UNDERSTANDING OUR COMPANY
AN IBM PROSPECTUS

We have done much in recent years to transform our company. In a number of meaningful respects, IBM is fundamentally different from what it was just a few years ago. Of late, our actions have accelerated, and some have received a good deal of public attention.

I want to explain to you why we have taken these steps. They constitute an end-to-end transformation of our business, driven by major new marketplace opportunities that promise to expand our industry significantly. We are confident in IBM's ability to seize these opportunities, and the purpose of this document is to explain the reasons why.

We think those reasons are relevant to shareholders, clients, employees, business partners, suppliers—or members of the broad range of our other important constituencies, from governments, to universities, to communities. If you are part of any of those groups, we think you'd want to understand what IBM is all about, and what its prospects are.

In fact, that is why we are calling this document a prospectus. According to one dictionary, prospectus means "a distant view." The word is related to the Latin verb meaning "to look forward." So a prospectus—above and beyond its specific use in a legal or financial context—is simply a presentation of pertinent information about a company or planned venture so that individuals can make informed decisions.

Fully understanding the strategies and prospects of companies in our industry today is, frankly, very difficult. We're in one of those transition phases when the old rules no longer apply and the new ones haven't fully emerged. People have been burned by overly ambitious promises and expectations in the past—but they know the answer isn't to sit on the sidelines.

Interestingly, some information technology companies did just that during the recent downturn. They hunkered down and awaited the eventual cyclical rebound. Others decided the future lay in consolidation, and chose to bulk up. And then some companies just concluded that their core business wasn't very interesting, and chased after new markets.

None of that describes what we've done at IBM. We saw the changes in technology, economic behavior and client preferences as evidence not of cyclical swings, but of a major secular shift in both technology and business—and we were determined to seize the opportunity it presented.

Now, after several years of changes that have touched virtually every aspect of IBM's operations and strategy, the major pieces are in place. Our company is aligned around a single, focused business model—innovation—and this document explains why it gives us confidence in IBM's outlook for the years ahead.

Providing this kind of understanding is particularly important in business today. Indeed, it is a form of transparency and accountability—a deeper form than the usual questions about legal compliance or ethics. This is about a company's strategy, operations, culture and values. Whether or not you want to be associated with the IBM company, we think you should do so for the right reasons.

Throughout our history, clarity about who we are has been the key to our best relationships and to our own prosperity. It helped IBM become a successful, progressive leadership enterprise. And everything we do today—the fundamentals of which are described in this document—is aimed at being that company in the decades ahead. After reading our prospectus, I hope you will share our confidence in IBM's future.

Samuel J. Palmisano
CHAIRMAN, PRESIDENT AND CHIEF EXECUTIVE OFFICER

THE OPPORTUNITY:

History suggests that a sustained period of growth is about to begin for the $1.4 trillion information technology industry. At the same time, new markets are opening up on its borders. But the rewards will not be shared equally. As in the past, they will flow to those enterprises that can turn disruptive shifts to their clients' advantage.

After several years of contraction, the global information technology industry returned to growth in 2003. At the same time, a significant new opportunity began to emerge for providers of business process services. Combined, these sources of growth are propelling information technology and business services beyond the IT industry as we have known it.

Information technology today is commonly held to be a $1.4 trillion industry. It includes computing hardware, software and services for business and consumer buyers. In the view of many analysts, that industry will likely approach $1.8 trillion or more in global revenue as early as 2008, assuming annual growth rates between 4 percent and 7 percent. While this rate is slightly below the industry's long-term historical growth of approximately 1.5 to 2 times global gross domestic product, it would be competitive with or outpace growth estimates for several other industries.

INDUSTRY REVENUE GROWTH 2003-2007 (U.S.)
COMPOUND ANNUAL GROWTH RATES

Banking	6.9%
Insurance	6.5%
Pharmaceuticals	5.0%
Media	4.2%
Retail	3.0%
Automotive	2.0%

Source: IBISWorld, Inc.

Although this growth rate for IT is similar to that of the early 1990s, we believe that the drivers of growth—and of the most attractive profit opportunities—are very different today and will remain so for the foreseeable future.

Industry trends

The IT industry today is moving into a new era, characterized by a new architecture of computing and the new business models it enables. IBM calls this "On Demand Business" (see pp. 16–17). Since 2002, we have made significant investments in strengthening our company's capabilities to help clients become on demand businesses, and to communicate our understanding of the concept to them and to our employees and partners. Not everyone uses the term "on demand" (though an increasing number of people, companies and even competitors do), but the essential ideas about the trajectories of technology and business are clearly taking hold. These changes are driven by the convergence of three historic developments:

1. NETWORK UBIQUITY

In less than a decade, the Internet, the most visible evidence of an increasingly networked world, has reached about 800 million people, and is projected by some analysts to reach more than a billion people by 2007. The Internet has not only connected people and opened up access to the world's information, it is rapidly becoming the planet's operational infrastructure. It is linking people, businesses and institutions, as well as billions, ultimately trillions, of devices—not only computers, satellites and telephones, but also cars, medical and production equipment and household appliances. It is at once facilitating and transforming transactions of all kinds—from commerce, government services, education and health care to entertainment, conversation and public discourse.

New business designs and a new computing architecture, both fully exploiting network ubiquity, will displace existing models in the years ahead.

2. OPEN STANDARDS

Technical and transaction specifications, mundane but vital, underpin all industries. When they become standards—that is, when they are widely adopted—they unleash growth by spurring the creation of many new kinds of products and services. Standards made possible electrical, telephone and TV networks, CDs, DVDs, credit and debit cards and global financial markets—and by extension, all the other business and public services these systems enabled. Today, standards are truly taking hold in information technology. They determine how computers operate and software applications are developed, how digital content is produced, processed, distributed and stored, and how transactions of all types are managed. These standards are "open"—that is, not owned or controlled by any one company or entity. (The Internet itself, for example, is built on open standards.) This is common in other industries, but a radical departure for IT.

Companies that innovate on top of open standards are advantaged because resources are freed up for higher-value work and because market opportunities expand as the standards proliferate.

3. NEW BUSINESS DESIGNS

The simultaneous emergence of a networked world and open standards is enabling entirely new business designs, giving CEOs and other decision makers options that were previously infeasible. Companies can now be far more flexible and responsive to changes in the economy, buyer behavior, supply, distribution networks, consumer tastes, geopolitical realities—even the weather. This is because their business operations can be integrated horizontally, from the point of contact with customers through the extended supply chain. Because vital information is captured and managed enterprise-wide, networked companies can anticipate and respond much faster (hence, our term "on demand"). Their computing infrastructures are similarly responsive and flexible, and the open standards on which they are based enable integration at a much lower cost.

In the recent past, IT "applications" for businesses largely entailed installing and deploying software packages. But now, to gain the competitive advantages of On Demand Business, companies are designing and implementing business processes and operations unique to their needs and industries. That is why for IT companies, deep expertise in industries and business processes—coupled with a deep understanding of technology—is essential to capture the highest-value growth opportunities.
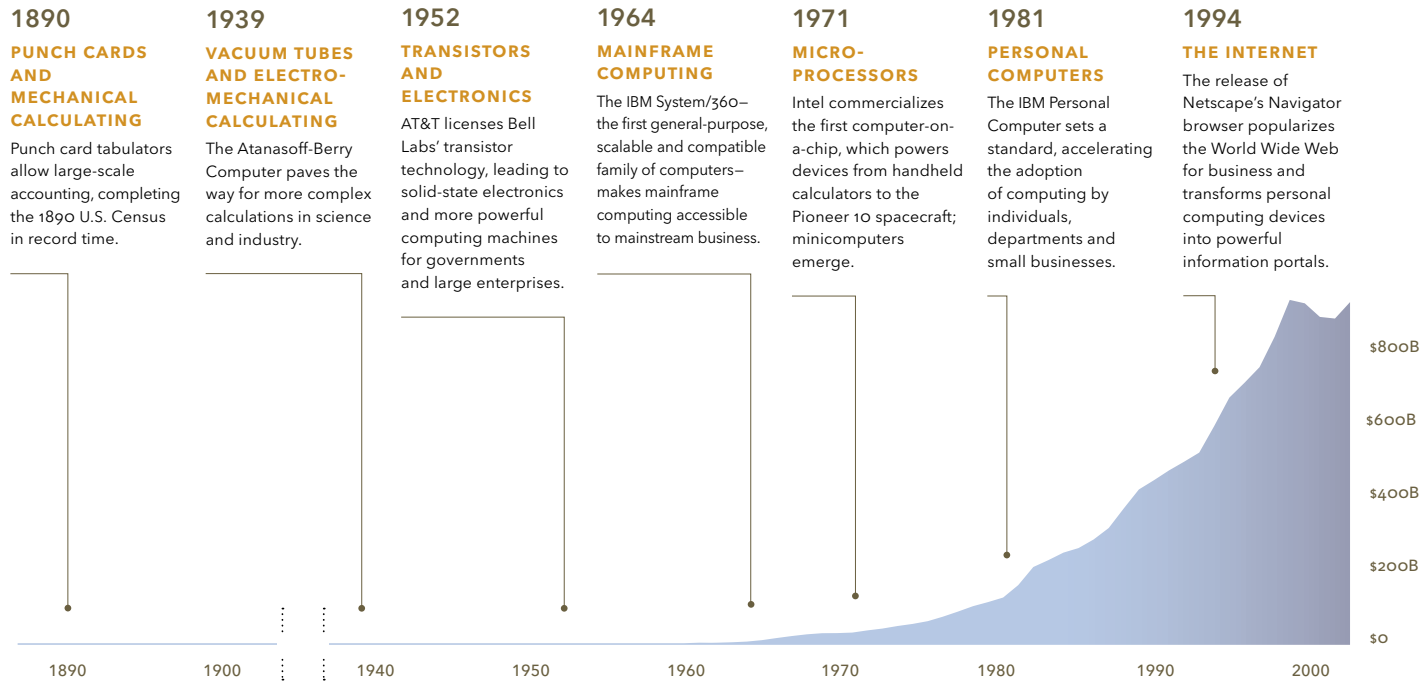
Clients are increasing their investments across these specific areas of business and technology: hardware and software based on open standards that support high-performance, highly flexible infrastructures; and services that help companies fundamentally change and manage their business operations for competitive advantage.

At the same time, these shifts are creating significant growth opportunities beyond the traditional IT industry. These new opportunities lie in what the world's companies and institutions spend on sales, general and administrative costs (SG&A), as well as some costs of goods sold, and research and development (R&D). Industry analyst IDC estimates that companies spend $23.6 trillion on these business processes annually. Of that, $1.4 trillion is currently being spent with third parties, and is projected to increase through 2008 by more than 9 percent a year (versus 6 percent for the traditional IT industry).

Some of that $1.4 trillion is in areas such as supply chain management, engineering design services, human resource management, after-sales services and customer care: business operations and processes that are critically dependent on information technology, or that can be radically transformed and improved through the application of IT.

We call this market Business Performance Transformation Services. And within this $1.4 trillion marketplace, we see opportunity in excess of $500 billion that can be addressed by both IT and non-IT companies—provided they have the right combination of expertise, advanced technology and the ability to deliver both with adequate scale. This market for transforming business processes and, in some cases, operating those processes for clients has thus far seen little penetration by traditional IT providers.

Evolution of the IT Industry

1890

PUNCH CARDS AND MECHANICAL CALCULATING

Punch card tabulators allow large-scale accounting, completing the 1890 U.S. Census in record time.

1939

VACUUM TUBES AND ELECTRO-MECHANICAL CALCULATING

The Atanasoff-Berry Computer paves the way for more complex calculations in science and industry.

1952

TRANSISTORS AND ELECTRONICS

AT&T licenses Bell Labs' transistor technology, leading to solid-state electronics and more powerful computing machines for governments and large enterprises.

1964

MAINFRAME COMPUTING

The IBM System/360—the first general-purpose, scalable and compatible family of computers—makes mainframe computing accessible to mainstream business.

1971

MICRO-PROCESSORS

Intel commercializes the first computer-on-a-chip, which powers devices from handheld calculators to the Pioneer 10 spacecraft; minicomputers emerge.

1981

PERSONAL COMPUTERS

The IBM Personal Computer sets a standard, accelerating the adoption of computing by individuals, departments and small businesses.

1994

THE INTERNET

The release of Netscape's Navigator browser popularizes the World Wide Web for business and transforms personal computing devices into powerful information portals.

$800B
$600B
$400B
$200B
$0

1890   1900   1940   1950   1960   1970   1980   1990   2000

REPRESENTATIVE COMPANIES BY ERA

• Burroughs Adding Machine	• Burroughs Adding Machine	• Burroughs	• Control Data	• Amdahl	• Apple	• Accenture
• Computing-Tabulating-Recording Company (later, IBM)	• Eckert-Mauchly Computer	• IBM	• General Electric	• Data General	• Compaq	• Dell
• Felt & Tarrant Manufacturing	• Engineering Research Associates	• Philco	• Honeywell	• DEC	• Computer Associates	• EMC
• National Cash Register	• IBM	• Sperry Rand	• IBM	• Fujitsu	• EDS	• Hewlett-Packard
• Remington Typewriter	• Remington Rand		• RCA	• Groupe Bull	• IBM	• IBM
			• Sperry Rand	• Hitachi	• Intel	• Intel
				• IBM	• Microsoft	• Microsoft
				• Siemens Nixdorf		• Oracle
						• SAP
						• Sun Microsystems

Industry growth data source: IDC, *40 Years of IT: Looking Back, Looking Ahead, An IDC Special Edition Executive Whitepaper* authored by Chief Research Officer John Gantz, 2004

Historical data source: IBM

New growth, new players

While these particular trends and their implications may be new, the general effects they will have on our industry are not unfamiliar. Throughout its history, with each important change in underlying technology, the IT industry has experienced a redefinition of its scope, growth in new segments that outpaces the old and—just as notable—a reshuffling of the competitive landscape. Some players have been able to capitalize on exponential growth in demand, and others have fallen by the wayside.

Transistors and integrated circuits made mainframe computing possible on a global scale—and the information locked in the "back offices" of the world's businesses changed from a cost burden to a competitive asset. The microprocessor gave birth to the personal computer. Open networking standards and protocols enabled the Internet. In every generation of IT, there have been winners, losers and also-rans—the result of successful or failed strategies, determined or mediocre execution. And this pattern is not, of course, restricted to IT. It echoes the evolution and impact of every major technology shift in the world over the past 250 years (see "Before and After the Bubble," below).
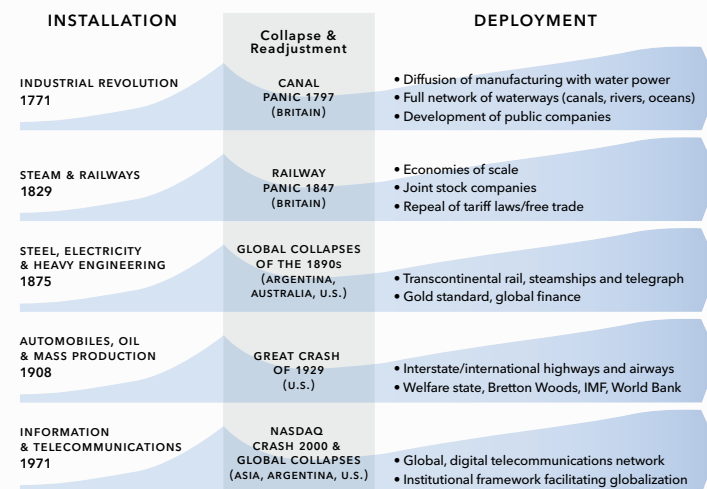
Choosing wisely

Like other major structural shifts before it, the on demand era—networked, built on standards and inspiring wholly new business and institutional models—is opening up new possibilities of profit and growth for business, while also affecting other realms of societal and economic activity, from government, to health care, to education. Even the ways enterprises buy IT are undergoing changes as far-reaching in effect as the changes in technology.

Seizing the opportunities presented by this shift, as always, requires unique foresight and capabilities. Despite the turmoil in the IT industry in recent years, some companies have managed to earn market share, advance the frontiers of science and learning, and build multiple kinds of new expertise. The result today is an industry poised for good growth in its traditional markets and robust growth in the new markets now coming into view. But that growth will not be shared equally.

In the years ahead, choosing wisely will once again prove as important for clients, partners and employees as it has for investors, ever since "tech sector" became a broker's byword. As in the past, navigating the scope and range of opportunities in today's and tomorrow's IT industry is not something every company will be able to do. But significant rewards will accrue to those up to the challenge.

BEFORE AND AFTER THE BUBBLE

From the Industrial Revolution to the Information Age, there has been a consistent pattern in the diffusion of technological revolutions and their impact on macroeconomic trends, according to Carlota Perez, a scholar of technology and socioeconomic development at Cambridge University's Endowment for Research in Finance. The core radical innovations come first. Their extraordinary success spawns a vast wave of interrelated investment, as happened with mass-produced cars and electrified homes in the 1910s and 1920s, and with PCs and digital telecommunications in the 1980s and 1990s. This is what she terms the Installation Period, lasting 20 to 30 years and ending in a speculative financial boom. The collapse of this bubble leads to a necessary correction. What comes next are two or three decades of what Perez calls the Deployment Period. This is when the new technology platform is fully applied and woven into the fabric of business and society. In Perez's analysis, the intense exploratory investment made during the dot-com frenzy of the late 1990s is likely to be the precursor of a prolonged period of sustained global expansion and growth, with information technology as the engine.

INSTALLATION	Collapse & Readjustment	DEPLOYMENT
INDUSTRIAL REVOLUTION 1771	CANAL PANIC 1797 (BRITAIN)	• Diffusion of manufacturing with water power • Full network of waterways (canals, rivers, oceans) • Development of public companies
STEAM & RAILWAYS 1829	RAILWAY PANIC 1847 (BRITAIN)	• Economies of scale • Joint stock companies • Repeal of tariff laws/free trade
STEEL, ELECTRICITY & HEAVY ENGINEERING 1875	GLOBAL COLLAPSES OF THE 1890s (ARGENTINA, AUSTRALIA, U.S.)	• Transcontinental rail, steamships and telegraph • Gold standard, global finance
AUTOMOBILES, OIL & MASS PRODUCTION 1908	GREAT CRASH OF 1929 (U.S.)	• Interstate/international highways and airways • Welfare state, Bretton Woods, IMF, World Bank
INFORMATION & TELECOMMUNICATIONS 1971	NASDAQ CRASH 2000 & GLOBAL COLLAPSES (ASIA, ARGENTINA, U.S.)	• Global, digital telecommunications network • Institutional framework facilitating globalization

Based on *Technological Revolutions and Financial Capital: The Dynamics of Bubbles and Golden Ages,* Carlota Perez

THE CHALLENGE:
INNOVATION

OUR COMPANY

IBM IS WELL POSITIONED TODAY TO CAPTURE THE HIGHEST-VALUE OPPORTUNITIES IN A RAPIDLY CHANGING INFORMATION TECHNOLOGY INDUSTRY.

Our Business Model

A business model is the essential design of a company. IBM's model—innovation for the enterprise—has sustained us through a century of change, and is well aligned with the market opportunity before us.

Our
Client Base

Every enterprise is reflected in the companies that choose it as a partner. IBM's global client base of leaders and first movers are believers in the power of technology-driven innovation to transform their organizations.

Our
Workforce

Competitive advantage today comes from expertise—and expertise is not static. IBM has the world's deepest, most diverse collection of business and technology innovators, supported by advanced collaboration systems and a culture that enables continuous learning.

Our
Management
System

Optimizing a global on demand enterprise means adapting continually to rapid change while integrating thousands of processes and managing millions of relationships—every day.

Our
Economics

Based on today's opportunities and our strengthened ability to capitalize on them, as described throughout this document, we believe IBM can generate consistently high returns on invested capital and increased shareholder value.

OUR BUSINESS MODEL

IBM IS AN INNOVATION COMPANY

A BUSINESS MODEL IS THE ESSENTIAL DESIGN OF A COMPANY. IBM'S MODEL—INNOVATION FOR THE ENTERPRISE—HAS SUSTAINED US THROUGH A CENTURY OF CHANGE, AND IS WELL ALIGNED WITH THE MARKET OPPORTUNITY BEFORE US.

"Thought," said IBM's founder, Thomas J. Watson, Sr., "has been the father of every advance since time began."
The one-word slogan "THINK" has appeared in offices and plants throughout the company since the early 1900s.

INNOVATION
FOR THE ENTERPRISE

IBM has a storied history of inventing technology and applying it to the needs of business. We have done so over many decades, through many changes in technology—and we're doing it again today.

Many businesses invent and commercialize technology. Others are experienced in helping clients transform their enterprises for competitive advantage. IBM is unique in the depth of its capacity to do both. This is what we mean by innovation.

This is about more than being an "innovative" computer or IT company. For us, innovation is a business model, an organizing principle. Our fidelity to this model has enabled IBM to remain a leader in our industry through multiple eras. It commits IBM to reinvent itself— in the products and services we offer clients, as well as in our internal operations—as technology, its possible applications and our clients' needs evolve.

Understanding IBM's business model and its consequences for our client relationships, workforce strategy, management systems and economics is key to understanding why and how we have transformed the company over the past few years. And that, in turn, is the basis for our optimism about IBM's ability to capture the most attractive marketplace opportunities now emerging.

A CENTURY OF INNOVATION

Although IBM began life as a maker of clocks, scales, electromechanical tabulators and other industrial equipment, it has never defined itself in terms of particular products or technologies. Even when the company emerged as a leader in "computation," it was constantly developing new kinds of computational technology and new ways of applying it—from automating the new U.S. Social Security system with punch card tabulators in the 1930s; to pioneering electronic banking, retailing and airline reservations with the mainframe in the second half of the 20th century; to setting a standard for and driving the commercialization of personal computers in the 1980s.

The one, near-fatal exception occurred during the late 1980s and early 1990s. For the first time in IBM's history, the company failed to adapt to changes in technology, competition and client needs, despite the fact that IBM itself had created many of the disruptive technologies of that time. The

company remained heavily dependent on its highly successful innovation of the prior era: the mainframe, and all of the businesses, distribution channels and economics that hinged upon the mainframe's continued dominance. However, the rise of alternative, lower-cost technologies, a new computing architecture, the proliferation of niche competitors and changes in client buying patterns combined to overwhelm the company and led to large market-share and financial losses.

The hard-learned lessons from that period are directly relevant today, in at least two respects. First, the IT industry is again undergoing fundamental change on many levels simultaneously, which will once more create winners and losers. Second, many of the actions IBM took to recover from its near-collapse put it in a strong competitive position for this new era, a position that the company has substantially strengthened in recent years.

IBM, forced to adjust to new realities, did so across the board. This included entering and building significant businesses in enterprise software and services—markets which together grew from 49 percent of industry revenues in 1995 to 59 percent in 2004. For IBM, software and services today constitute 16 percent and 48 percent of the company's total revenues, respectively.

IBM's gross profit margins in the mainframe era were unsustainable. So the company recalibrated its economic and cost structure to be competitive, while maintaining margins sufficient

The Relentless Forces of Innovation and Commoditization
BIFURCATION IN THE IT INDUSTRY

From its start, the IT industry has been characterized by the cycle of innovation and commoditization—and with it, high risk and high reward. Companies that create new, high-demand technologies and services enjoy, for a time, barriers to entry and superior margins and pricing power, for the simple reason that there are few or no other providers of that technology or service. However, alternative technologies or capabilities inevitably emerge, decreasing or eliminating the innovator's advantages. In short, that segment of the industry commoditizes. There are still attractive opportunities to be pursued, but with much less profit potential.

This innovation-commoditization cycle has never been more pronounced than it is today, and it forces distinct choices for both competitors and investors in the IT

industry. Winners can be the innovators—those with the capacity to invest, manage and leverage the creation of intellectual capital—or the commodity players, who differentiate through low price, economies of scale and efficient distribution of other parties' intellectual capital.

Perhaps the greatest risk is to get squeezed in the middle—being attacked by low-price competitors, while lacking the expertise and intellectual capital to keep up with the most aggressive innovators.

Understanding, anticipating and managing the forces of innovation and commoditization are essential to increasing shareholder value and mitigating risk. This is a core aspect of IBM's business model, and it has allowed the company to create value for clients and investors for nearly a century.

to fuel our high-value innovation business model. It created distribution and go-to-market channels to reach new decision makers and to increase sales coverage. It migrated all of its hardware and software platforms to high-performance technologies. And it shifted from proprietary to open architectures.

These capabilities have been dramatically enhanced and augmented in recent years. Today, IBM's strengths in business consulting, systems integration, IT and business transformation outsourcing, open enterprise software and high-performance hardware provide the company with a strong hand to capture the most promising opportunities that lie ahead. These opportunities involve doing new kinds of work for clients—work that is deeper and more complex, and for which traditional IT companies have not typically competed. ∎

2004 $96.3 BILLION
Revenue (as reported)

BLUE GENE BECOMES THE WORLD'S FASTEST SUPERCOMPUTER 2004
Based on IBM's Power microprocessor technology and Linux, the IBM Blue Gene system captures the worldwide lead in supercomputer performance with a record 70.7 teraflops, or trillions of calculations per second. Smaller in size, cost and power consumption than traditional supercomputers, Blue Gene also has a wider range of uses, prompting IBM to offer the technology commercially.

BUSINESS PERFORMANCE TRANSFORMATION SERVICES
IBM identifies this addressable opportunity, in excess of $500 billion, for the transformation and management of business processes and operations.

IBM eSERVER 2000
Sharing innovation across IBM's server families, the eServer brand unites development, manufacturing, marketing and sales. Since the eServer launch in the fourth quarter of 2000, IBM has gained nearly 10 points of market share.

LINUX FOR BUSINESS 1999
IBM pledges commitment to the open source Linux operating system, and begins to support it across its products and services.

COPPER CHIP TECHNOLOGY 1997
IBM researchers develop a method for replacing the aluminum wiring on microprocessor chips with copper, enabling the production of dramatically faster chips at lower cost.

IBM SOFTWARE 1995
IBM creates a dedicated software business unit to focus on open, platform-independent middleware. By 2004, IBM Software generates $15 billion in revenue, of which 80 percent is from middleware.

1994 $64.1 BILLION
Revenue (as reported)

IBM GLOBAL SERVICES 1991
IBM forms Integrated Systems Solutions Corporation, the precursor to IBM Global Services, to build on its $13 billion IT services business. By 2004, the business of information technology services has grown into a vast global market, and IBM Global Services generates $46.2 billion, 48 percent of IBM's total revenue.

IBM AS/400 1988
IBM debuts a new family of computers, designed for small and medium-size companies, with more than 1,000 software applications available on day of launch. In 2000, IBM relaunches AS/400 as iSeries, today the choice of more than 245,000 clients, with 400,000 systems installed worldwide.

How do you become a $96 billion company?

IBM INNOVATION AND GROWTH OVER TIME

1981 **$29.1 BILLION**
Revenue (as reported)

IBM PERSONAL COMPUTER 1981

The IBM PC establishes the standard that makes computing a ubiquitous part of business and everyday life. At the start of the 1980s, there are fewer than 1 million PCs in use. By the end of the 1980s, there are more than 100 million.

RISC (REDUCED INSTRUCTION SET COMPUTER) 1974

IBM researcher John Cocke develops a simplified instruction set for programming microprocessors that becomes the cornerstone for most modern chips, including IBM's Power microprocessors. Today's POWER5 system-on-a-chip is the fastest-growing RISC processor in the industry.

RELATIONAL DATABASE 1970

Edgar F. Codd, an IBM researcher, introduces the concept of the relational database—a set of related tables containing data in predefined columns that enables information to be accessed and manipulated in new ways. By 2004, IBM's Information Management business has more than 425,000 database customers.

LUNAR MISSIONS 1969

IBM engineers and System/360 computers help the National Aeronautics and Space Administration put the first men on the moon. IBM has supported NASA in practically all phases of America's space program, from Mercury, Gemini, Apollo and Skylab missions, to equipping space shuttle astronauts with ThinkPads.

1968 **$6.9 BILLION**
Revenue (as reported)

DRAM 1968

IBM scientist Bob Dennard invents one-transistor dynamic random-access memory (DRAM), enabling major increases in memory density. DRAM remains the dominant form of computer memory today.

SYSTEM/360 1964

The first general-purpose, scalable and compatible family of computers makes mainframe computing accessible to mainstream business. From 1964 to 1970, IBM's revenues more than double, from $3.2 billion to $7.5 billion.

SABRE 1962

The automated reservation system for airline travel is developed by IBM for American Airlines. It is the industry's first large-scale commercial computer and communications network operating in "real time."

1957 **$1.2 BILLION**
Revenue (as reported)

1945 **$142 MILLION**
Revenue (as reported)

IBM RESEARCH 1945

IBM founds its first facility devoted to basic scientific research, the Watson Scientific Computing Laboratory at Columbia University, to investigate physics and materials science. In the process, it helps establish the field of computer science.

FORTRAN 1957

IBM makes FORTRAN (formula translation), the first higher-level programming language, available to clients. Developed by IBM researcher John Backus, FORTRAN allows programmers to use characters instead of machine code and becomes the most widely used computer language for mathematically oriented jobs that require scientific and numeric calculations.

RAMAC 1956

The first computer to include a magnetic hard disk for data storage, the 305 Random Access Method of Accounting and Control enables business data such as sales records, inventory and production schedules to be stored, retrieved and analyzed. The device stores five megabytes of data at a cost of $10,000 per megabyte.

MAGNETIC CORE MEMORY 1952

IBM is the first company to integrate this early form of random-access memory into a computer system. An initial application enables the 1958 NORAD (North American Aerospace Defense Command) SAGE system for real-time air traffic control and defense.

On Demand Business

RESPONSIVE | VARIABLE | FOCUSED | RESILIENT

Industry focus

On demand solutions are grounded in the dynamics and processes of specific industries. IBM has aggressively deepened its expertise in 17 industries and 56 subindustries. Our understanding of the telecommunications industry has enabled firms to redesign customer interactions to improve satisfaction ratings. We've leveraged our expertise in financial services to help credit card companies shorten the time it takes to get new products to market. And we've worked with insurance companies to enhance the way they manage risk.

New analytics

On Demand Business lets the CEO see the enterprise in a new way—"componentized" into processes, resources, assets, strategies and people. These are the building blocks of a dynamically reconfigurable business. IBM has helped more than 120 clients— including Bank of America and U.K. financial services provider Egg—apply our Component Business Model (CBM) framework to align their business and IT strategies. We've developed 55 unique CBM industry maps.

On Demand Business is a new way of conceptualizing and managing business activity. It enables companies to achieve higher levels of responsiveness, flexibility and efficiency than legacy Industrial Age business models—or even those that have been developed more recently. This is now possible through advances in the architecture of computing (see "On Demand Infrastructure," below), which enable new levels of variability and interoperability among previously disconnected IT systems. This technical integration, in turn, enables end-to-end business integration among internal operations that have historically been separate—and even allows different businesses to interoperate seamlessly. As a result, an On Demand Business is able to detect and react quickly to changes in supply, demand, pricing, competitors' moves, shifts in customer preferences and other marketplace dynamics.

On demand also allows leaders to accomplish the seemingly counterintuitive feat of outsourcing tasks to external partners while tightly integrating them into their internal operations. And because they can choose partners with world-class expertise, on demand enterprises achieve lower costs and greater strategic focus, without sacrificing quality.

Most companies' first steps toward becoming on demand have been aimed at efficiency, cost savings, productivity and IT integration—addressing, in essence, the infrastructure and organizational fragmentation of the past 20 years. However, once business leaders start down this path, they soon come to understand the potential of the On Demand Business design to grow their top line by creating entirely new capabilities. In health care, for instance, on demand is leading to personalized medicine—as the integration of patient histories and genomic data is changing the nature of diagnosis and patient care. In insurance, on demand is making possible products and services tailored to the driving habits of individual policyholders.

Reinventing R&D

Technology isn't just the stepchild of science. It can also transform how science itself is done. IBM's Engineering & Technology Services (E&TS)—launched in October 2002—has turned IBM's own R&D management skills and systems into a new revenue stream. For example, E&TS is helping Honeywell optimize the advanced electronics systems that support its aerospace research with both broad expertise and a library of technical assets and intellectual property.

Economies of expertise

In a new kind of relationship called Business Transformation Outsourcing (BTO), IBM is managing and transforming systems ranging from finance, to human resources, to customer relationships. Case in point: Semiconductor equipment maker Lam Research has, with IBM's help, reduced operations spending by 42 percent and property and equipment spending by 52 percent, gaining market share during an industry downturn.

ON DEMAND
BUSINESS *{and}*

ON DEMAND INFRASTRUCTURE

Throughout its history, IBM has led through innovation that advanced information technology and the ways it is applied by enterprises. We're doing it again today.
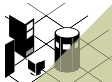
Services-oriented

Thousands of IBM clients are moving their technology infrastructures to a services-oriented architecture (SOA) typically based on Web services. Why? SOA increases the speed and lowers the cost of designing and deploying solutions by drawing on standardized software components. Yankee Group predicts that 75 percent of all enterprises will begin investing in SOA within the next year. Already, SOA implementations are helping clients such as Sprint, Guardian Life Insurance, Huntington Bank and Miami-Dade County, Florida.

Grids and virtualization

IBM's virtualization solutions allow clients to pull together diverse computer systems, storage devices and networking capacity into a single, virtual pool that can be accessed and managed across an entire organization, throughout the world. IBM has implemented grid computing for more than 200 clients. Austrian automotive-assembly firm Magna Steyr employed an IBM grid system to reduce the time it takes to analyze the components of a vehicle from three days to four hours.

Over the past 20 years, PC economics drove many organizations to add enormous IT capacity and distribute it throughout their companies—but they hardwired it to discrete operations. As a result, many clients are dependent on widely dispersed applications and systems that do not easily interoperate—and therefore are significantly underutilized. This has resulted in IT infrastructures that are highly complex, difficult to manage and expensive to maintain. In just one segment of IT spending—servers—operating and maintenance costs today far exceed investments in new server products and capacity.

The solution to these realities—and a key to freeing up investments in new products and workloads—lies in a new computing architecture, which we call the On Demand Operating Environment. It capitalizes on the most important developments in technology and computer science: It exploits a networked world. It is based on open standards, which are taking hold in the IT industry for the first time. It enables integration of technology and business processes, and it utilizes powerful new core technologies, such as virtualization and autonomic systems.

On Demand Infrastructure

INTEGRATED | OPEN | VIRTUALIZED | AUTONOMIC

Open standards-based

Technologies based on open standards ease interoperability and broaden the range of options available to organizations. The open source Linux platform is quickly becoming a standard for operating systems. Grid computing, based on open standards, aggregates computing power from otherwise underutilized systems. IBM is active in supporting open standards: The Eclipse Foundation, which IBM launched to create an open ecosystem for software tool integration, has logged 18 million download requests. Power.org, formed by IBM, Sony, Synopsis, Red Hat, Novell and nine others, is accelerating open collaboration and innovation around IBM's Power Architecture microprocessor.

Self-managing

The growing complexity of IT environments has increased the cost and difficulty of managing systems and ensuring security and stability. In 2004, IBM introduced more than 200 self-managing features across our product portfolio, including the DB2 Design Advisor, which improves database performance as much as 6.5 times that of a manually configured system. More than 50 partners are collaborating with IBM to integrate autonomic functions. And the world is increasingly taking notice. The first International Conference on Autonomic Computing was held in New York City in 2004.

OUR CLIENT BASE

GROWING AND DEEPENING

EVERY ENTERPRISE IS REFLECTED IN THE COMPANIES THAT CHOOSE IT AS A PARTNER. IBM'S GLOBAL CLIENT BASE OF LEADERS AND FIRST MOVERS ARE BELIEVERS IN THE POWER OF TECHNOLOGY-DRIVEN INNOVATION TO TRANSFORM THEIR ORGANIZATIONS.

A crucial aspect of the recent expansion of New York City's Museum of Modern Art was an IBM IT infrastructure to integrate, manage and automate MoMA's business operations, from the exhibition of artwork to its education resources, library archives and online store.

IBM CLIENTS:
THE WORLD OF BUSINESS

In their breadth, variety and global presence, IBM clients constitute an impressive array from the realms of business, government, health care and academia. They include small firms with rapid growth plans and the largest and most prestigious corporations and institutions on the planet.

1 We start with a remarkable client base

Regardless of their age, size or industry, IBM clients share a conviction that information technology can be marshaled to create tangible competitive advantage, and they are willing to transform essential aspects of their operations to leverage IT's power. Because of this, IBM clients today are investing in new technologies and services to become on demand enterprises. As first movers, they are establishing an early, significant edge over their competitors.

Vast in number, globally distributed and leading in their industries:

675 of Fortune 1000 companies, with average IBM spends of more than $30 million.

more than 1,400 retailers, with 2 million IBM point-of-sale systems installed in more than 100,000 stores in 100 countries.
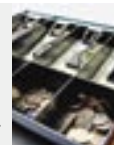
more than 90 percent of the **communications, retail and electronics companies** in the Fortune 500.

Representing some of the fastest-growing areas of the global economy:

half of the **Fortune 100 Fastest-Growing Companies** with 71 percent of **computer and professional services companies,** and 100 percent of the **consumer packaged goods** category.

83 percent of **life sciences companies** in the Fortune 1000.
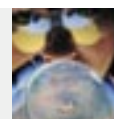
Managing crucial infrastructures that underpin global commerce and government:

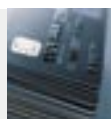**the 100 top retail and corporate banks in the world.** All told, IBM manages the majority of the world's banking customer data.

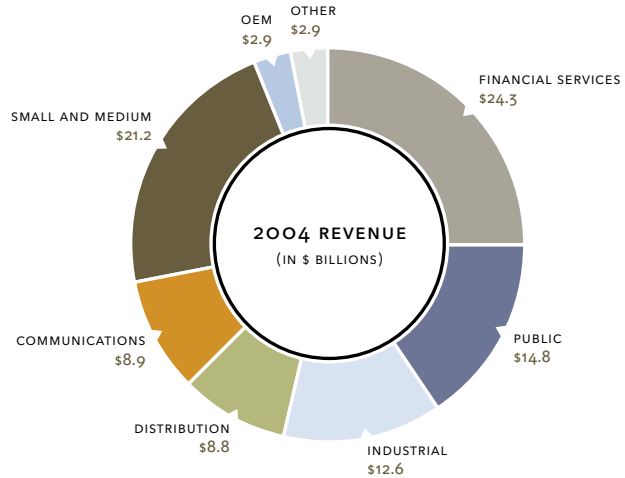**government and public sector organizations** in 58 countries, home to 75 percent of the world's population.

the majority of the **world's credit card transactions** are cleared using IBM infrastructure.

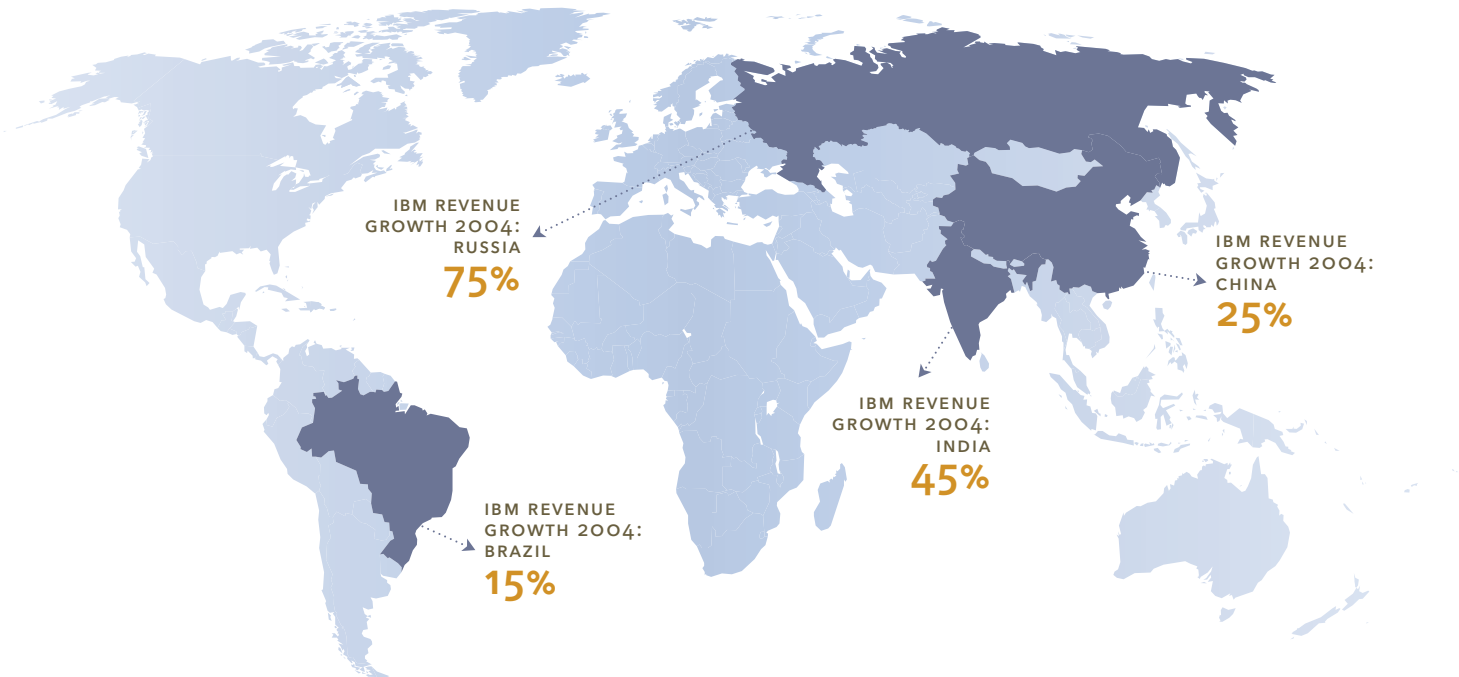# 2 Growing in number and reaching dynamic business segments

On demand business and computing solutions have improved the economics of and broadened the options available to enterprises—especially small and medium-size businesses (SMB). Revenue from IBM's SMB sales organization was $21.2 billion in 2004, an 8 percent increase over the previous year.

In 2004, IBM's revenue from its SMB sales organization grew by 15 percent in Asia Pacific, 11 percent in Latin America and 18 percent in the Central Europe-Middle East-Africa region. It also grew by more than 50 percent in emerging technology areas such as Linux, digital media and wireless.

2004 REVENUE
(IN $ BILLIONS)

OEM $2.9
OTHER $2.9
FINANCIAL SERVICES $24.3
SMALL AND MEDIUM $21.2
PUBLIC $14.8
COMMUNICATIONS $8.9
DISTRIBUTION $8.8
INDUSTRIAL $12.6

3 And leading in the world's rapidly emerging markets

By embracing On Demand Business solutions, IBM clients in rapidly developing nations such as China, India, Brazil and Russia are leapfrogging to new computing architectures and business designs. IBM clients include the five largest companies in India and five of the top 15 in China.

IBM REVENUE GROWTH 2004: RUSSIA
75%

IBM REVENUE GROWTH 2004: CHINA
25%

IBM REVENUE GROWTH 2004: INDIA
45%

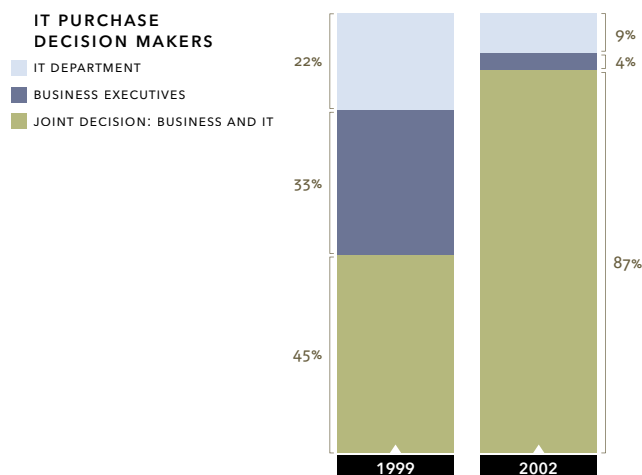IBM REVENUE GROWTH 2004: BRAZIL
15%

NEW RELATIONSHIPS, NEW MARKETS

What clients of IT seek today is very different from what they sought in the past: open rather than proprietary hardware and software; quantifiable business benefits, rather than technology for its own sake; and perhaps most significant, solutions rather than piece-part products they must integrate themselves. IT is becoming infused into the heart of business, so the ways it is sold—and the markets it can now enter—are changing in fundamental ways.

1   Clients want solutions—not pieces of technology, or bits of advice.

We estimate that integrated solutions — offerings from one or more companies that combine technology and high-value services to build new business processes that solve clients' problems—will be the way more than 70 percent of the IT industry's business products and services are bought by 2007. And this is not just about packaging or bundling.

In 1999, for instance, 22 percent of technology purchase decisions were made by IT departments, 33 percent by business executives, and 45 percent were joint decisions. Three years later, fully 87 percent of decisions were being made jointly.

IT PURCHASE DECISION MAKERS

- IT DEPARTMENT
- BUSINESS EXECUTIVES
- JOINT DECISION: BUSINESS AND IT

	1999	2002
IT department	22%	9%
Business executives	33%	4%
Joint decision	45%	87%

For an IT company, these changes will challenge not just its sales force, but its business model. Solutions, unlike point products, aren't mass-produced, but dynamically configured. They aren't created by a single department or company, but through the collaborative work of many. And selling solutions

2   We are creating new products, services and client engagement models to capture the opportunity.

IBM is changing both the way we work with clients and our strategy for delivering capability to them. IBM Global Services and IBM Software are working together to build services-oriented architecture solutions for more and more of our clients, as part of our On Demand Operating Environment and the evolution of our services unit to a more asset-based business.

The company is also making significant investments in Business Performance Transformation Services (BPTS), which entail transforming operations crucial to an enterprise, but not typically part of its unique expertise or value proposition. Often, these transformed capabilities will be delivered as a service, run by a trusted partner for whom they are core competencies.

IBM intends to pursue specific areas of opportunity within the BPTS marketplace, based on our unique capabilities.

A. RAMPING UP BUSINESS TRANSFORMATION OUTSOURCING (BTO)

This new kind of partnership involves the management and transformation of business processes. We have established growing BTO practices in several areas, including finance and accounting, human resources, procurement, customer relationship management and industry-specific solutions in government, insurance and banking.

B. LEVERAGING IBM'S SCALE AND EXISTING ASSETS

IBM's own integrated supply chain expertise enhances our BTO offerings in procurement. We estimate this has represented $600 million in client engagements. And we plan to turn our supply chain into a platform that can extend across multiple clients and different industries.

customized to the circumstances of each client, by definition, calls not for the broad, go-to-market strategy of a traditional manufacturer or marketer of a high-volume product, but for a targeted, segmented approach.

What isn't generally appreciated is that these changes present similar challenges for IT services in any flavor: the consultancy, the traditional outsourcing firm, or the systems integrator. Like many industries before it—agriculture, manufacturing, telecommunications, the building of skyscrapers and bridges—the IT services industry is increasingly moving from a predominantly labor-based business model toward one that leverages automation and reusable assets.

A major development in this shift toward "asset-based" services is the emergence of services-oriented architecture (SOA). Built on Web services and open standards, SOA enables businesses to share and integrate previously fragmented data and business processes. Software can connect data in an SOA regardless of its platform or application. SOA is an important part of the On Demand Operating Environment.

In the past, if a company wanted software customized to run particular operations, the result was something that had difficulty interoperating with other applications or programs—a barrier to end-to-end integration and flexible business designs. But with SOA, customization and interoperability are no longer at odds. For example, data formats describing basic information such as inventory parts, prices and customer records can now be standardized and shared—not only reducing cost but enabling the creation of capabilities that are truly differentiating: integrated supply chains; retail systems that span in-store, online and catalog shopping; integrated health care systems; and faster integration of acquired companies. The bottom line: more powerful, less costly solutions.

As difficult as the transition to solutions may be for both IT vendors and service providers, the rewards for providing deeper value and forging deeper relationships are compelling. IBM clients see what is becoming possible in terms of enhanced business performance—and they want to go there, fast. For the companies doing so, On Demand Business is already producing real results (see below).

C. EXPANDING SOLUTION OFFERINGS THAT DRAW ON THE IBM PORTFOLIO

- **STRATEGY AND CHANGE CONSULTING:** A new way to differentiate IBM's strategic consulting practice, the Component Business Model applies engineering discipline to analyzing and optimizing business design.

- **BUSINESS PERFORMANCE MANAGEMENT:** Using IBM middleware such as WebSphere, as well as business analytics, companies can embed their processes with software "triggers" that automatically monitor what is happening in the business and correlate that to external information, to enable better real-time decision making.

- **ENGINEERING & TECHNOLOGY SERVICES:** We are transforming our clients' R&D or engineering operations in fields as diverse as medical devices, consumer electronics and telecommunications.

- **SERVICE TRANSFORMATION:** This involves transforming a company's "service after sales" capability (e.g., for consumer electronics products).

- **ROAD CHARGING:** We are helping governments deal with the costs and environmental impact of automobile traffic through variable charges for the use of roads—by time of day, type of vehicle and traffic conditions.

- **CENTER FOR BUSINESS OPTIMIZATION:** This new practice combines consulting with expertise in business intelligence, mathematics, supercomputing and grids to address some of the most difficult business problems, such as pricing optimization and fraud detection.

- **ORDER-TO-CASH:** Billing is among the most complex operations in any industry, particularly services businesses such as telecommunications. IBM is helping clients speed satisfactory delivery of service to their customers, so they can collect payments more quickly.

WHEN THE SOLUTION IS ON DEMAND, THE RESULTS ARE REAL

IBM clients are gaining tangible competitive advantage through On Demand Business. In a study tracking 107 major U.S. companies from the FORTUNE 1000 and IBM's largest clients, the 30 companies furthest along in building on demand capabilities achieved:

15 points
HIGHER EARNINGS GROWTH THAN THEIR PEERS

1.3 points
BETTER GROSS PROFIT MARGIN IMPROVEMENT

1.2 points
BETTER RETURN ON INVESTMENT

In a second study conducted by IBM, companies within particular industries enjoyed the benefits of becoming on demand:

ELECTRONICS
- Profitability is 1.5 times higher and average return on investment is twice industry norms.

AUTOMOTIVE
- Revenue growth is 6 percent higher and return on invested capital is nearly twice the industry average.

CONSUMER GOODS
- Revenue growth is 25 percent higher and return on invested capital is nearly twice the industry average.

Academia

DEVELOPING 21ST-CENTURY EXPERTISE

- IBM's Academic Initiative is specifically focused on promoting skills around open standards-based software, by providing courseware and curriculum consulting services. Reaching more than 9,000 faculty members around the world, the program supports 4,500 institutions, educating 280,000 technical innovators of the future.

- IBM is engaged in groundbreaking collaborations with universities. The IBM-Stanford Spintronic Science and Applications Center (SpinApps) works on the future of processor technology based on the magnetic spin of electrons. Albany NanoTech, a unique institutional model within the University at Albany (SUNY) blends academic and industrial research on nanotechnology frontiers, including electronics and materials.

THE GLOBAL INNOVATION OUTLOOK

IBM reached out to scholars, business leaders and government officials in 2004 with its first Global Innovation Outlook (GIO). Multidisciplinary "deep dive" sessions were held in Shanghai, Zurich, New York and Washington, D.C., focusing on health care, the relationship between government and citizens, and the intersection of work life and personal life.

Among the insights the GIO offered:
- Medicine will shift from prevention to prediction, focusing on tailored treatments.
- Many national economies may specialize as they compete for talent.
- Enterprises will assume an increasingly important role as educators.

Governments

FOSTERING INNOVATION AND ACCELERATING OPEN STANDARDS AROUND THE WORLD

- IBM is working with governments, community organizations, businesses and universities worldwide to promote innovation-nurturing public and economic policy and curriculum development. In February 2004, the Russian government and IBM opened a Linux Competency Center in Moscow to provide education, technical support and promotion of Linux to developers, government institutions and commercial customers.

- More than 200 IBM government clients—including agencies in France, Spain, Australia, Mexico, the U.S., the U.K., China, India, Brazil and Japan—have deployed Linux to save costs, consolidate workloads, increase efficiency and enact e-government transformation.

- Innovation today is a source of competitive advantage for nations, as well as for companies. Starting in 2003, IBM Chairman and CEO Sam Palmisano co-chaired the National Innovation Initiative (NII) in the United States, sponsored by the Council on Competitiveness. Over an 18-month period, the NII captured and synthesized the views of hundreds of leaders and experts in business, government, labor and academia to forge a broad agenda for fueling America's innovative capacity. Among the NII's recommendations: a national health care IT infrastructure, a national innovation education strategy and a 21st-century intellectual property regime that embraces open standards. General managers of IBM's major country organizations are advancing similar initiatives in 20 other nations.

Open Standards
and Software Communities

CREATING A BUSINESS AND TECHNOLOGY INFRASTRUCTURE THAT EXPANDS PARTICIPATION AND CHOICE

- IBM is working to advance open standards through active participation in some 250 standards bodies and industry groups. In the last five years, IBM has helped establish key open groups and foundations that support standards and open source initiatives, including XML, UDDI and the Eclipse tool platform.

- IBM is helping to evolve the management of intellectual property toward a 21st-century model that balances protection of creators' rights with encouragement of open, collaborative innovation. We have pledged open access to technology covered by 500 IBM software patents, for open source use, a first step toward creating a "patent commons" that can serve as a platform for commercial innovation and software interoperability.

- We reaffirmed the importance of Linux—the fastest-growing operating system in the world and a key part of many client solutions—by pledging not to assert any IBM patents against the Linux kernel. We also donated Cloudscape, our Java-based database, and key speech-recognition software to the Apache Foundation.

Business Partners

COLLABORATING FOR MORE COMPLETE SOLUTIONS

- IBM's business partnerships have broadened, including an increasing number of consultants, independent software vendors (ISVs) and systems integrators. The portion of IBM revenue attributed to these partners was about 10 percent of IBM's total in the 1980s. Today, it is approximately one-third.

- IBM's commitment to open standards and open source is shared by many in the industry. It's one of the reasons why an estimated 60,000 ISVs across 55 countries have committed to developing and marketing solutions based on IBM's open infrastructure.

- IBM is working with more than 800 ISVs in Brazil, 70 percent of which are building solutions on Linux. IBM expanded its China Research Lab to provide research and testing capabilities for regional ISVs serving small and medium-size businesses—making it that country's largest software laboratory operated by an international vendor. In India, IBM has established relationships with 2,000 local software companies during the last five years.

Venture Capitalists

**BUILDING RELATIONSHIPS TO SPAWN
NEW COMPANY FORMATION**

- IBM Venture Capital Group works with VCs and the companies they form to advance computing and enterprise solutions based on open standards and IBM platforms. IBM has formed relationships with 85 of the firms on the *Forbes* Midas List, an annual ranking of technology's top 100 deal makers.

- In 2004, five out of IBM's six acquisitions of software companies were sourced though VCs in our partnership network, extending our efforts in key growth areas such as security, business intelligence and data management.

- In 2000, 20 firms funded by VCs as startups joined our ecosystem of business partners. In 2004, 700 such companies became members of IBM PartnerWorld.

Local Communities

**OPENING UP OPPORTUNITIES THAT SUPPORT THE GROWTH
OF SOCIETIES AND ECONOMIES**

- In 2004, IBM contributed $144 million at market value in equipment, technical services and cash to not-for-profit organizations and educational institutions worldwide. In addition, IBM employees and retirees personally contributed $56 million to nearly 18,000 non-profit agencies and schools.

- IBM's On Demand Community portal leverages our primary asset—the expertise and commitment of IBMers—to support education and community organizations in more than 80 countries by sharing IBM technology and know-how in volunteer engagements. More than 40,000 IBM employees and IBM retirees have registered, and they volunteered a million hours in 2004.

- IBM launched the World Community Grid in November 2004. It aggregates excess processing power from thousands of computers into a virtual supercomputer and enables researchers to gather and analyze unprecedented quantities of data aimed at advancing research on genomics, diseases and natural disasters. The first project, the Human Proteome Folding Project, assists in identifying cures for diseases such as malaria and tuberculosis, and has registered 85,000 devices around the world to date.

- In the wake of natural disasters, IBM's Crisis Response Team works with local governments to deploy appropriate technologies, services and solutions to help affected communities. In the last 10 years, this team has contributed to relief operations in the wake of more than 70 major disasters, including the earthquake in Gujarat, India, in 2001; the attacks of September 11, 2001; and most recently the tsunami that struck Southeast Asia. Within hours of that tragedy, IBM was working in India, Indonesia, Sri Lanka and Thailand to establish secure wireless systems, operate relief sites and deploy applications to track displaced and missing persons. IBM's commitment of $3 million in services and equipment for relief efforts was supplemented by $1.2 million in donations by IBM employees.

Developers

**PROVIDING RESOURCES AND TOOLS TO THE FRONT LINES
OF INNOVATION AND OPEN STANDARDS IMPLEMENTATION**

- With the 2003 acquisition of Rational Software, IBM added a leader in the application software development market, and strategically strengthened our broader on demand value proposition. We now provide a complete development environment for companies to integrate business processes internally and with suppliers and customers.

- Over five years, IBM's developerWorks Web site has grown into a heavily used resource for the global developer community and a focal point for open source and open standards development. It has 4.5 million registered users, representing 43 percent of the worldwide developer population, and is growing 25 percent a year. Since April 2003, more than 100,000 Linux developers have registered and created more than 6,500 Linux-based applications.

- Power.org, established by IBM and 14 other companies in December 2004, will serve as the premier open standards organization for developing, enabling and promoting Power Architecture technology and specifications.

AN EXPANDING
INNOVATION ECOSYSTEM

To deliver enterprise-transforming solutions, to champion open standards and to advance policies supportive of On Demand Business, IBM draws on a large, diverse and growing array of relationships.

OUR WORKFORCE

COMPETITIVE ADVANTAGE THROUGH EXPERTISE

COMPETITIVE ADVANTAGE TODAY COMES FROM EXPERTISE—
AND EXPERTISE IS NOT STATIC. IBM HAS THE WORLD'S
DEEPEST, MOST DIVERSE COLLECTION OF BUSINESS AND
TECHNOLOGY INNOVATORS, SUPPORTED BY ADVANCED
COLLABORATION SYSTEMS AND A CULTURE THAT ENABLES
CONTINUOUS LEARNING.

Attila Castiglioni, a member of IBM's team of Swiss financial services experts.

THE THREE DIMENSIONS
OF A 21ST-CENTURY WORKFORCE

In the Agricultural Age, land and farm production defined competitive advantage. In the Industrial Age, it was raw materials and manufacturing capacity. Today, it is the ability to create and apply intellectual capital based on multidimensional expertise.

1 Expert in business and technology
BRINGING THEM TOGETHER

To address the competitive issues our clients face today, both technology and strategic expertise are necessary. An understanding of technology—its current capabilities as well as its future potential—is now integral to business decision making. Business leaders need partners who are at the frontiers of research and deeply steeped in the issues and dynamics of their clients' specific industries.
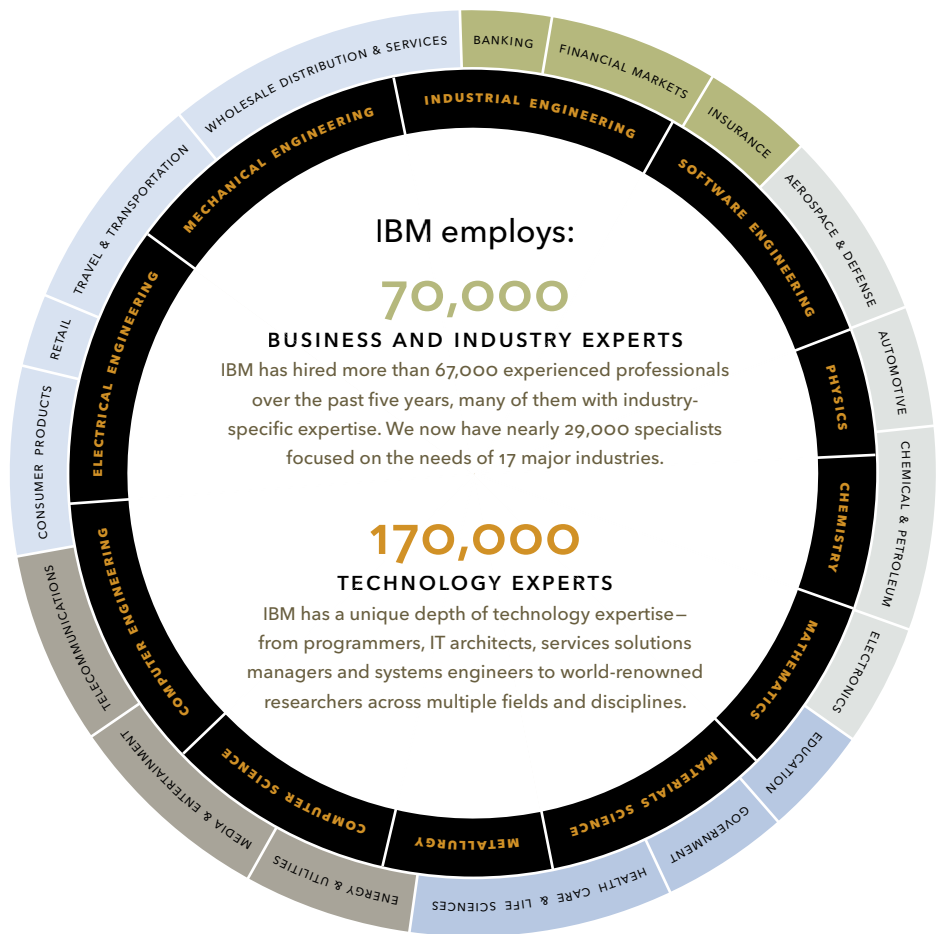
IBMers have earned more than 38,000 professional certifications in areas that include: Project Management, Information Systems Security, Advanced Application Development, 300mm Fabrication Technical Skills, Solution Design and Linux.

Depth of educational background: IBM has one of the most highly educated workforces in the world—more than 200,000 college graduates, nearly 54,000 with postgraduate degrees.

**U.S. PATENT LEADER
12 YEARS STRAIGHT**
TOTAL NUMBER OF IBM PATENTS

2004	3,248
2003	3,415
2002	3,288
2001	3,411
2000	2,886
1999	2,756
1998	2,658
1997	1,724
1996	1,867
1995	1,383
1994	1,298
1993	1,085
TOTAL	29,019*

* More than the total patents of ten of our top competitors combined.

IBM employs:

70,000
BUSINESS AND INDUSTRY EXPERTS
IBM has hired more than 67,000 experienced professionals over the past five years, many of them with industry-specific expertise. We now have nearly 29,000 specialists focused on the needs of 17 major industries.

170,000
TECHNOLOGY EXPERTS
IBM has a unique depth of technology expertise—from programmers, IT architects, services solutions managers and systems engineers to world-renowned researchers across multiple fields and disciplines.

2 Diverse and global

IN MORE WAYS THAN
ETHNICITY AND GENDER

Collaborative innovation depends on a multiplicity of viewpoints, experiences and fields of expertise. Our business model benefits from diversity in all dimensions—beyond the traditional categories of race, gender, disability and background in which IBM has long been a pioneer.

An extended workforce of 1 million-plus, including employees, business partners and suppliers

Employees in 75 countries serving clients in 174, and speaking more than 165 languages

Research labs in Switzerland, Japan, China, India and Israel, as well as the United States (California, Massachusetts, New York and Texas)

A tradition of progressive leadership

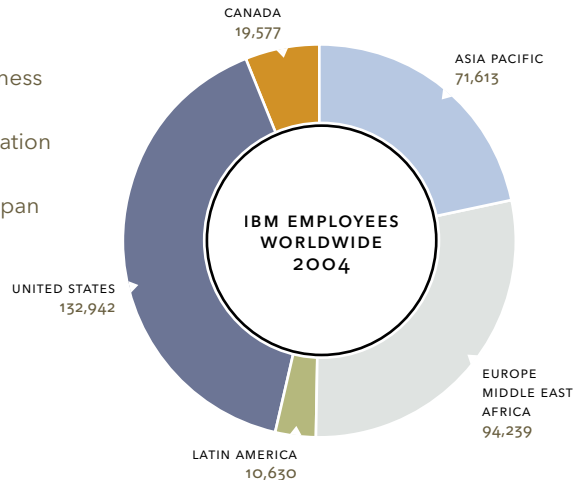| 1914	1924	1944	1953	1976	1984	2004
Hires the first employee with a disability, 76 years before the Americans with Disabilities Act	IBM's first black employee and first three women employees mark 25 years with the company	Is the first company to support the United Negro College Fund	IBM President Thomas J. Watson, Jr., publishes the company's first equal opportunity policy letter—one year before the U.S. Supreme Court desegregates public schools	Helps launch the National Hispanic Scholarship Fund	Adds sexual orientation to its nondiscrimination profile and establishes domestic partner benefits in 1996	Ranks as one of the "Best Companies for Working Mothers" for the 19th year in a row

And that tradition continues

29%
OF U.S. MANAGERS ARE WOMEN, 24 PERCENT GLOBALLY

65%
OF IBM EXECUTIVE WOMEN ARE WORKING MOTHERS

281%
INCREASE IN U.S. MINORITY EXECUTIVES SINCE 1995

Global Presence
An On Demand Business is one characterized by end-to-end integration on a global scale— with the capacity to span cultural borders in all its operations.

IBM EMPLOYEES WORLDWIDE 2004

CANADA
19,577

ASIA PACIFIC
71,613

EUROPE MIDDLE EAST AFRICA
94,239

LATIN AMERICA
10,630

UNITED STATES
132,942

Diversity in the economy and society of the 21st century will have a broader meaning. In an expertise-based global marketplace—and especially for a company with an innovation business model—diversity must extend to modes of thinking, disciplines, perspectives, and knowledge of local markets and cultures. This broad set of perspectives gives IBMers the ability to approach problems in new and creative ways.

3 Adaptive and collaborative
AS INDIVIDUALS AND AS A WHOLE

Innovation by its very nature is dynamic and ever-changing. A company that exists to deliver innovation for its clients must synthesize invention with marketplace insight. Doing so continually requires a culture of learning, skill building and collaboration. Specifically, it means that technologists and business experts need to work closely together, not simply to share insights, but to create entirely new intellectual capital.

Virtual collaboration

In a manufacturing economy, teamwork was mostly a matter of large-scale coordination among specialized forms of manual labor. But a business model based on innovation requires a much more individualized and deeply collaborative workforce strategy. To facilitate that, IBM has one of the world's leading intranets—a virtual work environment that provides enterprise-wide information, applications and collaboration tools.

ON DEMAND WORKPLACE

A pioneer in electronic work environments in the 1980s, IBM has embraced the Internet and On Demand Business throughout its internal operations. Every working day, our intranet receives a million visits from IBMers. Web-based applications and tools support virtually every process and function in the company, including development, sales, procurement, supply chain, human resources and finance. In 2004, this 21st-century workplace saved at least 3 million work hours.

IMPROVED EXPERTISE UTILIZATION

Thanks to a workforce tool that automates the coordination and management of marketplace demand with service professionals' availability and deployment, IBM Global Services was able to share the equivalent of 13,000 additional employees globally across its business lines in 2004, an increase of 28 percent over the prior year. In 2005, this system will be integrated with those from other business units, creating an enterprise-wide system to match expertise with opportunity across IBM.

EXPANDED EXPERTISE LOCATION

Extensive information about IBM employees' expertise—education, certifications, publications, patents, languages spoken, past work projects and more—is accessible on the intranet, and is heavily used and relied upon. In 2004, expertise searches rose from about 100,000 to almost 600,000 per month—while saving an estimated half hour each month per employee. More than 267,000 employees have updated their online expertise profiles within the past year.

COLLABORATION AND TRUSTED INFORMATION

The heaviest use of the On Demand Workplace is for learning and collaboration. Every day, more than 3 million instant messages are exchanged and 1,400 e-meetings are held. More than half of IBM's training is via e-learning. IBM's intranet is rated as the most credible and useful source of information about the company by 72 percent of our employees.

WORKPLACE FLEXIBILITY

4 out of 10 IBMers

AROUND THE WORLD
frequently work outside a traditional office, whether at a client site, while mobile or from a home office.

The National Medal of Technology

The National Medal of Science

IBM's Heinrich Rohrer (above, left) accepts the Nobel Prize in Physics in 1986 for co-inventing the Scanning Tunneling Microscope.

PIONEERING NEW FRONTIERS OF RESEARCH

IBM scientists and researchers—including five Nobel Prize winners, ten National Medal of Technology honorees, five National Medal of Science recipients, four A.M. Turing Prize winners and two Japan Prize laureates—continually expand the frontiers of discovery, pushing information technology into some surprising fields.

WE ARE ENTERING RESEARCH FIELDS BEYOND TRADITIONAL IT: Automation, Autonomic Computing, Bioinformatics and Biomedical Engineering, Information Management, Management Science, Nanotechnology, Operations Research and Statistics, Pharmaceuticals, Psychology, Services (Supply Chain, Engineering and Technology Services) and Speech Science.

Learning investment—and success

IBM invested nearly $700 million in employee learning in 2004, enabling more than 15 million hours of education and career development for IBMers. Total learning participation grew by 29 percent in 2004, while program costs declined by $10 million year-to-year. U.S. employees received $22 million in tuition reimbursement at accredited institutions, and more than $400 million was focused on "market-valued skills"—areas identified as high value for our clients.

MARKET-VALUED SKILLS INCLUDE:		IBM'S $700 MILLION SPENT ON LEARNING IS:

MARKET-VALUED SKILLS INCLUDE:

- **PROFESSIONAL SKILLS** such as cross-brand selling, business process transformation, complex deal pricing and consultative selling.

- **INDUSTRY TRENDS AND MARKETPLACE DYNAMICS,** with special focus on banking, government, retail, life sciences and small and medium-size business.

- **ON DEMAND STRATEGIES** such as the On Demand Operating Environment, services-oriented architectures and business componentization.

- **TECHNOLOGY SKILL AREAS** such as Web services, wireless systems, pervasive computing, security, Linux, data management, total systems management, and system design and architecture.

IBM'S $700 MILLION SPENT ON LEARNING IS:

- More than Harvard University spent on instruction in 2003.

- Nearly double MIT's expenditure on instruction in 2004.

- More than the endowment of the Wharton School of Business in 2004.

- More than Carnegie Mellon University's operating budget in 2003.

- Seven times the student education budget at Paris's Hautes Etudes Commerciales (Upper Business School) in 2004.

AWARD-WINNING LEARNING PROGRAMS

In 2004, IBM was ranked first in *Training* magazine's "Training Top 100" for outstanding learning programs.

The company has received more than 30 awards and commendations from such bodies as the International Society for Performance Improvement and the American Society for Training and Development.

DEVELOPING LEADERSHIP CAPABILITIES

To extract the greatest possible value from the expertise of a global population of business and technology experts—especially when those experts must collaborate in a dynamic, on demand marketplace—requires new ways to lead people and new ways to develop that leadership.

- **CONSOLIDATED TOOLS**
  The Manager Portal on IBM's On Demand Workplace integrates the resources, articles, tools and applications managers need to perform their role. Fifty-nine percent of managers feel their Manager Portal improves their decision-making ability, and 72 percent credit it with saving them as much as two hours of administrative work each month.

- **GLOBAL TEAMS**
  Advisory boards made up of managers in each geographic region meet regularly to identify common process obstacles and time constraints, test interfaces of tools in development, and outline managers' process and IT development priorities.

- **INVESTMENTS IN PEOPLE'S POTENTIAL**
  Rather than waiting for employees to be promoted before they learn how to lead, IBM identifies potential managers to begin development activities as early as one to three years in advance of a promotion.

- **SHARED LEADERSHIP MODEL**
  To enable managers, executives, sales leaders and technical leaders to achieve outstanding performance in an On Demand Business, IBM's learning offerings for these often-overlapping job roles now use a common framework of "leadership competencies" to create personalized development programs that instill and enhance the characteristics of IBM leaders.

OUR MANAGEMENT SYSTEM

DELIVERING OUR BUSINESS MODEL

OPTIMIZING A GLOBAL ON DEMAND ENTERPRISE MEANS ADAPTING CONTINUALLY TO RAPID CHANGE WHILE INTEGRATING THOUSANDS OF PROCESSES AND MANAGING MILLIONS OF RELATIONSHIPS—EVERY DAY.

More than 1,700 local IBMers gather outside IBM's Silicon Valley Lab, which is dedicated to developing IBM middleware such as DB2, WebSphere, IMS and software for business intelligence, content management, information integration, database tools and enterprise search.

HOW WE INTEGRATE IBM
FOR EACH CLIENT

In the end, the biggest limit to any organization's capacity for growth may be its own ability to manage size and complexity. For the past several years, IBM has been transforming itself to become a true On Demand Business. The advantages are tangible.

The promise of On Demand Business is that it allows companies to be far more responsive and efficient than current business and organizational designs. IBM's own on demand integration has dramatically increased the company's flexibility—creating a more complete view of operations, identifying bottlenecks, closing gaps and eliminating redundancies.

We manage enormous volumes of activity…

180 BILLION
client interactions annually.

12 MILLION
records of opportunities, orders and accounts active in IBM's pipeline.

350,000
client records updated every 24 hours.

…in a rapidly changing business: We are no longer focused exclusively on the development, manufacture, delivery and maintenance of technology, but on the integration of technology with multiple forms of expertise. IBM must make our 70,000 business consultants, industry specialists and solution architects—as well as 170,000 technical experts—available as needed, on demand, to tens of thousands of individual clients in 174 countries around the world.

Here's how we do it:

1 Global sales systems that capture opportunity and enhance client service

What we've done ▼

Freed up client teams' time

Overall, IBM has reduced the time it takes our sales teams to do certain administrative tasks by 25 percent. As a result, they are spending 38 percent more time with clients. IBM client teams are now world-class when benchmarked on time spent with clients: 33 percent of their time in direct sales contact, and 55 percent in total client-focused time.

Improved sales pipeline visibility

IBM's on demand sales management system gives sales leaders an ongoing, up-to-the-minute view into the current quarter's opportunity pipeline—and even into future quarters. In prior eras, companies like IBM were typically dependent on historical trending to determine how effectively they were capturing sales opportunities. Now, improved visibility allows us to be more responsive to changes in market demand, and better align sales resources and supply lines.

How we've done it ▼

Common business processes

IBM has developed integrated tools that include end-to-end marketing, lead- and opportunity-management applications; online ordering tools for real-time pricing, scheduling and financing; e-contracts with modular terms and conditions, flexible payment methods and financing options; and automatic location of IBM experts for faster response to clients and business partners who have problems or questions. In 2004, IBM's support Web site received more than 2 million hits, which we estimate saved our clients 600,000 calls. In addition, 70 percent of client questions were answered with one interaction.

Integrated, dedicated teams for key accounts

Each of our most strategic accounts—which in total cover about one-fifth of total IBM revenues—is led by an IBM executive supported by dedicated IBM sales and services specialists. From 2002 to 2004, these accounts had an average compound growth rate of 6.2 percent at constant currency across all industries.

And we've got an EDGE.

EDGE (Enabling Decisions for Global Execution) is a business intelligence engine built on IBM hardware, software and storage systems that consolidates and feeds sales leads, orders, financial and fulfillment data and other information into a real-time picture of IBM's business. These elements provide key indicators by business unit, product and geography—even by particular client team—for IBM senior managers' dashboards. The data—nearly 1 terabyte of it (or 1,024 gigabytes)—is updated daily.

2 Expertise-based workflow for a global professional workforce

What we've done ▾

Sped up and improved product development

While we continue to maintain high levels of R&D investment, over the past 10 years we have cut the cost to develop products in half, improved hardware development time by 67 percent and improved part reuse—the number of engineering parts used in multiple designs—by 63 percent.

Improved utilization of our consultants

In 2004, IBM Business Consulting Services (BCS) implemented new tools and processes to enable consultants to forecast their available hours with greater accuracy, and improve how we align consultant availability with project demand. BCS improved utilization by more than four points over 2003 levels.

How we've done it ▾

Integrated our product development

Ten years ago, we began reengineering the way we develop products. Today, integrated product development brings market intelligence and customer requirements in on the front end of the development process to determine where to place bets. We have "venture capital-like" portfolio management to adjust quickly to marketplace changes. And we track key performance indicators—from the original business case throughout the product lifecycle.

Applied our supply chain expertise to allocating experts

A detailed inventory of expertise taken across IBM and among our 90,000 business partners was matched against market demands to produce a forecast that gives IBM Business Consulting Services a 14-week view of our consultants' projected activities. This enables us to reprioritize people's time and their activities more responsively.

And we're evolving our own computing infrastructure to become on demand.

IBM'S OWN ON DEMAND OPERATING ENVIRONMENT ENCOMPASSES:

- 2,924 Linux servers (up from approximately 1,300 in 2002), many running critical applications, including IBM's worldwide intranet, search engine and IBM's 300mm semiconductor fabrication facility.
- A 400-computer grid at the Boeblingen Development Lab in Germany (leveraging the Open Grid Services Architecture), providing processing power to run an additional 1,600 test simulations each day to verify new chip designs.

- Automatic company-wide software downloads—more than 8.5 million applications in 2004, and 153,000 security patches applied to workstations worldwide in a single day.
- More than 200 terabytes of data flowing through IBM systems every week, the equivalent of the entire print works in the U.S. Library of Congress 20 times over.

3

Delivery systems that bring on demand to the operational core

What we've done ▾

On demand procurement

Over the last decade, we've cut the time to process a purchase order from a month to less than a day and saved more than $2 billion.

Faster order processing

Last year, by synchronizing demand and supply, we reduced the number of unfilled orders by 24 percent, achieving the lowest number in the company's history. Faster order filling—32 percent faster than a year ago—also had a direct impact on client satisfaction with our service delivery, which improved from 76 percent to 80 percent.

Strong working capital management

We manage our accounts receivable, accounts payable and inventory aggressively to maintain consistently strong annual cash flows.

How we've done it ▾

Simplification and enhanced automation

In the last three years, IBM has consolidated the number of procurement centers that process purchase orders from 300 to three. And thanks to ongoing automation over the last 10 years, 99 percent of purchase orders are now processed electronically.

More efficient procurement

We increased purchasing power by concentrating 80 percent of our spending on 2 percent of our suppliers. This strategy has also strengthened relationships with key suppliers and reduced the cost of components and products, especially in times of shortage.

Strengthened inventory control

More than 2 billion parts flow through IBM's inventory management systems every year. Since 1993, better asset-management systems and outsourcing partnerships have reduced IBM's inventory levels by 56 percent.

Becoming on demand is making IBM faster and more efficient—but its most important result is enabling us to do more for our clients than ever before.

HOW WE MANAGE OUR PORTFOLIO FOR HIGH VALUE

Staying ahead of the relentless advance of commoditization takes more than inventiveness. It takes disciplined management and a multifaceted approach to incubating, growing, reinventing and acquiring high-value capability.

Explore

1 Although conventional wisdom in the 1990s held that the large industrial research organization was a thing of the past, IBM Research is living proof to the contrary. IBM Research has remained a vibrant source of discovery for IBM since its formation in 1945. The inventions of its researchers—from FORTRAN and the magnetic disk drive, to the relational database and copper interconnect wiring for microprocessors—have helped lay much of the foundation for the IT industry, and enabled IBM to launch multibillion-dollar businesses.

IBM Research has developed a unique model and management system that link exploratory research with innovative engagement in the marketplace. It continuously scans the landscape of emerging technology and science through close relationships with the world's leading universities. Market discipline is applied to the setting of research priorities through a shared-funding system with IBM business units. And IBM Research collaborates directly with clients to pioneer new technologies, systems and ideas.

- On Demand Innovation Services (ODIS) pairs IBM researchers with IBM consultants to create new technologies and solutions for particular clients. ODIS has developed six focus areas and 14 specialized practices.

- IBM Research's annual Global Technology Outlook has consistently predicted the emergence of important developments—including areas such as pervasive computing, Web services, services-oriented architectures (SOA) and autonomic computing.

Incubate new businesses

2 In 2000, IBM established its Emerging Business Opportunities (EBO) program to identify and nurture new lines of business. An EBO focuses on "white space" opportunities that can become profitable, billion-dollar businesses within five to seven years. EBOs are

We have learned through many economic eras how to seize opportunities to create high value for clients and, as a result, for investors. That organizational capacity to create and apply new intellectual property has enabled IBM to keep nurturing and launching high-value businesses.

Reinvent core franchises

4 Staying at the forefront of high value is not just about inventing or divesting, but also reinventing. IBM continually adapts, refreshes and extends its core businesses.

- In the early 1990s, when many were declaring the mainframe dead, IBM breathed new life into it through a shift from bi-polar to CMOS processors, the adoption of parallel processing and, more recently, the migration to Linux as an operating system.

- Even the most venerable of software platforms, the Transaction Processing Facility (the engine behind many of the world's car rental, hotel and airline reservation systems) has been reinvented. IBM spent three years overhauling this mainframe workhorse to make it compatible with Linux.

Acquire vital capability

5 IBM acquires companies to increase its capabilities in technology, services capacity or expertise—so that we can penetrate a growth market more effectively. The pace of our acquisitions has increased in recent years, as we strengthen our ability to provide On Demand Business solutions, particularly in software and services. An asset in this effort has been IBM's growing consulting practice (itself the product of our 2002 purchase of PricewaterhouseCoopers Consulting), which has helped identify companies that meet our criteria. Also valuable in spotting promising acquisitions are IBM's deep relationships with select venture capitalists.

Recent acquisitions, several focused on Business Performance Transformation Services, have included:

- **DAKSH:** Added the 6,000 talented professionals of the company Dataquest rated the top Indian employer in business process outsourcing.

typically assigned an experienced IBM executive "champion" to manage the venture during its startup phase. Pilot projects, almost always involving clients, validate and refine initial ideas for the EBO's products or services. Once an EBO has grown to sufficient size, it usually becomes part of an existing IBM business unit. Of the 25 EBOs that have been launched since 2000, 22 ventures are in various stages of maturation and growth.
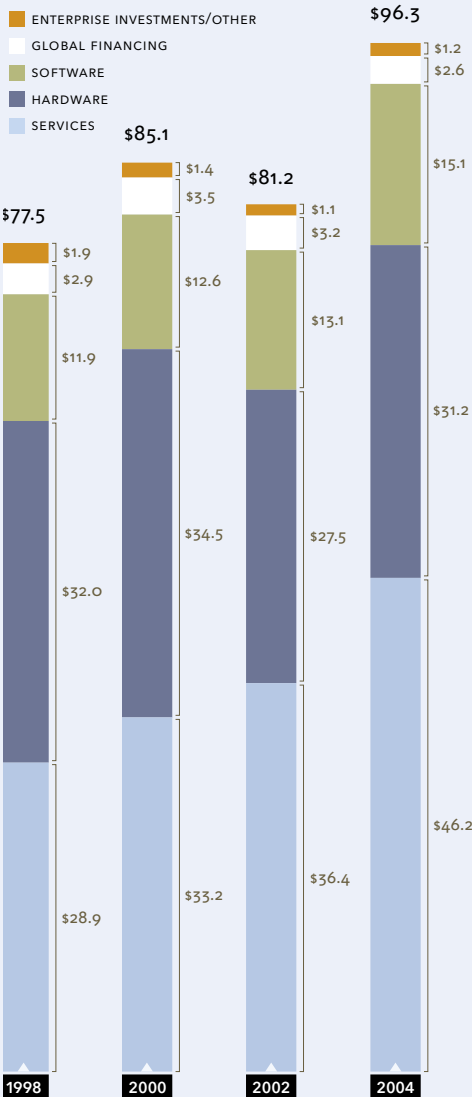
- **FOUR EBOS**—Digital Media, Life Sciences, Linux and Pervasive Computing—each achieved more than $1 billion in revenue in 2003 and again in 2004.

- **THREE ADDITIONAL EBOS**—Blade Servers, Flexible Hosting Services and Storage Software—doubled their revenue in 2004. And two new EBOs were launched: Information-based Medicine, and Sensor and Actuator Solutions.

Invest early & strategically in emerging nations

3 To seize the best opportunities in high-growth regions requires more than setting up sales offices. IBM has been a global company for decades. And we have always understood that being truly global requires being deeply rooted in local markets. This takes time, investment, patience and the ability to operate effectively across many different areas of society. Today, IBM is the most respected company in China—foreign or domestic—according to *Fortune China*'s 2004 survey. In this and other emerging markets, we are working on critical infrastructure projects in areas such as telecommunications, banking and government, which will support economic and societal development.

- The developing regions of China, India, Brazil, Eastern Europe and Russia have an IT spending growth rate of 14 percent—more than twice the worldwide average. IBM's own growth rate in China, India, Brazil and Russia is even steeper: more than 25 percent collectively in 2004.

IBM'S REVENUE MIX HAS CHANGED IN RECENT YEARS
In $ billions (as reported)

- ENTERPRISE INVESTMENTS/OTHER
- GLOBAL FINANCING
- SOFTWARE
- HARDWARE
- SERVICES

1998 — $77.5
- $1.9
- $2.9
- $11.9
- $32.0
- $28.9

2000 — $85.1
- $1.4
- $3.5
- $12.6
- $34.5
- $33.2

2002 — $81.2
- $1.1
- $3.2
- $13.1
- $27.5
- $36.4
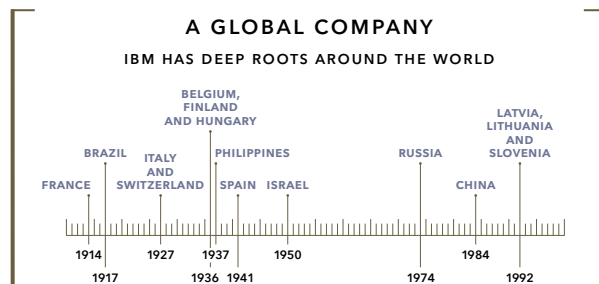
2004 — $96.3
- $1.2
- $2.6
- $15.1
- $31.2
- $46.2

- **MAERSK DATA:** This acquisition established IBM as a leader in transport-and-logistics services.

- **LIBERTY INSURANCE SERVICES:** IBM is now one of the leading firms in the world for life insurance and annuity processing and administration.

Divest when value fundamentally shifts

6 IBM's approach to divestitures is as disciplined as that for acquisitions. When we sell a business, we always seek more than a good price, and often establish an ongoing partnership with the acquirer. This was the case when Hitachi took over IBM's hard disk drive division, and again with 2004's announced divestiture of IBM's personal computer operations to China's Lenovo. In the latter partnership, IBM expects to benefit from services and financing business through its relationship with Lenovo—while also expanding IBM's presence in one of the world's fastest-growing economies.

- Opening the architecture for IBM's Power family of microprocessors has an important global dimension. It allows local developers in emerging markets to accelerate the growth of their own semiconductor industries. For example, Power.org member Culturecom has embedded Linux into a PowerPC chip to create V-Dragon, China's first 32-bit chip that can generate any Chinese character directly from the CPU. V-Dragon could be a contender for the large market in China for embedded systems in products such as appliances and automobiles.

A GLOBAL COMPANY
IBM HAS DEEP ROOTS AROUND THE WORLD

BRAZIL
FRANCE

ITALY AND SWITZERLAND

BELGIUM, FINLAND AND HUNGARY

PHILIPPINES

SPAIN ISRAEL

RUSSIA

LATVIA, LITHUANIA AND SLOVENIA

CHINA

1914   1927   1937   1950   1984
   1917   1936 1941   1974   1992

HOW WE MANAGE
BY VALUES

Enterprises built to endure must stand on a foundation of core values. Two years ago, we undertook a disciplined reexamination of our values for the first time in nearly 100 years—not to revive the spirit of our past century, but to get in shape for an entirely new one.

Our values form the foundation of our brand and culture.

Thomas J. Watson, Jr. & Sr.

The Basic Beliefs of Tom Watson, Sr., IBM's founder, guided the company through nearly a century of change—providing the guideposts for multiple reinventions that turned a small company into one of the pillars of global commerce. But what was suited to an industrial model required rethinking in a post-industrial world. So in 2003, the company began a step-by-step process of doing just that. Starting with senior leaders, this effort ultimately wound up in the broadest arena available to IBMers—our global intranet—in the form of a pioneering experiment in collective self-definition called ValuesJam.

IBMers came together by the tens of thousands in a worldwide, 72-hour online discussion on what, at its core, IBM most essentially is. Senior management believed that the only meaningful way to shape values for a global on demand enterprise like IBM—with its population of independent, 21st-century knowledge workers—was to trust that population to shape those values itself. Thousands of comments posted by IBMers over the course of ValuesJam were analyzed and distilled into three values.

These values are serving today as a touchstone for reconsidering everything we do and how we do it. In an even more-heavily attended jam in 2004, more than 57,000 employees posted 32,000 ideas and comments on how our values can be applied to improve IBM's operations, workforce policies and relationships. To date, 35 of the best ideas—as rated by IBMers themselves—are in various stages of implementation, with executive owners responsible to the chairman for their timely development and deployment.

IBMers Value

Dedication to every client's success.
Innovation that matters—for our company and for the world.
Trust and personal responsibility in all relationships.

And they are reshaping the way we do business.

EXECUTIVE COMPENSATION
Putting shareholders first
Our value of "trust and personal responsibility in all relationships" led IBM to strengthen its relationship with our millions of owners by better aligning executive compensation policies with shareholder interests. We settled on a simple formula: Senior executives now benefit from their stock options only after shareholders realize a 10 percent gain.

THE NEW IDEAS PROGRAM
Making every IBMer an innovator
We have reinvented the employee suggestion system for a more collaborative era, enabling and incenting employees to brainstorm online and work together to refine ideas for productivity improvements.

THE ON DEMAND MANAGER
Reimagining the employee-manager relationship
The relationship between first-line managers and employees is one of the linchpins in a values-based management system. IBM is developing an employee evaluation system to assess managers, and integrate those results with manager training and development.

OPPORTUNITY MARKETPLACE
Implementing personal responsibility
Already in use in the United States and with global deployment underway, IBM's new online Opportunity Marketplace will match any IBMer (or external candidate) who has the right expertise to new assignments as people and positions become available. Employees will be able to take charge of their own skills development, in their current jobs, to meet the emerging market needs that will shape future job opportunities.

MANAGER VALUES FUND
Freeing first-line managers to take quick action
IBM created the global Manager Values Fund to help its 21,000 first-line managers bring our values to life—and backed it with a commitment of more than $100 million. The fund authorizes each first-line manager to spend up to $5,000 annually for extraordinary situations involving clients or employees, or to fund a promising idea or innovation.

Online jamming
USING COLLECTIVE INTELLIGENCE TO DRIVE CHANGE

Since 2001, we have used our global intranet to bring IBMers together on an unprecedented scale. An IBM "jam," most simply, is a massive online discussion that develops actions out of a multiplicity of perspectives and expertise. This large-scale combination of technology and workforce strategy elicits participation by tens of thousands of employees from every geographic region and every part of the business. Topics of broad importance to the entire company—from the role of the manager, to the future of business consulting, to living our values—are discussed by employees over a defined period—typically two or three days. People "meet" who never otherwise would. Subject-matter experts and moderators guide jammers to build on each other's ideas, and text-analysis tools from IBM Research capture and play back key themes.

Because one goal of this organizational intervention is to develop actions and improvements in the business, the jam typically includes a rating phase, when participants assess the feasibility and potential impact of each idea. Those ratings, the theme analysis and qualitative research combine to produce action plans and insight into the IBM population's perceptions and priorities.

values*jam

July 29–August 1, 2003

Building on the learning from previous jams, ValuesJam took online company-wide engagement to a whole new level—inviting all employees to discuss what defines IBM and IBMers. It led to the first reformulation of IBM's core values in nearly a century.

FORUM 1 **Company values**
Do company values exist? If so, what is involved in establishing them? Most companies today have values statements. But what would a company look and act like that truly lived its beliefs?

FORUM 2 **A first draft**
What values are essential to what IBM needs to become?

FORUM 3 **A company's impact**
If our company disappeared tonight, how different would the world be tomorrow? Is there something about our company that makes a unique contribution to the world?

FORUM 4 **The gold standard**
When is IBM at its best? When have you been proudest to be an IBMer? What happened, and what was uniquely meaningful about it?

DURATION: **72 HOURS**   POSTED COMMENTS: **9,337**

world*jam

October 26-28, 2004

IBM's WorldJam 2004 identified actionable ideas for making the company a living, breathing embodiment of our values. In the jam's initial phase, participants developed tens of thousands of ideas, which were later analyzed and distilled to create 191 proposals. Employees were then invited to rate the ideas. Senior management committed to action on 35 of the top-rated recommendations.

FORUM 1 **Making IBM work for each client**
How can we make IBM easier to do business with?

FORUM 2 **Delivery excellence**
How can we get better at delivering what the client expects—and more?

FORUM 3 **For the world**
How can we see and seize new growth opportunities?

FORUM 4 **For our company**
Where and how can we innovate on IBM itself?

FORUM 5 **Managers**
What do our strategies and values imply for the job of the first-line manager?

FORUM 6 **Every IBMer**
What do our values imply for each of us—in our jobs, and in our careers?

DURATION: **54 HOURS**   POSTED COMMENTS: **32,662**
plus 7 days for rating top ideas

OUR ECONOMICS

MANAGING IBM FOR CONSISTENT RETURNS AND INCREASED VALUE

BASED ON TODAY'S OPPORTUNITIES AND OUR STRENGTHENED ABILITY TO CAPITALIZE ON THEM, AS DESCRIBED THROUGH-OUT THIS DOCUMENT, WE BELIEVE IBM CAN GENERATE CONSISTENTLY HIGH RETURNS ON INVESTED CAPITAL AND INCREASED SHAREHOLDER VALUE.

HOW WE CREATE VALUE
FOR OUR OWNERS

IBM's business model of innovation is designed to produce growth and high annual returns over the long term on the capital invested in the business. As we work to generate consistent results quarter by quarter, we are also strategically positioning IBM to lead our industry, make our clients successful and, in doing so, generate consistently high returns on invested capital and increased shareholder value.

1 We are faithful to a consistent, long-term financial management strategy.

IBM's business strategy and operations are designed to support the company's long-term financial model and objectives—including double-digit earnings-per-share growth.

DELIVERING REVENUE GROWTH IN THE MID-TO-HIGH SINGLE DIGITS

Our revenue model is based on the IT industry's historical growth pattern, the new opportunities described in this document and our ability to capture or maintain leading share positions in the markets we select.

IMPROVING PRODUCTIVITY AND MARGINS

The same on demand principles that have yielded efficiencies and enhanced capabilities in our integrated supply chain are being applied throughout our internal operations. Margin improvements will also come from a continued focus on high-value offerings and by fully leveraging IBM's global operations.

DEPLOYING CAPITAL EFFECTIVELY

We use our cash to support internal growth opportunities with capital expenditures and research and development, to acquire new capabilities, to open new market opportunities, and to repurchase stock.
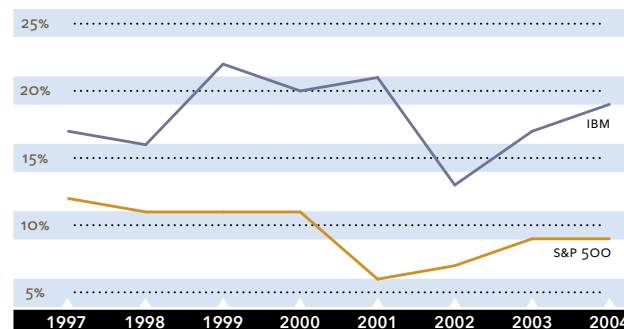
MAINTAINING A STRONG BALANCE SHEET

We maintain low financial leverage on IBM's non-financing business and a substantial cash balance. This gives us the financial flexibility to act on opportunities and to manage through periods of economic stress.

ACHIEVING SUPERIOR RETURNS ON INVESTED CAPITAL

IBM has delivered consistently high return on invested capital (ROIC). Our management discipline and strategy have produced sustained ROIC results well above those of the S&P 500 average. In fact, over the last five years, IBM's total ROIC ranged between 5 and 15 percentage points above that of the S&P 500 and well above our weighted average cost of capital. While IBM's total return on invested capital includes our Global Financing business, a more appropriate measure of our ROIC excludes Global Financing. In 2004, our ROIC increased to 29 percent, excluding our Global Financing business and a one-time pension settlement charge.* Most companies can deliver impressive return on invested capital for one year. The key is delivering impressive ROIC on a sustained basis.

(IN $ BILLIONS)	2000	2001	2002	2003	2004
NET CAPITAL EXPENDITURES	4.3	4.9	4.6	3.9	3.7
R&D	5.1	5.0	4.8	5.1	5.7
ACQUISITIONS	0.3	0.9	3.2	1.8	1.7
SHARE REPURCHASE	6.7	5.3	4.2	4.3	7.1

TOTAL RETURN ON INVESTED CAPITAL*

IBM

S&P 500

| 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |

S&P 500 2004 ROIC as of September 30, 2004 (on a rolling four quarters basis)

*Additional information about return on invested capital is contained in IBM's March 2005 Form 8-K in connection with this document.

Our financial management strategy is based on IBM's growth objectives. Our strong balance sheet and cash flows support continual investment, which generates revenue and earnings-per-share (EPS) growth. Our disciplined use of capital drives high annual return on invested capital, which in turn generates strong cash flows. And those cash flows are reinvested in the business or returned to investors through consistent dividends and share repurchases.

2 We pursue a multifaceted strategy for revenue growth.

CAPITALIZING ON GROWTH OPPORTUNITIES TO DELIVER BUSINESS VALUE

IBM is expanding in the high-value markets for IT-intensive business consulting and business transformation services. Business Performance Transformation Services generated more than $3 billion in revenues in 2004, up approximately 45 percent over the previous year.

EXPANDING OUR CLIENT BASE IN NEW AND EXISTING MARKETS

IBM revenues from emerging markets in China, Russia, India and Brazil together grew more than 25 percent in 2004, to more than $4 billion. Our revenues from IBM's Small and Medium Business organization grew more than 8 percent in 2004, and account for more than a fifth of our revenues today.

DRIVING TECHNOLOGY AND SHARE LEADERSHIP

We are leveraging IBM's leadership positions in IT services, enterprise middleware and enterprise hardware, and combining them with the capabilities of our business partners and independent software vendors.

- IBM Global Services is the worldwide leader in IT services, with more than twice the revenue of its nearest rival. IBM is ranked number one in IT outsourcing, application management and e-business hosting.
- IBM is the number one server provider in the world.
- In 2004, IBM increased market share for its zSeries, pSeries and xSeries servers, including its innovative line of blade servers.
- In 2004, IBM gained share in several key product segments of its software business, and held share in middleware overall. IBM's WebSphere platform grew 14 percent in revenues in 2004. Revenue from our Rational brand, acquired in February 2003, grew by 15 percent.

3 We use improved productivity and new business models to sustain healthy margins.

We don't just deliver On Demand Business to our clients, we apply it ourselves. As we've discussed, increased responsiveness, flexibility and ongoing efficiencies have now been built into our management systems—leading to significant cost savings and, as a result, more robust margins.

In addition, we are adopting business performance transformation ourselves to lower the costs of producing the services, hardware and software we provide clients, enabling increased investment to grow sales. Some of our business partners are also our vendors, helping us transform our processes and integrate them across the company.

Furthermore, after several years of creating advanced, custom, on demand transformation solutions for many clients, we're now able to reuse some of the intellectual capital we've generated and thereby increase our margins. IBM is actively pursuing this asset-based services model for our clients and for our own operations. The revenue and profit potential are attractive relative to purely labor-based services models.

4 We put IBM's strong cash flow to good use.

IBM has historically generated strong cash flows. This comes from our consistent profitability, disciplined working capital management and investment decisions that generate high annual return on invested capital.

Our mix of businesses helps us to sustain our cash flows year-to-year. Approximately 45 percent of our revenue and more than half of our gross profit come from annuity-like businesses, such as software licenses and long-term services contracts. Some have seen this as a pursuit of stable, recurring revenue streams for their own sake. We, however, see it as the result of a major shift in IBM's business model over the last decade—moving from that of an enterprise built primarily on individual transactions to one in which our most important work is managing deep, strategic, long-term relationships. We believe this shift will continue as our business performance transformation revenues grow.

The cash generated from the business is first invested to sustain and grow the business—through internal investments such as capital expenditures and research and development.

(IN $ BILLIONS)	2000	2001	2002	2003	2004
CASH AVAILABLE FOR INVESTMENTS & SHAREHOLDER DISTRIBUTION	11.3	12.0	10.5	12.7	12.9

Our investments are designed to exceed substantially the company's cost of capital. Next, we invest in acquisitions, with a primary focus on increasing our capability and expanding our market opportunities. Cash is then returned to our shareholders through stock repurchases and dividends.

Over the past five years, IBM's businesses have generated $59.4 billion in cash available for investment and for distribution to shareholders. Approximately half of this was reinvested in our business through net capital expenditures and strategic acquisitions.

5 We maintain substantial financial flexibility.

Our strategy is to maintain a strong balance sheet with a significant cash balance and low debt levels on everything but our financing business, where debt is an appropriate form of the capital base. This gives IBM the financial flexibility to take advantage of any business opportunity or to deal with economic difficulties the company may face. When borrowing is necessary, we have substantial credit lines and access to the capital markets to meet our requirements. Cash flows are used to reduce debt levels once the borrowing is no longer required.

(IN $ BILLIONS)	2000	2001	2002	2003	2004
NON-GLOBAL FINANCING DEBT	1.1	1.6	2.2	0.4	0.6
DEBT-TO-CAPITAL	6%	7%	10%	1%	2%
CASH & MARKETABLE SECURITIES	3.7	6.4	6.0	7.6	10.6

6 We consistently return value to our owners.

Our model for return to shareholders has allowed us to provide consistent dividend returns and make significant stock repurchases while maintaining financial flexibility so the company can move quickly and dynamically when opportunities arise.

DIVIDENDS

IBM began a regular series of dividend payouts in 1916, a time when such payouts were arguably the only tangible indicator of a company's financial health. After 89 years, IBM has achieved a number of milestones in delivering shareholder value:

- Dividend payouts for each of the last 357 fiscal quarters.
- Year-to-year increases in dividends per share in 64 of the past 89 years.
- $8.8 billion paid in dividends to shareholders over the past 10 years.

Today, our dividends are set by our board of directors and are consistent with our profit growth, stock repurchase and financial flexibility objectives.

SHARE REPURCHASES

Share repurchases complement our dividends with substantial additional payouts to investors in most years, yet they give the company financial flexibility to make alternative use of its cash flow for acquisition investments or other needs. Repurchasing shares also supports our financial model by reducing the number of shares outstanding and increasing our earnings-per-share rate of growth. Since 1995, IBM has returned $59.8 billion to investors through share repurchase.

MARKET CAPITALIZATION AND SHARE PRICE

As a reflection of the total value of our company, IBM's market capitalization since 1997 grew at a compound annual growth rate (CAGR) of 7.1 percent, from $100 billion to $162 billion by the end of 2004.

Another way to look at the value of our company is through our share price performance. While many factors can affect share price, it provides a single, comprehensive measure over time of investor confidence in how IBM runs its business, serves its clients, enables and develops its workforce, and manages its relationships and finances. IBM's share price has grown at a CAGR of 9.5 percent from year-end 1997 through year-end 2004—better than the S&P 500 (3.2 percent), the NASDAQ (4.8 percent) and the Dow Jones Industrial Average (4.5 percent) during the same time frame.

IBM SHARE PRICE VS. MARKET INDICES
(Percentage appreciation)
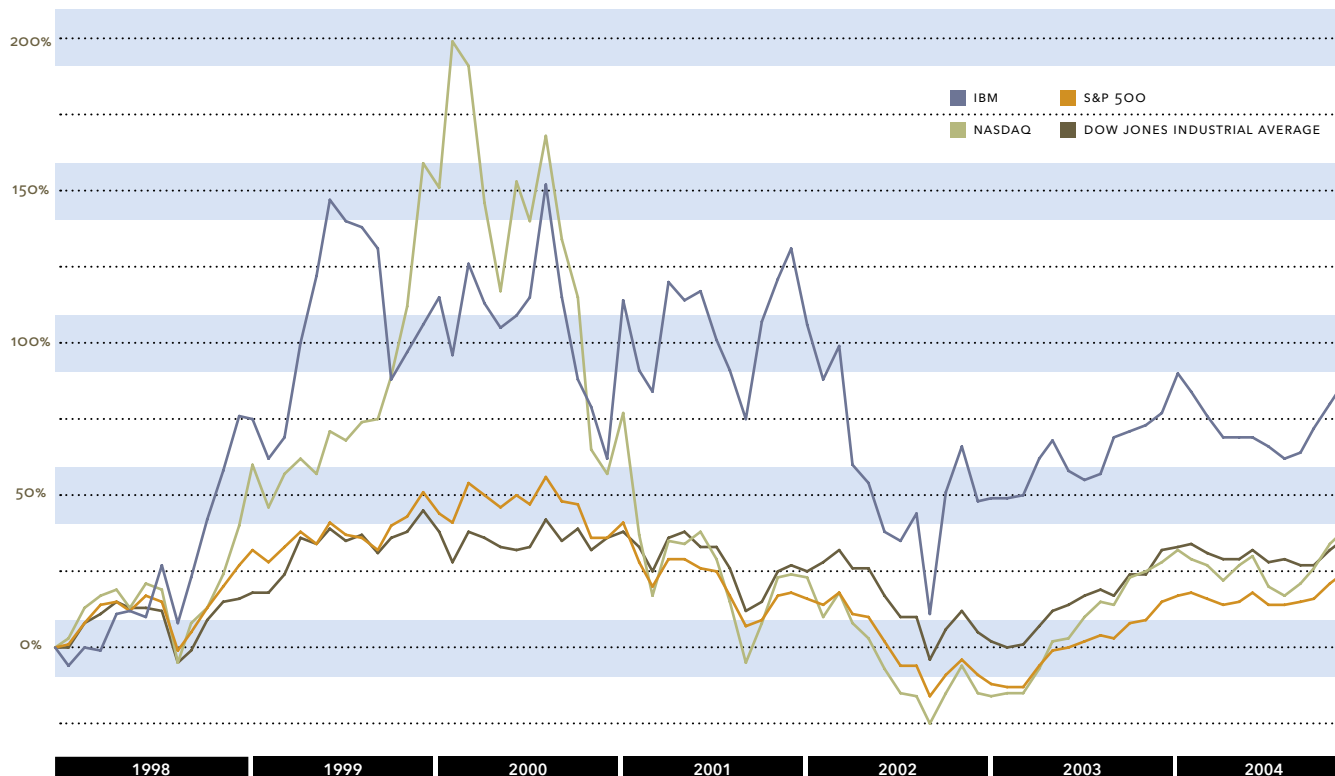
SUMMING UP:
OUR PROSPECTS

- We see compelling opportunities both in the "traditional" information technology industry and in new, previously unaddressed markets.

- IBM has long been a leader in innovation—creating advanced technology and helping our clients apply it for competitive advantage. Because of fundamental changes in the way clients buy and apply technology, we believe our model of providing innovative and integrated solutions gives us a significant advantage over competitors who provide piece-part or commodity technology and services.

- We are convinced that computing is fundamentally shifting to a new architecture based on open standards, a networked world, emergent technologies, and new ways of accessing and managing IT. Building on a strong base in enterprise hardware, software and core technologies, we are at the forefront of that shift.

- We believe that buying decisions by enterprise clients are increasingly driven by the need for a combination of business expertise and technology, and that clients will increasingly turn to partners to transform and operate parts of their business operations. We have substantially upgraded our capabilities in consulting, and in industry and business-process expertise. We are investing heavily in our business transformation and process outsourcing businesses.

- We have a strong bias for high-value segments of the industry. This provides our clients with technology, ideas and solution implementations that are truly differentiating for them, and it yields the revenue growth and margins necessary to fuel our business model based on innovation.

- Our commitment to the high-value segments of our industry leads us continuously to reinvigorate our portfolio of products, services and businesses through multiple approaches. This creates a steady stream of new capabilities and mitigates risk.

- Our ability to create intellectual capital in all its forms is a core differentiator for our company. This requires a workforce of experts in an expanding array of fields and disciplines, coupled with systems and a culture that continually upgrade skills and knowledge.

- We manage the IBM company to maintain fidelity to our business model and our values, which enables us to produce double-digit earnings-per-share growth, consistently high return on invested capital and increased shareholder value.

ADDITIONAL RESOURCES AVAILABLE ONLINE:

www.ibm.com/annualreport/2004