

A woman with dark hair pulled back, wearing a white turtleneck sweater and a gold earring, is shown in profile from the chest up. She is looking towards the right side of the frame. The background is a blurred office environment with a desk and some equipment visible.

Seven days at IBM

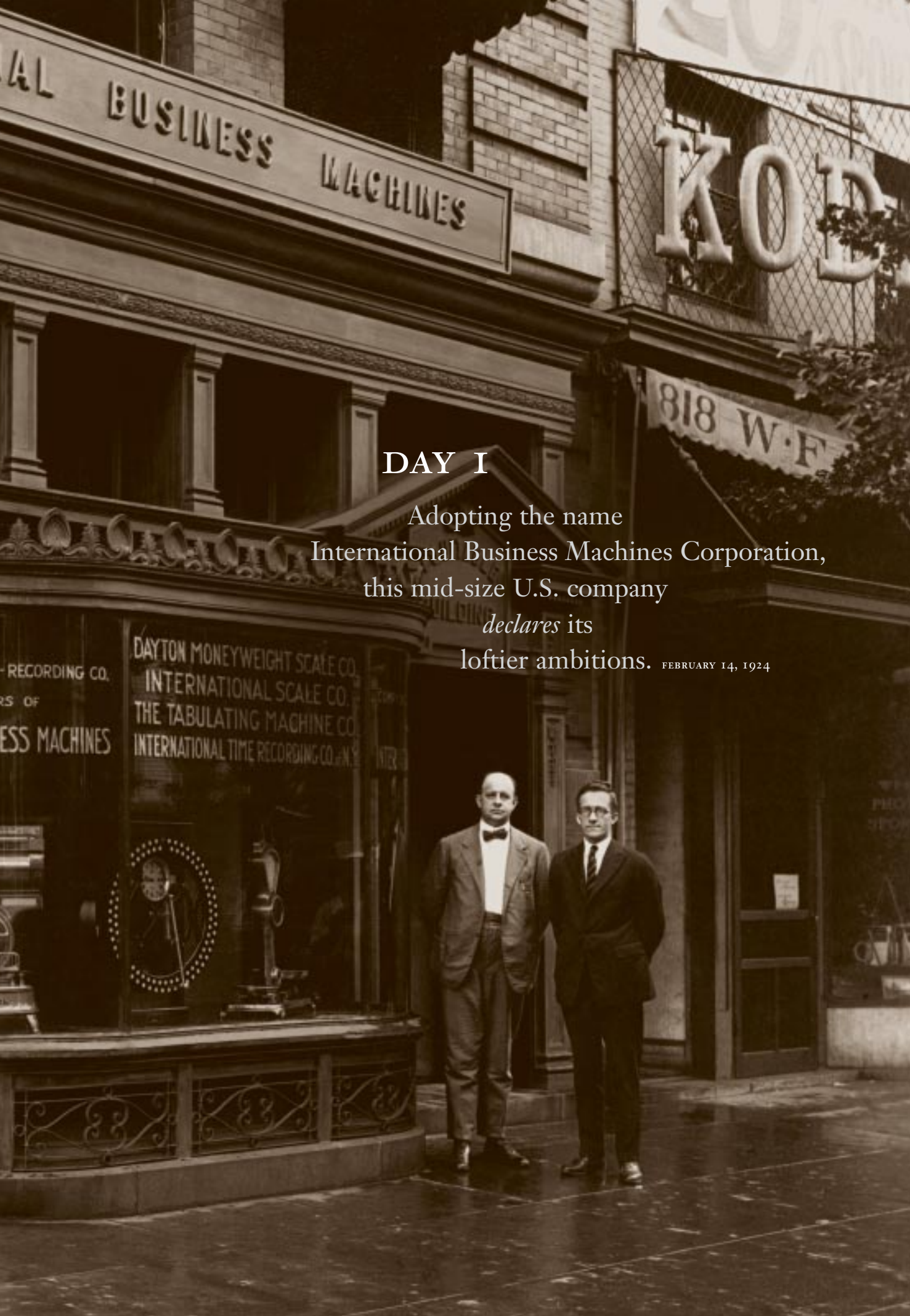


INTERNATIONAL

816

COMPUTING-TABULATING
MANUFACTURE
INTERNATIONAL BUSINESS

W. C. CAVES



DAY I

Adopting the name
International Business Machines Corporation,
this mid-size U.S. company
declares its
loftier ambitions. FEBRUARY 14, 1924



DAY 2

IBM commits to equal pay
for equal work 28 years
before it becomes
the law of the land.

AUGUST 15, 1935

DAY 3

Despite the Great Depression, IBM repositions itself for a recovery, keeps making tabulating machines— and it pays off big, as the new Social Security Administration ADOPTS THE TECHNOLOGY for “the biggest accounting operation of all time.” SEPTEMBER 28, 1936





DAY 4

We launch THE SYSTEM/360
and change the course
of modern computing—and
modern business. APRIL 7, 1964

SYSTEM 360



DAY 5

Gerd Binnig and Heinrich Rohrer
earn a Nobel Prize in Physics for the invention
of the scanning tunneling microscope,
allowing the *first-ever view*
of individual atoms—and presaging a
NEW GOLDEN AGE for IBM Research. DECEMBER 8, 1986



IN 1989, IBM'S DON EIGLER USES
THE SCANNING TUNNELING MICROSCOPE TO MOVE INDIVIDUAL
XENON ATOMS — SPELLING OUT "I-B-M."



DAY 6

With the formation
of IBM Global Services,
WE DEFINE THE OUTLINES of a new model
for the IT industry. DECEMBER 12, 1996

DENNIE WELSH (*right*), THE FIRST LEADER OF
IBM GLOBAL SERVICES, FINALIZES ONE OF THE COMPANY'S
EARLY OUTSOURCING CONTRACTS.

Today



OVER THE COURSE of our 92-year history, we've experienced our share of important days—days when fundamental change was in the air.

Those moments can be uncertain, often unsettling.

But of course, they're also the times when the need for leadership is the greatest. When one company—one team of people—can step forward to drive the change, and in the process, invent a whole new agenda—technical, social or cultural, in the workplace, and in the marketplace.

Today, once again, there's a change in the air. We're on the cusp of one more defining moment, and it's rippling across business models, technical models, and the very expectations people have for any enterprise they'll call a leader.

We've been here before. *It's a new day.*





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

Dear IBM Investor,

WHEN I JOINED IBM, it was one of the most respected, innovative and successful companies in the world. That was, in large part, because of the way Tom Watson, Sr., IBM's founder, had shaped it. He nurtured a unique culture, a progressive set of values and the aspiration to make a difference in the world.

The company's position had been further enhanced in the 1960s, when Tom Watson, Jr., took a daring, "bet-the-company" gamble on the System/360 mainframe. It revolutionized computing and transformed the way business was done. It also spurred a radical reinvention of IBM and propelled the company to worldwide commercial leadership for two decades.

Of course, you know that IBM stumbled badly in the early 1990s, largely because it strayed from its values and stopped listening—to customers and to its own smart people. As a consequence, the company failed to reinvent itself for new realities. Under Lou Gerstner's leadership, the people of IBM rebuilt their company. It has come back a long way.

Today, as I reflect on my first year as chief executive, I believe we stand our best chance in decades of returning IBM to a position of leadership—in all the ways that a business should lead.

I want to talk to you about that in this letter. It's important that you understand how we define leadership for IBM, because it is the context for understanding what we accomplished in 2002 and the framework for how we will manage IBM in the decade ahead.

SEIZING THE MOMENT

There's no question that 2002 tested our company. We had to deal with a continuing tough economic climate, particularly for the information technology industry, which contracted for the second year in a row.

Although our revenue from continuing operations of \$81.2 billion was off 2 percent from 2001 and our earnings decreased 35 percent, to \$5.3 billion, all of our core businesses—from servers to storage systems, to middleware, to services—gained marketshare in 2002. This is important. It means we will emerge in an even stronger position, relative to our competitors.

An environment like this, for all its challenges, is the ideal time to make decisive moves for future growth. Because of our ability to generate strong cash flows, last year we invested \$4.8 billion in

Financial Highlights INTERNATIONAL BUSINESS MACHINES CORPORATION and Subsidiary Companies

(\$ in millions except per share amounts)

FOR THE YEAR	2002	2001
Revenue	\$ 81,186	\$ 83,067
Income from continuing operations	5,334	8,146
Loss from discontinued operations	(1,755)	(423)
Net income	3,579	7,723
Earnings/(loss) per share of common stock:		
Assuming dilution:		
Continuing operations	3.07	4.59
Discontinued operations	(1.01)	(0.24)
Total	2.06	4.35
Basic:		
Continuing operations	3.13	4.69
Discontinued operations	(1.03)	(0.24)
Total	2.10	4.45
Net cash provided by operating activities from continuing operations	13,788	13,966
Investment in plant, rental machines and other property for continuing operations	4,753	5,400
Cash dividends paid on common stock	1,005	956
Per share of common stock	0.59	0.55
AT YEAR END		
Cash, cash equivalents and current marketable securities	5,975	6,393
Total assets	96,484	90,303*
Working capital	7,102	7,342
Total debt	26,017	27,151
Stockholders' equity	22,782	23,448*
Common shares outstanding—basic (in millions)	1,722	1,723
Market capitalization	133,483	208,438
Stock price per common share	77.50	120.96
Number of employees in IBM/wholly owned subsidiaries	315,889	319,876

* Reclassified to conform with 2002 presentation.

research and development, \$4.8 billion in capital expenditures and \$4 billion in acquisitions. We took advantage of reasonable valuation levels and acquired several companies, including PricewaterhouseCoopers Consulting and six strategic software firms. Early this year, we acquired Rational, a leader in software development tools, for \$2.1 billion. We opened the most advanced semiconductor development and manufacturing facility in the world. And we also improved our competitiveness. We revamped our PC and microelectronics businesses, and both our Personal Systems and Technology segments had returned to profitability by the fourth quarter. Our inventory levels now stand at a 20-year low. Through progress on our integrated supply chain, we took \$5.6 billion in costs out of the business, and we believe we'll achieve about the same this year.

One of the most important investments we made in 2002 was to contribute just under \$4 billion, in cash and IBM stock, to fully fund the accumulated benefit obligation of our U.S. pension plan—which was underfunded mainly due to low interest rates and continued weakness in capital markets.

After all of these investments, we had sufficient cash to return to shareholders directly—\$1 billion in dividend payments—and indirectly—\$4.2 billion in repurchased IBM common stock.

Add it up, and the people of IBM turned in a solid performance, despite a most difficult year. That performance was reflected in our market value. While our stock price was down year to year—and no one is pleased about that—it held up better than those of all our principal competitors.

However, the meaning of 2002 goes beyond the blocking, tackling and individual actions I've briefly described. I believe that years from now we will

see 2002 as the year we fundamentally repositioned IBM for leadership—leadership in an industry that will be very different when it comes out of the current economic slump.

A NEW GAME FOR INFORMATION TECHNOLOGY

In some ways, the IT industry will remain familiar. It will still thrive on fundamental technology innovation—an area of unparalleled strength for your company. In 2002, IBM scientists and engineers scored their tenth straight year as the world's most prolific inventors, earning 3,288 U.S. patents, nearly double the number of the next closest company. Over the past decade, the U.S. Patent Office has issued IBM 22,357 patents—more than for ten of our top U.S. competitors *combined*.

But in other profound ways, the industry will be very different. How? Most people don't realize it, but the IT industry has always been two, interrelated industries. One, of course, is computing. This is more than the chips, databases, operating systems, application software and other technology elements that are in a constant state of change. This is about computing as an architecture, a model, a *system*—what all of those individual pieces, when put together, make possible. The computing model doesn't change very often, but it's changing now.

The other "industry" is the application of computing to improve or transform some aspect of business (and by "business," I mean the work of every kind of enterprise and institution). This wasn't visible for many years, because these services—helping customers apply and manage the technology—were bundled with the hardware or software. But it was there all the same, and hugely important. For example, although IBM pioneered the mainframe model of computing,

it would not have taken the market by storm if we had only brought customers a new machine. We had to bring them a *new idea about business*, and we had to show them how to apply mainframe systems to transform back-office functions like accounting, payroll and inventory management.

I don't think it's an overstatement to say that IBM has been unique in stepping to the forefront of both these capabilities—computing and its application to business—for most of IT's history. Today, once again, both are changing in significant and interconnected ways.

Consider what's happening in computing. Our customers have stopped thinking of their technology needs just in terms of data centers, or storage systems, or PCs, or even the network. Today, it's the *entire technical infrastructure* on which their businesses run, a vital infrastructure that must connect with and support relationships and transactions with other businesses, devices of all kinds and all the people using those devices.

My point is, if customers are going to look to you as the leader in computing, you have to be able to drive forward the entire computing agenda, not just a piece of it.

We see a parallel situation in how computing is being applied by customers. For the most part, businesses and institutions have automated and digitized their standalone operations and processes—the back office, the manufacturing floor, procurement, logistics, customer-facing systems. They've extracted great efficiencies by doing so. Now they want to transform processes that cut across all of those systems. Why? Because they want to build a business that can respond dynamically to whatever the world throws at it. And goodness knows, the world has been doing a lot of throwing lately.

A NEW GAME FOR BUSINESS

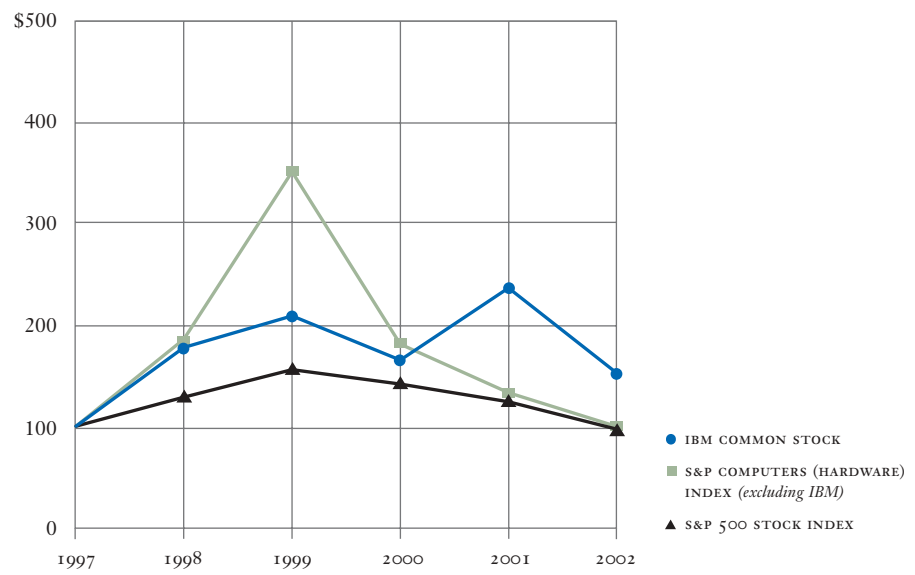
All of this is what we mean by “e-business on demand,” which you will be hearing a lot about in the months and years to come. The promise of on demand is that a company or institution can provide products, services, information, health care, education, government services and so on—all “on demand” for customers, citizens, patients and students. These “sense-and-respond” or “real-time” enterprises enjoy enormous competitive advantages. They are able to convert fixed costs into variable costs. They can greatly reduce inventories. And, most compellingly, they are extremely responsive to the needs of their customers, employees and partners.

That is obviously very appealing, especially in times like these. However, consider the magnitude of the business transformation it requires. It's almost as if a business were turned on its side—moving from a collection of vertical “silos” to a seamlessly integrated, horizontal flow across value chains. That's a major, major shift—in business design and in management thinking—and pulling it off requires deep business expertise and know-how.

This may sound rather grandiose, to some. And, of course, all technology companies envision ways in which their products will change business and society. Most do so with great bravado. More often than not, though, they are just plain wrong. The dot-com era was just the latest reminder that creators of databases, PCs and printers have no special qualifications to understand the future of serious business. In fact, they are probably the last people customers should look to for this kind of insight.

To be honest, when we at IBM began to understand the future course of technology and its sweeping implications for business, we looked in the mirror and saw some serious deficiencies in our own company. True, we had in recent years built

COMPARISON OF FIVE-YEAR
CUMULATIVE TOTAL RETURN FOR IBM, S&P 500 STOCK INDEX,
AND S&P COMPUTERS INDEX (*excluding IBM*)



up quite a bit of consulting capability. But we lacked a critical mass of business expertise to help our customers become on demand enterprises.

It was this realization that drove us to acquire PwC Consulting. We now have nearly 60,000 professionals in industries ranging from financial services to health care, with business process expertise in areas like supply chain, customer relationship management, human capital solutions and business transformation outsourcing.

We considered forming a web of alliances to gain the business insight we lacked. Others have chosen this path, and it's a perfectly respectable strategy—but not for us. IBM's brand and business model are very different from those of our competitors. Fundamental to our identity as a corporation is this fusion of business insight and technology leadership. Our learning in each realm informs what we do in the other. So we need an intimate linkage between them.

LEADERSHIP ON DEMAND

We have mobilized the entire IBM company and our expanding network of partners to make our e-business on demand strategy a reality. That work comes down to three main thrusts:

1. Helping our customers become “on demand businesses.” Through IBM Global Services, we are applying IBM's considerable business process and industry expertise to help customers build businesses that are almost intuitive in their responsiveness to changes in demand, supply, pricing, labor, capital markets and customer needs. This requires a great deal of integration—of business processes and operations, and of applications and the underlying IT systems. It means making them resilient in the face of changes and threats, from hackers to hurricanes. And it means helping them

focus on what differentiates them, on their core competencies—and outsource or tightly integrate with strategic partners to supply the rest.

2. Evolving the computing model to an On Demand Operating Environment. On demand business creates new rules for IT infrastructure. Computing must be integrated and must support integration of business processes and operations, which is why our WebSphere software is growing so rapidly. Computing must be built on open technical standards and platforms, which is why IBM will continue to be a leader of the open standards movement—a leader in Linux, Web services and other emerging technical standards. Applications must be developed for this new, open model, which is why we acquired Rational; it gives software developers a compelling alternative to proprietary approaches.

In addition, an emerging technology called grid computing, built around another set of open specifications, allows the sharing and managing of separate computing resources as if they were one huge, virtual computer. This will dramatically increase utilization rates and give customers access to enormous computing capacity. Finally, IBM technologists are also pioneering ways to make IT systems “autonomic”—more self-managing and self-healing. This, too, is critical, as the increasing complexity of systems is making them unrealistically costly to manage and maintain.

3. Establishing utility computing—computing on demand—as a viable and attractive alternative for accessing and paying for IT. This effort has gotten a lot of attention. Yes, we intend to be a leader in utility computing services, so that customers can acquire computing and applications and pay only for what they use. IBM Global Services is already

pioneering such services—server and storage capacity, as well as business processes like procurement and claims processing—for companies such as American Express, The Dow Chemical Company and Mobil Travel Guide. But we also want to equip and help customers to build their own internal utilities—software to manage and balance workloads, and server and storage systems to provide additional capacity on demand.

Clearly, the bet we're placing on e-business on demand is a big one. And part of what makes it big is that it encompasses where both computing *and* business are headed. Driving both at the same time requires a lot of work, but it's necessary, if you aspire to lead this industry.

IBM'S CENTER OF GRAVITY

Throughout IBM's history, we have reinvented ourselves over and over again. The most visible manifestation of this has been how radically our product line has changed over time—from clocks and scales to tabulating machines, to mainframes, to Selectric typewriters, to everything we do today.

How were we able to make those transitions without having a jarring identity crisis? It's because we never defined ourselves as a clock and scale company, or a mainframe company, or a typewriter maker, even when we were the undisputed leader in those markets. We simply committed ourselves to being the leader in inventing state-of-the-art technology and helping customers apply it to solve their problems. When technology and the nature of customer problems change—we do, too.

As I said earlier, the one time we forgot that and held on too long to products and ideas that were giving way to new ones, we nearly lost the whole ball game. That's a lesson we will not forget.

Today, with e-business on demand, we are again redefining the value we bring to customers.

It's driving us to grow certain businesses aggressively—especially services and software—and to de-emphasize others, as we did in 2002. I have no doubt whatsoever that 15 or 20 years from now, we will be in a bunch of new and different businesses, because technology and customer problems will have marched on, hopefully with our company at the forefront. But we will still be *IBM*.

THE PURPOSE OF A BUSINESS

As you might guess by now, we have been doing a lot of thinking about what leadership means for IBM. To lead our industry, we must be the company to which our customers look to understand the future of IT and how it can help them create business value. But there are additional aspects of leadership that are also important aspirations for our company: as an investment, as an employer, as a member of the community.

Now, companies often say that being a great employer or a responsible citizen is as important to them as creating shareholder value or delighting customers or beating competitors. But they don't elevate them as business priorities, to be managed with the same kind of investment and discipline—and competitive passion—that they apply to managing R&D, manufacturing and sales. We do.

Why? Because over time, failure to understand change in these realms can be as damaging as failure to stay abreast of markets or technology. Maybe more so. What do investors value? What will attract and motivate the best workforce in the world? What do communities—nations and neighbors—expect of companies? As with technology and customer requirements, these are all moving targets.

We believe investors, particularly those who invest in the technology sector, reward companies that adapt, that continually create and lead the high-value spaces—because that's the only way to

deliver consistent, long-term earnings growth in an industry that is constantly evolving. We believe investors reward companies that manage for the long haul, run highly efficient operations and are managed by experienced and disciplined leaders. And, at a time when industry growth projections are highly unreliable, investors reward companies that outperform their competitors—no matter the rate at which the industry is growing or contracting. This is why we have made marketshare a top priority.

I joined a company that was *the* place to work. It was progressive, fair and principled, and it invested in its people and their development. All of that stemmed from the commitment to have the best talent in the world, a commitment we reaffirm today. *How* you achieve that with programs and benefits depends on the times. As the composition of the workforce and their expectations changed, so did IBM, often far ahead of other companies or government mandates.

We know that employees today value flexibility and mobility, yet they want to feel part of a team, a community of colleagues. They value skill enhancement, but they want lifelong learning, not just classroom training. Most of all, while they are attracted to IBM's breadth and global presence, they don't want to get lost in a big company. They want to make a difference, have impact. All of this represents opportunities for us once again to innovate as an employer.

Finally, we need to adapt if we aspire to be a respected and engaged participant in our communities. This is more, far more, than philanthropy—although IBM takes a back seat to no one in contributions and volunteerism. (IBMers volunteered four million hours last year.) It's about building relationships based on respect, trust and integrity—IBM's bedrock values. And it's about using our remarkable scientific, managerial and analytic assets—some of

the best minds on the planet—to help local, national and international communities solve problems and stimulate economic growth.

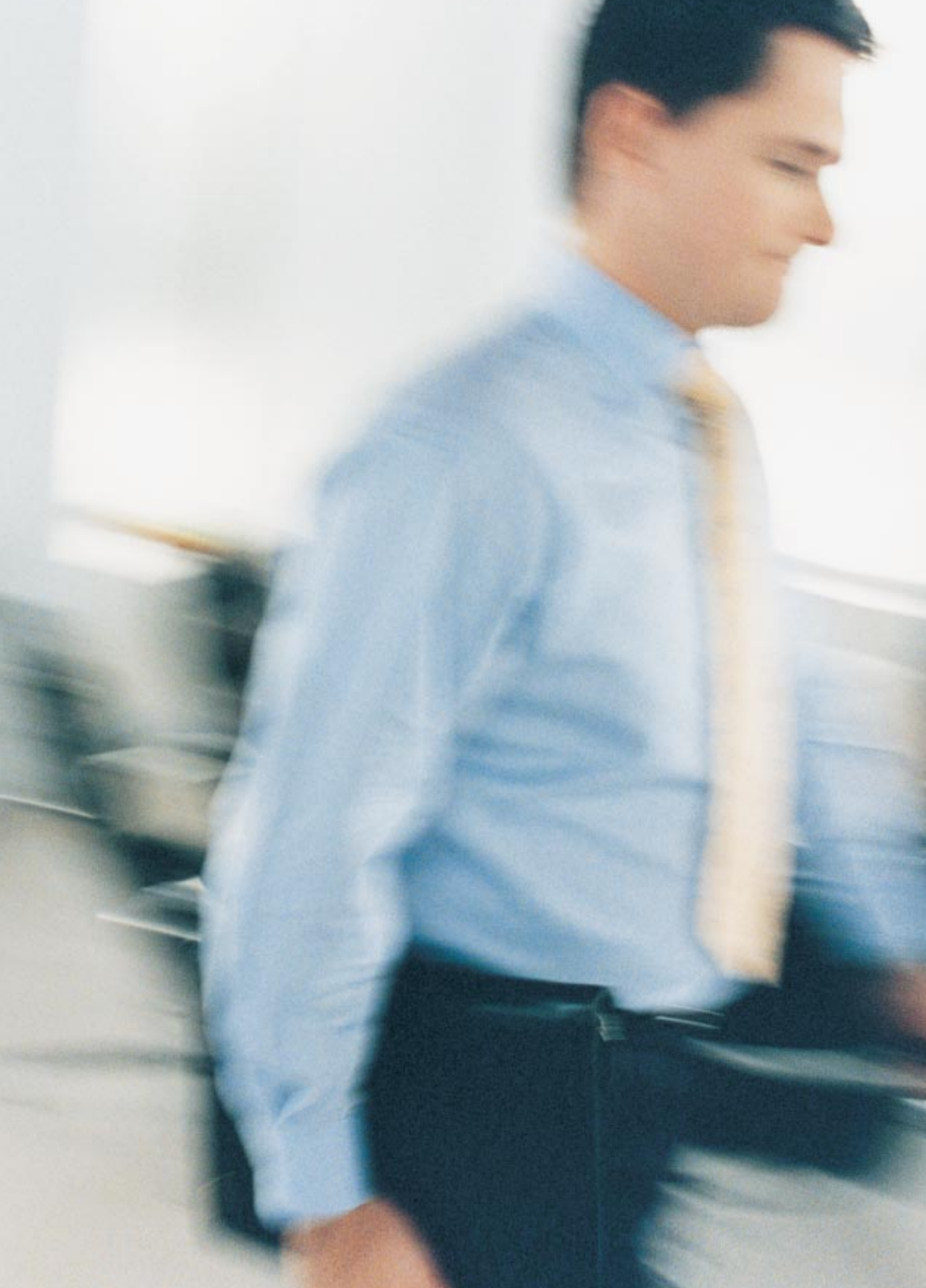
Right now, we have as many questions as answers, and more a sense of where we must go as a company than a clear path to get there. Yet we believe these are all appropriate and worthy aspirations for IBM and IBMers. They are consistent with the kind of company we want to be and have been for most of our history. This is IBM's DNA. The challenge, of course, is to bring the best of that forward without for a moment taking our eye off the customer, marketplace execution and strong results.

In the end, this goal of leadership, broadly defined, is what makes our company unique. It's why people come to work at IBM—and why millions more have wanted to be associated with it. There are certainly many places where a person can earn a very good living and build a highly gratifying career. You come to a big, complex company like ours if you want to be part of something whose impact is larger. And you come to this particular enterprise to be part of something whose impact will last, a company that explores, a company that matters.

That was the company I joined 30 years ago. Yes, the world has changed, and there's no going back. But my 316,000 colleagues welcome the challenge. We are determined to make IBM a truly great company—a great partner, investment and employer—for our generation and for our times.



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





Industry Solutions

IBM's client teams are specialized in the competitive pressures and dynamics of 18 industries, from automotive and government, to life sciences and wholesale distribution.

COLLEEN ARNOLD
*Worldwide General Manager
Communications Sector*

MARK GREENE
*General Manager
Global Banking Industry*



Why customers will invest the *next trillion dollars* in information technology

THIS MUCH IS CERTAIN. It won't be for the same reasons they invested the *last* trillion.

What's driving customer strategies and spending today is the need to *integrate* processes, people, ideas and work to create wholly new kinds of business designs and business value.

Rather than talk about automation, efficiency or reengineering, they use a new set of terms to describe the kind of enterprise they want to build: a company that is *intuitive* in sensing and responding to change; *flexible* in terms of structuring costs and adapting processes; *focused* on the unique things that set it apart; and *resilient* in managing change and threats.

This is what IBM calls an on demand business, and, yes, it requires lots of rock-solid technology. But in a fundamental departure for the IT industry, that's not where the discussion starts now. It starts with a deep understanding of the customer's industry, of business model design, and the nontrivial culture change that

comes with this kind of transformation.

The technology companies that can lead their customers to these new ways of seeing and managing themselves will set the agenda for business and for the IT industry, and stand at the forefront of the next trillion dollars in IT spending. (And those that can't, won't.)

REVAMPING A CUSTOMER'S IT INFRASTRUCTURE into an integrated, intuitive *system* is hard. But that's actually the easy part. Helping the business and *human* infrastructure learn how to sense and respond at the speed of the market... well, that takes a unique collection of business transformation skills and industry-specific experience.



Business Consulting Services

IBM created the world's largest consulting services organization—Business Consulting Services—following the acquisition of about 30,000 professionals from PricewaterhouseCoopers Consulting.

Customers are TWICE AS LIKELY to consider IBM consulting over any competitor in 2002
—Forrester Research

Business Consulting Services was RATED NUMBER ONE in Consulting Monitor's survey for "understanding the client's industry" in 2002

Nearly 60,000 PROFESSIONALS serving customers in 160 countries

GINNI ROMETTY
Managing Partner
Business Consulting Services

DAVID DOCKRAY
Managing Partner, Business Consulting Services
Europe/Middle East/Africa

Small and Medium Business Market and Business Partners

Small and medium businesses represent a \$300 billion market opportunity that continues to grow faster than the rest of the industry. In 2002, IBM outperformed this sector globally.

90,000 BUSINESS PARTNERS
worldwide generate 50% of IBM's small and medium business sales

IBM will invest \$500 MILLION in 2003 to help business partners generate demand and sales



MARC LAUTENBACH
General Manager
Global Small and Medium Business

ANN O'NEAL
President
Integrated Concepts, Inc.

DENNIS BURKE
CEO
Essex Technology

LES WYATT
Senior Vice President and
Chief Marketing Officer
J.D. Edwards



ERIC RAY
Vice President
Strategic Outsourcing, Financial Markets

Strategic Outsourcing

Customers who are increasingly interested in focusing on core competencies are turning to strategic partners to manage and operate their IT infrastructures. In 2002, IBM was awarded 42 strategic outsourcing contracts exceeding \$100 million each, and 5 contracts exceeding \$1 billion.

In 2002, IBM won the
LARGEST OUTSOURCING CONTRACT *in its history.*

JPMorgan Chase will invest \$5 billion over seven years to reduce operational costs, increase internal efficiencies, accelerate innovation, and improve its ability to respond to changing market conditions by using on demand technologies and services.



ALBERT HAN KIAT LEE
Vice President, e-business
Hosting Services, Asia Pacific

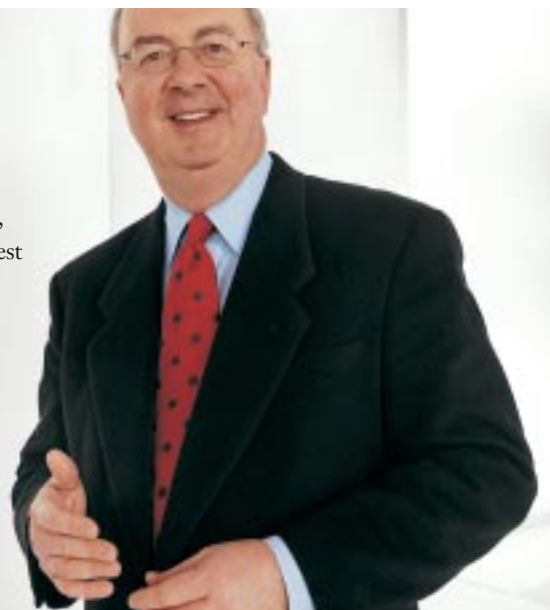
DARIA SCHUSTER
Pricing Manager
e-business Hosting Services

e-business On Demand Hosting Services

IBM is the leader in e-business hosting, with revenue equal to that of its three largest competitors combined.

20 PERCENT INCREASE
in hosting revenue for 2002

500 NEW CUSTOMERS
worldwide in 2002—
350 were first-time IBM customers



JIM CORGEL
General Manager
e-business Hosting Services



MARK LOUGHRIDGE
Senior Vice President
IBM Global Financing

IBM Global Financing

IBM Global Financing is the largest IT financier in the world, with an asset base of \$35 billion. If it were a commercial bank, it would rank among the top 25 in the United States.

\$35 BILLION
in new financial agreements signed in 2002.
Of that total, \$22 BILLION
in commercial financing was provided primarily to business partners.

Why it's time for a *new* computing model

BECAUSE THE OLD APPROACH is based on what technology can do, not on what business needs to do.

The existing computing model in most companies today has hard edges. It was built to drive the productivity and efficiency of a particular business process, or department, or functional unit. The benefits were substantial, but they were fragmented.

Here's the problem: Businesses today need to respond in real time to whatever the day brings—a change in supply or demand, a shift in the preferences of buyers, students or citizens, the vagaries of capital markets or the aftermath of a natural disaster. And that requires an infrastructure that's different in concept and capability from anything that has come before it. It's what we at IBM call the On Demand Operating Environment.

FIRST, AND MOST IMPORTANT,
THIS NEW MODEL IS ULTIMATELY OPEN
AND COLLABORATIVE.

It shares resources—

by allowing the computing assets within any individual enterprise, or across the networked systems of the world, to work together on common problems.

It masks technical complexity—

by behaving a lot like the human autonomic nervous system, spontaneously performing functions like fending off attacks, balancing workloads, or isolating and repairing failing components.

And it creates variable options—

by allowing customers to access and pay for computing just as they do with water or electricity.



JAI MENON
*IBM Fellow, Co-director
Storage Systems Institute*

JEFF NICK
*IBM Fellow, Vice President, Architecture and Design
e-business On Demand*



GREG BURKE
Director
Advanced Systems Infrastructure Technology

LIKE PRIOR COMPUTING ARCHITECTURES, the model that supports on demand business is composed of individual systems, hardware, software, components and platforms. None of that goes away. *Then again, in a way, it does.*

Because what's coming (thanks to open communications standards and protocols) is the ability to integrate it all, mask the complexity, and extract dramatically higher levels of learning, productivity and savings from what customers already own, without forcing them to do what they are doing today—spend about 40 percent of their IT investments to make all the pieces work together.



IRVING WLADAWSKY-BERGER
*General Manager
e-business On Demand*

DANIEL SABBAH
*Vice President
WebSphere Platform Development*

Middleware Is the Integrating Platform

If the world of on demand business is premised on open communications, it's fueled by open software. Applications that were written for standalone hardware products and a particular computer operating system now will be written for middleware—products such as Web application server software, databases and software for collaboration, content and systems management—that transcends the limitations of proprietary systems and organizational constructs.

DB2 GREW FASTER *than the industry and faster than its nearest competitor in 2002*

The WebSphere family of products
GREW MORE THAN 20%

Content management software revenue
INCREASED 26%

The Grid Gets Down to Business

In simplest terms, “grids” are systems that get connected—across one room, or across the world—creating one big virtual computer that shares processing, storage and other operations. Most of the early work has been in the far-flung supercomputing networks of places like Oxford University, the University of Pennsylvania and the National Science Foundation in the United States. Corporations like Charles Schwab have a different take. They're looking inside—using grids to boost the utilization of their complex infrastructures, in order to lower their costs and to bring the management and security of traditional mainframes to masses of distributed UNIX and Intel-based systems.

IBM is working with The Globus Project and the rest of the open grid community **TO DELIVER AN OPEN ARCHITECTURE** *that aligns the emerging grid standards with established standards for Web services*



JEFFREY GORE
*Vice President
e-business On Demand
Utility Services*

CALISTO ZUZARTE
*Senior Technical Manager
DB2 Development*

In Storage, the Word Is ‘Software’

The value proposition in storage is no longer just hardware. The next big storage battle is the software that allows customers to plug into, and manage, all of their information as though it were in one place. “Virtualizing” the data will supercharge applications that rely on real-time information in everything from customer service to fraud detection. Later this year, new IBM storage software offerings will move intelligence that’s locked inside individual servers out across the storage network, where it can be available to all application servers.

*Based on data through
the first three quarters of 2002, IDC forecast IBM’s external
STORAGE SHARE TO GROW 5.8%
between 2000 and 2002, while the market leader’s share
was predicted to decline*

A More Self-Reliant Model

Computers can no longer depend on human babysitters. To operate at on demand speeds, the systems themselves must take over functions that today require human management. That’s not a statement of what’s to come. IBM delivered broad-based autonomic capabilities in 2002.

*Technology in IBM eServer zSeries
AUTOMATICALLY DETECTS INTRUSIONS,
and deflects “denial of service” attacks that
flood a system or website with incoming messages*

*Storage Manager from Truoli has
**SELF-CONFIGURING, SELF-HEALING,
SELF-OPTIMIZING and SELF-PROTECTING**
functions—from automated
data protection to disaster recovery*

HIGH-END SERVER TECHNOLOGIES “LEARN”
*about Internet traffic patterns or the ebb and flow of
application use, and improve performance—in real time—
across a diverse set of systems*



THOMAS BRADICICH
*Distinguished Engineer and
Director of Architecture and Technology
eServer xSeries*

SHEILA HARNETT
*Distinguished Engineer
Linux Technology Center*

Linux Breaks Out

In 2002, the open software environment called Linux—once famously labeled a “bathtub of code”—went primetime. Linux crossed into enterprise applications in industries from telecommunications to life sciences. Importantly, governments around the world embraced Linux and open computing for use in their own infrastructures and as catalysts for economic development. Today, more than 75 IBM government customers—including ministries and agencies in Germany, Australia, the United States and Japan—are using Linux to cut costs, increase efficiency and enact e-government transformations.


MORE THAN 15% of the IBM mainframe capacity shipped in 2002 was for Linux workloads

*IBM has engaged with
THOUSANDS OF CUSTOMERS worldwide,
and has about 7,500 employees working in
porting centers, research, services, development labs,
and the sales and marketing of Linux*

The New Idea in Small Systems

They call them “blades,” and not because they’re the bleeding edge of low-end server computing. Our blades deliver twice the density and superior management and integration to the world of rack-mounted systems—meaning customers can bring sanity and lower operational costs to infrastructure sprawl.

*IBM is WORKING WITH
ALLIANCE PARTNERS
such as Intel, Microsoft, Red Hat, SuSE,
Nortel and Cisco toward
the vision of an industry standard
for blade servers*



Why high-tech isn't for everyone *(but why it's good that someone is doing it)*

THE FACT IS, few IT companies have the imagination or the financial model to do much real scientific exploration. And that's all well and good. There's plenty of money to be made leveraging the innovations of others, and occupying commodity segments of the marketplace where low price is the most important criterion.

We've chosen to live at the other end of the spectrum—at the frontier of inquiry and game-changing innovation. This is where 3,000-plus IBM researchers probe mind-stretching problems such as the folding of proteins or the manipulation of atomic-scale structures. More and more, they also venture out of the lab to immerse

themselves in the marketplace, working on grand challenges brought to them by our customers.

Over the past 10 years, we've steadily invested about \$5 billion annually in research, development and engineering. We consider it the price of entry for those who want to play in the arena where world-altering discovery takes place.



Information Please

Why is it still so hard to find the information we need and use the information we have? *One reason:* its many flavors, from simple text to video, music, images, diagrams, 3D, digital and analog. *One answer:* “integrated information,” which would let us tap into all this structured and unstructured information without first converting it to a standard format, and analyze it without humans having to digest it first. We’d better hurry—more data will be generated over the next three years than in all of recorded history. More than 200 IBM researchers are on the case—making information discovery, synthesis and analysis (leading to genuine insight) more than a blue-sky ideal. Products are scheduled for release later this year.

ALFRED SPECTOR
*Vice President
Services and Software Research*

ANDREW TOMKINS
WebFountain Chief Scientist



Lab Meets World

On Demand Innovation Services, a new unit we formed in 2002, combines the talents of IBM Research with our Business Consulting Services experts to bring our researchers into a whole new type of “lab.” They’re working in the marketplace on some of our customers’ most pressing challenges, and bringing those real-world problems back into the traditional lab to be solved with new technology.

As our scientists spread their wings (and their impact) as consultants, On Demand Innovation Services will become a primary channel for bringing the fruits of our investment in research directly to our customers.

PEGGY KENNELLY
Vice President
On Demand Innovation Services

What Is Life?

What began as a grand challenge for computer scientists will, when completed, have meaning for all humanity. And its pursuit has led IBM to a market that represents one of the fastest-growing segments of the global IT industry. When IBM launched a \$100 million project to build a supercomputer to fathom the intricacies of protein folding in humans, we’d crossed the threshold of exploration into personalized medicines, more precise diagnoses and new insight into disease and prevention. Today, our life sciences business includes more than 1,000 employees—bioinformaticians, biologists, chemists and computer scientists. They’re forging partnerships with leading-edge organizations like Aventis, deCODE genetics, Celera Genomics and the Mayo Clinic to transform drug discovery and development, and deliver information-based medicine.

Sweating the Small Stuff

The quest is always to get more with less. More processing power, more storage, but less electrical power, running at lower temperatures and created at lower cost. So physicists probe the unimaginably small realms of nanotechnology—finding alternatives to traditional silicon and building the tools to work at the level of atomic structures, paving the way for capabilities that we can’t yet imagine. The potential size of silicon transistors was reduced by a factor of 10 in 2002, with the creation of a transistor measuring just six nanometers.

Imagine a high-density storage device capable of holding a trillion bits of information—the equivalent of 25 million textbook pages of data—on something the size of a postage stamp. It’s code-named “MILLIPEDE” for its thousands of nano-size “feet” (or tips), used to punch single-bit indentations into plastic film.

'Cells' Multiply

IBM and Sony Computer Entertainment, Inc., in partnership with Toshiba, are at work on a breakthrough microprocessor architecture that puts broadband communications right on the chip. Just as the cells in a body unite to form complete physical systems, this "Cell" architecture will allow all kinds of electronic devices—from consumer products to supercomputers—to work together, signaling a new era in Internet entertainment, communications and collaboration.

*In July 2002, IBM opened the world's
MOST TECHNOLOGICALLY ADVANCED
CHIP-MAKING FACILITY—
the only one producing chips on 300mm (12-inch)
silicon wafers, which feature IBM
breakthroughs such as silicon-on-insulator transistors,
copper wiring and low-k insulation*


Making a Material Difference

Tiny is great—but at very small scales, "quantum" behavior takes over, degrading the reliability of some materials. Which only means that continued progress in computing depends on the discovery or creation of new materials better suited to molecular-level construction. Beyond increasing processor speed with innovations such as copper wiring or silicon germanium, we'll need an array of organic and inorganic materials—many assembled an atom at a time—for their ability to "behave" predictably at the quantum level.

What happens when silicon transistors can't get any tinier? IBM researchers think devices made from TINY CYLINDERS of CARBON ATOMS might be the answer. Carbon nanotubes are a chicken-wire-like mesh of carbon atoms rolled up into tubes about 50,000 TIMES THINNER than the average human hair—roughly 10 atoms across, but with five times the strength of steel.


Search This

Search engines are sadly lacking in insight and judgment. Getting beyond those limitations is the impetus for a new IBM technology called WebFountain. Using sophisticated analytical tools, it combs through billions of documents from the Web, news sources and a company's own information stockpiles to uncover valuable business insight—insight human researchers would be hard pressed to piece together. It applies techniques like machine learning, probability theory and pattern recognition to the data, processing tens of thousands of documents per second.



JOHN KELLY
Senior Vice President
Technology Group

KEN KUTARAGI
President and CEO
Sony Computer Entertainment, Inc.



Web conferences:
9,000 E-MEETINGS
per month, avoiding
\$50 million in costs in 2002

ManagerJam:
In July 2002, more than
8,000 managers came together
in a GLOBAL
THREE-DAY INTRANET
EVENT to generate
and share ideas on the
manager's role in a networked
enterprise

*National Business and
Disability Council names IBM's
Web Adaptation Technology
its 2002
"PRODUCT OF
THE YEAR"*

*"I've worked in plenty of small
companies and know the advantages
and disadvantages. The cool thing
about today is that we have all the
benefits of being CLOSELY CONNECTED—
like in a small company—but we also
have access to the breadth of the
IBM brain trust."*

MARIA ARBUSTO
Senior Manager, IBM Intranet

*"I'd love this job even if we were
just working on behalf of
people with disabilities.
But since I believe every person,
at some stage in life, will develop
a disability or limitation, I take
a very broad view of why
TECHNOLOGY HAS TO BE
AVAILABLE AND ACCESSIBLE—
to all people."*

SHON SALIGA
Director, Worldwide Accessibility Center



Why every big company *will want to be small*

WE'RE LEARNING IT FIRSTHAND.


In an on demand business, you know your customers by their first names, and your co-workers by theirs. Decisions get made fast. Every action is based on trust and accountability. And every relationship is built on a level of intimacy that compels the place and its people to act as good neighbors, responsible citizens and trusted partners.

In effect, even the biggest business takes on the attributes of being small.

Adopting attitudes and approaches normally associated with “small” becomes ever more important in a world that is growing perceptibly less personal, where businesses are subject to heightened scrutiny, and where the proliferation of technology raises important questions—from the protection of personal privacy, to the protection of a fragile planet.

So, whether the issue is business efficiency, customer care or the broader agendas of societal change and corporate responsibility, we've always come at them with equal measures of personal involvement and management discipline.

Now, as we enter this new day and confront its new challenges, we draw on the experience and learning of the last 92 years. And we feel, more than ever, the urgency of business matters, *and* of being a business that matters.



*IBM's on demand supply chain
achieved \$5.6 BILLION in
COST REDUCTIONS in 2002,
with a target of
\$5 billion more in 2003*


*Time between requisition and
supplier order placement has gone from
2-3 WEEKS to 2 HOURS,
allowing IBM to react faster to changes
in market pricing*

*Rated the technology industry's
NUMBER ONE
SUPPLY CHAIN by Supply Chain
Technology News*

*“Through our e-business transformation,
we optimized our SUPPLY CHAIN PROCESSES.
Through our on demand transformation,
we are linking those processes together.*

*It's making IBM faster, smarter,
easier to do business with—and the savings
enable us to protect profit margins,
and make opportunistic acquisitions in
the face of a soft market.”*

*BOB MOFFAT
Senior Vice President
Integrated Supply Chain*



*IBM's mobile technologies
and mobility management practices
allow more than
3/4 of ALL EMPLOYEES
to work remotely*

“In addition to the savings and dramatic process improvements in how we interact with customers, suppliers, partners and employees, E-BUSINESS ON DEMAND is really changing IBM at a deeper level. We’re replacing vertical silos with a fluid, ‘horizontal’ flow of information, knowledge and collaboration.”

LINDA SANFORD
*Senior Vice President
Enterprise On Demand Transformation
and Information Technology*

IBM became the first semiconductor manufacturer to set a voluntary climate protection goal for emissions reductions of perfluorocompounds—then beat the target, **REDUCING PFC EMISSIONS** by 40% relative to semiconductor product output since 1995

In 2002, IBM **RECYCLED or RECOVERED** 97% of 38,000 metric tons of end-of-life IT products and product waste

IBM's environmental excellence was recognized with **TOP HONORS** in 2002 in Japan and the U.K.

"I trained to be an engineer, but I've always cared about the ENVIRONMENT. When you imagine the sheer number of our products in use around the world, even small improvements in energy efficiency have a profound impact on energy consumption and the environment."

EDAN DIONNE
Director, Corporate Environmental Affairs
and Engineering Center for
Environmentally Conscious Products

Through the MentorPlace program more than **6,000 IBM VOLUNTEERS** provide academic assistance and career counseling to students in grades 3-12 in 11 countries—part of the **4 MILLION HOURS** IBM employees volunteered to community organizations in 2002

Since 1995, IBM has invested \$70 million in its Reinventing Education program, which will touch **100,000 TEACHERS** and **10 MILLION STUDENTS** in 10 countries by the end of 2003

Employees and retirees gave more than **\$30 MILLION** to more than 10,000 health and human services agencies through the Employee Charitable Contribution Campaign in 2002


"I remember that even as a little girl, I'd decided that being hard of hearing wasn't going to hold me back. What I tell young people today is partly about me, partly about the company where I work and mainly that YOU CAN BE ANYTHING YOU WANT TO BE."

DEBORAH DOLGIN
Global Web Applications Availability Manager
IBM Global Services,
and volunteer, IBM MentorPlace

Working Mother Magazine
in 2002 ranked IBM
among the top 10 companies for
working mothers for the
15TH YEAR in a row


Over the last five years,
the number of female executives
in IBM has **RISEN** from
185 to 692

For 12 of the last 14 years,
the **NATIONAL SOCIETY**
of **BLACK ENGINEERS**
has voted IBM the
company its members would
most like to work for



*“I met Tom Watson, Jr., some years after he retired, and asked him why he wrote what many believe is the **FIRST EQUAL OPPORTUNITY POLICY LETTER IN 1953**. He said that during negotiations with two Southern governors over new IBM facilities in their states, he made it clear there would be no ‘separate but equal’ racial policies at IBM. To make sure they knew he was serious, he wrote the letter to his management team and then made it public. That’s the legacy that we’re living, and extending, today.”*

TED CHILDS
Vice President
Global Workforce Diversity



COMPANY MISSION At IBM, we strive to lead in the invention, development and manufacture of the industry's most advanced information technologies, including computer systems, software, storage systems and microelectronics.

We translate these advanced technologies into value for our customers through our professional solutions, services and consulting businesses worldwide.