



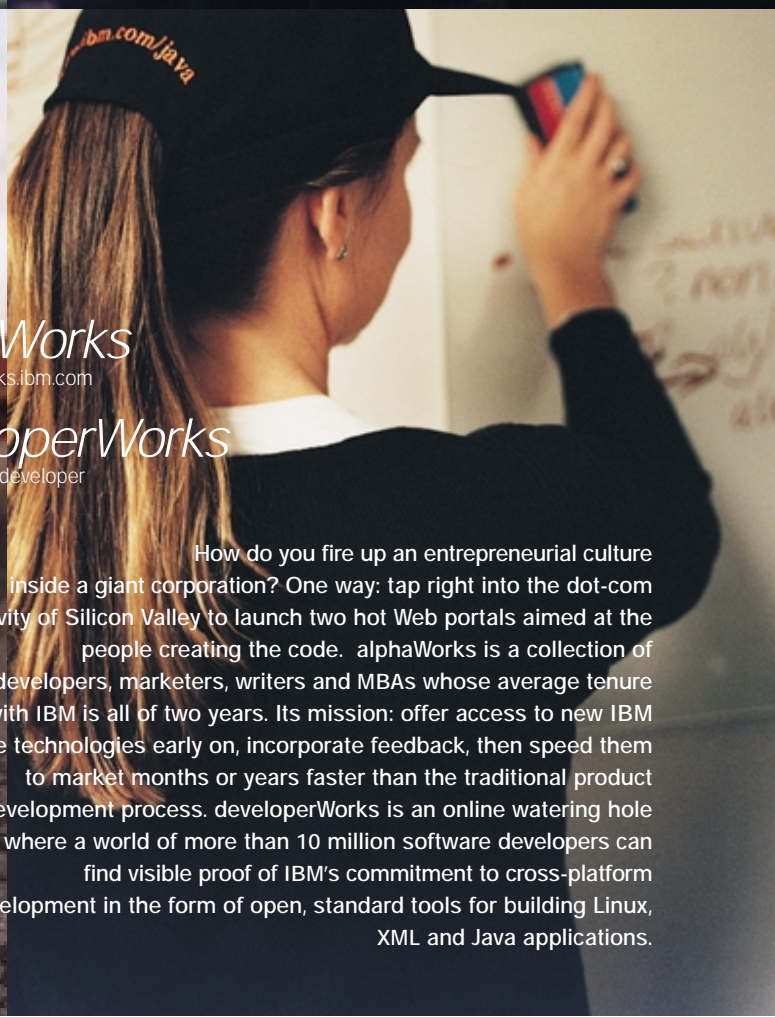


*alphaWorks*

[www.alphaWorks.ibm.com](http://www.alphaWorks.ibm.com)

*developerWorks*

[www.ibm.com/developerWorks](http://www.ibm.com/developerWorks)  
silicon valley



How do you fire up an entrepreneurial culture inside a giant corporation? One way: tap right into the dot-com creativity of Silicon Valley to launch two hot Web portals aimed at the people creating the code. *alphaWorks* is a collection of developers, marketers, writers and MBAs whose average tenure with IBM is all of two years. Its mission: offer access to new IBM software technologies early on, incorporate feedback, then speed them to market months or years faster than the traditional product development process. *developerWorks* is an online watering hole where a world of more than 10 million software developers can find visible proof of IBM's commitment to cross-platform development in the form of open, standard tools for building Linux, XML and Java applications.



## *e-business testing center*

gaithersburg maryland

Enough fiber-optic cabling to stretch from Washington, D.C., to Los Angeles and back again; more than 10 billion instructions per second of processor capability; more than 40 terabytes of disk storage. It takes that kind of computing muscle to model customers' technology infrastructures, then stress-test them to see if they can handle day-to-day operations (or even the possibility of runaway success). That's why more than 500 customers have come to this IBM Testing Center – the largest such test bed in the world – to put their systems through the paces.





*ford motor company*  
*accelerated solution center*  
dearborn michigan

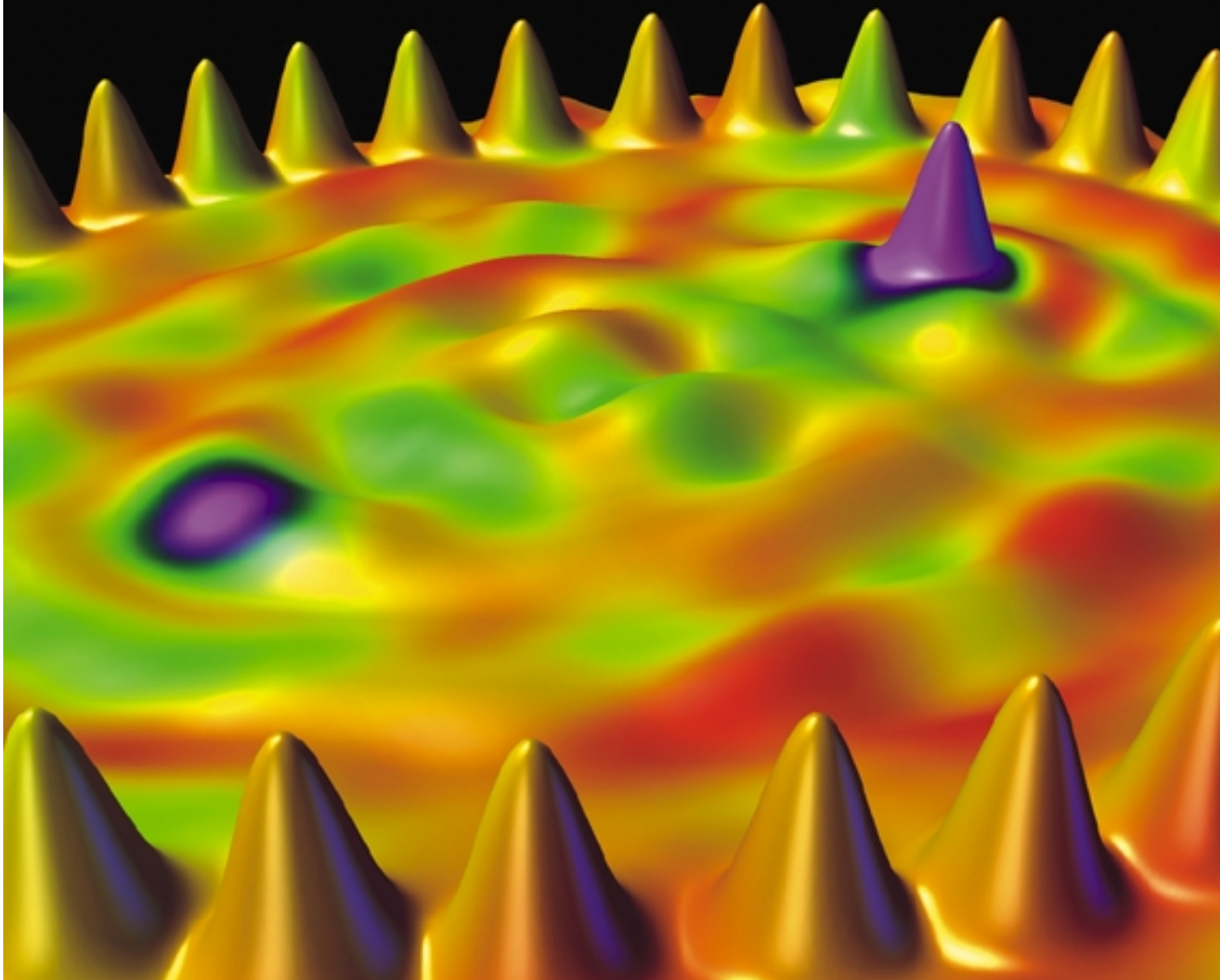
Ford's Accelerated Solution Center is a novel experiment that welds IBM and Ford programmers into tightly integrated teams to speed the development of e-business applications. Ford contributes automotive expertise and IBM brings its e-business knowledge. Part of a \$300 million services agreement, the approach has slashed Ford's software development time in half and cut costs by 30 percent.

## quantum mirage

almaden research center  
san jose california

It looks like a freeze-frame of a technicolor raindrop, taken milliseconds after impact — but it could someday lead to extraordinarily small computing devices a few nanometers (billionths of a meter) across. In February, three scientists at IBM's Almaden Research Center discovered a fundamental new way of communicating information on an atomic scale using a "quantum mirage." This scientific achievement, which projects information about one atom to a spot where no such atom exists, may make data transfer in nanoscale electronic circuits possible, enabling ever smaller, but more powerful, computers.

To demonstrate the effect, the research team used a Scanning Tunneling Microscope (a Nobel-prize winning IBM invention) to create a "quantum corral," the ring of yellow atoms partially visible here. When a cobalt atom (the tall magenta peak on the right) is placed at one focus of the ellipse, a smaller mirage appears at the other focus (the lower left magenta spot).



*e-business is here. We're never going back.*

## the abc's of @

Having unleashed the e-business revolution, we at IBM take seriously our responsibility to help people understand it all. Here's a brief guide to help you sort through the vocabulary, history and unique culture of all things "e."

### the "lingo"

#### **B2B (adj.)**

As in "Business-to-Business," the biggest and most lucrative e-business marketplace – pegged by industry consultant Gartner Group at nearly \$4 trillion by 2003, compared to estimates of \$380 billion for B2C (Business-to-Consumer).

#### **clicks-and-mortar (adj.)**

Also "clicks-and-bricks." A heretofore traditional (bricks-and-mortar) enterprise that "gets" the value of e-business and integrates its online and offline operations, creating benefits for each. For example, a customer who buys something from your online store might have the option of returning it either by visiting the physical storefront or by requesting a prepaid shipping label from the Web site.

#### **e-line (n.)**

You're said to be "above the e-line" if you operate on the Net. You're below it if you actually have physical stores, manufacturing facilities, distribution centers, etc. Since most enterprises are somewhere in between, we prefer the notion of an *e-zone*. Interestingly, travel through the zone is two-way – witness AOL's planned merger with Time Warner (a dot-com moving down through the zone to add physical operations and assets).

#### **incubator (n.)**

A startup nest – that is, a business or project that provides financing, technology, office space and marketing muscle to fledgling e-businesses, sometimes in exchange for equity in the new company. IBM's involvement in incubator programs, such as our joint venture with Silicon Valley Bank and Internet service provider Conxion, helps these NetGen companies get to market, and gives us an excellent early-detection system to spot technology trends and market directions.

#### **infomediary (n.)**

A service – usually a Web site – that brings together the latest information and prices from a variety of suppliers, and delivers them online to buyers. Quickly evolves into an "e-marketplace" (see "A Brief History of e"). For example, the infomediary SciQuest ([www.sciquest.com](http://www.sciquest.com)) created an e-marketplace where researchers in the life sciences industry comparison shop for lab products with just a mouse click before placing an order. (Not to be confused with the less-appealing "infodromedary," an e-commerce site that may go for days without being updated.)

#### **NetGen (adj.)**

Short for "Network Generation." Applies to companies born during the explosive growth of the Internet and the Web. Easily recognized – until lately (see "clicks-and-mortar") – by names emblazoned with the insignias of the networked world – the ubiquitous "dot" and the mysterious "com."





## a brief history of e [ *then* -> *now* ]

### profit (n., v.)

The market valuations of many dot-coms notwithstanding, still a valid measure of business success.

### stickiness (n.; from sticky, adj.)

In the Web world, sticky is good. A sticky site is one that attracts and keeps users. To make a site stickier, its creators may add personalization elements, online communities and discussion areas, user feedback, and extensive links.

### vortal (n.)

Vertical portal. It provides all the features of a "portal" (a Web site for a general audience, with its own content and links to other sites – like Yahoo!), but for a specific audience, such as expectant parents, fly fishers, or steelmakers and their customers. Software developers, for example, go to sites like IBM's developerWorks ([www.ibm.com/developer](http://www.ibm.com/developer)) to find resources, code and tools, and to swap ideas within a like-minded community.

### wallet (n.)

A small software program that resides on your computer or a server, allowing you to e-shop till you drop. The wallet usually consists of encryption software that can hold your already-submitted payment information (such as credit card or online account), a digital certificate to identify and protect you, and even the address where you'd like your purchase sent. Wallets speed the process and eliminate buyer frustration, thereby increasing sales.

### client/server -> Internet

In the mists of time (less than a decade ago), the information technology industry made a big promise. It was called client/server – and it described seamless connections and communication among all kinds of disparate computing platforms. It didn't happen. The promise of "any client to any server" proved to be far more costly and difficult to implement than anyone expected. Then, along came the Internet and its open communications protocols. Almost before we noticed, the long-awaited promise of any-to-any connectivity materialized – not just among computers, but also among the people and the enterprises that use them.

### big iron -> strong iron

How big are mainframes these days? Smaller than you might think, and far more powerful than just a few years ago. Recast in the Net world as enterprise servers, they are about the size of a refrigerator, but nearly 30 times more powerful – as measured in MIPS (millions of instructions per second) – than just five years ago. And enterprises turning into e-businesses are finding more value for these powerful servers than ever before, using them both to host existing systems and applications, and to integrate those with their new online offerings for customers, suppliers and employees.

### hard drives -> microdrives

IBM makes, and sells, a lot of hard disk drives, many to our competitors in the PC market. (We're flattered that they want to pay us for better hardware.) We've also been shipping our tiny-but-powerful 340-megabyte Microdrive to such customers as Kodak, Samsung, Hitachi and other leaders in the consumer electronics field. Just a little over an inch square, the Microdrive can hold 1,000 digital compressed photos, six hours of CD-quality music, or the equivalent of 300 novels.

### trading hours -> friction-free markets

The closing bell says it's time for people to go home. But their money wants to hang out and play some more. Pure demand, unhindered by distance or time differences, can set prices on the Web while we sleep, and sellers don't need to wait for a phone call or a fax to hear from the market. Online brokerages and computerized exchanges already do big business in after-hours trading, and other marketplaces – for parts, supplies, services, you name it – are starting to follow suit.

### e-businesses -> e-marketplaces

Today, the company. Tomorrow, the industry. Once a business e-enables its operations, it can find itself in new terrain, where all its competitors and customers are also operating as e-businesses. At that point, "buy, sell, trade online" doesn't apply just to stocks and bonds, but to every transaction in which an enterprise engages. Airlines and hotels are already auctioning off unsold seats and rooms via Web sites; universities are accepting online bids for tuition to fulfill their enrollment targets. And consolidators and infomediaries are bringing all parties together, with up-to-the-minute bids, prices and availability information. Markets become more liquid and efficient, and obstacles like time and geography become so... 20th century.



# 1999: *the highlights*

## our portfolio

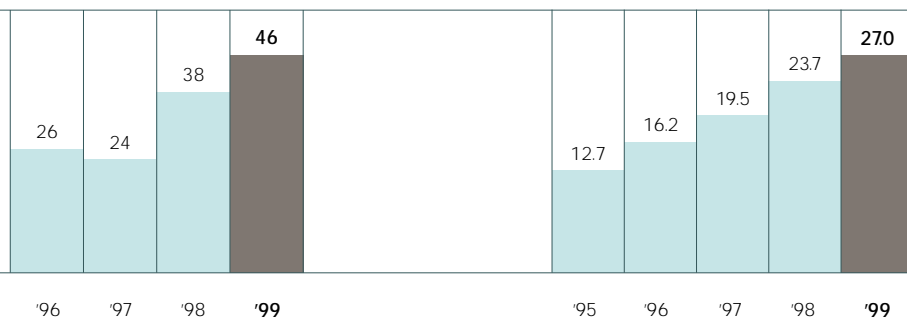
### services

In 1999, IBM extended its lead as the world's largest provider of I/T services. Revenue grew 11 percent; customers committed to more than \$38 billion in new contracts, and the backlog of engagements (work we'll do and be paid for this year and into the future) grew 18 percent to more than \$60 billion.

And in the most explosive segment of the marketplace – **e-business services – revenue increased 60 percent, to more than \$3 billion.** Factor in all the other services revenue that can be attributed to e-business – from consulting, business intelligence and strategic outsourcing – and our e-business services revenue easily doubles.

number of signed strategic outsourcing contracts valued at more than \$100 million

services revenue – [excluding maintenance, \$ in billions



### enterprise and personal systems

Customers ordered record server processing capacity in 1999. We also took some major steps toward building for the future, introducing new high-performance servers and acquiring two companies with strategic technologies. Sequent Computer Systems strengthens the high end of our Web server line, while Whistle Communications' elegant "thin server" technology is a key feature of our e-business offering for smaller enterprises. Among the other high points:

- > Added **hundreds of ISV applications** to our platforms.
- > Made the industry's most sweeping commitment to **drive the Linux operating system** across all our server lines.
- > **Increased share of the 500 most powerful supercomputers** in the world by 36 percent, establishing IBM as the leader in high-performance computing in 1999.
- > Replaced Compaq in 1999 as the #2 mobile PC vendor in the world. **ThinkPad unit volumes grew 50 percent faster** than the industry.

- > Most important, we came on strong in **three strategic segments:**

#### **UNIX : RS/6000 S80**

*Debuted in September as the world's fastest e-business UNIX server. Customers purchased as many S80s in its first three months as Sun shipped of its competitive product in its first 18 months.*

#### **High-end storage : Shark**

*Shipped more than 1,000 units within the first 100 days of its introduction, and penetrated half of the Fortune Global 100.*

#### **Intel-based servers : Netfinity**

*Increased shipments by more than 30 percent and gained market share.*

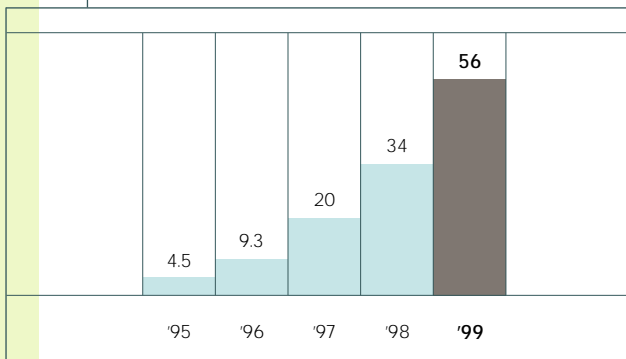
## software

IBM middleware, a key component in building current and next-generation e-business solutions, grew in double digits and faster than the industry. Our strategic e-business middleware products on UNIX, Windows NT and other fast-growing platforms grew significantly:

|  | revenue growth rate ('98/'99) | industry growth rate |
|--|-------------------------------|----------------------|
| Tivoli Systems Management:                 | <b>34%</b>                    | 20%                  |
| Business Integration Software (MQ Series): | <b>96%</b>                    | 53%                  |
| Database Products:                         | <b>56%</b>                    | 16%                  |
| Web Application Servers:                   | <b>59%</b>                    | 25%                  |

- > **40 percent of the top 100 retailers** in the world use IBM's WebSphere Commerce Suite to drive their e-tail sites.
- > IBM has an unmatched collection of professionals devoted to advancing open Internet standards and applications – more than **500 XML, 600 Linux, and 4,000 Java professionals** worldwide.

Lotus Notes seats – [ in millions

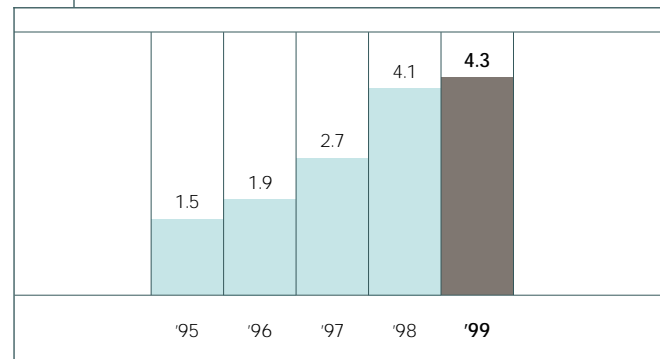


## oem

Overall, OEM hardware revenues – from sales of components and finished products to other high-tech companies – increased 15 percent to \$7.8 billion last year. That does not include the vast majority of revenues from five major OEM contracts signed in 1999, which are forecast to deliver \$30 billion over five to seven years.

- > Shipped more than **2 million copper chips** since their introduction in 1998.
- > Led the industry with more than **40 percent of the mobile hard disk drive (HDD) market**. Introduced the industry's highest-capacity mobile HDD at 25 gigabytes.

OEM storage revenue – [ \$ in billions



number of custom microchip designs for customers

