

We're watching the end of the PC era. That's important. **But the PC isn't going to dry up and blow away.** Its role is being redefined to serve as a key point of access to the Net – but not the only point of access.

3. Get BIG (and SMALL)

A panoply of new network access appliances is coming to augment the world of PCs – hand-held computers, Web-enabled TVs, screenphones. By some projections, these new devices will account for 40 percent of all devices connected to the Net by 2002. This will bring computing and the Net to millions of new users quickly. IBM will build some of these devices, but our main play will be the technologies – like chips and disk drives – that power them.

We think things get even more interesting at the other end of the network connection. As personal computing is redefined, customers are rediscovering the importance

of enterprise computing to handle their escalating e-business workload – everything from industrial-strength software like transaction systems and databases to highly reliable, secure, scalable servers.

As a result of these shifts, value is being redefined in information technology. It's changing where customers invest, and it's changing what leading technology companies work on. At IBM, this view of the future of computing is shaping all our product development plans, from supercomputers to ThinkPads, as well as our work in creating the core underlying technologies that power them.



Mark Anzani
S/390 hardware
developer

personal **computing** is being redefined...



(From left to right) **Aptiva:** award-winning PC family delivers superior technology – both for the under-\$1,000 market and for those seeking the power and performance of a 450-megahertz processor and DVD multimedia. **ThinkPad iSeries:** introduced in October, it quickly became our fastest-selling notebook ever. **CrossPad:** jointly developed by IBM and Cross Pen Computing Group, it creates a digital copy of handwritten notes. **Screenphone:** we’re working with companies like Deutsche Telekom to build new computing and communications devices and

new ways to conduct networked transactions. **WorkPad:** it adds IBM technology to the base 3Com product, enhancing PC-syncing and network functions. **Smart Card:** applications range from secure user authentication to “e-cash” – and we’re working on Java-based solutions. **Wearable PC:** in September, IBM researchers in Japan prototyped a computer with the power of a ThinkPad 560 yet small enough to carry in your pocket; the main unit attaches to a headset with a one-inch display and a hand-held controller with a “TrackPoint” and microphone.

MAKE NO MISTAKE. There will still be PCs – millions and millions of them. But the PC is going to be joined, augmented (and ultimately outnumbered) by a vast array of information appliances, a few of them shown here. This will bring computing and access to the Net to hundreds of millions of

people very quickly. IBM will build some of these devices, but our presence will be most evident under the covers – in the leading-edge chips and disk drives (like those at the bottom of this page) that will power all these new personal computing devices.



IBM UNDER THE COVERS



Microdrive (shown actual size)

The world's smallest and lightest hard disk drive debuted in September. The Microdrive holds 200 times more data or images than a floppy disk, and stakes out a leadership position in the market for compact storage devices for digital cameras, cellular phones and hand-held computers.



Silicon-on-insulator

In August, IBM announced a breakthrough in semiconductor technology that "turbo-charges" transistors so that they can run faster or use less power. This advance paves the way for development of more efficient hand-held computing devices and more powerful network-based computers.



Silicon germanium

In October, we announced production of chips using our patented silicon germanium manufacturing process. Virtually every telecommunications company is racing to incorporate silicon germanium to reduce production costs and sharpen the performance of high-speed data links, cell phones, pagers, and other wired and wireless products.

RS/6000 This line of UNIX-based systems reaches from workstations to the most powerful computers on earth – the SP-class supercomputers. In 1998, the SP line recorded major wins at the U.S. National Weather Service and the San Diego Supercomputing Center.

because **enterprise** computing is being rediscovered

WHEN YOU TAKE A BUSINESS TO THE NET, you stake a lot on the strength of your information technology infrastructure. Things like your reputation, brand and customer relationships. Your online systems have to be able to handle – not just the population of employees inside your business – but the population, period. And never go down.

So critical e-business applications have to run on enterprise servers and equally burly software called “middleware.” In combination, they make sure your application (and your reputation) can handle unprecedented stress, unpredictable spikes in usage, and that you’re ready when the world comes calling.

HARD FACTS ABOUT ENTERPRISE SOFTWARE

IBM ranks among the leaders in each of the key middleware segments, and our products run on all the industry’s leading operating systems – including HP-UX, Solaris, Windows NT, AIX, OS/2, OS/400 and OS/390.

MESSAGING AND COLLABORATION

Lotus Notes and Domino are leaders and enjoy double-digit growth rates. New installations totaled more than 14 million in 1998.

APPLICATION DEVELOPMENT

To become an e-business, a customer must extend its investment in existing technology to the Internet. In 1998, we maintained our number-one position in application development software and tools, such as VisualAge for Java.

DATA MANAGEMENT

More than 70 percent of the world’s data resides on IBM systems. IBM’s DB2 Universal Database is a top choice among customers, and grew faster than the industry in 1998.

S/390 The workhorse and performance leader among enterprise servers. Last year, we cracked the performance milestone of 1,000 MIPS (millions of instructions per second) and notched more than 350 competitive wins.

AS/400 It's quick to deploy and easy to run (requiring little or no support staff). That's one reason 20 percent of new orders in the fourth quarter of 1998 were from new customers. We shipped AS/400s in record numbers last year, and delivered a 94 percent performance improvement.

NETFINITY In 1998 – its first full year in the marketplace – Netfinity set industry performance standards and began delivering enterprise-class technology to the industry-standard marketplace.



TRANSACTION PROCESSING

Transaction systems enable disparate applications to connect and interact. IBM's MQ Series is the *de facto* message queueing standard.



SYSTEMS MANAGEMENT

IBM's Tivoli subsidiary is a leader in systems management software and technology – and continues to grow faster than the industry.



SECURE NETWORKING

With our SecureWay family of products, IBM is the market leader in secure networking software, enabling users to connect to the network, authenticate their identity, and do business with security and reliability.