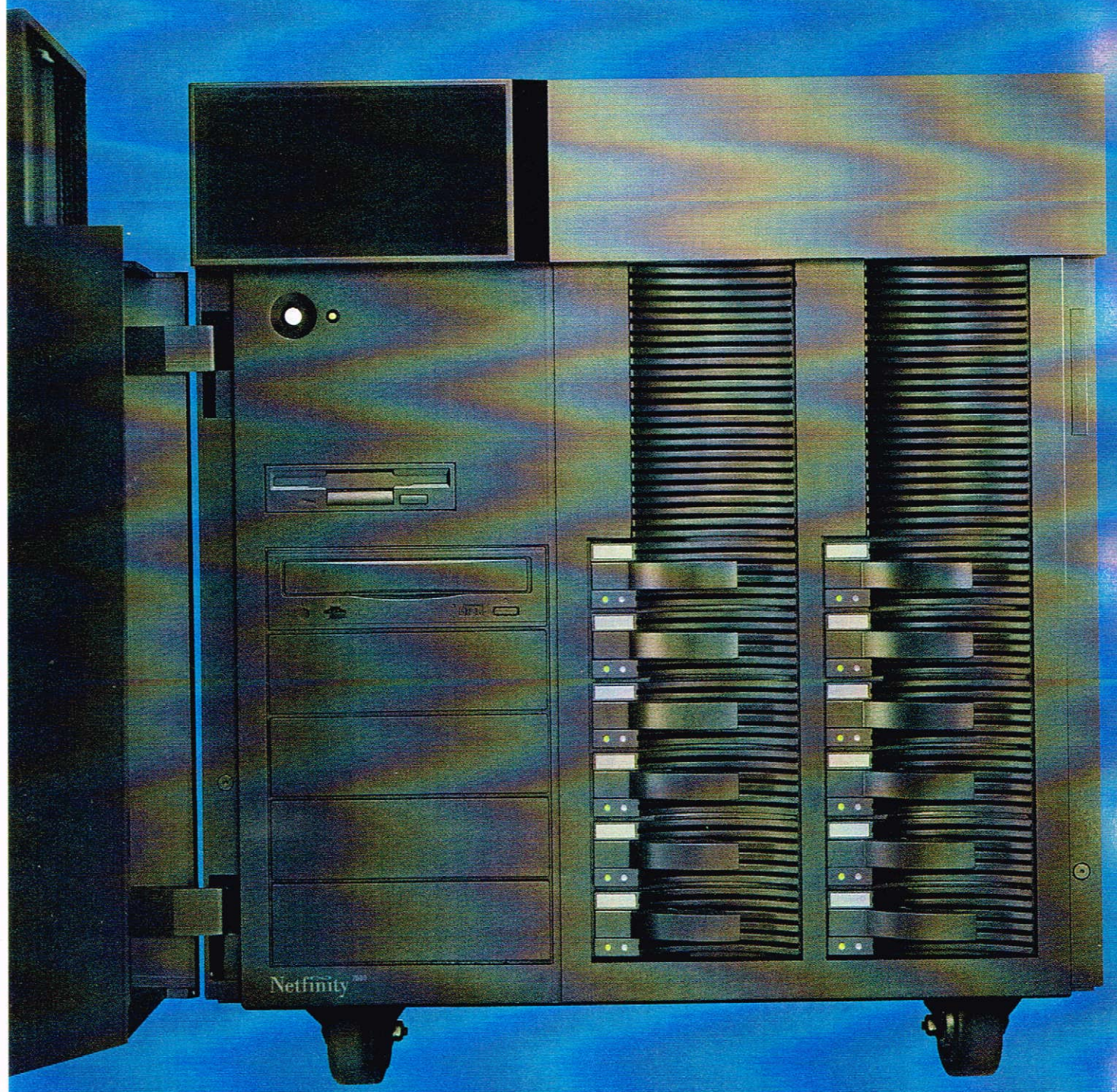
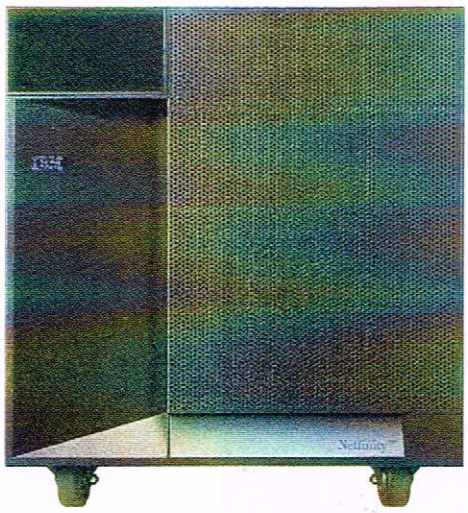
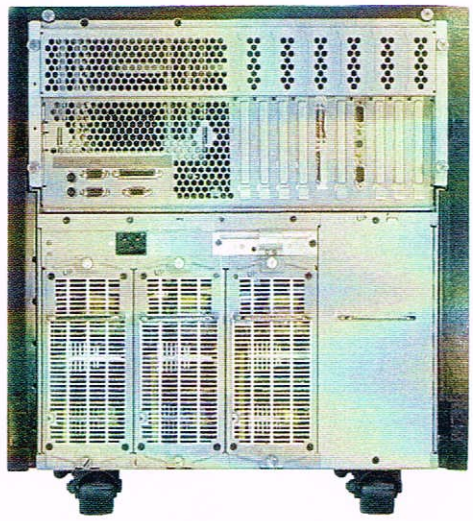
The top-of-the-line Netfinity 7000 server
welcomes you to the new IBM.







out of the blue

IBM is sailing into the next digital era with a sleek new product line, new image and a fresh strategy for future developments. But will good design prevail? By Peter Hall

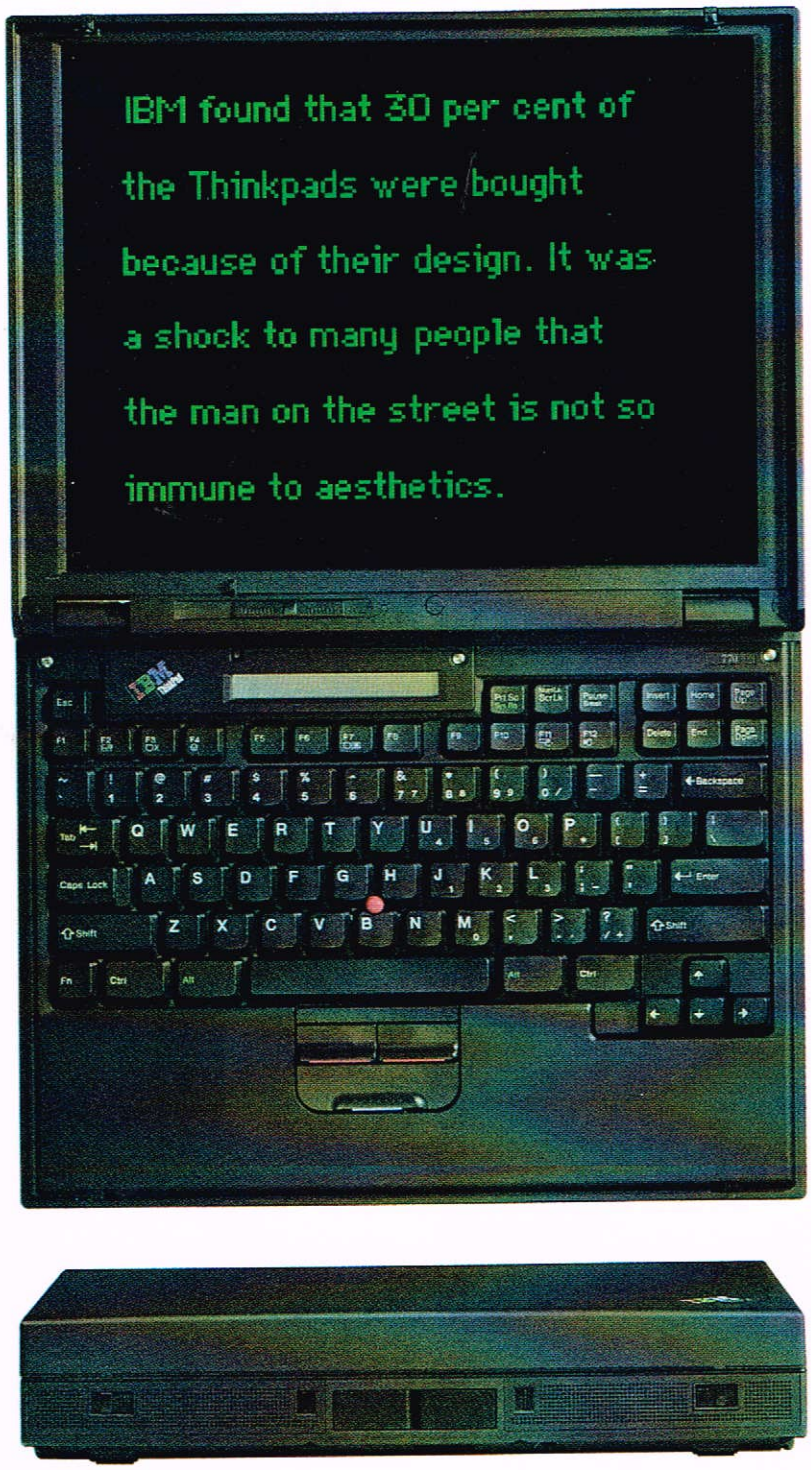
WHEN IBM APPOINTED A NEW CHAIRMAN in 1993, Big Blue was deep in the red. So far that year it had laid off over 100,000 employees and posted losses of over $7 million. The problem, as the new CEO Louis Gerstner saw it, was his predecessor's diversification strategy, under which IBM's many divisions operated as autonomous units, sometimes competing against each other.

In product design, the effect of this strategy was that each division—from servers to desktop and mobile computers—had its own machines designed in a "transactional" way, each model differentiated from the machines in other divisions by the addition of a bezel or two. "It was a potpourri of products," says David Hill, personal systems design manager. "Each brand wanted to be different, but since they all used the same keyboard and monitor they all ended up looking very neutral."

Up in the boardroom, Gerstner rallied for a reorganization, insisting that the corporation's monolithic size was a strength rather than a weakness. With the strength of the IBM name, he gambled, the corporation could offer its traditionally big customers a one-stop shop for products and service, just as in the past it had specialized in providing mainframes, terminals and maintenance.

Down at the design center in Raleigh, North Carolina, Gerstner's scheme presented an opportunity to reinvent the entire product line. After a series of brainstorming meetings, a frighteningly simple idea emerged: Instead of trying to make all its products look different from each other, the design teams, from Raleigh to Scotland to Japan, would endeavor to differentiate IBM from its competition. To Gerstner, it made sense; a coherent and progressive product range would be associated in the public eye with a unified and innovative company. "Our policy was strongly endorsed by the chairman," says Lee Green, who arrived as director of corporate identity and design at the same time as Gerstner. "It was part of the overall emphasis on repositioning the IBM brand."

The fruits of this new policy have begun to appear in magazines and on the shelves of computer stores, where, to the appreciative eye, IBM's new computers stand like a squadron of Stealth military planes on a runway of jumbo jets. In contrast to the booming speakers, blinking lights and bulbous, predominantly gray boxes of its competitors, the IBM desktop Aptiva and Intellistation NT machines are characterized by severe, perpendicular lines and black, impermeable facades. A closer look at the product line reveals that many of these facades transform themselves during operation: A low, sleek unit that sits under the Aptiva S series monitor, for example, unlatches and pops up, offering its CD and floppy disk drive slots to the user at a 20-degree angle; and the smoked translucent polymer facade of the new server, the Netfinity 7000, extends outward to reveal an array of modular drives.



Richard Sapper's archetype: the Thinkpad in its most recent slim incarnation, the 770.

To those familiar with the work of Richard Sapper, the legendary German industrial designer who created the iconic articulating Tizio lamp in 1972, this coupling of severe, Brutalist forms and transformational mechanisms is familiar design territory. Now 65, silver-haired and betraying no signs of fatigue, Sapper has been IBM's resident design guru for 17 years, helping develop such products as the 1986 PC convertible, a portable laptop that unfolded to reveal a screen and dual floppy drives (no hard drive), and the archetype for all current IBM design investigations, the Thinkpad notebook computer. Based on the idea of a black cigar box, the sleek, mysterious slab of the Thinkpad unlocks to reveal its screen and keyboard—which, in one sub-notebook incarnation known as the Butterfly, actually expanded to full size on opening. So far, with the possible exception of the Apple PowerBook, there has not been a notebook on the market with a comparably unique appearance.

Sapper's role at IBM is to provide creative direction (in person and via telephone from his Milan office), take on specific design assignments and ask difficult questions. Working with the in-house team on the overhaul of the product line, Sapper railed against what he calls "pudding design"—a current penchant for lumpy shapes—and exhorted the benefits of forms so simple they could be described over the phone. From an ergonomic perspective, he urged the designers of the Aptiva computer to "get it off the desktop," so that only the essential components occupy the user's precious desk space. Hence the pop-up CD unit that sits beneath the Aptiva monitor, out of the way but available when needed, relieving home computer users of a tabletop monster or an awkward scramble under their desks. Across the line, the angular forms that materialized bear a direct relation to Sapper's idiosyncratic prototyping methods and remote presence. "He uses methods that to many practitioners today might appear odd," says Hill. "I watched him change the design of a model using scissors, black paper and cut tape."

According to Sapper, IBM's decision to refocus on design was in part triggered by the earlier success of the Thinkpad. "At one point they used to say that the value of product design to sales value for a typewriter is 2 percent—we wondered how they can figure out that it's 2 percent and not 2.5," he says with a characteristic tinge of irony. "After the Thinkpad's success, IBM did some market research and found that 30 percent of the Thinkpads were bought because of their design. It was a shock to many people, because it showed that, after all, the man on the street is not so immune to aesthetics."

From IBM's perspective, the corporation has long recognized the benefit of casting an agent provocateur to inspire the in-house team and contribute designs, with Eliot Noyes, Paul Rand and Charles and Ray Eames among the previous consultants (not to mention the array of world-renowned architects hired under chairman Thomas Watson, including Ludwig Mies van der Rohe and Eero Saarinen). Deliberately, perhaps, the design oracle is not stationed in-house, but kept at a distance to provide what Green calls "honest, frank direction" and Hill calls "highly trusted authority." Peers as well as accomplices have come to recognize the value of such an arrangement. "Under Sapper's direction, the products certainly articulate a clear sense of the company—who they are and where they are going," says Jonathan Ive, head of the industrial design group at Apple Computer. "This is an industry that moves so fast that clarity can be enormously comforting."

Comforting may not be quite the phrase others would use. It is not unheard of for the design team to consult Sapper on a particular feature of a developing product and for the outspoken European to respond that the whole product concept is "stupid." At other times he exercises his fabled tenacity. Central to the Thinkpad's list of innovations, for instance, is the trackpoint, a surprisingly accurate little red rubber pointer with a grainy texture, sometimes affectionately referred to as a cat's tongue. According to the trackpoint's inventor, Ted Selker, a research fellow at IBM's Almaden, California, center, Sapper was shown an early prototype in which the trackpoint was black. "We were nervous about it and wanted to subdue it," explains Selker. Sapper, on the contrary, felt it was so critical to the design that it should be bright red. IBM's experts on European standards, however, advised him that red was a color reserved for emergency buttons. So he made it magenta in the first prototype and altered it slightly with each successive generation until no one noticed it was bright red again.

Such battles are to be expected. Given its dependence on technological progress, the market for computers is strikingly conservative in its tastes. The computer designer's job is sometimes akin to propelling an innovation through a corporate wind tunnel of resisting forces. "Sometimes it is difficult in a big corporation," says Sapper, "because there are those in marketing departments who think the easiest thing is to do what their competitors do." David Hill, whose team of designers labored for three years on the new IBM look currently being sold to retailers, agrees: "Marketing says our products are too hard-edged, classical and not friendly enough." Once a market becomes comfortable with a particular look, it seems, it fixates on it and becomes fearful of new things.

The computer industry is also notoriously cutthroat, and, lately, cut-price. Although under Gerstner IBM has returned to record profits, the new product line faces fierce challenges. Hardware sales for IBM declined by 1 percent in the last quarter of 1997, owing partly to a decline in its personal computer sales amid the latest price-cut-flurry. According to Dataquest, the industry analyst, IBM ranked behind Compaq in worldwide PC sales during 1997, and ranks only fourth in the U.S. With Compaq's recent acquisition of Digital, IBM's

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position as the biggest computer-maker in the world, in terms of overall revenue, is also under threat.

PC sales make up less than half of IBM's revenue, but are disproportionately important, since the machine is the public face of the corporation. This raises a dilemma in marketing departments. A computer may be an expression of a corporation's values—in IBM's case, solid, sleek and expensive—but it still has to sell. Shortly after the arrival of its high-end Aptiva S line, IBM watched PC prices plummet in a sudden race for a target bottom-line $999 machine. The top-of-the-line Aptiva model, with its pop-up CD unit (which won a *Business Week*/IDSA IDEA gold award last year) is likely to be the first casualty, according to Hill and Sapper. At press time, discussion was afoot to eliminate it from the line.

Ultimately, the computer designer's greatest enemy is not the marketing department, however, but the computer itself. In its discombobulated development, it has accumulated a trail of anachronistic features. The first offender is the QWERTY keyboard—too large, littered with keys that are meaningless to most, counter-intuitive and difficult to learn. As has been frequently pointed out, the arrangement of letters was invented to slow down typists in the days when adjacent mechanical levers would jam when punched in quick succession.

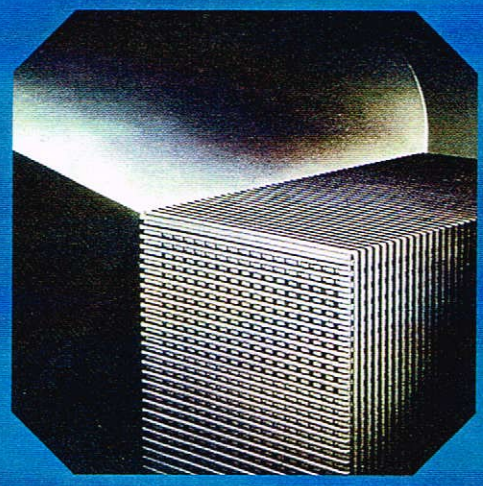
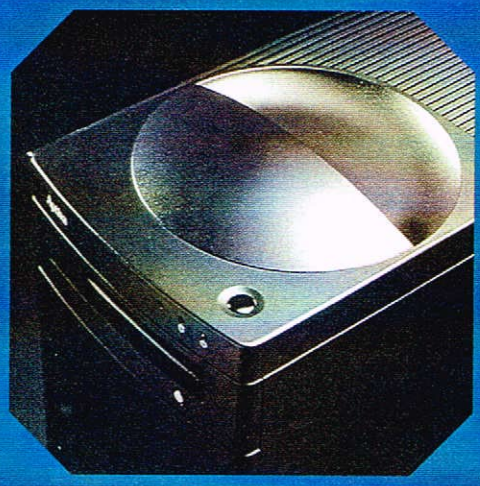
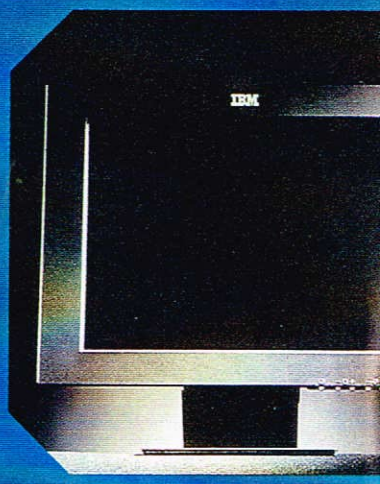
For Sapper, however, the area of computer design that needs most work is what's on the screen. "The computer industry is in its absolute beginnings," he asserts, "because nobody has understood how to organize the thing that lights up when you open the computer. At the moment it looks like pieces of paper stacked on your desk." On top of this, the "horrendous Windows thing," as he calls Bill Gates's golden egg, spoils the clean lines and facade of the computer. It also creates complications: in the IBM team's efforts to make the Aptiva line more "friendly," it has introduced a mini operating system that works on top of Windows, as well as a group of shortcut buttons on the keyboard for starting up, for example, a Web browser application without all that pointing and clicking. While such features might appear to be a blessing, they also add to the number of mysterious buttons already cluttering the keyboard. A graphical user interface designed from scratch would do a better job.

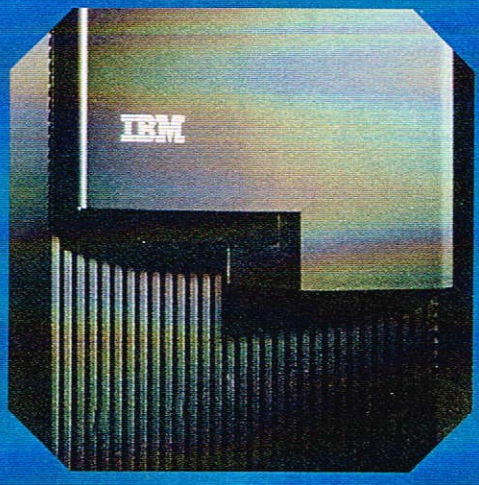
IBM actually has people working on the screen interface. Its joint programs with MIT have yielded a number of experimental interfaces loosely reminiscent of gazing through a telescope at the clear night sky. The in-house team is also at work on new hardware interface paradigms. "Our objective is to make the systems we interact with more intuitive," says Green. "Under the umbrella of 'natural computing,' we're looking at voice and handwriting recognition and packaging them in a way that gives the new technologies a form. That's what gives them life."

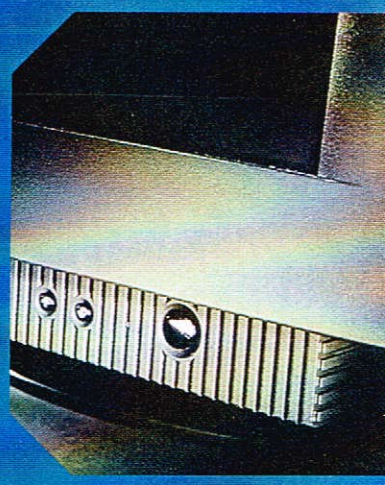
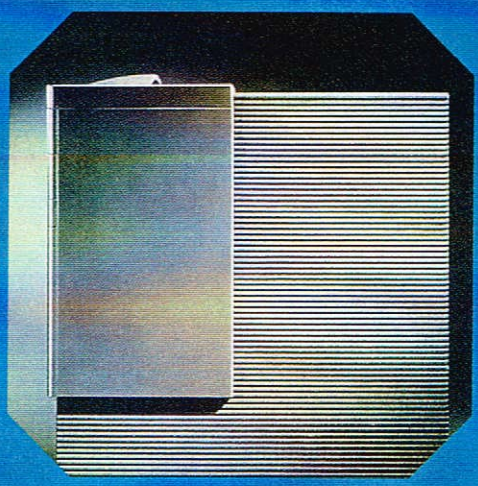
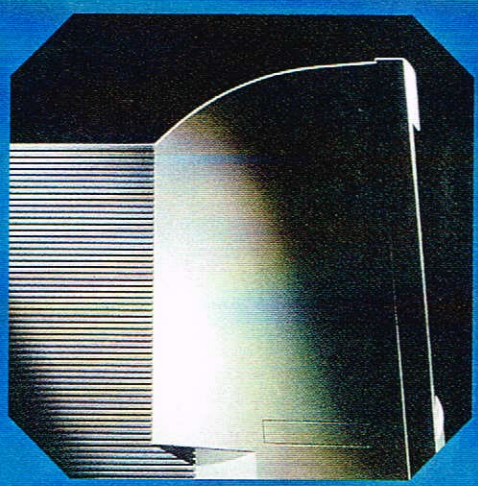
The next stage in the development of the computer is easy to envision. The machine is already shrinking. IBM has manufactured its first Java-based network-station in limited quantities, a flat-panel monitor with a small processor attached to the back to network with a server. At MIT's Wearable Computing conference last year, Selker hinted at "wallet PCs" and demonstrated a computer that clipped to the waist and could be operated with one hand using a half-QWERTY keyboard. Other speakers waxed lyrically about data transfer through the human body via a handshake.

It is not insignificant that Big Blue has recently rebranded itself under its "e-business" logo in an effort to position itself not as a provider of simply hardware, but software and—the most significant area of growth—service. Hardware is, arguably, becoming less important to IBM as information processing and system maintenance expertise become more vital. As microchips and sensors find their way into the everyday objects around us, and the means of operating them become increasingly intangible, the potential arises for the desktop computer to disappear altogether. In an odd way, this might please the exacting formalist in Richard Sapper. At the very least, it would solve the aesthetic problem of the cables that snake out the backside of the computer into a messy, unsightly tangle under the desk. "I have been fighting them for 20 years," he laments, "but it's a battle I may never win." ✦

Peter Hall is senior writer at I.D. Magazine.




The clean lines and crisp forms of the Aptiva and Intellistation, including the award-winning but high-priced "media console" (center.)