

NOTES:

And Now, Big Blue Is at Your Service

Continued From Page 1
 exceeding 25 percent annually. That is now one-fourth of the company's sales, more than from mainframe computers or any other product line. And services now account for half of I.B.M.'s 240,000 employees.

"It's not just the fastest-growing piece of I.B.M.; services have become the soul of I.B.M.," said Laura Conigliaro, an analyst for Goldman, Sachs & Company. "I.B.M. got to where it is today by offering its customers excellent service, solutions and support, but had largely given them away free." Now it charges.

Services may be the soul of I.B.M., but they aren't always a godsend. Profits represent a meager 10 percent of sales, far less than for its other businesses.

In addition, some analysts say I.B.M. lags behind its competitors in some hot areas, notably writing application programs and helping companies farm out business functions like purchasing and payroll.

"I.B.M. has a history of being very good in services that surround its product line," like mainframes, said John M. Whiteside, a former top I.B.M. services executive who is now the chief executive of Servicenet, which runs computer networks for companies. "The question is, can they produce a set of services for the next decade that embraces the hardware and software of all vendors?" Meantime, with E.D.S. recovering from a two-year slump and new entrants crowding the computer-services field, competition is heating up even as Asia's economic turmoil shrinks its prospects as a market.

AND now, I.B.M. faces a new challenge: the departure of Dennie M. Welsh.

While Mr. Gerstner can take credit for nurturing I.B.M.'s services business, the initiative is largely the creation of Mr. Welsh, the Tennessee-born engineer who ran I.B.M.'s contracts for NASA during the Apollo and space shuttle programs. Mr. Welsh persuaded I.B.M.'s management to tap into its experience in running big computer systems for the Government and go head to head with E.D.S. in the market for operating corporate computer systems. He then nursed the services business through several tough early years with a mix of personal enthusiasm and his ability to navigate the complex corporate structure.

"Dennie Welsh was a lone wolf crying out and pursuing the business, and no one was paying too much attention to him," said Stephen T. McClellan, a computer-services analyst at Merrill Lynch. "He has surprised a lot of skeptics in moving I.B.M. beyond the hardware and software business."

Two weeks ago, Mr. Welsh said he would take a leave of absence to fight an immune disorder so rare that the company says it has no name. He was replaced by Samuel J. Palmisano, his deputy in the early years of the services business who went on to run I.B.M.'s personal computer division. Mr. Palmisano, 46, is among the most prominent of a generation of younger I.B.M. executives seen as potential successors to Mr. Gerstner, who just signed a second five-year contract.

Still, Mr. Palmisano will have a difficult time sustaining the momentum. After all, I.B.M., which eliminated nearly 200,000 jobs in the early 1990's, is hiring 18,000 new people into its services division each year. "Sam's challenge is simply



After running I.B.M.'s personal computer division, Samuel J. Palmisano, 46, has taken over the company's fast-growing Global Services unit.

growth," Mr. Welsh said recently of his successor. "We have been growing this thing at 20 percent or more for some time. Statistics don't allow that to continue forever."

In many ways, the dynamics of the services business are the delightful opposite of the treadmill that forces hardware manufacturers to run faster and faster to sell ever more powerful machines at ever lower prices. Once companies buy these improved machines, they have to program them, maintain them, update them and train employees to use them. For I.B.M., the computers are the razors it sells to reel in captive customers, and the services are the blades that the users must buy again and again. It is the same logic that prompted General Electric to build a business servicing the jet engines it manufactures.

The scope of I.B.M.'s services offerings can be seen by traveling to Boulder, Colo., and prowling the enclosed walkways that connect the low buildings at the company's 493-acre site nestled in snow-covered mountains, one of nine such operations around the world.

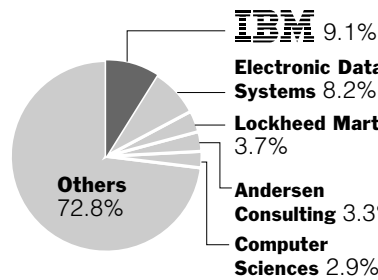
The command center is one of those showy rooms, modeled after NASA's Mission Control, in which dozens of hushed technicians scurry about under a glowing wall of giant television screens, pausing occasionally to tap at computer terminals. They are busy performing I.B.M.'s classic, and biggest, technology service, in which it undertakes big, computerized functions like accounting and inventory-management for clients. This outsourcing business took off in the recession of the early 1990's, when companies were searching for ways to cut costs. Some even got an initial financial kick, because I.B.M. and E.D.S. bought their computers and hired their data processors in return for 10-year contracts.

While downsizing and layoffs no longer land an executive on the cover of a business magazine, "strategic partnerships" and sticking to "core competencies" often do. So the Boulder operation does more than save clients money. Monsanto wasn't looking simply for mainframe outsourcing; it wanted a partnership with a single company for research, programming and computer operations. "We are looking for fewer, more substantial relationships," said

Hand Holders

Market share of leading worldwide computer services providers.

1996 TOTAL \$159 billion



Source: Dataquest
 The New York Times

Patrick J. Fortune, the company's chief information officer.

Other parts of the Boulder center knit such relationships together. Through a tunnel from the command center is the computer room, where the I.B.M. mainframes that handle much of the large-scale data crunching have the appearance of the black obelisk in the movie "2001: A Space Odyssey."

Snaking into the computer room are enough telephone lines to keep a town chatting. I.B.M. has built one of the largest data networks in the world, with links to more than 100 countries. Not only does this network connect I.B.M.'s far-flung data centers to its corporate customers, it has also turned into a major product in its own right. Companies use the network to connect electronically to their suppliers, for example. And, increasingly, I.B.M. helps companies like Merrill Lynch hook their customers to the Internet.

Nearby is a vast facility that offers an eerie "Twilight Zone" sense that something is amiss. There are rooms and rooms filled with desks, telephones and computers, but not a person is to be seen. This is a new, \$34 million disaster-recovery center, which will spring to life the next time a hurricane, earthquake or terrorist act disrupts a client's operations.

I.B.M. keeps copies of clients' computer data, so its machines can stand in for theirs. And I.B.M. employees will answer customers' phones until they send their own staffs to Boulder. Another building houses hundreds

of work stations, but unlike the disaster station, it is buzzing with earnest young techies. This is the fastest-growing part of I.B.M.'s service business: the workers operate help lines for stumped computer users at corporations across the country.

Fifteen years after I.B.M. introduced corporate America to PC's, it has become clear that the cost of buying them is only the tip of the financial iceberg of maintaining them and training employees to use them. And beyond the cost is the confusion. These days, many big companies don't even know how many PC's they have or what programs are on them. And that makes it difficult to upgrade the machines' software or track down bugs.

SO, increasingly, corporations are paying companies like I.B.M. as much as \$250 a month per user to take these problems off their hands. "We can take control of your PC and tell you that your printer is out of paper," said David Graves, a systems developer. "Then we can tell you where in the closet the spare paper is stored."

Elsewhere at Boulder, and at many other sites around the world, are armies of consultants, programmers, repair technicians and specialists in such fields as updating computers to handle dates in the year 2000 and beyond.

The glitz and scope of the Boulder facility are a far cry from the seat-of-the-pants operation Mr. Welsh and a few other executives cobbled together in 1990. "We got started when I.B.M. was at its worst," Mr. Palmisano recalled, referring to the company's slide into red ink in 1991. "And we needed capital to start up and to hire a lot of people, but we had to earn our way every day."

Then, when the operation opened, nobody was interested. "I was 4 percent of my sales plan in 1993," said Daniel R. Colby, one of the first sales executives Mr. Welsh recruited. "It was real touch-and-go whether we were in the right business."

The company made some whopping mistakes. When a key phone line supporting Amtrak's reservation system was cut, it turned out that I.B.M. had never installed a planned backup. As a result, the railroad's phones were dead for half a day. But in classic I.B.M. fashion, it shipped in

so many shock troops so quickly to fix the problem that it was able to repair its relationship with Amtrak.

Other customers were not so understanding. Some, like First Tennessee Bank, abandoned I.B.M. altogether. And several customers that stayed were money-losers, because I.B.M. had won its early contracts with below-market bids.

Lessons were learned, however. As I.B.M. figured out what its real costs were, and as it grew bigger and more efficient, it stopped the kamikaze bidding. As for the unhappy customers, it placated them by writing into their contracts the exact service level they could expect. It promised to fix problems within an hour or a day, depending on how much they were willing to pay. If that is spelled out, I.B.M. says, there's less room for complaining later.

I.B.M. also had to explain to customers that the squads of systems engineers who for years had helped set up new mainframes and keep them humming would now be sending bills for their services. But because this unbundling of services helped I.B.M. lower its computer prices, the complaints were muted.

The company has had to navigate through the potential conflict between providing the best services and promoting its own hardware and software. At a client's request, I.B.M. will buy and operate computers made by Hewlett-Packard or Sun Microsystems and use software from Microsoft or Oracle.

Competitors are quick to note that I.B.M. technicians' advice might not be completely objective, since they are obviously tempted to denigrate rivals' products and pitch their own. And Mr. Welsh made no bones about the fact that whenever he could, he pushed computers made by I.B.M. and software from its Lotus subsidiary. Indeed, I.B.M.'s services unit has turned into one of the company's biggest customers for hardware.

The business began to hum in 1995, when I.B.M. posted \$12.7 billion in services revenue, edging past E.D.S. to become the world's largest computer services company two years ahead of Mr. Welsh's master plan.

"They have done a great job in building mass in the service business and a very good job in persuading the market that I.B.M. is a credible player," said Gary J. Fernandes, vice chairman of E.D.S. "We were lured into a false sense of security by the long record of success we had."

Now, Mr. Gerstner is pushing I.B.M.'s services business with a huge marketing campaign built around the Internet. Once companies dip their toes into the on-line waters — what I.B.M. calls "e-business" — they will realize they will also need to improve the rest of their systems to keep up, the theory goes. Linking big, complicated systems to one another plays right into I.B.M.'s strengths, the company figures.

"In my old life at the I.B.M. P.C. company," Mr. Palmisano said, "we wanted to put customer support and ordering on line, but we had to get daily information on our parts available from the warehouses of our suppliers. To do that you have to upgrade your entire system."

When other companies go through the same exercise, he said, "a lot of people are just going to say: 'You run all this for me. I just want to take the orders when they come in and be done with it.'"

SMALL businesses are another vast untapped market that Mr. Gerstner has declared a priority. There are millions of them, representing nearly half of the technology spending in the country. And many are hopelessly perplexed by their computers. I.B.M. is using the expertise it gained in running its corporate personal-computer help desks to offer scaled-down versions of the same service.

For example, it has just introduced a series of prepaid service cards, which look like telephone cards and are sold in shrink-wrapped packages by computer dealers. One, which costs \$200, entitles the holder to call I.B.M. five times for help on any of dozens of software programs.

The company is selling another card — this one for \$25 a computer, with a minimum of five machines — that is good for one disaster-recovery mission by I.B.M., complete with air-shipped delivery of a new computer and use of a nearby I.B.M. office, if needed.

Similarly, I.B.M. is about to test a mass-marketed training and consulting package aimed at helping small businesses to use the Internet. For fees of \$1,000 to \$5,000, customers will get the right to a certain number of seminars delivered over the Internet, written material and the ability to get answers to some questions by electronic mail.

Actually, I.B.M.'s small-business product line starts at prices as low as \$25 a month for a service that lets companies put their own home page on the World Wide Web.

Why would Big Blue bother with anything that small? For the same reason it was interested in joining Monsanto in genetics research: Once a customer whets its appetite at \$25 a month, it is often just a matter of time before it wants a fancier Internet site that can take credit cards. Funny, I.B.M. has just the thing. Just buy a \$15,000 I.B.M. server with the \$5,000 I.B.M. Net.Commerce software. Need to design your site and get all of this hooked together? Perhaps a \$50,000 I.B.M. Smooth Start service package will do.

Well, at least that's the way the new, improved I.B.M. is supposed to work. □

The Original Mr. Fix-It Gives Way to a Super-Salesman



Dennie M. Welsh, who founded I.B.M.'s services unit and engineered its fast growth, is taking time off for treatment of an immune disorder.

By SAUL HANSELL

You'd think it would be a day to stay near your boss. At a meeting of I.B.M.'s elite executive committee two weeks ago, Louis V. Gerstner, the company's chief executive, named Samuel J. Palmisano to run its fast-growing services division. But midway through the meeting, Mr. Palmisano excused himself and hopped a plane to Detroit to call on Kmart, a big customer.

"Sam does not suffer bureaucracy well," said John Whiteside, a former I.B.M. executive who is now chief executive of Servicenet, a network services company. "Sitting in endless internal meetings at I.B.M., he'd often just break his pencil, throw it down on his desk, and go out to make more sales calls."

Mr. Palmisano will have to sell quite a bit to maintain the momentum the services business had under its founder, Dennie M. Welsh. Colleagues describe Mr. Welsh as a visionary who had a passion to build the services business — and an engineer's understanding of the nuts and bolts of the business. He kept a workaholic schedule, often sending E-mail messages to subordinates well past midnight, after returning from a full day of calling on customers. But in recent months, Mr. Welsh's hectic pace has been slowed by an

ailment that turned out to be a rare immune disorder. At first, he tried to remain on the job while he was being treated, cutting back only his international travel schedule. But over the Christmas season, it became clear that he would need time off for rest and extensive drug therapy.

"You can never plan for these things," he said philosophically. "My doctors are confident they know how to treat it and that I can be back at work in several months."

Associates describe Mr. Palmisano as less intuitive, but a more focused thinker, than Mr. Welsh. Mr. Palmisano concurs. "Dennie is the 'Field of Dreams'; Sam makes them happen," Mr. Palmisano said of himself. "My role was to come up with the business models that maximized the profits."

In one instance, he recalled, Mr. Welsh complained that the typical outsourcing deal was so expensive to set up that it lost money for I.B.M. in the first few years. Mr. Palmisano concocted pricing formulas that customers could live with but that made a profit for I.B.M. from the start.

But for all his interest in business models, Mr. Palmisano is mainly described as a tireless salesman, especially with chief executives. "He is a guy who knows how to sell business," Mr. Whiteside said. "Sam is a closer." □

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