

## REAL WORLD CASE 3

# Merrill Lynch and Others: The Growth of Linux in Business

Over the past two years Linux has spread like wildfire through corporate data centers. Companies once dependent on expensive proprietary systems from Sun, IBM, or Hewlett-Packard have replaced them with dirt-cheap Dell or no-name servers that are Intel-powered and loaded with the Linux operating system. Linux now runs almost 15 percent of all servers and is growing at about 23 percent a year. And even mainframe systems have joined in, with IBM estimating that over 10 percent of its mainframe sales are for running Linux applications.

Though PC users haven't switched to Linux—less than 1 percent of all computers run Linux—a 2002 survey by *CIO* magazine found that almost 30 percent of chief technologists were considering moving their companies' PCs to a Linux PC operating system like Lindows. Wal-Mart, which began selling Lindows-ready PCs on its website in September 2002, had such success with that offering that by Christmas it was having trouble meeting demand. Almost every major PC electronics maker, from HP in printers to Epson in scanners, is making sure it has Linux-compatible offerings. And Sun has poured millions of dollars into its Star Office software suite, which gives Linux users programs that work like—and more important, are compatible with—Microsoft PowerPoint, Word, and Excel.

Backed by technology titans such as Intel, IBM, Hewlett-Packard, and Dell, Linux is just now going mainstream. From DaimlerChrysler to Tommy Hilfinger—not to mention just about every major brokerage on Wall Street—Linux is gaining ground. Coming from near zero three years ago, Linux grabbed 13.7 percent of the \$50.9 billion market for server computers in 2002. That figure is expected to jump to 25.2 percent in 2006, putting Linux in the No. 2 position, according to market researcher IDC. And get this: Starting in 2003, No. 1 Microsoft's 59.9 percent share in the server market will reverse its long climb and slowly slide backwards. Even the surprise but shaky assault on Linux by SCO in its suit of IBM is not expected to slow the steady growth of Linux.

Meanwhile, Linux is finding its way into countless consumer-electronics gizmos, including Sony PlayStation video-game consoles and TiVo TV-program recorders. "Has Linux come of age? The answer is absolutely, positively, unequivocally yes," says Steven A. Mills, group executive for IBM Software.

How did Linux make the jump into the mainstream? A trio of powerful forces converged. First, credit the sagging economy. Corporations under intense pressure to reduce their computing bills began casting about for low-cost alternatives. Second, Intel Corp., the dominant maker of processors for PCs, loosened its tight links with Microsoft and started making chips for Linux; at the same time a resurgent IBM made a \$1 billion investment in Linux compatibility across its entire product line. This made it possible for corporations to get all the computing power they wanted at a fraction of the price. The third ingredient was widespread resentment of Microsoft

and fear that the company was on the verge of gaining a stranglehold on corporate customers. "I always want to have the right competitive dynamics. That's why we focus on Linux. Riding that wave will give us choices going forward," says John A. McKinley Jr., executive vice president for global technology and services at Merrill Lynch & Co., which runs some key securities trading applications on Linux.

Using open-source software like Linux is a no-brainer for many companies. It's stable and can be fixed easily if bugs appear, and you can't beat the price. But some companies and government organizations are taking their commitment to open source a step further by actively participating in the open-source community that develops Linux. When their developers write patches, modifications or new implementations of open-source software for in-house use, these organizations are releasing that new code back to the open-source community, thereby assisting in the software's ongoing development.

What's the payoff? It makes for better software. "If we find a bug or a problem, we're interested in fixing that problem. We're also interested in not fixing it again in the next version," explains Robert M. Lefkowitz, director of open-source strategy at Merrill Lynch & Co. in New York.

This is why Merrill Lynch sent the fixes it made to open-source software during one of its projects back to the open-source community. "The way a typical open-source project works is that there is a core team in the open-source community with direct access to modifying the code on its central website," Lefkowitz says. "People who want to contribute to that community submit their code, which is looked at by a core team and integrated if found appropriate."

For all contributions, Lefkowitz emphasizes the importance of creating a corporate policy with help from the departments that could be affected by open-source involvement. At Merrill Lynch, an eight-member Open-Source Review Board determines when contributing is appropriate.

### Case Study Questions

1. Should businesses continue to switch to the Linux operating system on servers and mainframes? Why or why not?
2. Should business and consumer PC users switch to Linux PC operating systems like Lindows and software suites like Sun's StarOffice? Why or why not?
3. Should the IT departments of companies like Merrill Lynch contribute their software improvements to the open-source community for products like Linux? Explain your reasoning.

Source: Adapted from Fred Vogelstein, "Bringing Linux to the Masses," *Fortune*, February 3, 2003, pp. 98–100; Jay Greene, "The Linux Uprising," *BusinessWeek*, March 3, 2003, pp. 78–86; and Minda Zetlin, "In the Linux Loop," *Computerworld*, April 7, 2003, pp. 37–38.