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Peer Innovation and Production

The co-authors of *Wikinomics* explain how old-school companies like IBM can create value by embracing open-source models

by Don Tapscott and Anthony D. Williams

When Linus Torvalds first posted a fledgling version of Linux to an obscure software bulletin board in 1991, no one would have predicted that open-source software would be much more than a short-lived hacker experiment. Even after Linux became a serious global movement, large software companies denigrated it, arguing that open-source code would never offer the completeness or reliability of proprietary software.

One large software company saw things differently. IBM (IBM) recognized early that open source represented a new mode of software production that could potentially upset the balance of power in the industry. Today, IBM provides a quintessential example of how a large, mature company with a tradition deeply rooted in proprietary development can embrace openness and self-organization as catalysts for reinvention.

While many have heard about IBM's foray into open source, the details of the company's journey are not well known. The story offers an abundance of lessons, not just for software firms, but for all companies seeking to harness peer production for growth, innovation, and profit.

IBM'S OPEN-SOURCE JOURNEY

IBM was an unlikely candidate to become a champion of open-source software. After all, we're talking about Big Blue—the company that became an industry powerhouse by building and selling proprietary everything. But by the mid-1990s, many of IBM's Web server and operating system businesses were failing. IBM's Web server product Domino, for example, had less than 1% of the market. It's fair to say that IBM did not have much to lose.

And increasingly, the company was being pinned between low-end hardware vendors, particularly Dell (DELL), and operating system vendors Microsoft (MSFT) (Windows) and Sun Microsystem (SUNW) (Solaris). Linux adoption, meanwhile, was growing quickly. Customers were increasingly asking about running Linux on IBM hardware, and the company was finding that new hires from universities were fluent in Linux and supported open source.

Linux offered solutions. It was a scalable operating system that would work well on small servers and could grow to handle heavier tasks. Because it was free, customers could try it easily. These advantages would help shift the locus of differentiation from operating systems to services and solutions, IBM's sweet spot.

Nevertheless, there was considerable nervousness in the senior management ranks. "At the time we had great concerns," recalls IBM strategist Joel Cawley. "Would the open-source community reject us? Will there be hostility to IBM? Will we face new legal issues that affect our ability to develop software?"

COMMUNICATION STRATEGIES

IBM eventually decided to dive in, donating large volumes of proprietary software code and establishing teams to

help the Apache (Web server) and Linux (operating systems) open-source communities. Difficult as it was, the strategic shift was just the first of many changes IBM had to make. Ultimately, the decision affected everything from internal communication protocols to resource allocations to the competitive landscape of the industry.

Working in these communities proved difficult at first. Open-source software communities run on instantaneous, transparent back-and-forth communication and rapid product iterations. By comparison, internal company communications, attentive to internal sensitivities, are frequently slow and measured. IBM worked hard at getting the culture and processes right, starting with the way IBM communicated with Linux developers.

"When we were responding slowly with canned answers we weren't fast enough or transparent enough," said Daniel Frye, head of IBM's open-system development group. "It was not a level of technical exchange that was attractive to Linux developers." So Frye told his team: "I'm unplugging you from the network. You can only communicate about Linux through the Linux community." And from then on the team used the same bulletin boards and chat rooms as Linux developers. This helped IBMers become full members of the community.

COMING OF AGE

Today, IBM spends about $100 million per year on Linux development, dedicating some 600 software developers from 40 countries to the project—an investment of human capital that is divided evenly between code that is specifically customized for IBM customers and more general contributions that may benefit the entire community of users. By contrast, IBM estimates that it would cost the firm up to $1 billion per year to develop and maintain an equivalent proprietary operating system. In other words, Linux saves IBM some $900 million per year.

Meanwhile, the Linux ecosystem has matured. Today, Fujitsu (FJTSY), Hitachi (HIT), Hewlett-Packard (HPQ), Intel (INTC), NEC (NIPNY), Novell (NOVL), Oracle (ORCL), and dozens of other firms have followed IBM into the open-source community. Like IBM, these companies now dedicate serious resources to Linux development. At a time when reliability and trust remain the big question marks surrounding Linux, IBM and other large companies not only contribute the bulk of Linux funding, they help indemnify client risk. This maturation, in turn, has paved the way for Linux to go into all sorts of new products, including set-top cable boxes, TiVo (TIVO) recorders, Motorola (MOT) RAZRs, home appliances, and even some BMWs.

Open source, it seems, may at last be coming of age.

GET YOUR PEER-PRODUCTION ROADMAP READY

IBM's involvement with open-source communities provides a model of how even old-school companies can harness self-organizing webs of independent contributors to create value. A company that was proprietary, insular, and vertically integrated 15 years ago now partners extensively with the open-source community and is considered a positive force for collaboration and openness. What should other business managers be asking themselves as they contemplate the IBM example?

First, think about how self-organized collaborations can change the way we invent, build, market, and distribute products and services—and build scenarios for your industry. Remember that its greatest impact today is in the production of information goods—and its initial effects are most visible in the production of software, media, entertainment, and culture—but peer production won't stop there. We already see it at work in mutual funds (www.marketocracy.com), peer-to-peer lending systems (www.zopa.com), designer T-shirts (www.threadless.com), and to an increasing degree, in the production of complex physical goods such as cars, motorcycles, and airplanes (check out Boeing's 787 Dreamliner).

Second, remind the doubters that open source doesn't mean "no profits"—it means that the profits are migrating

to new offerings, and increasingly these offerings are big business. So while Linux may be free, Gartner estimates that sales of complementary hardware, software, and services will reach $37 billion annually by 2008. Follow IBM's example and look for opportunities to nurture ecosystems that can contribute to innovation and growth in your sector.

Third, abide by community norms. IBM not only accepted open-source software products and processes but also accepted its philosophy, which is to spur quality and fast growth rather than just profits based on proprietary ownership of intellectual property. Giving up so much control is unconventional to say the least, but the rewards for doing so have been handsome. If the Linux community puts in $1 billion of effort, and even half of that is useful to IBM customers, the company gets $500 million of software development for an investment of $100 million.

Fourth, remember that to reap, you must sow. When firms join a peer-production community, sharing is the continued price of admission to the community from which the firm derives various benefits. This is why firms like IBM, Sun, Nokia (NOK), and others are granting open-source communities royalty-free access to their software patents. In exchange, they obtain a "license to operate" in the community—a form of tacit permission to harvest some of the value created in collaboration with community members.

It's time to get your peer-production roadmap ready. Barriers to entry are vanishing and the trade-offs that individuals make when deciding to contribute voluntarily to projects and organizations are changing, creating opportunities to reconfigure the way we produce and exchange information, knowledge, and culture. Companies that recognize, address, and learn to tap peer production will benefit, while those that ignore and resist will miss important opportunities for innovation and cost reduction and may even go out of business.

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