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Now More Than Ever, Innovation Is The Answer
Jobs will arise from the creation of new products, processes, and markets

As technology jobs boom in Asia and employment languishes here, it's easy to forgive American tech workers for casting an angry gaze across the Pacific. To find the real job thieves, though, they needn't look so far -- a mirror will do. Without the technologies that U.S. techies produced during the 1990s boom, offshore outsourcing never would have happened. Global high-speed networks, ever-cheaper computers, and ubiquitous run-your-business software made it possible to have operations anywhere from Bangor to Bangalore. Pity the poor tech workers: Who else in business must keep creating the very innovations that may someday obliterate their own jobs?

Yet now more than ever, they have no choice. Continuing to innovate is the one way tech workers and their companies can survive the latest disruption. They must keep creating leading-edge technologies that make their companies more productive -- and especially, innovations that spark entirely new markets. After all, the same tech boom that spawned offshoring also created multibillion-dollar Internet markets and blockbuster successes from Amazon.com ([AMZN](#)) to eBay ([EBAY](#)) to Google -- creating thousands of new jobs, largely in the U.S.

It's not just a matter of creating the next hot product or service, though that certainly will help. Companies need to keep innovating in all of their operations -- seeking out and creating cutting-edge technologies and then applying them to transform outdated, inefficient business processes. Says independent business consultant John Hagel III:

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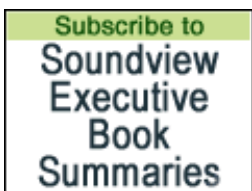
"At the end of the day, this puts a big innovation challenge on the table."

First, it's especially important that corporations keep innovating in software development. One technique that was born in the late 1990s is called extreme programming. In this approach, programmers work directly with businesspeople, breaking projects into pieces that can be written and tested fast. Pairs of programmers literally write code together simultaneously -- creating real-time checks and quashing bugs as they go along. The technique is not yet widely employed, but it should be. By using extreme programming, Nextjet Inc., a transportation-management software company in Dallas, was able to cut production time on its projects in half. Says Oregon software-development consultant and extreme-programming pioneer Kent Beck: "It's possible to get really good results at prices comparable to the outsourcers."

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Others are trying to create even more fundamental software innovations. Intentional Software Corp. in Bellevue, Wash., aims to automate the cumbersome process of communication between product designers or businesspeople and the programmers they work with. Founder Charles Simonyi, a longtime Microsoft Corp. (MSFT) wizard who managed the teams that created Word and other key programs, says the traditional process leads to errors and long development times. He's creating tools that he says will make it much simpler for product designers or businesspeople to directly convey their intentions for the software into a form that can be more accurately transformed into usable code. Says Simonyi, who expects to have a product ready within two years: "Automation can create jobs that are much more rewarding."



Backyard Alternatives

Companies also must keep abreast of innovative technologies that can cut costs even more than going offshore. Last fall, cellular carrier Liberty Wireless outsourced some call-center jobs to the Philippines. But at the same time, it launched a voice-activated service from Mountain View (Calif.) startup BeVocal Inc. that guides people to answers through menus instead of routing them to a live operator. BeVocal estimates that its service costs less than 10 cents a minute, vs. at least 25 cents for a live call center in India or the Philippines. "We hope to use less offshore labor and more automation," says Liberty President Donald Charlton, who expects the BeVocal system to handle 50% of Liberty's calls eventually, up from 25% today.

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Finally, companies should never stop looking in their own backyard for alternatives to offshoring. Many of them are fighting outsourcers by applying technology to forge new, more competitive business models. Last year, for instance, Real-Time Technology Solutions Inc., a New York software-testing company, created a remote service using networking technologies and Web software. Because its U.S.-based engineers can get more done working remotely, says William Hayduk, president and director of professional services, RTTS's rates now approach those of the outsourcers. Result: That business has grown to be 20% of RTTS's sales.

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These prescriptions won't stop the economic forces that are pushing jobs offshore. But coupling innovative approaches with offshoring could pay off for everyone. Consider the case of NetScaler Inc., a Silicon Valley maker of network switches that speed online applications such as Google searches. It had to cut its 100-person staff to 55 in 2002 after the September 11 attacks dried up sales. To survive, it launched an operation in Bangalore. Round-the-clock work in the U.S. and India helped it pack leading-edge



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data-compression and security features into its latest product. Now, with sales jumping more than tenfold, to well above \$10 million last year, it has boosted its U.S. staff to 105, even larger than before. "Saving money is important," says CEO B.V. Jagadeesh. "But keeping the technology edge is even more important." That's something America's tech companies should never forget.

By Robert D. Hof

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