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Innovation-enabling Tools and Software for Individuals and Product Pipelines

Western corporations have been trying to harness innovation since the mid-1990s when leading companies realized the world was becoming a global marketplace and began changing their competitive posture to compete in that new arena. By the late-1990s, key articles and books focusing on accelerating technologies and more-innovative products into the new marketplace started appearing. Those types of publications steadily increased through the mid-2000s.

Then in 2004, *Business Week* and **Boston Consulting Group,** recognizing that leading companies had been building their "innovation acumen" for several years, teamed up to rank the world's most-innovative companies. Everything was now in place for a widespread western-industry movement towards repeatable innovation to maintain competitive position in the now global economy.

The demand for ways to innovate was steadily increasing and everything from "Disruptive Innovation" to "Value Engineering" gathered disciples. About two years later in 2006 — about the time it usually takes for savvy companies to develop and sell tools to help slow adapters catch up with their competitors — numerous innovation-enabling products targeted at these thirsty corporations began to appear. There was now an emerging industry to service the latest corporate movement, the belief that innovation was crucial to success.

Industry progress on improving speed to market in 1990s, and innovation in the early 2000s, put in place the final cogs that had been eluding yet another source of competition — the "Makers" and what is now called the "Makers Movement." (MACHINE DESIGN, June 13, 2013) These Makers were quicker to market; CAD/CAM was available as shrink-wrapped software for home use, and rapid prototyping was nearly everywhere and inexpensive. Now Makers even have manufacturing capacity, thanks to 3D printing and manufacturing companies for hire eager for their business. Between talented individuals, small companies on one's home turf, and global competitors coming out of nowhere, just about all established corporations clearly had to improve their ability to systemically innovate.

The study of innovation has been growing steadily for a decade and will continue to grow for at least another decade. Researchers are mapping the brain, developing artificial intelligence, simulating combinational molecular chemistry, engaging in crowdcasting and crowdsourcing using the Internet and a host of other activities that are leading to improved abilities to innovate across industries. The tools and enabling technology available to folks sitting at their desks, and to groups and teams chartered with bringing improved products to market, are getting better every day.

Right now, we know enough about innovation to talk about early market results. We cannot yet determine what the best long-run tools will be to achieve it consistently. But there are already 300 of these tools available that are being kick-tested by companies today. Some are gaining traction. Offerings span self-help, group-help, and sharing and structuring knowledge. Some products actually increase the available domain knowledge in brainstorming sessions and enable companies to better innovate themselves out of specific problems.

It is prudent to not tout specific tools. After all, it is not possible to review every company's offering, software, or service. But it goes without saying that **Microsoft**'s Office is the number one tool used for innovation. Another tool, the USPTO Web site, is regularly used by half of the companies. Next are Wiki sites with 40% of companies using them. Triz has penetrated about 20%. And around 15% of companies use different "brain and mind-mapping tools" that let you create, place, link, and annotate just about any thought that pops up in brainstorming and problem-solving sessions. Tried-and-true techniques like Lead User Analysis, Six Hats, the KJ Method, and Creative Whack Pack, which have been used by companies for over 30 years, are regularly used by 10 to 15% of companies. Even if we ignore MS Office, just about all workers and managers should be running into one or more of these innovation-enabling tools at their companies. **md**

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