

## The future of innovation

### The rise of the creative consumer

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#### How and why smart companies are harnessing the creativity of their customers

LAST November, engineers in the healthcare division of General Electric (GE) unveiled something called the “LightSpeed VCT”, a scanner that can create a startlingly good three-dimensional image of a beating heart. This spring Staples, an American office-supplies retailer, will stock its shelves with a gadget called a “wordlock”, a padlock that uses words instead of numbers. In Munich, meanwhile, engineers at BMW have begun prototyping telematics (combining computing and telecoms) and online services for a new generation of luxury cars. The connection? In each case, the firm’s customers have played a big part (GE, BMW) or the leading role (Staples) in designing the product.

How does innovation happen? The familiar story involves boffins in academic institutes and R&D labs. But lately, corporate practice has begun to challenge this old-fashioned notion. Open-source software development is already well-known. Less so is the fact that Bell, an American bicycle-helmet maker, has collected hundreds of ideas for new products from its customers, and is putting several of them into production. Or that Electronic Arts (EA), a maker of computer games, ships programming tools to its customers, posts their modifications online and works their creations into new games. And so on. Not only is the customer king: now he is market-research head, R&D chief and product-development manager, too.

This is not all new. Researchers such as Nikolaus Franke at the University of Vienna and Christian Lüthje at the Technical University of Hamburg have demonstrated the importance of past user contributions to the evolution of everything from sporting equipment to construction materials and scientific instruments. But the rise of online communities, together with the development of powerful and easy-to-use design tools, seems to be boosting the phenomenon, as well as bringing it to the attention of a wider audience, says Eric Von Hippel of the Massachusetts Institute of Technology, who is about to publish a book, “Democratising Innovation” (MIT Press). “User innovation has always been around,” he says. “The difference is that people can no longer deny that it is happening.” Indeed, it is “very likely that the majority

of innovation happens this way," says Mr Von Hippel. Such innovation, he says, has a "much higher rate of success".

According to Mr Von Hippel, in the past firms have mostly resisted customer innovation or not known what to do with it. American farmers were lobbying manufacturers to make cars with detachable back seats as early as 1909. It took Detroit more than a decade to "invent" the pick-up truck. Even now, carmakers respond to customer modifications such as performance-exhaust systems by voiding the warranty. Within three weeks of launching "Mindstorms", a build-it-yourself robot development system, in 1997, Lego was facing around 1,000 hackers who had downloaded its operating system, vastly improved it, and posted their work freely online. After a long stunned silence, Lego appears to have accepted the merits of this community's work: programs written in hacker language may now be uploaded to the Mindstorms website, for example.

## **DIY innovation**

BMW's efforts to harness the creativity of its customers began two years ago, says Joerg Reimann, the firm's head of marketing innovation management, when it posted a toolkit on its website. This toolkit let BMW's customers develop ideas showing how the firm could take advantage of advances in telematics and in-car online services. From the 1,000 customers who used the toolkit, BMW chose 15 and invited them to meet its engineers in Munich. Some of their ideas (which remain under wraps for now) have since reached the prototype stage, says BMW. "They were so happy to be invited by us, and that our technical experts were interested in their ideas," says Mr Reimann. "They didn't want any money." BMW is now broadening its customer-innovation efforts.

Westwood Studios, a game developer now owned by EA, first noticed its customers innovating its products after the launch of a game, "Red Alert", in 1996: gamers were making new content for existing games and posting it freely on fan websites. Westwood "made a conscious decision to embrace this phenomenon", says Mike Verdu of EA. Soon it was shipping basic game-development tools with its games, and by 1999 had a dedicated department to feed designers and producers working on new projects with customer innovations of existing ones. "The fan community has had a tremendous influence on game design," says Mr Verdu, "and the games are better as a result."

Traditionally, firms have innovated by sending out market researchers to discover "unmet needs" among their customers. These researchers report back. The firm decides which ideas to develop and hands them over to project-development teams. Studies suggest that about three-quarters of such projects fail. Harnessing customer innovation requires different methods, says Mr Von Hippel. Instead of taking the temperature of a representative sample of customers, firms must identify the few special customers who innovate.

Researchers call such customers "lead users". GE's healthcare division calls them "luminaries". They tend to be well-published doctors and research scientists from leading medical institutions, says GE, which brings up to 25 luminaries together at regular medical advisory board sessions to discuss the evolution of GE's technology. GE then shares some of its advanced technology with a subset of luminaries who form an "inner sanctum of good friends", says Sholom Ackelsberg of GE Healthcare. GE's products then emerge from collaboration with these groups.

Staples found its luminaries by holding a competition among customers to come up with new product ideas. It got 8,300 submissions, says Michael Collins, boss of the Big Idea Group, a start-up firm that helped Staples to organise its competition.

At the heart of most thinking about innovation is the belief that people expect to be paid for their creative work: hence the need to protect and reward the creation of intellectual property. One really exciting thing about user-led innovation is that customers seem willing to donate their creativity freely, says Mr Von Hippel. This may be because it is their only practical option: patents are costly to get and often provide only weak protection. Some people may value the enhanced reputation and network effects of freely revealing their work more than any money they could make by patenting it. Either way, some firms are starting to believe that there really is such a thing as a free lunch.