Overcoming the Global Innovation Trade-Off

How to maintain creative complexity without the limitations of co-location.

BY YVES DOZ AND KEELEY WILSON

Leading Ideas

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For their global innovation strategies, many companies have long relied on their ability to assemble people with key capabilities and critical knowledge. They typically do this through co-location: bringing together designers, engineers, technologists, and other creative thinkers in a few innovation centers at home and in lead markets. The new products and services they create are then disseminated to markets across the world.

But as the range of knowledge needed for global innovation be-comes wider and more varied, co-location is no longer sufficient. Leading innovators are increasingly seeking competitive advantage by combining knowledge and capabilities from many different places. Consider Essilor International SA, the world's largest manufacturer of ophthalmic corrective lenses. It engineers its lenses in Germany, makes blanks from high-transparency polymers in the U.S., and adds micron-thin coatings in Japan. Essilor taps into the best capabilities around the world to create, develop, and manufacture leading-edge products.

Very few companies, however, have succeeded in internationalizing their innovation strategies enough to draw on the globally dispersed, complex knowledge needed for today's products and services. Instead, they use their international networks only to arbitrage routine tasks, and fail to exploit opportunities for global innovation. Our research suggests that the reason for this failure is the commonly accepted trade-off between complexity and dispersion. The challenge is to overcome this trade-off: to build a worldwide R&D team that can master the complexities of robust innovation. (See Exhibit.)

Many managers recognize that the knowledge best suited to dispersed global innovation is explicit, codified, and modular. An example is provided by the Internet-based software development and analytics company TopCoder Inc. Because of the highly codified nature of the knowledge it deals with, this company can break all its clients' software development projects into relatively simple pieces. Then, through

Exhibit: **Complexity Meets Dispersion**

These curves represent two ways of managing the trade-off between complexity and global dispersion. Most companies exist on the lower curve, but by optimizing their innovation practices, they can leap to the upper curve, where even globally dispersed teams can work effectively on complex projects.
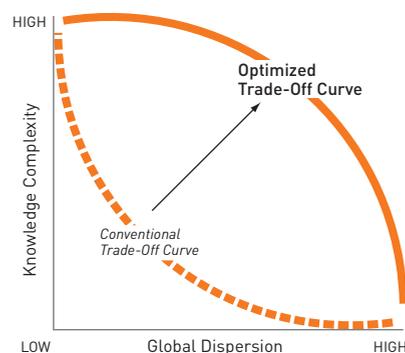
Source: Yves Doz and Keeley Wilson, *Managing Global Innovation* (Harvard Business School Publishing, 2012)

a process of open innovation and bidding for modules, TopCoder taps into a global community of software developers to deliver projects for a range of clients.

Even when knowledge isn't explicit, some firms can achieve dispersed innovation by putting it into more simplified, explicit forms. The

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India-based services firm Infosys Technologies Ltd. structured and codified much of its system integration and facility management knowledge. This allowed the company to develop a global delivery model serving a client base around the world.

Unfortunately, in most industries, the knowledge that is critical for innovation is collective, tacit (not easily codified), and locally rooted (not easily managed across long distances). Simplifying it doesn't always work. Making tacit knowledge more explicit tends to diminish its richness, timeliness, and uniqueness, thereby seriously eroding or even destroying its value. Thus, many companies turn to a different approach: They co-locate more of their researchers at one single knowledge source so these people can collaborate more intensively.

For example, the perfume industry is very slow to change; brand share remains relatively constant over decades. For 20 years, Japanese cosmetics group Shiseido Company unsuccessfully tried to build a global perfume business with marketing staff and designers in France and product development in Japan. Shiseido initially failed to recognize

that most of the complex knowledge needed to develop, manufacture, market, and package perfumes was rooted in France, the world's leading perfumery market and competence cluster. Eventually, Shiseido realized that it had to connect its staff more closely with the critical knowledge it was lacking; it co-located its entire perfume business in France. This move paid off. It allowed Shiseido to develop such successful global perfume brands as Jean Paul Gaultier, Issey Miyake, and Zen.

But both simplification and co-location fall short of the ideal: innovation of products and services that involves the free exchange of tacit knowledge among people dispersed around the globe. As long as firms are bound by the complexity–dispersion trade-off, the opportunities to create value and competitive advantage from global innovation will be limited.

Fortunately, our research at more than 50 global companies over the last few years suggests that it isn't necessary to remain hostage to that trade-off. Instead, innovation leaders can take a third approach. They can leap to the upper curve of the exhibit: They can redesign their innovation practice to enable far-flung people to work together on complex ideas. This transition can be made by optimizing three different facets of innovation, generally at once. First, build a more compact and agile innovation footprint. Second, develop the capabilities, processes, culture, and structures needed to support rich communication. Third,

boost support for collaboration in innovation projects, both internally and with external partners.

Through the experience of a number of companies, general principles are emerging for making each of these facets work.

The innovation footprint. Limit the number of physical sites in an innovation network to those that contribute unique and differentiated knowledge. As more sites are added to a network, the marginal costs increase, because of the greater costs of management, communication, and coordination. The additional value to innovation that these sites might bring is likely to diminish because of duplication and redundancy. The optimal number of sites in an innovation footprint is as many as you need, but as few as you can manage.

The ideal innovation footprint should also be flexible enough to help find and access new sources of market, process, or technical knowledge, and easily disengage from obsolete sources. To extend their compact physical footprint, firms can adopt short-term approaches that might include employing open source intermediaries to fill specific knowledge gaps, collaborating with more geographically dispersed partners, and organizing learning expeditions to access interesting sources of knowledge.

Communication and receptivity. In a typical co-located environment, combining complex knowledge is straightforward. It takes place through an informal, reciprocal, and iterative process of interaction, bolstered by the shared context and norms, as well as the language of a single place. But when innovators are separated by distance, time, and culture, communication becomes a serious challenge. The key to over-

coming this challenge is a full array of communication tools, processes, and mechanisms, replicating as closely as possible the richness of in-depth local communication.

This can be achieved in part through information and communications technology–based tools that are part of the everyday work-flow — Web meetings, integrated engineering platforms, knowledge-sharing applications, forums, communities of practice, social media platforms, and so on — together with regular periods of temporary co-location to build trust and famil-iarity among dispersed teams.

Companies can also deploy people with a multicultural back-ground or experience to interpret and translate complex knowledge among different contexts. Many leaders recognize the value of such people, but few companies have put the career structures and rewards in place to develop these critical skills.

In many companies, knowledge hoarding is common. But "not un-derstood here" can be as big an im-pediment to knowledge sharing as "not invented here." To overcome these barriers may require a grass-roots change in corporate culture. Beginning in 2000, the Xerox Cor-poration deliberately transformed its secretive, patent-based culture to one of open knowledge sharing across the group. This began with the adoption of an open source plat-form called CodeX that made code available for reuse across the com-pany. By hosting projects on the platform, engineers experienced the benefits of knowledge sharing. To-day, the culture at Xerox embraces an unusually high level of sharing and collaboration; for example, the website open.xerox.com invites pub-lic scrutiny of its latest innovations.

Collaboration. Many firms have tried to get people working together on global innovation projects. They typically fail when they transfer best practices and skills from a co-locat-ed site to a more dispersed environ-ment. Globally dispersed projects require different competencies and processes, plus a strong project man-agement organization and the active involvement of senior management.

When projects extend beyond the boundaries of the firm to involve external players, an even greater set of new capabilities is required — to find external innovations, bring the players on board, and manage the expectations and contributions of complementary partners. For exam-ple, when Intel launched WiMAX (the wireless broadband standard), it initially partnered with a few other companies. But over time, Intel had to recruit a wider ecosystem of play-ers to supply compatible infrastruc-ture, devices, and services.

Experience shows that innova-tion doesn't have to be constrained to the complexity–dispersion curve. Implementing the necessary changes is challenging and can take time — but it is one of the best ways to posi-tion an innovative company for com-petitive advantage in the future. ✚

Reprint No. 00145

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is published by PwC Strategy& Inc.
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