

INNOVATION PARADIGM SHIFT

The message in this year's *World Development Report*, published by the World Bank under the title *A Better Investment Climate For Everyone* is that technological innovation is not a 'zero-sum game' in which the rich get richer while the rest of the world drops behind. Rather, it is the prime motor of economic and social development for all — as evidenced by the extent to which there are strong links between the country's research universities and its industrial corporations. The report — which focuses on the importance of encouraging innovation as a route to economic growth — admits that mistakes in this field have been made in the past (for example, by governments that have sought to build an industrial strategy around 'picking winners'). Countries and companies need strategies that provide a supportive environment for individuals, institutions and enterprises that are dedicated to finding the best ways of putting research results into practice and fostering innovation.

Closed Innovation

Henry William Chesbrough, Harvard Business School, notes that there is a paradigm shift in how companies commercialize industrial research. The old paradigm might be called *Closed Innovation (CI)*. It's a view that says successful innovations require control. Companies must generate their own ideas and then develop them, build them, market them first, distribute them, service them, finance them and support them on their own. This paradigm counsels firms to be strongly self-reliant, because one cannot ever be sure of the quality, availability and capability of others' ideas. This view suggests that we should hire the best and the brightest people, so the smartest people in our industry work for us. Further, we should control our intellectual property, so our competitors don't profit from our ideas.

Erosion of Closed Innovation

In recent years, several factors have continued to erode the underpinnings of CI. One factor was the growing mobility of highly experienced and skilled people. When people left an organisation/company after working there for many years, they took a good deal of that hard-won knowledge with them to their new employer (although the new employer didn't have to pay any compensation to the previous organization for that training). The logic of Closed Innovation was further challenged by the increasingly fast time to market for many products and services, making the shelf life of a particular technology ever shorter.

Further, as well, the burgeoning amount of college and post-college training led knowledge to spill out beyond the corporate central research labs to companies of all sizes in many industries. Beyond that, when fundamental technology breakthroughs occurred, the scientists and engineers who made them were aware of an outside option that they had formerly lacked. If the company that funded these discoveries didn't pursue them in a timely fashion, the scientists and engineers could pursue the breakthroughs on their own - in a new start-up firm. Most often those companies failed, but the ones that succeeded might achieve an initial public offering or be picked up at an attractive price, leading to great rewards. Other successful companies wouldn't reinvest in new fundamental discoveries but, would look outside for another external technology to commercialize.

Open Innovation Defined

Open Innovation (OI) is a paradigm that assumes firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as the firms look to advance their technology. Under OI, both external and internal ideas are used to create value, and internal mechanisms are defined to claim some portion of that value. OI assumes that internal ideas can also be taken to market through external channels, outside the current businesses of the firm, to generate additional value. Ideas can also

start outside the firm's own labs and can move inside. OI allows the recovery of overlooked innovations. Now there's a greater chance the projects will find value in a new market or be combined with other projects, because everything is more open and flexible.

According to Dr. Chesbrough, “Not all the smart people work for us. We need to work with smart people inside and outside the firm. External R&D can create significant value; internal R&D is needed to claim some portion of that value. We don't have to originate the research to profit from it. Building a better business model is better than getting to market first. If we make the best use of internal and external ideas, we'll win. We should profit from others' use of our knowledge, and we should buy others' knowledge whenever it advances our own business model.”

Some industries have been in OI mode for a long time. The Hollywood film industry, for example, has innovated for years through a network of partnerships and alliances among production studios, directors, talent agencies, actors and scriptwriters. Modern investment banking has been using external ideas as well, adopting the new, exotic investment instruments devised by newly minted PhD's or finance professors.

These different industries can be located on a continuum, one end of which includes industries in which entirely CI prevails, the other end containing industries with fully OI conditions. Many industries are in transition between the two paradigms: automobiles, biotechnology, pharmaceuticals, healthcare, computers, software, communications, banking, insurance, and consumer packaged goods, even military weapons and communication systems are examples. The locus of innovation in these industries is moving beyond the confines of the central R&D laboratories of the largest companies to start-ups, universities and other outsiders. In so doing, the company can renew its current business and generate new business. For an innovative organization/company in a world of abundant knowledge, this can be the best of times.

Achieving innovation is of course much more of a challenge than it sounds. It requires a 'supportive environment' covering many dimensions. Therefore, working to accomplish presents major political challenges. According to the World Bank, many barriers exist to innovation. For example, a survey identified that one of the biggest barriers to innovation was a lack of confidence by local leaders that their governments would respect national and local laws protecting investments. Another significant worry is about corruption. Leaving aside the moral (or even economic) dimension is the concern that corruption can distort technological priorities; for example by skewing investment towards large-scale projects such as dams (for which official permission can require large pay-offs), rather than small-scale initiatives that may often be more directly appropriate to local needs. The existence and availability of relevant scientific and technological knowledge is one of the most important components of the supportive environment that successful innovation requires. Equally essential (but equally often overlooked), are the mechanisms needed to ensure that scientific knowledge is put to effective use. Economic and social development not only requires a physical infrastructure, such as the roads and telecommunications needed to transport goods and information to where they are needed. Equally important is a parallel 'virtual infrastructure', linking universities, corporations and policy-making bodies in ways that ensure scientific results and technological information also reaches its targets effectively. Administrative procedures in poor nations still make it two times harder than in rich nations for entrepreneurs to start, operate or close businesses. Businesses in poor nations have less than half the property-rights protections that are available in rich countries.

Furthermore, as countries like China and India are already finding to their cost, rapid industrialization can have unwanted side effects — from scarcity of resources to health-destroying pollution. Governments continue to have a major responsibility to ensure that innovation takes place within a regulatory framework that is sufficiently strict and sufficiently rigidly enforced, to avoid the costs outweighing the benefits.

Linked directly to this is the danger of formulating innovation policy around a one-dimensional view of human progress. Not all technological products are, by definition, desirable (even those for which a market exists). And modern technologies developed in advanced scientific laboratories are not always the most appropriate solutions to local needs and problems. Technological innovation must be seen as a social process, in which the social factors play as important a role as the market in formulating user demand. Only if policies for the support of science and technology can be formulated on that basis — and if policies in other areas recognise the central role of science and technology in achieving their objectives — does the elimination of global poverty stand a chance of becoming a practical proposition.

Managing for Innovation

Managers and executives often ask for programs to make their staff “think outside the box”. But what these organizations really need is to focus on **Idea Management**. When organizations in both the government and corporate sectors look for innovative thinking programs, they are typically experiencing problems such as:

- Lack of teamwork within a department or business;
- Important decisions being made at the last minute;
- New ideas are rare, non-existent or not known about;
- People are reactive — virtually unable or unwilling to take initiative.

At best, organizations develop skills to react to these problems. However, many fail to do this adequately. The losers are customers who do not benefit from problem-free services or products.

What is Training’s Role in Helping People to Think Outside the Box?

This is a truly important question, which needs a much broader examination than most organizations are prepared to give it. The result is a tremendous waste of brainpower potential in our organizations. Workshops that give people a brainstorming tool or two are not the solution. We have to understand “what makes an organization innovative?”

To understand the innovation challenge, PriceWaterhouseCoopers looked at 300 large corporations in the United Kingdom. They examined the companies’ ability to continually launch new products and services in terms of the percentage of turnover coming from bottom-line sales of new products and services. They ranked companies on this measure and then studied the top companies in depth. The results were surprising.

The study found that:

- Innovative organizations have above average earnings for their industry.
- Innovation is not the domain of certain industries such as technology. In fact, some technology companies were found not to be innovative at all, while commodity-based companies were.
- There are no innovative industries; instead, innovative companies in all industries.
- Innovation is not solely the role of R&D; in fact, all departments must contribute ideas and innovations to grow the bottom-line.
- Innovative organizations - regardless of industry - have certain common attributes. These attributes reflect their programs and policies in three key areas:

Idea Culture and Policies: Innovative organizations have well-defined “idea management culture and policies” — They seek to encourage people to actively seek out ideas, to manage these ideas, and to use them. They seek ideas and knowledge widely from customers, suppliers, employees, other industries and competitors.

Innovative Leadership: Organizations are led by executives who carefully balance leadership and management, who empower people to take initiative, recognize and reward those who encourage staff to take broader approaches. An effective balance between leaders and followers is crucial to sustaining an innovative working environment. For the highest performers this means:

1. Defining which decisions can be taken unilaterally and which must be based on consensus so that the social contract between leaders and followers is made explicit;
2. Recognizing and rewarding people who take the lead in encouraging others to challenge current ways of working; for example, sponsoring and protecting mavericks; and
3. Employing human resource processes which recognize that leadership roles are often separate from management positions and which selectively promote role models at all organizational levels.

Knowledge Management: Allow ideas and knowledge captured to be shared, stored in user-friendly form, and made freely accessible.

Capability Expansion: A capability development program should have at least six components vital to the innovation process:

1. **Idea generation** - Innovation starts with deliberate creative thinking - finding new ideas when and where they are needed - by using specific tools.
2. **Idea development** - Our first ideas are often raw and need to be nurtured. We can enhance, combine or connect them to shape more powerful solutions. We transform average ideas into great ones.
3. **Idea evaluation** - By learning to evaluate ideas we find those capable of creating the results we want.
4. **Idea marketing and proposing** - To get commitment to any new idea takes communication. Learning to sell your idea is as important as finding it in the first place.
5. **Ideas implementing** - Transforming our ideas into action plans and results is our goal.
6. **Team learning** - The final element is to ensure that team lessons are learned during the innovation process.

CONCLUSION. So the next time someone in your organization says, “We need to think outside the box,” try to lead the organization to assess where the problem really lies. Is it in the culture, paradigm, policies, leadership, structure, and/or skills in generating ideas, harvesting them, or turning them into action, etc? This can provide a stronger framework for necessary change and/or identifying training needs. Capability development calls for new creative and participative learning approaches, such as experiential exercises, facilitated brainstorming and conversation, and simulations and application. Many IFTDO organisations can access qualified resources in their countries to meet this need.