

A Study about Business Management and Innovation Technology

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Abstract

Business Management and Innovation technology management is an inevitable issue in the high end technological and innovative organizations. Today, most of the innovations are limited with developed countries like USA, Japan and Europe while developing countries are still behind in the field of innovation and management of technology. But it is also becoming a subject for rapid progress and development in developing countries. Innovation and technology environment in developing countries are by nature, problematic, characterized by poor business models, political instability and governance conditions, low education level and lack of world-class research universities, an underdeveloped and mediocre physical infrastructure, and lack of solid technology based on trained human resources. This paper provides a theoretical and conceptual framework analysis for managing innovation and technology in developing countries like India and China. We present the issues and challenges in innovation and technology management and come up with proposed solutions.

Key Words: Innovation and technology, developing countries, revolutionary, decision.

Introduction

The Business Technology Innovation benchmark research explores in detail how companies can make technology deployments and use these choices to gain a competitive advantage and streamline operations. The research identified and quantified the ways in which organizations use each of six technology innovations across business and IT. It also explores the value of using these technologies to create more effective processes, and assesses the maturity of organizations' current use and the benefits of deployment.

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Although technology trends seem to come and go with frightening regularity, some have a lasting impact on business. These are ones that change the way businesses operate and provide dramatic improvement for those that adopt them. Such technologies help organizations become operationally lean, agile and responsive, increase effectiveness and improve outcomes. Innovative technology also empowers executives, managers and workforces to operate their businesses more effectively.

But deciding which technologies to adopt and where to apply them requires thought and planning, and for many it is hard to know where to start and how best to ensure that they are not falling behind in competitive global markets. This confusion is multiplied when six game-changing technology innovations appear virtually simultaneously; each category requires its own approach to evaluation and selection of products, and this says nothing of the complexity of combining them.

Objectives

Understand the nature of strategic competitiveness and develop the ability to analyze the competitive environment facing a firm, assess the attractiveness of the industry and identify potential sources of competitive advantage. Recognize typical technical, organizational, and market issues that occur during the product life cycle, and be better equipped to anticipate and manage such problems. Consider the actions of competitors and how that impacts the ability of a business to accomplish its strategic goals. Develop courses of actions that incorporate the actions of multiple players in the marketplace. Discriminate among the types of data that general managers need to evaluate alternative scenarios. Make quantitative assessments of strategic alternatives and develop logical, coherent and persuasive analyses for a desired course of action

The Role of Management

Due to increased competition and accelerated product development cycles, innovation and the management of technology are becoming crucial to corporate success. Research conducted by Forbes, Ernst & Young, and the Wharton School of Business found the most

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important driver of corporate value for both durable and non-durable companies to be innovation.

Importance of Technology and Innovation

It must be emphasized by people at the very top and reinforced by people throughout a corporation. If top management and the board are not interested in these topics, managers below them tend to echo their lack of interest. When growth in sales and profits stalled at P&G several years ago, the new CEO, Art Lafley, realized that product development was no longer a core competency of the company

Technological Developments

Motorola, a company well known for its ability to invest in profitable new technologies and manufacturing improvements, has a sophisticated scanning system. Its intelligence department monitors the latest technological developments introduced at scientific conferences, in journals, and in trade gossip. This information helps it build “technology roadmaps” that assess where breakthroughs are likely to occur, when they can be incorporated into new products, how much money their development will cost, and which of the developments is being worked on by the competition. A company’s focusing its scanning efforts too closely on its current product line is dangerous.

Most new developments that threaten existing business practices and technologies do not come from existing competitors or even from within traditional industries. A new technology that can substitute for an existing technology at a lower cost and provide higher quality can change the very basis for competition in an industry. Managers therefore need to actively scan the periphery for new product ideas because this is where breakthrough innovations will be found. By the time Microsoft realized the significance of this threat, Netscape had already established itself as the industry standard for browsers. Microsoft was forced to spend huge amounts of time and resources trying to catch up to Netscape’s dominant market share with its own Internet Explorer browser. One way to learn about new technological developments in an

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industry is to locate part of a company's R&D or manufacturing in those locations making a strong impact on product development. Large multinational corporations (MNCs) undertake between 5% and 25% of their R&D outside their home country.



The same is true of the semiconductor industry in terms of manufacturing.²¹ Impact of Stakeholders on Innovation A company should look to its stakeholders, especially its customers, suppliers, and distributors, for sources of product and service improvements. These groups of people have the most to gain from innovative new products or services. Under certain circumstances, they may propose new directions for product development. Some of the methods of gathering information from key stakeholders are using lead users, market research, and new product experimentation. Research by Von Hippel indicates that customers are a key source of innovation in many industries. Suppliers are often important sources as well.

These lead users are “companies, organizations, or individuals that are well ahead of market trends and have needs that go far beyond those of the average user.” They are the first to adopt a product because they benefit significantly from its use—even if it is not fully developed. At Dow Chemical, for example, scientists solicit feedback from customers before developing a

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new product in the lab. Once the product is ready for commercialization, Dow gives its lead users the first opportunity to use the product and suggest further development.

At the time, it was dominated the market but had not developed a new product improvement in almost a decade. After spending six weeks learning about the cause and prevention of infections, the project team spent six more weeks investigating trends in infection control. The team then worked to identify lead users—doctors in developing nations and veterinarians who couldn't afford the current expensive drapes. The team invited several lead users to a 21 /2-day workshop focused on “Can we find a revolutionary, low cost approach to infection control?” The workshop generated concepts for six new product lines and a radical new approach to infection control.

The team chose the three strongest concepts for presentation to senior management. It has successfully applied the lead user method in 8 of its 55 divisions. Lead user teams are typically composed of four to six people from marketing and technical departments, with one person serving as project leader. The four phases of the lead user process are:

- **Lay the Foundation:** Identify target markets and the type and level of innovations desired.
- **Determine the Trends:** Research the field and talk with experts who have a broad view of emerging technologies and leading-edge applications.
- **Identify Lead Users:** Talk with users at the leading edge of the target and related markets to understand their needs.
- **Develop the Breakthrough:** Host a two- to three-day workshop with several lead users and a half-dozen marketing and technical people. Participants first work in small groups and then as a whole to design the final concepts that fit the company's and the users' needs.

Categories of Innovation

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Innovation can range from incremental to radical. As shown in Figure A–2, a corporation’s capabilities (existing or new) interact with its strategic scope (limited or unlimited) to form four basic categories of innovation. A corporation may emphasize one of these categories or operate in all of them.

Quadrant 1: Improving Core Businesses: This type of innovation focuses on incremental innovations that can be developed rapidly and inexpensively. It includes line extensions and more convenient packaging and is often a part of a horizontal growth strategy. Its potential weakness is market myopia—its emphasis on current products and customers. As illustrated earlier in this chapter, Pepsi & co is the master of this type of innovation.

Quadrant 2: Exploiting Strategic Advantages: This type of innovation focuses on taking existing brands and product lines to new customers and markets without requiring major change in current capabilities.

Quadrant 3: Developing New Capabilities: This type of innovation focuses on deepening customer satisfaction and loyalty to the brand or product line by adding new organizational capabilities without introducing major changes in strategic scope. The company may develop or purchase new technologies, talents, or businesses to better serve the firm’s current scope of customers and markets. It may involve a vertical growth strategy. Its potential weakness is the investment cost and implementation time. Microsoft follows an embrace-and-extend policy to either acquire or imitate a new product in order to offer it to its current customers in the next version of Windows or Office software.

Quadrant 4: Creating Revolutionary Change: This type of innovation focuses on radical innovations that transcend current product lines or brands to make fundamental changes in both its strategic scope and its capabilities. This can mean a new business model and a revolutionary new future for the company. Its potential weakness is a high risk of failure. Sony Corporation is

the master of radical innovation. Its pioneering products, such as the Walkman, the Airboard, and the robo-pet Aibo, introduce whole new product categories.

Innovation



Developing an Innovative Entrepreneurial Culture

To create a more innovative corporation, top management must develop an entrepreneurial culture—one that is open to the transfer of new technology into company activities and products and services. The company must be flexible and accepting of change. It should include a willingness to withstand a certain percentage of product failures on the way to success. It should be able to manage small, incremental innovations in existing products as well as radical advances that may alter the basis for competition in an industry.

Largeness is not a disadvantage. In his classic book *Diffusion of Innovations*, Rogers reveals that innovative organizations tend to have the following characteristics: Positive attitude toward change Decentralized decision making Complexity Informal structure Interconnectedness Organizational slack (unused resources) Large size System openness Such a culture has been noted in Corporation and Texas Instruments, among others.

First, employees are dedicated to a particular project outcome rather than to innovation in general.

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Second, employees are often responsible for all functional activities and for all phases of the innovation process. Time is allowed to be sacrificed from regular duties to spend on innovative ideas. If the ideas are feasible, employees are temporarily reassigned to help develop them. These people may become project champions who fight for resources to make the project a success.

Third, these internal ventures are often separated from the rest of the company to provide them with greater independence, freedom from short-term pressures, different rewards, improved visibility, and access to key decision makers.

Conclusion

The management of technology and innovation is crucial in today's fast-moving global environment. In every industry, the leading competitors are the innovators. The list of today's innovators, well-known companies such as Dell, Southwest Airlines, and Starbucks, lead their industry now but will eventually cede this advantage to other companies with even better ideas.

The real challenge for strategic management is sustained innovation. Royal Dutch/Shell had traditionally been better at investing in large, low risk projects yielding a modest return than in small, high-risk projects with the potential to transform the entire industry. In an effort to emphasize radical innovation, the company introduced a new approach called Game Changer. Six teams of six people each meet every week at the Exploration and Production Divisions in Houston, Texas, and in Rijswijk, the Netherlands, to consider ideas that have been sent to them by e-mail. Out of these Game Changer teams have come four business initiatives for the corporation. One of them is Shell's new "Light Touch" oil-discovery method—a way of using lasers to sense hydrocarbon emissions released naturally in the air from underground reserves.

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