

Case Studies on  
**Managing Innovation – Vol. I**

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Edited by

**Nusrath Jahan Maldar**

**Rajendar Singh Rathore**

Icfai Business School Case Development Centre



**Icfai Books**

# 71, Nagarjuna Hills, Punjagutta, Hyderabad – 500082

**Icfai Books**

# 71, Nagarjuna Hills,  
Punjagutta, Hyderabad – 500082  
Andhra Pradesh, INDIA  
Phone: 91 - 40 - 23435387/91, Fax: 91 - 40 - 23435386  
e-mail: [icfaibooks@icfai.org](mailto:icfaibooks@icfai.org), [ibscdc@icfai.org](mailto:ibscdc@icfai.org)  
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**ISBN** : 81-314-0603-2

**Editorial Team:** Subha Dharmapuri

*Visualiser:* Ch. Yugandhar Rao

*Designer:* K. Sreehari Rao and P. Damodara Siva Prasad

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## OVERVIEW

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Management guru, Peter Drucker, observed that any business enterprise has only two basic functions: marketing and innovation. All else, he implied, was detail.<sup>1</sup> His words have proved to be prophetic, as the birth or turnaround of some of the world's leading companies today has been scripted by an exemplary innovation. Be it Procter & Gamble, Sony, Intel or Apple, innovations have spanned the success of these diverse companies across decades.

Although the term 'Innovation' has been defined and redefined over the ages, its importance has rarely been denied – fast changing markets and technology combined with intense competition in almost all major industries have ensured that. Successful innovations, throughout history, have driven new customer acquisition, margin enhancement and top-line growth, as demonstrated by Ford's Model T in the early 20<sup>th</sup> century and Apple's iPod in the early 21<sup>st</sup> century. The question plaguing companies today is not, should we innovate? But rather, how should we innovate? (Exhibit I).

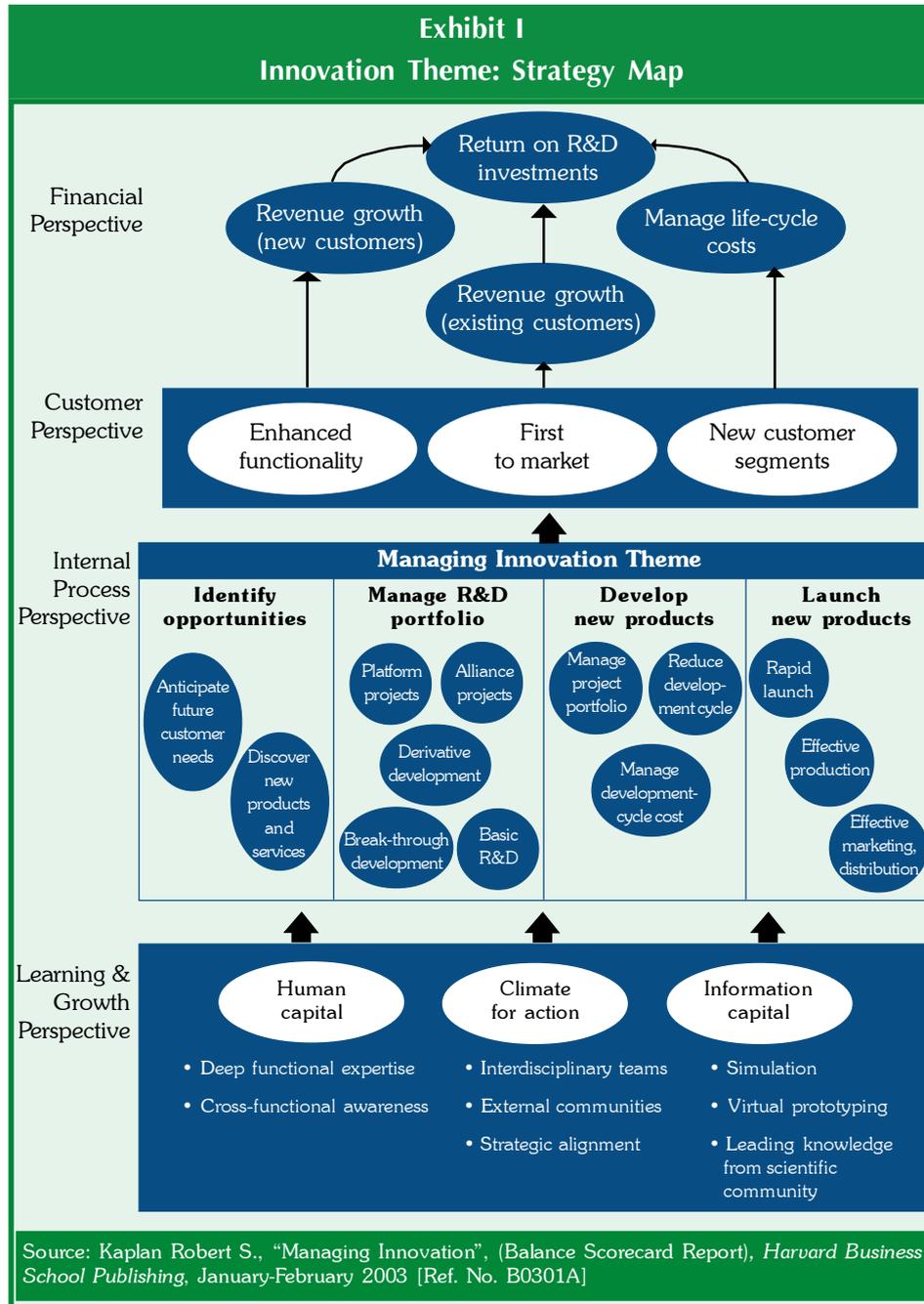
The world has seen several innovations that have been pioneered by geniuses but increasingly, strategists are now beginning to believe that a structured approach to innovation, which follows a conscious, purposeful search for opportunities, is the key to building an innovative company.

Areas of opportunity can be found both within the company and the industry in which it operates. A company's social or intellectual environment may also provide a hint of such a prospect. Within the company, ideas may spring from previous experience or technological understanding. Not long ago, companies like Xerox and General Electric looked to their own R&D to come up with paradigm-changing innovations, and R&D was jealously guarded as the primary source of the organization's intellectual capital. Those were the days of 'Closed Innovation'. However, as the 21<sup>st</sup> century has dawned, the belief that 'not all smart people work for us' has taken hold and businesses are looking to leverage on other companies' intellectual capital. Partnerships with research laboratories, universities and building strong relationships, especially with customers and suppliers, have today become the rule rather than the exception, in an attempt to identify and capitalize on a new opportunity.

Once new ideas have been identified or generated, the company must finalise which projects to fund, which to put off and which to kill. The company must then determine the details of the projects funding – should it be funded internally, collaboratively or through a joint venture, or should it be licensed or outsourced entirely. Even after finalising the company's R&D portfolio, there is a need for reevaluation in the light of the company's overall objectives and resource availability. Ideally, the R&D portfolio of any company should contain a mix of the following:

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<sup>1</sup> Dolan Robert J., "Note on Marketing Strategy", *Harvard Business School Publishing*, November 1<sup>st</sup> 2000 [Ref. No. 9-598-061]



- Projects focused on developing new science and technology knowledge that may later be applied commercially
- Projects devoted to developing a platform for the next generation of products in a given product category
- Alliances with other companies that enable the company to acquire a new product/process/technology from another company
- Projects aimed at creating breakthrough products based on the application of science and technology in an entirely new way. Such projects typically create a new product category or a new line of business for the company.

The core of product development involves the design and development of the new product. A successful design and development process should be based on two key characteristics. Firstly, the target market should find the product's desired functionality attractive, and the company should be able to manufacture the product with a consistent quality within the targeted cost. Product development involves concept development, product planning, and detailed product and process engineering.

At the conclusion of a successful product development stage, the company has a new product in-hand, 'almost' ready to be launched in the market. Prior to the commencement of commercial production, the project team should initiate a pilot production to finalise production specifications. Testing the product and the production system should involve answering the following questions –

- Can the finished product meet the required functional, cost and quality standards when manufactured at commercial volume levels?
- Can the company find suppliers who can deliver the required inputs in the necessary quantity, on time and within the targeted cost?

Once the production feasibility has been proven, the company can commence commercial production, while, at the same time, the marketing and sales departments begin to sell the new product. This stage is iterative and the development project will end only when the company has been able to achieve production and sales levels that meet the targeted product quality, functionality and cost.

Having summarized the important stages involved in innovation, it is also important to look at the main types of innovation that exist in the market. Commonly, innovations are classified as follows –

**Product/Service innovation** involves the introduction of a new or substantially improved good or service. A product/service innovation may create a new line of business not only for the company but also for the marketplace, while upgradations may involve improvements in functional characteristics, technical abilities, ease of use, or any other dimension.

**Process innovation** involves the implementation of a new or significantly improved production or delivery method. A type of process innovation may be –

- Supply chain innovation where innovations may occur during the process of sourcing inputs from suppliers and the delivery of outputs to customers.
- Marketing innovation where new marketing methods may be developed with regard to improving the product design or packaging, product promotion or pricing.

**Business Model innovation** involves capturing greater value by changing the way business is done e.g. Dell and FedEx.

Another method of categorising innovations is by the impact it has on existing markets or businesses. **Breakthrough innovation** also called radical innovation involves creating a new line of business for both the company and the marketplace. The term 'new' may imply a product or process with hitherto unseen performance features or with already familiar features that offer potential for a 5-10x (or greater) improvement in performance, or a 30%-50% (or greater) reduction in cost. Breakthrough innovations often tend to be disruptive in nature, as they tend to render some products obsolete, while significantly changing a particular product category or creating a new one.

**Incremental innovation**, sometimes, also called sustaining innovation, implies a step forward along a technology trajectory. As opposed to breakthrough innovations, incremental innovations are associated with low risk and a high probability of success. Companies invest a high degree of their R&D budget in achieving incremental improvements.

For instance, while Sony's Walkman, the world's first personal portable cassette player, can be considered to be a breakthrough innovation, the subsequent portable cassette players with features like the radio are simply advancements in technology and are called incremental innovations. Another breakthrough innovation in the same industry has been Apple's iPod.

Similarly, in the automobile industry, while hybrid vehicles can be classified as incremental innovations, the invention of a cheap, safe, personal flying machine that could replace cars would definitely be considered a breakthrough innovation.

Business organisations generally invest a significant amount of their turnover on innovation, that is, making changes to their established products, processes and services. The very nature of the industry in which the company operates gives an idea about the amount of R&D investment, that the company might be required to make. The amount of investment can vary from as low as 0.5% of revenues for organisations operating in an environment with a low rate of change to anything over 20% of turnover for organisations facing a rapidly changing business environment. In IT, consumer electronics and pharma companies, the investment tends to be on the higher side, while producers of FMCG goods may comparatively invest a lesser percentage.

Most importantly, to be consistently successful at innovation, an organization must have employees who are broad based in their experiences, known within the organization as the group to contact with radical ideas, and skilled at evaluating and helping to articulate the benefits of novel technologies.<sup>2</sup> Persistence and organizational staying power are believed to be the key.

This book features case studies on some of the best-known innovations recorded in recent business history. The case studies have been classified into three categories – product innovation, process innovation and business model innovation. The product innovation section has been sub-classified into breakthrough and incremental innovations. Case studies on breakthrough innovation include among others *Segway HT: Troubles and Challenges of the Revolutionary Human Transporter*, *Michelin's PAX Tyres: Radial Type Innovation?*, *The iPod – Apple's Trojan Horse?* and *TiVo: Pioneering the Interactive Television*. Each of these case studies highlights the industry conditions as well as the organizational environment that led to the concerned innovation. They also deal with the production and marketing challenges faced by companies that create breakthrough innovations.

Although a single successful breakthrough innovation has the power to catapult a company to the forefront of the industry, the case studies on incremental innovation such as *Airbus: Flying High with A380*, *Innovation at Pixar – The Key to Sustainable Profitability?* and *Samsung's Washing Machines: The "Nano" Innovation* prove that it also occupies a very important place in the company's R&D.

The case studies *Olympus' "Creative Destruction": Tsuyoshi Kikukawa Revamping the Innovation Process*, *Project Platypus – Mattel's Unconventional Toy Development Process* and *Innovating 3M's Innovations*, discuss the importance of providing the right kind of environment to boost innovation and the role played by top management in building an 'innovation culture' within the organisation.

In the third section, the case studies, *FedEx: Revolutionising Global Express Delivery* and *Dell's Business Model: Is it Time to Reinvent?* exemplify business model innovation.

The book also contains the interviews of such experts in the field of innovation as *Dr. Michael Treacy*, *Dr. Sam Kogan* and *Dr. Curtis Carlson*. The ideas and issues brought forth in these interviews can be used as a supplement during case study discussions.

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<sup>2</sup> O'Connor Colarelli Gina and Rice Mark P, "Opportunity Recognition and Breakthrough Innovation in Large Established Firms", *California Management Review*, Volume 43, Number 2, Winter 2001 [Ref. No. CMR195]