



TenStep Supplemental Paper

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Market-Based Technological Innovation

Companies no longer divert their profits to research and development (R&D) activities. Owing to greater emphasis on operating margins and with each department acting as a profit center for the organization, research activities have to be conducted on a market-specific approach through detailed cost-benefit analysis.

R&D- an exclusive domain?

Until recently, R&D activities were an exclusive domain in organizations. Employees working in this segment were not considered as part of the strategic decision making team. R&D was considered more of a support activity than a line activity. Inclusion of these activities in an organization's strategic perspective or business model was thus alien.

Thanks to the changing customer needs, R&D activities have undergone a metamorphosis of late. With the growing emphasis on the customization of products and services that cater to specific client requirements, there has been an emphasis shift. Companies have realized that merely investing in R&D activities do not trigger success in the current competitive technology-oriented market. Organizations are thus forced to empower technology managers to use a business-development approach that links research and technology to the psyche and requirements of the target consumer.

Changing business scenario

With market competition getting extremely intense and established tech-based businesses vying for top honors with knowledgeable, low-cost competitors, established companies are expected to go beyond pricing models to retain their competitive edge. This can be achieved not just on the basis of cost cutting and downsizing, but also by creating new business opportunities.

Managing growth within an organization therefore necessitates an update of management skills, and change management in the form of people, processes and systems. Such a change management process aims to advance a proven commercial proposition into a market reality through product design and development. This calls for a focus on standardization, quality and reliability.

Getting into the act

The success of technology-based companies is largely dependent on their ability to quickly adapt to the evolving market and reap profits. This requires companies to incubate business-building programs where technologies generated in the labs are converted into deployable capabilities speedily commercialized and launched in new markets. Innovative programs need to support the research aimed at product development, market development and subsequent commercialization of the product in a phased manner. Such programs must lead evolving technology through the commercialization cycle as a continuous chain of inter-related processes.

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Technology development manager comes to the fore

In today's context, a technology development manager needs to execute nine key roles encompassing three major groups of activities. These include:

- Pipeline-building (or the identification and screening of opportunities);
- Market entry (through the introduction of prospective opportunities into the market)
- Take-off (managing the actual launch of the new projects)

These activities are taken up at three levels of challenge:

- Venturing (or entrepreneurial-oriented activities aimed at setting up new businesses),
- Championing (ensuring that adequate resources are allocated to new business development) and
- Heat-shielding (instilling a corporate atmosphere that enables new business development).

All this involves the formulation and execution of a technological management program that necessitates innovation beyond the realms of R&D labs into the world of business reality and viability.

To ensure the success of the technological innovation, the top management should go beyond mere calculation of investment costs. It must consider broader management issues and the strategic impact on the company's business and market standing on account of the new technology. One of the global majors that has taken a lead in this direction is healthcare giant, Aventis Pharmaceuticals, a *Drug Innovation and Approval (DI&A)*.

The *Global Regulatory Approvals and Marketing Support* department at Aventis utilizes data generated from globally conducted clinical programs for simultaneous submission and rapid registration in different countries. The company's Global Drug Development Center concept encourages constant interaction between the clinical, regulatory and marketing divisions to drive product launches after getting the regulatory nod. The process is incorporated in a "*Value Net*" approach. This technique overcomes the shortcomings of the traditional sequential-based drug development model by allowing activities simultaneously or in varying configurations depending on the kind of data available. In effect, such an approach integrates R&D and other knowledge-based parties into a virtual network that encourages simultaneous hypothesis generation, testing and evaluation and rapid cycles besides streamlining viable options depending on the information obtained.

Other companies that have adopted market-based technological innovation include Procter & Gamble (P&G), General Electric and DuPont. P&G has adopted an outward focus on technology innovation with its core capability to develop and commercialize. In tune with the changing trends, the company has moved from the traditional vertical integration focus in R&D to a horizontally networked organization. This involved the participation of both insiders and outsiders in enhancing the R&D expertise of the



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organization, thereby leveraging the best of available technology-research talent to get the competitive edge. At DuPont, venture teams explore the business viability of various ideas through a screening process with special emphasis on the features of the venture and its consistent application that yields results.

Competitive edge through technological innovation

Market leaders in the technology segment include those who can implement technology development programs directed at business development. So organizations need to hire and nurture techno-commercial managers as their strategic human resource asset for developing and driving their business through research-based innovative technology to ensure customer satisfaction.