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New Books and Reports For Leaders of Technological Innovation

Resolving the Innovation Paradox: Enhancing Growth in Technology Companies; *Georges Haour; Palgrave, Macmillan; 153 pp., $37.50.*

The goal of this book is to define the need and examine how to facilitate innovation. Georges Haour, who teaches technology and innovation management at IMD, has set up his book such that the reader is exposed to a description of innovation and examples of the processes followed during innovation. Innovative and non-innovative companies are examined and the effect of and lack of innovation on companies is tracked. The facilitators and blockers of the process are also described. Company case studies are presented as support and illustration.

This reviewer recommends reading the foreword in order to gain insight into the author's experience, thoughts, exuberance, and sense of urgency regarding this topic.

The first chapter examines the need for innovation, which is viewed as nothing less than survival (the chapter's title) for a company. The degree of innovation throughout the world and that it is more prevalent in some countries than others is discussed. Additionally, how innovation has changed over time and how innovation within a company changes as the company grows is broached.

Chapter 2 defines the "innovation paradox"; that is, if innovation is critical to corporate survival, then real attention should be given to it, not just lip service. There is a lot of discussion about the role of top management, especially the CEO, in the innovation process, along with descriptions of how top-level management drives innovation and which corporate cultures support it.

How to be effective in the innovative process is the subject of Chapter 3, which examines targeted and managed product development systems. This chapter shows that innovation can be managed and, more important, planned. Innovation must be carried through the entire product development process, from market needs and idea through technology. This approach will yield a project portfolio which can allow the company to have a mix of short and long term, high and low risk, revolutionary and evolutionary projects.

How to get the most (leverage) out of the innovation process that has been put in place is the major topic of Chapter 4. Generics of Cambridge, UK is used as a case study. Multiple approaches and methods to get innovation benefits are described, including collaborative developments, technology spin-offs and growth of concept with close market ties. This business model is defined as innovator/incubator/investor.

Chapters 5 and 6 describe the rudder that controls the direction and degree of growth resulting from an innovation; in particular, how best to capitalize on innovations is discussed. Interestingly, the author refers back to the CEO's critical role in innovation.

Redefining the "business perimeter" of a company by moving items to outside organizations is discussed in Chapter 5. Case studies of Danone, Nokia and Samsung are examined and effective performance is pointed out.

In Chapter 6, market-oriented distributed innovation achieved by having work done at outside organizations and then moving it into the starting company is discussed. The case studies examined include Nokia, Intel and pharmaceutical companies.

Chapter 7 stresses the human element. Corporate culture, motivation, sense of urgency, commitment, attitude, and skill sets are obvious qualities needed for success. Ways to optimize and manage these qualities are described.

Chapter 8 brings us back full circle to the CEO, whose role in the innovation process was described in Chapter 2. Chapter 8 examines the CEO's use of the process.

The real benefit derived from reading *Resolving the Innovation Paradox* is examination and understanding of the complete process of innovation. While many of the topics can be viewed in isolation, the examination of the process from start to finish is critical. Many people have an understanding of sections described in this book; however, trying to optimize innovation with an understanding of only one or a few sections would be like trying to build a house with a limited tool box. Even if one only understands the individual items, the interactions between these items and the case studies will prove beneficial for entrepreneurs, corporate managers or anybody wanting to get more output from a company.

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NOTABLE PAPERS AND ARTICLES

The Acquisition, Protection, and Leveraging of Technological Competencies; Special Issue of the Strategic Management Journal, July 2004; *Guest Editors: Kathleen Eisenhardt (Stanford University), Susan McEvily (University of Pittsburgh), John E. Prescott (University of Pittsburgh).*

How managers *acquire, leverage and protect* technological competencies in order to innovate successfully and enhance firm performance is central to the field of strategic management. When tensions across acquisition, leverage and protection activities are resolved and synergies are captured, the value derived from technological competencies can be used to fuel a virtuous cycle in which fewer resources are needed to perpetuate a firm's advantage. The papers in this special issue examine how managers of firms *acquire, leverage and protect* technological competencies in order to innovate successfully and enhance the performance of their firms. Innovation

is treated broadly, encompassing the production of new knowledge and novel products.

The first two papers in this issue examine *key dilemmas in alliances and acquisitions*. Oxley and Sampson discuss how firms can protect their technological competencies at the same time they collaborate with other organizations, by delimiting the scope of their collaborative efforts and adjusting the governance mechanisms used to manage them. The challenge in acquisitions has been to realize expected synergies. In a creative field-based study, Graebner breaks down post-acquisition performance further and reveals how managers can capture expected and unexpected value from acquired technological competencies. Successful acquired managers balance autonomy—which supports exploitation of existing technology—with integration, which promotes exploration through the recombination of technology resources.

Two papers deal with leveraging technological competences through *competence transfer within firms*. Roberts and Nerkar examine how prior experience affects a firm's ability to leverage competencies into new products. They find that the value of experience depends on how closely it relates to the product markets a firm seeks to enter, and that technological and market experience do not enable leveraging in the same way. Hansen and Lovas investigate the degree to which formal and informal relationships enable firms to overcome the barriers created by geographic, cultural and technological distance. Formal and informal relationships are differentially effective in overcoming the negative effects of spatial distance, and technological relatedness seems to be less influential than prior research would indicate.

Three papers examine how *country and corporate context* affect competence acquisition and leverage. Feinberg and Gupta investigate how opportunities to acquire, protect and leverage technological competencies affect a multinational's decision to locate research and development with a particular foreign subsidiary. They find that an MNC is much more inclined to locate R&D with a subsidiary if it can protect the resulting technological knowledge and leverage it via a global network of subsidiaries. Almeida and Phene demonstrate how attributes of the host country and MNC influence the subsidiary's innovativeness, and show that a subsidiary's knowledge linkages to other firms in the host country improve its innovative capability. Thomas shows that technological competencies, and a firm's ability to sustain innovativeness, are shaped by a firm's history of participating in local and foreign markets.

Finally, three papers offer new insights into *search processes* that underlie the acquisition of technological competencies. Ahuja and Katila investigate *when* firms embark on a new search trajectory. They identify triggers for firms to change their search patterns, and several triggers (e.g., change in mix of countries) that lead firms to initiate new technological paths. Argyres and Silverman examine *where* firms look for technological knowledge, and reveal organizational drivers of the breadth of search. They find that the centralization of decision-making authority increases the breadth of a firm's search across organizational boundaries, but not across technological domains. Fleming and Sorenson discuss *how* firms use science to search for novel and effective technological solutions. They show that, in addition to eliminating less promising technologies, science leads inventors more directly to useful combinations of technologies and motivates them to continue searching a technological domain in the face of negative feedback.—**Susan McEvily.**

Sharpening the Intangibles Edge;
Baruch Lev; Harvard Business Review, June 2004, pp. 109–116.

When the author, a New York University professor of accounting and finance, was asked to estimate the return on investment for the different types of R&D performed by one of DuPont's divisions, he estimated the return on the total R&D effort was roughly three times the cost of capital, "suggesting that DuPont's investment in the division's R&D fell short of the optimum."

In general, Lev reports, neither markets nor managers accurately value investments in intangibles like R&D. As a result, investors misprice the shares of intangibles-intensive enterprises and managers misprice their cost of capital, thereby hindering their ability to invest adequately in R&D.

Lev's solution for this problem is to generate better information about investments in intangibles and disclose at least some of that data to the capital markets.

An Examination of Long-term Abnormal Stock Returns and Operating Performance Following R&D Increases;
Allan C. Eberhart, William F. Maxwell and Akhtar R. Siddique; The Journal of Finance, April 2004, pp. 623–650.

Do increases in R&D spending lead to better than expected operating performance, and is the market slow to recognize this benefit? Yes is the answer to both questions, according to authors Eberhart (Georgetown University), Maxwell (U. of Arizona) and Siddique (Office of the Comptroller of Currency). They examined 8,313 cases, between 1951 and 2001, where firms unexpectedly increased their R&D expenditures by an economically significant amount. For the five years following these increases, they found "consistently strong evidence that firms experience significantly positive abnormal operating performance." They also found consistent evidence of the market's misreaction, evidenced by "significantly positive abnormal stock returns" following the increases.

Beyond the Balance Sheet: Innovation;
Cecily Fluke and Lesley Kump; Forbes, July 5, 2004, pp. 142–145.

Citing the benefits of R&D spending demonstrated by Eberhart and co-authors (above), these *Forbes* statisticians compute an "innovation-adjusted earnings" figure for big R&D spenders. Analogous to traditional cash flow measures, their figure adds R&D spending to earnings, thereby yielding better (i.e., lower) price/earnings ratios by excluding R&D from expenses.