

our own more "canned" approach to science, I think, skips. The author argues that a specific, deliberate effort to understand the problem, including figuring out the impact on profitability of the knowledge involved, forces one to look for a more "big picture" interaction among disparate knowledge patterns.

Incubation leads to the "aha!" moment of "profound discernment" (p. 101). This activity is enabled by engaging in a variety of research projects (not a bunch of annoying administrative work), by having time to follow intuitive thoughts and to pursue anomalies, and by participating in restful diversions.

Stimulation via basic research, external stimuli, and specialized thought processes (including humor, presentation and publication, and extensive interaction) enables incubation. Several chapters of the book delve into a variety of stimulation methods, such as allowing anomaly to drive research, balancing reductionism with holism, connecting disciplines, and being tenacious in "attempting to find the most creative and useful hypothesis" (p. 204).

Finally, illumination occurs as the researcher writes reports and prepares presentations—"a process promoted beyond reasonable limit by the publish or perish credo of academe. . . [but one that] is greatly underdone in industry" (p. 193).

CHALLENGING

According to the author, "If new knowledge from research is always exhaustively analyzed for its relationship to commercial application, a surprising number of new, potential pathways to profit can be found" (p. 206). However, he also emphasizes that many managers do not understand the processes by which innovation is achieved, which challenges those of us who teach managers. Discovery and innovation are central to an organization's value creation, but if the managers do not understand the processes that constitute this essential activity, how can they manage it effectively?

These kinds of curriculum issues have been raised before, but still—what are we teaching if not the basic processes of value creation? Theories of motivation, leadership, structure, strategy, culture, justice, and so on ought to be connected to the actual phenomena of work, rather than taught in the abstract. We also need to teach that common ground exists between tech-

nological possibilities and business opportunities, so both sides can understand the discovery process. There has to be an ongoing, deep dialogue between the various facets of business management and technology management in the real world, and so perhaps it should be included in the classroom too. Finally, managers (including technology managers) need to be comfortable with looking for unexpected interactions and connections among disparate patterns of knowledge (the source of discovery). I am not saying that business education is not valuable, since it certainly is. However, rather than teach separate slices only, we need to think about teaching interweaving too.

This book calls into question how we management scholars manage our own discovery process. If going beyond the scientific method is necessary, then how can we add rigorous thinking about the phenomena we study to our rigorous methods? Wayne Bundy develops a number of excellent ideas (including Taoist or hands-on knowing, generating creative and useful hypotheses, and, as a teaser, avoiding the collapse of the Schrodinger wave function in our research processes). This book is not normal managerial science, and it does not draw on established thinking in innovation management (except for a few basics on creativity). It also dismisses "postmodernism" as nihilistic sophistry, when many of the ideas of this literature are consistent with the arguments here (the dominance of ideology, power). But the author arrives at a similar place regarding what innovation management is all about, and he adds important elaborations about the processes of science, technology, and innovation within organizations.

Managing New Industry Creation: Global Knowledge Formation and Entrepreneurship in High Technology, by Thomas P. Murtha, Stephanie Ann Lenway, and Jeffrey A. Hart. Stanford, CA: Stanford Business Press, 2001.

Reviewed by Jay P. Chandran, Northwood University, Midland, Michigan.

Most of us know that the core technology for the VCR was developed in the United States, yet

there has never been a single U.S. manufacturer of the VCR. Several case studies and articles have been written, in which the authors have tried to analyze the failure of American companies to capitalize on one of the most lucrative marketing opportunities of the twentieth century. The authors of this book explore a similar theme, but with some major differences. The industry that forms the subject matter of the book is the flat panel display (FPD) industry, which may be considered the cutting edge in the field of electronics. Unlike the VCR industry, where Japanese companies attained competitive advantage and market dominance by locating the research and the manufacturing in their home country, the authors argue that, in the case of the FPD industry, geographic location of physical assets has no bearing on competitive advantage.

Murtha, Lenway, and Hart state, in the preface, that although this book focuses on a single industry, it has broad applicability for audiences ranging from R&D scientists to academics to public policy makers. After having read it, I must say that I agree.

Managing New Industry Creation chronicles the successful collaboration among companies from the United States, Europe, Japan, South Korea, and Taiwan, resulting in the creation of the modern-day FPD industry, with applicability for products such as television sets, laptop computers, PDAs, etc. It is an exciting tale—a quest for the “holy grail,” a TV on a wall, which began as far back as the 1930s and culminated in the development of the FPD, TFT (thin film transistor), and LCD (liquid crystal display) technologies. But there is a great deal more to the book than that. The reader must be patient, however, since the first six chapters trace the evolution of the industry, and it is only in Chapter 7 that theoretical models with broad applicability are developed. Having said that, I must add that the earlier chapters are not purely narrative but also analytical and reflective, thus allowing the reader to benefit from their research and perspectives through the numerous analogies and critical observations presented.

In Chapter 1 the authors assert that the leveraging of knowledge from multiple countries to create a new global industry—namely, the FPD industry—had no precedents in the history of technology. They point out that although twenty-one out of twenty-five FPD manufacturing facil-

ities were located in Japan, which gave rise to several fears among industry observers, such as global dependency on Japan, cyclical over- and undercapacity, commoditization, and so forth, none of these scenarios materialized. This was due to the emergence of global technology sharing, spearheaded by several U.S. and Japanese companies.

In Chapter 2 the authors draw a parallel between the semiconductor industry in the 1980s and the FPD industry in the 1990s and show how unfair trading practices, government intervention, and U.S. corporate smugness hurt U.S. national competitiveness. They also describe the U.S. government's drive to create a domestic FPD industry, which obscured the reality of the global FPD industry and caused a failure to recognize the market leadership of several American companies, such as IBM, Corning, and Applied Materials. There are stories of successes as well as failures: the successful companies were those that were “open to knowledge creation and sharing” and focused on “knowledge assets,” such as product and process technologies, rather than physical assets. The main thesis of this chapter is that the geographic location of manufacturing facilities has very little to do with global competitive advantage in high-technology industries.

Chapter 3 traces the development of the FPD industry from the early 1970s to 1988, which the authors have termed *the starting line*, denoting the commercialization of TFTs. The authors describe the organizational challenges managers and researchers confronted as they strove to make “dynamic flat information display” a reality. The story of Larry Weber and Plasmaco is inspirational and proves that grit and determination in the face of seemingly insurmountable odds do pay off in the end. There are interesting comparisons among companies with different approaches to the development of new technologies. One clear lesson is that incremental goals are better than one “grand goal,” which, if unattained, can prove to be demoralizing. Several companies such as RCA, AT&T, and Westinghouse abandoned their FPD research after failing to attain perfection, while companies such as Sharp and Seiko implemented imperfect technologies in products such as calculators and wristwatches and became market leaders.

The initial phase in the emerging TFT/LCD/FPD industry is described in Chapter 4, which emphasizes the importance of collaboration and risk taking. The buildup to mass production, the burgeoning of global competition, and struggles faced by participating companies—internal as well as external—are well chronicled. We get a good sense of the birth pangs being experienced by an industry poised for greatness but mired in uncertainty.

In Chapter 5 the authors focus on one critical problem—namely, yield rates. Manufacturers struggled to overcome the problem of microscopic dust particles entering into the display panels, leading to the development of “Generation 2” manufacturing lines, which set the stage for the evolution of a highly competitive industry.

Chapter 6 deals with the “coming of age” of the FPD industry and the “killer app” that enabled this—namely, laptop computers. Several interesting problems and events are discussed: indecision regarding the best size for FPD screens, the genesis of the IBM ThinkPad, the struggle to meet new demand triggered by the success of the ThinkPad, the breaking of the \$500 price barrier, moving from Gen 2 to Gen 3 TFT/LCDs, and the announcement of the death of the CRT by engineers at Sharp, to name a few. The critical role played by individuals and teams as “knowledge carriers” is emphasized in the chapter.

Chapter 7 emphasizes the importance of *continuity, learning, and speed*. In this chapter the authors present several models, attempting to generalize from the experiences of the FPD industry to other similar industries. They demonstrate how knowledge creation and speed of response, often facilitated by the willingness to form partnerships and collaborate with one’s competitors, were the basis for success. The “dynamics of knowledge formation in new industry creation” and “knowledge-driven competitive orientation” are very useful models for understanding how companies succeed in high-technology industries.

Chapter 8 underlines the danger of imbuing the pursuit of global leadership with a nationalistic flavor. Companies burdened by the need to establish a national identity are predisposed to limit their search for knowledge and other resources to the nation’s geographic boundaries, and, therefore, are at a considerable dis-

advantage vis-à-vis global competitors who are not operating under similar constraints.

In the final chapter of the book, the authors again emphasize that knowledge is the key to global competitive advantage, not geographic location or physical assets. They also show that competitive advantage is fleeting and that South Korean companies have successfully challenged Japanese dominance in the FPD industry. They give other examples of knowledge-driven competition in industries such as wireless telecommunications. They also paint a bright future for the FPD industry.

Appendix 1 provides us with a useful timeline, listing major events beginning with the invention of liquid crystals in 1888. Appendix 2 furnishes information about prices and market share. The endnotes are quite exhaustive. It is an extremely well-researched and well-constructed book.

For the student of management or strategy who has no particular interest in FPD or related technologies, this book provides some valuable lessons. The main benefit of the book is in its analysis of how knowledge-based industries evolve in today’s marketplace and how they derive competitive advantage. Hamel, Doz, and Prahalad (1989) have shown how companies can enhance their ability to learn through competitive collaboration. Similar themes have been explored by Garvin (2000) and Nonaka (2000). The authors apply these principles to an exciting new industry that is still evolving, and they demonstrate how companies have been able to attain market leadership by focusing on converting theoretical knowledge into practical applications through teamwork, dedication, willingness to take risks, and competitive collaboration. Although the book does tend to get a bit technical at times, which, given its subject matter, is perhaps unavoidable, the authors do manage to keep the narrative flowing. The theoretical contributions of the book are concentrated in the last three chapters, particularly Chapter 7. There is a risk that the reader may grow impatient before reaching that chapter.

This book can be likened to a very in-depth case study. While the technical details of the industry itself may be of interest to some, the lessons in managing emerging technologies in a global marketplace should benefit a much broader audience.

REFERENCES

- Garvin, D. 2000. Building a learning organization. In C. A. Bartlett & S. Ghoshal (Eds.), *Transnational management* (3rd ed.): 690–703. Boston: Irwin/McGraw-Hill.
- Hamel, G., Doz, Y. L., & Prahalad, C. K. 1989. Collaborate with your competitors—and win. *Harvard Business Review*, 67(1): 133–139.
- Nonaka, I. 2000. The knowledge-creating company. In C. A. Bartlett & S. Ghoshal (Eds.), *Transnational management* (3rd ed.): 681–690. Boston: Irwin/McGraw-Hill.

Searching for a Corporate Savior: The Irrational Quest for Charismatic CEOs, by Rakesh Khurana. Princeton, NJ: Princeton University Press, 2002.

Reviewed by Michael Maccoby, The Maccoby Group, Washington, DC.

The stock market slide, revelations of unethical and illegal corporate conduct, and the downfall of grandiose serial acquirers of companies have triggered a strong backlash against the once-feted, larger-than-life marquee CEOs. In *Searching for a Corporate Savior: The Irrational Quest for Charismatic CEOs*, Rakesh Khurana adds a salvo to the attack, making the case that CEO selection processes lead to hiring the wrong kind of CEOs, with disastrous results for companies and society.

While this book is repetitive and often reads like the doctoral thesis it was, with needless excursions into sociological theory, Khurana makes and supports important conclusions that should be considered by boards of directors and investors. I'll first summarize Khurana's argument and then present my criticisms.

Boards have bought into the mythology that a successor to an inadequate CEO (the successful ones can name their own successors) should be a charismatic outsider. They feel pressure from Wall Street analysts, the business press, and investors who will push up or downgrade the stock, depending on how impressed they are by a new CEO. Directors appoint search committees made up of individuals who lack deep understanding of the problems facing the company and who do not give serious consideration to the firm's strategic situation and the kind of person needed to lead it in the right direction. Rather, these directors focus on how analysts and the

business media will respond to their choice, and, above all, they want to defend themselves from criticism if the new CEO proves a dud.

The selection process itself is defective. Information about the candidates is inadequate, often based on hearsay or social encounters. Candidates are valued because their companies are doing well, even if those companies are in totally different businesses from the one the candidates are being recruited to lead. Directors are overly impressed by a candidate's appearance and an aggressive, take-charge attitude. Finally, the directors can become so invested in a charismatic candidate and so anxious about losing him that they accede to his requests for outlandish pay and power. This process has led to huge salaries and bonuses unrelated to business results. The new CEO overcentralizes control, demanding to be made chairperson as well as CEO. The gap between the CEO's salary and that of other executives, not to speak of the growing chasm between the top and ordinary employees, undermines teamwork and morale.

Khurana cites cases like Bank One to back up his thesis. He has interviewed directors and executive searchers who play a big role in matching charismatic candidates to the specs demanded by directors. A case he could have studied was AT&T's recruitment of Mike Armstrong, whose anointing pushed up AT&T's market value by billions, only to have it deteriorate as he took the company deeply into debt with a "visionary" strategy that he was unable to execute. Armstrong impressed directors as a technology CEO, because he had been an executive at IBM and CEO of Hughes. But he knew little about telecommunications, cable, or internet—the piece parts of his vision. He paid too much for his acquisitions, and his autocratic attitude alienated AT&T managers and turned the executive offices into a court of suspicion and intrigue.

According to Khurana, boards would do better to select an insider—a proven company man or woman who is trusted by peers—to lead the organization. But Armstrong's predecessor, Bob Allen, was just that kind of person. While he did not cause as much damage to the company as Armstrong, his hostile takeover of NCR was a disaster, and he failed to craft a winning strategy for a company that blew opportunities to be a first mover in cellular telephony and internet.

Copyright of Academy of Management Review is the property of Academy of Management and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.