

Managing New Industry Creation: Global Knowledge Formation and Entrepreneurship in High Technology.~(book review)

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Thomas P. Murtha, Stephanie Ann Lenway, Jeffrey A. Hart; Stanford University Press, Stanford, California; 2001; 269 pp., \$34.95.

In this book, which C. K. Prahalad calls "required reading for those who are concerned about innovation and competition in global industries," the authors argue that a new class of global, knowledge-driven manufacturing industries has emerged in which learning, continuity and speed define competition. In these new industries, access to knowledge-creation processes matters more than ownership of physical assets. Location matters only insofar as it confers learning advantages and market access. Companies need strategies that can mobilize their organizations' country-specific strengths and freely leverage them in open, global learning partnerships with allies, suppliers and customers.

The authors (professors at the University of Minnesota and Indiana U.) draw their insights from interviews with more than 160 managers and scientists in the U.S., Asia and Europe who helped found the high-information-content flat panel display industry. This was the first new manufacturing industry to fully emerge in a global economy defined more by trade in knowledge than in physical products, they observe. Their book recounts the business decisions that propelled the industry from building watch and calculator displays to affordable wall-hanging, high-definition televisions. Success required companies to orchestrate global strategic and organizational innovations in concert with an unprecedented rate of technological change in their laboratories, factories and markets. In doing so, they established new rules for competing in the knowledge-driven manufacturing industries of the future.

Chapters 1 and 2 provide an overview of frameworks for strategic and organizational analysis that are used throughout the book to explain industry evolution. Continuity, learning and speed are introduced as core dimensions of successful strategies in knowledge-driven competition. Chapter 3 describes the period from the invention of basic technologies to the announcement of the first large-format color flat panel prototypes in Japan in 1988. The authors relate how companies that implemented management and technology processes based on continuity and learning became leaders. Chapter 4 describes the interregnum between the prototype announcements and companies' decisions to make the costly investments in fabrication lines and manufacturing processes necessary to commercialize the large displays. In the companies that proceeded, senior managers set aside negative recommendations based on financial models because they envisioned displays as keys to future markets that could not be quantified.

Chapters 5 and 6 examine "the torrid interaction of product and process innovation" in Japan during the 1990s, when companies vied to enlarge the display sizes they

could manufacture, while at the same time driving costs down to reach a mass market. Learning and speed dominated their efforts to confront "the paradox of increasing investment requirements combined with the need to decrease prices." Chapter 7 discusses the frameworks touched on in Chapter 1 in more detail, and Chapter 8 examines issues that affected the industry's diffusion to manufacturing locations outside of Japan, particularly the relative openness of corporate and government policies and practices to global knowledge-creation partnerships.

Chapter 9 concludes by extending the authors' perspective on knowledge and new industry creation to other industries. Three broadly relevant observations:

1. "The ability to manage such rapid, continuous change depends critically on experienced people who carry a significant proportion of prior-generation knowledge forward as part of the foundation for new knowledge accumulation.
2. "Few companies enter emerging industries as founding members. Despite holding follower status when they start out, however, some companies play critical roles in building new industries and end up as leaders. Good followership counts for a lot in establishing a viable business in the knowledge-driven competition that defines new industry creation.
3. "Stepping forward into ongoing, knowledge-driven competition begins by taking a step back, recognizing that the point of entry is not a teacher's position but that of a student."

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