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Book Reviews

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The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation

by Ikujiro Nonaka and Hirotaka Takeuchi
(284 pages, Oxford University Press, \$25)

Reviewed by **Barbara Presley Noble**

Americans love nothing more than seeing the underdog triumph, especially when the underdog is themselves. For years, American executives and commentators made the long pilgrimage to Japan to observe firsthand the economic miracle that threatened American industrial hegemony. They returned sounding about the new forms of work organization much as the muckraker-journalist Lincoln Steffens did about the Bolshevik Revolution when he came back from a trip to Moscow: "I've seen the future and it works."

Today, of course, Japan's "future" is hardly working. If anything, it looks more like a repeat of recent American history, complete with a recessionary economy, financial scandals and corporate downsizing. American companies in certain fashion-forward industries like semiconductors have even pushed ahead of their Japanese competitors.

What has the former overdog to teach its rivals now? To conclude that Japan has taken a permanent turn into a big muddy would be a mistake, say the two authors of "The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation," who regard the current problems as no more than a blip in a business cycle.

As the subtitle of their book signals, Ikujiro Nonaka and Hirotaka Takeuchi believe Japan's enduring competitive advantage is its talent for innovation: its willingness to break with the past, dissolve fond attachments and invent the next great thing.

American companies--think of I.B.M., for example, or the major American auto makers--tend to rest on their accomplishments with an "if it ain't broke don't fix it" attitude. At the best Japanese corporations--as at the best corporations internationally, the authors add--innovation is institutionalized. A business is only as viable as its next product, process or strategy.

Why, the authors wonder, do Japanese companies seem so particularly devoted to what Mr. Nonaka and Mr. Takeuchi, both business school professors, call continuous innovation?

In observations and interviews at almost two dozen companies, the authors found that American and Japanese executives tend to hold fundamentally different attitudes about information and knowledge. Americans tend to put their faith in "explicit knowledge," or knowledge that is formal, unambiguous, systematic, falsifiable and scientific. In a kind of update of the organic model of the assembly line, in which workers were viewed as animate parts of a smoothly running machine, Herbert Simon, the Nobel Prize-winning economist, actually uses the image of the firm as an "information processing" machine that transforms data into goods and services.

The Japanese are more inclined to value "tacit knowledge," or knowledge that is intuitive, bodily, interpretive, ambiguous, nonlinear and difficult to reduce to a scientific equation. The two professors trace the differences between tacit and explicit knowledge back to the divergence in the Western and Japanese intellectual traditions, between, that is, the rationalism of the West and the "oneness of body and mind," as the authors call it, of the East.

Readers who long ago switched from saffron robes to J. Press and came, however reluctantly, to accept Cartesian dualism may feel a headache coming on. But "The Knowledge-Creating Company" follows the rules set down by Japanese corporations when they send their workers off to spas for brainstorming weekends: no destructive criticism. The book's critique of rationalism is polite and firm, and the argument is made not in Zen koans but in the international language of business education: the case study.

The authors disapprove, for example, of the widespread American practice of benchmarking, in which companies keep a scorecard on their competitors' business practices to stay a step or two ahead of them. This, the Japanese would say, leads to incremental improvement, not to true creativity or knowledge creation. In a Japanese company, knowledge is thought to be internally generated from basic principles laid out by top management, then improved on by brainstorming from within the ranks and finally some amount of feedback from external sources. Knowledge acquired by individuals becomes "organizational knowledge" shared among colleagues.

In a long and fascinating example, Mr. Nonaka and Mr. Takeuchi recount the development of a breadmaking machine at the Matsushita Electric Industrial Company. Providing the opportunity for fresh home-baked bread every morning seemed to be a worthy and profit-making goal, but among the many problems the design team needed to solve was that none of its prototypes could turn out dough with the proper texture. The team's solution: several engineers apprenticed themselves to a master baker, observing him at length and discovering that he made a special twisting motion that seemed to be the secret to his special touch with dough. The team was able to "socialize his technical skill," that is, to transfer the tacit knowledge in his hands to the kneading mechanism in the breadmaking machine. When it finally came to market, after the team solved several other similarly knotty problems, the breadmaker turned out to be a major success for Matsushita.

One intriguing aspect of the professors' analysis is that they believe middle management, now typically thought to be the deadweight, expendable part of the corporate structure, is critical to staying on the cutting edge. Top management may encourage the "creative chaos" that keeps Japanese companies innovative, but middle management is the engine that drives it. This may explain, in part at least, why Japanese companies are moving much more slowly than their American counterparts in dismantling the lifetime corporate employment system and ridding themselves of the middle layers of management.

Along the way, the authors occasionally skate close to the line that divides a realistic view of the virtues of Japan's best companies from a romantic, pseudo-spiritual one.

But Mr. Nonaka and Mr. Takeuchi recognize innovative companies no matter where they are based. They write approvingly, for example, of the Xerox Corporation, which met the Japanese challenge in the copy machine market, and of the Minnesota Mining and Manufacturing Company, which gives its researchers time to play around in the lab and then to "socialize" knowledge by using the office as a beta-testing site. Co-workers were skeptical when one researcher passed around his innovation, little pads of sticky-backed yellow paper. But the Post-it was the future, and it worked.
