semiconductor, computing, and communication industries. The histories of research and development at AT&T and Lucent, IBM, Intel, and Xerox PARC are interesting and instructive. You won't be bored. The general point that large established firms in these industries have turned to greater openness in innovation is probably true. We do not yet have robust statistical evidence to support this proposition, but there are many company examples going beyond those in the book that suggest that these industries rely more heavily on technological innovations in start-up companies and have greater cross-licensing of patents than in earlier eras.

To provide more robust evidence beyond the examples in the book, we first need a more precise definition of what constitutes open innovation exactly. Chesbrough mentions a number of factors, including greater licensing of technology from others, greater ties to university research, greater decentralization of internal research and development, and greater reliance on innovation by component suppliers. Additional factors not discussed as thoroughly include research and development alliances between firms and outsourcing of technological development to others. How prevalent these and other possible factors are in a range of different industries is still unknown. And how useful the various elements of open innovation are in improving the rate and quality of technological innovation is still to be determined.

Like most research, the answers to the foregoing questions are likely to come incrementally, as researchers study individual topics such as research and development collaboration, patent licensing, and decentralization of internal company research and development. The amount of research on these issues has been increasing. For those like Chesbrough who seek to promote open innovation as a superior paradigm for innovation, a thorough analytical review of the academic literature from the perspective of open innovation would be a useful foundation for further research. It is important to go beyond the book and ask questions such as: What are the precise elements of open innovation? What sort of differences do we see between firms in degree of openness for the different features of open innovation? Under what circumstances and in which types of industries and companies does greater openness in the various elements of innovation activity work well? And under what circumstances and in which types of industries and companies does open innovation not work well to promote technological advance? It is critical to ask the latter question. After all, if all companies essentially outsource their research and development to others, where is there room to benefit from technological innovation?

The Keystone Advantage: What the New Dynamics of Business Ecosystems Mean for Strategy, Innovation, and Sustainability

By Marco Iansiti and Roy Levien. Cambridge, MA: Harvard Business School Press, 2004. 272 pages, hard cover, $35.00

Reviewed by Michael L. Barnett, Assistant Professor of Management, College of Business Administration, University of South Florida

Can't firms all just get along? Marco Iansiti and Roy Levien point out that they should at least try—primarily because their fates are intertwined. Firms are embedded within broader business "ecosystems," the health of which influences the success and survival of all their member firms. Thus, firms should look beyond their own boundaries and develop a more holistic strategy. If a firm is a "keystone" firm—basically the hub of a network—it should also *act* beyond its own boundaries: "Keystones *must* manage the health of their ecosystems as a key business priority" (p. 220). Thus, as they note in their opening sentence, "Strategy is becoming, to an increasing extent, the art of managing assets that one does not own" (p. 1).

And that's where the trouble begins. Strategy has always been about the art of managing assets that one does not own; even more so in days of

yore. The technological advances of recent decades have, in many ways, increased the interdependence between firms, since so many firms are now connected by common information systems. Thus, firms do have greater need to strategically manage technologies that spread beyond their own boundaries. However, strategy covers more than managing just the technological assets that one does not own. Firms also have a long history of practicing the art of managing non-technological assets that they do not own—and, generally, this is a history replete with negative outcomes for ecosystems, business or otherwise. Firms strategically manage rivals, regulators, legislators, employees, the media, activists, customers, communities, and the public in general. Over time, many laws have been enacted to limit the ability of firms to do so, and with good reason. The United States' brand of capitalism (the book is focused on the U.S. only) is built on a foundation of fierce competition amongst independent firms. As firms grow so powerful that they can exert significant control over assets that they do not own—like controlling the media, co-opting regulators, and cornering markets—then markets crumble, consumers get hurt, and our natural ecosystems get trampled. Thus, we really don't want strategy to increasingly become about the art of managing those assets that one does not own. We have built our society on the notion that ownership of assets should be dispersed. We shouldn't seek to advance some back door strategy that enables firms to gain control of others' assets. Increasing control without ownership will surely pervert the democracy of free markets in the much same way as does concentrated ownership.

I wouldn't call the authors on the problems of the broader implications of their simple opening statement, given that the content of the book is focused solely on technology strategy. However, Iansiti and Levien seek to have broader impact beyond technology strategy. They want to influence both "business leaders and policymakers" (p. 12). They practice the art of managing policymakers by bookending their discussion of business ecosystems with calls to loosen antitrust enforcement (pp. 11–12; 223–224). Technology strategy may indeed be furthered by broader coordination, if not downright control, by keystone firms. However, there are many problems associated with busting up trust busting and allowing keystone firms to take control.

Iansiti and Levien provide only dismissive nods to the herd of elephants in the room. They note that it is "not *necessarily* bad for the health of the ecosystem as a whole" (p. 12) when firms control key hubs. Sure, powerful firms could use their power for evil by becoming "dominators that reduce productivity and make their partners more vulnerable to external shocks" (p. 12), but they could also use their power for good and become "keystones that nourish diversity and stabilize their environments even as they vigorously defend their own ends" (p. 12). They shade the picture toward optimism throughout the book by noting the beneficial effects of Microsoft's control of the computing ecosystem. Not so surprising, given Bill Gates' prominent and strong endorsement of the book at the top of both sides of the dust jacket, they are critical of the detrimental effects of antitrust enforcement of the type demonstrated by the Justice Department's attack on Microsoft during the Clinton administration (pp. 11–12). But how do policymakers distinguish the evil from the good? Iansiti and Levien simply state that dominator strategies "should be a red flag for policymakers" (p. 12). Those red flags are mighty hard to see, especially when dominating firms block the view. Until they are recognized, much damage can be done. Overall, this not-so-subtle and generally unsupported over-reaching into policy domains, which they note is "not the main focus of the book" (p. 11), tars the otherwise interesting contributions of the book for business leaders.

For business leaders, the implications of viewing a firm as if it were embedded in a broader business ecosystem, the health of which needs to be managed, is compelling. The notions of interdependence and broader ecologies are not new, but Iansiti and Levien's take on them is well-stated, interlaced with good examples, and logical, as long as we stick to technology. The core of their argument is that firms need to be flexible, but they can't efficiently or effectively gain ample flexibility by owning many assets. Instead, they must rely on the ability to obtain these assets within their

ecosystems, as they are needed. Their ecosystems must be healthy if they are to yield the degree of bounty necessary to remain flexible. Thus, they have incentives to maintain the health of their ecosystems, rather than attempt to dominate and own all assets within them. To put it in their words, "From a world of vertical integration, internal capabilities, internal R&D, internal projects, and internal infrastructure, we have come to a world of mutual dependencies, distributed innovation, technology integration, trading collaboration, and on-demand capabilities. Leveraging the distributed assets of an extended network of business partners has opened the way to unprecedented innovation and operational flexibility" (pp. 221–222). Absolutely. For those business leaders who still think their firm is an island, this book will help alert them to the tsunami approaching their shores. For those business leaders who know that their firm is not an island, this book will help them to better understand their roles and the associated strategies for their niche in their ecosystem. And that's a pretty good contribution.

This book does not offer the same "holistic view" for policymakers that it does for business leaders. They claim: "We are not just talking about technology networks. . . . We are talking about interconnected communities of people and organizations that truly share in collective success and failure" (p. 222). No, they're not. One wouldn't expect them to properly deal with such a huge system in a single book, on top of the detailed look at technology networks. The contribution to business leaders about technology strategy is ample. Overreaching into policy domains without considering people and organizations outside the focal industry is a bad practice for the authors.

They seem to want to use the angles research on the sustainability of the natural environment, and the moral upper-hand that comes with them, by using the language of interdependence and interconnectedness: "webs of interdependence shape collective success" (p. 19); "The health of each depends on the health of the whole" (p. 22); "We are bound together" (p. 222). But the "we" in all of this is restricted to business firms only. They argue for a holistic view of strategy, one wherein firms realize that they are embedded in a broader ecology, but this ecology does not include the natural environment, communities, consumers, or employees. No firm is an island because its actions affect not only other firms, but other stakeholders. Iansiti and Levien, in reaching into policy domains, have conjured up what is tantamount to a one-sided stakeholder argument wherein firms must consider the prosperity of others, but only those others that are business firms. They leave out all the other stakeholders that traditionally get crushed when firms are allowed to pursue self-interest under a stifled regulatory regime. Apart from this, though, the book is good. Thus, I suggest that business leaders skip the opening and closing of the book, and our non-business ecosystems might be more sustainable if policymakers skip the book entirely.

Corporate Social Responsibility: Doing the Most Good for Your Company and Your Cause

Edited by Philip Kotler and Nancy Lee. Hoboken, New Jersey: Wiley, 2005. 307 pages, hard cover, $29.95

Reviewed by Francesco Perrini, Associate Professor of Management and CSR, Bocconi University

Those convinced that corporate social responsibility (CSR) is an important wave of the future would do well to read *Corporate Social Responsibility: Doing the Most Good for Your Company and Your Cause. Best Practices from Hewlett-Packard, Ben & Jerry's, and Other Leading Companies*. Authors Philip Kotler, Distinguished Professor of International Marketing at Kellog School of Management, Chicago, and Nancy Lee, President of Social Marketing Services Inc., present a compelling argument for *why* many companies should change their most basic beliefs about the bottom-line as well as good corporate citizenship. Kotler and Lee's various and highly useful case histories provide significant insights for anyone wishing to adopt CSR as a company bottom-line.