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Book Reviews

Book Review Editor: Preston G. Smith, CMC

Books reviewed in this issue:

- *The Strongest Link: Forging a Profitable and Enduring Corporate Alliance*
- *Mastering Alliance Strategy: A Comprehensive Guide to Design, Management, and Organization*
- *What's the Big Idea? Creating and Capitalizing on the Best Management Thinking*
- *Creating an Environment for Successful Projects*
- *Strategy Maps: Converting Intangible Assets into Tangible Outcomes*
- **The Entropy Vector: Connecting Science and Business**

Editor's Note: This group of reviews includes two short reviews. Because there has been some confusion about short reviews, I would like to clarify. A book receiving a short review is in no way an inferior book; we do not review books we regard as substandard. Instead, it is a book that does not fit squarely within our normal selection criteria. For example, neither of the short reviews here addresses product innovation exclusively but only as one of many corporate activities. In addition, *Strategy Maps* aims principally at top management.

The Strongest Link: Forging a Profitable and Enduring Corporate Alliance, by Gene Slowinski and Matthew W. Sagal. New York: AMACOM, 2003. 288 + xvi pages. US\$29.95.

Mastering Alliance Strategy: A Comprehensive Guide to Design, Management, and Organization, by James D. Bamford, Benjamin Gomes-Casseres, and Michael S. Robinson (eds.). San Francisco: Jossey-Bass, 2003. 410 + xiv pages. US\$48.00.

Developing new products and services with alliance partners rapidly is becoming an important approach to new product development (NPD) because of the

advantages it can create in terms of time to market, cost reduction, and technology access to name a few. In industries such as automotive, electronics, and pharmaceuticals, codevelopment alliances are common. In many other industries, codevelopment alliances are on the upswing. As a relatively new discipline within NPD, there is a great need for an accessible source of experience to avoid common alliance pitfalls and to descend the experience curve pioneered by others without having to make their investments. These two books provide this kind of insightful and practical guidance, and they both will be valuable for practitioners new to codevelopment as well as those who are more experienced.

While both books cover the broad arena of alliances in general, NPD practitioners will find that the concepts and tools apply quite well to codevelopment alliances. New product development practitioners may find themselves wanting deeper insight into how the concepts play out as part of a product development system. For example, a book focused mainly on NPD alliances might be clearer about organizing cross-functional codevelopment teams or managing collaborative cross-functional gate decision-making. Still, making the translation from alliances in general to codevelopment alliances should not be a major leap. On the plus side, the breath of thinking about alliances in general will give NPD practitioners much to think about in taking full advantage of this approach in all aspects of their businesses.

These books are nicely complementary. *The Strongest Link* is an outstanding toolkit for putting together a successful alliance. Its primary focus is at the individual alliance level, and it generally assumes that the reader has an underlying alliance strategy in place to guide alliance management. *Mastering Alliance Strategy* was written from the other perspective, putting most of its focus on formulating alliance

strategy and building alliance management capabilities to support that strategy, to be applied across all individual alliances. Taken together, they provide a complete picture of alliance strategy and management that can be applied readily to NPD alliances.

The two books differ distinctly in their style and research base. *The Strongest Link* is written by Gene Slowinsky and Matthew Sagal based on 20 years of their experience researching and supporting alliance development. It draws as well on insights gained from anthropologists for cultural integration, marriage counselors for interpersonal relationships, and psychologists for interfirm relationships. It is decidedly a toolkit filled with case examples, how-to exercises, matrices, checklists, and helpful hints that follow an overall framework for alliance management. *Mastering Alliance Strategy* is an editorial alliance of 18 contributors (including *The Strongest Link*'s Slowinsky) and is closer to an anthology in its style. This makes for a somewhat less integrated reference at times. For example, there are multiple definitions of alliances, and some of the chapters have content that would seem more appropriate in other sections. To offset this, the editors have contributed a number of chapters spread throughout that pull the whole book together quite well. Along with these chapters, the book includes selected guest chapters such as the one describing Eli Lilly's Office of Alliance Management, as well as articles that appeared from 1994 to 2001 in *The Alliance Analyst*. It has many more case studies than does *The Strongest Link*, but it has many fewer tools. This may be due in part to its treatment of alliance strategy, which is more difficult to systematize and may be illustrated better through case examples that illuminate strategic concepts and alternatives.

This review outlines each book with some comments on chapters and themes that I found most valuable.

The Strongest Link: This book is broken into two parts: (1) planning and negotiating the alliance; and (2) implementing the alliance. The first part is built around a structure called The Alliance Framework[®] (a registered service mark of coauthor Sagal). This framework lays out the 14 critical elements of a successful alliance agreement as well as the iterative process for creating it. The first seven elements are called the Strategic Assessment Elements, and they include:

- Objectives
 - Ours
 - Theirs

- Roles
 - Ours
 - Theirs
- Overall Resources
 - Ours
 - Theirs
- Boundaries
- Market Model
- Strategic Exclusivity
- Intersection

This list illustrates some of the recurring themes that make the book valuable. First, the authors show how to triage the critical elements while still being comprehensive in their thinking. Second, they repeatedly recommend treating alliances as a two-way affair, always trying to take both points of view (they recommend that many exercises be carried out twice, once from each perspective). Third, they suggest an iterative process that continuously refines the joint understanding of the elements.

Of particular note in the first part of the book is the notion of having a process that emphasizes stop fast or go—so often it takes too long to negotiate alliances and even then, the result may be a problem. The tools offered focus on getting quickly and iteratively to the important issues that could kill the alliance. In some ways, it is analogous to a good stages-and-gates approach to NPD. In the earliest stages, the objective is often to determine rapidly and iteratively if a new opportunity has sufficient merit proceed.

The second part of the book is about implementation and addresses issues including early join-up, conflict management, alliance metrics and management systems, and cultural differences management. Of particular note in part II are the approaches offered for getting the alliance off the ground from a people perspective. Expectations mapping, decision analysis, and a stepwise process for bringing the appropriate parties together are useful tools in this regard. Should an alliance run into trouble, there are tools such as such as breakdown sessions and trust self-assessment to help restore relationships.

The Strongest Link does have a few shortcomings worth noting. It assumes that there is an alliance strategy behind the alliances, and it could have given more insight into alliance governance. As it turns out, these are well addressed in *Mastering Alliance Strategy*, which is one of the reasons these two books complement each other well. The only other drawback is

that it describes an alliance management process that exists separately from the NPD process. Companies integrating these processes will need to make some translation from the general alliance level to the specifics of their NPD systems.

Mastering Alliance Strategy: This book is organized in four sections: (1) designing alliances; (2) managing alliances; (3) competing in constellations; and (4) building an alliance capability. The book starts with the admonition to focus on alliance strategy rather than strategic alliances. This is right on target. As companies use alliances more frequently, it becomes incumbent on them to learn how to manage them more strategically. This includes having an overarching alliance strategy, understanding how alliances uniquely can add value to the business, how they bring value as a network (or constellation as referred to in the book), linking alliance selection criteria with strategy, and creating an overall enterprise capability to tap the value of alliances effectively. (For more on the power of alliance networks and more case examples describing the impact of global alliances on innovation capability see the January 2003 *JPIM* review of Doz 2001.)

In the first two sections on designing and managing alliances, the most useful materials were those on governance structures. These tended to fill the gaps left by *The Strongest Link* and offered unique insights such as the notion that alliances need more, not less, governance over time. It is not that little governance is needed up front; it is just that it does not need to be too complex. As alliances grow and become more far-reaching and complex, then governance must be added to help manage this increased breadth and complexity.

The section on building an alliance capability also was insightful. The danger of *The Strongest Link* is that it largely focuses on what it takes to make a single alliance successful. Doing this repeatedly to build a network of alliances requires a cultivated, repeatable capability. In fact, some would argue that the ability to create an alliance is a kind of universal core competence. The book offers a novel view of the stages of maturity of this capability, which could provide companies with a kind of road map for assessment and improvement.

The Strongest Link also had a small list of shortcomings. I found myself wanting in *Mastering Alliance Strategy* the same kind of practical tools for creating a robust alliance strategy. Instead, it provided only insights into possible strategies through the

rich examples used. *Mastering Alliance Strategy* was far more conceptual in comparison, but it may be targeted more to business executives formulating alliance strategy instead of alliance implementers.

In summary, both of these books offer solid advice to those engaged in planning, managing, or executing alliances in NPD. If I had to have only one, I would start with *The Strongest Link* because it probably is geared best to where the majority of companies are today—trying to make individual alliances work as effectively as possible. For those that have a solid co-development alliance management capability in place, I would recommend *Mastering Alliance Strategy* because of its focus on managing across alliances.

References

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What's the Big Idea? Creating and Capitalizing on the Best Management Thinking, by Thomas H. Davenport and Laurence Prusak with H. James Wilson. Boston: Harvard Business School Press, 2003. 242 + xi pages. US\$27.50.

New product development vitally depends upon discovering “new” product ideas. Innovation and business in general require new ideas to be brought in, to be modified for the organization, and to be shepherd-ed through to implementation. Thomas Davenport and Laurence Prusak are writers, researchers, consultants, and teachers who focus their attention on understanding the people who embrace all kinds of ideas and bring them to fruition, resulting in significant product and business improvement.

The authors introduce the role of “idea practitioners” and credit them with doing the real work to import and to implement new ideas into business. The book describes the thorough processes that idea practitioners use to achieve success where others fail. The authors also acknowledge and salute the gurus—people such as researchers, writers, theorists, and consultants who create new ideas. These two groups “form an ecology of ideas, with its own dynamics, that has powerful effects, for both good and

occasionally ill, within most large organizations in the world today” (p. ix). A key contribution of this book is to bring more awareness and recognition to idea practitioners and to separate the faddish from the valuable ideas put forth by gurus.

The target audience comprises three groups—idea people, consultants, and managers. As it was for me, this book offers an opportunity for idea people to experience an epiphany—to discover they are not alone in being stimulated by ideas, in feeling frustrated about not being appreciated, and in learning steps to get their ideas implemented. Since ideas introduce change, copious examples offer stimulation about how to become a more effective change agent. Consultants may be inspired to read an articulate expression of their role as a conduit for spreading ideas and practices throughout organizations and to understand better who their contemporaries are and what they are doing. Managers gain an appreciation for valuable resources already existing within or outside their organizations and how to tap this wellspring of ideas for greater business impact.

The authors believe the subject of idea management is more important now than ever before because

- The size of the idea management problem is increasing: more and more ideas, more idea creators, blurry lines between professions, and more channels for distribution.
- The pace of idea generation has accelerated, and management attention to deal with new ideas increasingly is scarce.
- Innovative business ideas have become more important to companies’ products and services.

The opening chapter compares how General Electric avidly pursued new business ideas whereas Westinghouse, despite its product discoveries, languished, largely by an overriding focus on financial results instead of business innovation. GE does not just talk about ideas—it gives them a bear hug: they embed in the management system new ideas that become corporate initiatives, conduct intense learning sessions, and stick with the ideas instead of treating them as fads. The chapter describes ideas that improve internal business performance—such as ideas in the areas of knowledge, supply chain, or portfolio management—and product development ideas that aid the process of bringing new products to market by companies selling services, software, or tangible goods.

The authors’ intent is to generate insights and to provide a set of tools and frameworks to help idea

practitioners do their jobs, such as criteria for selecting which ideas to pursue, how to enlist others in idea-generated initiatives, and applying multiple points of view to achieve acceptance. The context that guides the authors is that ideas serve two basic roles: (1) improve organizational performance in areas such as improved cost, cycle time, financial performance, and market share; and (2) provide legitimacy by impressing people such as customers and investment analysts that the organization diligently is attempting to improve. Throughout the book the authors stress three objectives—improved efficiency (how things are done), greater effectiveness (what things are done), or innovations in products or processes (contributions)—as criteria; big ideas need to address at least one of the three objectives to be considered. Idea practitioners who determine what ideas make sense, modify them, and mobilize their organizations are the subject of chapter 2. These evangelists are heads of operational units and business functions, planners and strategists, and individual contributors. They manage people, budgets, projects, and processes, but they also “get things done through passion and persuasion more than power” (p. 13). Sidebars tell the stories of real people and the step-by-step means they employ to get ideas implemented.

The next two chapters discuss how ideas go wrong when they become faddish or go right when they become pervasive. A clue appears in the chapter sub-heading: “It’s the content that counts” (p. 49). Fads occur when people indiscriminately apply ideas whose content does not fit the organization, treat the ideas as panaceas that can solve all problems, or talk about implementing but do not supply sufficient resources or commitment to make anything happen. Ideas whose content is selected carefully and is modified for the organization ultimately are more successful.

Extensive research and notes in the back of the book describe the key source of ideas—business guru—who create business ideas for a living, and they explain how guru contributions are ranked. The authors advise readers to understand the source of new business ideas, cultivate relationships with a select few gurus, but also keep “gurudom” in perspective. The book goes on to describe how certain pressures help ideas become important and valued. One example is the uncertainty in how to make an organization more effective, efficient, or innovative. There are few, if any, scientific or verifiable rules and methods to guarantee success. The authors say this gap opens up a giant hole for idea sellers to fill. Gurus find buyers for their

ideas through channels such as storytelling (narratives), the written word (publishing), education (training), and conferences (speaking). The book offers criteria such as translatability and timing to help idea brokers evaluate ideas and then describes an approach to selling ideas into organizations. A common theme is seed, select, and amplify.

Two chapters present detailed case studies of how ideas work in organizations: one that struggled with reengineering and another that succeeded with knowledge management. The book concludes by recording an interview with an outstanding idea practitioner; this interview provides a first-person detailed point of view about how he worked with the chief executive officer (CEO) to sell ideas, to break down boundaries, and to use experimentation as a way to avoid failures. Appendix A lists a select survey of business and management ideas; Appendix B provides a list of idea practitioners; and Appendix C scores the top 200 business gurus.

The authors consistently emphasize the importance of customizing ideas to the environment and culture. Credibility is a requisite characteristic that enables idea promoters to get their ideas across to others. People give greater credence to senior people who are great storytellers, because these people have lived through more events; have refined their stories to their essentials; and have gained the wisdom to emphasize what stories to tell, to whom, and to what effect. Idea promoters “should be serious, credible, earnest, and passionate . . . exhibit a ‘sense of discipleship,’ and have a strong sense of direction for his or her own career and for what will make the organization successful” (p. 29). A critical success factor is to link the idea to something the organization already cares about and can understand easily. Develop resonance between ideas and organizational needs, and use the language of problems the organization is facing.

The book offers much practical advice for idea practitioners. Major change involves working on foundations, which is time consuming but critical. The authors suggest experiment first, and then scale up—people can afford to fail while experimenting. Also know when to get out of the way: where an idea starts out is less important than where it ends up. Successful practitioners use rhetoric with care and precision; rhetoric leads, and action follows. Note that just because an idea provides intellectual stimulation does not mean that it offers business value. Value becomes more probable when there is a critical mass of supporters, and that mass can be accumulated

by listening to reactions and suggestions from critical individuals—the gatekeepers who make the difference between fighting widespread, internal resistance or achieving strong advocacy.

Initiatives run amok lead the authors to the conclusion that “senior executives in a company should maintain control of the project and involve employees in doing the work as much as possible” (p. 171). This means not to turn over implementation of new initiatives to consultants but rather to stay involved. Case studies demonstrate common premises from change management: people who do the work will be much more likely to adopt new processes if they have a hand in designing them; if people and their desires and behaviors are not paramount in any new business approach, the approach probably will have a tough time succeeding.

Much like the quality movement, the authors suggest that management embed idea-related activities throughout an organization rather than establish an “idea management” function. Leaders need to ensure that the presence and respect of idea practitioners is pervasive. Demonstrate through support and recognition how the value of these mature, wise, productive, and respected individuals is an incredibly valuable resource. A role of managers is to state organizational values clearly because these basic values set the boundaries for practitioners to explore ideas.

A distraction in this book is that Davenport and Prusak’s role in the idea movement often appears in the narrative. Graphics or charts are in short supply, but stories and examples abound. This is not a book about generating or managing new product ideas; instead, it covers how ideas in general come to fruition through people and supportive processes.

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Creating an Environment for Project Success

Creating an Environment for Successful Projects, 2d ed., by Robert J. Graham and Randall L. Englund. San Francisco: Jossey-Bass, 2004. 307 + xxvi pages. US\$45.00.

The main theme of this book is that successful project environments in organizations are created and are maintained by upper management. This focus on upper management naturally reveals best practices at a high organizational level.

Since project management is an essential methodology underlying successful product development, this

book can be an excellent reference for product development leaders at several levels. Most directly, it explains what upper management must do to produce products that satisfy stakeholder needs. In addition, this kind of information is invaluable to development team leaders, as it helps them understand what upper management needs to do to develop products successfully. It also can serve development team leaders to assess their current organization in terms of a supportive environment.

In chapter 1, “Leading the Change to a Project-Based Organization,” the authors criticize upper management for their failings to implement organizational change effectively. The authors offer a solution later in the book, by suggesting that an “upper-management team” decide on what, when, and how organizational change should take place.

There are two major components to creating environments for successful projects: upper-management authenticity and integrity and upper-management alignment and agreement on strategy. Without authenticity (upper management means what they say) and integrity (they do what they say they will do), people lose faith in organizational improvements. If the “messenger” of poor project performance or failure is punished repeatedly, upper management loses the trust of people. They must be willing to listen to mistakes they have made with an open mind and learn from them. “Hanging a scapegoat merely ensures that the reasons for failure will never be discovered: the same mistakes might be made again and again. Upper management will not be trusted until it sees that people who discuss ‘mistakes’ are no longer made the scapegoats” (p. 282).

Upper-management alignment and agreement on organizational strategy is key to development of environments that breed successful projects. This alignment is achieved by establishing councils or boards that represent departments across the organization and work with project managers, helping them understand the system of projects. “These councils or boards exercise leadership by articulating a vision, discussing it with the project managers, asking them their concerns about and needs for implementing the strategy, listening carefully to them, and showing them respect so that they become engaged in the process” (pp. 45–46).

The upper-management “team” idea is a good one, but in many organizations, these people are mostly self-indulgent, wondering, “How’s my stock option package doing?” or “I’ve got the best approach to our

new product offering, why doesn’t marketing get it?” It is hard to say how effective the authors proposed solutions would be in these kinds of environments. Many of the shining examples of success are from Hewlett-Packard, one of the most forward-looking companies in Silicon Valley. Companies in this category of project and portfolio maturity are rare.

The book is organized around 10 concepts represented by pieces of a puzzle that, when assembled, establishes an environment conducive to successful projects. Some of the important puzzle pieces are “The Change to Project Based Organizations,” “Strategic Emphasis for Projects,” “Organize for Project Management,” and “Develop a Learning Organization.” I like the metaphor, but these concepts are difficult to implement and would take years to emerge as driving forces in the organization. So if you are looking for fast ways to improve product delivery right now, this book will not help.

The authors discuss some excellent organizational best practices and provide steps to achieve them. One organizational practice is linking projects to organizational strategy as a way to avoid “suboptimization.” This happens when project leaders hoard resources, become secretive about their project, and act independently. This frequently prevents other projects from being successful. Unfortunately, the authors do not provide motivational approaches to guide teams away from this behavior.

However, they do say that prevention comes from communicating organizational strategy to all, so that they understand the total system of projects. Individual project managers then see how their self-interest decisions impact the strategic goals of the organization. Also, upper management must tell project leaders that the resource pool will be managed by them and not by individual projects.

Another best practice discussed is the use of “core teams”—project members who stay on the project from beginning to end and, according to McGrath (2004, p. 361), represent a “hub-and-spoke project team model, with a small inner team empowered to coordinate all project activities of the extended team. Inner team members are drawn from different functions, with a project manager facilitating the team.” This practice has been shown to reduce cycle time, to improve quality, and to enhance effectiveness. “Experts at Motorola claim that one of the fastest ways to improve quality is to focus on reducing cycle time. They found that when they focused on cycle time, defects were reduced at a much faster rate than when

they focused on defect reduction alone. This is because core teams reduce hand-offs from one department to another, reducing the information loss and quality decreases such hand-offs might otherwise cause” (p. 116). In support of their core-team execution effectiveness claim, the authors quote Hewlett-Packard employee Ellis: “The teamwork and alignment of the members of the core team is critical. . . . The project team and management group will look to this group to provide leadership. The extent that we get ‘out of our silos’ [see chapter 5] and act as a team will play a large factor in success or failure” (p. 119).

An important organizational best practice is the concept of a dual career ladder. Some people are forced into leadership roles for which they are unsuited or are uninterested. It is typical of upper management to assume that a high-technical performer can and should lead projects and departments. They assume that understanding the project technology is the most important attribute for the leader. Frequently, this is how they became management, and they see it as a natural career progression. “Research points to the enthusiasm of the project manager as a key criterion for project success: the project manager not only must want to be a project manager but must want to manage the project in question. David Packard, a co-founder of HP, stated as part of the corporate objectives in 1961: ‘A high degree of enthusiasm must be encouraged at all levels; especially the people in important management positions’ ” (p. 191). The newly appointed leader finds a world of personalities, agendas, and conflicts with which they are not equipped to deal. Those lacking enthusiasm for management and leadership—and certainly those not trained—should have an alternate, satisfactory career path. This is covered well in chapter 7, “Selecting and Developing the Project Manager,” where the authors provide lists of competencies, identified from research, that distinguish outstanding project managers. A few of these are “sense of ownership and mission,” “relationship development,” and “strategic influence” (p. 192).

At the end of every chapter is a box called “The Complete Upper Manager.” These list successful upper-management best practices or personal characteristics. They are very useful for understanding upper management’s influence on successful project environments. You can use these lists to measure your environment and thus to improve it.

The closing chapter, “Creating an Environment for Successful Projects in *Your* Organization,” provides a seven-step implementation process including “De-

veloping Senior Management Support,” “Develop Upper Managers’ Abilities in Managing Project Managers,” “Make Project Management a Career Position,” and “Develop a Project Learning Organization.” The authors close the final chapter with an architecture metaphor. “Organizations advancing along a project management maturity model toward enterprise project management can be viewed as a pillars-to-arches evolution” (p. 283). Development of the arch by the Romans opened up building construction to wider possibilities. What the Romans conceived, they could build.

This is the authors’ call to upper management: Create an environment for successful projects, and you can deliver whatever you build.

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James W. Sloane, PMP, CM
Project Management Explorations

Strategy Maps: Converting Intangible Assets into Tangible Outcomes, by Robert S. Kaplan and David P. Norton. Boston: Harvard Business School Press, 2004. 454 + xviii pages. US\$35.00.

A strategy map helps an organization visualize its strategies for creating value, and the strategy mapping methodology defined by authors Robert Kaplan and David Norton is an evolution of their well-tested balanced scorecard (BSC) approach to strategy (Kaplan and Norton, 2001). Their latest book takes the reader on a three-part tutorial of strategy maps—overview, value creating processes, and intangible assets—before describing, in part IV, how to build and to customize a strategy and strategy map for your organization. They illustrate each subsection of the tutorial with one or more case studies, and the book concludes in part V with a collection of case studies from a cross-section of organizations.

Strategy Maps aims at leadership teams, who should find enough information, tools, procedures, measures, and real-life examples to be able to create winning strategies (and strategy maps) for their own organizations. What makes this book stand out are the detail, linkages, and associated measures provided with each of the BSC perspectives—(1) financial; (2)

customer; (3) internal; and (4) learning and growth—as well as the numerous case studies used to illustrate key points. This reviewer was disappointed with the disproportionate representation of service-sector organizations in the case studies. However, a competent leadership team in a product or system (OEM) business should be able to “connect the dots” easily for themselves by using the generic material presented in the first four parts of the book.

Product development enters the strategy map in the context of “innovation processes,” which share the internal perspective of the BSC with three other value-creating processes: “operations management processes,” “customer management processes,” and “regulatory and social processes.” Innovation processes consist of the following: identify opportunities, manage the research and development portfolio, design and develop new products and services, and bring new products to market. Most leaders of product development will find nothing new in the exposition on innovation processes, although there are references to several of the important thought leaders in this area.

In keeping with the notion of a strategy map, and what some product development leaders might recognize as novel, the authors develop links (always with objectives and measures) between innovation processes and objectives in the other BSC perspectives. However, it is curious that the authors have not discussed the integration opportunities that exist within the internal perspective; that is, product development cannot be isolated from operations management, customer management, and regulatory and social processes, but nothing in the strategy mapping process precludes these connections.

Leaders of product development organizations will do well to study this book and to construct their own strategy maps. Complementing this undertaking with the advice contained in Bossidy and Charan (2002) should ensure that an organization’s strategy map will become a reality.

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The Entropy Vector: Connecting Science and Business, by Robert D. Handscombe and Eann A. Patterson. Singapore: World Scientific, 2004. 185 + xii pages. US\$26.00.

Although this book is not a must-read, it may change your views of product development. The authors are highly trained in the scientific principles of entropy and have experience in entrepreneurial businesses as well. They translate the scientific concepts of entropy into business guidance that is especially pertinent to product innovation.

“Entropy is the degree of disorder or chaos that exists or is created” (p. 1). Entropy, or waste, is a by-product of all business processes. It can appear as lost labor, money, knowledge, or time, and it generally is unrecoverable. Although you can arrange to reduce entropy locally, globally entropy rises relentlessly. For instance, a refrigerator creates a cold space, but overall it generates more heat than cold from the electricity it consumes.

Vector, as the authors use the term, is incorrect. *The Entropy Gradient* would have been a more accurate title. Nonetheless, the authors’ concept of an entropy gradient—or rise in entropy over time—is helpful in managing innovation. Basically, one should match the gradient of one’s organization to that of its business environment, or should plan to lead the competition by employing a gradient that is slightly ahead of the industry. For example, Virgin Atlantic—this is a British book—leads a conservative airline industry: “Virgin simply take more adventurous decisions. They set a course that takes them into high entropy waters. The overriding philosophy is that it is better to decide and act than to prevaricate” (p. 130) (in British usage, *prevaricate* means “to deviate from straightforwardness” rather than “to lie”).

This material shines new light on many innovation management principles. One is that overconstraining a situation, for instance, by micromanaging it, leads to needless entropy generation. Another is that incremental processes, as advocated by the agile development movement (Highsmith, 2004), generate less entropy than prescribed (gated) ones. Although “green” design and environmental sustainability are enviable goals, the concept of complete recyclability (McDonough, 2002) violates the law of constantly rising entropy.

This book is short and easy to read. It illustrates points with many original cartoons and diagrams.

Sadly, some of the material is shallow and has little obvious connection with entropy; you easily could skip chapters 8, 10, and 11 and probably chapters 4 and 6 as well (almost half of the book). Fortunately, the book is well indexed and is designed to allow sampling it randomly.

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New Product Dynamics

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