

managers can make to enable them to 'make a difference' and embed new organisational behaviours. Chapter 7 looks at the adoption of new organisational practices and the potential pitfalls in their integration. The key issues identified in successfully adopting new practices are useful reading for those experienced managers who have seen initiatives come and go, and underlying organisational practices remaining little changed.

Case studies are used to further good effect in the following chapter dealing with 'Learning in Organisations'. Rover is described as an organisation that used learning as a tool to enhance its organisational reputation without actually fundamentally changing anything. Chaparral Steel and BP provide a useful counterweight to the Rover experience.

Chapter 9 digs even deeper into the organisation to look at the behaviours of individual managers in terms of their own decision-making processes. It describes the ability to 'switch cognitive gears' between different modes of thinking as a characteristic of the effective manager, and takes us through a series of steps that can improve individual judgement and decision making both at the individual and group level.

Cooperating across the boundaries of geography, businesses and functions is the underlying theme of Chapter 10, which focuses on four international businesses to illustrate the journey of corporate renewal that is essential if organisations are going to be sustainable in the long term.

Most managers will relate to the issues raised in Chapter 11, which deals with overcoming 'business that has no productive outcome'. It is pro-

posed that this is caused by three major traps and suggests that managers who overcome these will have a 'bias for action' that marks out the exceptional manager.

The final chapter deals with the first steps that managers should take in stepping out of the comfort zone, if that is not providing innovative, high value-added goods and services. It reinforces the book's central theme of calling for managers to strive to be exceptional in their capacity to build and support a unique context capable of innovation, but also exceptional in their personal knowledge and competencies and in the values and attitudes they bring to their work.

The book achieves an enormous breadth of coverage in its mission to define the essential characteristics of the effective manager, operating at the national, organisational and individual level. For those managers unfamiliar with much of the content it provides an excellent 'one stop shop'. For those more familiar with this subject matter it may not offer anything unique but adds considerable value by integrating disparate themes within a single volume. It has an easy reading style and well-structured content with good use of organisational case studies to support the material. It provides both context to an ongoing debate about the value that managers bring to organisations, as well as serving directly as an implementation guide for those managers who recognise that behavioural changes are required if they really are going to 'make a difference'.

ALASDAIR BALL

Innovation Management: Strategy and Implementation using the Pentathlon Framework.

Edited by Keith Goffin and Rick Mitchell. Palgrave Macmillan: New York, 2005, £26.99 (pbk.), ISBN 1403912602, pp. 409.

When two authors with such an extensive experience in managing new product development and R&D, in consulting in high tech business environments, and in academic teaching, like Keith Goffin and Rick Mitchell, explicate their knowledge and insights, it must be worthwhile. The result is a book that offers a balanced overview on the management of innovation. The book refers

to a huge number of practical examples and cases as well as to an enormous set of relevant literature in order to understand these practices theoretically. It includes a variety of models, tools and typologies and offers many guiding principles for managers, CEOs as well as those who bear specific responsibilities in the field of innovation. The book stresses heavily the need to understand innovation from a broad, integral perspective. Innovation is more than just new product development, it also requires process development and innovation of services, and especially the focus on services is one of the added values of the book. Moreover, the distinction between policy-, orga-

nizational- and project level, and the mutual relationships between these levels, reflect the integral perspective taken by the authors.

The core of the book, the Chapters 4–8, is very systematically structured along the elements of an integral framework, the *Innovation Pentathlon Framework*, which was developed from the authors' research and has been used extensively in their work with companies. As the name suggests, this framework identifies five main areas or elements of innovation management. The sequence of the first three elements *ideas: managing creativity and knowledge* (Chapter 5), *prioritization: selecting and managing the portfolio* (Chapter 6) and *implementation of new products, processes and services* (Chapter 7) in this framework represent the development funnel, which is well known in the context of innovation management. This funnel model emphasizes the process character of innovation and stresses the *market* orientation, resulting in new products, processes and services. In the pentathlon framework the development funnel is embedded in, on the one hand *developing an innovation strategy* (Chapter 4) and on the other hand the aspects of *people, organization and innovation* (Chapter 8). The pentathlon framework as an overall structuring of the strategy and implementation of innovation management certainly is what distinguishes this book from other (text) books on the topic.

The storyline of the ten chapters of the book starts with *the role of innovation* in Chapter 1. Here, among others, innovation is defined and the pentathlon framework is introduced. In Chapter 2, titled *innovation and economics* the authors elaborate among others on economic cycles, on the relation between company size and innovation and discuss the factors that influence the diffusion of innovation. Chapter 3 discusses the issue of *contrasting services with manufacturing*. Service products are inherently linked to their production and delivery; they are intangible and non-storable. The service sector is not only increasing, services are also more and more intertwined with manufactured products in order to differentiate business' propositions in the market. All this makes management of innovation for services just as relevant as complicated.

Explanation of the innovation pentathlon starts in Chapter 4 with the awareness of innovation strategy as an important part of an overall strategy. Long-term orientation, insight in own assets and in the needs of the markets, and the ambition to fulfill stakeholders' expectations are essential ingredients for an effective strategic

plan. In order to create such a plan, a coherent set of components is needed, that can be represented graphically by a roadmap. The roadmap concept is one of the issues the authors work out in this fourth chapter. One of the themes discussed and illustrated in Chapter 5 regards 'creativity'. Creativity has to be distinguished from invention and innovation: it can lead to inventions but until they are commercialized, they are not innovations. The authors differentiate between types of business creativity. They also make an important distinction between individual creativity, team creativity and a culture of creativity and innovation in which innovation project teams can excel. It is illustrative for the design of the book that, after elaborating the concept of creativity, the issue is complemented by an exposition of several creativity techniques for innovation. A leading subject in Chapter 6 regards portfolio management. Company's configuration of projects should reflect strategic alignment, available resources including time, and a balanced risk/reward profile. Chapter 7 gives, among others, attention to project management and many of its techniques.

In Chapter 8 the authors deal with the fifth element of the innovation pentathlon, what they call the foundation stone of innovation: people and organization. The main question dealt with in this chapter is how organizational culture, teamwork and people management relates to all other aspects of innovation.

Boosting innovation performance, the topic of Chapter 9, requires, to begin with, an adequate insight in the actual innovation competencies, resources and results. Therefore, it is necessary to develop a set of valid and reliable performance measures. The authors give some examples of performance measures based on a simple input–process–output model of innovation as follows:

- input resources: financial (a.o. percent of revenues invested in product R&D), customer perspective (percent mix of projects by their strategic drivers like meeting customer needs, reaction to competition and technology driven) and resources (a.o. percent of total employees involved in innovation projects);
- innovation process: financial (a.o. average project costs), process efficiency (a.o. average time to market), learning (a.o. number of improvements to innovation processes) and specific service measures (a.o. complaints: number and type);

- innovation output: financial (a.o. percent of sales revenues from new products) and customer perspective (a.o. market share growth due to new services).

After determining the strengths and weaknesses, in order to boost innovation performance, management needs to generate ideas, to determine priorities and to develop an action plan to improve innovation performance at both the project and organizational levels. In Chapter 9 Goffin and Mitchell also give an interesting overview of innovation audits. As an appendix the authors list a huge number of audit questions, categorized according to the pentathlon framework.

Regarding *the future of innovation management* (Chapter 10) in their final chapter the authors discuss the difficulty as well as the need to better understand the more subtle needs of customers. For future success, the authors argue, organizations will have to be prepared to experiment more in the marketplace and to accept that demand will be more difficult to predict, so organizations and also supply chains must be more flexible.

Evaluating the book, a few critical remarks can be made regarding the content of the text, especially its coherence. In Chapter 5 for instance, part of the text is about managing knowledge. The storyline on this topic is not that convincing.

The field of knowledge management is too broad to cover and a clear explanation of focus and choices related to innovation management is missing. At some points, the authors extensively discuss what may be regarded an outdated theory or model, like Maslow's theory. Some obviously relevant and actual approaches are missing, like for instance the concept of 'open innovation'. Apart from these minor points however, an overall appreciation dominates. The book is really worthwhile to read, for practitioners who want to theoretically reflect on their own experiences as well as for academic professors who want to extend their repertory of practical illustrations and its understanding. The very systematic approach, with illustrative small case boxes during the text and, at the end of every chapter a summary, management recommendations, recommended literature and one main case study, makes the book very accessible. Primarily written to meet the needs of MBA students following courses on the strategic management of innovation, or conducting in-company projects related to innovation management, the book achieves its goal, and additionally provides (future) managers with the Pentathlon which will be an enduring and useful tool to manage innovation.

PETRA DE WEERD-NEDERHOF
University of Twente

Structured Creativity: Formulating an Innovation Strategy. Edited by Tim Sauber and Hugo Tschirky. Palgrave Macmillan: Basingstoke, 2006, £55.00 (hbk.), 1403991502 (hbk.), ISBN 9781403991508, pp. 227.

This stimulating book represents another very useful output from the ETH Center for Enterprise Science at the Swiss Federal Institute of Technology in Zurich. Under the guidance of Professor Hugo Tschirky, this group has produced a series of excellent contributions to the field of technology and innovation management. A major characteristic of the work has been both academic excellence and practical relevance—and this book is no exception.

The work represents the results of PhD study by Tim Sauber, and is based on action research

into how technology-based companies can approach the formulation of an innovation strategy in a systematic manner. A gap in theory and practice was identified early in the project, by means of literature review and exploratory interviews with company personnel. This gap concerns both the understanding and representation of the innovation system in terms of its complexity and evolution, and also the means of formulating and implementing an innovation strategy.

The concept of an innovation architecture (based on previous work at ETH) is introduced to address the issue of representation. This shows the linkage of a company's scientific knowledge through to fields of innovation via applied knowledge, technologies, functions, modules, product-system services, markets and market needs. This model was extensively deployed with nine colla-