

Books

PARADIGM SHIFT: THE NEW PROMISE OF INFORMATION TECHNOLOGY

Don Tapscott and Art Caston
McGraw-Hill Inc., New York, 1993
337 pp, £21.95
ISBN 0-07-062857-2

Hot off the press for the new year — with a 1993 copyright — is this aptly named book written by two practitioners. In many ways the book could be seen as a sequel to the Scott Morton (1991) edited volume (see *JSIS* Vol 1, No 2, 1992). Yet such a view would be to miss the excitement and the new which is a refreshing aspect of the *Paradigm Shift*. Each of these books examine the intricate, perplexing relationship between the organization and information technology. Each is based on extensive research. Many words and concepts used in the book will be familiar to readers of the Scott Morton volume. For example, 'business reengineering' has more than half a page of references in the Index to the book.

Such are the apparent similarities. But what of the more interesting differences? The basic thrust of *Paradigm Shift*, as the name implies, is to change the reader's thinking about information technology (Kuhn, 1962). The idea that the information age was going through a paradigm shift is traced back to DMR (1987). The changes in IT are set out within a context of changes in the business environment, world economic and political order, and the nature of organizations.

The central, technology paradigm shift, of the book is worth quoting at length because of its vision:

... it is open and networked. It is modular and dynamic — based on interchangeable parts. It technologically empowers, distributing intelligence and decision making to users. Yet, through standards, it is integrated, moving enterprises beyond the system islands (and their organisational equivalents) of the first era. It works like people do, integrating data, text, voice, and image information in its various formats and provides a backbone for team-oriented business structures. It blurs walls between enterprises, enabling the recasting of external relationships. Most important, it has matured to the point where it is achievable and affordable. In fact, the longer your organisation waits to begin a transition, the more you have to spend, even in the short term. (p xiii)

Taking this change as the starting point, the book goes on to discuss the

technology paradigm shift in detail. Three critical shifts in the application of IT are used as a basis for discussing eight technology shifts. The three shifts in the application of IT are:

- from personal to work group computing,
- from system islands to integrated systems, and
- from internal to inter-enterprise computing.

The eight technology shifts are:

- from semiconductors to micro-processor systems,
- from host-based to network-based systems,
- from vendor proprietary software to open software standards,
- from single to multimedia,
- from account control to computer vendor-customer partnerships,
- from craft to factory software development,
- from alphanumeric to graphical user interfaces, and
- from stand-alone to integrated software applications.

The book is structured around discussions of each of these paradigm shifts, always set within the wider context of the changing business, and economic environments. The advantage of two authors, rather than a collection of edited papers, shines out in the way the book articulates concepts and follows them through.

Intuitively many prospective readers will feel that they know and understand the paradigm shifts outlined. The strength of the book is the authors' ability to articulate clearly such fundamental truths, discuss the implications, and spell out in a very practical way the action points for business.

For those interested in the development of an information technology strategy the book can be recommended. Few books have considered the important, but difficult question of 'how to' do an IT strategy study, preferring often to take the IT as given and discuss the organizational impacts. There are those books (for example, Weizer *et al.*, 1991) that consider technology from a forecasting perspective and those that consider technology as one part of the wider information planning process (for example, Ward *et al.*, 1990, or Earl, 1989). Here is a book which breaks with

tradition and goes to the heart of technology change.

At the heart of the matter is whether the technology pushes change or the business demands it. Whatever side you might take in this debate, the *Paradigm Shift*, provides a clear insight into why technology push is important and how the business can plan to use the technology of the so-called second era.

Overall, this is not an academic treatise in the sense of a book filled with references (there are only nine pages of references, contained in a section of Notes at the back of the book). However, the contribution that the book makes to our thinking and conceptualization about IT is unmistakable. And these are not simply the ideas of the authors: the work is based on research involving 5000 organizations, over the period 1986-92, and costing more than \$7 million. Teachers and students will find a number of mini-case studies, arising from the research, reported in the book.

It is a book that can be recommended to students, practitioners, and fellow academics. I will be using it on the Information Technology Strategies course at Warwick.

David Grimshaw
Warwick Business School
UK

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