success of the Japanese with information technology or as a controversial compendium of business information largely culled from two principal US sources, *Fortune* and *Business Week*.

The book is divided into eight chapters. The reader familiar with Forester's work will recognise that chapters three, four, five, six, and seven are re-worked and up-dated versions of previously published work. Nevertheless, chapters one to seven provide a useful overview of the history of the myopia and mistakes of US electronics industry, the Japanese appropriation of US microelectronics "know-how", the myth of Japanese weakness in the development of software, the factory and office of the future and the battle for telecommunications supremacy. In all chapters, but particularly in chapter eight, there is an attempt to explain the success of Japan and the failure of both the US and Europe in the competitive struggle. In general, the Japanese success is said to be mainly attributable to a high level of cooperation between the government and the large Japanese companies, the subsidisation of Japanese companies, the very strict control of imports into Japan and the particular cultural characteristics of Japan. In the case of the latter, two aspects are seen as important, first a hardworking labour force and second, a system of business ethics where industrial espionage and the theft of intellectual property from companies in other countries are of little concern. Conversely, the US failure is attributable to the lack of a US Government industrial policy, the complacency of top management in US business and the common ideological belief in US business that there is a level playing field in a free market economy. The reasons offered for the European failure are somewhat different. The Common Market aside, European failure arises out of national rivalries, highly bureaucratic management, social barriers which divide the workforce and a firm belief that big is beautiful.

Forester's comments on Europe are quite brief, the book is obviously aimed at a US audience. The book will certainly appeal to the general "Nipponophobic" reader in the US and given the criticisms in the text of US business complacency, together with the remarks about questionable Japanese business ethics, it will also become required reading on MBA courses not only in the US but elsewhere.

However, for the general reader there may be a problem. How can the despondent story in the book about the US failure to exploit information and communication technologies be reconciled with stories from other sources which document the vast wealth of Bill Gates of Microsoft or the wealth and global influence of Rupert Murcoch?

Silicon Samurai became Tom Forester's epitaph. He died on 28 January 1994, aged 45.

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Communication Technology Update: 1993-1994 *edited by August E. Grant and Kenton T. Wilkinson* (Technology Futures, Inc., Austin, Texas, 1993) pp. vi + 352, US$25.00, ISBN 1-884154-02-8.

In recent years, there is little doubt that our work, our lives and societal structures are being rapidly transformed by new communication technologies; in fact, the pace and range of developments is now so massive that for students, educators and professionals working in the area, the challenge to maintain an up-to-date understanding of these developments is becoming more difficult to meet. The reason that *Communication Technology Update: 1993-*

1994 is a welcome addition to this fascinating field of study is that it provides the latest information on a large range of communication technologies. It does not represent a definitive source. This is a resource for those who want a brief description of a wide range of information technologies, and to be kept informed about key issues affecting their development.

For the editors, the book represents the second of a proposed series of annual reviews of communication technologies which brings together the contributions from students in Communication Technology and Policy of the Radio-Television-Film Department at the University of Texas at Austin. Each of the 37 chapters — on everything from advances in digital compression to sundry technological explanations and clarifications — has an introductory note about the technology and details of what, where and how the technology is being developed. Clearly the editors have wrestled with the problem of how and with what purpose to combine an anatomical review of current communication technologies. The threads are certain changes in social and economic factors and the convergence of the technologies. The readers targeted are communications professionals who need to keep abreast of recent developments both within and adjacent to their particular field of specialisation, and students who need information which is more current than text books and providing more background information than is found in trade journals or magazines. Unlike the editors' first *Update*, this edition uses a greater range of market related statistics, and relevant economic regulatory and social references so as to inform the reader and to permit some comparative analysis among the technologies themselves.

Divided into 5 sections, the book is carefully organised to allow easy reference. This is an accessible approach and will appeal to the audience of professionals, students and educators for whom it is written. Each section deals with a major technology industry group: Electronic Mass Media; Computers and Communication; Consumer Electronics; Satellites; and, Telephony. The first section includes discussions on two increasingly important technologies: digital video compression and interactive television. The second includes a range of developments in computer technology with an emphasis on computer multimedia aspects. The impact of recent developments in digital technology are emphasised in the consumer electronics section. A section on satellites provides a quite comprehensive layman's description of satellites and some of their more important applications. In the final section, an update of a wide range of telecommunications applications and technologies is provided.

In each of the 37 contributors' chapters, developments in a major technology are assessed. Each provides a technical analysis describing the basic principles associated with the technology supporting a service, technology and equipment trends, and broader social issues as well as standardisation activities. In other words, it aims to answer the questions: Who is doing what? How do standards affect the recent developments in the technology? How are regulations affecting the technology? What are the corporate influences on the development of the technology?

Whilst it is recognised that no single volume is able to offer a wholly comprehensive coverage of these advances, this book does attempt to answer some of these questions by taking a focused, yet broad technical view. The answers are biased towards equipment, with little or no attention given to the frameworks required for the delivery of associated services. The contributors have discussed both the hardware and software aspects of the various technologies. A definition of software has been adopted which includes the "messages communicated through the technology system" (p.4). This of course implies any information manipulated by a technology, as well as the instructions to manipulate it. The contributors have therefore attempted to deal with organisational structure, as well as political and economic influences and user issues on the development of the technology. The result is that the present collection forms a broad elegiac collection which creates almost a technical appendix.

All of the pieces are written in an expository and prosaic style which unifies them where their content does not. The concepts, developments and issues relating to the technology are all revealed in an easy to understand and often naive exposition of the technology. While I found this aspect a little disappointing, the reference materials included at the end of each section added to the value of the book and may also provide a valued resource.

I have read the contributions interregnums and one of the main problems encountered in bringing together such a large range of contributions, is that is difficult to locate their core and yet it is still an incomplete sampling of the *oeuvre*. The technology purist may be able to put it down with an easy feeling in the pit of their stomach. However, in an effort to make sense of new communication technologies, from broadcast to telephony, from wireless to wired and to appreciate these diverse contributions, it is best to turn first to the introduction. In the Introduction, Grant does attempt to unify the contributions by introducing his "umbrella perspective" (pp. 4-7). In the umbrella perspective, the individual users of the technologies are viewed as being sheltered under an umbrella shaped by social, organisational and technological features. It is the bottom level which consists of the hardware and software aspects of the technology while the top level represents the social system level, including political, economic, media systems as well as the groups of individuals who make up the society. The handle by which the umbrella is held is the individual user, and signifies the importance of the user-technology relationship. Grant's message is that all of the relationships must be examined in order to understand a technology. Again in the final section, A Broader View, Grant attempts to unify the contributions by noting some of the commonalities which can be observed among the technologies. However, one still finds it difficult to identify a unifying core and here too it becomes apparent that the editor's visionary gifts are somewhat lacking. The editorial remarks in Conclusions, also appear to lack scholarly debate. In this final chapter, Grant introduces a range of social research factors based on social cues rather than objective technical features which might also play a critical role in the acceptance or not of the new technologies described. It is of concern that one is left with the impression that the social considerations are presented to the reader more as an afterthought, rather than as being of prime concern as is suggested by the umbrella model.

Despite these quibbles, the discussion on the theoretical platforms does present the reader with an opportunity to — at least for a moment — reflect on the broader views of communication technology as part of a social system, as well as part of a process by which innovation occurs. In fact, for those who are closer to the debates touched on than the readership for whom this book is largely intended, Grant confirms the validity of many of those contemporary perceptions. It was also refreshing from the point of view that it does not bludgeon the reader with persuasive or biased conclusions. By an absence of significant scholarly dispute, the analysis is offered almost diffidently, not merely to challenge the reader to extend the contextual meaning of the collection packaged, but also to recognise the demand for the conclusions which are not forthcoming.

Many may have doubts about the utility value of pulling together such a vast number of contributions covering the wide spectrum of communication technologies. In this case too, I thought at first that we are presented with a large collection of hackneyed descriptions of technology under the guise of 'new'. However, after reading many of the contributions and reflecting on the wider perceptions and uses for such a compilation it seems there is indeed some value in the exercise. Yet overall, I do not think that this update will become a definitive reference source in its current format. Such a book might therefore be needed for no other reason than to provide an updated chronicle of the most recent major advances in the development of communication technology.

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