

tional technology is not yet given the prominence it deserves, perhaps that is an issue for AMTEG to address in the near future.

The VIDEOTEX and TELETEXT Handbook - Home and Office Communications Using Microcomputers and Terminals, by Paul Hurly, Matthias Laucht and Denis Hlynka. New York: Harper & Row, 1985. 404 pp. (\$21.95 US, paperback).

Reviewed by Gary Boyd

Probably the first question to ask when reviewing a book is: "Who can be nourished by this book"? In the context of *CJEC*, the question becomes; who among our readers will be nourished by the *VIDEOTEX and TELETEXT Handbook*? The communication services discussed are of a public nature; potentially everyone is a user. These systems have been used experimentally, and are being used for delivering distance education. The alpha-geometric graphics encoding techniques (and the NAPLPS standard) are applicable to many forms of computer-generated instructional graphics, and to the production of graphics for television and for optical videodisc media. Consequently, if you are an educational technologist working in distance education or in media production, this book may be valuable to you.

The preface says: "This handbook will introduce readers to the facts and the myths, the potential promises and the perils that videotex information technology offers." In other words, it is a handbook for *beginners* and for those wishing an introductory overview. It is not intended as a handbook for advanced workers in the field, although it does have much information which should be of value to them. In actual fact, the book gives a good introductory coverage of facts, exemplifies some of the myths and exhibits a few of the promises and perils.

This book is about public computer-mediated communication. The authors re-define VIDEOTEX very broadly as "a generic term for systems that provide easy-to-use, low cost computer-based services and communication facilities." This is a curiously broad definition of VIDEOTEX, since the term actually was defined by the CCITT¹ to cover such systems as PRESTEL, TELIDON and ANTIOPE (which have not been notably successful). To use the term in such a broad way as to include the PC-oriented successful networks (e.g., The Source, COMPUSERVE, etc.) in with the stumbling, TV-oriented systems is rather as though a hundred years ago some influential people insisted on using the term "telegraph" to include the telephone as well! The trouble with this is that it blurs over a profound distinction in *accessibility* between VIDEOTEX and PC telecommunications. Therefore, it is not surprising to find that what this handbook does *not* do is relate these new technologies to the underlying politico-economic struggles of modern society. There seems to be an unspoken assumption that the readers are or will be largely passive consumers of this technology rather than being protagonists who are actively shaping it.

It is to be hoped that the scientific and professional expertise of educational technologists can be mobilized to shape these technologies into forms which will best serve a

¹ C.C.I.T.T Regulation S70, November, 1980.

pluralistic multitude of societal clients, not just large corporations and governments. In a paper entitled "Four Ways of Providing Computer Assisted Learning and their Probable Impacts" (Boyd, 1982), I have dealt with the differential impact on client groups which different configurations of these "communications" or "computerations" systems do have. There is a need to be very clear about *which interest* groups we are supporting, and how the technical aspects of hardware, and the technical aspects of message design and control *differentially* help or hurt these groups. This type of discussion does not occur and is not alluded to in this handbook. That is my main caveat about it.

A secondary reservation is that the technical expositions seem to cater more toward a superficial familiarity with appearances and vocabulary than with the deeper more coherent understanding which is needed in our profession. I think Dean Gengle's (competing) book the *Netweaver's Sourcebook* is much more thorough in this respect. (It also is valuably humorous at times.) Admittedly, any book such as *The Videotex and Teletext Handbook* which is attempting to cover a dozen engineering technologies and a half dozen fields of application must rely on references and bibliographies to provide much of the depth.

The bibliographies of the Handbook are quite good and quite up to date in the technical, social and educational fields. There are notable omissions like Gengle's book, and the educational teleconferencing books by Lome Parker and some important papers by G.A.B. Moore (1985), Geoff Potter (1985), and Boyd (1982). But considering that the book is packaged for an American audience by a U.S. publisher, it does manage to retain a remarkable amount of Canadian material. This is a valid tribute to the amount of Canadian foresight and industry which has been exercised in this area.

The *Videotex and Teletext Handbook* provides a great deal of valuable technical information on protocols, ISO standards, and hardware characteristics which is nowhere else so simply explained and handily packaged. There is also useful commercial and organization information such as the directory of Canadian VIDEOTEX firms and their capabilities, as well as market size and growth tables, which may be of considerable use to entrepreneurs in the field. (The principal Montreal-based firm in this field, Formic Videotex, is however omitted).

The book appears to be the latest in a series of similar works advocating TELIDON/VIDEOTEX as a super tool that ought to be used by everybody. Other books in this genre are: Godfrey and Chang's (1981) *The Telidon Book*, which is cited and James Martin's (1982) *Videodata and the Information Society* which is not. A more profound work is Hiltz and Turoff's (1978) *The Network Notion*, which I like for its deeper coverage of the nature and implications of social group processes on-line.

In my opinion, VIDEOTEX is an educationally disappointing medium for three reasons. Two of these reasons are purely technical, while the third results from the specific mixture of techni-political and economic forces involved. First, the cheap decoder and display hardware now available yields only low resolution graphics which experimental work, such as that of Geoff Potter and others in Alberta, has shown to be severely limiting for instructional purposes above the primary school level. Second, there is no encoding/decoding standard for audio even though sounds and speech are not only important, but necessary for many educational purposes. Finally, VIDEOTEX systems are, for the most part, centralized "totalitarian" systems where a few priveleged and powerful, so-called "IPS" (Information Providers), broadcast their material for the edification of all.

The practical and technical side of this is that ordinary teachers cannot cheaply encode their own graphics or video clips or transmit their contributions to the data base and to students because the *affordable* NAPLPS hardware available is for display only. Moreover, most of the central computer systems are set up to discriminate against user input, and

against user-to-user communication. For example, the major system in the United Kingdom, PRESTEL, has a 1200 baud rate channel *out* for pictures and words going from the IP to the users, but only a 75 baud rate channel for the users return contributions or user-to-user mail. 75 baud is painfully slow.

Systems such as the SOURCE, CompuServe, I.P. Sharp, Guelph University's CoSy and UBC's Forum are much more democratic. These systems, however, are mainly for text transmission albeit at a comfortable 300 or 1200 baud rate.

Also, the total costs of these services are very high (\$5/hour and up) in terms of an average student's budget. However, college level courses and training courses are now being given on the Guelph University system and soon will be given, I understand, by Quebec's TELUQ and by Athabasca University.

Although the book does have some information on how lessons are actually structured to be delivered by videotex, it does not summarize the research on the effectiveness and ineffectiveness of such use. Nor does it mention which courses, such as the QUBE courses for firemen and the Alberta primary school experiments, have proven to be effective educationally. In actual fact, the low-resolution slow build-up graphics and the very limited interactivity available with most current NAPLPS systems severely restrict worthwhile usage of the medium to simple subject matter and to introductory courses (Potter, 1985).

Even if one likes the idea of promoting NAPLPS/VIDEOTEX for educational and training purposes, one still may feel that this book does not do so effectively. For example, the CONSORTEL library of courseware (Hart, 1985) incorporating NAPLPS graphics is not mentioned. The Guelph University experiments of G.A.B. Moore, combining NAPLPS graphics and computer aided learning are not alluded to. To be fair, it should be stated that chapter 4 has a very good bibliography on uses of videotex in education and training. Three important works which I would add are: Rudy Bretz' (1983) *Media for Interactive Communication* and Lome Parker's two books *Teletechniques: An Instructional Model* and *Teletaining Means Business*. Parker's books, while largely audio oriented, do give a better indication of the educational potential which lies around the corner if and when computer communications become able to cheaply handle high resolution graphics, animation and audio in fully reciprocal modes.

Chapter 13 does a good job of discussing doubts about VIDEOTEX as well as the major factors limiting its growth. It points out the seriousness of not providing, for example, unique options, low cost service, and network interconnecting gateways. With its length of only 5 pages, however, this chapter is disproportionately small compared to the many pages of reproductions of crude VIDEOTEX screens which are reminiscent of the TELIDON and PRESTEL publicity leaflets of years gone by.

The future of VIDEOTEX in education may actually be very bright if we form coalitions to make it so. But, more *educational* research with computer-mediated telecommunications is badly needed now to determine optimal configurations and protocols before we rush into implementation. In my view these technologies are too inaccessible and rudimentary yet for widespread educational use. We need cheap fully reciprocal access with real animated graphics and audio, as well as coloured text.

The time will come when all that we need is technologically possible at low cost. But, the question remains whether financial and political interest groups will see fit to allow us to have the best configurations of such services for education. There is a tremendous amount of, in a sense fully justified, fear of really effective education, and of really open public communication. If truly potent educational communication ever becomes widely available, important new public interest coalitions will arise. If we want this we will have to fight for it. Technology implementation is shaped by vested interests. There is but little intimation in

this book of the huge political and cultural struggle which must be fought for the evolution of the kinds of publicly accessible communications that can ensure more potent education. Nonetheless, the technical introduction that this book provides could well be your first step toward such effective engagement.

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