

Book reviews

Brian and Margot Blunden (Eds.) *The Electronic Publishing Business and its Market*. Published by IEPRC/Pira International, Leatherhead, Surrey KT22 7RU, UK. 1994. ISBN 1 85802 082 4. 628 pages. Price £45.

My Collins English Dictionary says that Electronic Publishing means “The publication of information on magnetic tape, disks etc., so that it can be accessed by a computer”. In my book *An Encyclopaedic Dictionary of Information Technology and Systems* (Bowker Saur) I said it is “A phrase covering a multitude of activities in which electronics is used at some stage of publication”. I followed that definition by half a page of amplification in the encyclopaedic manner. I think that my definition covers the book being reviewed here quite well – particularly the bit about “a multitude of activities”.

What I like about it is that it mainly describes “case studies” in a number of diverse fields. Not many books tell you how it is done by practitioners. I have to admit that I had not heard of IEPRC – the International Electronic Publishing Research Centre – before. Had I done my homework properly I would have known that the EC publication *New Opportunities for Publishers in the Information Services Market*, from which much of the material in this book was taken, was an IEPRC proposal. Not only is the book rich in case studies, it also contains a 30 page appendix of data and statistics.

In the first chapter, Brian Blunden quotes some figures suggested by Dr. Thomas Laukamm, who led the IEPRC team which produced the publication just mentioned. The potential European market for printed publications in the year 2000 will be about 112,000 million ECU, while the electronic publishing market will be about 12,000 million. In the US the publishing industry’s current revenues are about \$55,000M, and electronic publishing about 10% of that.

Blunden says “If one considers developments in speech input, superhighways, standardisation of imaging protocols, data compression, touch commands and iconographic language, then the suggestion that man’s natural multimedia behaviour may be emulated in machine form within a decade is feasible”. Ten years is the fashionable span for predictions, and according to *Collins* “feasible” can mean either “possible” or “probable” – so in this context the word is well chosen.

Uncertainty permeates this chapter. For example – “Do publishers have available adequate market intelligence and reliable futures-scenario generation? There is little evidence to suggest that they do... the lack of personnel skilled in developing, designing and manufacturing unique EP multimedia products is one of the greatest barriers to successful new media publishing... in the short term there are no obvious solutions available for the attraction of serious advertising revenue streams into EP products...”, and so on.

One can hardly expect to find any case study in a book like this that ends on a rather gloomy note and I could not find one. On the contrary, uncertainty about the future does not seem to deter a wide variety of organisations from trying out new ideas. Publishers obviously intend to diminish their uncertainty because half of the studies are conducted by them. The remainder are carried out by telecoms and IT companies, research organisations, institutions, and others.

I found two particularly interesting studies in this rich collection although unlike most they are both already proven successes rather than feet-wetting experiments. Robert Lynch of McGraw-Hill describes his company's *Primis* on-demand publishing product: "It allows professors to select instructional material from a large retrievable database, integrating disparate subjects, ideas and types of information". "Production" is done by the R.R. Donnelley Company who provide a "just in time" service of printing, binding, and shipping "customized books" direct to customers. In 1990 there were 7000 pages in the database and 30 user-institution customers. By 1993 there were 100,000 pages and 1000 customers.

Andrew Rosenheim of the Oxford University Press covers the history of the printed OED and the company's experiences with the CD-ROM version. The second 1989 20-volume printed edition sold over 10,000 sets at £1500 apiece. Significantly, entries were tagged using SGML, providing a database for electronic publishing. The first CD-ROM version was limited by the technology and experience of the time, and was considered to be a trial. However 1000 copies were sold at £500 each which made it a CD-ROM "best seller".

The second attempt was aimed at a much wider market, used Windows enabling different fonts to be used for 700 special characters, and provided a much improved two-layer retrieval system, one for general users and the other for "philologists and lexicographers". A special, un-Oed-like, marketing effort followed for the £495 product. Unfortunately Rosenheim coyly omits to tell us about his sales results.

This book makes most interesting reading. To anyone contemplating an EP venture, or already involved in one, it is essential reading.

Charles Oppenheim (Ed). *Applications of Optical Media*. Published by Aslib, 20-24 Old St., London, EC1V 9AP, UK. 1993. ISBN 0 85142 290 X. 141 pages. Price £26.

Parts of this 1993 book are a little out of date, particularly Chapter 2, written by Charles Oppenheim. This is a pity because an up to date version of the numerous figures and tables provided in it would be very useful. In the same chapter the dangers of forecasting are revealed – unfortunately the Amiga CDTV has not turned out to be the company's "best hope for long term success". Not to worry Charles, Virgil was not always right when he said *audentis fortuna juvat* (Fortune assists the bold), as I have found to my cost when making incorrect forecasts. Most forecasters have moved on from 2001 to 2005 – to ensure that by the time ten years have elapsed their erroneous forecast will certainly have been long forgotten!

As a matter of fact Commodore's fate is interesting. The Amiga was the first machine with multimedia potential, but the company took a wrong turning with CDTV.

Now in liquidation, the UK division is attempting a management buy-out which may or may not have succeeded by the time this piece is printed.

The book contains some interesting chapters. Binder and Neubauer's exposition about CD-ROM networking is a very good introduction to the topic. I am told by those who know that Ultraset – which was unavailable when the list of CD network products was prepared for this chapter – is now one of the best. In the chapter about the use of CD-ROM by information managers, Joan Day says "CD-ROM on public access has been found, almost universally, to enhance the image of the information service". "Images" have "PR" stamped all over them, but who can say that image-building for library/information services is not an important activity?

If there is still a need for a book which explains the optical media background, this little book fulfils that requirement.

Raymond A. Wall. *Copyright Made Easier*. Published by Aslib, 20–24 Old St., London, EC1V 9AP, UK. 1993. ISBN 0 85142 310 8. 393 pages. Price £28.

The blurb on the cover of this book says that it is "An expert study that is sure to become the classic in its field". It seems to me that this is a very reasonable assumption. The book could not have come at a better time because the diffusion of information by electronic means proceeds apace and the ownership of intellectual rights, mainly worked out for print, often cannot be easily applied to electronic "publications".

The book comprises a Quick Reference Guide, 16 Chapters covering fair dealing, rights, copying, permissions and many other subjects, references, an appendix mainly covering the UK Copyright, Designs, and Patents Act, 1988, a glossary, and an index.

Copyright connected with any form of "Multimedia" is of considerable current interest. Chapter 3 is devoted to "Nonprint: audiovisual media and electronic copyright". Wall wisely does not use the word "multimedia" anywhere, thereby escaping the problem of defining it. However this chapter is about sound recordings and films, "electronic" copyright, cable, etc, which embraces a large part of "multimedia".

Noting (page 7) that "copyright is automatic without any need for registration or claim, provided a work is 'fixed' or recorded in some form", and having said that "there is really no such thing as electronic copyright", Wall provides definitions of things in which copyright is said to subsist, quoting from Section 5 of the 1988 Act as follows:

Sound Recording. A recording of sounds from which those sounds may be reproduced, or a recording of the whole or any part of a literary, dramatic, or musical work.

Film. A recording on any medium from which a moving image may by any means be reproduced.

Copying. (inter alia) Storing the work in any medium by electronic means.

Cable Programme Service. A service mainly for sending visual images, sounds or other information, otherwise than by wireless telegraphy for reception at two or more places. (Wall comments "This brings to mind audio information systems by

telephone, cable television, teletext services, and electronic databases, but the wording appears, from its lack of precision, to aim at hospitality to future technical developments".)

Wall says in reference to the 1988 Act: "After sorting out the negatives it should be quite clear that all online electronic 'databanks', whether of pictures or text (did he omit sound purposely?) are cable programme services".

Offline portable databases such as CD-ROM, diskette, or tape "are outside the definition of 'cable programme service'," Wall says. They should be "treatable like a book in the absence of contractual restrictions". He continues by discussing cases where "one subscriber could serve a wide area without any revenue coming in", saying "It would seem fair to restrict external use of a CD-ROM in respect of multiple copies of, or excessively long, system printouts". Eusidic (an association of information providers and users) has "endeavoured to regularise the situation but appears to have been singularly ignored so far". Wall mentions the CITED project (The final report is discussed later in another book review) about proposed means for protection.

As the remainder of this book shows, copyright is becoming more complicated and court cases in whatever country, rarely pursued because of the expense and the greyness of the area, should be carefully noted in spite of country to country differences in copyright law. It is sometimes assumed that customs can determine copyright practices. For instance in the United States it was thought that a film distributor could exploit a film "by all means known or hereafter devised". However in *Peggy Lee versus Walt Disney* it was ruled that Disney should have obtained permission to make a video recording of Lee's earlier recording of "Lady and the Tramp"; video could not have been anticipated at the time.

Copyright is a minefield. It seems to me that any organisation considering, or already operating, in the area of the electronic dissemination of information, should arm themselves with this book, and in the likely event of uncertainty about what to do next, should seek the advice of an expert such as Dr. Raymond Wall.

David Lewin and Malcolm Kitchen. *Interconnect: the Key to Effective Competition*. Published by Ovum Ltd., 1 Mortimer St., London W1N 7RH, UK. 1994. ISBN 0 903969 96 3. 272 pages. Price on application.

No man is an island, entire of itself; every man
is a piece of the Continent, a part of the main.
John Donne. 1624

The choice of Donne's words in the management summary at the beginning of this report could hardly be more apt. As the authors say: "One sage spoke clearly about the competitive telecommunications environment that would emerge nearly 400 years later". This publication is about only one preliminary aspect of what needs to be done before an Information Superhighway becomes a reality – the agreements which must be reached between network operators for the interconnection of their networks.

The detail provided here will obviously be extremely valuable to any organisation

in the telecommunications business interested in the politics, costs, time consumption etc., of interconnect negotiations. The specialised nature of the report means that most other IT people may well think that such issues need not concern them. They would be wrong.

Quite apart from the social consequences of telecom interconnections in Europe, the enormous size of the industries directly concerned is an indication of general importance. As a rough estimate, the revenue of the top twenty world telecoms carriers in 1995 will be about \$275 billion and they will employ well over two million people. The world market for telecoms equipment will be about \$100 billion, so we are talking about a huge figure approaching \$400 billion for the industry. The general effect of the financial and social effects of interconnection in such an enormous enterprise must be of wide interest. Moreover the size of the revenues of the carriers is so large that discussions between competitors to defend them are bound to be tough and prolonged.

In a satisfactory interconnection agreement, five issues are critical, say Lewin and Kitchen:

- Setting the level and structure of interconnect charges.
- Dealing with end-user price distortions through interconnect charges.
- Using interconnect to curb the power of the incumbent.
- Deciding the form, number, and location of points of interconnect.
- Establishing customer-access arrangements for competing long distance services.

The complexity and detail of inter-connection and the case studies discussed here shows what a time-consuming complex business it is. For example it took 20 months for an agreement to be reached on the inter-connection terms and technicalities between BT and Nynex CableComms Sussex (NCCS). In 1995 some issues still remain unresolved. A review followed by a revised agreement in 1998 will follow. NCCS, like other cable companies, offers telephone service, and must be able to connect to the UK telephone network to do it.

This report discusses interconnections between fixed and mobile voice services and deals only with that fraction of all telephone companies who have been actively involved. It points out that 190 agreements would be needed if 20 operators wished to interconnect.

So what does this tell us about the prospects of agreement between telephone, television, radio broadcasting, cable, computer network, and satellite organisations which may be involved in the development of the Information Superhighway? For instance will there be a single connection into homes to deliver the stuff, or must there be several combining in some kind of a box for consumer information reception and interaction? Obviously the number of needed agreements between different organisations will soar into the hundreds, or will the private sector companies simply buy up each other?

Interconnection requirements will be accompanied by international political arguments, revenue collection and distribution decisions, the resolution of copyright problems etc., before the Information Superhighway can start to arrive at households, presumably following its arrival for business purposes. The more I think about it the less inclined I am to forecast when that might be.

Colin Burke. *Information and Secrecy: Vannevar Bush, Ultra, and the Other Memex*. Published by The Scarecrow Press, Metuchen, NJ, USA. 1994. ISBN 0 8108 2783 2. 462 pages. Price £49.50.

This book is a model of painstaking research. It contains an enormous reference section of 75 pages averaging 14 references per page – a total of over 1000 items. The book combines the history of code-breaking computers with wartime politics. It is a professional portrait of Vannevar Bush as well. Fifty years ago, Bush wrote: “the first article of any significance about computer-based retrieval systems”. [See Cawkell, A.E., *Information Services & Use* 14 (1994), 91–108, Gems from the literature part 1: 1945–1987.]

Colin Burke considers that: “Vannevar Bush was one of the most powerful scientists the world has ever known and a man familiar to most Americans. The heritage of his policies continues to shape the organisation of scientific research in America. Although his plan for a federal role in science was not completely fulfilled, the National Science Foundation is testimony to his influence”.

Bush was born in 1890 and died in 1974. The Memex machine was a vision which followed his earlier interest in information retrieval. “With the help of electronics and microfilm”, Bush asserted, “retrieval systems could be based on the human dynamics of creativity and association, not the static categorical systems of the old librarians”.

But the extraordinary thing is that Bush arranged for very large expenditure on machines which never worked as expected – notably the Rapid Selector, a machine for coding and selecting abstracts, and the Comparator, initially a machine for cryptanalysis. Hundreds of thousands of dollars were spent on the Rapid Selector.

While working at MIT, Bush made his name by directing the development and construction of the Differential Analyser calculator in 1931. “It was a room full of gears and rods and shafts and motors that took mechanical analogue computing to the limits”. Later in the thirties Warren Weaver (subsequently to cooperate with Claude Shannon in producing one of the most cited mathematical articles of all time) saw the Analyser and “secured an astounding eighty five thousand dollars for the Rockefeller Analyser project at MIT”.

Chapter XI is a fascinating account of the US-British co-operation – and the lack of it – to read messages encrypted by the German Enigma machine. The Poles invented a machine called the Bomba to do this job in 1938 and when the country was about to be invaded gave one to Britain. At about the same time the UK established the Government Code and Cypher School (GC&CS) at Bletchley Park and work started on the Ultra project to read Enigma messages. Alan Turing and others produced a more effective machine called the Bombe based on the Polish design. The British Tabulating Machine Company, under its chief engineer Harold Keen, succeeded in making Bombes for GC&CS in 1940. The result was limited success in reading Enigma messages. The British had no success at that time in reading Fish codes generated by an improved German machine.

The British obsession with secrecy, which endures today, became obvious following an agreement between Churchill and Roosevelt in 1940 for cryptanalytic cooperation. In January 1941 an American team visited Bletchley and gave GC&CS two

Japanese Purple enciphering machines and much information about Japanese codes. In return, they did not get the help that they expected.

The Americans succeeded in making their own much faster versions of the Bombe and by 1943 “the British found it impossible to continue with a condescending attitude”. The number of hours needed to break Enigma messages steadily decreased. Meanwhile work continued on Bush’s Rapid Selector but “there were no Bush type machines in operation before the last months of 1943”.

At GC&CS Wynne-Williams designed the Robinson machines, delivered in 1943, from which the greatest British success emerged – the Colossus 2500-valve machine developed by Flowers and Turin and built at the Post Office Research Labs at Dollis Hill. The first was working in December 1943 and 11 machines were made. It receives one mention by Burke as “a miracle of project management... the finest electronic pre-computer”. Why the word “pre-computer” is used is unclear. Perhaps it is in order to reserve the honour for the American ENIAC machine, often claimed to be the first electronic computer, built in 1946. In fact Colossus was “valve based, binary, stored-program, large scale, had conditional branching and incorporated parallel processing...” [Stevens, R., *Computer Weekly*, July 24th 1986. “Past secrets revealed”.]

After the war the last model of the Rapid Selector was built by the National Bureau of Standards for the Bureau of Ships. It was huge, expensive, and slow. By 1961 “The incredible pace of change in electronic computers was making the Selector appear as a hangover from another era”.

Admiral Stanford C. Hooper, the navy’s senior advisor on electronics, had many discussions with Bush during Hooper’s attempts to introduce scientific methods into the navy. Bush retired in 1958 and “...treated the Selector as a success, continuing to refer to microfilm as a near wonder technology” but “Hooper had a much less pleasant retirement”. He was not well off and as “the old man who had done so much for the American navy” he had difficulties in retirement. He did not receive payments promised to him.

He wrote to the head of Remington-Rand that he had to “sell his lot in Miami Beach and give up years of hope in planning for a house on La Gorce Island and a new car, but that can’t be helped. It was pretty hard on my wife”. Hooper’s sadness, so touchingly expressed, seems somehow also to express the sadness which must be felt at Bush’s failure to achieve success during his brilliant career for the machines that so nearly succeeded.

I hope that you will enjoy reading this book as much as I did.

ESPRIT II, Project 5469. *CITED Final Report*. Available from the British Library, Boston Spa, West Yorks LS23,7BQ, UK. ISBN 0 7123 2115 2. 200 pages. Price £25.

CITED is an ESPRIT project to investigate methods for capturing copyright material and accounting for any due royalties. Sarah Keates wrote a short piece for this journal (14 (1994) 109–110) about progress with the CITED project in which she

said: "The final report... will consist of documentation produced throughout the project by individual partners".

In the absence of this information I would have said that this is a badly coordinated un-edited final report without page numbering, table of contents, references, or index. Editing and ordering of the contributions made by authors from six different countries is badly needed.

Knowing that this is not a final report in the accepted sense, but exactly what Keates says it is, CITED is revealed as a very interesting important idea which deserves better. The report contains a good deal about the problems of electronic copyright; it includes proposals to monitor the use and devise payment mechanisms for the use of copyright material, in particular "electronic material".

CITED seeks to remedy a problem as stated in one of the papers: "Because there is no way of preventing copying, pressure on the law has been felt in the area of policing copyright requirements. Nevertheless, the relative ease with which copying can be done, and the very low chance that individual infringers will actually be prosecuted, has led to widespread ignoring of the copyright law in all areas of digital information: software packages, databases, electronic publishing, video/TV, and audio recording and broadcasting".

One proposed solution relies on the installation of appropriate software within the machine which is downloading publications. It indicates royalty expenditure and reduces outstanding royalty credit according to the rights of owners and users.

For instance a person using a CD-ROM might request an "access" to be informed that there is no charge, but if the user types "copy", a charge is made and displayed on the screen according to the terms agreed between supplier and user body. A "Notarisator" manages an audit trail file to provide statistics and accounting.

A new ESPRIT programme called COPICAT (Copyright Ownership Protection for Computer Assisted Training) is to be put in hand to investigate material, such as multimedia packages, for networked educational purposes.

Proceedings of the International Conference on Multimedia Computing and Systems. Boston, May, 1994. Published by IEEE Computer Society Press, Los Alamitos, CA, USA. 1994. ISBN 0 8186 5530 5. 572 pages. Price £25.

The IEEE is a very large organisation. It publishes dozens of journals and multimedia is a major topic. In 1964 it launched a new one – *Multimedia*. In a message at the beginning of these *Proceedings* – covering the IEEE's first conference on this subject – the Chairman says "The convergence of several technologies for multimedia applications is now commonplace... the need is to be interdisciplinary".

The truth of these comments is shown by the diversity of activities which are discussed in this book. Its seventeen sections bear titles such as "Scheduling and Synchronisation", "Networking", "Operating Systems", "Content-based retrieval", "Database and Information Systems", "Video Compression and Processing". This is a book for Information Technologists -the accent is on the technical. The nature of the subject means that broad areas of IT must be included. I am forced to be selective in this review.

The very first article covers a technique which must be mastered for the successful implementation of the Information Superhighway (ISH) – Synchronization architecture and protocols for a multimedia news service application” by L. Lamont and N.D. Georganas. In the proposed system the contents of each news article is divided among image, voice, text, graphic, and video servers, to be stored, managed, transmitted, and re-formed in the manner most suited to the media in question. This application describes how synchronisation could be preserved not only during the re-assembly of the contents of an article, but also allowing any user to “request the display to pause to view a certain portion, to skip a portion, and to scan backwards and forwards” – an ambitious undertaking.

The article “Scheduling continuous media in a video on demand server” by D.R.K. Hosekote and J. Srivastava covers another kind of major service expected on the ISH. The article contains a mathematical analysis of scheduling, buffer design, jitter etc., in the vital task of managing concurrent access to an enormous amount of data if input/output bottlenecks are to be avoided.

There are three papers about image content retrieval by Y. Gong et al., A. Yoshitaka et al., and R. Weiss et al., – another subject receiving increasing attention following the realisation that indexing pictures with descriptive words is often inadequate for retrieving a picture containing an object of interest. The third paper covers the content retrieval of motion video.

In the paper “Multimedia consumer applications on the information super-highway” Bruce Krulwich and others discuss “a multimedia application that serves the needs of mainstream Americans”. It is nothing less than a system for shopping by browsing or being guided by electronic mail to different shops in a mall. “As the user walks around the mall, sprites will pop out of the walls trying to entice the user into a store”. Their appearance could be “tailored to a user’s profile so only those with some chance of interesting the user would be displayed”. It appears that this is a vision of moving the superhighway from hype to reality, but whether it will really happen or is merely the addition of superhype to hype remains to be seen.

The paper “NVR: a system for networked virtual reality” by J.E. Berger et al., is yet another example showing that there is no shortage of people with imagination and (presumably) no shortage of money to support them when it comes to distributed multimedia system research. NVR is a “toolkit that facilitates the creation of networked virtual worlds... which allows for networking over the Internet”. In this case something seems to have been made to work. Stations used Internet links to the Carnegie-Mellon campus backbone using bandwidths between 2400 bps to 38.4 Kbps. Among applications tested were a virtual car showroom, a representation of an Egyptian temple, and a multi-player video.

I must fall back on the usual excuse of a shortage of space for not including more about the overwhelming scope of these *Proceedings*. Suffice it to say that this collection of papers contains a range of ideas which cannot fail to interest students of the subject.

Thomas A. Schröder. *Information Science and Europe*. Published by IOS Press, Amsterdam, Netherlands. 1994. ISBN 90 5199 167 3. 230 pages. Price NLG 80.

This book could have been entitled "Information science education in Europe" which is what it is about. It is packed with information about this subject.

Schröder quotes a part of Churchill's 1942 Mansion House speech in which he said "This is not the end. It is not even the beginning of the end. But it is, perhaps, the end of the beginning". He is referring to the problems of compiling such a book. 97 out of the 142 organisations who were sent a questionnaire in three languages, replied. The acquisition of information is continuing.

In the introduction Thomas Schröder, from the Heinrich Heine Universität, Düsseldorf, tells us that there are 142 training institutes in 30 different countries with 34 in France, 20 in Germany, 17 in the UK, 10 in Spain, and 8 or less in the remaining countries. Schröder estimates that about 1759 senior and junior lecturers are teaching about 31,200 students.

Schröder continues "The centre of the spider's web of pan-European co-operation between institutes of learning is nearly always the United Kingdom... anyone intending to study for a degree in Europe must get to grips very intensively with the costs of studying abroad... tuition fees are generally not charged in Germany. Within the EU states, special agreements and bilateral treaties often apply".

As an example of fee differences he quotes "Loughborough University of Technology charges £6200 for a complete course, the School of Library, Archive, and Information Studies of the University of London charges at least £2200 for a full time MSc, MA, MPhil, or PhD course, and the University of North London charges £1100 for its full time PG diploma course". He lists those institutes participating in the EC's ERASMUS programme for the recognition of information science.

The bulk of the book consists of two sections – Institutional data supposedly ordered by Country, City, Institution, and a second supposedly ordered by academic subject. Unfortunately access to this very useful information is confused by the curious method of ordering. Scotland and Northern Ireland are treated as separate countries, but Wales and England are classified under "United Kingdom". However, there is only one Scottish institution listed in Scotland; two are listed in the United Kingdom.

Headings by "Academic Subject" are not very helpful because of the profusion of near synonyms. Thus the University of North London appears under "Information and Communication", "Information Science", and "Library and Information Science".

Thomas Schröder would be the right man to attempt to do something about the descriptive differences in the profession which are no doubt responsible, in part, for his classification difficulties. Do we really need subject "differences" such as "Computing and Information Systems", "Information and Computer Science", "Information and Library Science", "Information Science", "Information studies", "Library and Information Science" and "Library Science"? What are the differences between these and other relatives such as "Information analysis", "Information and library management", "Information and documentation" and "Information Management".

I do not believe that classification problems interfere very much with accessing the

wealth of information contained in this useful book, but if this is “the end of the beginning”, no doubt in the next edition covering the “beginning of the end” this matter will be sorted out.

***Preparing for the multimedia revolution.* Anon. Illustrated booklet available from Touche Ross, Peterborough Court, Fleet St., London EC4A 3JR, England. September 1994.**

This booklet appears to be a kind of PR exercise produced by Touche Ross Chartered Accountants, and the Financial Times. The sub-title is “Converging technologies – diverging markets” and “Findings of a Touche Ross/Financial Times Conference Organisation global survey”.

I cannot see why it should not have either the address of the publisher or the date of publication printed somewhere inside it, but it is nicely done in numerous colours by Touche Ross’s own studios. The logos of twelve major companies presumably surveyed are shown. They all have an interest in talking-up the subject e.g., Granada, Alcatel, BT, Cellnet etc. In any survey it is nice to have some information about the surveyed and response percentages.

These gripes do not affect the value of the most interesting information received from “over 500 organisations”. A survey of this size by organisations of repute like Touche Ross/FT carries a good deal of weight. The nine groups surveyed are Consumer Electronics, Computer Hardware, Satellite Networks, Computer Software, Telecomms Equipment, Cable TV, and (although not actually listed) apparently Information Providers, User Equipment, and one other.

“A good working definition of multimedia” says the publication, is “the conveyance of information using some combination of text, image, graphics, newsprint, databases, sound, live and recorded speech, music, still and moving pictures, and even physical sensation”.

The information provided includes opinions about barriers to growth, a list of business and consumer applications and their expected time of arrival, degree of preparedness, organisation vulnerability and cooperation expectations.

The biggest barrier to growth is considered to be “end-user price unaffordable or uncompetitive”. “Copyright constraints”, regarded with great importance, particularly with respect to the superhighway which receives some attention in this publication, is not mentioned. The major “market driver” will be the “development of applications”. The first consumer application to reach critical mass will be “games” (3 years), and the first for business, also in 3 years time, will be “business and financial news”.

The “most vulnerable” are considered to be “video hire”, but “traditional print” is not far behind. “They are less interested, less prepared, and less aware” says the leaflet. The most aggressive and enthusiastic are the cable companies.

Significant consumer market penetration for multimedia in the US is expected by 1998–2000, critical mass then being reached for “games on demand, home shopping, home banking and video on demand”. More surprising “58% believe that the domestic mass market will have access to network-based interactive multimedia by

1998–2000” – in other words the information superhighway will have arrived.

Another surprising conclusion is that while the conventional wisdom has it that the “industry” will be entertainment led, 54% said that information products and services, led by education, will be at least as important mainly because of people’s desire to learn and keep on learning.

A.E. Cawkell