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Emphasis on software opportunities at Second Multimedia Conference on CD-I



Speaking informally at the Second Multimedia Conference on CD-I are Mr. R. Maxwell (left), Chairman of Maxwell Communications Corp., Mr. J.D. Timmer (centre), President of Philips, and Mr. N. Kanoi (right), Deputy President of Sony Corp.

Over 600 delegates and journalists at the Second Multimedia Conference on Interactive Compact Disc, which was held at the Royal Lancaster Hotel, London, on 29 and 30 May 1991, heard a wide range of presentations from leading representatives of the publishing and media industries.

Throughout the conference, strong emphasis was placed on the software opportunities that the coming consumer market introduction of CD-I offers. Held under the sponsorship of Philips, Sony, Mat-

sushita, PolyGram and Maxwell Communications Corp., the Second Multimedia Conference built on the success of last year's event, and attracted nearly 150 press representatives.

IMS NEWSLETTER

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PHILIPS

26 speakers from publishing and media companies

A total of 26 speakers from publishing and media companies around the world completed a very full programme at this successful event. Brief extracts from their presentations are given on the following pages.

The conference itself was divided into four sessions: a general session on 29 May, followed by parallel technical and titles sessions and a concluding general session on 30 May.

The first general session was chaired by John Browning, Technology Correspondent of *The Economist* magazine. The technical session, entitled 'Developing a CD-I' was chaired by Ravi Singh, managing director of Chrysalis Interactive, and the titles session, entitled 'Publishing on CD-I', was chaired by Richard Horsnell, director of Baronsmead and chairman of Convergent Communications.



CD-I Arcade exhibition



Part of the Philips stand at the CD-I Arcade exhibition, showing some of the many demonstration exhibits.

Running in parallel with the conference was the CD-I Arcade exhibition, at which 26 companies showed their products and capabilities to the delegates. Philips also held a press conference at this event on 29 May, at which a number of new commercial and technical announcements were made (see articles elsewhere in this newsletter).

Keynote speakers at the conference included Philips president Mr. J.D. Timmer, who gave a presentation entitled

'The importance of CD-I for multimedia publishing'. Interactive Media Systems was further represented by Mr. G. Bastiaens, who opened the conference and also gave a presentation reviewing the state of the art in CD-I.

The other keynote speakers were Mr. R. Maxwell, Chairman of Maxwell Communications Corp.; Mr. M. Higashi, Director of the Board of Matsushita Electric Industrial Co.; and Mr. N. Kanoi, Deputy President of Sony Corp.

'Major investments by Philips in CD-I software': Mr. J.D. Timmer

Over the last few years, Philips has made major investments in CD-I software, Philips president Mr. J.D. Timmer told conference delegates in his keynote speech. These investments will promote the availability of attractive software titles at the time of the system launch in Europe in mid-'92, since it is the quality and variety of the CD-I title catalogue that will form the cornerstones of the system's future market success.

An important part of Philips' plans in CD-I is Philips Interactive Media Europe, which was announced at the conference.

This new company will concentrate on publishing multilingual titles for the European launch, and will have subsidiaries in key European countries.

Similar operations are already in place in the USA (American Interactive

Media) and Japan (Japan Interactive Media), where they are preparing for the system introduction in their own regions with the development of new software concepts and titles.

In the coming years, Philips will invest hundreds of millions of guilders in the development and creation of new software concepts targeted at many different languages and regions, Mr. Timmer told delegates.

Reviewing the various CD-I software opportunities, Mr. Timmer emphasised the variety of programme types that could be created on CD-I, including music-based software with additional information, interactive cartoons that will make children part of the programme, family entertainment based on popular TV programmes, special-interest or 'personal' titles and many more.

Education is another potentially im-

portant area for CD-I, with today's concern for better educational tools and higher quality of education, although it demands concerted international action to standardise learning tools.

Universal world standard

Only the existence of a universally accepted world standard like CD-I can make all these different types of software possible, Mr. Timmer pointed out, and this situation has now been reached with the commitment of Philips, Sony, Matsushita and many other major players in the world CE and publishing industries.

Mr. Timmer concluded by referring to the recently announced joint venture between Philips and Maxwell Communications in the field of language learning and travel information, and invited the next speaker Mr. R. Maxwell to address the conference.

New CD-I software company formations announced by Philips

Among the many important announcements about developments in the field of CD-I which were made at the press conference during the Second Multimedia Conference were the formation of two new companies by Philips: Philips Electronics Media and Philips Interactive Media Europe.

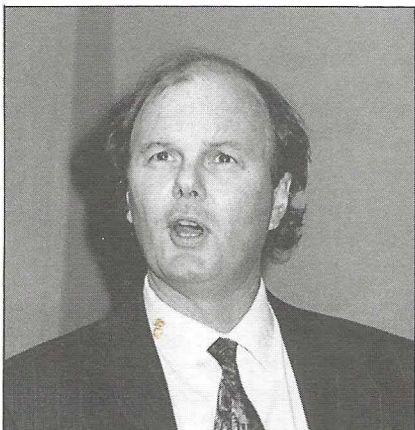
Both these new companies are part of the continuing heavy investment programme by Philips in CD-I software, in preparation for the system's consumer market launch which is scheduled for mid-'92 in Europe, and for late '91 in Japan and the USA.

Philips Electronics Media

Philips Electronics Media is a new holding company to control and co-ordinate all Philips' worldwide CD-I software interests in the major market regions Europe, the USA and Japan.

This regrouping of Philips' electronic publishing activities is a reaction to the overwhelming public response to the CD-I format, and the high expectations for its success in the market.

Chairman of the board of Philips Electronics Media is Mr. Gordon Stulberg, who is also chairman of the Philips-owned company in the USA American



The Chief Executive Officer and Managing Director of the newly formed company Philips Interactive Media Europe is Mr. Garry Hare.

Interactive Media. Mr. Gaston Bastiaens, director of Philips Interactive Media Systems, is a member of the Executive Committee. Another member of the Executive Committee is Mr. Mike Inwards, who is also chairman of Philips Interactive Media Europe (see below).

Philips Interactive Media Europe

The new London-based company

Philips Interactive Media Europe will strengthen the European consumer publishing efforts in CD-I, with the intention of publishing the first CD-I titles in early 1992.

This new company will concentrate its publishing activities on the European market, just as its sister company American Interactive Media does in the USA.

Philips Interactive Media Europe will have subsidiaries in several key European countries, which will be particularly important in view of language and cultural differences. These subsidiaries will operate in France, Italy, the UK, Spain, the Benelux countries and Germany.

The formation of Philips Interactive Media Europe is in line with the Philips objective of achieving a critical mass of attractive software at the time of the consumer market launch, and the company will play a leading role in Europe for the creation of that software.

The Chief Executive Officer and Managing Director is Mr. Garry Hare, formerly president of Fathom Pictures, and one of the leading designers in the field of interactive software.

IMS now reports direct to Consumer Electronics CEO

Following a reorganisation of responsibilities, Interactive Media Systems now reports directly to Mr. T. Meyer, Chairman and Chief Executive Officer of Philips Consumer Electronics.

This move is intended to allow more responsive and efficient operation within IMS as the launch date for the CD-I system approaches. Under this new structure, responsibility for the CD-I system launch, including both hardware and software, has been entrusted to IMS director Mr. Gaston Bastiaens.

New European CD-I Consortium

Also announced at the Second Multimedia Conference was a new European CD-I Consortium to support and promote the CD-I medium. Members of the consortium are European publishers and software developers, production houses, television companies and electronics manufacturers. The aim is to create awareness of CD-I as a new communication channel for business and a new media system for the home.

The European CD-I Consortium will provide an active forum for the exchange of information, promote the business and creative opportunities generated by CD-I, and provide assistance on legislative and copyright issues.

Activities of the Consortium will include encouraging title production in

Europe, exchanging technical and market information, and raising the awareness of CD-I among potential users in the business and consumer markets.

Specific plans include the production of a regular news bulletin, staging a series of seminars on technical and software development issues, and introducing an award for creativity and innovation in CD-I title design.

The new Consortium has the full support of the three leading CD-I hardware manufacturers Philips, Sony and Matsushita. Membership of the Consortium will be open to all those involved in CD-I, including studios and designers, electronics manufacturers and retailers, TV and video programme producers and print publishers.

Co-operation on full motion video chips

Following the announcement by Philips and Motorola in April about co-operation in the field of system chips for CD-I and MPEG/FMV, Philips announced a new joint development activity in basic CD-I technology at the Second Multimedia Conference.

The new project is with C-Cube Microsystems, one of the leaders in compression technology.

One of the important aspects of this new co-operation agreement is the development of real-time compression

chips.

The objective is the availability of full motion video compression chips, which are necessary for the development of CD-I titles with full motion video applications.

New announcements by Philips and Nintendo about video games on CD

Nintendo Co., Ltd., one of the leading companies in the field of video games, has recently made two important announcements about future product developments using the Compact Disc format.

The Nintendo Entertainment System has a penetration of one in every three households in the USA, while in Japan over 40 per cent of households have such a system.

Nintendo games on CD

Nintendo has obtained a licence from Philips to develop and market video games on the Compact Disc format for use on its new Famicom and Super Nintendo Entertainment System 16-bit home video game hardware systems.

Philips and Nintendo will work together to develop a unique CD application format for the Nintendo 16-bit

hardware system.

According to Nintendo, the new CD video games will be played on a low-cost CD-ROM-XA Compact Disc player, which consumers can connect to their Nintendo hardware. The chosen application format also ensures compatibility with CD-I players.

Commenting on this agreement, Mr. Thierry Meyer, Chairman of Philips Consumer Electronics, said: "This is an important license agreement for Philips. It is a further step in achieving worldwide standards for CD-based products.

We believe there will be an ongoing business relationship in this field between Philips and Nintendo."

Mr. H. Tamauchi, President of Nintendo Co. Ltd., said: "Our new license agreement with Philips will enable Nintendo and our system licensees to

develop and market great video games in an entirely new format. We will work closely with Philips in developing Nintendo CD-based games."

Nintendo characters to feature in CD-I titles

Nintendo's family of popular video game characters will feature in new CD-I titles, as a result of an agreement between American Interactive Media and Nintendo of America.

Under this agreement, AIM will be able to develop and market CD-I titles in which the Nintendo characters appear.

Nintendo characters like Super Mario, Princess Zelda, Link and Donkey Kong have been popularised by the sale of millions of video game cartridges for the Nintendo Entertainment System, as well as for coin-operated arcade machines.

New products from Optimage

Interactive Media Systems

CD-I Authoring Tools

CD-I MediaMogul™

MediaMogul

A modular package that brings publishing power to a CD-I player-based system

- No specialized knowledge of a software programmer required
- Offers easy to use capabilities previously only available through complex programming on expensive, dedicated systems
- Graphical user interface
- Includes three integrated software modules, together creating a powerful CD-I publishing system
- For use on the 1927 (S) 162 player
- Wide range of video and audio effects possible for the multimedia professional
- Reads MS-DOS formatted floppies

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Interactive Media Systems

CD-I Authoring Tools

Image and Audio Conversion

for SUN® Workstations, Macintosh®, or PC compatible computers

Top quality utilities for converting image/audio data into CD-I compatible formats

- Image conversion to and from CD-I compatible formats from many popular paint and image manipulation programs
- Enhancing and GLEIT manipulation available for maximum image quality
- Optimage's CD-I Plug-Ins and Adobe Photoshop™ software work with the Apple® QuickDraw™ for image operation to CD-I from TGA, TIFF, PICT, GIF and many other file formats
- PCMCIA getting capability prior to conversion to CD-I
- Audio conversion from ADFF PCM input to CD-I format (Level A, B or C) for direct use on CD-I applications (Review and encode)

PHILIPS



popular image manipulation programs for the Apple Macintosh.

This new package provides CD-I imaging from scanner to CD-I destination format.

Adobe Photoshop's creative tools like colouring, enhancement, blending, masking and filtering are used. CD-I Plug-Ins allows easy manipulation and graphics conversion through the user-friendly Macintosh interface.



This new package forms part of Optimage's development programme for CD-I authoring tools, which support developers in the creation of CD-I titles.

Optimage of San Jose, Ca., a limited partnership between Philips Consumer Electronics, Microwave Systems Corp., Sun Microsystems and National Computer Services, has announced two new products for CD-I developers.

CD-I MediaMogul easy-to-use publishing package

The new MediaMogul software package from Optimage is the first multimedia authoring package that even non-programmers can use, making it easier for individuals and companies to produce titles for CD-I.

The package contains three in-

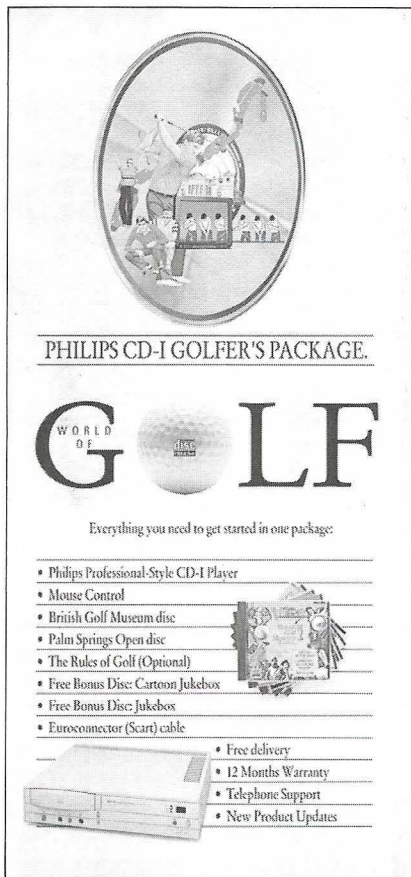
tegrated software modules - Script Writer, Editor and File Director - which together form one of the most powerful multimedia authoring packages ever developed.

The introduction of this new package reflects Optimage's belief that the future of multimedia in general and CD-I in particular depends on the quality of the available authoring tools.

CD-I Plug-Ins software package for Adobe Photoshop

Also introduced by Optimage is the CD-I Plug-Ins software package for use with Adobe Photoshop, one of the most

Professional-style CD-I golf package announced by IMS



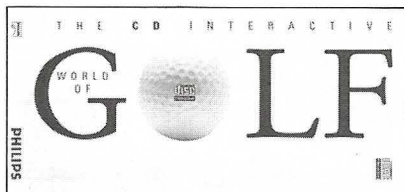
PHILIPS CD-I GOLFER'S PACKAGE.

WORLD OF GOLF

Everything you need to get started in one package:

- Philips Professional-Style CD-I Player
- Mouse Control
- British Golf Museum disc
- Palm Springs Open disc
- The Rules of Golf (Optional)
- Free Bonus Disc: Cartoon Jukebox
- Free Bonus Disc: Jukebox
- Euroconnector (Scart) cable
- Free delivery
- 12 Months Warranty
- Telephone Support
- New Product Updates

A new packaged, professional-style CD-I system targeted at European golf clubs and other corporate users has been



announced by Interactive Media Systems. Shipments are due to start at the time of the full CD-I consumer launch in the USA in Autumn 1991. The package includes discs on the British Golf Museum, the Palm Springs Open game, an optional teach-yourself Rules of Golf disc and two bonus, family-style titles - one jukebox and one children's. All these discs have been prepared specially for the new CD-I medium, and make use of its audio, video and interactive features.

These five discs in brief are;

British Golf Museum based on the material contained in the recently opened museum at St. Andrews in Scotland - the home of golf. The disc traces the origins of the game 500 years ago, and relives its memorable moments. It includes exciting match play, ghostly play-off game on the Old Course, and a golf trivia quiz.

Palm Springs Open allows you to play 18 of the best holes from the Californian course without leaving the clubhouse. Players can make their own choice of

club and swing, playing against the course, wind and opponents. The commentator and wise-cracking guest add to the authenticity of this superb simulation.

Rules of Golf, approved by the Royal & Ancient Golf Club, is a learning system for newcomers to the game as well as a reference medium for experienced players. Quizzes and tests are included, and will challenge even the experts.

Cartoon Jukebox, a free bonus disc that shows the potential of CD-I. Children can colour dozens of pages from ten animated cartoons of classic children's songs, and play engaging interactive games.

Jukebox, another free bonus disc featuring golden popular music hits with on-screen lyrics and information on artists' careers, showing how CD-I will become one of the most entertaining ways to play music in the future.

Demonstrations of the new golf package and the CD-I system will be held at 50 golf clubs throughout Europe over the next 12 months.

Golf has been chosen as the subject for this project because of its appeal to a wide cross-section of the community, and its ability to reach many people who will recognise the benefits and many potential applications for CD-I.

Exhibitors at the CD-I Arcade exhibition

The following companies showed and demonstrated their products at the CD-I Arcade exhibition, which was held at the same time as the Second Multimedia Conference on Interactive Compact Disc.

Applecetre Thames Valley (Reading, UK). Apple dealer and Philips Apple Macintosh CD-I authoring system dealer.

A.P.S. Multimedia (Manningtree, UK). Designer, producer and publisher of CD-I titles, and designer of the British Golf Museum disc in co-operation with Philips IMS.

Capitol Disc (Washington, USA). Handles sales to, and production of CD-I titles for, the professional market, and responsible for the day-to-day consumer title production operations of Capitol Video.

Codim Interactive Media C.V. (Eindhoven, the Netherlands). The largest CD-I studio in the Netherlands, with all the required facilities and know-how in-house for complete CD-I projects.

Editoria Elettronica Editel SRL (Milan, Italy). Showed a demo on the activities of CLUB MED, using sound, pictures and text to provide information to visitors.

Epic Interactive Media Company (Brighton, UK). A leading force in interactive media production in the UK, and among the first European companies to make a commitment to CD-I production.

European CD-I Consortium Intended for all players in the CD-I industry, and aims to create awareness of CD-I as a new home media system, and to create the conditions for success for all its participants.

Freehand Ltd. (Cranleigh, UK). A leading UK specialist in the use of professional, high-quality, high-resolution computer graphics applications, with activities in hardware sales and software creation and production.

Futuremedia and Lasermedia (Arundel, UK). One of the UK's leading producers of interactive multimedia

programmes, with full CD-I authoring capabilities.

Interactif Delta/Niam Interactive Multimedia (Noisiel, France). CD-I disc producer, with 25 completed discs for the professional CD-I market including training, point of information, archiving and cultural discs.

Interactive Support Group, Inc. (Chatsworth, CA., USA). CD-I title producer with high-quality authoring tools and experienced CD-I engineers, able to develop cost-effective CD-I prototypes.

Interlight Productions (Tallahassee, FL., USA). Developer of CD-I discs, working with leading entertainment companies, publishers, software firms and others to create a wide range of CD-I titles.

Matsushita Electric Industrial Co., Ltd. (Osaka, Japan). One of Japan's most comprehensive manufacturers of electrical and electronic equipment, and participant in the development of the CD-I system.

Maxwell Multi Media (London, UK). A joint venture between Philips and Maxwell Corp., publishing self-teach language courses on CD-I and other new media formats.

New Media (London, UK). Specialist in the design and production of multimedia programmes for education, entertainment, training, publishing, museums and exhibitions.

Next Technology (Cambridge, UK). A multimedia production company with its own CD-I design, authoring and mastering studio; also develops CD-I software tools and libraries.

Optimage (Des Moines, Iowa, USA). Partnership between Philips and Microware, and producer of the Optimage CD-I authoring tools which are the standard in CD-I production worldwide.

Philips Interactive Media Systems (Eindhoven, the Netherlands). A Business Group of Philips Consumer Electronics, offering a complete capability in interactive media based on the optical disc technologies which were pioneered by Philips.

Philips Japan Ltd. (Tokyo, Japan). The Japanese Philips organisation, which demonstrated a selection of CD-I discs produced by Japanese companies.

Script Systems, Inc. (Manlius, NY, USA). Producer of CD-I authoring tools and systems; showed its new Designers Work bench high-level authoring system and Designers Work Station PC-based system.

SIDAC (Rome, Italy). The Italian leader in multimedia interactive optical



Seen here watching a demonstration of the first CD-I disc produced by the Valkieser Group of Hilversum are Philips President Mr. J. D. Timmer (centre) and Chief Executive Officer of Philips Consumer Electronics Mr. T. Meyer (right).

memory applications. Has developed over 100 multimedia products for a wide variety of applications.

Sony Corporation (Tokyo, Japan). One of the world's leading manufacturers of audio and video equipment with a strong commitment to research and development in the electronic equipment industry.

Spin UK Ltd. (Croydon, UK). Joint venture between Philips and Shell, publishing and marketing generic training courses on CD-I. Now building a catalogue of titles addressing the key training issues of the 1990s.

Telecity CD-I N.V. (Hasselt, Belgium). Produces and markets educational interactive programmes on Com-

pact Disc, and producer of the first wide-public production 'The Rules of Golf'.

Valkieser Group (Hilversum, the Netherlands). A growing force in the field of digital video, audio post production and computer graphics. Has already produced dozens of interactive programmes on LaserVision. Valkieser's first CD-I disc, a demo project made in a series of 1,000 and showing high-quality video pictures, was presented to Philips President Mr. J.D. Timmer during the CD-I Arcade exhibition.

Vektor (Salford, UK). The world's leading producer of interactive multimedia language learning packages; producer of the Connection range of courses, marketed in 36 versions in 15 countries.

Summary of presentations

Brief summaries are given here of the presentations made by the speakers at the Second Multimedia Conference on CD-I.

The pre-launch state-of-the-art in CD-I

Gaston Bastiaens, Philips Interactive Media Systems

Major steps in CD-I software creation and production are being taken by Philips and its partners, as the launch date for the CD-I system approaches. Philips has set up two new companies - Philips Electronics Media and Philips Interactive Media Europe - under a continuing programme of major investments in CD-I software. The European publishing activities in the consumer field will be handled by Philips Interactive Media Europe, which complements the existing companies American Interactive Media and Japan Interactive Media. All these companies have the aim of ensuring adequate software

choice and availability by the system launch dates of late '91 in Japan and the USA, and mid-'92 in Europe. The worldwide CD-I software activities of Philips will be controlled and co-ordinated by the new holding company Philips Electronic Media. A review of the various CD-based systems was also given, in response to the many questions on this subject, and covered CD-ROM, CD-ROM-XA and Photo CD, as well as CD-I.

'CD-I: from dream to reality'

Gordon Stulberg and Bernard Luskin, American Interactive Media, USA

CD-I now has 'sizzle', with many titles already completed. Much progress has been made in all areas of disc making, including rewriting and streamlining titles, establishing partnerships with various hardware manufacturers, engineering production pathways, solving engineering issues, learning how to

improve title design and architecture, and in upscaling art direction, user interface, screen design and navigation, fonts and iconography. This is the year of introduction of CD-I in the USA, and the system will bring electronic publishing into the consumer and education markets.

'The year of the home use multimedia revolution'

Mikio Higashi, Matsushita Electric, Japan

The 'home use multimedia era' is no longer on the horizon, but is here today. Consumers are no longer satisfied with receiving one-way information; they expect to be involved with it through interactivity. Multimedia will become the mainstream product area in home electronics as we move towards the 21st century. CD-I's user-friendliness, CD-compatibility and international acceptance makes it the ideal standard for multimedia. But even stronger joint ef-

forts are needed between the hardware and software industries to ensure its success and make home use CD-I a reality. Matsushita has made CD-I a key business project, and plans to develop the system as a breakthrough in the AV industry.

'A historical overview of innovations in the development of key consumer entertainment media' Nobuo Kanoi, Sony Corp., Japan

Major technology trends like the development of LSI and digital signal processing technologies have enabled the AV industry to make the transmission and storage of signals independent of the basic material properties of the media. This is the key to the development of CD-I, which unites the trends towards digital audio and pictures and personalised computing. This new information tool will bring about revolutionary changes in consumers' lifestyles and the world's industrial structure. In the coming years, CD-I will continue to improve, with new applications like Photo CD and CD-I FMV. Sony will continue to support both hardware and software development of the markets using CD-related media.

'Hypermedia and artificial reality' Koji Yada and Kozo Ohta, CSK Research Institute Corp. and Hyper Media Corp., Japan

Recent technology developments such as AR (Artificial Reality) confirm the trend to acceptance and anticipation of multimedia products which are now only in the planning stages. Today, there is an ever-narrowing gap between the capabilities of present PCs and the ultimate multimedia machine, the 'hypermedia computer'. Following the first hypertext concepts over 30 years ago, today's trend is towards a 'hypermedia culture', in which applications are determined by aspects like image, sensitivity and human needs. Research into artificial reality themes like 'tele-existence' and 3D image manipulation is now widely supported in Japan, and software developers are eagerly awaiting the ever-growing potential to exploit these unique technologies.

'It all starts with an idea' Garry Hare, Fathom Pictures, USA

One of the biggest challenges facing creators and producers of interactive and multimedia programs is to find a way to vividly illustrate their ideas to potential publishers. Too often initial discussions start with business issues: budgets, rights and the like, and skim over the important creative aspects. This oversight is almost guaranteed to result in disappointment. From the publisher's point of view, the production process comprises initial title visualisation (the idea), through budgets, rights, production milestones, technical assistance and

the final production itself.

'XA-CD-I: 2 into 1 can work for many' Graham Brown-Martin, Next Technology Corp., UK

Next Technology in association with Philips is in the process of developing software tools and libraries to enable the straightforward production of CD-I titles that will also play on PCs fitted with CD-ROM XA (extended architecture) drives. This will give software publishers the opportunity to address a wider variety of delivery system requirements with a reduced development budget. Although it is technically possible to create such combined discs, the process of cost-effective software development for both platforms has not yet been well addressed.

'CD-I authoring, keeping the cost down' Robert Sorensen, Optimage Interactive services, USA

The three most frequently asked questions in CD authoring are 'How can I make a CD-I title?', 'How much does it cost?' and 'How do I do it cost-effectively?'. Answering the first question, the main stages in the title creation process are: design, prototyping, production - comprising video and audio production and application logic development - an integration phase, debugging and finally testing. Factors influencing the cost are the scope of the title, the available source materials, the level of interactivity and the use of familiar working environments. Recommendations to contain costs and achieve good results include using tools with preview capabilities, using high-level tools for logic development, choosing a prototyping tool whose results can become part of the final application, and above all using Optimage tools to ensure quality and success!

'Setting up a CD-I studio' Clive Shepherd, Epic Interactive Media Co., UK

First, decide how much of the CD-I production process you want to handle. The solution you choose depends on the available skills and facilities, and the quantity and nature of the planned work. Equipment can range from a CD-I Starter Kit, through single PC or Macintosh solutions to large-scale Unix networks. To get people with CD-I skills requires 'stealing' them from other studios or otherwise plenty of training. The key thing about a CD-I studio is the attitude to 'get things done'. Remember your customer is not your client, but the end-user of the title, because 'amateurs are concerned with making programmes, professionals with making audiences'.

'From analog to digital: a pathway for converting videodisc programs to CD-I' Jean-Pierre Isbouts, AIM Artspace Group, USA

The applications already available

show that CD-I will pass the test of time as a quality AV medium. Its uniqueness compared with other CD-based media requires sound investments in production facilities, and good techniques are just as important as in the production of great film or TV programs. There is no reason to 'wait' for motion video; wonderful CD-I programs can be made with today's technology. To truly understand and exploit digital video, the producer must first understand CD-I's multimedia language. Finally, CD-I authoring is no longer a 'black hole'; much of the authoring work can now be done by creative personnel without advanced programming and engineering skills.

'Semiconductor technology for CD-I' Ray Burgess, Motorola Inc., USA

To make CD-I a major market driver for the consumer industry, two key initiatives must be aggressively pursued. First, the standard must be globally accepted by the publishing industry, with the volume and richness of titles creating consumer pull. Secondly, equipment must be readily available to the mass consumer market to take it beyond the 'enthusiast' niche. Semiconductors and systems are the key enabling factors, and Motorola has committed itself as part of the 'CD-I food chain' to help make this a reality. One of the major initiatives is to reduce the size and cost of the overall system, while increasing features. As the costs of silicon and packaging permit, Motorola will take a step-by-step approach towards the ultimate vision of the single-chip CD-I player.

'The Kodak Photo CD System: an overview' Scott Brownstein, Eastman Kodak Co., USA

Photo CD is a blend of technologies, combining the unmatched image quality of silver halide photography with the fidelity, longevity and convenience of electronic recording on CD. It makes it possible to use more than 360 million 35 mm cameras worldwide, and to capture film images for electronic playback. Photo CD is also suitable for commercial users, in fact it has tremendous potential for anyone who uses images. Kodak believes that Photo CD plus CD-I is a terrific partnership, that brings together the worlds of interactive multimedia and personal photography in such a way that imaging will never again be the same.

'Taking the British Golf Museum home' Peter Lewis, British Golf Museum, UK

The British Golf Museum tells the story of the development of British golf from the middle ages to the present day. For security and conservation reasons, all the objects in the museum must be kept behind glass. But since the advent of film and TV, people have become accustomed to seeing exhibits in the

comfort of their own homes. So museums had to change, by finding new ways to amaze the visitor. This has been done by making extremely user-friendly AV programs - through touch-screens, a simple menu structure and short text panels. The commercial CD-I disc telescopes the 11 museum discs into 1, and offers the viewer a complete armchair golf experience - the rich history of golf plus a quiz and games.

'Children's musical theatre and other CD-I titles' *John Ramo, Sonic Images Productions Inc., USA*

CD-I is a process of discovery, both technically and creatively. But the best is yet to come, with a wide spectrum of titles, especially music titles, to be discovered. Children's Music Theatre uses a musical metaphor for children, with the opportunity to change lyrics, styles and instrumentation. The many choices make it a classic example of tremendous complexity beneath a simple but powerful user interface. The most complex obstacles to CD-I music products at present are technical (such as FMV and memory improvements) and rights issues. MIDI is an important future-proofing feature for CD-I, and makes CD-I the most powerful platform for interactive music product development.

'Licensing for CD-I in the USA' *Scott Smith, Polymedia Communications Corp., USA*

CD-I is a home entertainment medium for which there is, as yet, no established demand. As such it does not fit into any of the traditional licensing categories. Some guidelines for CD-I licenses include: if possible avoid paying up-front rights fees, or keep them as low as possible; in case of full rights buy-outs, schedule the payments over an extended period; if you have agreed per-unit royalties, go for a flat percentage rather than a graduated payments schedule; secure rights for later media upgrades; try to trade extra on-screen or label credits for lower rates; and get a warranty from the owner that your use of his property will not infringe the rights of any other party. Most important is to appreciate the nature of this exciting new technology, and to negotiate accordingly.

'Weathering the storm - development of the Children's Bible series' *Jerry Lundquist, Interlight Productions, USA*

Noah's Ark, the first in a series of Children's Bible Stories, survived the disasters that come with pioneering a new industry. The disc combines reference materials, entertainment and educational data, which makes it a valuable 'edutainment' disc offering great opportunities for learning. Development of generic and re-usable tools for this first disc allows subsequent titles to be produced much more efficiently and economically. The result is that both individual discs and series can be produced at significant savings, and within a much more realistic timeframe than the two plus years it took to produce Noah's Ark.

'Exploiting a new home market: games on CD-I' *John Garcia, Novalogic, USA*

Of the CD-I discs projected to be available at launch, only 20% are games - a figure that contrasts sharply with the actual market breakdown. With the proven large market for interactive games, a standardised, consumer-oriented software player sold on a worldwide basis, and a superior software distribution method, it looks as though the vendors of fun games for that system will sell a lot of them. Interactivity - provided by a computer - is the most important success factor for good CD-I games. Use the computer to do more than just flip through slides of follow simple branches. The key to making CD-I succeed is to exploit all the yet unexplored interactions between human beings and the product you create.

'The European Communities and its views on future A/V technologies' *Georges Lemonidis, Commission for the European Community, Belgium*

Future audio and video technologies will shape our working and living environment, the way we learn and communicate, and the way we relax. They also represent industrial and economic stakes too important for the Community to overlook. Priority number one of the

Community is HDTV. The Commission proposes to encourage early availability of an attractive range of products by stimulating the setting-up of production environments. Funds will also be provided to cultural information owners and publishers to define and develop interactive and multimedia products.

'CD 92: plans to stimulate the development of titles on interactive multimedia programmes' *Patrick Madelin, Club d'Investissement Media, France*

The objective of the Club is to promote AV creation and production by means of advanced technology. It is mainly active in production, training, information/promotion and the development of systems linked to the use of digital and computer techniques, including interactive multimedia programmes. The Club believes that interactivity represents one of the major opportunities for diversifying publishing and AV markets in the 1990s. At present, it mainly supports the development of sound initiatives which promote the development of European content and/or know-how.

'Fast Track CD-I development - a presentation on improving software productivity in CD-I development' *John Gray, Capitol Disc Interactive, USA*

CD-I production costs and time are decreasing, and developers today can begin to have it all. To do this, however, requires maximising what is available today and learning from the past in setting your objectives. Capitol was one of the pioneers of CD-I development, and initiated the 'Treasures of the Smithsonian' project in 1988, together with American Interactive Media. It believes that the Museum Amparo project is the first public access, independently funded CD-I based point of information system anywhere in the world. This project, comprising over 2,500 images and 4 hours of audio in four simultaneous languages, took 8 months. Later projects are taking about 6 months, and it is hoped to reduce this time further.