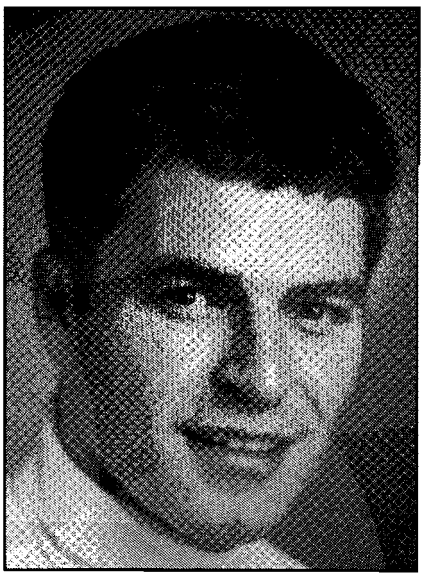
Interactive Marketing: The Next Dimension in Corporate Communications

Peter Schäfer

Increasing competition, declines in consumer demand and consumers that are more strategic than ever before have led to saturation and stagnation in a number of well-developed markets. Corporations have begun to realise that constructive forms of marketing communication in such markets imply that all business efforts need to be directed at relationship-building with consumers, i.e. all communication instruments, including advertising, personal selling, sales promotion and corporate identity as well as conventional direct and database communication need to draw on personalised and targeted methods and media if marketing is to remain cost-effective. Technological developments in interactive communication, telecommunication and digital marketing make this possible. Far more than mere communication tools, interactive media have become powerful business instruments. The article examines the nature of interactive communications and media and their integration and implementation in the marketing communications mix. The long-term implementation of interactive communi-cations in corporations requires a marketing communications specialist that operates more interdisciplinary than ever before: he needs to assume the role of a "marketing communications engineer" beyond the mere technical sense of the term, something that raises a number of implications for the communication services industry, academics in communication and marketing communication practicioners.



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BACKGROUND AND INTRODUCTION

In recent years, marketing theorists and practicioners have raised the issue whether marketing communication as we know it has reached a point of culmination or even stagnation. Increasing competition coupled with long-term declines in consumer demand dominate a number of markets, ranging from branded goods to high-technology

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and business- to-business. Consequently it's becoming increasingly difficult to secure market shares with the same amount of marketing communications that has shown effects before. The effects of stagnating markets have been analysed in a number of high-standing contributions (Porter, 1980; Hambrick, 1983; Meffert, 1983).

In these markets, many companies typically react by what I term "contraproductive" or even "opportunistic" Marketing, i.e. short-term improvements in products or brands and short-term reductions in price and a unidimensional use of the available communication instruments or media. On the long-term, consumers become dissatisfied and the loyalty with the companies and its products decreases.

In order to secure a long-term market share, companies in stagnating markets should turn such situations into an advantage by searching for new marketing communications solutions (Belz, 1986). This is only possible by surveying the larger environment in which Marketing and Communications functions. Rather than short-term reactions to market declines, our role should be that of a "market engineer" who surveys the impact of other developments and adapts them in his long-term strategy for a product, service or brand. This influences the message, mode and intruments of communication he will ultimately use. But what are these developments?

WHY MARKETING COMMUNICATIONS IS CHANGING

Of course any development in marketing communications is always dependant on political and economic developments. Ecological awareness on the side of consumers in Northern Europe may, for example, arise from heated discussions on ecology broadcasted on political television. These, in turn, are dependant on "higher" political developments such as burning oil wells in the Middle East as a result of Operation Desert Storm etc. Further, we have become familiar with developments such as the opening of the European Economic Community to a real common market in 1992. which will have a great effect on mergers and aquisitions, consumer safeguards, value added taxes etc. (Booth, 1989). The changes in marketing communications here are restricted to the context of this article.

The changing consumer

The first development is the changing consumer. Companies are realising that their customers are more competitive in their buying habits and not as loyal as they used to be. The buyers of the 1990's have changed and are dramatically transforming the way they make purchase decisions. They are thinking longer and harder about both expensive and inexpensive purchases and are looking for better value, quality and service for their money. They are becoming "smart shoppers", spending more time gathering information and shopping around fro the best deal. The market has become segmented beyond mere demographics such as age , race, income etc.

Further, we have reached a point where the combination of such demographic factors with psychographic criteria no longer is the only adequate basis for market segmentation. Looking to the USA, the Hispanic Market needs to be defined even more closely as result of gaining affluence in some sectors. In Europe, a term such as "Yuppies" is no longer viable to capture the hybridity of this target group. Political developments such as the German reunification, increasing ecological awareness and a simultaneous increase in both spend-

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ing power and leisure time call for the need to define this age and income category more closely.

Marketing Communications is therefore faced with the dual challenge of delivering target-oriented messages and developing loyal customer relationships. Within this dilemma corporations above everything else need to operate economically in current markets and at the same time secure leads for new markets.

I would like to illustrate this with an example from the German automobile industry. BMW Germany is renowned for creating supreme but also realistic image advertisements. The decline in sales as a result of the recession in the early eighties showed that BMW can no longer rely on the image of its automobiles and advertising alone. In addition, product improvements and technical innovations are usually long-term. The corporation realised that it needed to segment more narrowly according to target groups if it wanted to utilise the uncovered market potential. BMW implemented a marketing communications strategy whereby sales personnel were to achieve a certain amount of sales based on the marketing goals of the outlets and the prescribed capacity for each salesperson per region. What this means is that each salesman was to contact a certain amount of the target group in order to reach the objectives for the sales period.

Now, we all know that BMW is an exclusive product and that much information seeking takes place before the purchase decision. The sales personnel therefore needs to consult each target individually. With nearly 2000 prospects a year, this can become problematic if the outlet wants to retain its cost-effective strategy. On the one hand there is a need for rapid information on customer needs and contacts, on the other the client needs to retain information rapidly on the product and services. In the case of BMW, the situation was mastered by employing a database for the sales personnel that simultaneously stores information an all available models, cars, accessories and services for the customer. The salesperson was responsible for transporting this electronically stored information to the target.

Advances in technology

This brings me to the second major impact on the future of marketing communications, viz. the advances in technology. New avenues of communications are opening up to corporations that were never available before. The possibilities of using computer technology in marketing and sales efforts are endless. As this article will show, computer-based marketing can be used for internal and external communications such as point-of-sales systems, direct marketing campaigns , trade show demonstrations, multimedia campaigns. sales presentation tools, recruiting tools, product demonstrations, interactive training modules, and merchandising, promotional and public relations campaigns.

The major advantage of utilising computer technology is the ability to meet the proliferation of individual needs and choices of customers. It has enabled corporations to communicate with each individual customer or target prospect through the use of interactive communications. Interactive marketing communications delivers personalised, targeted messages and recommends solutions based upon the prospect's individual reqirements. The BMW example shows that a prospect profile section in an interactive sales

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programme can capture relevant and important sales information, providing sales representatives with prequalified leads. Interactive marketing communications can assist in customising one-on-one sales presentations, educating the prospect and providing in-depth information on a company's service or product.

A host of companies around the world are turning to the power of the personal computer and interactive communications to reach and impact their customer. Companies such as American Express, Chase Manhattan Bank, Chevron, Digital Equipment Corporation, IBM, Coca-Cola and Intel in the USA and Ciba-Geigy, The Robeco Group, SAS Scandinavian Airlines, Swissair and BMW in Europe are integrating interactive communications into their marketing and advertising mix as an innovative and cost-effective way to communicate with each individual in their target group. Reports on the effects of interactive communications within these companies show that it provides consumers with the high-quality, in-depth information they want, when they want it and in a form that is meaningful to them. In this sense, the power of the personal computer has enabled people to communicate like never before.

Against this background, this article will attempt to show:

— what interactive electronic technology implies,

— which interactive communication media exist in marketing communications,

— how they can be integrated in the marketing communications mix and

— implications these developments hold for marketing communication practicioners.

DEFINING INTERACTIVE ELECTRONIC COMMUNICATIONS

The 20th century had undergone significant changes in the ways in which businesses and individuals communicate with each other. Inventions that have brought the world closer together abound. Witness the invention of the telegraph, the telephone, fiber optics, the fax machine and most importantly the computer. The impact of global communications was recently demonstrated in how rapidly the events of China and Eastern Europe were relayed to the rest of the world. In fact, Chinese students in the USA and in Europe were helping orchestrate the revolution by faxing instructions to their peers in China.

Global communications have also reached the area of corporate communications. With every technological advancement, companies have been able to respond to customer needs more quickly.

Interactive electronic communication is the result of two directions of technological advancement within corporations. Firstly, there are those developments that have to do with the technological possibilities afforded by telecommunications. Secondly, there are the advances in computer technology. (Weinhold, 1989; George, 1990). Within corporations, interactive electronic communicationis usually fall within the domain of a department termed Telematics (Lazak, 1990a). The personnel in such departments resemble what I termed earlier as "market engineers". Typically, they have a qualification in marketing communications and sales coupled with technical qualifications or training. A number of larger companies already have independent telematics departments.

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Definitions of interactive electronic communications are as various as they are confusing. Indeed, there are as many definitions as there are communications media experts, and even seasoned pundits will illustrate interactive communication with the brush and colour of their own specialism. This is partly because of the nature of the media itself.

Interactive electronic media combine a whole host of communication elements - still and moving pictures such as video, sound, text and graphics (Baird-Whyte, 1990). Each of these elements has its own particular advantages in conveying different kinds of messages and eliciting different kinds of responses. In addition, each of these elements may be originated from, and delivered by, a bewildering array of sources. Because we speak of a number of elements, interactive electronic media has becom synonymous with interactive multimedia.

Typically, however, some sort of computer technology will orchestrate and blend these disparate parts to provide in a single source a powerful convergence of message systems. Essentially, the message is greater than the sum of its elements.

The computer controls audio, visual and textual elements and the means by which they are delivered. The device, delivery system or technology is only important insofar as it provides us with the most efficient and effective way of conveying meaningful information. And, put simply, the information is only meaningful if we (as senders and receivers of information) can manipulate it, apply and use it. It follows, therefore, that the level of interaction is defined by the level of control a user exercises over the entire delivery system and the information within the system.

In one sense interactive multimedia is nothing more than the natural outcome of an evolutionary process. It uses, after all, some very familiar elements - text, pictures and sound, which have long been delivered by other media such as print (e.g. books and magazines), television, computing and telecommunications (e.g. teletext, videophone, video-conferencing etc.).

The evolution of computing is itself now familiar. The first mainframe computers introduced shortly after World War II took up whole rooms. Just 30 years later, a computer was sitting on a desk in the workplace as companies such as Apple and IBM brought computing power to the masses with the introduction of the personal computer. Text and graphics manipulation by computer came next, followed by the ability of the computer to manipulate and store still pictures and video. More recently, the advances in analogue-digital conversion have brought moving video into the computing arena.

Going one step further, the personal interactive media workstation can be integrated in a teleport dialogue system that enables satellite communication between corporations on a worldwide basis (Lazak, 1990b). Such teleport systems integrate mainframe networks with television, telephone, fax machnine, video camera and the personal interactive workstation in a way that all stations and their multimedia are combined by an integrated broadband communication network system. This enables the transportation of all multimedia messages worldwide. Such Teleports already exist as part of the architecture for the new conception of the London Docklands. In Japan, one corporation is implementing teleport stations for nearly 100 000 employees in a complex that will include airports and two new skyscrapers specially

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conceived in a teleport-type architecture (e.g. satellite dishes are placed in an ecoarchitecture on specially conceived floors within the building).

What is revolutionary is that nearly all of these elements are available via our own desktop computer. Developers of multimedia have developed some sense of transparency. As users of interactive multimedia we need only to manipulate it with ease: the computer undertakes the complex processing job. "Manipulate", however, is a very evocative word and its usage suggests something not altogether friendly. More sophisticated communication is non-linear and suggests at least a two-way flow of information. I would therefore like to look next at the characteristics of interactive electronic communications.

CHARACTERISTICS OF INTERACTIVE ELECTRONIC COMMUNICATION IN MARKETING

As I outlined earlier, text, pictures, video and audio have their own information conduits. Each has a unique mechanism for the delivery of different types of messages. However, by combining these communication elements we can draw on the best features of each and increase their advantages. If we add the power of computer technology, we can deliver a multipurpose communication channel able to meet the information needs of a variety of target groups in a range of different environments. To name a few: the sales personnel that requires training on product characteristics; the shopper at the supermarket who is enquiring about these very products via a monitor integrated with an information kiosk at the entrance to the store; and the respective product and marketing managers in the corporation who are enquiring about the availability of the product in their local or international markets.

Essentially, this is the benefit of interactive communications: the compelling power of pictures and television with the functionality of computing to place programme control in the hands of its users. Hence, in marketing communication, this type of multimediality shows a number of characteristics that combine to make this a medium that rises above the "unidimensional" communication media such as print or television.

Dialogue and interaction

Interactive dialogue and feedback provide a highly effective means of reinforcing information content. The user can consult the system at his convenience, stopping to ask more questions at certain points. The prospect becomes more involved in the information by actively participating in the marketing message by looking or sifting throught the information options available on the screen, asking and responding to sales messages and thereby choosing his own path of information entirely according to individual needs. Because of the interactivity of the medium, it has been shown that it can hold the prospect's attention for an average of up to 20-30 minutes, all the while involving the prospect in the information. This results in retention rates of up to 60%, compared to 20% for radio or audio tapes and 30% for television (George, 1989; Baird-Whyte, 1990).

Another facet of this interactivity is that prospects are more likely to react favourably to the message when it is distributed via personal computer or multimedia station. Prospects place more value on information they receive from the computer than they do from other sources such as newspapers, magazines, television and salesmen (George, 1990). A study by the Softad Group in the USA found that the recall and retention for an interactive

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programme is 63%, compared to television advertisements at 21% and 9% recall for print advertisements (George, 1990). The same study showed that the ability of an advertisement to persuade a customer is high at 28% for an interactive programme, 9% for television and 2% for print. As these statistics show, interactive communications contributes directly to relationship and dialogue building with the customer or prospect.

Direct communication and personalisation

The same interactive multimedia can be used by a large target group. However, each prospect utilises the medium according to his own needs and paths of information. Consider the automobile buyer. One automobile manufacturer may offer over 50 different models. Each model in turn can be fitted out with any of a range of over 100 accessories. Further, the finance and leasing package is different for each model and can be adapted according to individual financial needs. By "shopping" for a vehicle electronically each prospect can search for the facts he needs and with the appropriate online or telecommunicative links (e.g. videotex) even purchase his car electronically. In this way, the sales and marketing arguments are standardised and not subject to the personality and qualifications of the sales personnel. The same interactive programme can incidentally be used to train sales personnel in preparing their personal selling strategies for important leads.

Personalisation also means that the prospect can chose to see the interactive programme at a time he chooses. This is a significant fact, given that penetration of personal computers has in some companies already reached 100% (Weinhold, 1987). Where the interactive prorgamme is not distributed via workstation, the customer can also choose whether he wishes to expose himself to the message. Point-Of-Information monitors do not bombard the customer with marketing information; rather, he can choose to select information if he so chooses. In this way, the consumer has already a certain readiness and interest before seeing the sales arguments. Compare this to your classic image advertisements, where one can say somewhat provocatively that often the stage of "attention" in AIDA is not reached . Of course the success of both media is dependant on how creatively the message is transported. The integration of both media in the marketing communication mix will be discussed later on in the article.

Clear, cogent and consistent messages

Critical information can be presented the same way - everytime. For example, marketers can provide consistently accurate and current product information, including for instance price and availability. For sales training, trainers can insure that all sales personnel receive the same level and quality of information in interactive training modules.

Cost versus performance

Unlike the classical communication media, it is possible with interactive programmes to directly assess the effects of the communication. The existing interactive marketing applications are for the largest part coupled with databases that register the name and other qualitative data on the consumer and his buying habits. Besides being a powerful direct marketing tool, some relation to the cost of an interactive campaign can be established.

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For example, in 1987 Jaguar Cars faced a major training need. The imminent international launch of a completely new vehicle, the Jaguar XJ-6, placed enormous pressure on the Dealer Training department. The complexity of the new car's systems would require extensive training for technicians and sales personnel alike; given the shortage of trainers and resources, this provided financially and logistically impossible (Jaguar reckoned that to provide conventional training the cost of salaries alone would have been in the region of £90'000). Jaguar therefore introduced a series of six interactive video programmes. The interactive programmes not only took training directly to the workplace, but halved the training time taken away from the job from four days to two days. For each of the 115 dealers in the UK network, the saving was averaged at around 7'000 pounds per delegate (National Interactive Video Centre, 1990).

Another example is that of the Ford Motor Company in the USA. Ford employs an interactive communications programme that successfully harnesses the power of the personal computer to reach consumers at their workplace and homes. With over 61 million computers in homes and offices worldwide, Ford targeted the users of these computers by putting information on over 98 cars and trucks into an easy to use database that allows consumers to electronically shop for a new vehicle. Now, instead of straining through the fine print of different brochures, catalogues and magazine articles, consumers simply insert a disc into their personal computer. The programme can tally up the sticker price of a new car including special features and options and even allows consumers to easily figure out a monthly finance plan. The Ford programme also includes an exciting Grand-Prix-style driving game; a section of animated graphics that provide a sampling of new innovations from Ford; and a built-in customer survey which provides Ford with essential customer database information. To date, Ford has distributed close to 200'000 Ford Simulator disks to consumers across theUnited States. An interesting aspect, though, is that consumers are so eager for this type of information that they are willing to pay $6,95 to receive it (Softad Group, 1990).

IBM Switzerland developed an interactive campaign to introduce the "Risc System 6000" and "AIX" to its customers. The programme was a major component of a two-step direct marketing programme targeted to existing IBM customers. IBM has achieved some significant results, generating 5-10 times more qualified sales leads than traditional methods.

Representation and integration through multimedia

The power of human-computer interaction sets interactive programmes apart from all other types of presentations by involving the senses and emotions in a way that no other form of marketing communication currently does. By combining computer graphics, animations, sound, copy, interactive dialogue, photography and full-motion video images the medium is intuitive. Further, one medium is not advantaged at the cost of another. A playful product slogan and animated logo does not mean that the significant product information stored in the programme cannot be selected by the user who wishes to see it.

In this sense, interactive media do not seek to replace the potential and advantages of other media. Rather, the advantages of each medium are employed and the combination enabled by the processing capabilities of the per-

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sonal computer. For example, to demonstrate lifestyle qualities of a soft drink, a full motion video can be supplemented by detailed product information with a text overlay during the video. Another example: the Arts Museum in Vienna uses an interactive porgramme to guide vistors through the museum. The walk through the museum is simulated in an animated motion video denoting the positions of paintings that are for sale. By clicking the position of the painting in the simulated programme, photographs provide a history of the painting followed by texts with purchase information (Leber, 1989).

INTERACTIVE MEDIA

Interactive multimedia technologies are nothing more than the hosts or platforms via which we deliver information - in the form of training, education, marketing or information presentation. The following section aims to desribe briefly these technologies and their basic concepts.

It is useful to begin with a description of interactive video, partly because it was the first interactive system to put moving video on optical disc, and partly because many of its basic concepts apply to other forms of multimedia. For example, the methods of recording and reading data on optical discs is the same whether they be video discs or compact discs. Similarly, many of the fundamental stages and processes of developing and designing interactive multimedia are the same. In addition, many of the tools (such as computer authoring programmes, graphic and animation packages) can be used to develop multimedia for a variety of platforms.

On a purely functional level, other kinds of multimedia could be called interactive video in the sense that they use pictures, a computer and are interactive. Indeed, there is nothing that says that interactive multimedia has to use video at all. There are very good packages which combine still images with text and high quality audio, all stored on computer hard disc. These tools allow more of us to develop multimedia presentations on our desktop in the same way that as desktop publishing packages such as "Pagemaker" and "Ventura" made publishing something that anyone could do.

Other tools are revolutionising the way we approach, use and manipulate information for an interactive communications programme. These tools (e.g. "Hypercard" developed for Apple Macintosh computers) aim to loosely emulate the free associations of characteristic human thought and allow users to create, access and customise information including still and moving video, text, graphics, animation, music, sound and voice. Data is held on familiar index "cards" and "buttons" within the cards enable a grouping together into so-called "stacks".

However, because we have the tools does not yet mean that we all have the requisite skills to use them effectively. Similarly, just because technologies such as videodisc and compact disc exist does not mean that we have to use them. The critical point in selecting the medium and accompanying hard- and software for any interactive communications programme is that the application, environment and target group should always dictate the application, and not vice versa. As you will see later on in the article, the development of interactive multimedia brings together a number of specialists from different fields that have to consult on the viability of the application. The arising considerations, whether from a computer programmer, computer graphic designer or marketing communications

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manager, need to be evaluated for a media script much like the storyboard for an advertisment or television film. Only after the input of all competences are we ready to select the media.

Interactive Video

Interactive Video is largely a technology used by the professional market. In broad terms, the applications are either generic (i.e. commercial products available off the shelf) or customised programmes designed to meet the needs of one organisation. The marketing applications fall within the broad categories of point-of-sale and point-of-information and trade shows and presentations. A wide range of programmes has been developed in all of these categories, including applications for Jaguar Cars, Levi-Strauss, Coca-Cola, Nuclear Electric, Bank of England, the Dutch Post and Telecommunications, Benetton, Minolta, Sony, Philips, Ford Motors, BMW, Lufthansa German Airlines and L'Oreal Cosmetics. A few examples will be highlighted later.

The user of an interactive video delivery system typically sees not much more than a videodisc player, a monitor, a computer and an "input device". The latter refers to the user's means of communicating with the system. Generally, the most common input devices are the computer keyboard, a remote-control keypad or touch-sensitive screen, a mouse or trackerball, lightpen or barcode reader. Many interactive systems will use a combination of these devices e.g. keyboard to type in answers to questions, touch-sensitive screens to select a picture or number on the screen. Still other devices such as concept keypads or even voice recognition can be used for more specialised applications.

In interactive video, software often describes the content of a total programme. i.e. a computer and video programme that run in tandem. The still pictures and moving images are typically stored on a videodisc or a videotape and the text and graphics are stored on and generated by the computer. Computer control programmes can overlay text and graphics on video (so that we can see them on the monitor). The essential device is an overlay card or board residing within the computer. It combines (analogue) video signals with (digital) computer texts and graphics, and enables all the delivery components to work together as a system.

As we presently know it, interactive video employs reflective optical disc. The audiovisual elements for the interactive videodisc are prepared on videotape and converted to a master tape that is then recorded onto the disc. The disc comprises up to 60'000 frames (imagine them as photographs) which are numbered and indexed like the pages of a book. Through these numbers, any segment or frame of a video can be accessed almost immediately via input device and a series of still or moving pictures can be retrieved in the order the user desires.

From the above, the main advantages of interactive video are through videodiscs the ability to store and retrieve vast amounts of information that can be rapidly and randomly accessed by the user. It may hold a wide variety of segments - some more comprehensive, some simpler than the central core of material - and thereby produce a programme specifically designed to meet the needs of its users. A variety of users may see any one programme, but no two users will necessarily see the programme in the same way.

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Compact Disc Digital Audio

In addition to videodisc there are a variety of compact disc technologies that can be used by themselves or in combination to deliver interactive multimedia to both the consumer and business markets. Consumer-based compact disc products are typically self-contained, whereas professional products are generally developed within the computing environment. Like videodiscs, compact discs are based on the reflective optical disc. Unlike videodiscs, though, the data stored on compact discs is in digital rather than analogue form (in simple terms the difference between analogue and digital is akin to the difference between a continuous flow of water and the drip, drip, drip of a tap). Whereas videodiscs employ an analogue recording technology based on variations in a continuous electrical current, compact disc technologies break down recorded data as digits (bits and bytes).

Another important difference between analogue and digital forms is that analogue forms are tied to the incompatible broadcasting standards of different countries - PAL (used in Britain, most of Europe and the Middle East), NTSC (used in North America and Japan) and SECAM (developed in France). In contrast, one of the most important features of CD-technology is that there is a common standard between its different forms.

A disadvantage with the existing forms of compact disc technolgy is that it is impossible to store more than a very small amount of video on a disc. The compression processes involved in transporting still or moving images via compact disc often results in a loss of the original high quality.

Compact Disc Read Only Memory (CD-ROM)

Unlike Compact Disc Digital Audio, which is used mainly for audio applications, CD-ROM is the compact disc format for storing large quantities of digital data in various forms. A single CD-ROM has the capacity of 150'000 pages of text. One CD-ROM based product contains all 18 volumes of the official telephone directory of Switzerland or the equivalent of 3,75 Million adresses (Raskin, 1990). Another application is the CD-ROM eqiuivalent of the Hutchinson's encyclopaedia, which holds some 25'000 entries, 7'000 biographies and 250 tables.

CD-ROM can be thought of as just another compatible form of the harddisc. The only real difference is that it holds much more data and is "Read Only", i.e. once data has been recorded it is immutable.

The enormous data capacity together with cheap reproduction costs means that large quantitites of interactive information can be distributed fairly easily to a potentially vast audience. In addition, a number of CD-ROM drives can read both CD-ROM data and CD-data - a useful feature for applications that combine interactive audio with digitised graphics and text.

Compact Disc Interactive (CD-I)

Compact Disc Interactive is described as the logical extension of CD and CD-ROM and is a multimedia platform for combining text, still and moving pictures and sound on one disc. Unlike CD-ROM, there are more defined specifications for storing and receiving data. The standard for CD-I is a complete standard specification that includes how data is layed down on disc, the disc content and the CD-I player itself. In contrast,

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CD-ROM only specifies the division of the compact disc into sectors and blocks of data. Typically, the capacity of CD-I equals 72 minutes of stereo sound and up to 6000 high quality images or any combination of these - computer programmes, computer text and graphics, music, speech and pictures. Audio, video, text, graphics and computer data come into the player from various sources and are decoded and blended for output on a single screen.

CD-I has already featured in some industrial and marketing training applications. In October 1990, Renault of France demonstrated four CD-I training programmes in a joint project developed with Philips International in France. The multilingual programmes will provide technical and sales training for Renault employees in the worldwide dealer network.

However, CD-I is mainly intended as a consumer product. Hence, CD-I applications currently under development are commonly desribed as "edutainment" (Baird-Whyte, 1990), i.e. games and sports programmes.

Compact-Disc Extended Architecture (CD-ROM XA)

CD-ROM in its original form was not intended to include sound or pictures. In simple terms, CD-ROM XA puts CD-I standard images, graphics and sound on a CD-ROM disc. It does not add much cost to the conventional CD-ROM drive, but will provide many features including limited (quarter screen) motion videographics and simultaneous audio tracks. The "XA" standard overcomes the problem of playing sound by interleaving blocks of audio data at regular intervals between blocks of text, image or programme data. This means it is possible to synchronise a text display with an audio input - critical, for example, in developing multilingual interactive campaigns.

The physical form of a CD-ROM XA is a plug-in personal computer card mainly aimed at the professional world. The only hardware needed alongside the conventional personal computer is a so-called XA-interface. This means that true multimedia systems can be implemented fairly cheaply. XA has been specified in a way as to be compatible with existing CD-ROM and CD-I soft- and hardware.

Porgrammes that employ CD-ROM XA are already in production. These are, however, mainly in the spheres of training and education. For professional marketing applications, CD-ROM XA is an intermediate technology that lies just short of the more complex full-motion video systems, although even this constraint will not remain as XA has been designed as a subset of newer systems such as Digital Video Interactive.

Digital Video Interactive (DVI)

Given the broad base of platforms for DVI, many of those in the multimedia community are banking on it as the long-term multimedia winner (George, 1989; Baird-Whyte, 1990). In general, DVI-technology is similar to that of CD-I, only that it offers far greater storage capacities. In contrast to most of the other technologies, however, DVI is designed to operate across all computer systems and operating platforms. Only the chipset for the Apple Macintosh operating system is currently still undergiong development. This means that users will not have to purchase hardware with every new version of DVI. While DVI can provide a publishing vehicle for interactive programmes incorporating digital video, it also transforms the personal computer into a

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multimedia production and delivery platform. While it is a component for CD-based programmes, it can simultaneously be employed for desktop video production and editing.

The capacity of DVI will depend on the choice of storage medium and the data actually used in a given application. On CD-ROM, DVI could deliver 72 minutes of moving video and its audio track, or twenty minutes of video with seven hours of separate commentary, some 5000 high-quality still images (Raskin, 1990).

A variety of marketing communication projects are already underway. For example, ICL computers in Britain will employ DVI to create a generic marketing training package based on its existing "Quality Assurance" management training package.

Most of the interactive multimedia marketing, sales and point-of-information applications that exist have been developed as interactive video through laserdisc. In Europe, around 2000 companies are already utilising some form of interactive multimedia. CD-ROM and DVI seem to offer the most promise for the future, however. Not only the technology but also the tools offered to developers make these interactive media more accessible for developers in agencies, production houses and marketing departments. Companies such as Meridian Data Inc. in the USA offer tools such as video screen editors, sound editors and graphic editors which can be employed by any person at a multimedia workstation (Jacobs, 1990). This means that after the architecture for an interactive application has been established, even the user can adapt the programme to his own needs by editing superfluous media material. As pointed out earlier on, the large hardware manufacturers have made devlopment easier through excellent multimedia developer packages. Elementary packages allow the individual combination of still and moving images with text and audio and make possible the development of interactive programmes in the same way we would utilise a desktop-publishing programme.

INTEGRATING INTERACTIVE MEDIA IN THE MARKETING COMMUNICATIONS MIX

The purpose of using the possibilities afforded by interactive multimedia is not to substitute the existing instruments we have in the marketing communications mix but rather to complement these. Image advertising is and will remain a superior medium to create awareness or stimulate interest for a product. In the same way, personal selling will always have to be supported by visual sales promotional materials when the product or message is relatively complex (e.g expensive product such as an automobile). However, where these media are used in an effort to build relationship marketing or a dialogue with the customer, interactive media will emerge through its characteristics of interaction, direct communication and personalisation, message consistency and integration described earlier as a powerful and cost-effective marketing communications medium.

This relationship marketing does not merely refer to efforts aimed at gathering collective information on customers to be transported into company databases. Rather, interactive media can be utilised at another level as a powerful business administrative instrument (Schäfer, 1990). In this sense it offers and at the same time reaches beyond a mere direct marketing medium. I will attempt to outline this with the following criteria of interactive media in the marketing communications mix.

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Consumer decision making

In extremely diverse product areas interactive media offer a transparent overview of available products, assortments, accessories and accompanying company and communication services (Netta, 1989). This enables the consumer to scan and search for those products and services tailored to his individual needs and motives. In retail outlets, the showroom is often only stocked with prestige products or special offers and the customer has the feeling after having left the store that he has only seen a small part of the available assortment. As a result, 50% of all customers leave such retail outlets undecided (George, 1990).

Individual consumer decision making can be enhanced by offering the entire product and service lines on an interactive medium that has been cleverly and above all creatively integrated with the design of the store. Similarly, the same concept can be applied in a communications mix with trade shows or exhibitions, where it is impossible to show all products, services etc. plus the corporate identity in a space that is often limited to three square metres. For both trade shows and retail outlets, the success of the application depends on an effective visual integration with the identity of the company, the sales promotional material available on company and products and the argumentation of the sales personnel. These salespersons should therefore be "trained" in consumer decision making using the system.

In the USA, the introduction of an interactive video application at ARO manufacturers of oriental carpets resulted in a 300% increase in turnover during the first six months after implementation (National Interactive Video Centre, 1990). The application offers a complete and animating overview over the entire product line. Should the customer select an option, the system shows a full motion video communicating the lifestyle aspects of the product. After this involvement aspect he is offered a complete overview of all the styles, colours and quantitative data for the product. Should he wish to place an order, this is immediately registered and transported via modem and communications software to the stockrooms and warehouse, which in their turn offer input to the system as to the current ranges available.

A further direct consequence of these media is the convenience for the customer through the overview on the one hand and and the consistency in sales arguments and consultation on the other. One can safely say that each of us has encountered situations where an appealing advertisement was followed by inaccurate product information and leads as to where the product is available. Much prejudice surrounding direct mail and catalogues for "collector's articles" can be countered through a truly interactive direct medium that does not require a deposit or coupon to be filled out before a result becomes apparent.

Consumer education

A specific marketing environment that is conducive to interactive media is where the education of the prospect is important. This is the case for complex sales and communication messages in the business-to-business sector. At the Swiss Marketing Institute we are currently developing an interactive video application to transport know-how on complex erosive technology machines. This multimedia programme will be implemented worldwide by the company to describe consistently to prospects the foundations and technology

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involved for the machines. The application will be integrated with indirect communication instruments (e.g seminars and public relations activities) such as the opportunity to "test-drive" a real machine on the factory floor after having simulated the use of the machine via the interactive application.

I mentioned earlier on the use of interactive applications in the automobile industry, where the sales personnel in the dealer network are trained on the ranges, innovations and accessories available, while at the same time customers can utilise the application in the showroom to retrieve the detailed emotional and technical information they wish. Here, the interactive programme needs to be coordinated with all dealer showroom and sales promotional activities. In one case, the image spot used for cinema advertising runs in an endless loop with the text option to touch the keyboard at any point. Should the prospect do this, the interactive application using the same monitor begins with a menu screen that allows him to select the option and information he wishes.

Because the consumer is becoming more strategic in his shopping habits (for reasons I mentioned earlier on), there is another advantage of such applications. Through the storage capacities for information (both visual and textual) the clever marketing communication practicioner will not only offer products but additional services. Much like electronically choosing and purchasing the accessories for a motorcar via the application, the consumer can be shown what services, guarantees etc. accompany his purchase. In this sense, the consumer is educated in buying a system rather than only the product. In the USA, Scotty's DIY stores found that persons who consulted an interactive video application for a second or service purchase totalled 41% more than those who did not use the application. In the same example, an increase in brand loyalty of up to 400% was a direct result of the integration of interactive media in the nationwide retail outlets (Netta, 1989).

6.3 Direct marketing

In many sectors such as financial services or retail it is difficult for conventional direct marketing methods to break through close circles as a result of resistance to new products and overlapping target persons (Softad Group, 1990). Interactive media not only deliver personalised, targeted messages but also through direct feedback recommend solutions based on the prospect's individual requirements.

For example, MCI in the USA faces a fiercely competitive environment in the telecommunications industry and was looking for a "breakthrough" method of marketing communication to attract commercial clients to their new Corporate Account Services. MCI created a direct marketing and sales presentation tool that would communicate in an innovative manner the advantages of MCI's Corporate Account Services to hard-to-reach telecommunications managers in Fortune 1000 companies. An interactive programme was developed featuring detailed descriptions of the services and discounts available; an integrated spreadsheet calculator that allows for a comparison between MCI and AT&T charges; an interactive demonstration on MCI monthly management reports; a direct response letter that prospects could print out to request further information; and an interactive trivia game based on telecommunications "fun facts" to reinforce the marketing message.

The programme positions the Corporate Accounts Services as a high quality

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telecommunications solution and a sound business investment. It provides on the diskette specific, personalised information on the financial savings a client can realise when using MCI's Corporate Account Service and recommends a customised solution based on the customer's situation and needs, Further, potential MCI prospects are profiled. MCI received a 19% response to this programme and a 45% conversion to the Corporate Account Service (George, 1989).

Another example is that of the pharmaceutical manufacturer Ciba-Geigy in Switzerland. An increasing amount of companies are arming their sales force with laptop computers and interactive sales programmes and marketing programmes. Physicians have traditionally been very difficult to impact and have little time to spend with pharmaceutical salesmen. The challenge Ciba-Geigy faced was to interest hard-to-reach physicians, capture their attention and then educate them about a new product. The solution was an innovative interactive sales presentation tool designed to run on a salesman's laptop computer. This programme was used by sales representatives to clearly and quickly demonstrate the features and benefits of a new arthritic pharmaceutical Ciba-Geigy was introducing. The interactive programme featured computer graphic animations of complex medical concepts, product information and comparisons, detailed clinical abstracts and a diagnosis game. The results were outstanding: 83% of the physicians were receptive to this type of computer presentation in the hospital setting and 73% in an office environment (Netta, 1989). Incidentally, the programme has also been received enthusiastically by sales representatives.

As these examples show, the success of interactive media as a direct marketing communication instrument can be attributed to the fact that it is a highly targeted medium that can effectively reach and impact hard-to-reach decision makers, especially in difficult markets such as the business-to-business sector, pharmaceuticals, high-technology and the automobile industry. With most of these decision makers computer-literate, it provides an innovative and unique form of marketing that gets noticed and that differentiates a company from its competition.

Database marketing and marketing research

Closely linked to direct marketing is the effect of interactive marketing as a powerful database tool. By eliciting infromation from customers at interactive or multimedia terminals, these media provide the advantage of providing statistics and profiles on customers not reached by traditional communication and conventional direct marketing methods. This is especially the case for retail outlets and point-of-sale and point-of-information systems. There is furthermore an indication of how far the customer has advanced in his purchase decision, giving personal sales an indication as to the potentiality of new customer leads. Further, the statistics may be imported into other spheres (e.g. warehousing and production) by direct telecommunicative links (depending on the link to mainframe computers or networks and gateways) or even transported to the market research departments or directly to agencies.

The validity of such statistics and consumer profiles is naturally dependant on the questions that the interactive programme asks the user and which are ultimately designed by communication specialists. In order to establish

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fruitful links to databases and marketing research, they should include consumer history, product information as well as the personal contact and communication history with the customer (Weinhold, 1989). Some indication should also be given as to the position in the purchase decision, i.e. is the customer only interested or is he a potential lead that needs follow-up through printed sales promotional materials, direct telephone-marketing or personal sales.

The more advanced interactive programmes already include digitised photographs of customers while they are operating the terminal (of course with the user's consent after the system asks him the question) which are then imported into databases as a typological description of the customer. This form of "digital marketing" (Weinhold, 1991) will be enhanced by the possibility to transport full-motion video and still images via broadband network systems once an international standard has been decided on.

In the same way, one can visionise future digital databases that include audiovisual lifestyle information on customers (e.g. photographs showing the person and motion video showing his hobbies) alongside textual and alphanumerical quantitative data on his address, product and purchase habits. By selecting the name in the database the information on the customer can be scanned by the marketing reserach department as a "typical" target group prospect and then transported via external broadband telecommunicative links or internal to the creative department. In this way, more reliable information can often be retrieved than through conventional methodologies such as focus-group sessions.

Of course this type of digital database is also imaginable for product and brand management, logistics and warehousing.

Public Relations and Point-of-Information

Point-of-Information systems (also termed "kiosks") are the form of interactive multimedia most commonly known. They can be distinguished from pure marketing applications in that the emphasis is on information rather than marketing or sales messages. Until 1988, 30% of all interactive applications worldwide fell within this category (Netta, 1989). In Europe, nearly thirty museums are extensively employing the medium, while a number of applications are used by corporations in the tourism industry such as American Express, Swissair, Lufthansa German Airlines, British Airways, British Rail, the British Tourism Authority and others to offer public information on hotels, destinations, sightseeing etc. as an additional service. For example, for the 1990 World Cup Football Event in Italy, interactive video terminals were installed in over 400 railway stations throughout Italy informing on hotels, roads, match results etc.

The main advantage of the medium in the public sphere is that large amounts of information can be stored and processed, offering passers-by the opportunity to immediately select the facts relevant for them. Such points-of-information are usually placed in an environment where they catch the eye of passing prospects. Corporations should use these to their advantage. Interactive programmes showing the history and corporate identity of a company can be placed in the main lobby to help pass the time for customers or partners waiting for an appointment. In the same way, touch-sensitive keyboards placed behind shop windows add a new di-

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mension to window-shopping when information can be retrieved outside business hours and independent of the sales personnel.
This area has seen a number of recent innovations. For instance, the Art Museum in Vienna I mentioned earlier incorporates in its public interactive programme information on similar paintings in the Louvre Museum in Paris. Should the user be interested to know more about these paintings, he can choose an option in the programme. A telecommunicative link is then established to a compatible interactive terminal in the Louvre, where the information is ready and constantly updated. Of course this works vice versa as well. The system does not only provide textual information but uses full motion video and still images, all transported over longer distances and compatible with the telecommunication norms in both countries. For instance, information on a painting aquired for the museum by Sigmund Freud is accompanied by archive film material on the psychoanalyst and a daring film showing the powers of the libido! This inquisition is then possible from the Louvre in Paris as well!

As becomes apparent from the examples, the development of an interactive programme requires extensive investments in both computer hardware and development, which often means that corporations and their marketing communication departments do not advance beyond single tests or prototypes. One should consider, however, the long-term advantages attained by the medium, something only possible through careful planning, execution and project management. For example, an application developed for point-of-sale at the retail outlet will inevitably include product information, sales arguments and accessible statistics next to a database package that allows a recording of the consumer profile. This same system can be integrated as part of seminars or sales training to ensure consistency in sales personnel.
In the same application, the marketing department that equips the salesperson with such a system should evaluate the possibility of using the medium as an internal communications tool. For instance, an option within the database could include a selection of important customer leads the salesperson needs to contact within a specific time period, based on a selection according to criteria in the customer profile. The sales representative can retrieve this selection electronically each morning and see which customer he needs to contact that day. He then selects the profile and sees which product characteristics, topics etc. need to be brought up in the personal conversation with the customer. Going one step further, the salesman can import the sales results into the database where they can then be retrieved by the sales or marketing departments for business period prognoses.

A vast number of applications exist in the corporate training and education spheres. These aspects will not be treated here owing to the context of the article.

IMPLEMENTATION OF INTERACTIVE MEDIA

One can safely say that the scepticism surrounding interactive media has been in some way overcome. A number of larger companies are willing to learn from other examples and engage, albeit at lower investments, in pilot projects for developing interactive media applications for marketing, sales and communications. The greatest resistance to interactive media comes from quarters that see it as a high-cost "computer", "technological" or

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"infrastructural" investment. With the introduction of personal computers and even regular updates of something as simple as word-processing packages for secretaries the initial resistance is large. Further, with interactive media marketing and sales communication personnel feel that their jobs are being substituted rather than complemented to increase their own organisational efficiency. This is also the case with management, where the field is unknown territory and usually associated with Electronic-Data-Processing and available technological expertise and competences within the organisation.

For the development of interactive applications in marketing and communications a certain amount of technical know-how is unavoidable. However, what counts are the long-term or strategic goals of the application and the effective integration in the marketing communi-cations mix. For the marketing communications manager, an important point is to know which sources to utilise in implementing interactive multimedia.

For development and implementation of interactive media, know-how is required from a number of areas (Schäfer, 1990). Firstly, the marketing communications department will be responsible for formulating the quantitative (e.g. market share) and qualitative or communication goals for the application. Further, a short- and long-term business plan coordinated with hard- and software investments and all arising consultation costs needs to accompany the short- and long-range plan for integration in the marketing communications mix. Thirdly, indirect measures such as training, positions concerning the after-sales service for marketing and technology of the application need to be coordinated with the respective organisational departments such as training, personnel and EDP-support. The marketing communications manager usually coordinates and manages all phases of the project.

The development and creative execution of the messages needs to be carried out by a specialist in computer graphic design and semiotics. This position can be either part of the production house supplying the audiovisual materials for the application or the agency contracted to plan the integration in the communications mix. We have found that a direct link to the audiovisual production company is often the best form, though this depends on the extent that the medium is directly integrated with classical advertising and sales promotional measures. For example, an exhibition stand at a trade fair that carries large corporate advertisements can use an interactive medium for detailed product and service infromation; here the emphasis will be less on image factors in the interactive medium.

Another reason is that audiovisual production houses usually have the technical know-how on the media. In this sense, the communication to hard- and software manufacturers is easier.
The audiovisual production must work in close harmony with both the manufacturer and the position contracted for the computer programming. Often, the integration of the application in network systems (so that telecommunicative links are possible) is the same position as the programming and integration of all communication elements such as text, graphics, photography for still images, video, audio etc. It is advisable here to employ a company familiar with the restrictions, both technical end ethical, of the postal telecommunication and telegraphic systems.

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For the task of programming and integrating the various elements the programmer needs to work from an exact script or storyboard, usually developed in phases by the audiovisual production company. Where the script demands knowledge of specific media, it is advisable to employ an additional specialist in communications concerned with the message clarity and distortion effects of the medium. For example, sales training on high-technology should not be hampered by the inability of the monitor to show a machine because of quality loss due to computer graphic file conversions or inappropriate screen emulations.

It becomes apparent that a great number of positions are involved in an initial implementation of interactive media. For a recent interactive programme integrated in a trade show exhibition stand (a relatively simple application) for Union Bank of Switzerland, a consultant for interactive media worked together with the agency, a technological services and computer programming company, the audiovisual production company, the designers and builders of the exhibition stand and the transport company.

Because of the required coordination efforts, a number of companies have in recent years developed as specialists for consulting, development and implementation of interactive media. These are either existing communication services companies such as Young and Rubicam in Switzerland that have extended their services into this sector, or new interactive companies such as Chrysalis in London, England that have brought together experts from all the fields.

The key to an effective implementation of interactive media, whether independant or with a specialist company, is project management. The marketing communication manager needs to assume this role and appoint responsible positions in each of the involved companies. In this way, a competence or quality circle is created that develops the conception for the application in workshop form (Schäfer, 1990). Next to these external positions periodic workshops need to include a representative from top management, personnel, EDP-support and one or two further specialists from marketing. The marketing communication manager therefore needs to equip himself with know-how on the fundamentals of project management in implementing interactive media. I will shortly describe the various phases of this project management here.

Conception

In the conceptional phase, the marketing and communication goals need to be defined as well as the integration in both the business plan and the existing marketing communication mix as mentioned above. The marketing communication manager establishes in list form all phases of project management outlined below and randomly makes notes for each phase (in interactive communication consulting, this is usually the first step the consultant undertakes with the client). This enables a projection of emerging costs and manpower involved in the project. In a next step, the target group is defined and a needs analysis with respect to the marketing communication goals carried through.

Typically, it will be decided in which component of the mix the emphasis should be. For example, an interactive application developed for point-of-sales in a supermarket could include peripheral sales promotional measures such as regular discount offers. Emphasis will therefore be on price and sales pro-

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motion and distribution measures (e.g. when and how are the products delivered). For a point-of-information system, the emphasis will be on image and product positioning components, since at such points much information on both corporate identity , products and services needs to be communicated.

Parrallel to this all expertise and budget quotes for the special application are gathered and the relevant positions that were described above selected. A written document outlining the goals and target groups, communication mix aspects, business plan and budget, time management and hard- and software considerations is distributed to all members of the fixed project group.

Planning

In the planning phase, all aspects of the concept are detailed. This becomes possible now as it is here that the project group together with a specialist in communications begin to define the contents of the programme. These are laid out in a manuscript form with a listing of the communication elements in the multimedia that will transport the contents most effectively for the respective target group. The manuscript shows that content A will be communicated by video, content B by text, content C by audio and photographic image etc. It is important during this phase that the contents are not described in too much detail, as they will be deepened and copy-written in a storyboard by the audiovisual company.

After this, the initial concept is evaluated according to the manuscript and the hard- and software specified. Where a system is implemented internally in a corporation, hard-and software specifications are dependant on facts supplied by the EDP-support department. For example, if the medium to be chosen as a sales presentation tool are laptop computers, the department should specify whether these are compatible with existing laptops in the company. On the basis of these specifications a hardware list according to the number of applications (e.g. "50 systems for metropolitan supermarkets nationwide") is made and the budget adapted.

For the software specifications, crucial aspects to be evaluated are the selection of compatible programming and authoring tools. If further development of the application after implementation is handled by someone outside the present project group, it is advisable to work with user-friendly and visual multimedia tools (e.g. IBM's "Audio-Visual Connection" or Apple Macintosh's "Hypercard") rather than computer programmes. In most large companies someone affiliated with the training and marketing departments is usually responsible for media-authoring. On the other hand, development by a professional software house means that the advantages of computer programming should be used.

On the basis of the manuscript and the media hard- and software specifications, the budget and time plan for each of the positions in the project group can be adapted.

In a next step, a prototype version of software is used for the design of the screens by the computer graphic artist. This is done in coordination with the audiovisual company and software development team, who periodically consult the creative team as to the execution possibilities of the creative concept within the limits set by the medium. For example, as mentioned before the CD-ROM means compromising the graphic and visual quality on the screen. Parrallel to the screen design the storyboard for the application is conceived.

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Before the production phase, a flow chart is established on the basis of the storyboard on one page showing all the "links" within the programme, i.e. if the user chooses option A he will arrive at a specific point X; the user who chooses option B will arrive at a specific point Y in the programme etc. The flow chart is developed by the audiovisual company in collaboration with the software developers and programme author in the company.

Production

Production comprises the creative execution for all of the communication elements in the interactive multimedia programme.

In a first phase, all audiovisual material is produced. This encompasses the subcontracted video production, the photography for the still images and all other production (computer graphic screens and animation, sound recordings etc.) according to the fixed storyboard and the standards laid down by the medium. It also includes the copywriting of the contents developed by the project team in the earlier phase.

In a further phase, the production is adapted to the software. For the audiovisuals, this means the production of a mastertape with pneumatic quality material which is then pressed by a laser-electronical process (done commercially by only three companies in the world thus far) into an optical disc (e.g. laserdisc, CD-I etc.). It is this mastertape that harmonises all of the communication elements.

Next, the optical discs are compared to the computer programming concept and flow chart and then programmed. For example, the computer programmer records which frames (split-second bit of audiovisual material on the disc with four frames per second on the disc!) are selected by the computer harddisc when a certain option is selected.

A prototype of the developed application is then evaluated by the entire project group and all corrections undertaken by the software house. As graphics and texts are stored on computer harddisc, these can be easily adapted. The optical disc material, though, is in most cases immutable.

Implementation

What usually happens is that a test with the prototype is launched over a short period of time. Thereafter, implementation occurs according to the planning laid down in the marketing communications mix and the investments for hard- and software. The implementation also comprises all internal and indirect communication measures coupled with the launching of the application. Thus it includes internal and external training for the application (e.g. seminars for dealer networks, retailers etc.), public relations and press activities, publications etc. that are typically laid down by a consultant together with the company's advertising and public relations agencies.

The publication point deserves special mention. It is at this point that all accompanying material such as user guidelines, instructions etc. must be completed, usually in collaboration with an agency.

Thirdly, finance and leasing plans are executed together with retail and distribution in order to compensate the hard-and software costs of the corporation. These may be short-term (e.g. leasing for an annual trade show or

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exhibition) or long-term (e.g. a contract to have an application in a retail or dealer outlet for a longer time period such as one or two years).

Feedback and control

As outlined earlier, an interactive application is usually coupled with a database or customer profile section in order to establish links to databases and market research. During the initial implementation, these mechanisms are used over a given time period to record frequency of use, customer profiles and feedback on the system (e.g. some questions may ask the user what he thinks of the system). In the case of Coop, a supermarket chain in Germany and Switzerland, it was found that amongst all the enthusiasm with the system (e.g colourful animated computer graphics of vegetables were shown "dancing" through the supermarket shelves and pointing at the vegetable bargains for the week) one of the major goals of the system, viz. to show the price bargain this discount-image store has to offer were unknown because all customers found the texts unreadable.

Secondly, a crucial point is the updating of data in the application. this is usually an ongoing assignment of the marketing communications department or agency. For example, in the case of decentralised systems (e.g. at retailers) it is wise to import the new weekly or monthly data by some type of compatible communications software via telecommunicative links. In the example of Coop mentioned before, this is done weekly by teletext. The sequence with the dancing vegetables remains, however, new information subsequently appears over the selection of a page in teletext. A note on the screen tells consumers that this information can also be retrieved in their own homes should they have a videotext decoder. The updating function of the system must be specified in the conception phase.

Thridly, the technical and after-sales-service of the application must be contracted to the hardware manufacturer, software development house or special company in the field together with a hotline known to the continuing authors, marketing communications department and decentral stations where this is the case.

Having arrived at the end of this short overview of interactive media implementation, I would like to return to a point mentioned in the conceptual phase, viz. that the marketing communication manager should make a sketch of the planned concept according to all the points above at the outset. For the marketing communications department, a standard procedure document should be developed for the implementation of interactive media. This should include all valid information including examples of storyboards, flow charts, hard- and software configuration diagrams etc. relevant during each phase of project management.

FUTURE DEVELOPMENTS

The future developments of interactive multimedia can be categorised according to technical, economic and social influences.

A number of technical developments such as teleports and user-friendly satellite communication have already been highlighted. With respect to hardware, the most significant influences will be greater personal computer harddisc data capacities for screen and audio. These will be necessary to accomodate better developments in software, for instance the possibilities of multidimesional scanning which will

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enable one-to-one reproduction quality on monitors and screens of texts comparable to newspaper articles without any additional work in graphic software packages. For audio, the important software developments in the next two to three years will be better voice and sound recognition tools (Weinhold, 1991).
A third development will be in the area of applications, where the high quality offered by digitisation will allow extensive applications with photographic and full motion video images. As mentioned earlier, these will form the base for a new type of "digital" databased marketing.

These technical developments are all restricted to the station itself. However, the ability of networks and gateways to transport these media will be imperative. What this means is that multimedia can be transported worldwide (e.g. from the headquarters of a company in the USA to its subsidiaries in Asia, Europe, Australia and Africa) to individual multimedia workstations of employees. Already, a number of companies are using video-conferencing as an attractive combination medium for external diversification into new services and internal corporate communications. The transfer of multimedia is dependant, though, on regulations and monopolies of integrated broadband and satellite communication systems. What is already technical possible is fro instance presently hindered in Europe because of monopolies of national postal systems.

Beyond hard- and software and developments in applications there are electronic developments in marketing communication itself. We are witnessing an increasingly widespread use of computer-based decision support systems used to evaluate marketing and advertising programmes prior to real-world introductions. These tools will be increasingly integrated as software in interactive applications.

Going one step further in developments on the side of marketing communication decision-making, within a decade we will see the advent of so-called expert systems in the industry. This is a tool that analyses data, diagnoses problems based on the data and then makes decisions faster than human managers do. These systems employ automated or "artificial" intelligence to do their thinking: computer programmes which seem to think the way humans do. The higher the intelligence of the programme, the greater the knowledge of the expert, and the more sophisticated the available databases, the better will be the solution, answer or decision (Newton, 1989). In the USA, "ADVISOR" is a system that is a prototype of a copy-evaluation tool. Many other expert systems will be integrated in interactive applications, though, which will do everything from designing media schedules to laying out an entire marketing plan (Clancy, 1990).

From an economic perspective, interactive applications will become more cost-effective as we see standardisation and compatibility within interactive media (e.g. standard graphic conversion formats), low-cost carrier reproduction (e.g. both computer and optical discs), network systems that will reduce transport costs for telecommunicative or so-called "online" applications and general compatibility in hard- and software. It is important to remember that the cost is always dependant on the specific project and application engineering. When setting the budget for an application, both the engineering in an initial phase and the maintenance costs later on should be considered at the outset. And, as with conventional media, the audio-visual production will

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comprise a significant part of the budget.

Lastly, the social developments cannot be negated. I want to go back to the beginning of the article, where I mentioned the changes in consumers. These changes will require a mixture or integration of conventional and "new" media all based on an individual or personalised communication with the prospect. This is imperative in stagnating markets such as high-technology (especially business-to-business) and automobiles as we are currently experiencing in first-world countries. Selling high-cost goods, whether commercially or to the consumer, requires more targeting and personalisation than ever before. This is not only the result of market segmentation but the need to build relationships with customers. In this sense, there is a dilemma arising from the cost per relationship per customer, something that can presently only be countered by electronic retrieval of customer, product, research and other market information.

CONCLUSION

The implications for marketing communications were pointed out throughout the paper. In conclusion, I would like to repeat something written before, viz. that the role of the marketing communications manager will increasingly become the role of a market engineer. This is not to be confused with the technical connotation of the word, however. The market engineer will carefully build and exploit his markets according to economic and consumer developments and then utilise technology to achieve the desired goals. In communication services, the work for clients will extend beyond planning to strategic consulting on the transfer of market communications in complex situations. This will require a multidisciplinary approach to the field, where some knowledge of electronics, graphic design, semiotics, project management and other areas will become unavoidable to the field as it begins to see the emerging opportunities offered by marketing technology.

For academic studies in marketing communication, the task should seem clear. Typically, the curriculum should include some training in market engineering and technology. A number of universities and institutions in Europe and the USA have been offering tailored courses in "marketing communications engineering" and "sales engineering" for a number of years now. And, looking through the classified job advertisements in daily newspapers such as "Neue Zürcher Zeitung" or "Frankfurter Allgemeine Zeitung" over here, a qualification with these titles is required almost every second day. Students of communication can no longer ignore the fact that computing and technology has become one of the most important areas of specialisation in their field. This area is not to be confused with general computer knowledge in word-processing, calculation and desktop publishing and printing which should be commonplace anyway. By the way, this holds for corporations and the communication services sector too!

While I have restricted the article to the context of corporate and marketing communications, I would like to leave the readers with some food for thought. Given the possibilities of interaction, multilinguality and alike, would these media not offer a contribution to education in South Africa? One can imagine a group classroom setting where the interactive system is used by a teacher to show, for instance, history and geography of different nations and cultures. The vast data storage capacities, audio channels enabling different languages,

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visuality and interaction offered cannot go unseen.

In the years ahead, each of us will see the arising possibilities. It is up to us to motivate markets, clients and employees with these "new" communications. We should, however, also be open enough to be motivated by such perspectives ourselves.

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