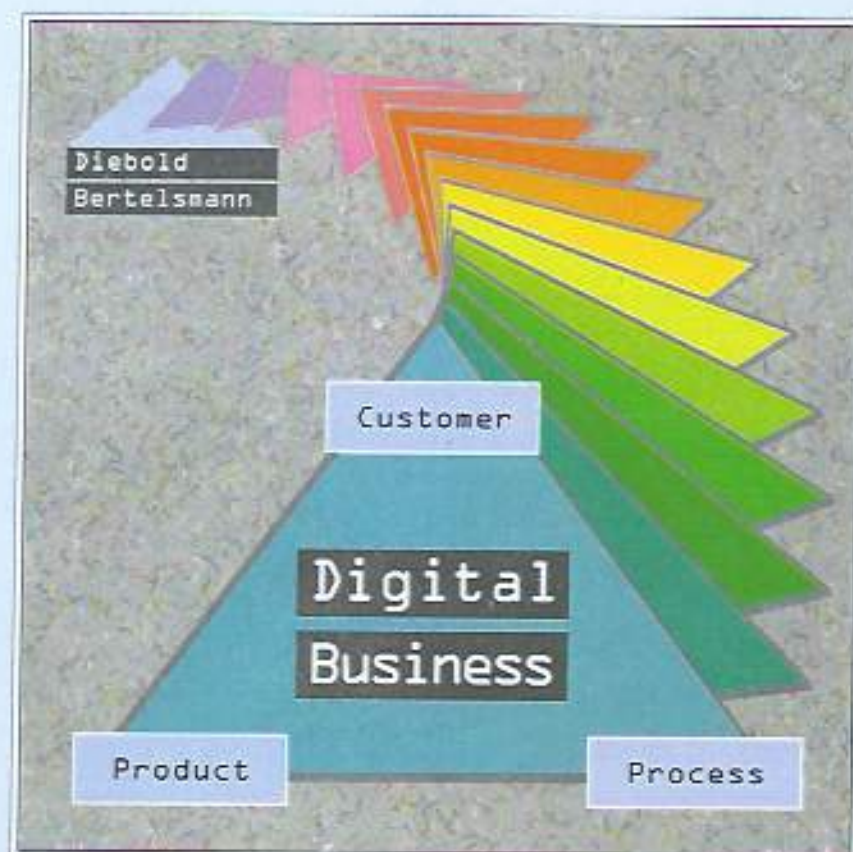


DIGITAL BUSINESS



The international electronic commerce
study by Bertelsmann Telemedia
and Diebold – a Company of the
DAIMLERBENZ Group

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Preface

In the future digital business will be one of the most important forms of business in domestic and international markets.

In light of this, mastering the concepts and methods of electronic commerce and its proper implementation in a competitive environment will become a priority management task.

Trend-setting decisions for tomorrow must be made today. However, this is often impossible due to the lack of a reliable foundation and the absence of management concepts which can be put into practice.

Many questions pertaining to the development of business strategies for digital business still remain unanswered:

- ☐ What are the most attractive target groups and the most interesting market segments?
- ☐ In what way are trade relations and branches of industry changing?
- ☐ In what areas are modifications of products, prices and communications necessary?
- ☐ Which methods of customer recruitment and customer services are appropriate for the digital market and how can customer loyalty be increased?
- ☐ Which business models and processes are the most promising?

These questions are answered in this study and substantiated by the latest information from more than 200 renowned companies in various branches of industry, thereby offering valuable decision support.

Companies which enter the digital market too late run the risk of losing their existing market positions. DIGITAL BUSINESS is therefore a management task and should be accorded the highest priority.



Dr. Klaus Mangold
Managing Director of Debis AG

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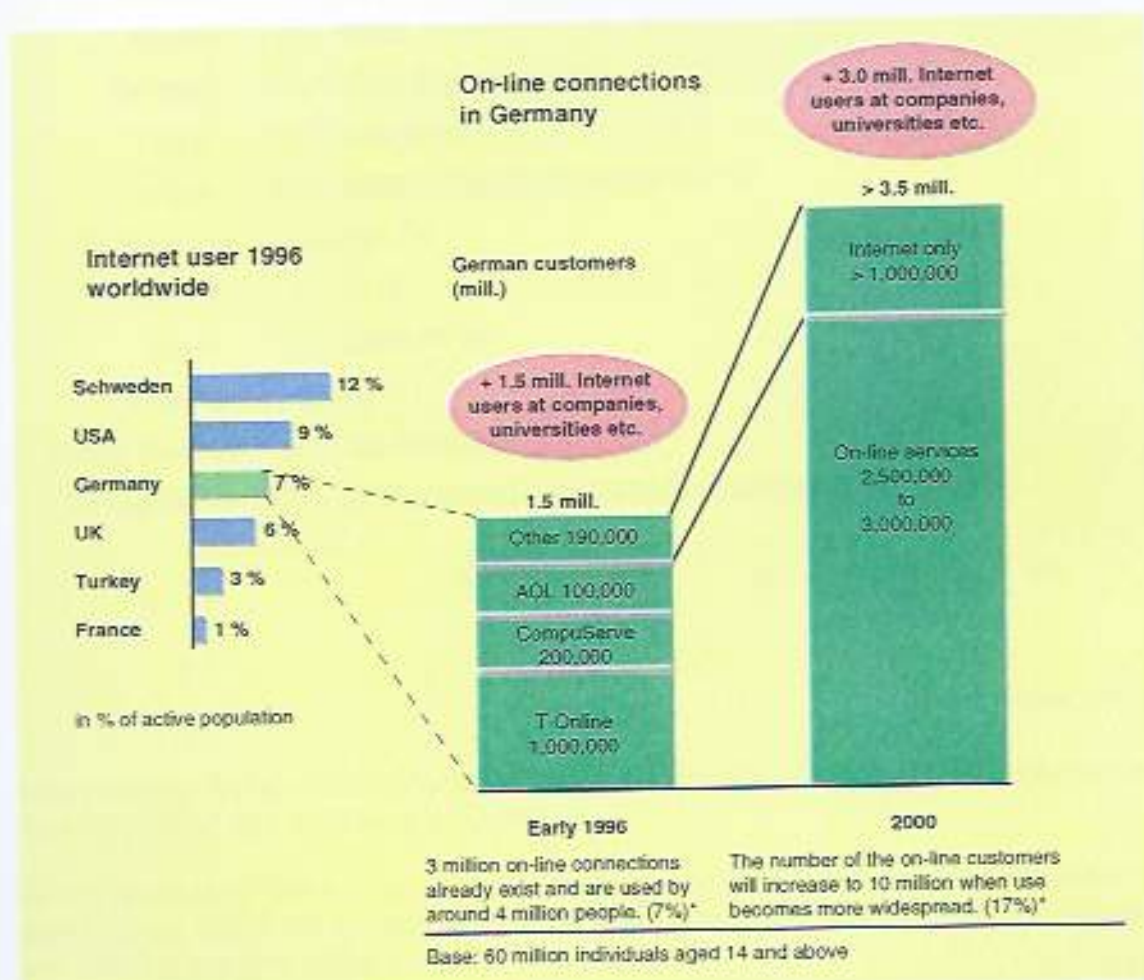
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Introduction

Diebold and Bertelsmann Telemedia have carried out a joint analysis of the multimedia activities of more than 200 companies.

Projects were implemented, interviews were held and on-line research was carried out in companies in the USA, Japan, Germany, France, England, Switzerland, Korea and Singapore.

The knowledge gained leads us to believe that, in the wake of the PC revolution, we are about to experience the network revolution. 'Digital business' will transform markets. The allocation of tasks in existing traditional forms of marketing may soon become obsolete because multimedia is set to become a mass media.

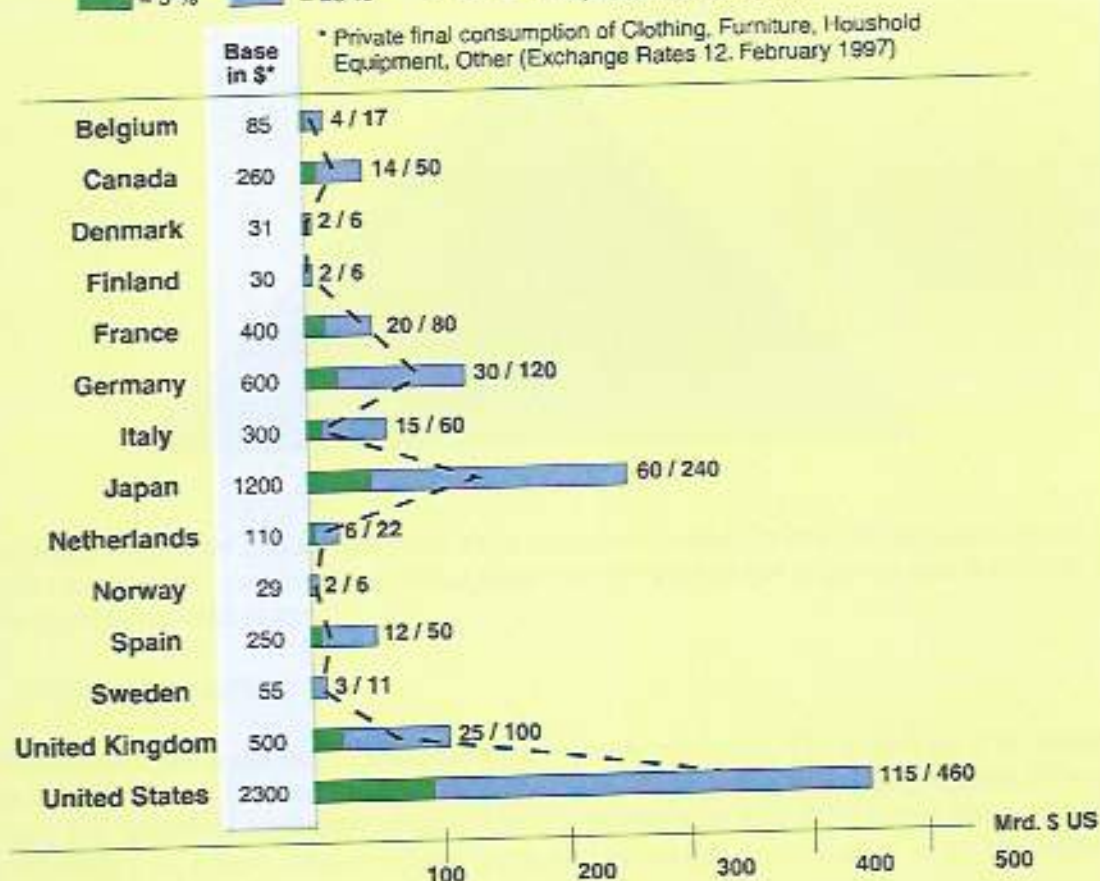


The driving force behind digital business is the Internet. Rapidly increasing user figures and increasingly popular modes of access have transformed the Internet into a mass media within 2 years. The Internet can be reached by increasingly wide sections of the population by telephone via the local network. Connections are offered by numerous access providers, starting at around \$ 6 a month or as a 'bonus' to customers who buy a PC. Its popularity has led to specialised multimedia PCs being offered on the market for less than \$ 600.

Turnover via digital sales in 2005 (forecast)

Anything from 5-20% of the retail market will be captured by digital business by the year 2005

■ = 5 % ■ = 20 % - - - = expected market volume



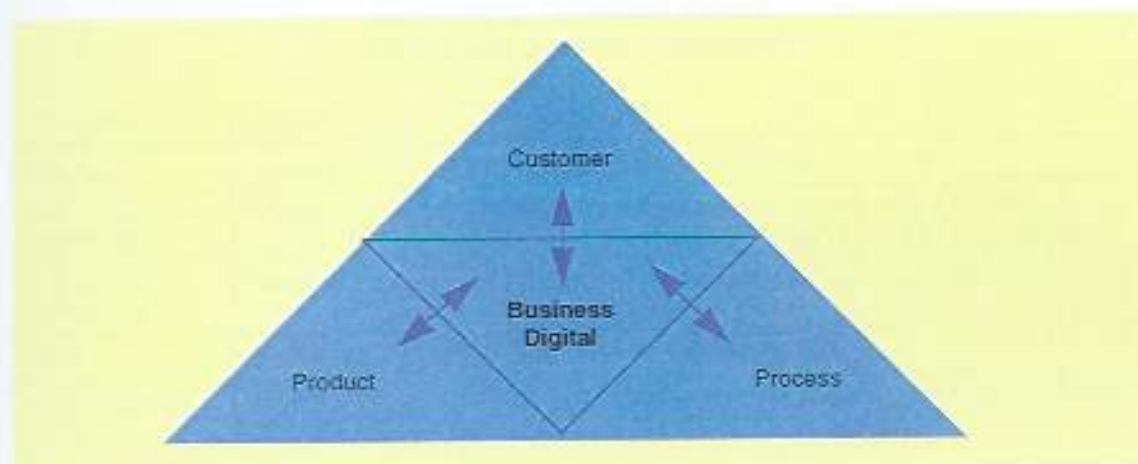
Source: Prognos Diebold

Many companies have already entered the market and are, at least, using the Internet for communication and marketing purposes.

At the same time, there is a trend towards the establishment of powerful alliances. In some cases, these are formed between different branches of industry. Even archrivals are entering into joint digital business ventures.

Furthermore, an increasing number of leading companies in traditional industries are appearing on the Internet, digitally marketing their products and establishing new business contacts. By contrast, some companies are not yet represented at all.

Multimedia management expertise generally only exists in a company by chance. There is an absence of concepts on which to base important management decisions regarding digital business. These have been developed and will be presented in this study using examples of leading companies.



Innovative methods and instruments have been elaborated for the management tasks of product, customer and process management which exploit the opportunities that exist in the digital business sector:

1. Product Management

The Internet offers users the opportunity to specify products. For example, it facilitates the compilation of a selection of newspaper articles, offering new perspectives to readers. The **product variation** of an electronic newspaper and a TV set in terms of how up-to-date it is, scope, delivery date, price and individual specification is an innovative product management instrument.

The second instrument is **pricing**. Digital business offers new means of offering optimal utility prices to each different group of customers.

Thirdly, **communication instruments**, such as multi-channel communication and commercials, must be structured to eliminate the boundaries between advertising and product information. Perception-oriented performance indicators such as Hits, Visits, Page Clicks and AdViews are also explicitly dealt with and reaction-oriented, user-oriented and purchase-oriented performance indicators for on-line advertising are discussed in detail.

Methods of product management are explained using the example of on-line advertising in a commercial channel.

Further successful business case studies in the areas of media and services which are already active in this business segment today are also mentioned.

**Successful Business-Cases
- Media and Service Providers -**

Company	Branch	On-line figures
Info Seek	Services	More than 5 million on-line visitors per day
San Diego Daily Transcript	Media	40,000 new readers on the Internet with a printed circulation of 10,000. Accessed more than 180,000 times
Schweriner Volkszeitung	Media	8,000 Internet readers per day and accessed approx. 150,000 times a day
Time	Media	150,000 on-line visitors each day
Haus + Garten	Media	From 1st to 28th August '96, 130.000 pages were retrieved

2. Customer Management

The digital market poses new challenges to customer management. It offers new methods of **customer recruitment**. Advertising can be efficiently incorporated in search engines or hyperlinks on frequently-visited Web pages and oriented to specific target groups.

Furthermore, **customer loyalty** can be promoted by means of instruments such as frequent usage pricing, incentives, links to interest groups and the establishment of special forums.

Customer services on the Internet should be utilised as a third customer management instrument. Interactive after-sales care, personalised information, expert dialogue and on-line customer management are suitable methods.

The customer management instruments are illustrated using the examples of companies in the tourism industry, such as LTU and FAO. At the same time, particular importance is presently attached to customer management in the banking industry.

Successful Business Cases - Tourism and Banking -

Company	Branch	On-line figures
Start	Tourism	Monthly growth in Internet utilisation figures between April and July 1996 averaged 50%.
TraXXX	Tourism	Average of 50,000 pages retrieved each day. 142,800 pages retrieved between 1st and 28th August 1996.
Checkfree	Banking	550,000 on-line transactions each month.
First Virtual	Banking	More than 350,000 on-line customers in 130 countries.
Sparda-Bank Hamburg	Banking	2,000 applications were received before the introduction of NetBanking (Status:16.08.96). 7,000 customers are expected.
Stadtparkasse Dortmund	Banking	In the first 4 1/2 months (15.03.96 - 31.07.96), it was accessed on average 12,300 times each month. 415 direct customers already use Internet Banking. Growth in access figures in 07/96 alone = 35%.

3. Process Management

Digital interaction requires the placement and individual processing of orders for thousands of customers each day in a matter of seconds.

Digital business providers must develop new **business models**. Using the Sony business model, we can show how digital and traditional sales and marketing can be structured parallel to one another.

The second instrument of process management is **organisation management**. Hyundai and Sony have two contrasting methods of organisation, which illustrate the range of effects from posing a threat to the traditional basis of trade to providing marketing support.

The third instrument is **process sequence management**. Particular consideration must be given to the special aspects of the digital marketing process compared with traditional marketing in terms of processing sequence, processing frequency, order volumes, degree of centralisation, degree of automation etc. Furthermore, there are different process models in digital marketing such as ex-warehouse sales (Sony) or integration in production (Hyundai).

Successful Business Cases - Manufacturers -

Company	Branch	On-line-figures
Gibson USA	Industry	Accessed 15,000 times each day. When the advertising campaign is over, it is expected that the service will be accessed 200,000 to 300,000 times a day.
Mercedes-Benz	Industry	Orders for high-quality consumer goods, such as mountain bikes at prices of up to DM 6,000, are increasing daily.
Progressive works	Industry	Since 04/95, more than 6 million RealAudio Players have been downloaded from the Net RealAudio Site (Status 08/96). Accessed more than 500,000 times each day.
Rank Xerox	Industry	US\$ 300,000 on-line sales up to 05/96

There are already a number of manufacturers who sell direct to consumers. It is therefore essential to eliminate the potential field of conflict between manufacturers and retailers. Successful examples of digital business are evident in both branches.

Successful Business Cases - Retail -

Company	Branch	On-line-figures
1-800-Flowers	Retail	US\$ 20 million on-line sales per year, which corresponds to 10% of 1-800-Flowers' total sales.
Future Fantasy	Retail	15% to 20% sales growth through the Internet. Half of this due to overseas customers.
Neckermann Versand	Retail	DM 100 million on-line sales in 1995.
Olympic Ticket Server	Retail	15% of all the tickets for the 1996 Olympic Games in Atlanta were sold via the server.
OnSale	Retail	US\$ 2.4 to 2.8 million on-line sales per month. On-line sales per member of staff in the first year = 2 million.
Quelle Versand	Retail	DM 68 million on-line sales in 1995; 400 on-line orders per day.
Otto Versand	Retail	DM 400 million on-line sales in 1996

Summary

- ☐ Digital business is changing internal processes in companies. All the links of the added value and business process chain are being rearranged. The size and organisational structure of corporate units are also being influenced
- ☐ Digital business is precipitating the development of new product management instruments for product variation, pricing and advertising. The objective is to create target group-oriented products, prices and advertising and thereby enhance the appeal of digitally-marketed goods.
- ☐ Digital business is affecting the division of labour between companies within the individual branches. The simple, global and inexpensive transferability of any information is simplifying the spatial distribution and outsourcing of an increasing number of corporate functions. The added value shares within branches of industry are shifting.
- ☐ Digital business is changing communications between companies and their customers. Innovative instruments for customer recruitment, customer loyalty and customer services, which can exploit the inherent advantages of multimedia, must be developed and implemented by means of an appropriate infrastructure.
- ☐ Digital business is influencing joint ventures and the competitive situation between companies in different branches of industry. The added value shares in the individual branches are shifting.

Companies which do not become actively involved in these developments run the risk of losing their existing powerful status. Furthermore, digital business also offers new opportunities, particularly for small and medium-sized companies and newly-established companies.

As to the question of how the content of this study can be of practical relevance to management executives in industry and public administration, one thing is beyond doubt: digital business is a management task which must be accorded highest priority and can only be delegated to a limited extent.

The authors would like to thank the staff of Bertelsmann and Diebold who were involved and whose support facilitated the making of this study.

1. Background to the Study

1.1 Technologies

Multimedia emerges from the integration of the previously independent worlds of computer/ IT, telecommunications/ networks and media/ content. These are linked by digitisation, compression and transmission technologies, which facilitate the decomposition, bundling and transmission in bits and bytes of information - picture, sound and text - via copper cable, glass fibre or satellite to private consumers or professional customers. If these customers have a transmission medium and a suitable terminal, they can access multimedia products and services anywhere, anytime. Which multimedia technologies are presently available or will be available in future?

The following diagram shows an overview of the three central multimedia technologies: The dynamism of the development of multimedia depends on a whole range of factors,

Types of multimedia technologies			
	Off-line	Narrow band (PC)	Broad band (TV)
Platform	PC with CD-ROM	PC with modem, Telephone line	TV with decoder, Glasfibre networks
Forms / stages of development	<ul style="list-style-type: none"> • CD-ROM • CD-i • Multimedia CD • DVD (Digital Video Disk) 	<ul style="list-style-type: none"> • World Wide Web • Consumer Services • Professional Services 	<ul style="list-style-type: none"> • PPC (Pay per Channel) • VOD (Video on demand) • NVOD (Near Video on demand) • Interactive TV
Advantages	<ul style="list-style-type: none"> • High / increasing memory capacity • Falling prices 	<ul style="list-style-type: none"> • Interactive • Up-to-date • Electronic community 	<ul style="list-style-type: none"> • Possibility to transmit substantial quantities of data and moving images
Disadvantages	<ul style="list-style-type: none"> • Limited up-to-dateness • No Communication with / between users possible 	<ul style="list-style-type: none"> • Relatively high transmission costs in Germany until 1998 • At present it is difficult to transmit large quantities of data 	<ul style="list-style-type: none"> • High investment necessary • TV use is hardly interactive

Diagram 1

which are presently taking on concrete form. One important question is which technologies will have a future in the market. A significant market for off-line products has existed since the mid-eighties, particularly with regard to the carrier medium of CD-ROM. The world market for CD-ROM's was DM 12 billion for consumer titles alone in 1995.

In light of the expected increase in memory capacity - Digital Video Discs (DVD's) already have a memory capacity of 18 GB - it will be possible to offer full-length feature films for off-line carriers in future. Over the next 10 years, the success of off-line products will

remain undiminished, although it is likely that they will be increasingly substituted by on-line products and services. Further refinements to compression and transmission technologies will permit the on-line transmission of vast digital data streams at a reasonable speed.

At the same time, narrow band on-line services and the Internet are becoming established at an increasingly rapid rate, although these two technologies are presently merged. Today, there are hardly any on-line services which do not offer access to the Internet or have the Internet directly integrated into their software.

The central features of these services are that they are up-to-date and interactive. Direct - i.e. on-line - private and professional users have access to a wealth of information, products and services from all over the world. By means of E-mail, pinboards and chat forums, individual participants can make direct contact with each other or the content provider.

The Internet and its graphics section, the World Wide Web (WWW), have especially experienced explosive growth since 1995. This increasing success can be put down to the following technical factors:

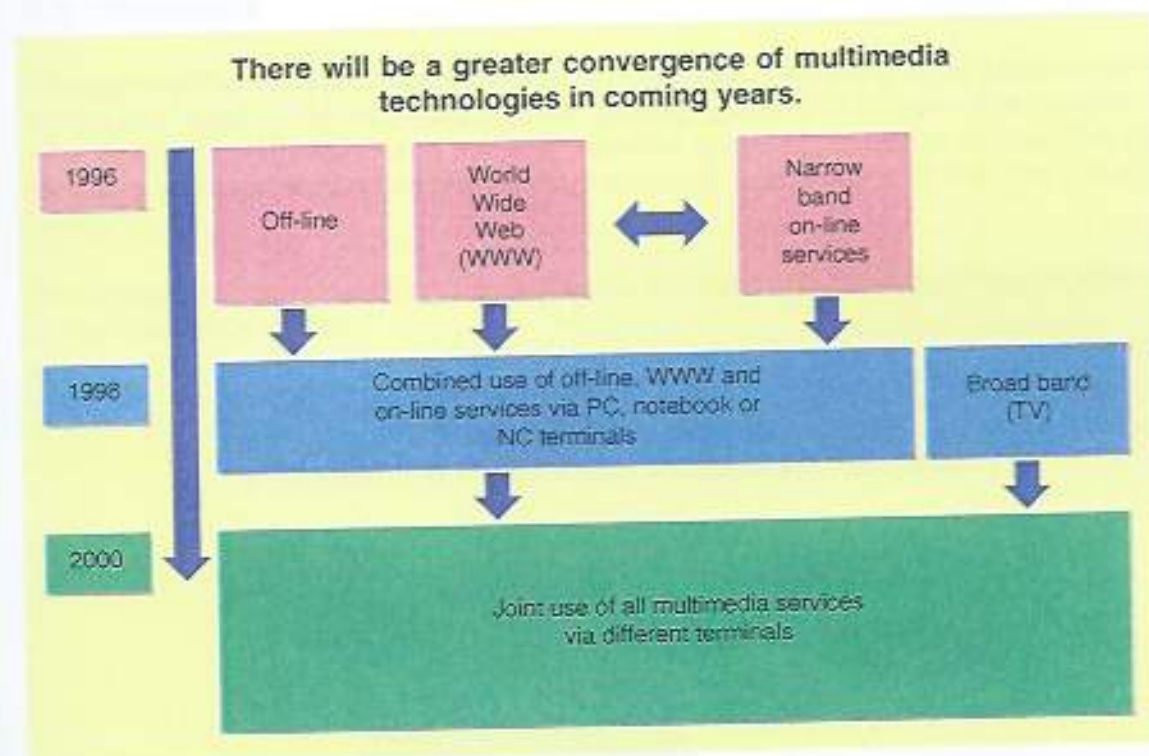
- ☐ Information in the WWW is transferred with a uniform protocol (HTTP = Hyper Text Transfer Protocol) and has a uniform display format (HTML = Hyper Text Mark-up Language).
- ☐ All the important network services (ftp, telnet, ...) can be integrated.
- ☐ Any amount of multimedia content (text, sound and picture) can be exchanged.
- ☐ It has the latest client-server system (open, global).
- ☐ Inexpensive network computers are now available.
- ☐ To use the WWW and/ or on-line services, all that is needed is a PC, a modem and a telephone line.

From a technological point of view, a decisive factor for the future development of Internet and on-line services is that it will take place against the background of a convergence of multimedia platforms which, to a large extent, were previously separate entities. There is already evidence of this today: various multimedia product information offers combine off-line storage on a CD-ROM with on-line updating via the Internet or an on-line service (e.g. in lexicons or tourist information).

In the long-term, interactive TV, as a broad band extension of on-line services, will converge with other platforms. Narrow band networks, such as the Internet, offer the opportunity to set up a reverse channel which interactive TV requires for communication between users and providers of services such as Video On Demand (VOD) Near Video On Demand (NVOD) or home banking.

The following diagram shows a graphic summary of these comments:

Diagram 2



For some time now, the Java authoring language has been boosting the dynamic growth of the World Wide Web. Java is predominantly used to create Internet applications, especially in areas where interaction and processing are necessary and/or HTML (Hyper Text Mark-up Language) pages must be frequently updated (e.g. updating product offers and price lists). The object-oriented language has all the characteristic features of a modern authoring language: simplicity, security, robustness and parallel processing.

A special technical feature additionally facilitates access to any object - even those distributed in the network. On the whole, Java opens up entirely new perspectives to content providers:

- ☐ simple and inexpensive integration of new services and content.
- ☐ individually-designed user interfaces, which can be flexibly modified
- ☐ one-off storage of applications on dynamic WEB servers, which means that they are easy to update.
- ☐ to a great extent, Java program modules are reusable.

In summary, the following can be said: contrary to the first proclamations of an information highway on broad band networks (interactive TV), off-line products, narrow band on-line services and the Internet / World Wide Web are the driving force behind multimedia business at present. Interactive TV will only develop into a significant market in Germany in the mid-term (from the year 2000 onwards).

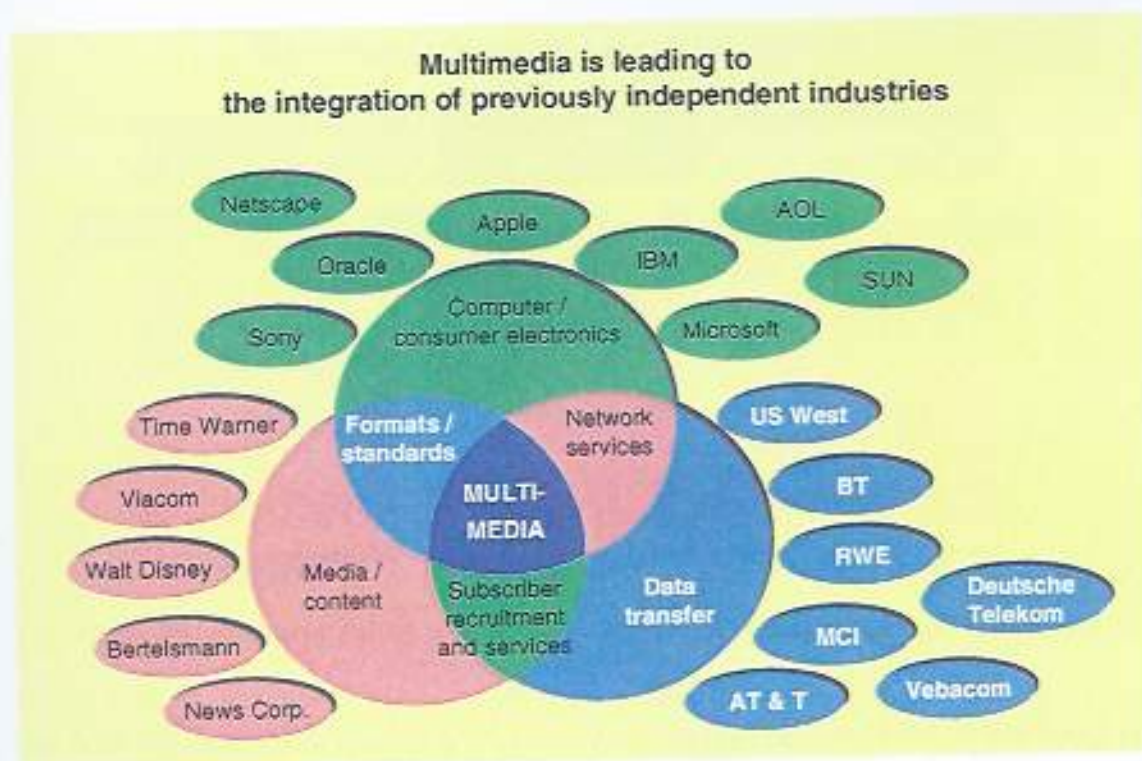
1.2 Competition

1.2.1 Providers

The step-by-step process of technological convergence is resulting in the establishment of new and global competitive relationships between previously independent industries. New forms of joint ventures and strategic alliances spanning industries will become essential to increase existing knowledge and expertise and adapt it to the new requirements.

The following diagram illustrates this process with regard to large international providers in the multimedia market:

Diagram 3

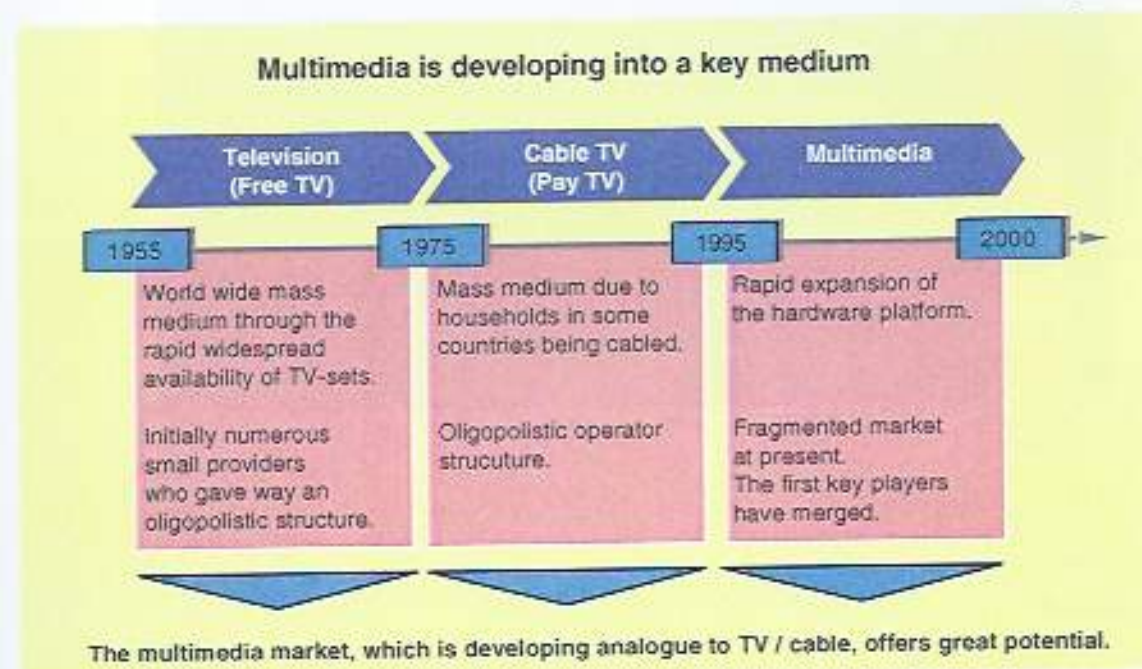


The diagram highlights the fact that strategic alliances will be the key to the successful development of multimedia business. Providers must guarantee that they are well versed in the knowledge and expertise of the three industries that are involved (computer/consumer electronics, media/content and data transfer).

1.2.2 Developments and Trends in the Multimedia Market

Multimedia is developing analogue to free TV and cable TV. From 1955 onwards, free TV became a global mass medium as a result of the rapid widespread availability of TV sets. Initially, there were a multitude of small providers, which eventually gave way to an oligopoly. Cable TV (Pay TV) experienced a similar development in some industrial nations from 1975 onwards. The high density of cabling in significant countries also led to the rapid development of a mass medium with only a few providers. The following diagram summarises these facts and shows the parallels to the emerging multimedia market:

Diagram 4



The budding multimedia market is presently fragmented, both in terms of the forms of products and services that are offered and the competitors. However, the first key players are already emerging. These are international groups of companies, such as Microsoft, IBM, SUN, Oracle, Netscape, Sony, America Online, CompuServe, Reed Elsevier, Matra Hachette, Viacom, News Corporation, Time Warner, Bertelsmann, Walt Disney, Pearson, Reuters, Deutsche Telekom, British Telecom, NTT, TCI, MCI or AT&T.

For some time, these companies have been attempting to define their own optimal multimedia strategies. The first concrete steps to realising strategic approaches are presently being taken. In this process, the answers to the following questions are being sought: How can the multimedia business segment be defined? What parameters indicate a potential development of multimedia business? Which trends are presently evident as multimedia business becomes established? Which uncertainties must be taken into consideration when broaching multimedia business segments? Which strategic options are available in response to these uncertainties? In the following part of the study, important trends will be illustrated in terms of these questions.

The emerging multimedia market can be defined in terms of the following trends:

1. Narrow band on-line services, such as America Online (AOL), CompuServe and T-Online are experiencing explosive growth. This is shown by the following diagrams:

Diagram 5

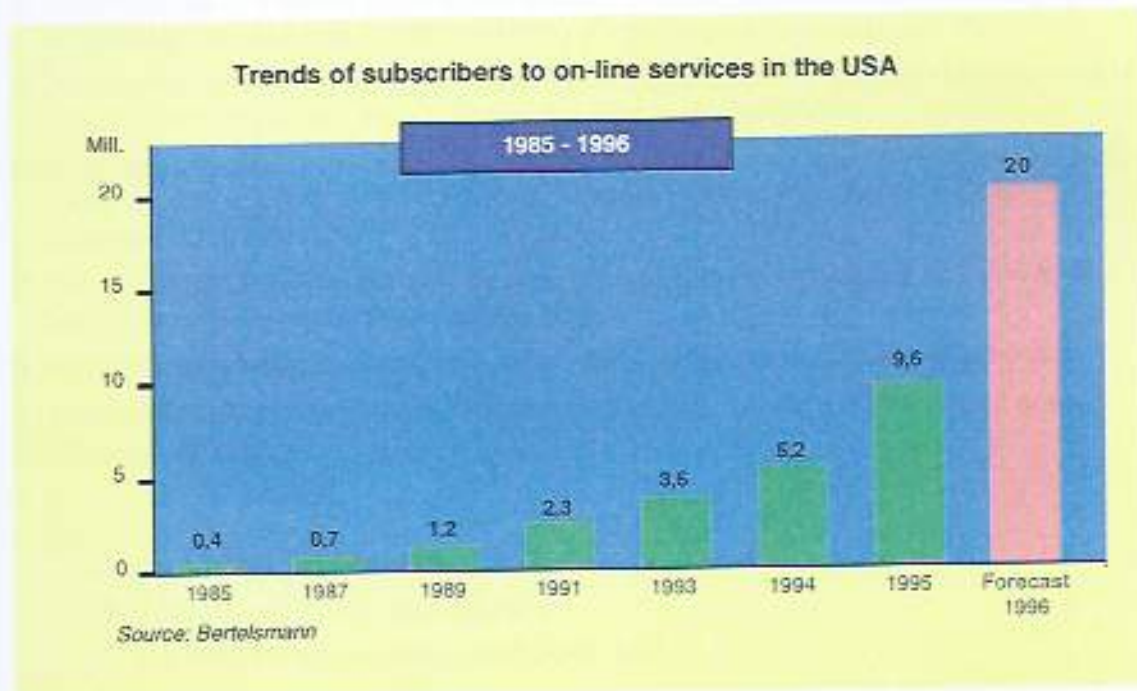
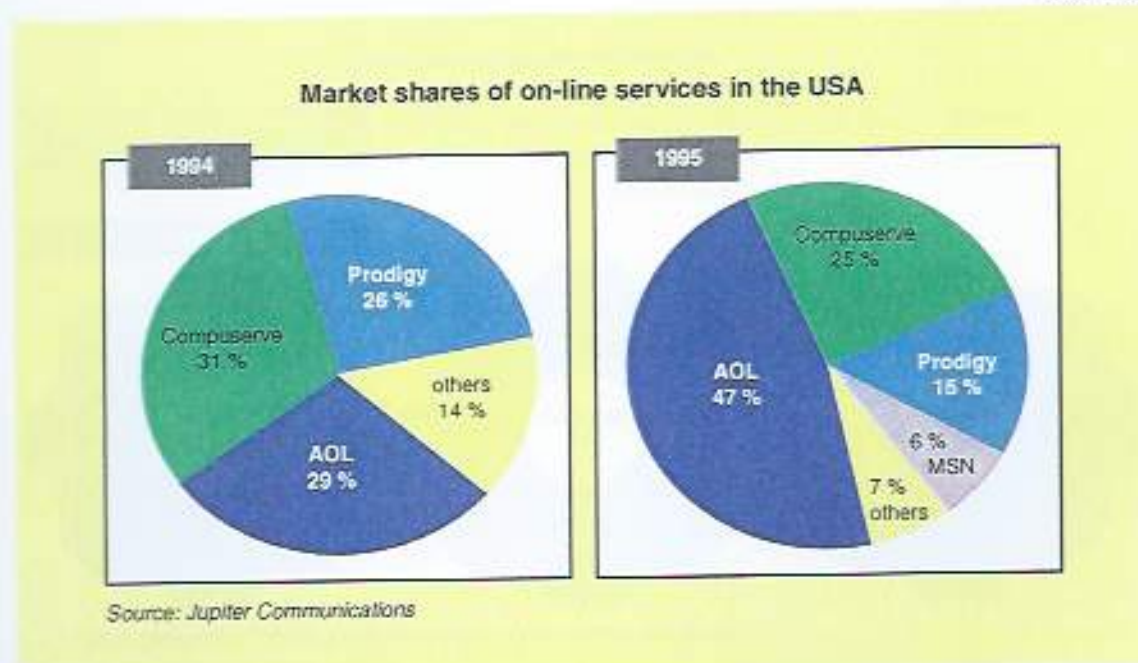


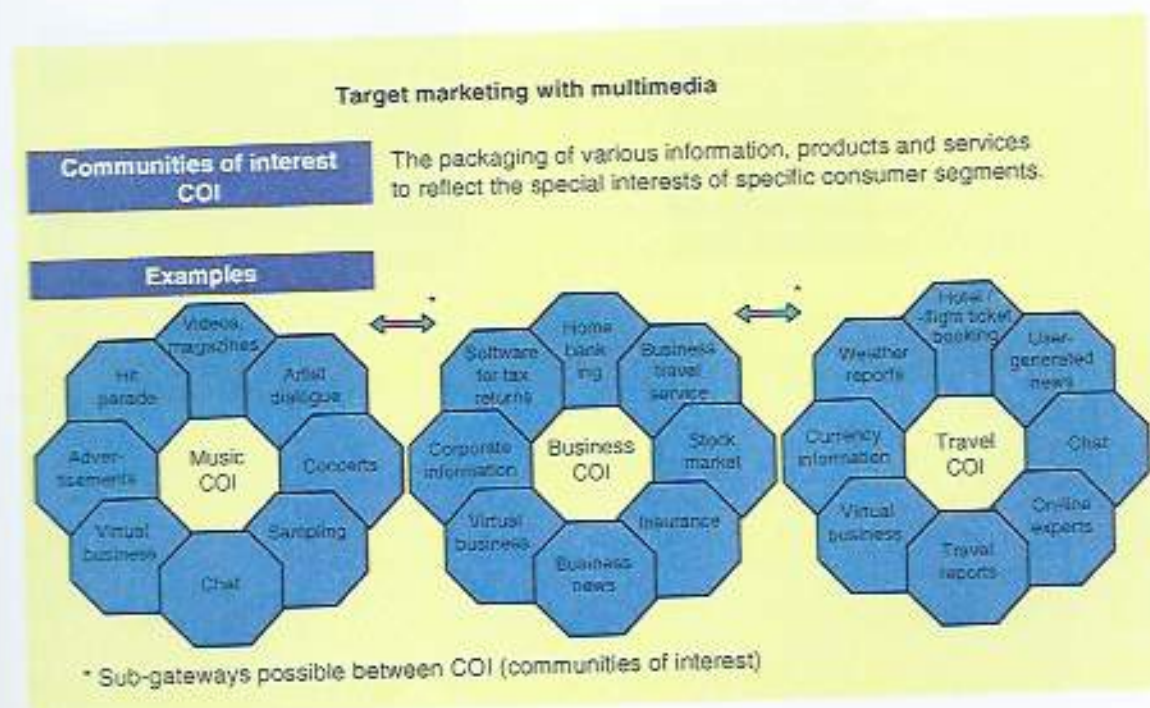
Diagram 6



2. The Internet (WWW) is developing into a global communications and marketing platform.
3. The source (technical platform) of content is becoming increasingly indispensable for meeting customer requirements. Customer utility is, to a large extent, determined by the range, quality and presentation of the content, simple navigation and an acceptable, segment-specific price.
4. Communities of interest - COI in the sectors of retail, travel or health are playing an increasingly central role in the marketing of multimedia (see Diagram 7).
5. Transaction and advertising sales are becoming the most important determinants of growth (more important than subscription fees in the long-term).
6. Multimedia business includes a multitude of business segments, i.e. there is a real need to focus on smaller business approaches. Homogeneous multimedia business does not exist.
7. The development of multimedia business is still in its infancy in Europe (3-5 years behind the USA) - and the gap is widening.
8. Strategic alliances play a key role in the development of multimedia business.
9. Multimedia is becoming a mass market in the USA. This is evident in light of the following trends:

- ☐ expanding infrastructure
- ☐ increasingly mixed demography
- ☐ the beginnings of commercialisation and
- ☐ increasing average utilisation.

Diagram 7

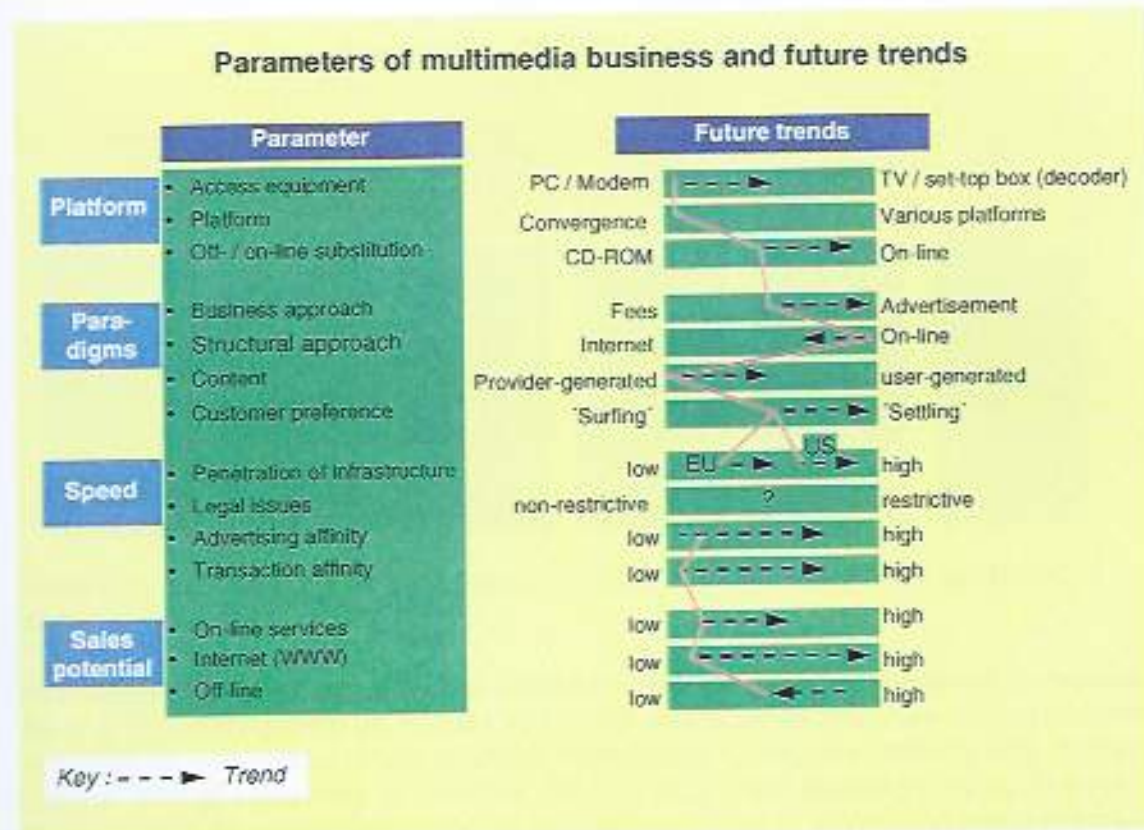


The illustration shows three examples of communities of interest (COIs), via which private or professional customers can obtain a wide range of information, products and services on all aspects of a variety of subjects. In these forums, people with the same interests can exchange information on the subjects that they have in common on a regular basis. Different companies can offer their products and services through a COI. COIs are particularly attractive to companies because, at relatively low cost, these can participate in a frequently visited and homogeneous electronic marketplace.

1.2.3 Parameters of multimedia business and future trends

The dynamism that exists in the multimedia market is determined or influenced by a multitude of factors. There is some uncertainty at present as regards specific weighting and the direction of trends. The following diagram attempts to give an overview of the future development of the central considerations in the multimedia business:

Diagram 8



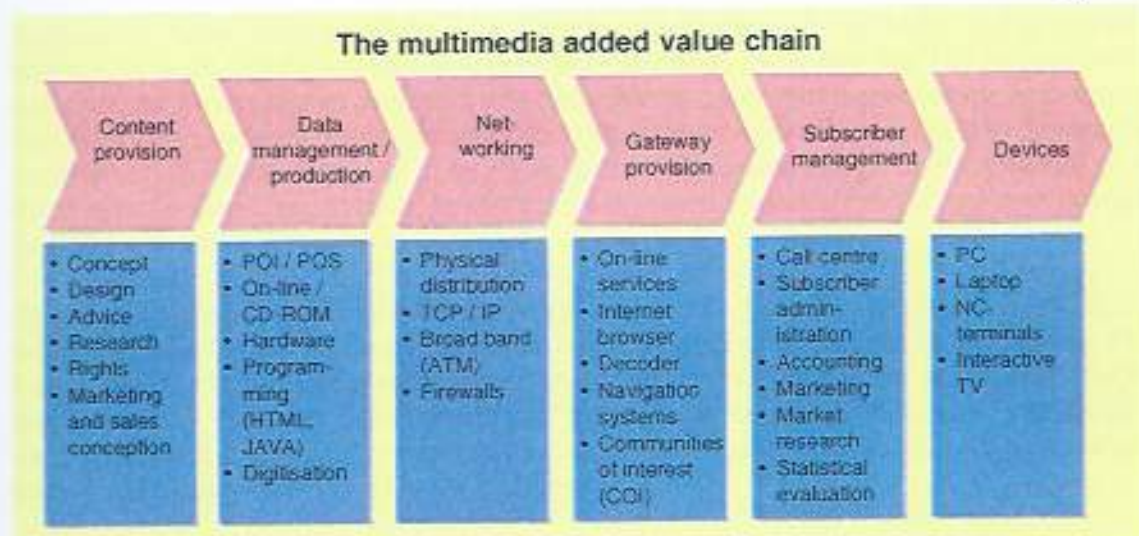
1.3 Added Value Chain

For the development of strategies and measures in the area of digital business, it is practical to use the individual elements of the multimedia added value chain as a guide. The following is a highly simplified version of the chain:

- ☐ Content provision
- ☐ Data management/Production
- ☐ Networking
- ☐ Gateway provision
- ☐ Subscriber management, services
- ☐ Devices

The following diagram shows a systematic overview of the multimedia added value chain:

Diagram 9



Multimedia can therefore be described in terms of a added value chain consisting of the following elements:

With regard to content provision, the established brands must be transferred to multimedia (e.g. Focus magazine as 'Focus Online') but, at the same time, new market services (e.g. AOL on-line service) must establish themselves. Consumer products (e.g. games) must be offered separately to business services (e.g. stock exchange rates). The price structure must be consistently oriented to customer utility. In advertising content, cross-marketing, which involves combining on-line advertising measures with advertising in traditional media, is playing an increasingly important role.

Data management / production. Multimedia creative centres and film studios produce multimedia products i.e. the individual media content (sound, text, picture) is fused to one overall multimedia concept. Print and music publishers, TV companies and on-line providers combine and market their own and outside content to reflect consumer interests and requirements.

If added value is to be generated in this element of the chain, a successful strategy must be based on the development of standards which can be implemented in the market by suitable partners. People who use advanced authoring tools and open platform architectures (mastering) can produce content starting with a source of various multimedia platforms (CD-ROM, Internet, on-line services...). Since the infrastructure for this type of production requires high initial investments (e.g. high-speed computers for rendering), pay-per-use mechanisms should be provided which permit the use of the computer at the same time as making it available to external customers (e.g. High Tech Center, Babelsberg). The networking of computer systems facilitates joint use and simultaneous production at different locations.

Networking. Video, audio, text and data can be distributed via carrier media such as video, CD-ROM, CD-i or via networks. The former is called off-line distribution, the latter on-line distribution. On-line transmission is carried out either via the narrow band telephone network or broad band terrestrial or satellite transfer.

Successful networking depends on a number of variables: in particular, a high-performance network, intelligent network operator software, including the TCP/IP standard protocol, as well as higher protocols and high data security. For market entry, a cooperation of existing network providers who have their own corporate networks is to be recommended. This is the only way to facilitate a comprehensive range of inexpensive products and services, which balance out the peak network loads of individual user groups (e.g. on-line users in the evening hours).

Gateway provision. In the area of gateway provision, a user-friendly interface is highly significant. As far as the price structure of the individual gateways is concerned, the future lies in the area of a transparent fee structure, which can be achieved through blanket prices. Gateway marketing is best achieved through direct marketing and informative product PR because many consumers lack specific knowledge and it is necessary to help them overcome their inhibitions.

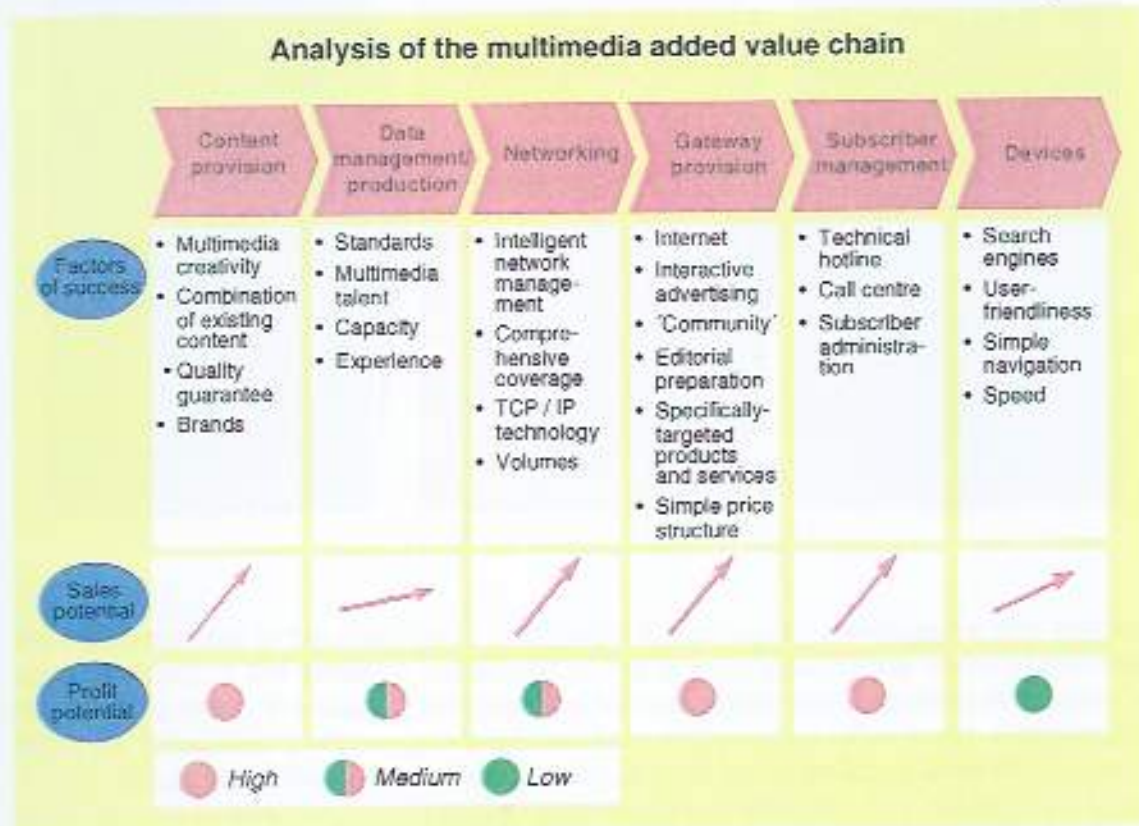
Subscriber management. On-line services, Internet navigators, cable operators and TV companies offer the consumer access to multimedia products and services. These have special payment mechanisms and advice centres to offer support to consumers with technical problems and problems relating to content.

The establishment and safeguarding of customer loyalty by means of effective subscriber management plays a central role in the added value chain. If the objective is to develop an indispensable service culture, it is necessary to be familiar with all aspects of the culture of the countries in question. Staff who come into contact with customers by telephone, house visits or on-line must have a perfect command of the language and be aware of specific cultural peculiarities. In the wake of the general trend in the direction of a concentration of core competencies, there is evidence of considerable willingness to outsource services in the area of the collection of utility data, its pricing and the accompanying account management.

Devices. The consumer gains access to the desired content and programs via a multimedia PC with modem, an NC terminal, a PDA (Personal Digital Assistant) or a TV set with decoder and built-in reverse channel, which can run on the Internet.

The next diagram is a summarised presentation of an analysis of the multimedia added value chain.

Diagram 10

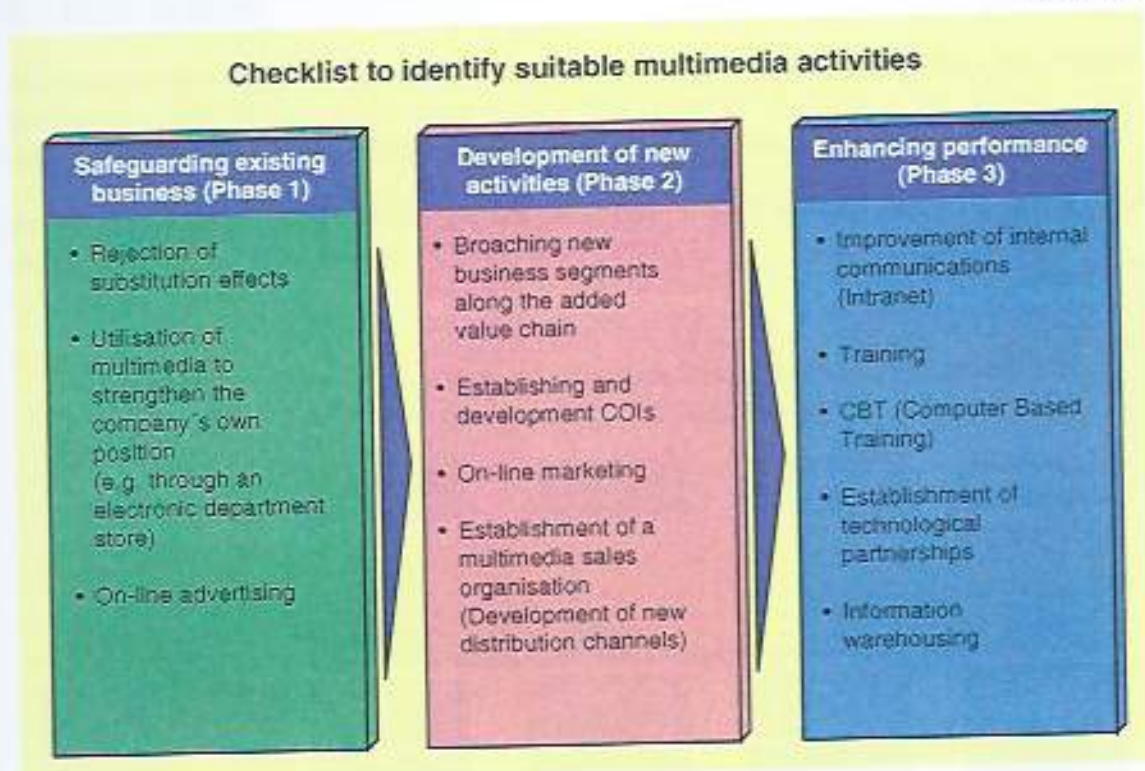


In light of the increasing significance of multimedia, many companies are faced with the question of whether - and if so, how - they should or can utilise it for their own business activities. These questions can only be answered in detail in terms of the individual circumstances of the company in question. Basically, three stages of analysis are involved:

- ☐ Safeguarding existing business
- ☐ Developing new activities and business segments
- ☐ Enhancing performance

The following diagram shows initial guidelines for this type of detailed survey:

Diagram 11



An important step in the direction of multimedia comprises an investigation into and the ascertainment of the strategic positioning of the company along the entire multimedia added value chain. Basically, it is impractical for businesses in all branches of industry to strive for a positioning with regard to all elements of the added value chain. A pilot study is also necessary in this respect. Furthermore, it must be established whether the company intends to cater for private and/ or professional customers. The necessary decisions in this respect determine the strategy for the development and/ or expansion of digital business.

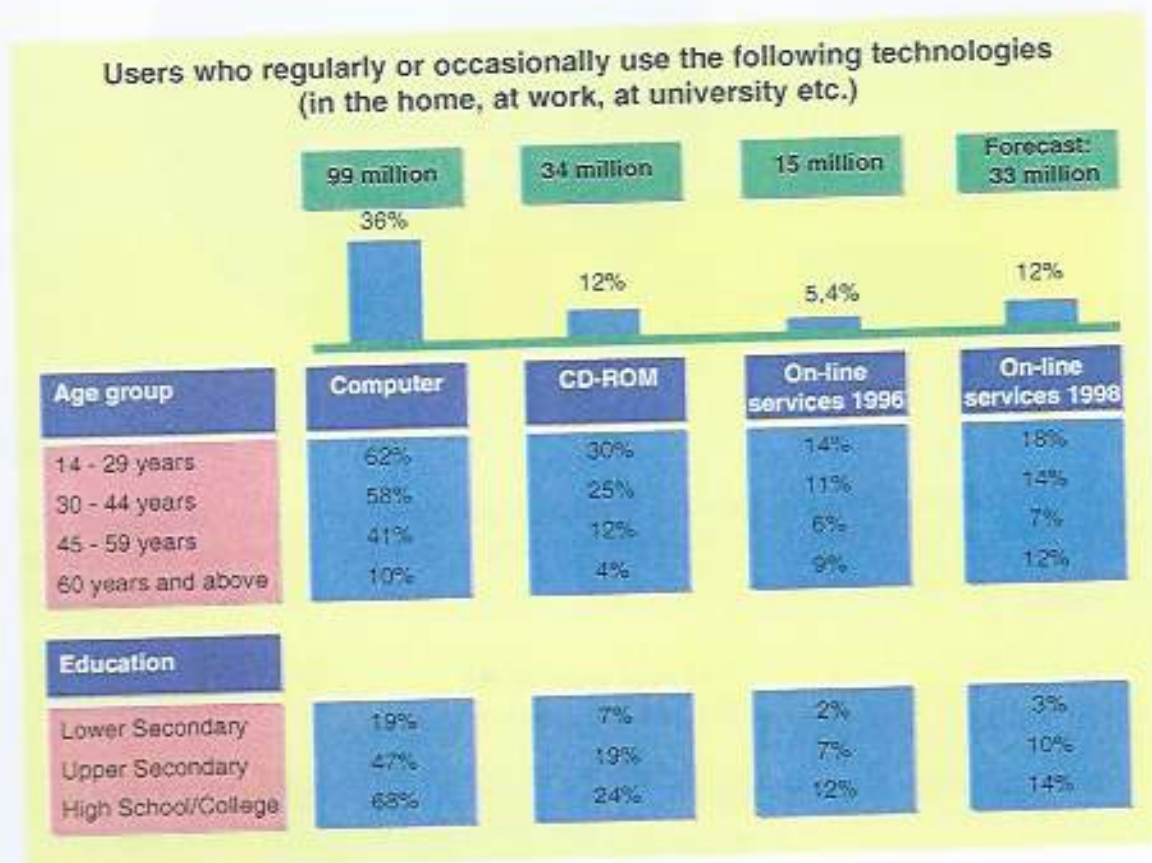
2. Target Groups

2.1 User Groups

Multimedia PC terminal users are an attractive target group for merchandise, information and service providers. A large proportion of this target group have a high school or college education and - depending on age - a high net income.

At the same time, these users are still relatively young. Nevertheless, as they grow older, they will not lose their affinity for technology.

Diagram 12

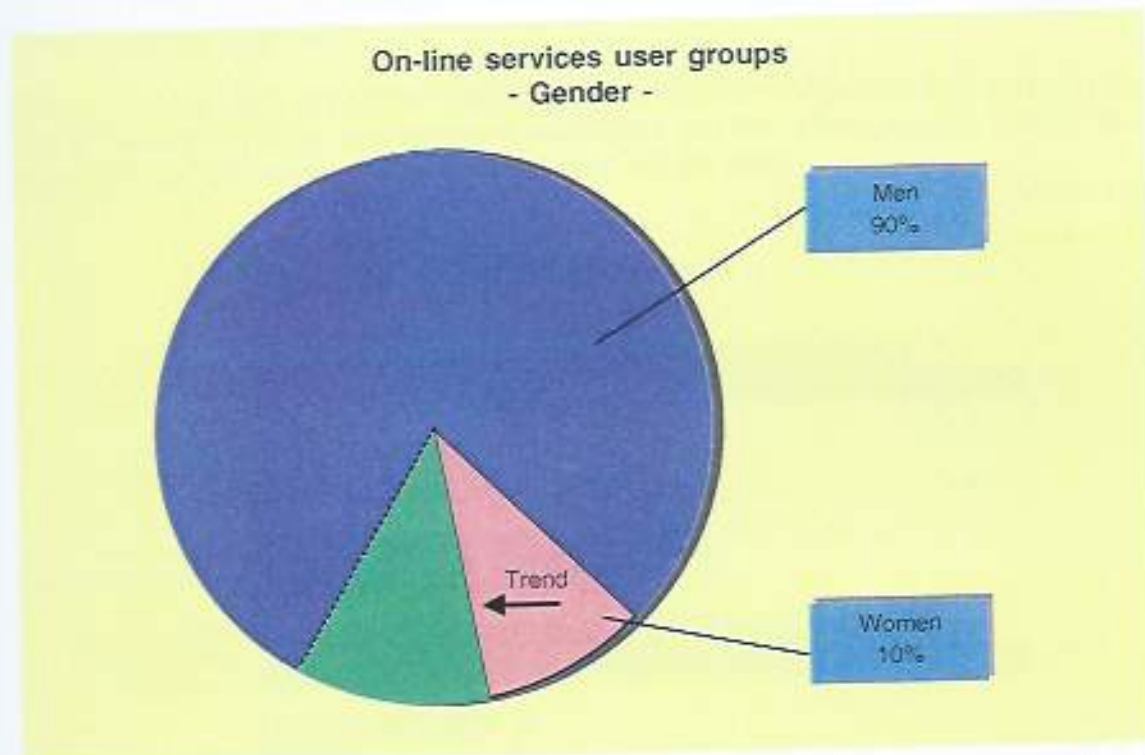


Base: 275 million private individuals aged 14 and above (EU)

Source: EITO '97 & Diebold

Overall, there is a markedly higher proportion of male users in Germany. However, in future, with increasing market penetration, the gap is expected to close and more closely resemble the overall picture in the USA.

Diagram 13

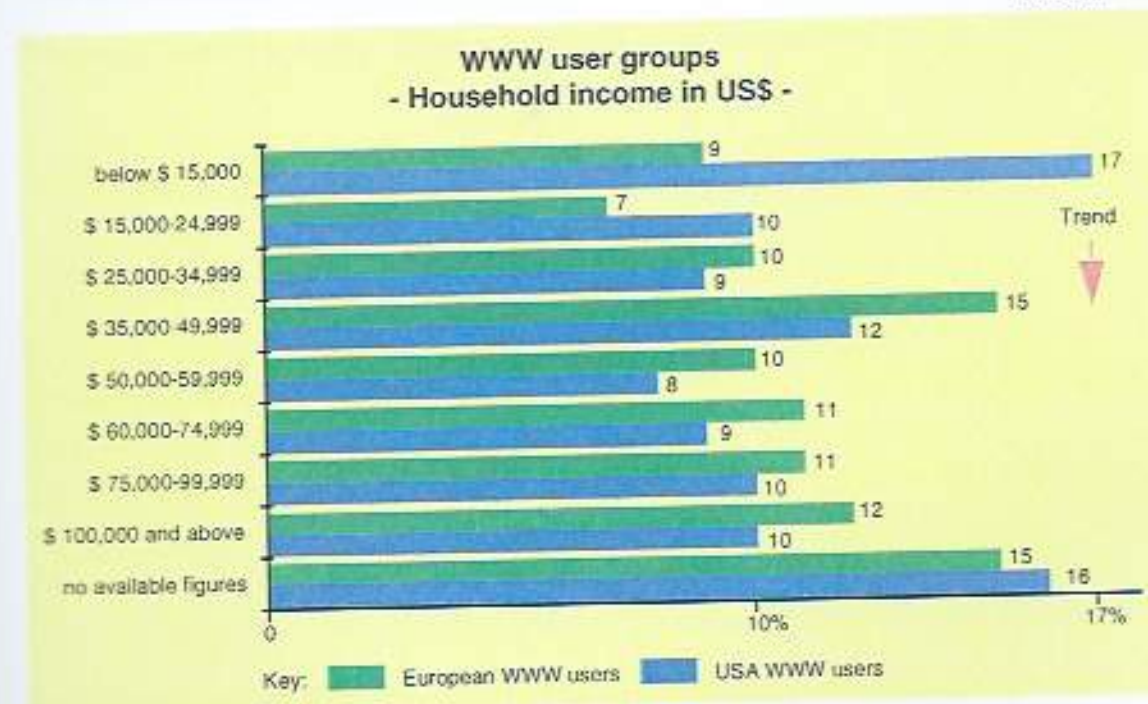


Base: 10,000 cases (in Europe)

Source: GfK, I/96 & Diebold

The distribution of the income brackets appears to be equal at first glance. However, if we also take the high proportion of younger users into consideration, it is obvious that incomes are relatively high.

Diagram 14



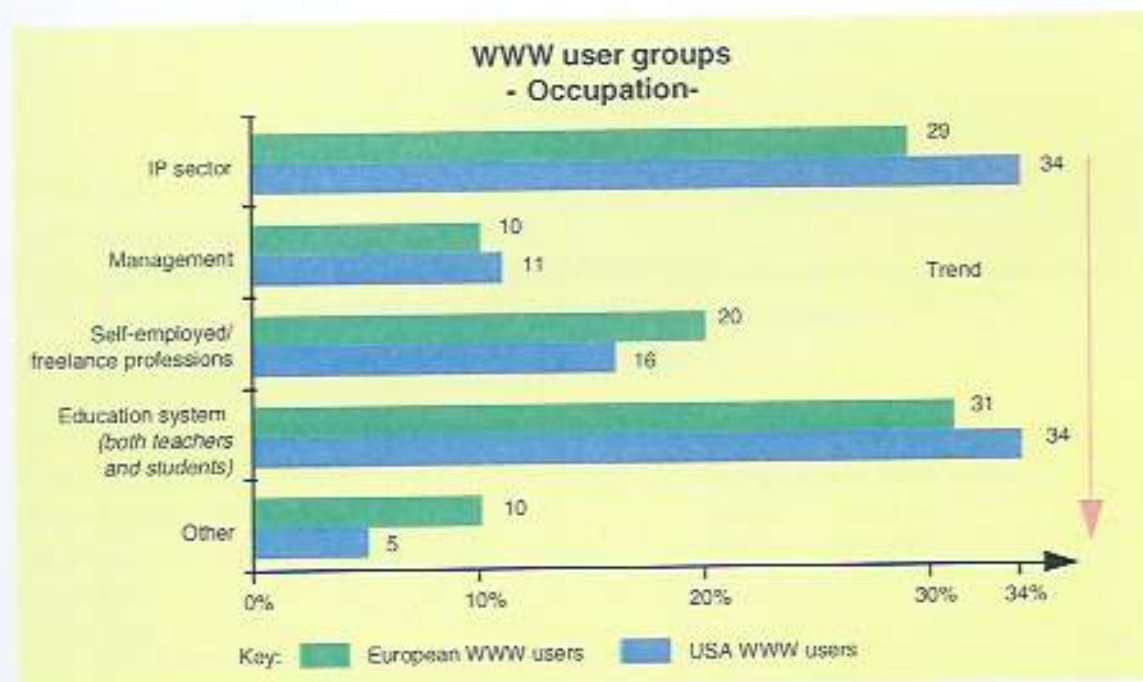
Base: 23,348 cases (Europa und USA)

source: Stern Online I/96

In future, these users will move up into the higher income brackets because they tend to be better educated people.

On-line service users are predominantly employed in technical occupations and the education system. However, management employees and the self-employed - both in Germany and the USA - use on-line services on a regular basis.

Diagram 15



Base: 23.348 cases (Europe and USA)

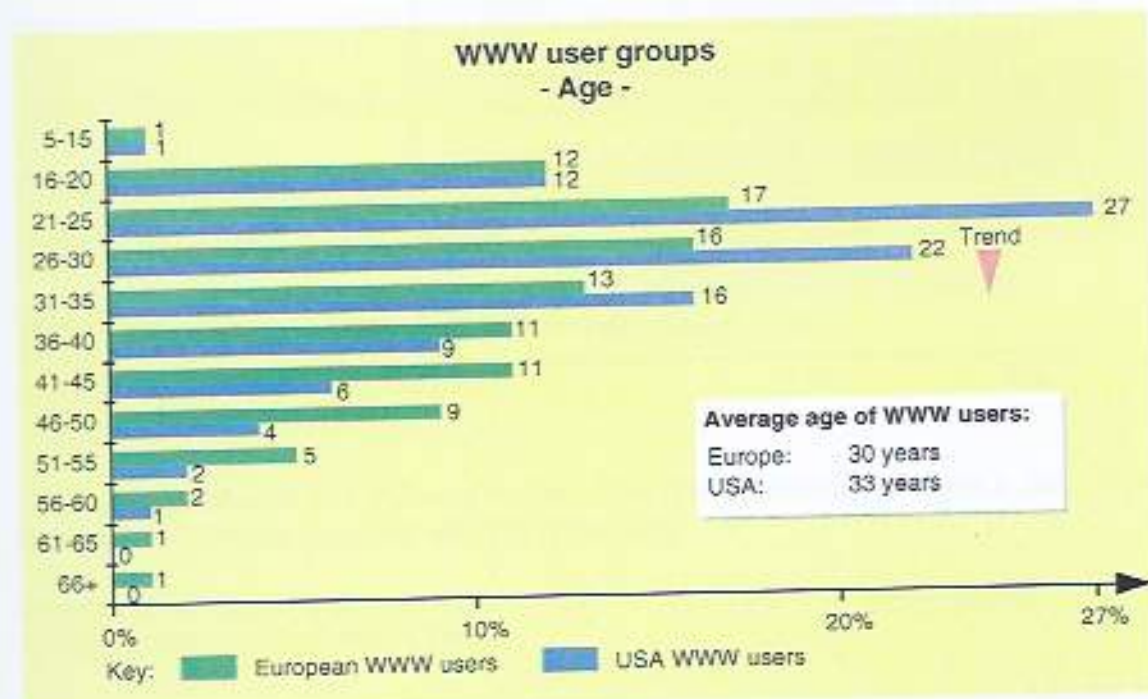
Source: Stern Online 1/96

The trend will lead to further diffusion to include other occupational groups.

Thus, just under 70% of Germans with high-school or university education already use PCs occasionally or on a regular basis. Every fourth has a CD-ROM and, in 1998, every 7th will use on-line services.

The target group of the 4 million on-line service users in 1996, which will have grown to 6 million users in 1998, is a particularly interesting target group for digital marketing.

Diagram 16



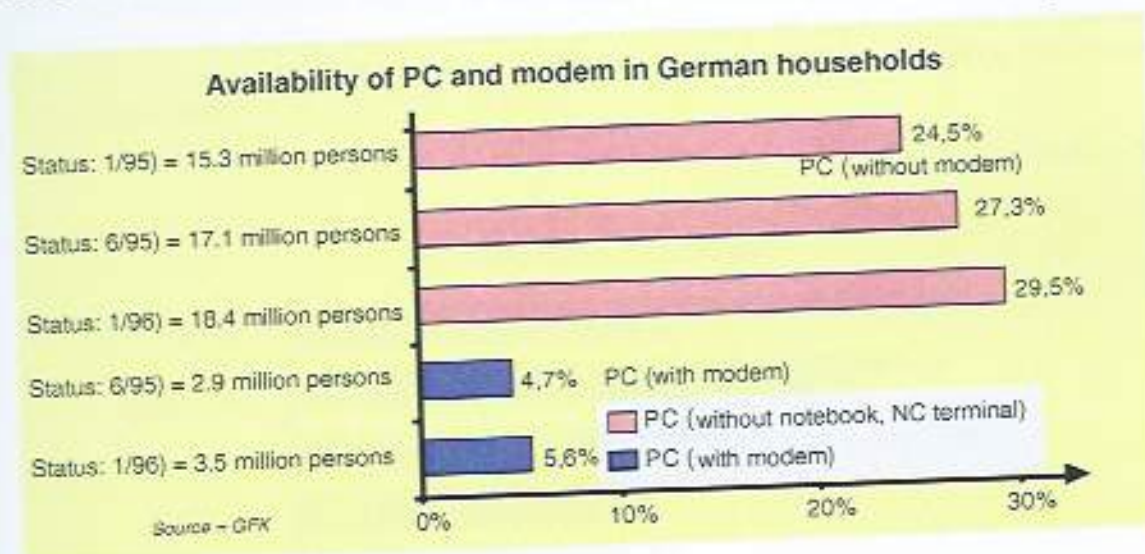
Base: 23.348 cases (Europa und USA)

Source: Stern Online 1/96

2.2 Equipment and Modes of Access

Of the 62.5 million private individuals in Germany aged 10 years and over, approximately 30% have access to a PC and 6% to a PC with modem in their homes.

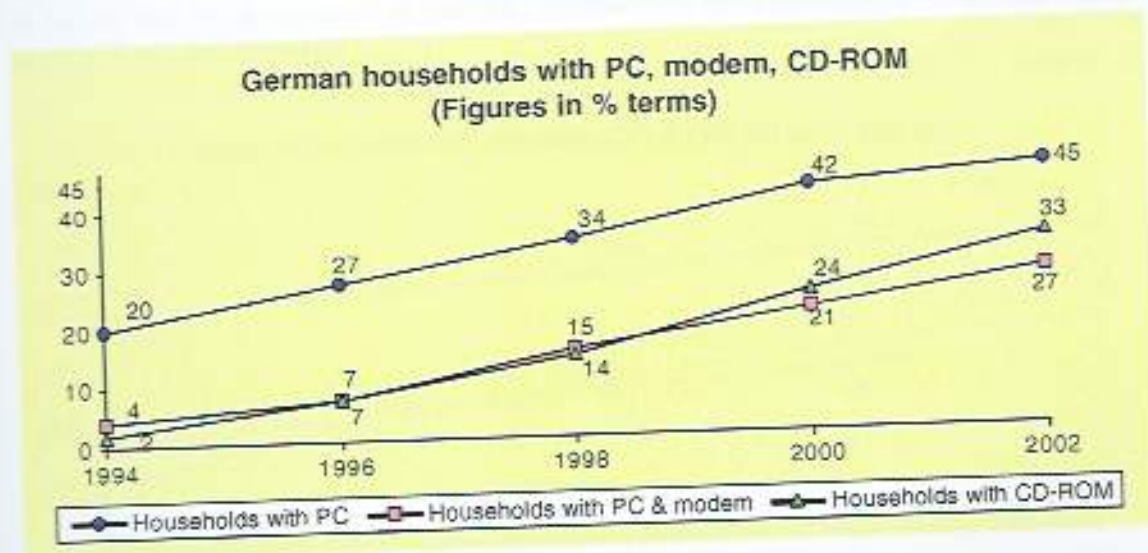
Diagram 17



One mode of access is a PC with modem. It is also necessary to make a distinction between households equipped with this technology.

In general, the equipment contained in homes and companies can serve to underline the current and forecast utilisation trends.

Diagram 18

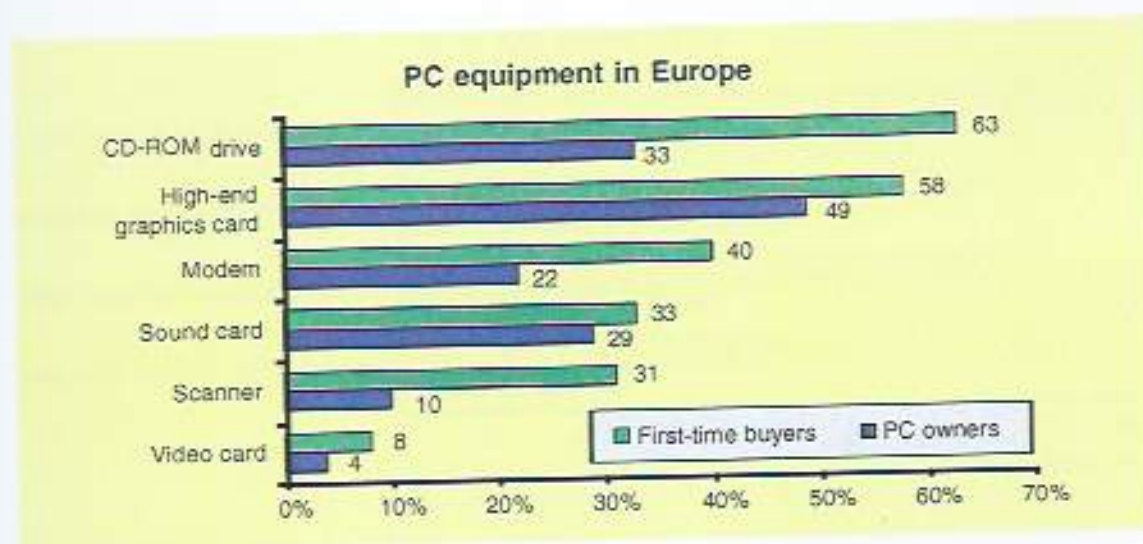


Source: Veronis, Suhler & Associates; Bertelsmann-Analysen; Company Interviews

Including all types of equipment, 27% of German households already own a PC. Around one-quarter of these PCs have a CD-ROM drive and/or modem. This percentage will markedly increase in future.

With regard to the overall market of multimedia PC-owners and future buyers, it is expected that almost all newly-purchased PCs in Germany will be multimedia-compatible (CD-ROM drive, modem, sound card, graphics card and possibly also with a video conferencing facility).

Diagram 19

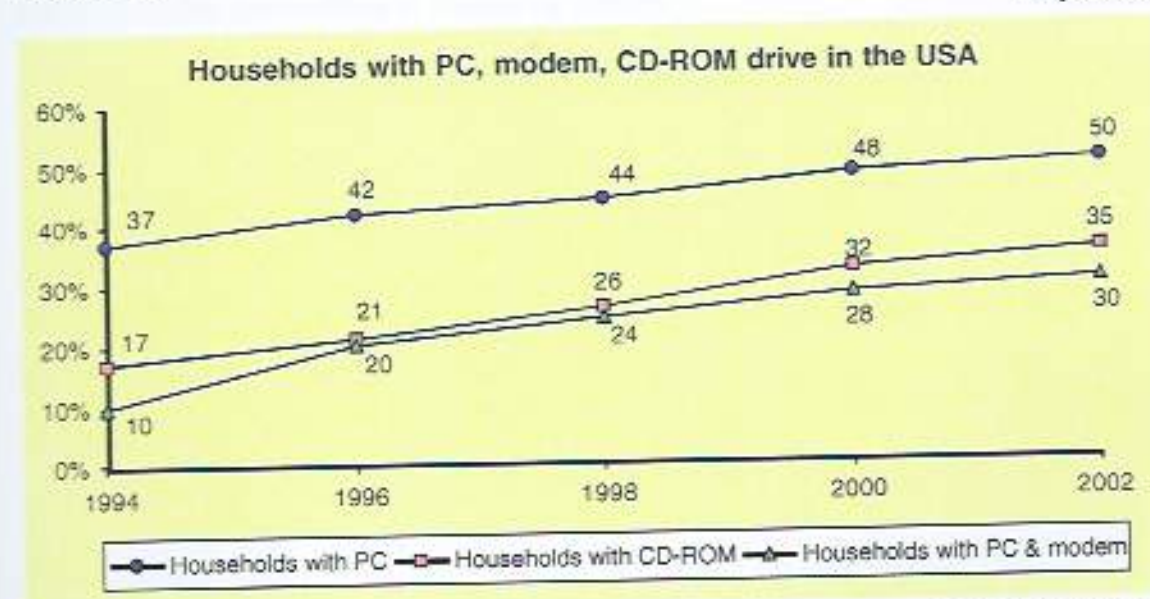


Base: 25.000 cases

Source: Inteco 95

In future, the PC equipment in German households will increasingly reflect the equipment in USA households.

Diagram 20



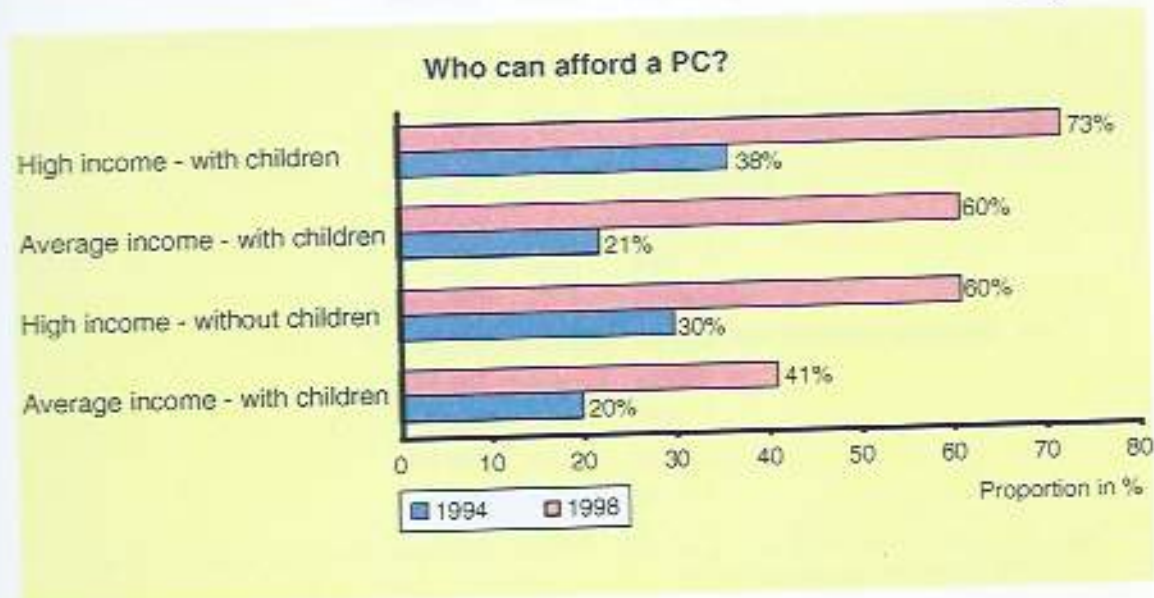
Source: Bertelsmann

The total PC quota will probably not exceed 50% because other technologies, for example NC terminals, will play an increasing complimentary and also substitution role.

Reflecting the trend in the USA, high-income target groups will predominantly install PCs in Germany.

In 1998, 73% of all affluent people will own a computer.

Diagram 21

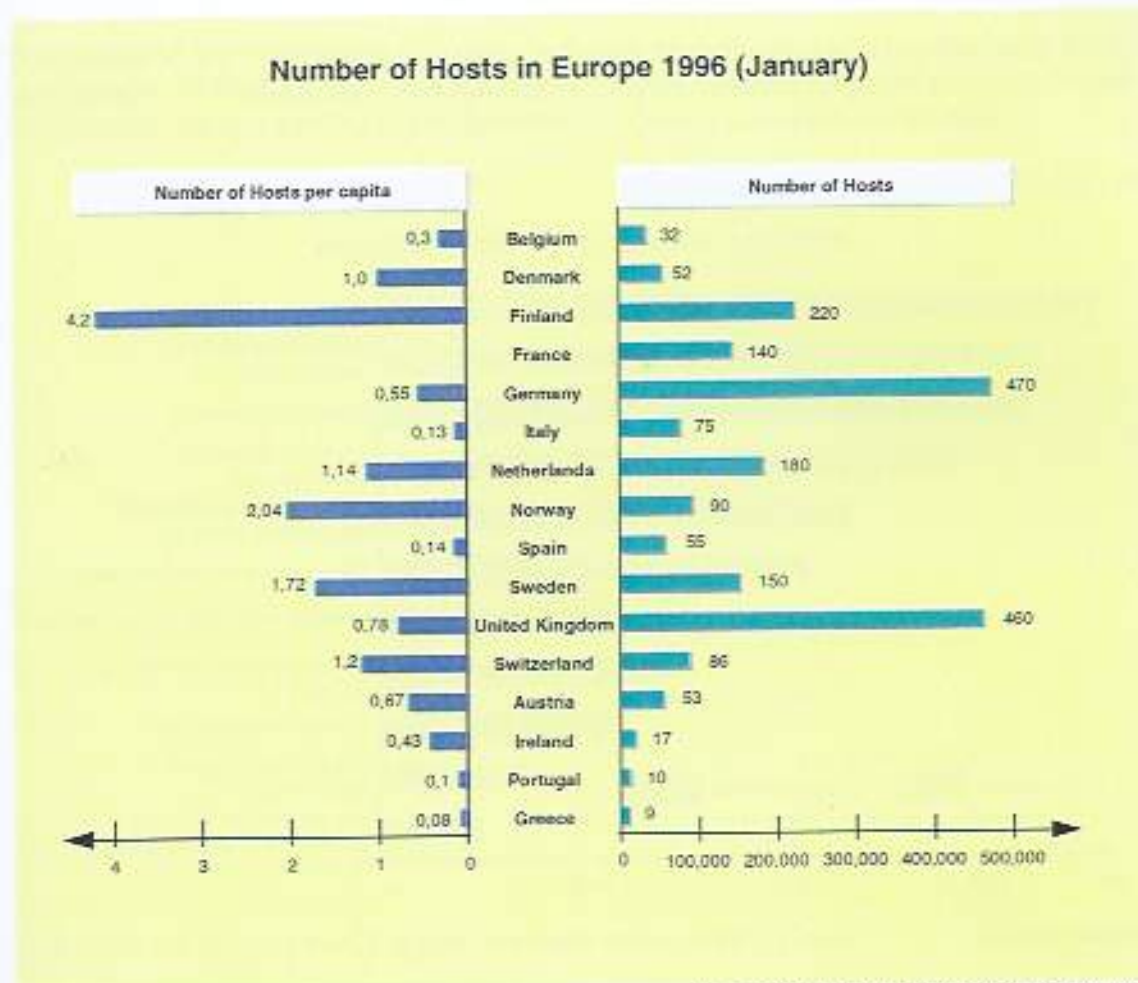


Base: 25,000 cases (Europe)

Source: Inteco

On the basis of equipment (e.g. by comparing the number of hosts), it is possible to examine on-line connections in Europe by country.

Diagram 22

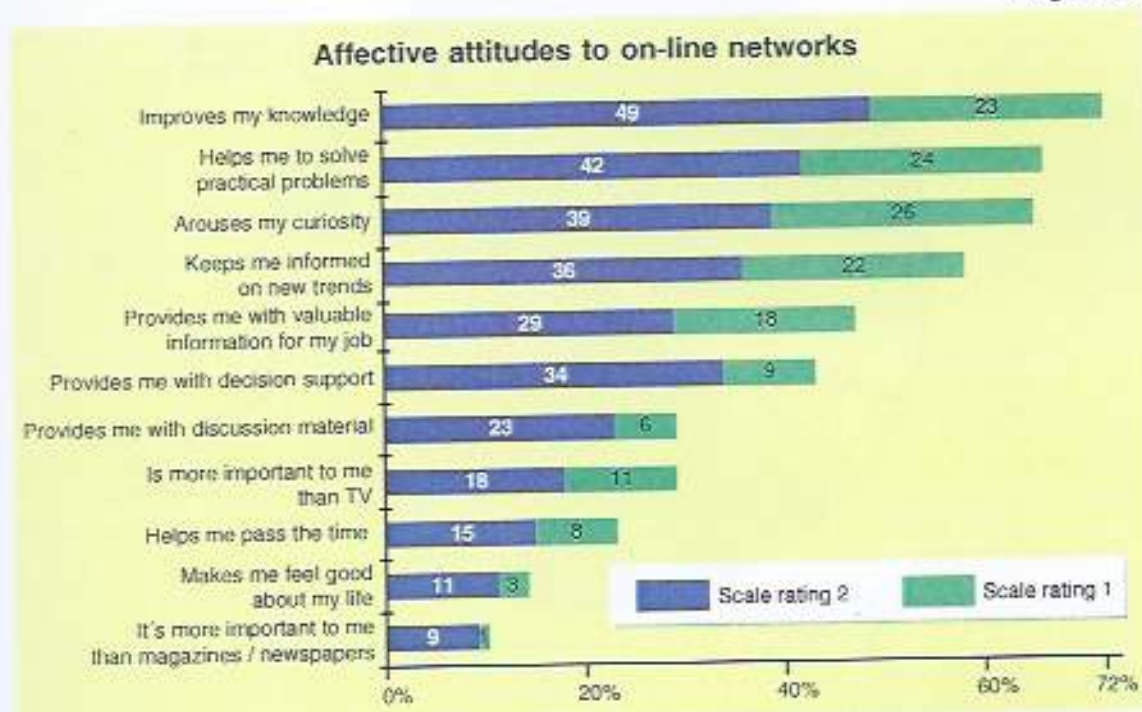


Source: Network Wizards/ General Magic

2.3 Utilisation and Purchasing Behaviour

The utilisation and purchasing behaviour in the multimedia market is multifaceted. Whilst the utilisation of multimedia CD-ROM and POS systems is comparable with that of traditional media, on-line service users demonstrate unique utilisation behaviour.

Diagram 23

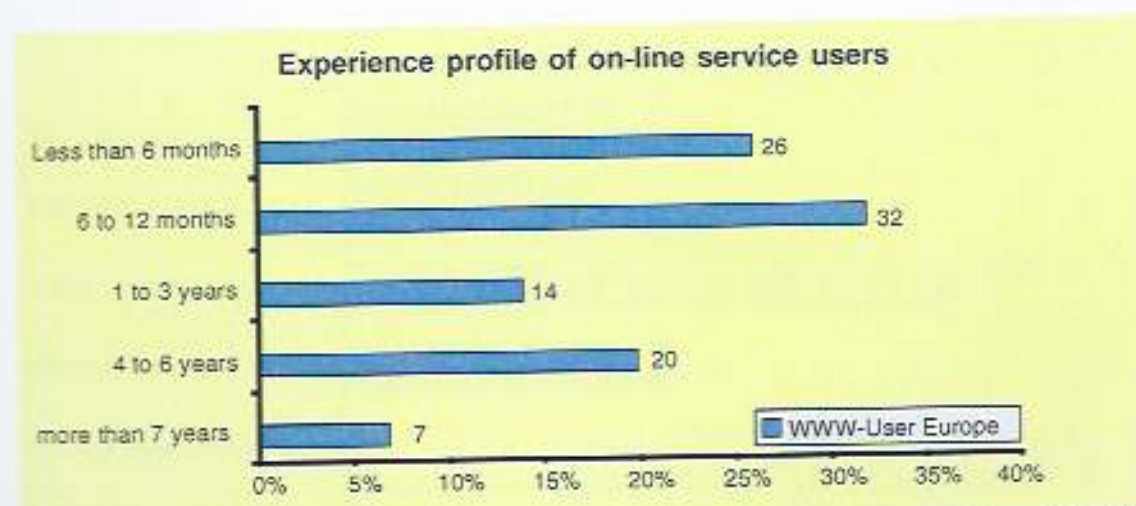


Scale rating 1 'is definitely true', 2 'is true'. Base: 500 on-line users in Europe

Source: Alice II

The massive boom over recent months is clearly reflected in the hours of usage; 58% of European users became new subscribers in the last 12 months.

Diagram 24

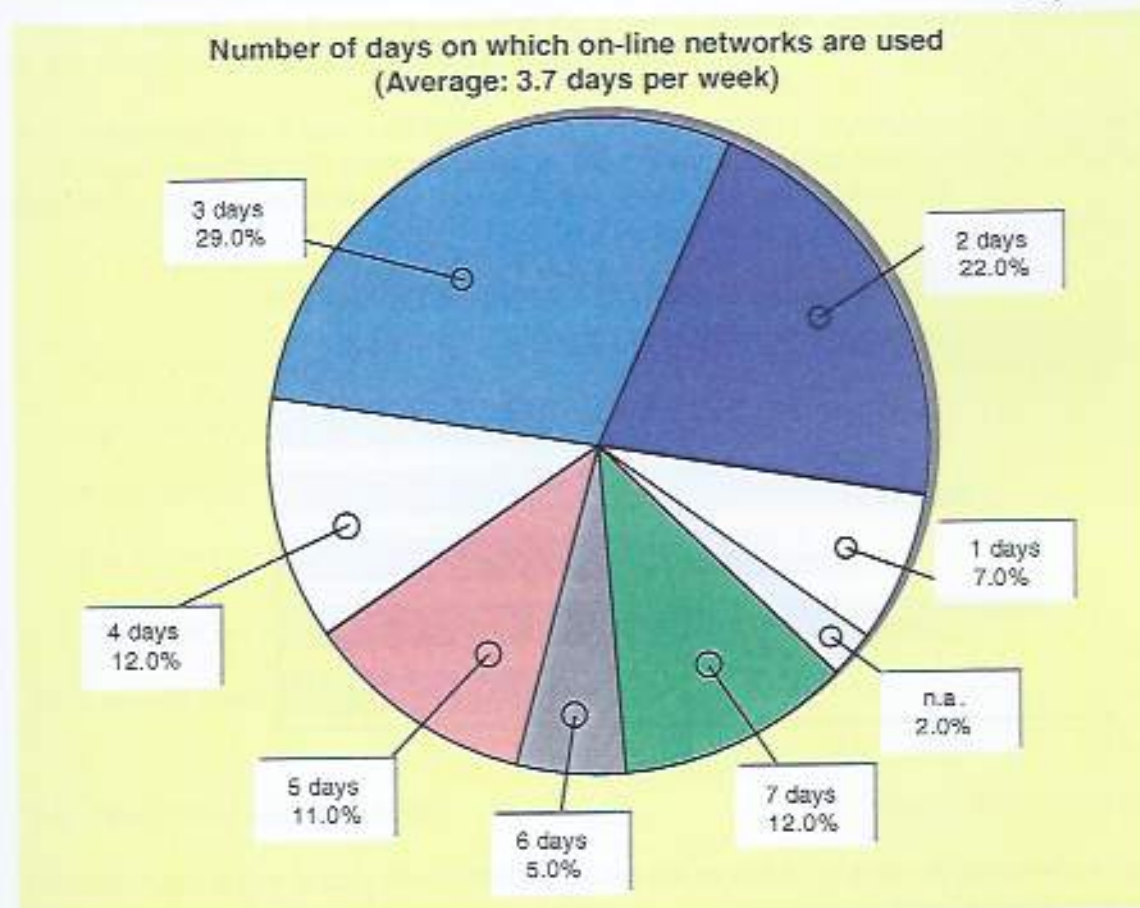


Base: 23,348 cases (Europe and USA)

Source: Stern Online 1/96

Most people use on-line services on three days a week.

Diagram 25

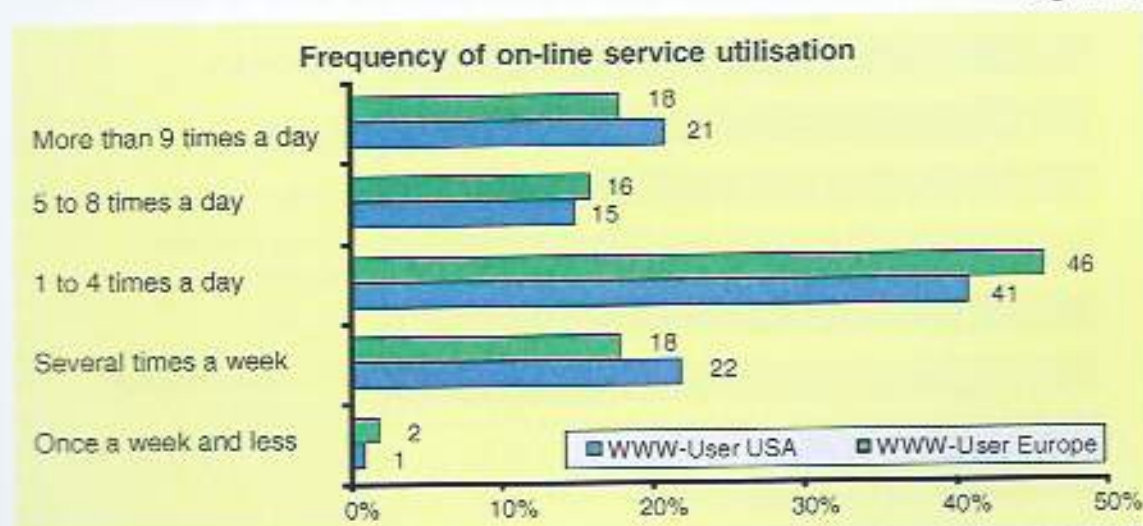


Base: 500 online-users in Europe

Source: Alice II

In accordance with this, the length of time spent in the network or frequency of access differs.

Diagram 26



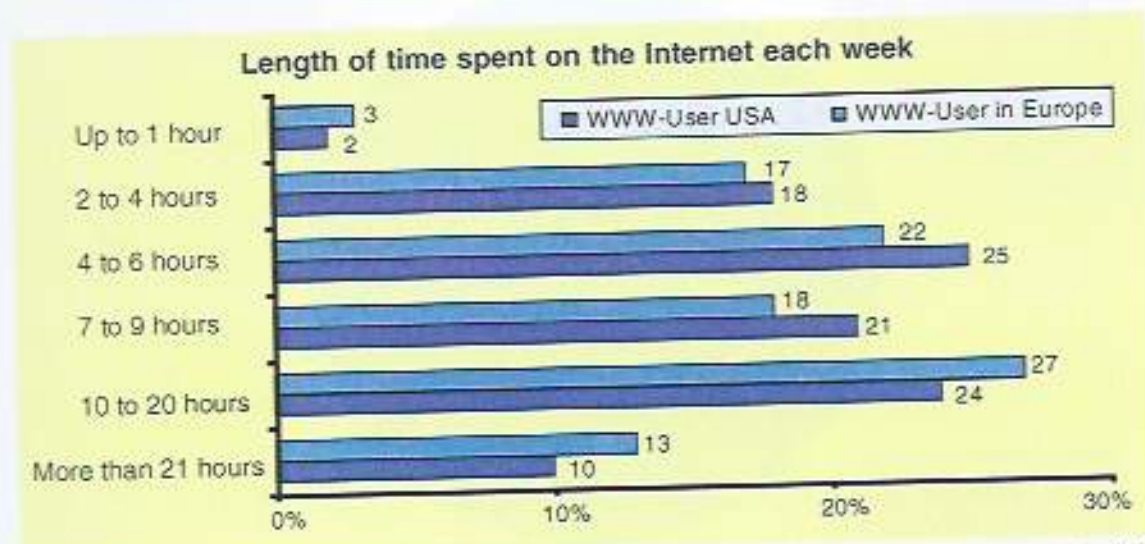
Base: 14,475 cases (Europe and USA)

Source: Stern Online 1/96

In contrast, the utilisation curve is relatively homogeneous in terms of the time of day. The peak access time for users is during the evening between 6 p.m. and 11 p.m. (peak at 9 p.m.). This indicates predominantly private use.

The average length of use is nine hours per week. However, 40% of European users surf on-line for more than 10 hours a week; in the USA the average length of use is higher than in Europe because the on-line services offered are more advanced.

Diagram 27



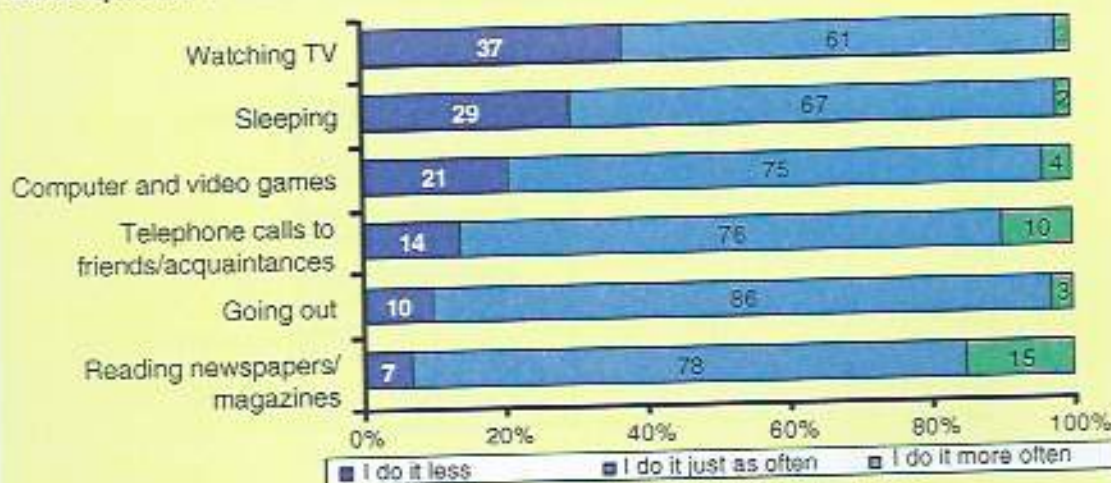
Base: 14,475 cases (Europe and USA)

Source: Stern Online 1/96

The fact that the day is only 24 hours long poses the question of what other activities are being substituted by on-line activities. In particular, on-line services replace the television set. However, social contacts also tend to be neglected in favour of network communication.

Diagram 28

Development of other activities since on-line networks have become available

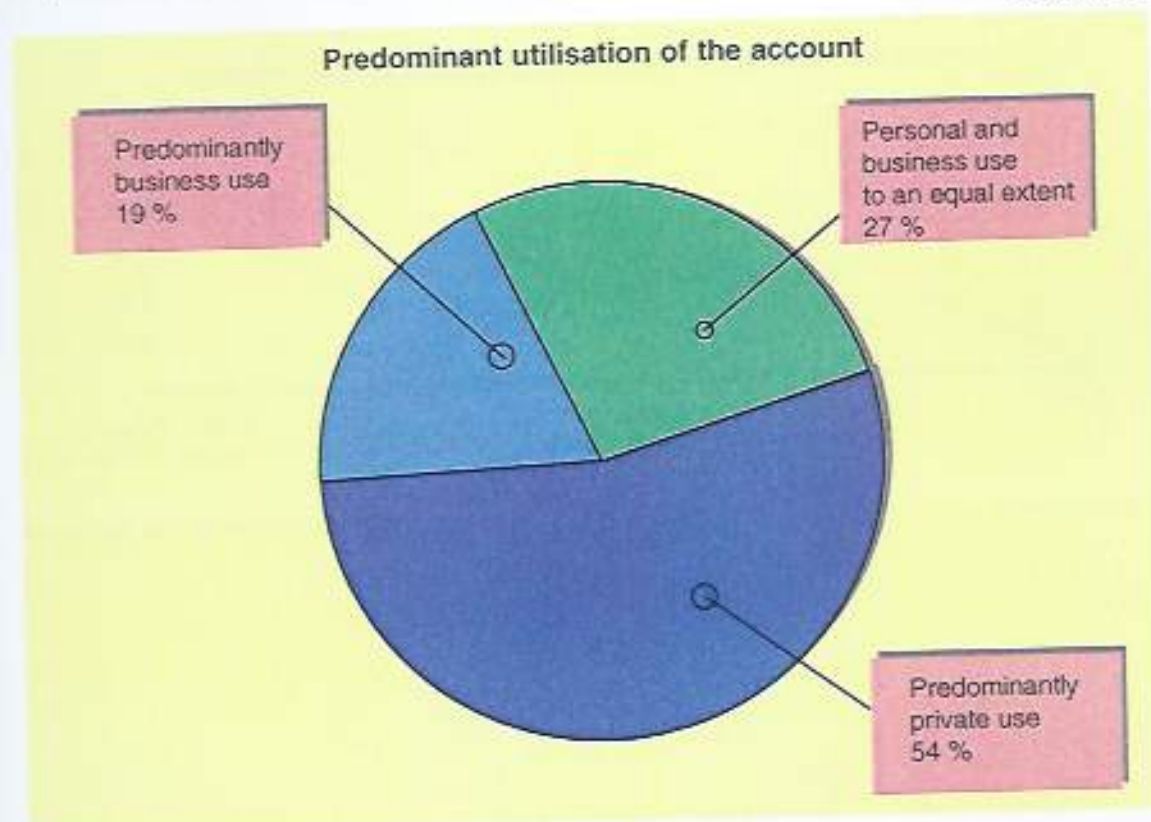


Base: 500 online-users in Europe

Source: Alice II

More than half of the respondents only access on-line services for personal use. This depends, to a great extent, on which services are preferred.

Diagram 29

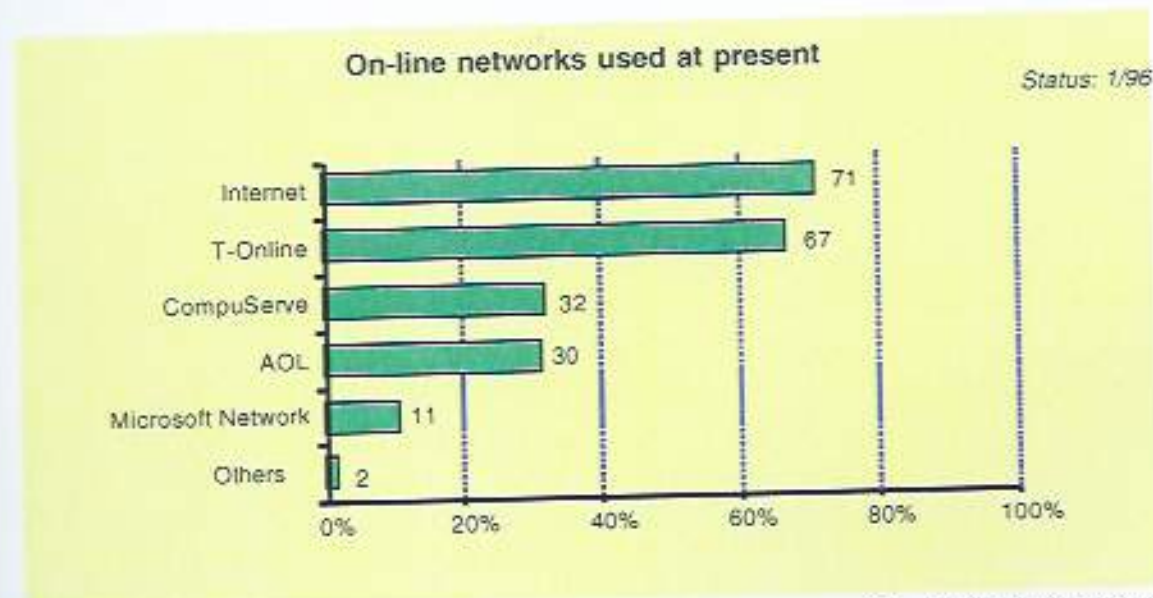


Base: 500 online-users in Europe

Source: Alice II

Often, the Internet and on-line services are used simultaneously. The preferred network in Germany is the Internet, closely followed by T-Online. (Status 1/96).

Diagram 30

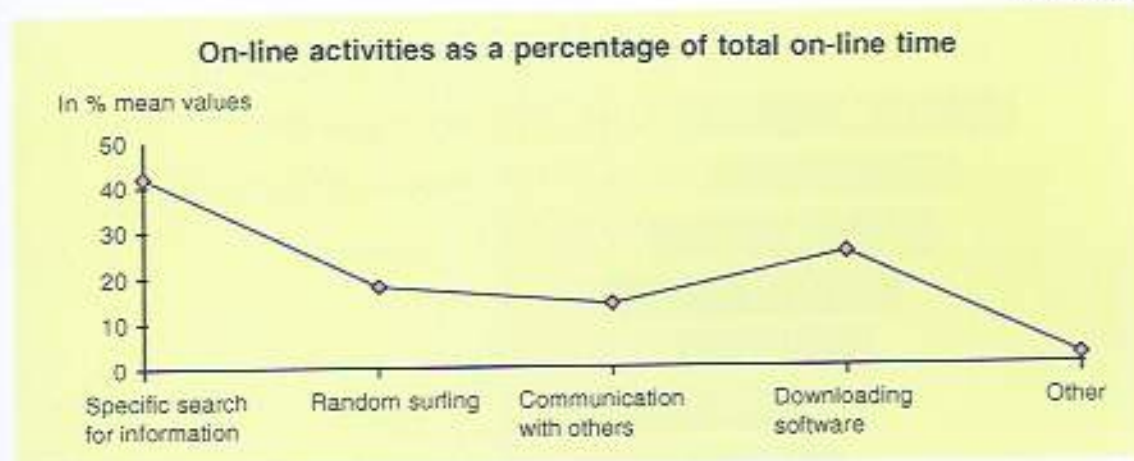


Base: 500 on-line users in Germany

Source: Alice II & Diebold

Average users spend 77% of their time in the network seeking specific information and downloading of software (which is particularly time-consuming).

Diagram 31

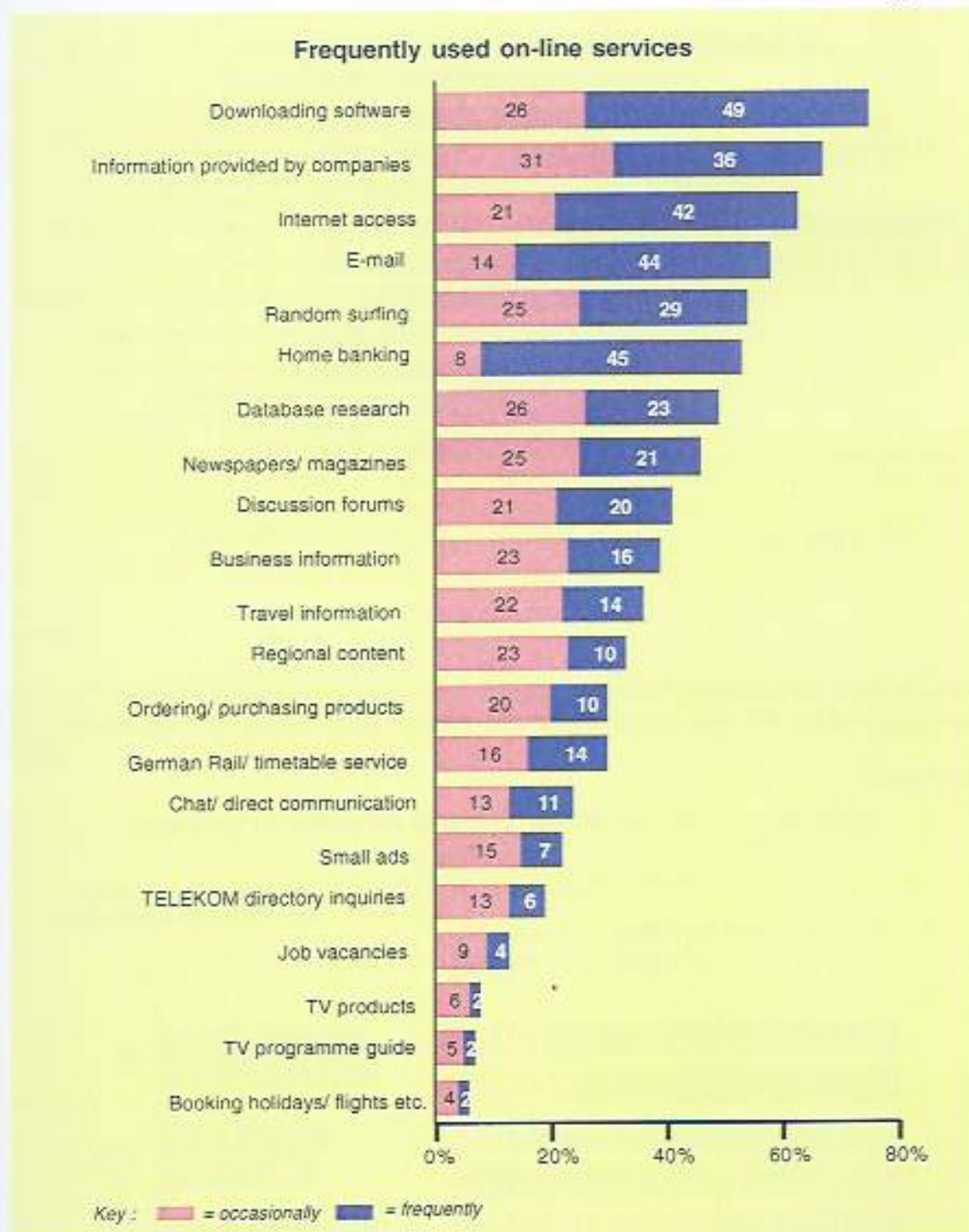


Base: 500 online-users in Europe

Source: Alice II

A more detailed investigation reveals the 'biggest headache' of on-line services; the range of practical content is still extremely limited.

Diagram 32

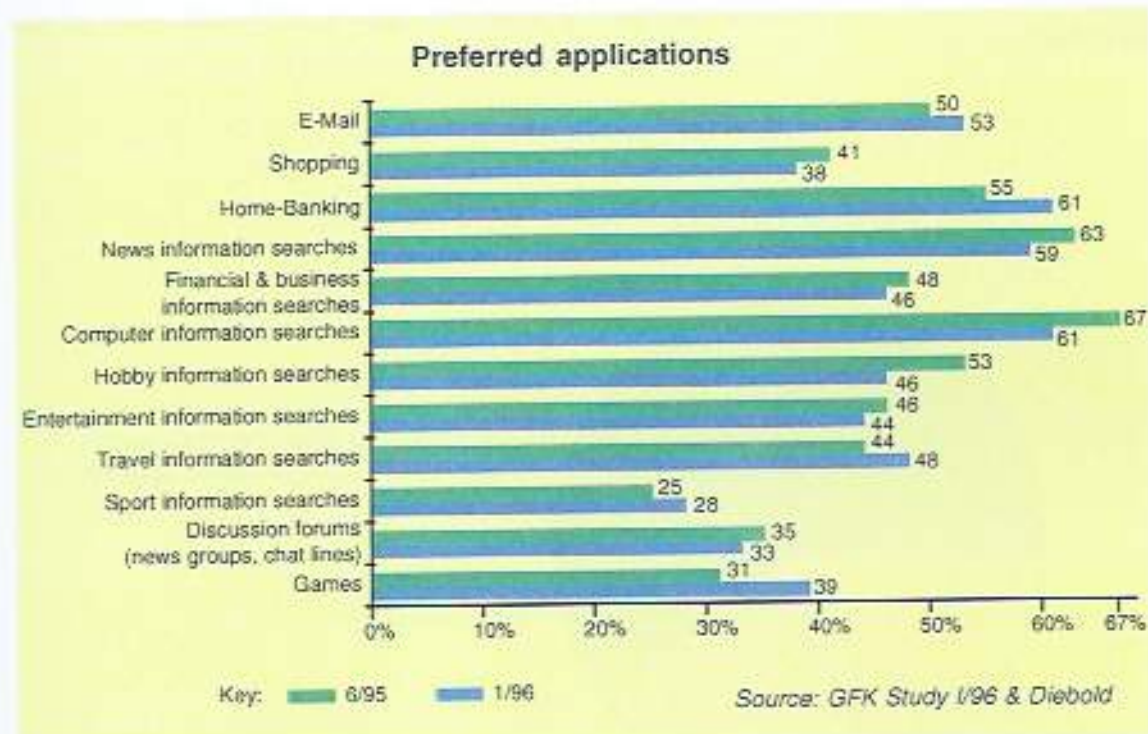


Base: 500 online-users in Europe

Source: Alice II

When they are connected to the network, users tend to focus on a few specific applications. Information, home banking, as well as shopping and games are the most frequently accessed services.

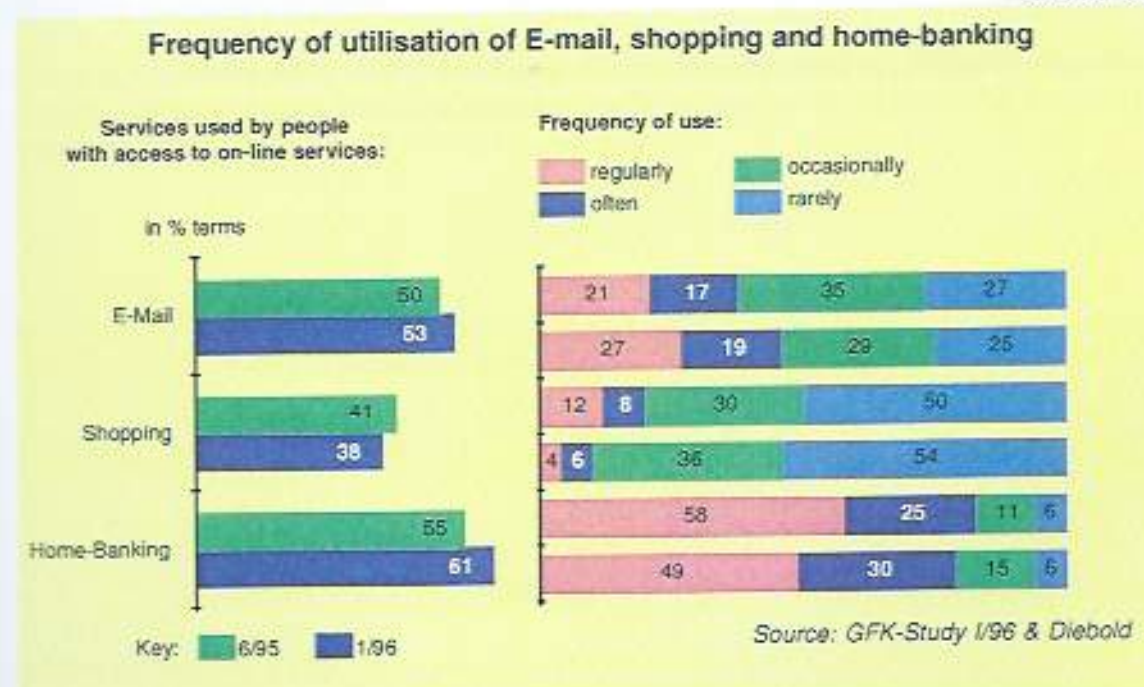
Diagram 33



Europe

Although 41% of users buy products, most of these people only make occasional purchases and the quantity of products purchased has not increased over the last six months of 1996.

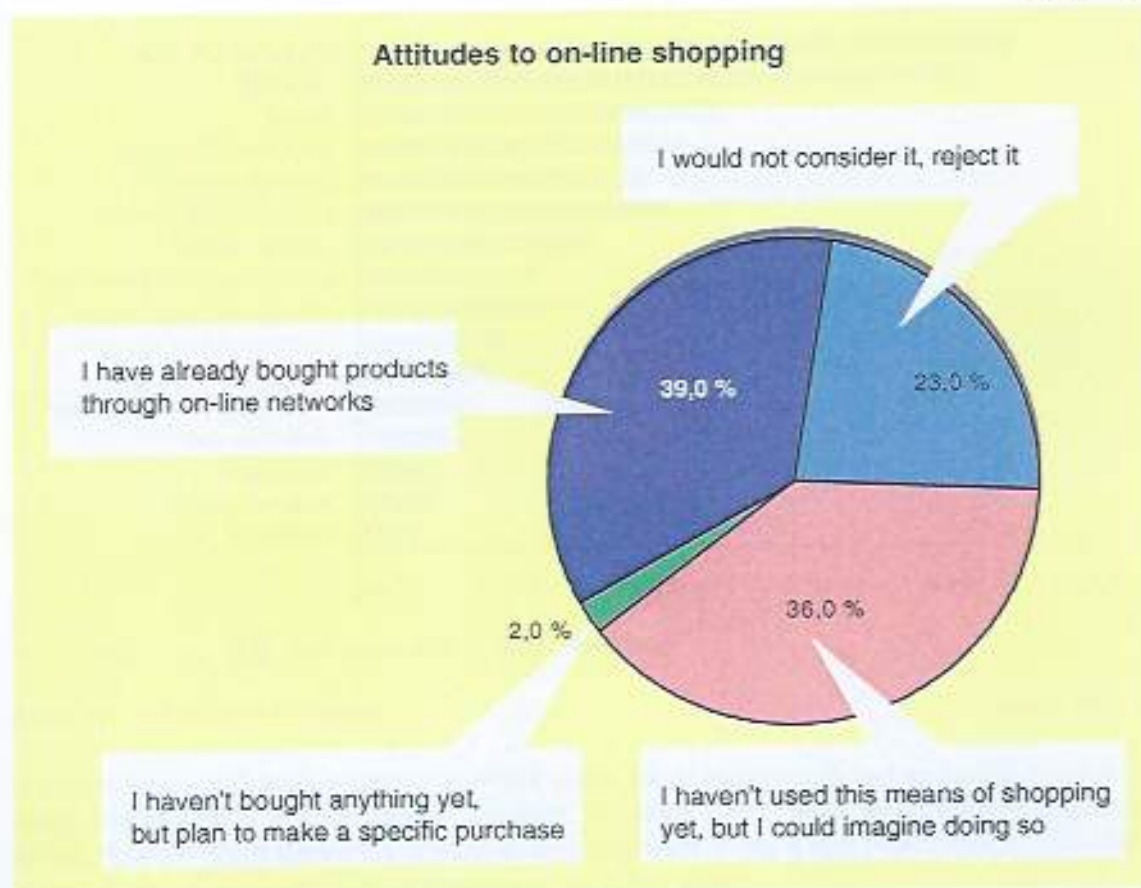
Diagram 34



Europe

Only 23% of all on-line users cannot imagine buying products via the network. In other words, more than 75% of users are already potential customers.

Diagram 35

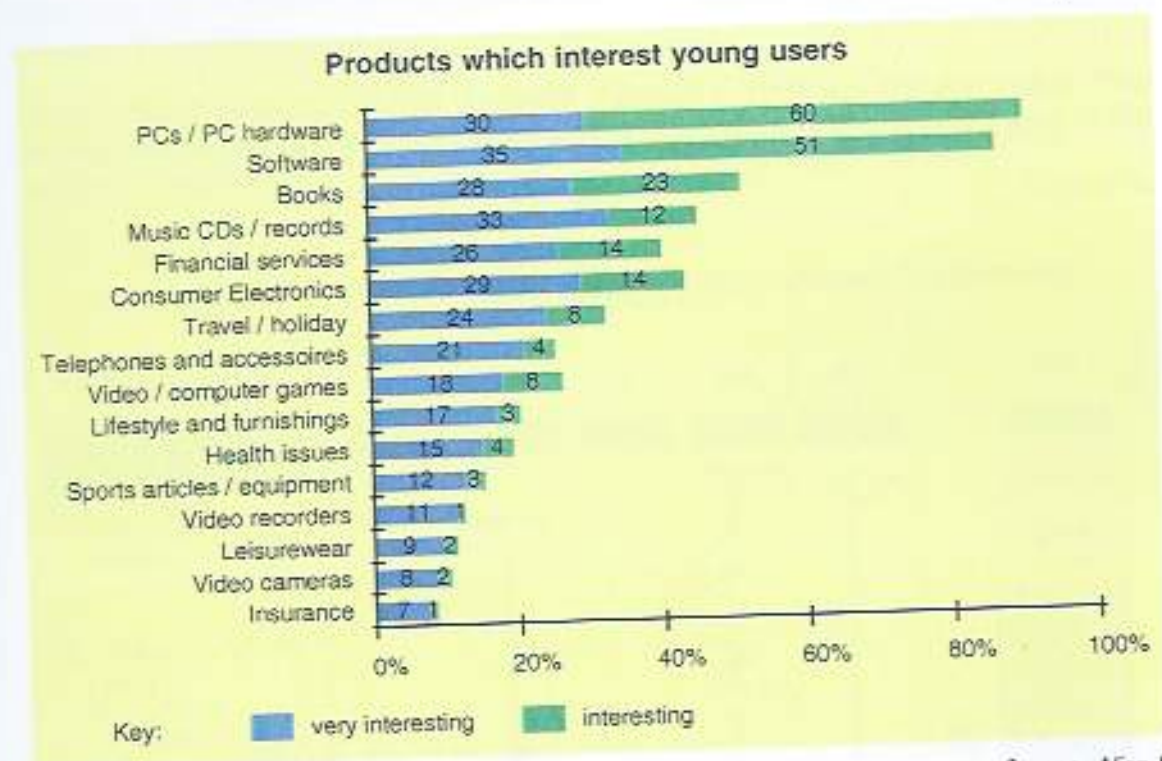


Base: 500 on-line-users in Europe

Source: Alice II

The predominantly male, young and higher-income on-line users are primarily interested in hard/ software, books and CDs/ records. The 'killer application' of electronic banking is only ranked fifth as a 'typical' interest.

Diagram 36

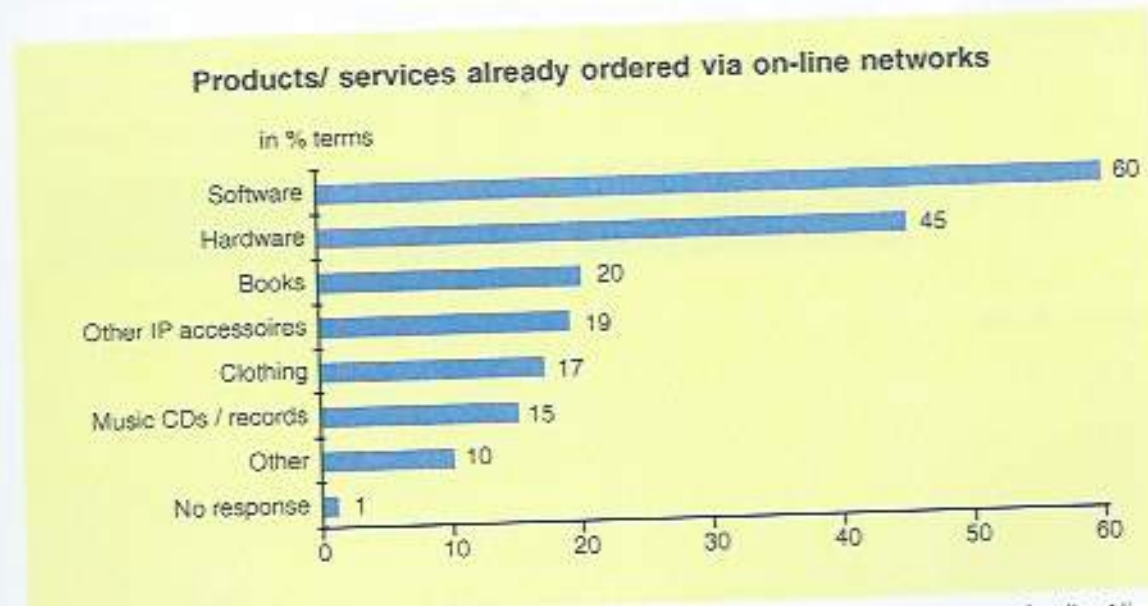


Base: 500 online-users in Europe

Source: Alice II

In accordance with their interests, on-line users have mainly ordered software and hardware, books and IP accessories in the past. However, until 1995, the products available in the network were generally limited to this segment. Only a few mail order companies have offered clothing and other merchandise since 1995.

Diagram 37



Base: people who have already bought products via on-line networks, n= 192
(multiple responses possible)

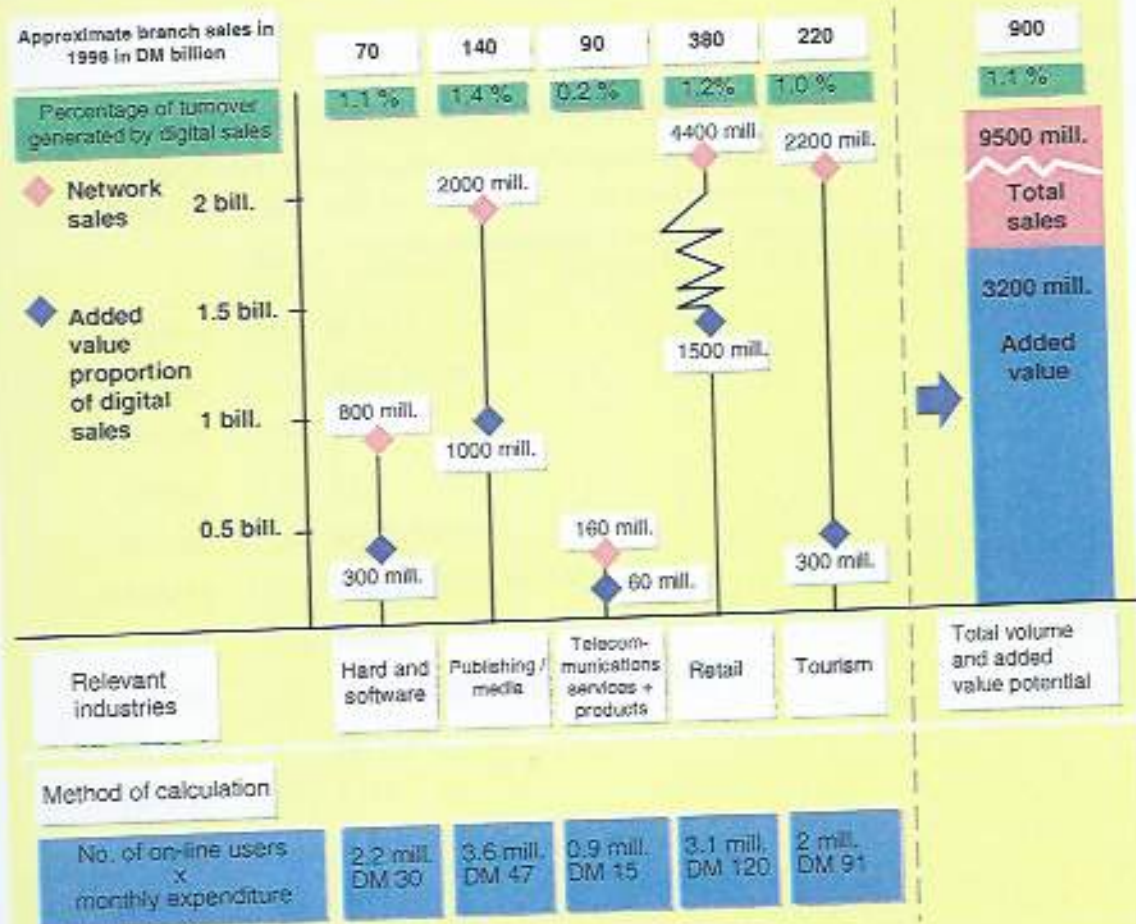
Quelle: Alicell

More than 1.2 of 3 million on-line users in Germany already order products and services via the network today.

The volume of merchandise sold via digital channels in 1996 was DM 800 million. This corresponds to approx. 0.1% of the volume of merchandise and services sold in the relevant industries

Diagram 38

Merchandise turnover via digital sales in 1998 (forecast) in Germany



Source: Diebold

This consumer trend will soon become more strongly established. The basic prerequisite for this is that special marketing services are used to offer appropriate product variants at low prices, supported by multimedia marketing. The low prices can mainly be accorded on the basis of savings made through eliminating retailers.

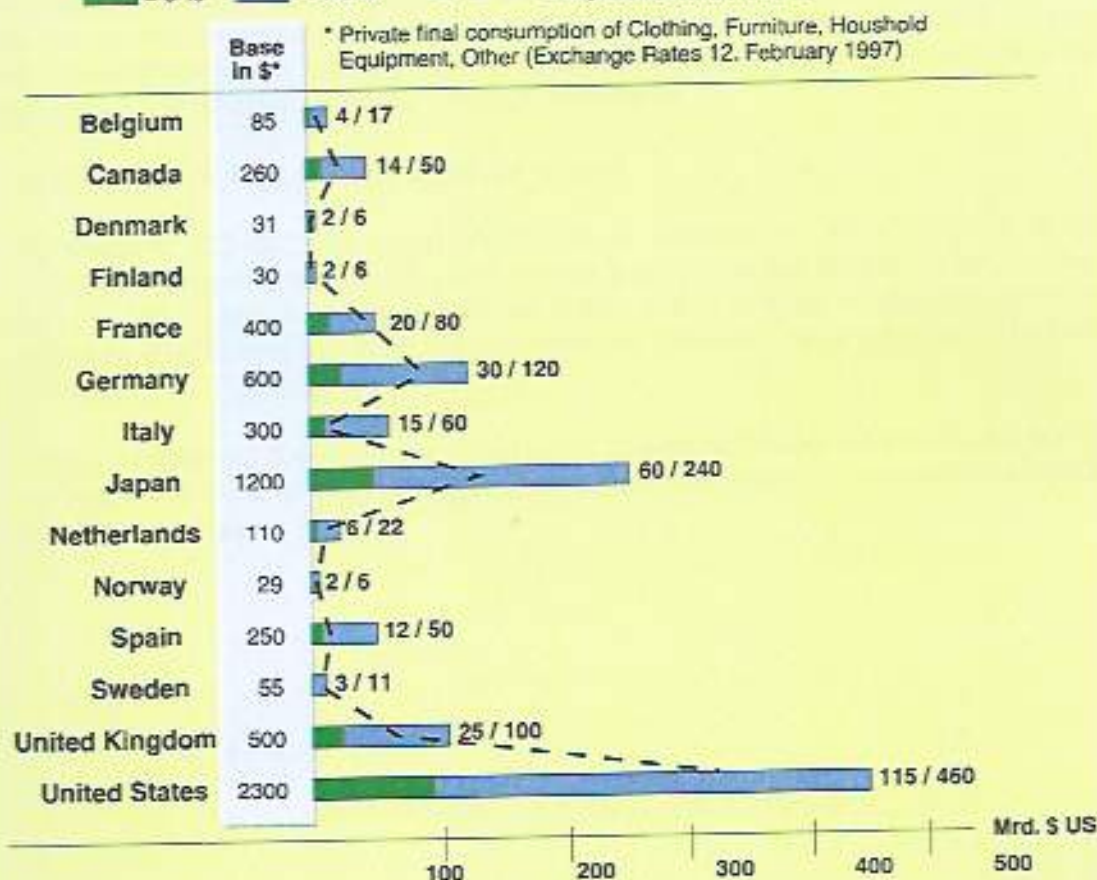
In 1998, around 1.1% of the volume of merchandise in the relevant industries will be ordered via on-line networks, assuming that the above conditions are met. This corresponds to a sales volume of around DM 9.5 billion in Germany.

Diagram 39

Turnover via digital sales in 2005 (forecast)

Anything from 5-20% of the retail market will be captured by digital business by the year 2005

■ = 5 % ■ = 20 % - - - = expected market volume



Source: Prognos, Diebold

3. Digital Business Instruments

3.1 Development Management

Companies which intend to enter the world of multimedia usually implement a pilot project, in which a system is immediately installed 'on a trial basis'. Regardless of whether this is a video communication system, computer based training or marketing presence via a Web server: a pilot project is always the first step. Pilot projects often last much longer than planned (BMW), generally markedly exceed the planned budget (Mercedes-Benz) and are often much less effective than envisaged.

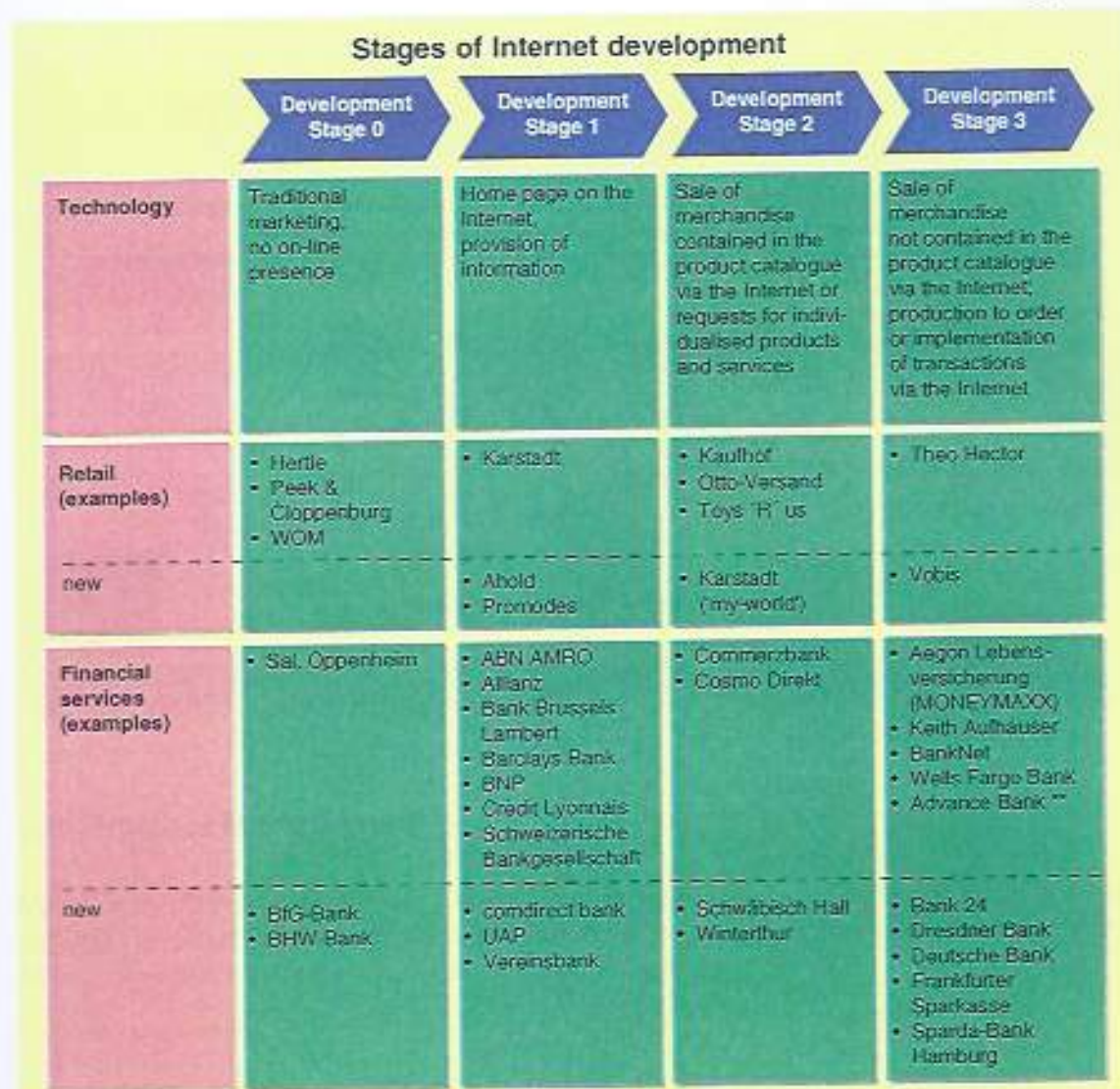
A year soon passes by without any business in sight (Siemens).

These unsuccessful pilot projects can be put down to the absence of development management.

The first step towards entering the multimedia market must be development planning. This can be implemented in several steps. Stages, time limits and milestones must be determined at the outset. Usually, German companies evolve through a 3-stage development process when they enter the world of multimedia.

- ☐ At 'Stage 0', no multimedia technology is used.
- ☐ At 'Stage 1', CD-ROMs are first introduced, for example in CBT (Computer Based Training), video conferencing is used and the first Web pages are placed on the Internet. The latter serve to promote external image and to provide information about the company and its range of products and services. However, there is no facility to order products.
- ☐ Stage 2 offers the customer the opportunity to order products on-line or use on-line services. The merchandise is delivered ex-warehouse and is therefore only available in a limited range.

Diagram 40



Status: January/97

** about to be realised

- Stage 3 permits the customer access to all producible variants. Merchandise is not supplied ex-warehouse, but commissioned to order. This is the typical procedure for ordering a car. Merchandise can only be stored in a warehouse in exceptional cases due to the enormous number of variants.

In the financial services sector, for instance, Bank 24 in T-Online, Deutscher Investment Trust Direkt or from service providers, such as Sixt, customers can already receive information pertaining to the term, conditions and type of contract for a personalised product on the same day.

The following comments regarding product, customer and process management are based on the assumption that the company is already at development stage 3. Financial services, publishing and media firms are pioneers in this respect. However, manufacturers and retailers will soon catch them up.

Web. /

Barclay Square Web Page

In the Barclay Square virtual shopping centre, customers can visit different 'branches' of various service and consumer goods suppliers in the 'shopping malls' and order goods and services online.



3.2 Product Management

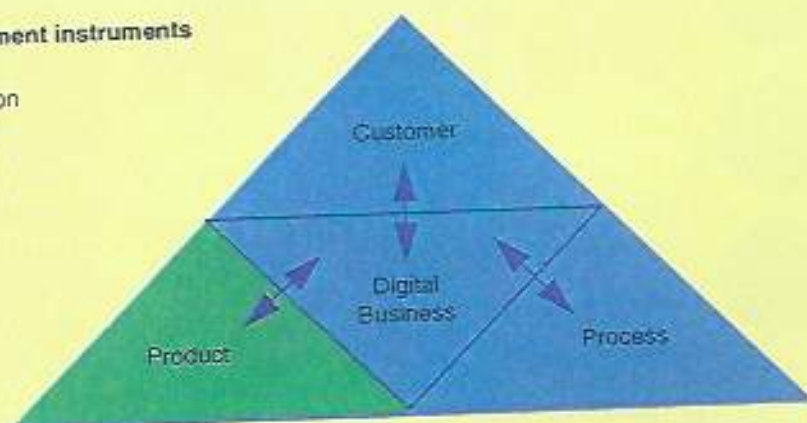
Multimedia product management must provide innovative price differentiation, product variation and communication instruments. The direct interaction between suppliers and consumers offers entirely new means of achieving this.

Diagram 41

Instruments and Structure of Product Management

Product management instruments

- Price differentiation
- Product variation
- Communication



Oracle published this report on one of its customers: 'A market leader in the textiles branch is now selling direct to its customers through the Internet. Customers send their personal measurements via JAVA and the Internet to the jeans manufacturer's automated production - and receive their made-to-measure trousers by post. And what have you got to offer?'

This section explains the principal opportunities that are available.

3.2.1 Pricing

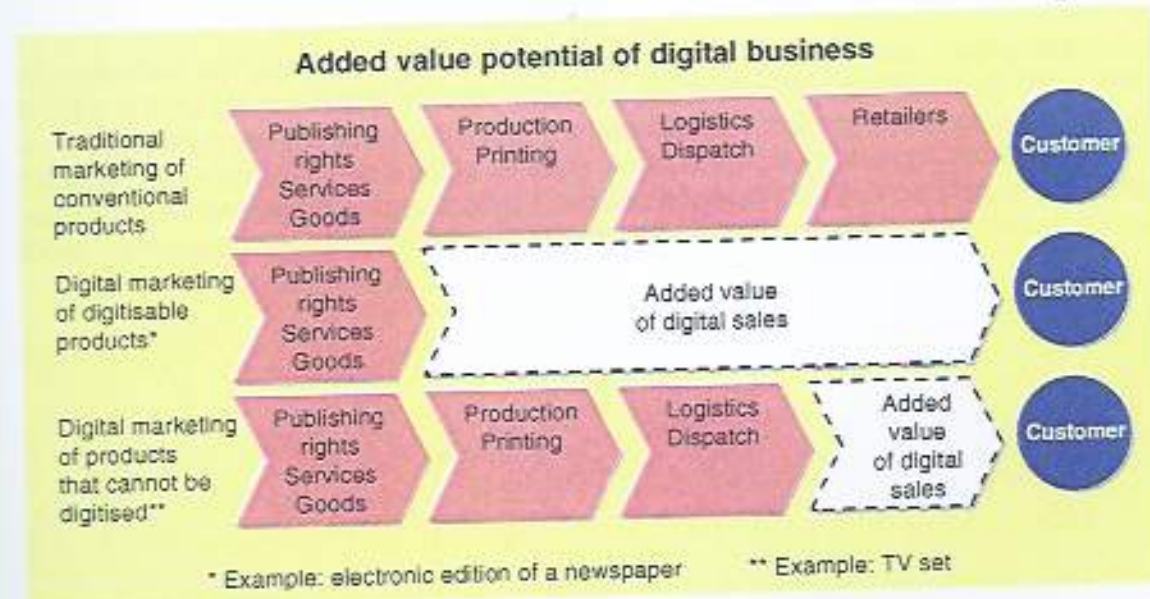
Pricing describes the opportunity to offer optimal prices to different customers in the digital market.

The digital market not only poses entirely new challenges as far as processes and product variation is concerned, price management, in particular, is becoming one of the most important factors of success.

There is almost full transparency in the multimedia market with regard to price-performance ratio. The high market transparency is influenced by extremely fast response times, daily updates and negligible transaction costs. A customer can compare all current prices in a matter of minutes, without having to leave his home to make time-consuming price comparisons in various retail outlets.

This is why a manufacturer must ensure that the prices of his digitally sold goods are extremely low if he wants to be successful. This price advantage is facilitated by the added value of digital sales. Added value is created through eliminating retailers. A TV set manufacturer, which digitally markets its products, saves a retail mark-up of 50%, some of which can be passed on to the consumer.

Diagram 42



In the case of products such as books or newspapers, which can be digitised, the added value is even higher. The supplier also economises on production and transport costs.

This is why newspapers, such as the Chicago Tribune, Frankfurter Allgemeine Zeitung, Washington Post, New York Times, The Hindu, El Mundo, Financial Times, Die Welt, Le Monde and many others are already exploiting the added value of digitisable products to the full.

Web. //

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IN QUESTIONS

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100% Digital.

AD INFO

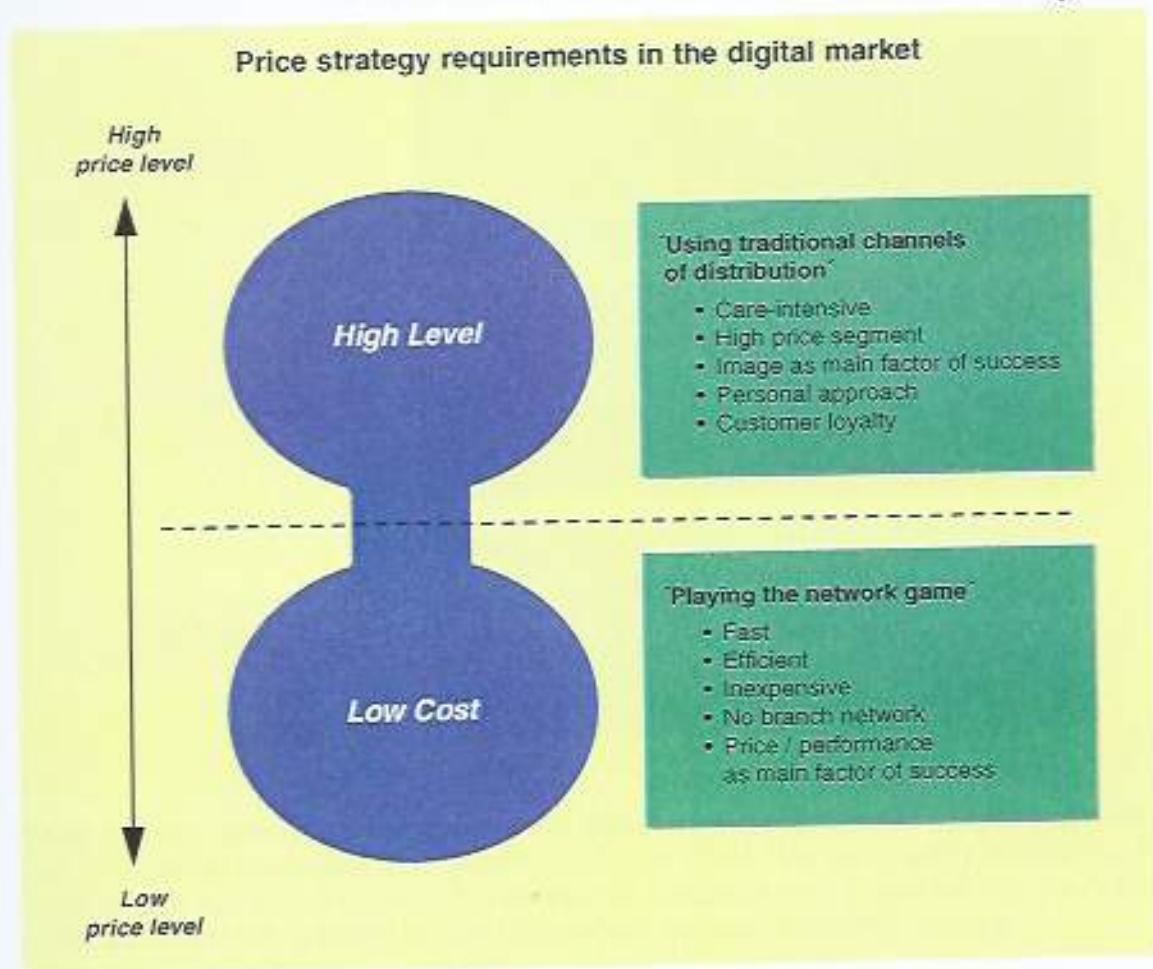
Copyright 1997 The New York Times Company

'The New York Times' newspaper offers its on-line customers a wide range of news and information. For example readers can browse through the latest edition or request older articles from the archive.

All providers are capable of implementing different price strategies. Customers, who purchase through conventional sales channels pay the traditional 'high level' price. Network customers pay the 'low cost' price. The market transparency and price sensitivity of network customers will necessitate different price strategies. Although resistance from retailers or decentral sales organisations can be expected, new competitors, in particular those without large-scale retail or sales organisations, or who have not yet had access to

the retail sector, will create this pricing pressure. Often these companies have been recently established and previously marketed their products and services exclusively in other countries or regions. In the financial services sector, a similar trend is already clearly evident. (See Section 4). Providers must therefore pursue across-the-board price differentiation strategies in future.

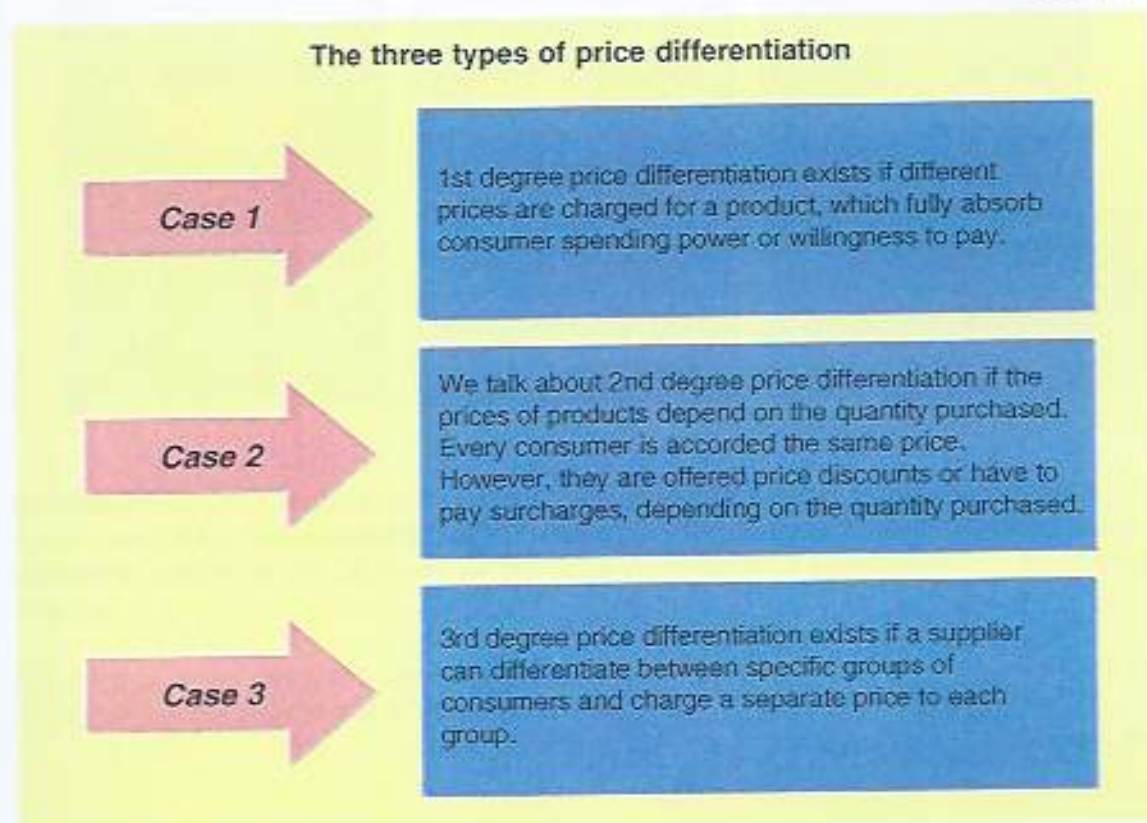
Diagram 43



The possible methods of price differentiation can be derived from economic theory.

Digital sales also provide an ideal framework for implementing profit-bearing price differentiation. In economics, there are three types of price differentiation:

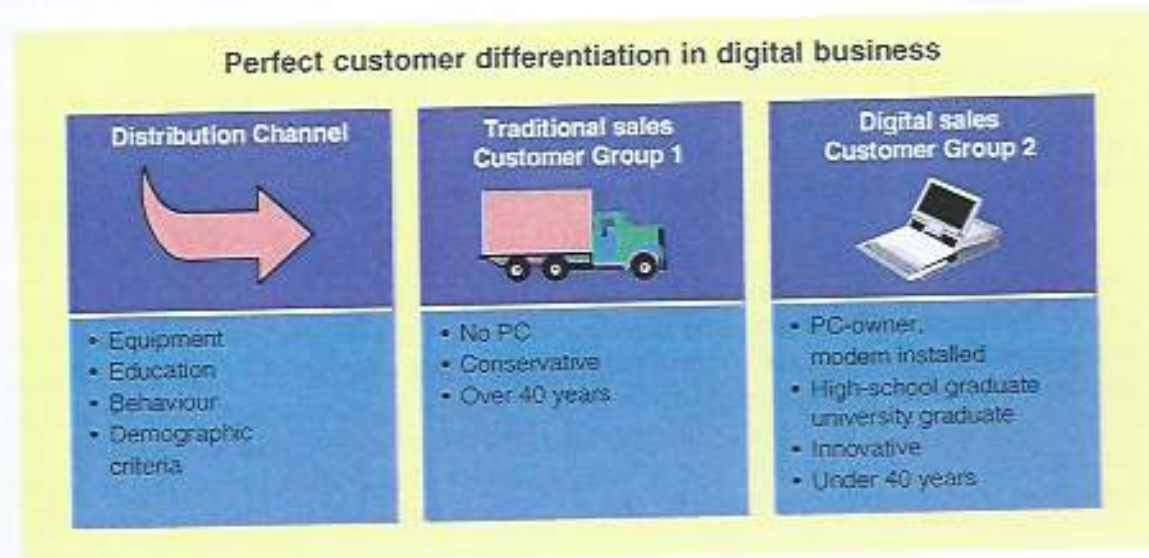
Diagram 44



Case 1 is only theoretically relevant. Case two can be implemented in digital business, just as it can in conventional marketing channels. Case 3 is particularly interesting. A supplier can sell his products in the traditional market at high prices as well as in the digital market at low prices if he can differentiate between consumer groups.

The method of price differentiation is therefore also a method of customer differentiation. If a manufacturer can achieve perfect customer differentiation, it can recruit new customers in the network that it would not otherwise have encountered in the traditional channels. The more heterogeneous both customer groups are, the more likely this is to happen. For example, it would be possible to digitally market the Mercedes A-class car. The average Mercedes-Benz customer is over 50 years old and tends to be conservative. Digitally marketing the A-class car is unlikely to cause substitution effects. On the contrary, it is far more likely that Mercedes-Benz will be addressing a new, young and innovative target group, which would otherwise never visit a car showroom or a Mercedes-Benz dealer. 3rd degree price differentiation also offers interesting opportunities for book clubs, whose customers are generally older, to recruit new customers.

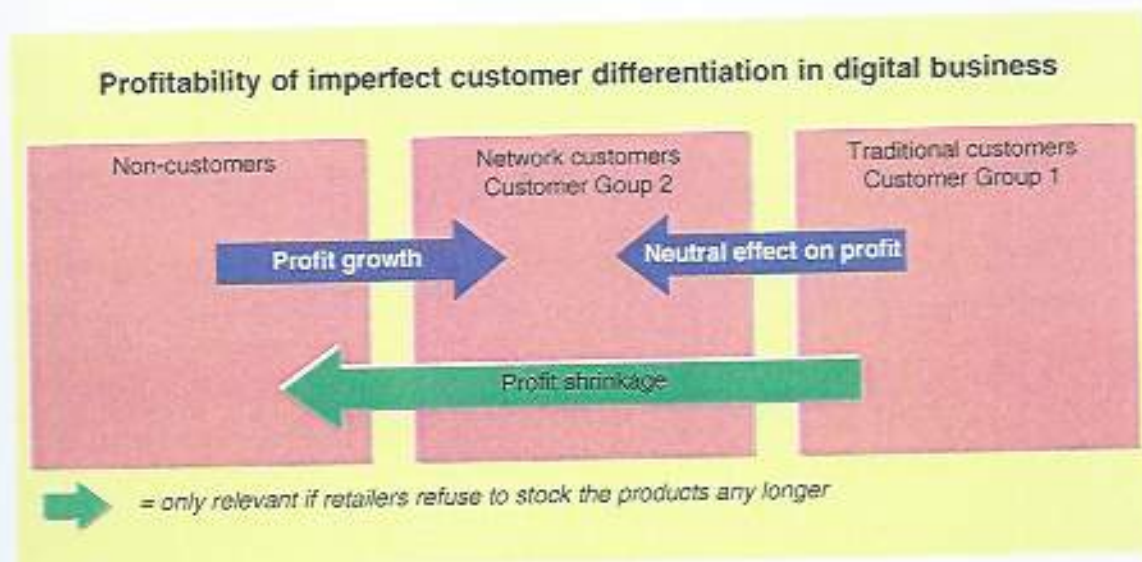
Diagram 45



In most situations, a supplier will be faced with incomplete target group differentiation. In some cases, it is unavoidable that some customers who generally make purchases through traditional channels will be lured by the price advantage of purchasing via the digital channel.

Even if this is the case, the implementation of price differentiation and the utilisation of digital sales channels is still worthwhile.

Diagram 46



As long as no negative action is taken by retailers or the sales force, multimedia marketing and sales always increase profits.*)

Non-customers who become 'network customers' increase profits. Traditional customers who become 'network customers' have a neutral effect on profits - or, if the supplier absorbs the trade margin, they can also increase profits. However, as soon as the retailer refuses to stock a TV set that is also sold digitally at a 40% discount, the loss of traditional customers will have a negative effect on profits.

The action of distributors is therefore a factor which is critical to success. However, in the mid-term, market pressure will force the distributors to modify their approach. Firstly, retailers will set up their own digital marketing channels. Secondly, the strategy of product variation will also mask price differentiation. For example, there is no explanation for the enormous mark-up on a hardback book compared with the paperback version in terms of production costs. There are simply customers who are willing to pay for hardback editions and price-sensitive customers (e.g. students), who opt for the paperback editions.

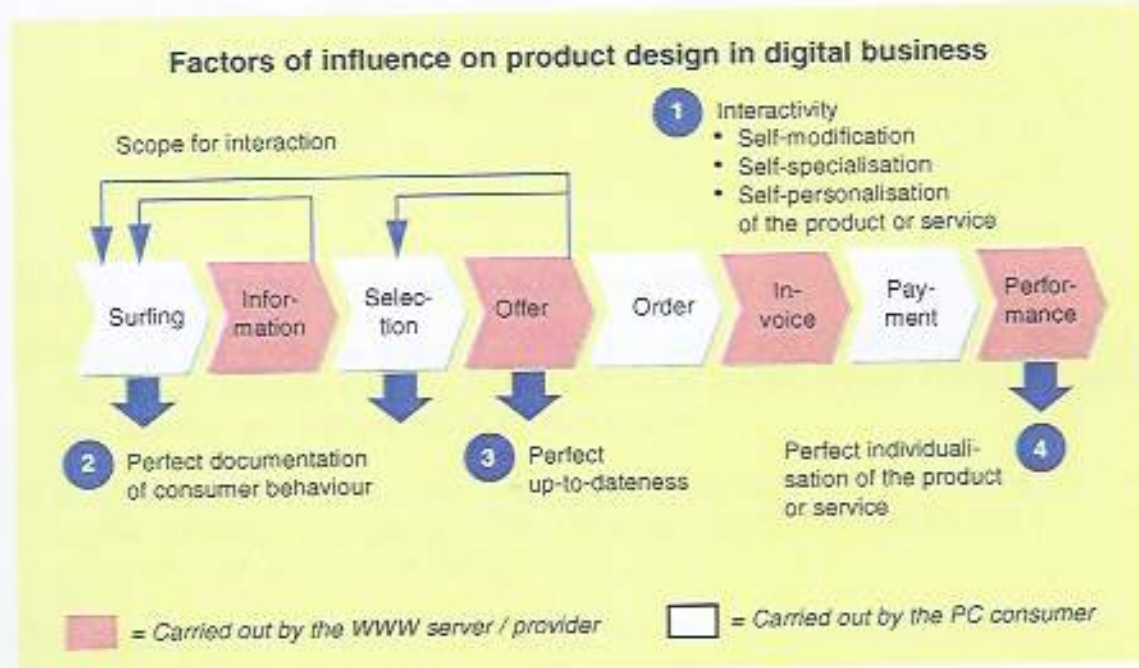
**) Obviously, the costs involved in digital sales must bear relation to proceeds.*

3.2.2 Product Variation

Product variation is a method of enhancing the attractiveness of digitally marketed products.

The advantages of digital business compared with conventional forms of marketing relate to the products in the distribution process, the purchasing process and to the scope for product variation. Digitisable products, particularly newspapers, financial services, travel information, books, films and pictures, can be specifically geared to individual consumer requirements as regards up-to-dateness and other criteria. The interactivity of the purchasing process facilitates this self-modification. However, products which are impossible to digitise, such as TV sets, can also be interactively specified by the customer (e.g. the number of scart connections) in the purchasing process, provided that an appropriate production process exists. In this way, for the same price, product utility can be increased.

Diagram 47



Product management must be based on the factors of influence and the product design.

Services, such as interactivity, perfect up-to-dateness, the documentation of consumer behaviour and the individualisation of products and services, which are possible in the digital marketing process, offer fresh scope for variation.

Depending on the suitability of the products in question for digital marketing, they can be specified by the consumers themselves to optimally reflect their individual needs.

Diagram 48



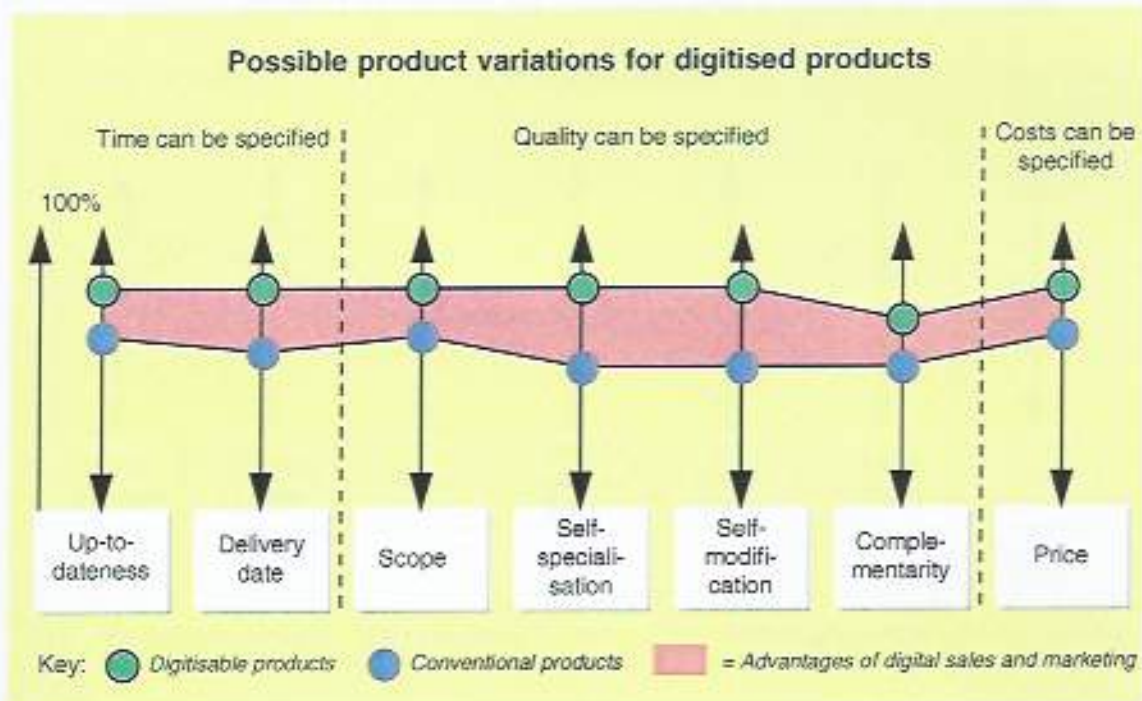
Basically, products can be broken down into four groups:

- ☐ Products which can be digitised, yet are not disposable, such as those offered by Deutsche Lufthansa, the hotel chains Hilton and Marriot, Seatop Reisen, a Munich tour operator, and many financial service providers.
- ☐ Products which can be digitised, are also physically disposable and can be specified on-line, for instance, those of all big publishing houses, newspapers and magazine providers, such as Focus or Spiegel.
- ☐ Products which are impossible to digitise, but can be individualised, such as cars.
- ☐ Products which are impossible to digitise, and cannot be individualised, such as petrol.

Taking the example of newspapers and books on the one hand, and TV and video on the other, we will attempt to show the variation possibilities of products which can be digitised and are disposable and products which cannot be digitised, but are variable.

You will see that both types of products permit customer product specification, which offers a markedly higher product/ utility ratio with regard to price, quality and costs.

Diagram 49



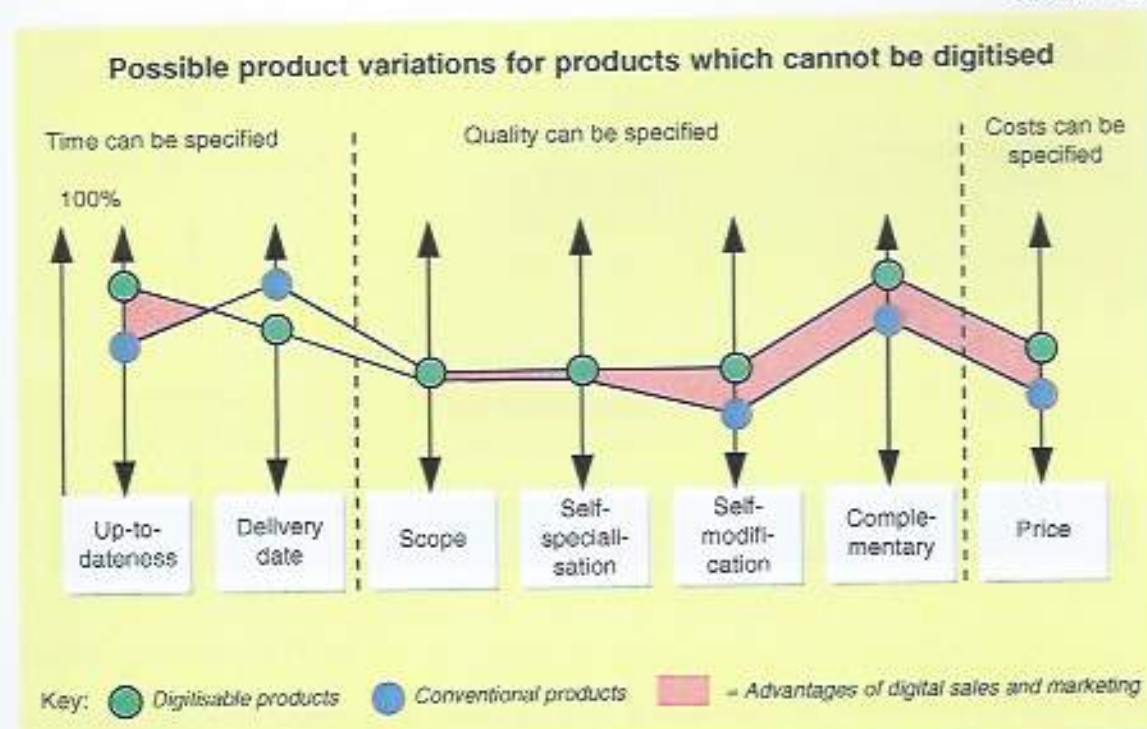
Example: newspaper edition

There are three separate dimensions in which product variations can be achieved:

1. The dimension of time: the extent to which a product is up-to-date and its delivery date. An electronic newspaper can be up-to-the-minute and relayed to the second of the requested delivery time.
2. The dimension of quality: scope, specialisation, modification and complementarity. In this dimension, the relayed article can be precisely adapted to meet the recipient's needs.
3. The dimension of costs: a maximum price can be determined on an individual basis for the requested newspaper edition.

The scope to vary digitisable products, such as a newspaper, is practically unlimited in terms of quality, time and costs. To a large extent, a consumer can specify the product according to his requirements. A person who purchases a conventional newspaper can only ensure that his preferences are met in terms of quality, time and costs by carefully selecting a special edition.

Diagram 50

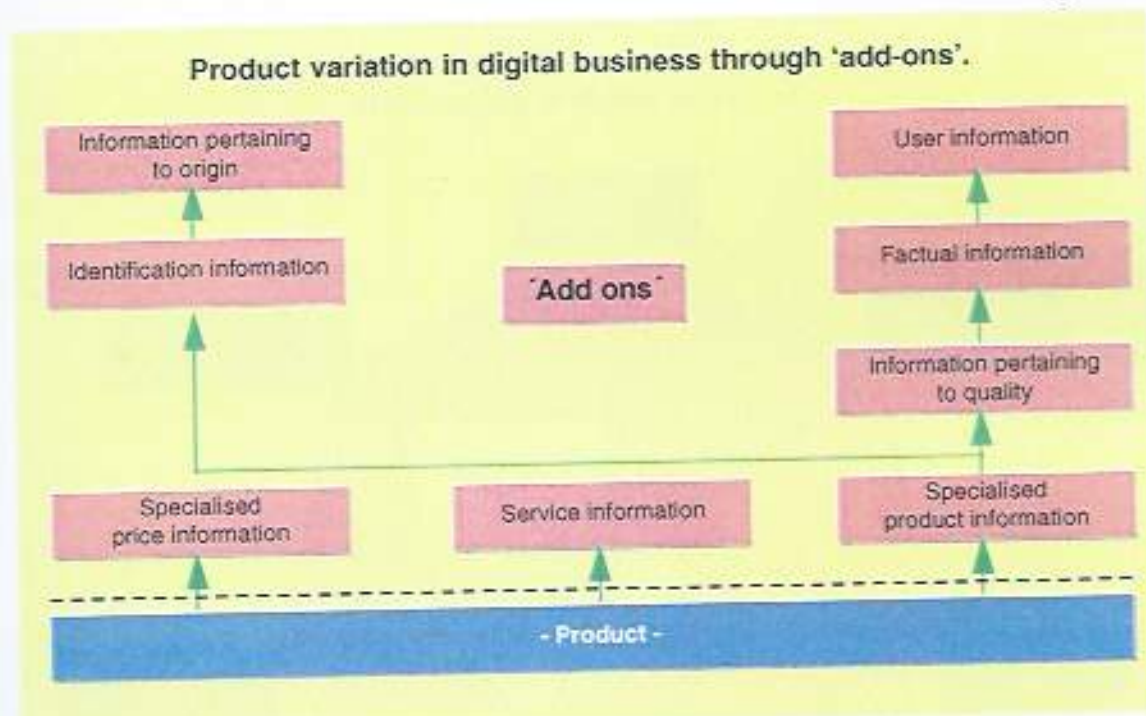


Example: purchase of a TV set

The scope to vary products which cannot be digitised, but are only marketed via digital media, is limited. Despite this, TV sets sold through digital channels will be the latest model because they have not been stocked at a retail outlet before sale. Delivery dates can be specified by the customer, although the product cannot be delivered immediately as is the case when a set is bought from a retailer. However, there are advantages to be gained through the facility for self-modification and maximum price limits when customers specify the individual components of a TV set. For example, potential Hyundai customers can specify the fittings, engine, colour etc. of a car on the Internet and request a direct quotation. FIAT even permits the customer to design their dream car on-line. The direct complementarity of TV sets, video recorders or satellite equipment can also be constantly guaranteed. The manufacturer's warranty is far more valuable than any warranty given by a retailer. A further advantage of digital sales in the above case is the clear price advantage of 50% which is achieved through the elimination of the trade margin.

Interaction with customers also permits product 'add-ons', for example, in the form of information.

Diagram 51



Example: purchase of a TV set

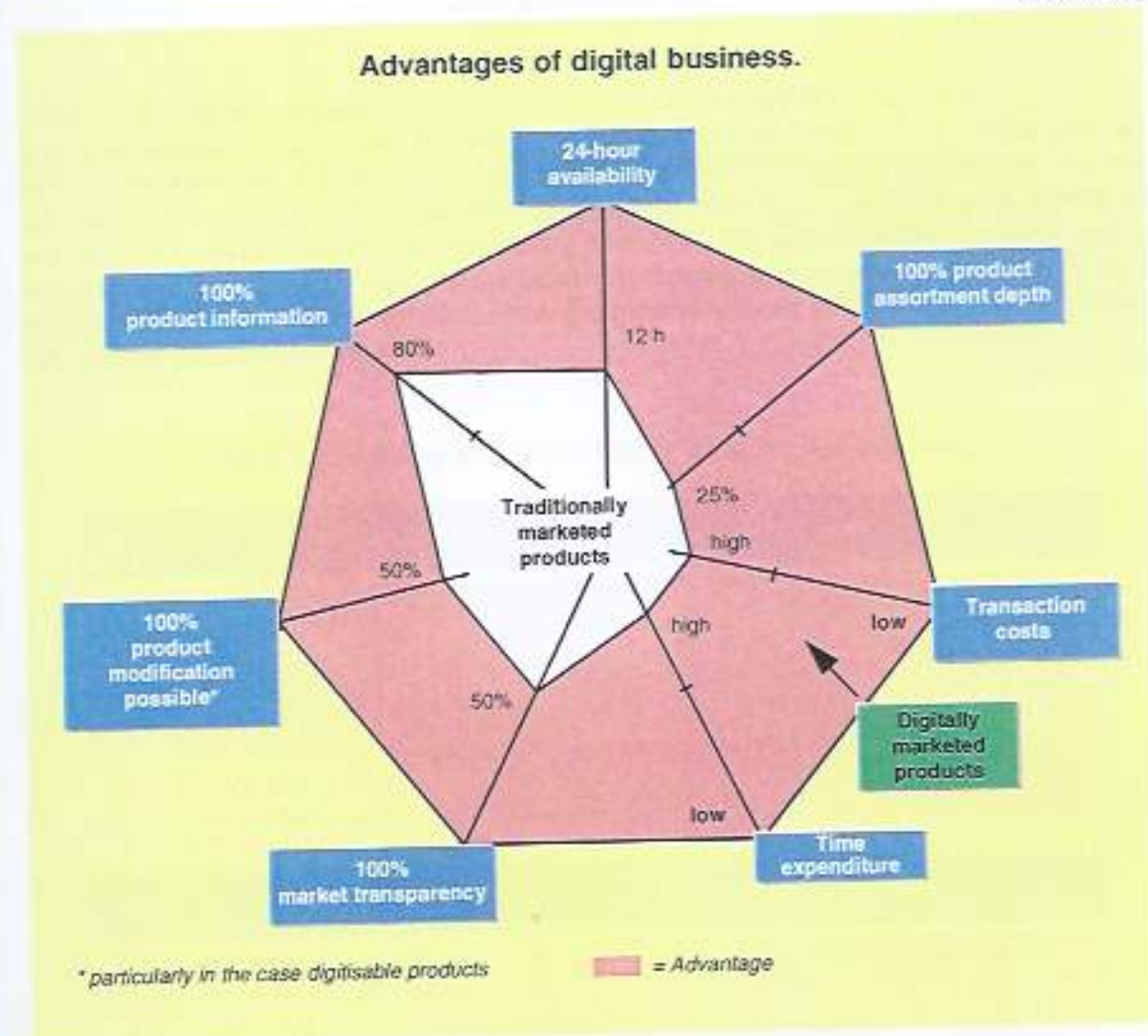
Information can be provided for every product, at any level of up-to-dateness and in any depth to reduce the purchase risk. The value of this information for the same price is the value of the product for the customers.

This information can pertain to

1. the product itself and its possible variations.
2. the price and its upper / lower limits.
3. possible forms of distribution and related service information.

The scope for product management in multimedia sales can be summarised. Both the purchasing process and the scope to vary products considerably increase the advantages of digital marketing compared with traditional forms of distribution.

Diagram 52



3.2.3 Communication/ Advertising

Advertising offers new opportunities to finance on-line media and to enhance their attractiveness

Communication accompanies the price and product strategy and creates the prerequisites for customer management. In light of the increasing commercialisation of the Internet and on-line services, advertising proceeds are now taking on central importance. In comparison, the significance of subscriber fees, which were previously the only source of income in the on-line market, is diminishing. The declining proceeds from member subscriptions are increasingly being substituted by proceeds from on-line advertising and transactions. The following statistics show the quarterly sales of the major advertisers or advertising sites on the Internet:

Diagram 53

Top 5 advertisers and advertising sites on the Internet.

Top 5 Internet / on-line Advertisers		
Rank	Advertisers	Budget (1995, 4th quarter)
1	AT&T	\$ 567,000
2	Netscape	\$ 556,000
3	Internet Shopping Network	\$ 329,000
4	NECX Direct	\$ 322,000
5	Mastercard	\$ 278,000

Top 5 Internet / on-line Advertising sites		
Rank	Advertising sites	Proceeds (1995, 4th quarter)
1	Netscape	\$ 1.766,000
2	Lycos	\$ 1.296,000
3	Infoseek	\$ 1.215,000
4	Yahoo!	\$ 1.086,000
5	Pathfinder	\$ 810,000

Source: Montgomery Securities, Webtrack

A marked increase in advertising activity is expected in Germany from 1997 onwards now that a basic currency for advertising in on-line services has been established. (See the section entitled 'Performance indicators for advertising in on-line services' in this respect).

Types of on-line advertising.

The types of on-line advertising can be classified in terms of 3 criteria.

- ☐ **Region:** advertisements can be placed for regional products and services only. Display advertisements or classifieds (job market, car or property market) in connection with digital city and local community information (opening hours of administrative offices and public institutions, events calendar) are possible in this respect (e.g. Chicago Tribune). Furthermore, advertisements for intraregional products and services at national and international level are also possible. The Internet has the particular advantage that companies - especially smaller and medium-sized companies - can advertise and market their products on a global basis there.
- ☐ **Presentation sequence:** normally, on-line advertising is realised in the form of parallel advertising alongside the editorial section. On the other hand, it would also be feasible to use advertising to bridge waiting times, for example, when Internet pages are being loaded or when the user purposely takes a break.

Diagram 54



- ☐ **Medium:** advertisements can be placed directly in on-line services (AOL, CompuServe, T-Online etc.) or in closed Internet sites. Attractive advertising in the form of Infomercials can thus operate as an independent profit centre.

Free advertising placed on the Internet is an entirely new form of advertising. Search engines can link advertising pages with various search parameters (Lycos). If the user enters a word as a search parameter, an advertising page which is linked to this search parameter is displayed. In this way, it is possible to link the term, BMW, with a Mercedes advertisement. When 'BMW' is entered as a search parameter, all information in the network pertaining to BMW is compiled. At the same time, an advertising page for Mercedes is displayed, which offers the user the opportunity to request information on Mercedes ('target advertising'). The search engine provider receives a fee from the advertiser for every user contact with the advertising site.

The advantages of on-line advertising

On-line media offer both advertisers and network users considerable advantages compared with traditional mass media:

Individuality: on-line media are ideal for personalising advertising content ('target advertising'). In this way, advertising can be geared to the interests of users ('segment of one'). Customer requirements are either ascertained by way of on-line questionnaires or by means of the disclosed search and utilisation behaviour. It is also advantageous to insert pre-selected advertisements in individual communities of interest (e.g. business, travel, sports). The dispersion losses associated with traditional advertising are thus reduced. On-line media are leading to the fusion of advertising and direct marketing.

Diagram 55



Interactivity: one basic feature is that the user specifically determines the content and quantity of the information that he wishes to receive. In traditional advertising, the presentation of products and the company take precedence. However, on-line advertising can also be linked to the sale of products and/or services. In contrast to traditional one-way communication, multi-channel communication is possible on-line, which permits dialogue or feedback. Because the recipient plays an active role, success can be measured directly and recorded in log files.

Flexibility: in on-line advertisements, advertising messages can be updated quickly and on a regular basis. This also applies to individual elements, which can be completely replaced or varied on a daily or even hourly basis. A further advantage is that pre-tests and advertising optimisation are simple and therefore inexpensive to implement.

Availability: a further major advantage of on-line advertising as opposed to TV and radio advertising is that it is always available ('prime time is my time'). This applies both to time and space. Advertising is therefore less an instrument of publicity and, to a greater extent, additional service components such as information pertaining to products and prices and information on delivery from a service provider.

Multimedia compatibility: by using multimedia modules, e.g. moving images and audio elements, utility for individual customer groups can be markedly increased. There are advantages in this area in comparison with the printed media. The way that multimedia functions results in more attention being paid to the product and the company. This raises levels of product awareness and buying intention.

Community: in traditional advertising, the only information provided pertains to the advertising company. On-line media have the advantage that information on a product category which is generated by a user can be processed and displayed. This type of information could be contained in case histories or commentaries. Furthermore discussion forums provide recipients with a direct, interactive means of exchanging information and opinions with the manufacturer and, in particular, with one another.

The following diagram shows the current trends in the area of on-line advertising:

Diagram 56



Limitations of on-line advertising

As well as advantages, on-line advertising also has disadvantages, which must be taken into consideration in the design of advertisements.

- Particular attention should be paid to ensuring that the users' interest is aroused. Because every advertisement can be skipped over, passive advertising consumption - as is predominantly the case in TV media - is the exception to the rule. This means that uninteresting advertising in on-line media has little chance of being effective.
- In contrast to TV, radio or the printed media, the user is paying for on-line time. This means that long waits whilst advertising is being downloaded could result in the user cancelling the loading process. This risk can be reduced by resorting to smaller infomercials to bridge waiting times.
- The guiding criteria and abort mechanisms, which are familiar in the traditional mass media advertising industry, only exist in some areas (see the following section in this respect).

- ☐ At present, on-line media do not generate the user figures that the advertising industry is accustomed to in the traditional mass media.

In summary, the following can be said:

- 1) The disadvantages of on-line media can be overcome through increasing user figures, increasing the scope of transmission/ improving compression technology, as well as through well-designed advertisements, which are geared to the specific requirements of this new medium.
- 2) Successful on-line advertising must utilise the specific advantages of the medium and not simply copy the forms of advertising used in the areas of TV, radio and the printed media.

Performance indicators for on-line advertising.

In Germany, A.C. Nielsen Gesellschaft für Konsum- Markt- und Absatzforschung (GfK), a consumer, market and sales research association, the Informationsgemeinschaft zur Festlegung der Verbreitung von Werbeträgern (IVW) (Information Association to Ascertain the Dissemination of Advertising Media) and the Verband Deutscher Zeitschriftenverleger (VDZ) (Association of German Newspaper Publishers) are attempting to find appropriate performance indicators for on-line media. A generally acceptable measurement criterion for on-line advertising is necessary to facilitate performance comparisons with other advertising media.

At present, the following performance indicators for on-line advertising are used:

Perception-based

'Hits' are one element of an Internet offer. Depending on how an Internet page is configured, it can result in one or several 'hits' per page.

'Visits' or 'sessions' are the number of related pages which are retrieved i.e. the number of visits to an on-line service over a specific period of time. The number of pages which are retrieved on each visit is not recorded. Performance is measured in terms of the number of pages that are accessed over a specific period of time. A visit is over when a visitor fails to retrieve a new page within a specific period of time (e.g. ten minutes).

'Page clicks' or 'page views' are the number of times all on-line users view a specific page within a specific period of time. If further display elements on this page (e.g. supplementary graphics) are retrieved, this does not increase the number of page views.

'Ad views'. This variant, which is also a perception-based performance indicator, records the number of pages or objects which are relevant to advertising that are retrieved.

Response-based

'Ad clicks' are the number of clicks on a hyperlink leading to information provided by an advertiser. In this respect, a response refers to clicking onto a hyperlink. The performance indicator is the number of recorded re-routes on the basis of a displayed advertisement.

User-based

Users: the number of people who have viewed the products or services of an advertiser.

'Registered users': the number of user names, passwords or people identified on the basis of demographic data, who have viewed the products or services of an advertiser.

'Duration of visit' is a variation of the registered user indicator. The duration of a visit is taken as a performance indicator. In this case, performance is measured in terms of the total duration of the visits of all registered users.

Purchase-based

'Buyers'. This method ascertains sales, profit margins or profit on the basis of the sale of products or services to on-line users, who discovered the electronic shopping page in question through displayed advertisements.

Diagram 57



Who is the user? - Initial problem-solving approaches.

At present, there are three approaches to solve the 'Who is the user?' problem:

- ☐ Personal data voluntarily provided by the user (e.g. in order to access personalised services or to be eligible for a price discount).
- ☐ Automated analysis of the search behaviour of the user (search parameters, duration of visit in individual areas and content, user tagging)
- ☐ Traditional market research, as is carried out in other media, by means of questionnaires or focus groups.

Advertising costs for on-line media.

Business models for on-line advertising assume that the quantity of advertising sold will increase as the number of subscribers to the medium increase. Compared with direct marketing prices, CPMs (costs per thousand contacts) in established services such as AOL or T-Online are quite high (more than DM 140 in Germany). The following diagram shows a comparison of the advertising costs in on-line media and selected traditional media:

A comparison of advertising costs in on-line media and traditional media.

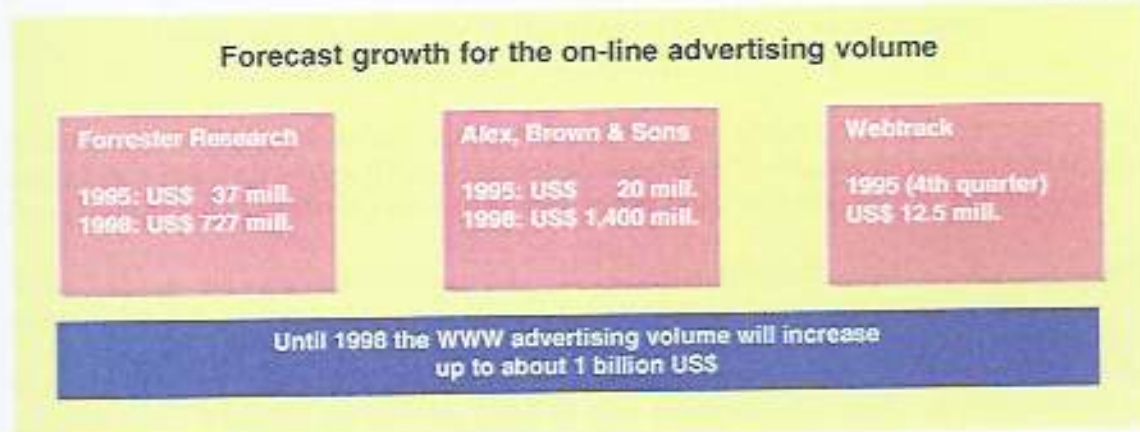
On-line media		Other media	
	CPM		CPM (USA)
<input type="checkbox"/> Hot Wired	\$ 150	<input type="checkbox"/> Trade journal (1-page, colour)	\$ 150 (Tennis Mag.)
<input type="checkbox"/> "No Name"		<input type="checkbox"/> Newspaper (1-page)	\$ 82 (FAZ)
<input type="checkbox"/> Search engine	\$ 10	<input type="checkbox"/> Current affairs magazine (1-page, colour)	\$ 53 (Der Spiegel)
		<input type="checkbox"/> TV (prime time, 30 seconds)	\$ 12 (RTL)
		<input type="checkbox"/> Local radio	\$ 3 (WDR1)
			\$ 63 (Tennis)
			\$ 60 (Boston Globe)
			\$ 44 (Newsweek)
			\$ 6 (Network News)
			\$ 1 (Rush Limbaugh)

Source: Interactive Week (08.05.1996)

Source: Forrester Research (1994)

High growth rates for the on-line advertising volume are forecast, particularly in the graphics section of the Internet, the World Wide Web.

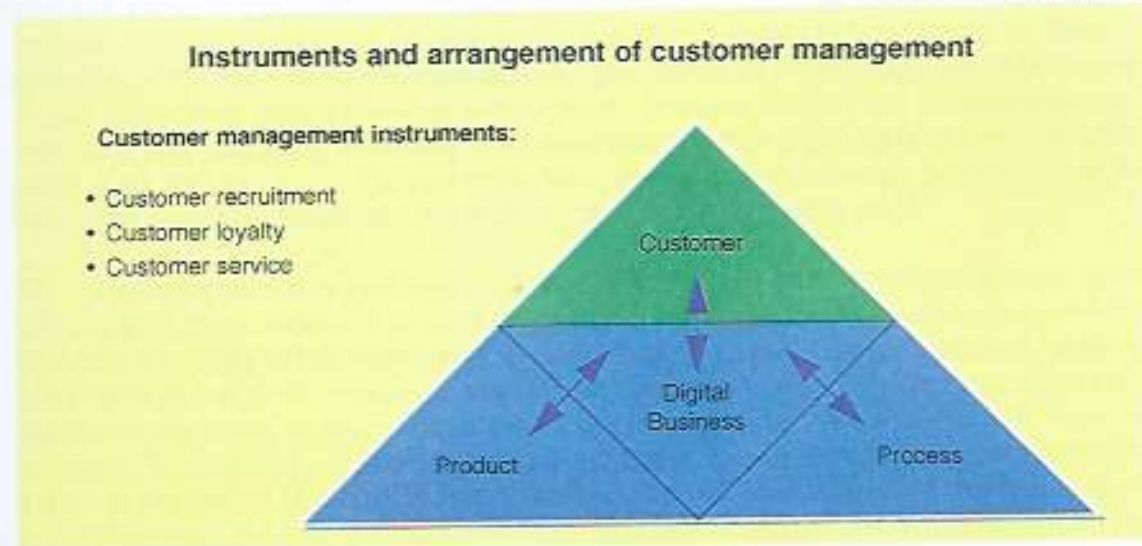
Diagram 59



3.3 Customer Management

New methods of customer recruitment, achieving customer loyalty and customer service must be implemented in digital business. The inherent features of multimedia offer great potential in this respect.

Diagram 60



Traditional customer management mechanisms (e.g. for clubs, financial services or catalogue dispatchers) must be modified or supplemented.

The following section provides points of reference for digital customer management.

3.3.1 Customer Recruitment

Multimedia offers innovative opportunities and considerable cost-cutting potential in the area of customer recruitment.

'Hardly anything is more expensive than recruiting new customers', managers with sales experience often complain. It has been ascertained that the costs associated with a business relationship tend to diminish over time: often to 20-30% below the original level.

In light of this, an investigation must be made into the extent to which on-line media are suitable for supporting the difficult and costly process of customer recruitment.

In terms of its structure, the Internet is a 'pull' medium rather than a 'push' medium. In its original form, it cannot be actively used to offer products, services and information to potential customers. The Internet is far more a multitude of products, services and information, which potential customers must search for themselves.

In this respect, it is necessary to investigate the downstream stages prior to a purchase, such as needs, product familiarity, image, utility and preference in terms of how they are influenced by on-line media and to adapt customer recruitment methods accordingly.

The first stage of a purchasing process model is the activation of a need by means of an internal or external stimulus. On-line media are ideally suited to function as an external stimulus, in the form of an infomercial or a Java-animated home page. Multimedia animated advertising also generates 'added value', arouses the interest of potential customers and prompts them to actively seek information about products and services which meet their requirements. Furthermore, awareness of a company's products can be increased through appropriate hyperlinks from frequently visited pages.

The information which is provided with regard to the real product characteristics forms the basis of the customer's perception of these products. Intersubjective, non-uniform perception creates virtual reality, which can deviate to a great extent from actual reality. In this phase of the purchasing process, on-line media offer the opportunity to counteract excessive deviation. In this phase, quality of utilisation plays a central role. It must be simple and fast. Simplicity is achieved through intuitive, self-explanatory user interfaces, a clear presentation of products and services and on-line help functions. Speed pertains to minimal waiting times (seldom and brief) and fast access to the entire range of products and services.

Web. III

Toys 'R' Us Web Page



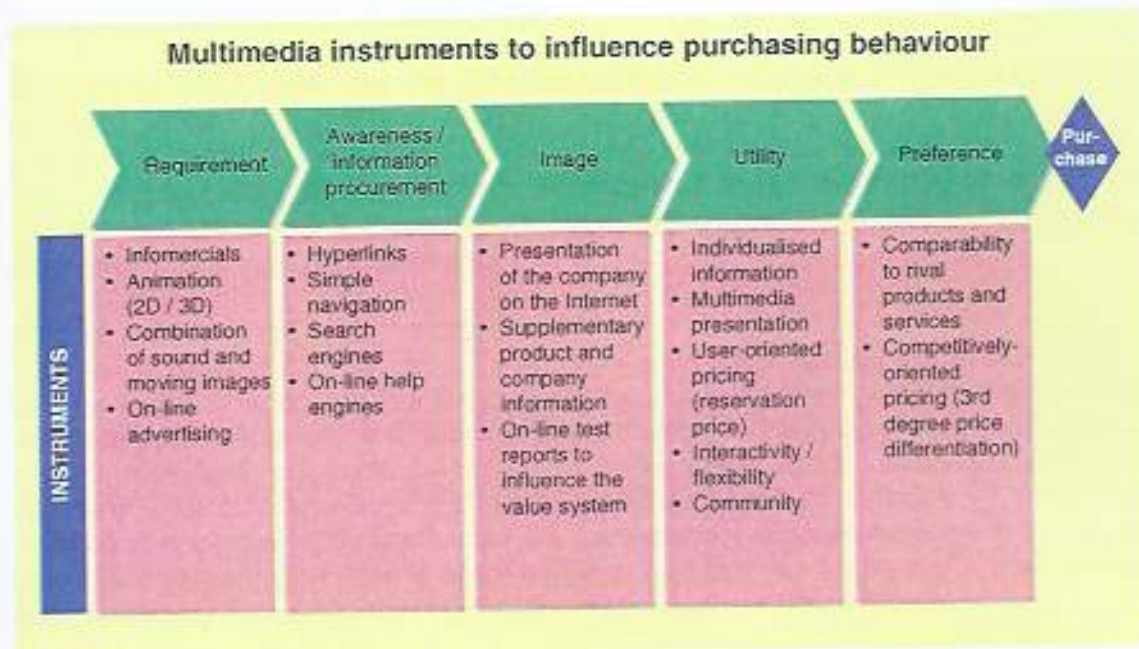
The visual display of the Web page is intended to prompt customers to request information on Toys 'R' Us and, possibly, to purchase articles.

This psychological process is affected by the values held by the potential customer. These are directly related to the image of the product or company. A company that is found on the Internet is promoting a modern and future-oriented image.

In their product evaluation, potential new customers link product characteristics with an overall picture and compare it with their personal objectives and frame of reference. In this phase, on-line media in the form of individualised information, can be of particular assistance and visual presentation can increase the subjectively perceived utility of the product. In this respect, emotionally appealing presentations, little text, plenty of graphics (possibly supplemented by sound and moving images) hold great potential.

If the expected utility of the product is higher than the price and, if the discrepancy between these two variables is greater than that of all rival products and services, the company has gained a new customer. In order to support this phase of customer recruitment, market research methods, such as conjoint analyses, can be implemented on-line.

Diagram 61



The following concepts are suitable to support customer recruitment using on-line media.

1) Linking marketing activities with search engines

As described above, the Internet is a 'pull' medium. Potential customers must actively search for products or services. If a company intends to market its products and services via the Internet, search engines, e.g. DINO, Infoseek or Alta Vista, are of central importance. A search parameter given by a customer permits the display of advertisements which are contextually relevant and precisely meets his needs. The advertising site can be directly linked to product and service information or contain this type of information (infomercials) and, in turn, be linked to an order form or an interactive application (E-mail, chat).

2) Marketing products in communities of interest

Communities of interest (e.g. business, health, lifestyles, tourism or sport), already contain a vast number of people who share the same interests'. Product or service providers can benefit considerably if they directly incorporate their products and services into a community of interest or provide a direct link from one of these 'communities' to their home page.

The advantages of the above include the minimisation of distribution losses and the opportunity to address specific target groups of customers. The recruitment of new customers is thereby simplified and the average costs for customer recruitment are reduced.

3) Establishment/ transfer of brand names

Established brand names are one of the central factors of success in marketing products and services via on-line media. Traditionally powerful brands (e.g. Coca Cola, BMW, Focus or Sony) can be directly transferred to on-line media because people will search for them. In comparison, other products must be given a brand name which is suitable for on-line communications and conveys the 'value proposition' in the on-line medium (e.g. Hot Wired, Pathfinder, Access Atlanta).

4) Regionally adapted customer recruitment

On-line media offer companies the opportunity to market their products and services world-wide. This especially gives small and medium-sized companies the chance to broach new countries and regions. In this respect, it is vital that regional customs and traditions are taken into consideration (e.g. in Japan, white is the colour of mourning). Advertisements and the range of products must be appropriately adapted in terms of language, colour and presentation. This is not a problem, because the origin of the user can be ascertained.

5) Further means of recruiting new customers

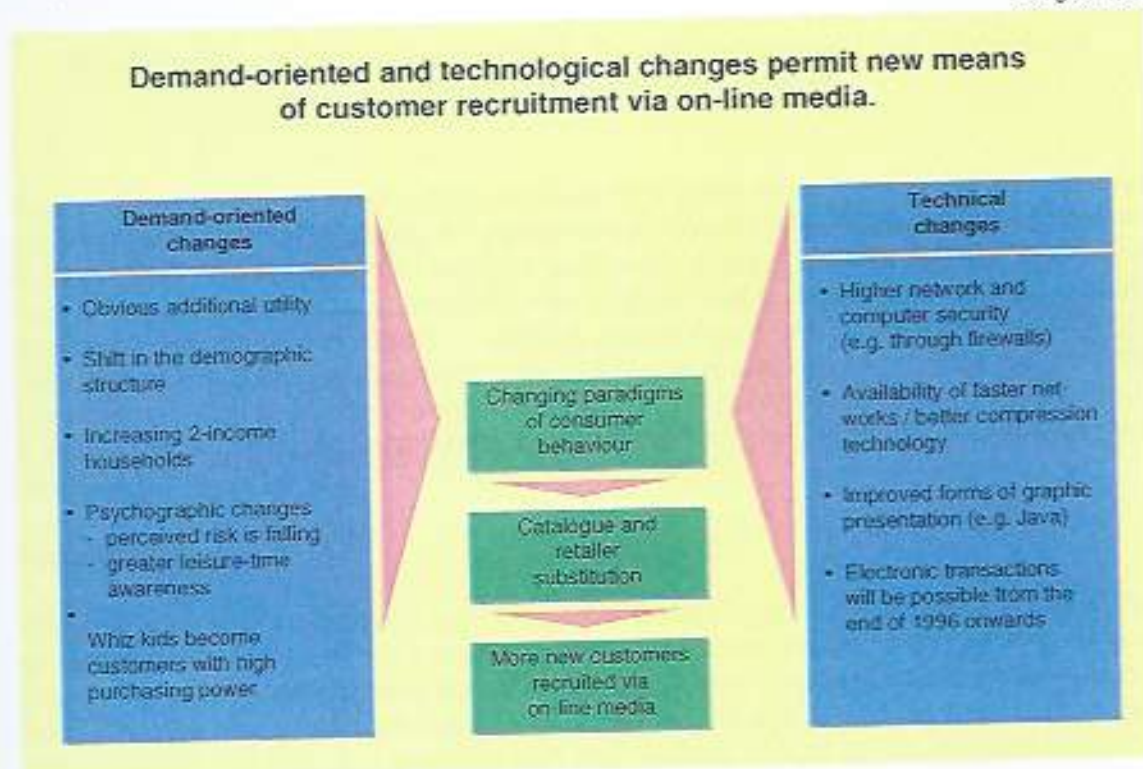
Free trial subscriptions (e.g. for 4 weeks) can be offered on-line to potential new customers, as can incentives (for subscribers to find new subscribers). In this way, personal data pertaining to new potential customer segments can be obtained and used for future marketing purposes. Additional possibilities to recruit new customers exist in cross-selling and sponsoring. (See the example of the tourism industry in Section 4 in this respect). Direct marketing measures can include electronic mailings, mailing lists or tracking. These reduce dispersion losses and costs. Reference to an Internet address in traditional media and PR in external services (e.g. CompuServe, AOL or T-Online) also offer additional scope for customer recruitment.

In coming years, there will be a shift from traditional channels of distribution to interactive shopping. This trend is already evident in the following product categories:

- ☐ Products which do not need to be or cannot be physically touched (e.g. tickets, software).
- ☐ Multimedia products (e.g. games).
- ☐ Low-price products (e.g. gifts)
- ☐ Trademarked goods (e.g. hardware)

The causes and the resulting chain of effect of this new trend are shown in the following diagram:

Diagram 62



In conclusion, the following can be said: the recruitment of new customers can be increased by expanding marketing activities via on-line media and addressing specific target groups to a greater extent. Multimedia forms of presentation offer new scope to support customer recruitment to a greater extent. Multimedia forms of presentation offer new scope to support customer recruitment.

3.3.2 Customer Loyalty

The provision of innovative customer loyalty instruments will be decisive to success in the multimedia market

An investigation into the marketing activities of a great many companies reveals that excessively high value is placed on customer recruitment. This often has a negative effect on the service provided to existing customers. Because customer fluctuation is a cost-driving factor, marketing theorists now suggest that companies should focus their activities on securing the loyalty of existing customers. In this 'relationship marketing', customer satisfaction plays a central role. 'Relationship marketing' provides instruments to promote customer loyalty in a world in which they can change suppliers at the 'click of a mouse'. In the following, multimedia instruments to support relationship marketing are described.

Instruments

'Information at your fingertips' is a famous advertising slogan. However, the same applies to information about competitor product ranges and prices. Products and services which prove to have an unsatisfactory price/performance ratio have very little chance of being sold in the age of the 'information highway'. In the on-line age, it is much easier to compare transparent products and services with one another. In light of this, innovative customer loyalty instruments are taking on central importance.

Frequent usage pricing/ bonus system for frequent users is a process which measures the use of a service or offer by a customer (e.g. quantity, length of time). Customers are offered price discounts which reflect their utilisation behaviour. The rates of discount can be staggered or continuous. One variation is a loyalty bonus for long-term users or customers.

Product gifts/ incentives can be offered to customers who regularly use a service (e.g. an on-line regional newspaper), for instance, when they exceed a certain number of pages (e.g. a free ticket for a regional music or theatre event). (See also the following diagram, which shows the business model for an on-line regional newspaper). One main advantage is that the gift can be selected in accordance with the documented search and utilisation behaviour of the customer. This increases the probability that the gift will reflect the customer's preference structure and that he will actually use it.

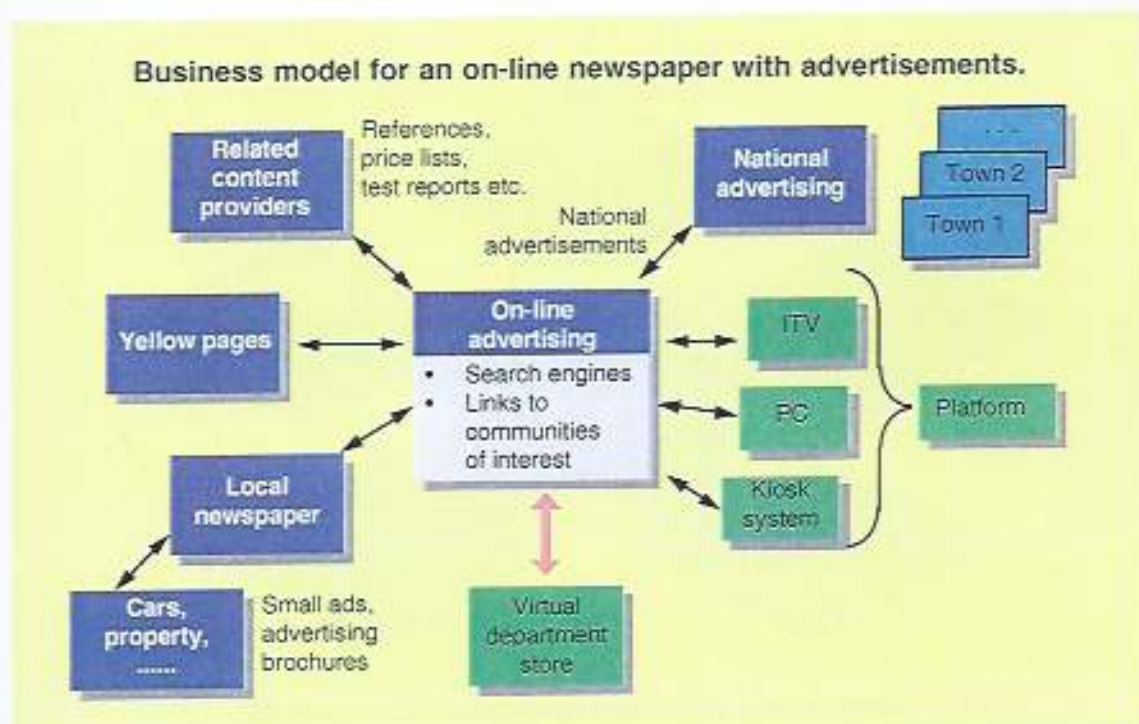


Diagram 63

On-line competitions and games of skill can further arouse consumer interest for a company's products and services. By using 2D and 3D animation, considerable additional consumer utility is generated. Furthermore, the interactivity of on-line media offers the user the opportunity for direct feedback.

Advertising/ information on new products are further means of enhancing customer loyalty. Direct E-mails providing information about a new product or service (in the form of a link) or a short description of the new product sent to the customer also ensure that the customer becomes familiar with them. The form, type and method of presentation should reflect the known utilisation behaviour of the consumer. In this respect, it should be pointed out that the user must have the opportunity to determine the frequency and content of any direct E-mail that he receives.

Hyperlinks to communities of interest and services, which are contextually related to the range of products and/or services, increase perceived overall quality and therefore also customer satisfaction. In communities of interest (e.g. gardening fans or people interested in health issues), customers can exchange views and information with regard to a product that they have purchased and establish new contacts. (User-generated content considerably increases customer loyalty!). This presents the opportunity to dispel any doubts someone may have that he has made the right purchase decision in the post-purchase phase. A link to related products and services will also increase customer satisfaction (e.g. a sub-gateway between a commercial and a travel channel).

Diagram 64



Multimedia relationship marketing instruments

Customer loyalty can also be improved by the following measures:

- ☐ implementation of regular user surveys
- ☐ guaranteed on-line query processing within 12 hours
- ☐ regular content updates
- ☐ differentiated lead tracking
- ☐ constant extension of Internet/ marketing presence and appropriate reference to this
- ☐ recording and evaluation of access and system statistics
- ☐ use of intelligent agents
- ☐ use of filter systems (matching almost identical uses).

In the following, the effects of the use of intelligent agents on customer loyalty are described:

Intelligent agents provide information on customer preferences and thereby permit individualised marketing. They ascertain precise customer profiles. Internet agents solve this task by either directly asking users about their preferences or by following and recording the search and utilisation behaviour of consumers.

The more often an agent is used, the more familiar it becomes with the user. The losses experienced by a user when he switches to another agent thus increase over time. The use of agents as marketing platforms at an early stage offers a major competitive advantage in terms of customer loyalty.

Advantages and risks with regard to customer loyalty

On-line media offer further advantages with regard to customer loyalty.

Advantages:

- ☐ Opportunity to regularly, systematically and inexpensively survey customer satisfaction. The evaluation of user data is fast and can be directly utilised to adapt the product range and individualise communication with consumers.
- ☐ Linking Management Information Systems (MIS) with Decision Support Systems (DSS) improves the planning and control of the customer loyalty instruments.
- ☐ Cost-effective customer loyalty management through the provision of on-line club and incentive schemes with hot-line services for problems pertaining to operation and content.
- ☐ 2D/ 3D animation (e.g. also in the form of virtual service staff, who can communicate with customers in real-time by means of modern rendering technology) particularly have the effect of increasing familiarity.
- ☐ Regular updating of product information and price lists as well as special conditions, if applicable.
- ☐ Interactive search options for products and services on the basis of special criteria.

There are also some risks with regard to customer loyalty

Risks:

- ☐ Low search costs: current customers can find competitor information and products faster and more comprehensively via on-line media.
- ☐ It is hardly possible to implement spatial price differentiation.

In conclusion, the following can be said: on-line media offer great scope to increase customer loyalty. This generates the following effects for companies marketing their products or services.

1. Higher customer loyalty through the familiarisation of the customer with content, look & feel.
2. Increased knowledge of target groups through user-specific data and utilisation behaviour.

3.3.3 Customer Services

Multimedia particularly supports customer services.

Additional services are an integral part of modern economic systems. In many industries, product differentiation is largely achieved by way of services. On-line media offer the ideal framework for the provision of services, since additional services are an inherent part of their basic functions.

Individualised information, products and services:

- ☐ Information search services in the form of personalised search tools (e.g. Lycos or Inktomi) simplify the customer's overview of the information and products offered by different companies.
- ☐ Product and information packages not only include individual offers in response to complex customer queries; they increasingly incorporate additional information and products that are available in the field in question.

One example of this is a personal business service. This includes the sectors of money, savings/ financial security, starting up a business, business news and career planning. The individual areas can also be broken down into separate categories. For example, the area of money could contain information and products on the subjects of banking transactions, stock exchange and financial investments. The area of starting up a business could be broken down into company/ franchise market, ideas/ tips and financing. An appropriate concept is shown in Section 4.

Interactive after-sales care

On-line media are a particularly useful means of optimising after-sales care. The end-user has direct access to a company's databases or on-line services. Thus, he has direct access to information on customer service staff, exchange and returns regulations or repair workshops.

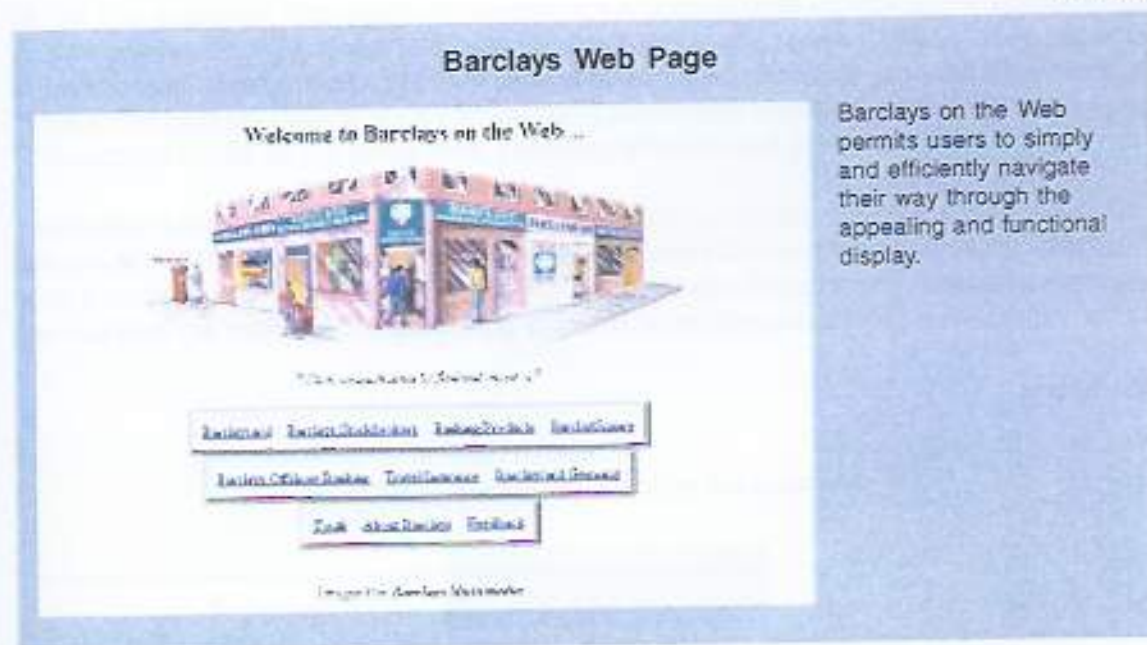
A pin board and E-mail further optimises the service. These permit the customer to send queries to the company at any time of the day or night. These services offer particularly interesting possibilities to smaller companies, which cannot afford to operate a 24-hour hot-line.

Additional utility through multimedia impressions

The highly acceptable level of service in multimedia offers the customer considerable additional utility. Graphic multimedia-compatible interfaces and the associated intuitive

user interfaces permit the user to easily navigate his way around the network and offer fast and simple access to the required services. The advantage in terms of money is obvious. Furthermore, the fact that this saves time provides further considerable customer utility. In designing the interfaces, an in-depth knowledge of multimedia design and programming is necessary.

Web. IV



Spatial availability

On-line media are - provided that the technical requirements are met - available throughout the world. Therefore, the fact that customers can use the service whether they are at home or on business trips is indispensable to them.

Selected instruments

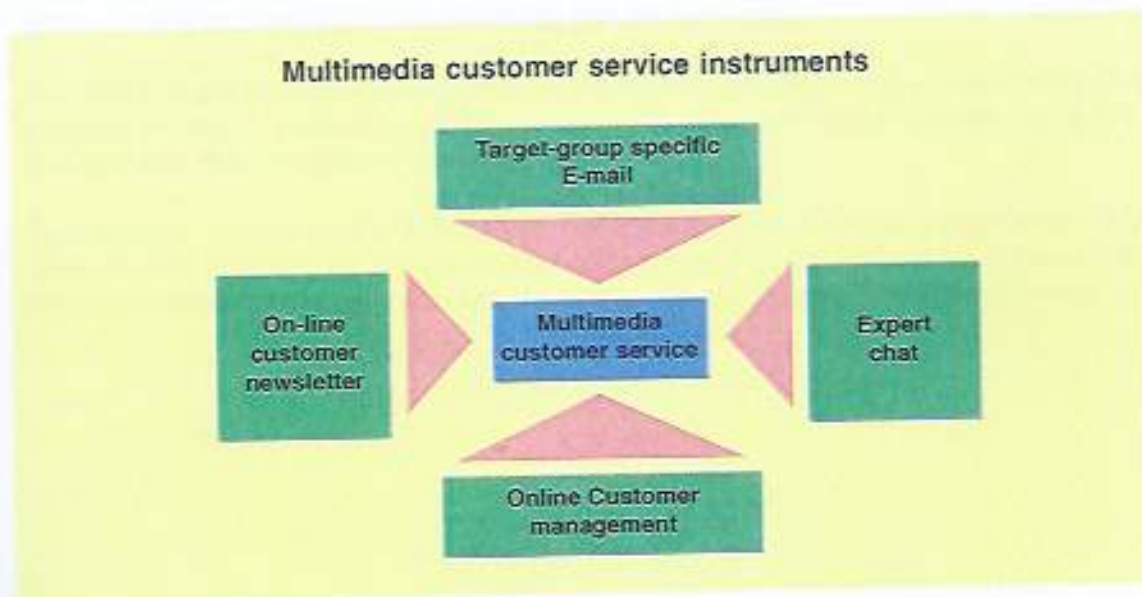
The following on-line instruments can be used in conjunction with customer services.

- ☐ Target group-specific information push via E-mail: information about new products or price changes can be sent to automatically determined target groups in order to heighten the impact of marketing campaigns. If this E-mail pertains to one of the recipient's specific areas of interest (make clear by using appropriate headings!), it will be opened and, at least, read.
- ☐ On-line customer magazines in the form of personal information and product offers provide customers with additional service utility. The service can be refined through setting up a personal archiving or research facility (subject areas, search parameters), which can be updated daily or weekly.

- Expert chat provides a direct link between customers and appropriate experts in the relevant fields. In this way, the publishing firm can organise regular chat events between authors and readers of a publication (e.g. a best-seller). In the case of scientific publications, on-line discussions or forums involving researchers can be initiated by a publishing firm.
- On-line customer management performance components comprise the acceptance, processing, documentation and statistical collection of queries, orders and complaints per E-mail, pinboard or chat with regard to content, prices or general conditions of use. The primary objectives are to increase subscriber loyalty and maximise sales per customer whilst, at the same time, providing efficient and customer-oriented services.

Interactive customer service requires the introduction of various dialogue measures. Someone who turns out to be a 'regular user' after a short time must be addressed differently to a customer who only uses a service occasionally. Appropriate database systems can support the process of addressing users in accordance with their utilisation.

Diagram 65



The degree to which multimedia is realised or to what extent the company intends to realise it in the near future, is decisive. As already mentioned, the following stages of Internet development exist:

0. No Internet utilisation
1. Home page in the Internet
2. On-line marketing/ electronic shopping in the Internet
3. Integration of customers and the production process via the Internet

In Stages 0 and 1, it is not possible to provide additional multimedia services. In Stage 2 the entire range of services described above can be provided.

Stage 3 is interesting. Particularly in industrial enterprises, it permits the establishment of a link between on-line media and/or computer-assisted survey software with CAD systems or the R+D division. Interactive preference-recording modules which are linked to the above systems in the companies inform them immediately of market research findings and negligible changes in utilisation behaviour, which can then be used for planning purposes. Furthermore, within a short period of time, product ideas put forward by consumers and direct customer-feedback can be generated.

Summary: customers must be informed of the individual aspects of a service policy. Over a period of time, it is essential that the instruments used are varied. On-line media are a low-cost and direct means of achieving this.

Furthermore, on-line media themselves - as described in the initial paragraphs - offer considerable potential for the expansion of services. Future surveys will focus on the important aspect of the extent to which Internet use is influenced by service policy.

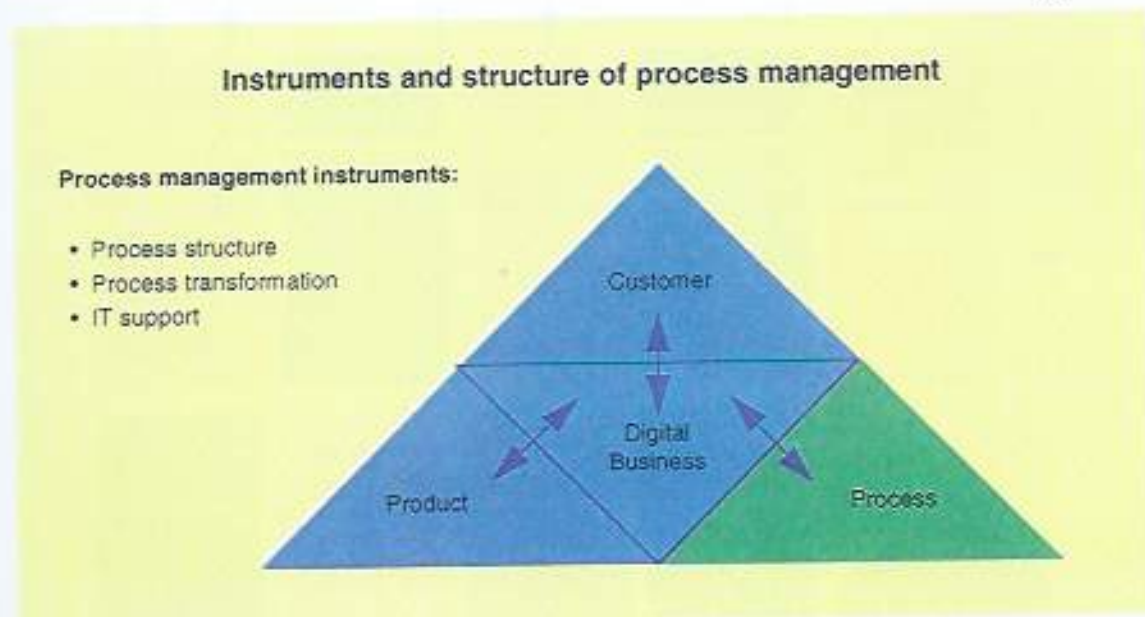
3.4 Process Management

In order to implement digital business, a series of organisational adaptations are necessary. The multimedia marketing of data and services involves the communication of a system at the company headquarters with the PC of a consumer. A reply to a query must be sent within seconds. Checks of stock in hand and delivery availability must be made. In some cases, modifications to the ordered product are necessary - whether this be a digital or physical product. On the whole, this requires an adaptation of business processes. These adaptations will be even more comprehensive

- ☐ the more decentralised the present marketing organisation is,
- ☐ the less frequently the company headquarters presently comes into contact with consumers, retailers, representatives and branches,
- ☐ the longer the period of days and weeks order processing has taken in the past.

This is why organisational adaptations are necessary if multimedia marketing channels are used. The more processes, structures and activities are modified, the greater the 'dreaded' digital business volume, which is why process management and IT support must be particularly effective.

Diagram 66



The relevance of process management for the company depends on the stage of Internet development that it has reached. In Stage 1, in which a home page is set up, process management is unnecessary. However, as soon as data and services are sold ex-warehouse (Stage 2), process management does become necessary. In Stage 3, process management obviously plays an essential role.

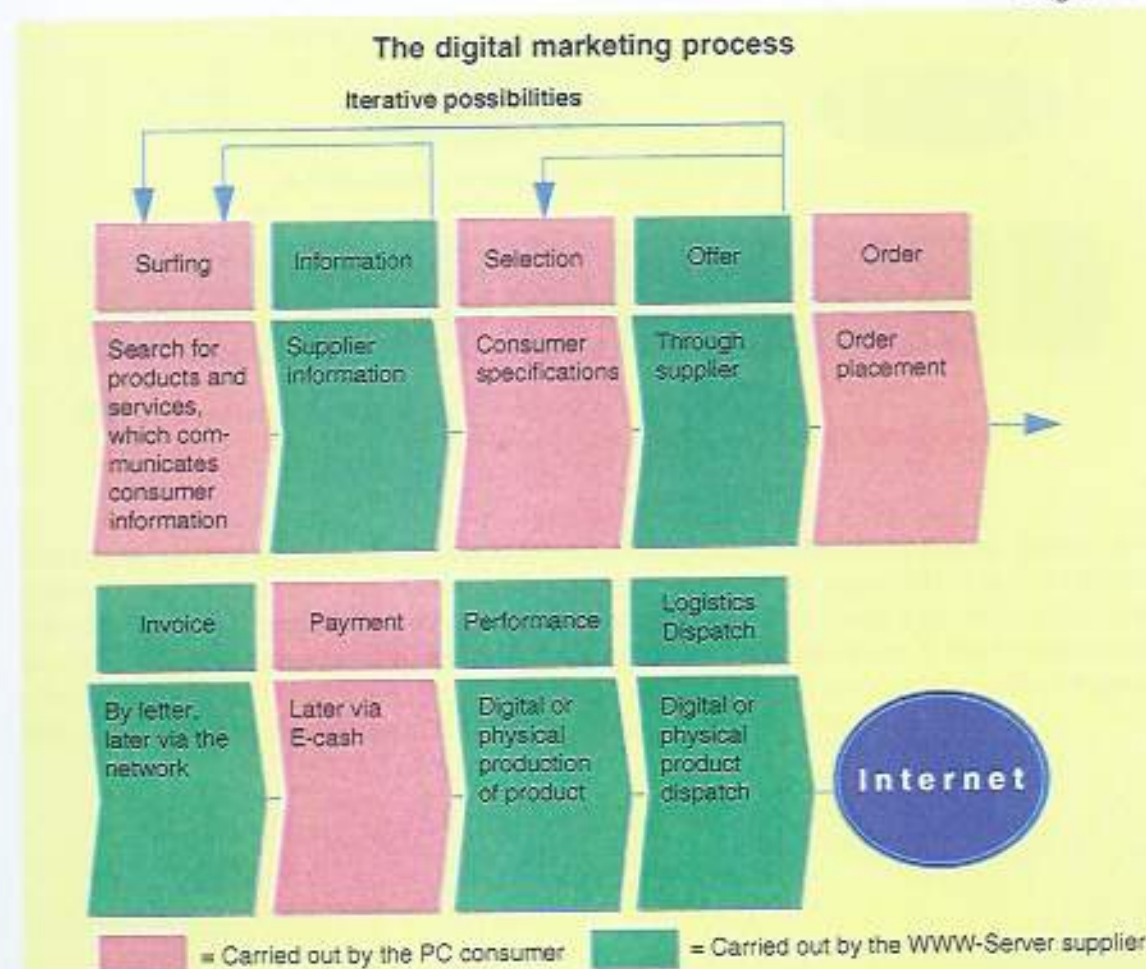
As soon as the order procedure is integrated into production, for example in order to permit the customer to select the variants himself, a far-reaching business process transformation becomes necessary. Today, this is still the exception to the rule. However, the potential that digital business holds for rationalisation and the competitive advantage of products which are individualised by the customers themselves will soon take on vital importance.

3.4.1 Process Structure

The process structure offers a basis for problem-free multimedia transactions.

The digital marketing process involves communication between the customer's PC and the provider's WWW server. Between initial contact and order placement, there are obviously a number of iterative possibilities. When the order has been placed, an invoice is issued immediately (in future, payments will be made in 'E-cash'), the service or product is supplied and dispatched by digital or physical means.

Diagram 67



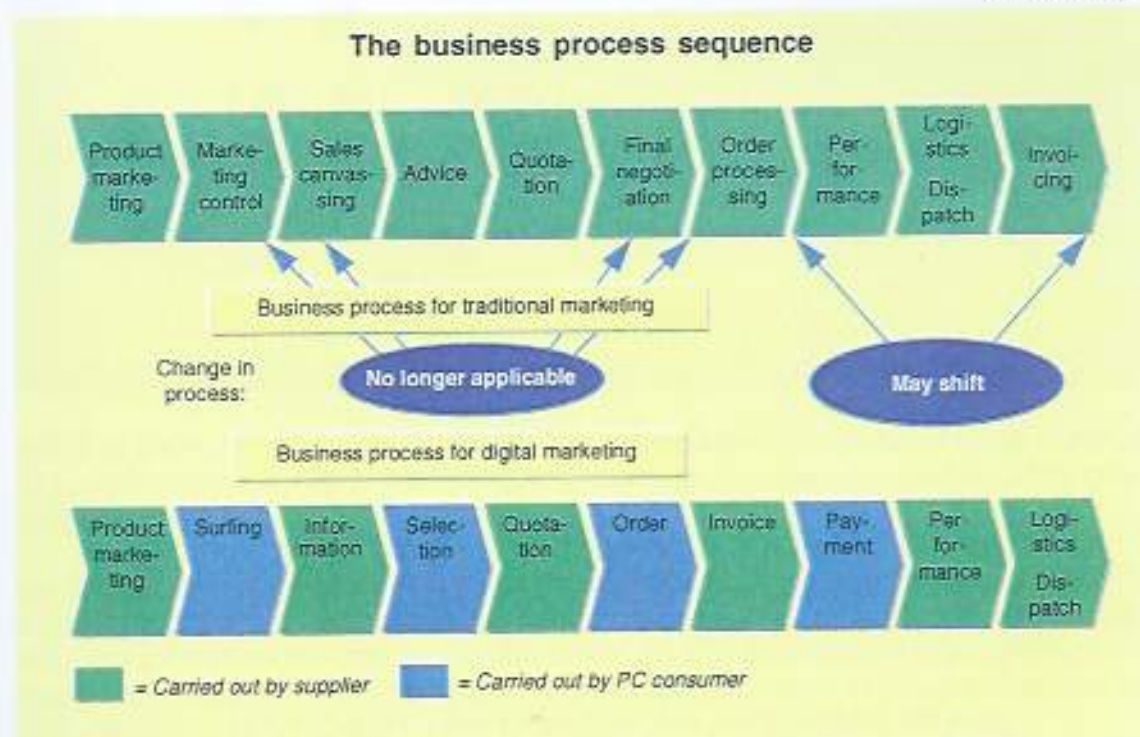
On the whole, this business process sequence is fundamentally different to traditional marketing business process sequences.

Not only the business process sequence but also the integration of the business process in the organisation, frequency, order volumes, processing times and the degree of automation and centralisation are considerably different.

In each case, a specific comparison of the digital and traditional business process sequences must be made:

Digital communication with consumers and their personal selection of products and services means that some traditional process steps are superfluous.

Abbildung 68



Marketing control (agents, distributors and subsidiaries) becomes obsolete. Sales canvassing takes on an entirely new form because the customer must dial in to the service himself. The final negotiation is replaced by the iteration between selection, offer and order. Order processing is also no longer necessary. This is because of the fundamental difference between digital and traditional business processes with regard to the integration of the process sequence in the organisation.

Web. V

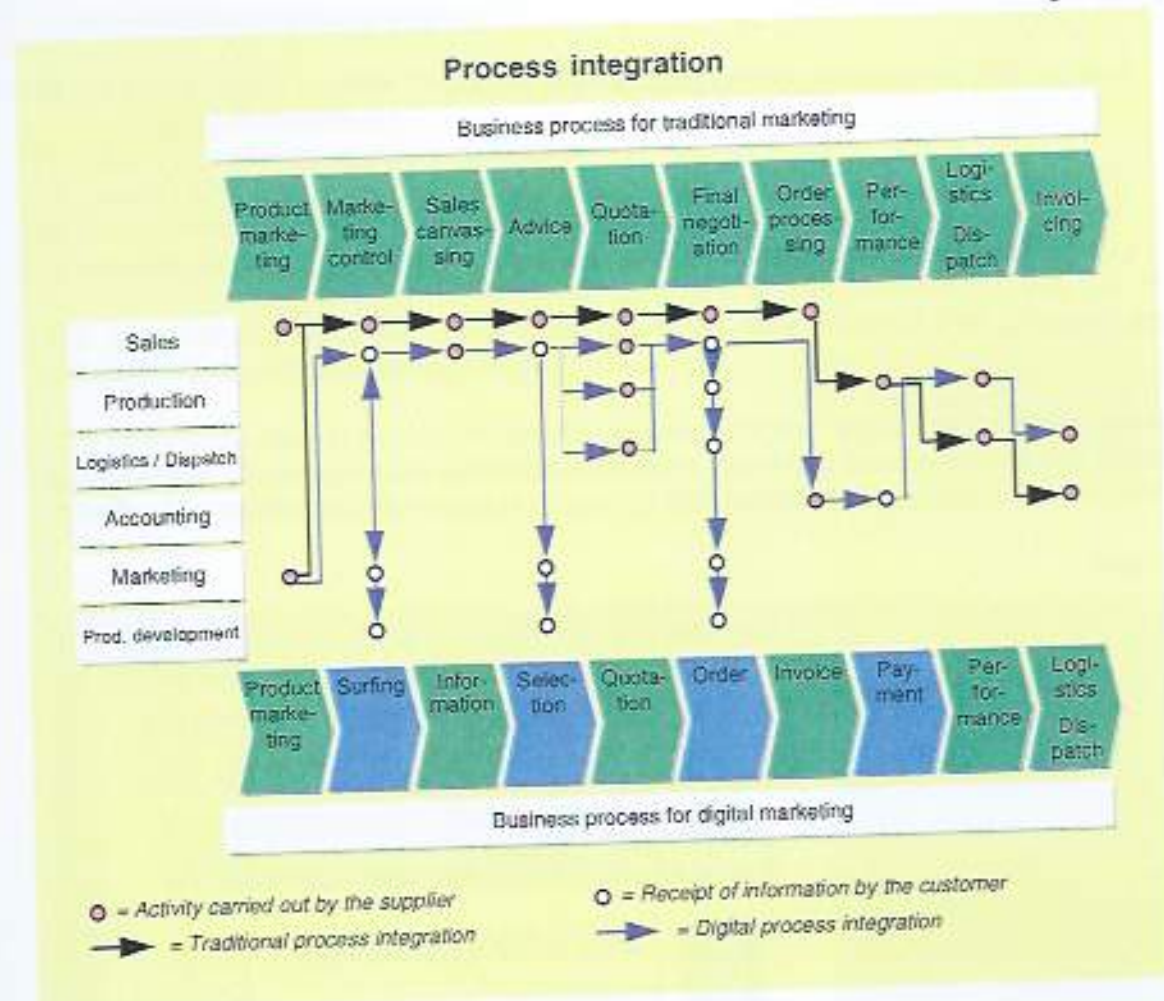


Whilst in traditional marketing the marketing organisation is responsible for all activities up to performance, in digital marketing almost all sub-processes are carried out by other organisational units.

Levi's digital marketing of jeans is an example of this. Normally, retailers are supplied on a weekly basis with a large quantity of items in various sizes spanning the entire range. Now, the consumer dials into the service, states his size and receives a quotation after a production feasibility check has been made, pays, and receives his merchandise by post. This process is repeated many times each day and is entirely different.

When a quotation is made, up-to-the-minute and automated clarification must be given as to whether the selected article can be dispatched in the required design and within the specified delivery time. The production feasibility checks, delivery scheduling and order confirmation must also be made in a matter of seconds.

Diagram 69



Order processing is thus an integral part of order placement. Furthermore, the automated processing of customer orders permits the automated evaluation of consumer behaviour. Product development, marketing and sales can learn from documented customer orders, selected products, product modifications and the accompanying price sensitivity.

Using this automated information, the product range, pricing and communications can be optimised on a daily basis.

Thus, in addition to the business process sequence and integration, further necessary process modifications are necessary. The degree of automation must be fully adapted over days or weeks and the processing time must be reduced to a few minutes.

At the same time, the degree to which most companies are centralised will change considerably. This particularly applies to the multitude of companies with decentral marketing organisations.

These include companies such as

- ☐ Mercedes-Benz AG with its branch organisation (also agents and official repair workshops in Germany),
- ☐ Allianz AG with its agency organisation,
- ☐ Loewe Opta with its specialised retailer organisation,
- ☐ Commerzbank AG with its branch organisation,
- ☐ Brockhaus AG or Bertelsmann Club with direct marketing organisations

and many other companies in the same industries, which market their products and services via decentral marketing units.

The multimedia market requires centralised service. In the digital market there are no spatial limits. Customers and potential customers receive information and are served digitally. The traditional interim stage of agents, distributors or branches is eliminated.

Web. VI

Internet Mall Web Page

Internet Mall delivers its products directly to Internet customers at a discount price.

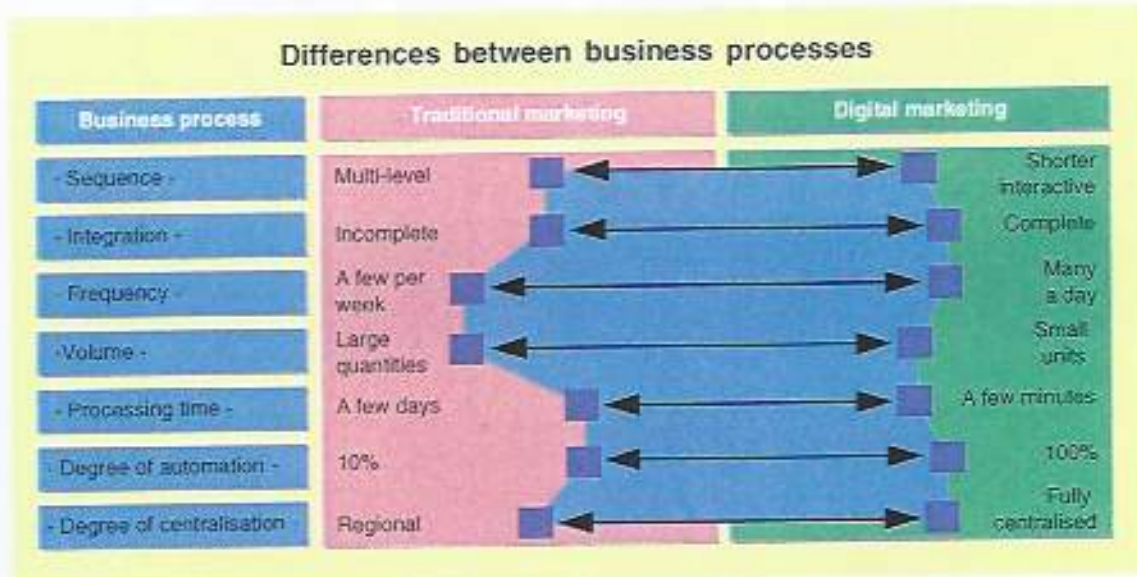
In some cases, new digital agents are appearing: virtual department stores. However, these only serve as a focal point or magnet to attract customers on the basis of familiarity. In the final stage, these virtual department stores will forward queries and orders direct to suppliers, making a small profit. In this way, companies such as CUC International can sell their around 250,000 products at up to 50% below listed prices. These Cyber-Agents then use the manufacturers' digital sales processes. The classic retail process, which includes planning, purchasing, sourcing, storage and logistics no longer takes place. This is particularly interesting because the interactive design of products would not otherwise be possible.

It should not be forgotten that new structures are also being created. For example, a new central logistics system is necessary to dispatch the products from the manufacturer to consumers. Often, companies arrange this through engaging specialised forwarding agents and parcel services.

The Internet is not a sufficiently interactive medium to solve all the problems which may arise when a product is purchased. This especially applies if customers with little experience of media 'join the Internet'. Some of the advice which retailers have provided up to now could be provided by specialised 'on-line agents' in future. It is feasible that a travel agency in the network, having made a pre-selection of offers, could additionally communicate with its customers by E-mail and provide links to offers.

Basically, this means that the manufacturers' headquarters will receive fewer big orders. They will be required to process a multitude of data from a vast number of small orders from direct customers. This will change the frequency and volume of the business processes at the headquarters. On the whole, considerable changes to the content of business processes will occur during the transformation from traditional to digital sales.

Diagram 70



These fundamental changes in the business processes and the absence of necessary concepts are the main reasons why digital forms of marketing and the attractive offers associated with them have not yet become widespread.

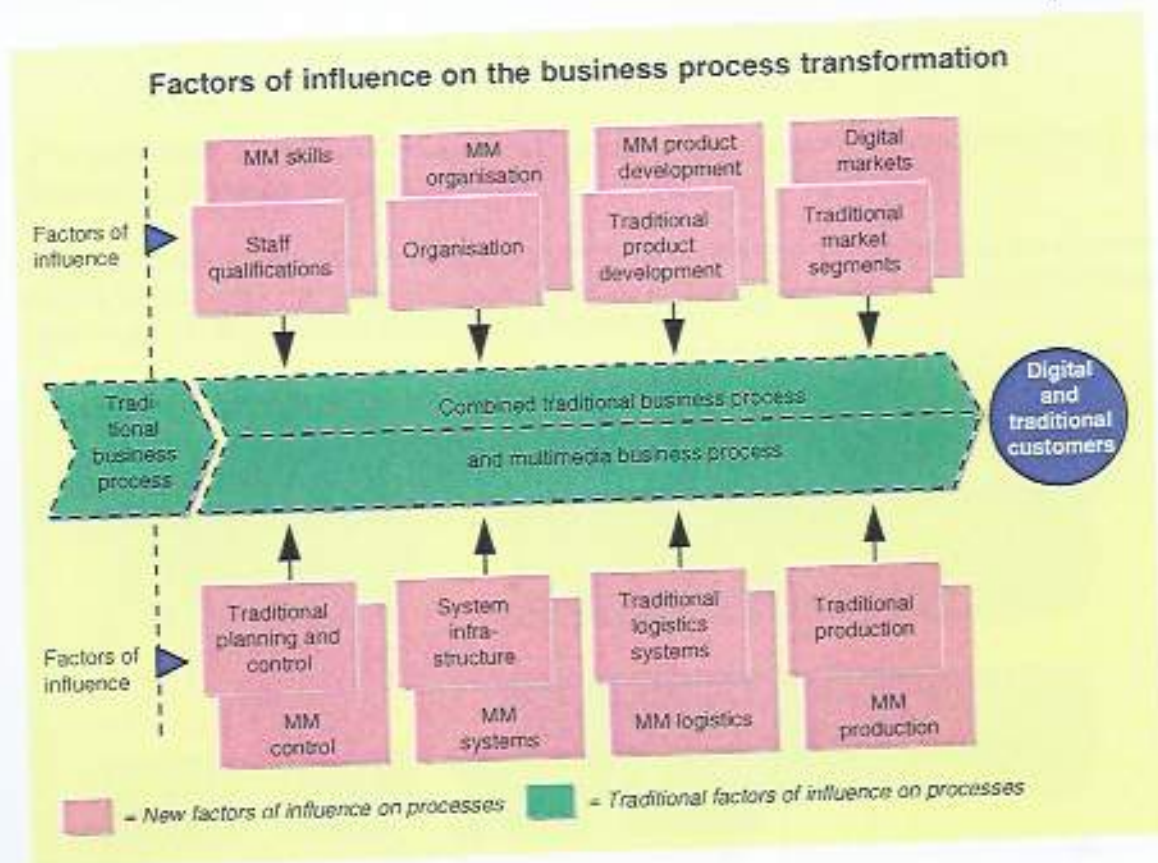
3.4.2 Process Transformation

The transformation of the business process is a method of translating traditional business processes into a digital business development process.

The catalyst behind the process transformation could be a change in the factors of influence, the target group or the main success criteria.

Digital marketing & sales and catering for new digital target groups mean that there are entirely new requirements of process sequences. At the same time, the main success criteria are also changing. For example, the response time to customer queries must be reduced from days or weeks to a few seconds.

Diagram 71



Furthermore, new factors of influence on the business process are emerging:

A multimedia product concept, multimedia control, systems, production and organisation require new processes. As a result, a business process transformation from traditional processes to combined multimedia and traditional business processes must be implemented.

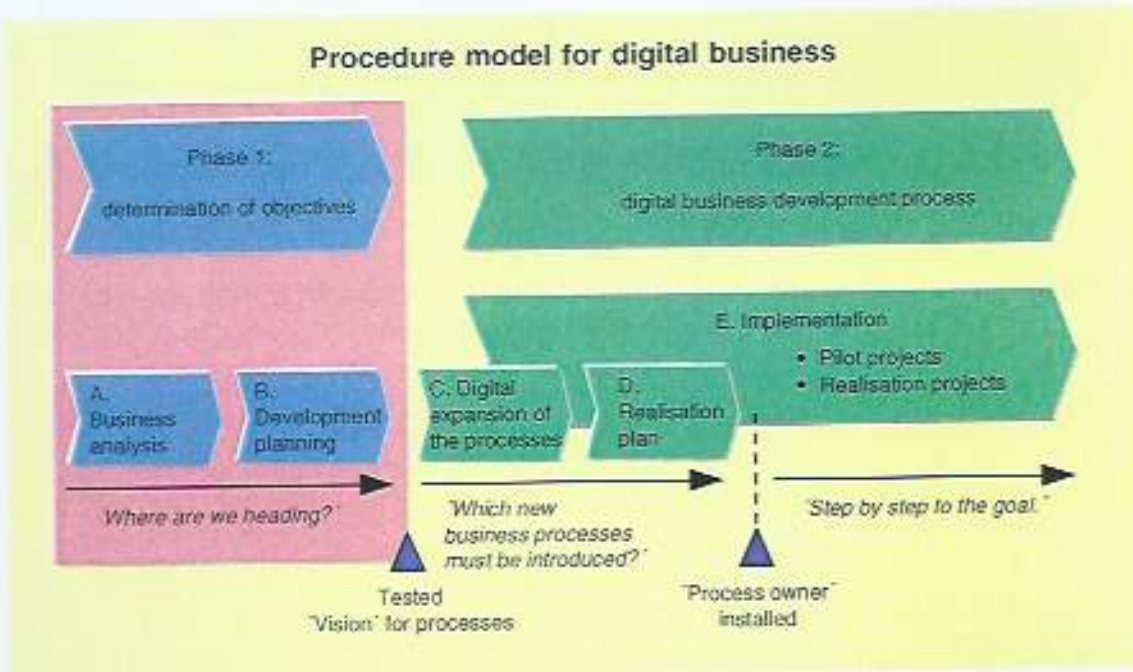
In this respect, it is important that an isolated multimedia business process is not developed. To a far greater extent, the digital marketing channel should be integrated with the traditional marketing channel. Both channels can provide each other with information and new data regarding product development, marketing, corporate planning and other areas, thereby improving overall performance.

In this way, for example, 'hits' on certain products can be evaluated. Modification requests and information requirements can be digitally documented and provide product managers with data on a daily basis. However, the process of information exchange between digital marketing and the specialist departments on the one hand, and production and logistics on the other, should be fully automated and networked.

The complexity of this task means that a multi-level approach to the transformation of business processes is necessary.

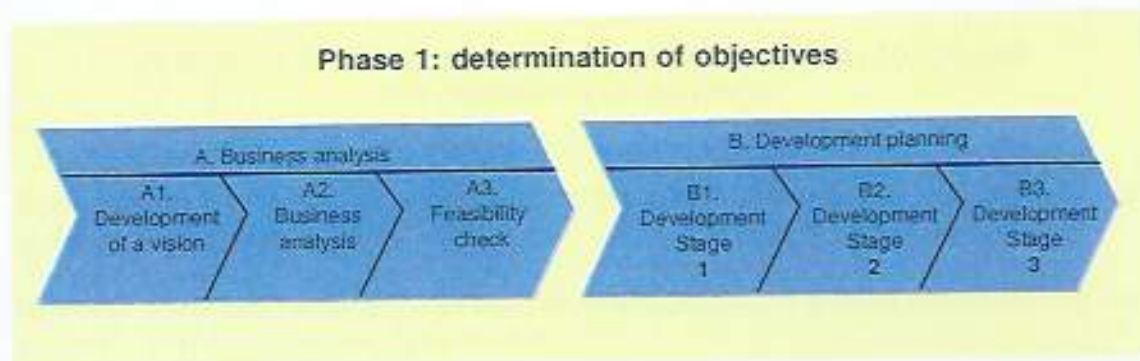
Before the actual process of change can occur, a phase in which objectives are determined is necessary. The objective-determination phase results in a vision being adopted with regard to the process structures to be created.

Diagram 72



First of all, a business analysis is carried out by a project team.

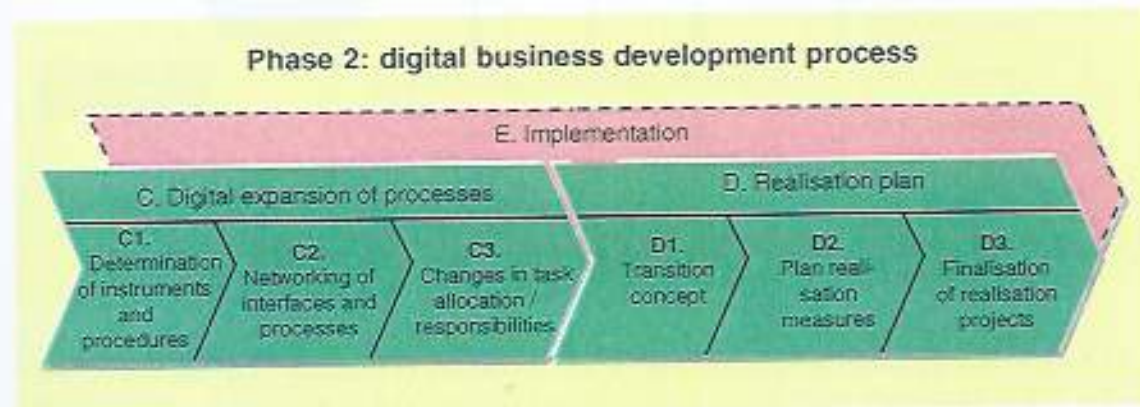
Diagram 73



Based on this, development coupling is carried out in expert workshops by the people involved in the process.

The final part of redesigning the processes is the demarcation of tasks and the determination of the process owner.

Diagram 74



The realisation plan contains the realisation measures, the relevant milestones and describes and determines the realisation responsibilities.

3.4.3 IT Support

IT support defines the necessary software modules to support the multimedia applications.

Communication between the consumer and the WWW-server is facilitated by technically defined standards (HTTP, HTML).

However, there are hardly any standard interfaces to create a close and varied link between the WWW-server and the company's IT.

Diagram 75



The challenge to IT support is therefore not a question of the isolated installation of a WWW server. It is far more a question of establishing the various interfaces of the WWW server to the company's traditional IT.

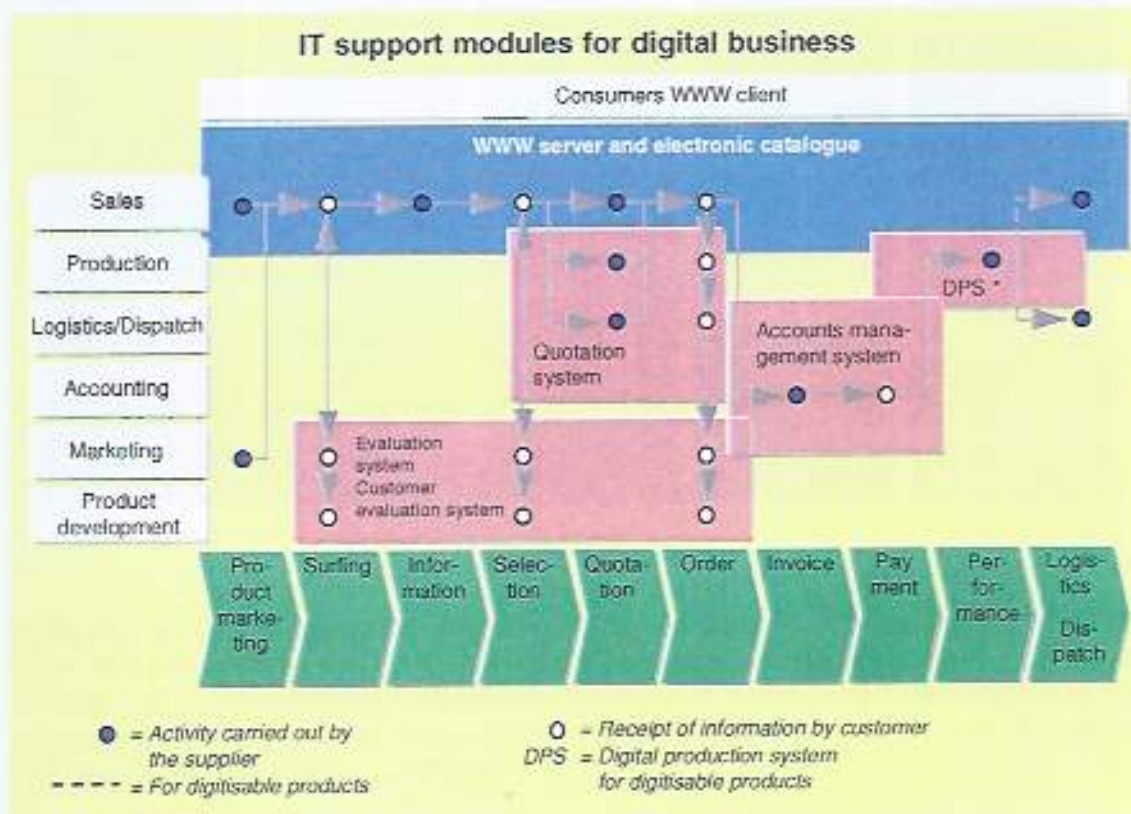
Many companies which already employ multimedia marketing today use a WWW server as an isolated solution. Usually, a few students answer queries, print out order lists and process orders.

At the latest when it becomes necessary to process a mass of data and a vast number of transactions in a business day, the degree of automation must be markedly increased.

In addition to the WWW server, other modules will be required:

- ☐ A quotation system with interfaces to logistics and production will be necessary to ascertain whether product variants can be manufactured, delivery times and price in a matter of seconds. These data are sent in the form of an individualised quotation via the WWW server to the consumer in reply to queries.

Diagram 76



- ☐ An accounts management system will also be required to permit the processing of mass transactions.
- ☐ Furthermore, a flexible production system must be installed for digitisable products. If the products cannot be digitised, digital 'add-ons' can be provided (see branch examples in Section 4).
- ☐ IT support is rounded off by an evaluation and customer information system which stores and updates the mass data. In this way, downstream departments can be provided with information and the whole performance chain can be optimised. Product design can become more customer-oriented and methods of addressing new target groups can be improved.

Diagram 77

IT tasks, implementation of follow-up systems

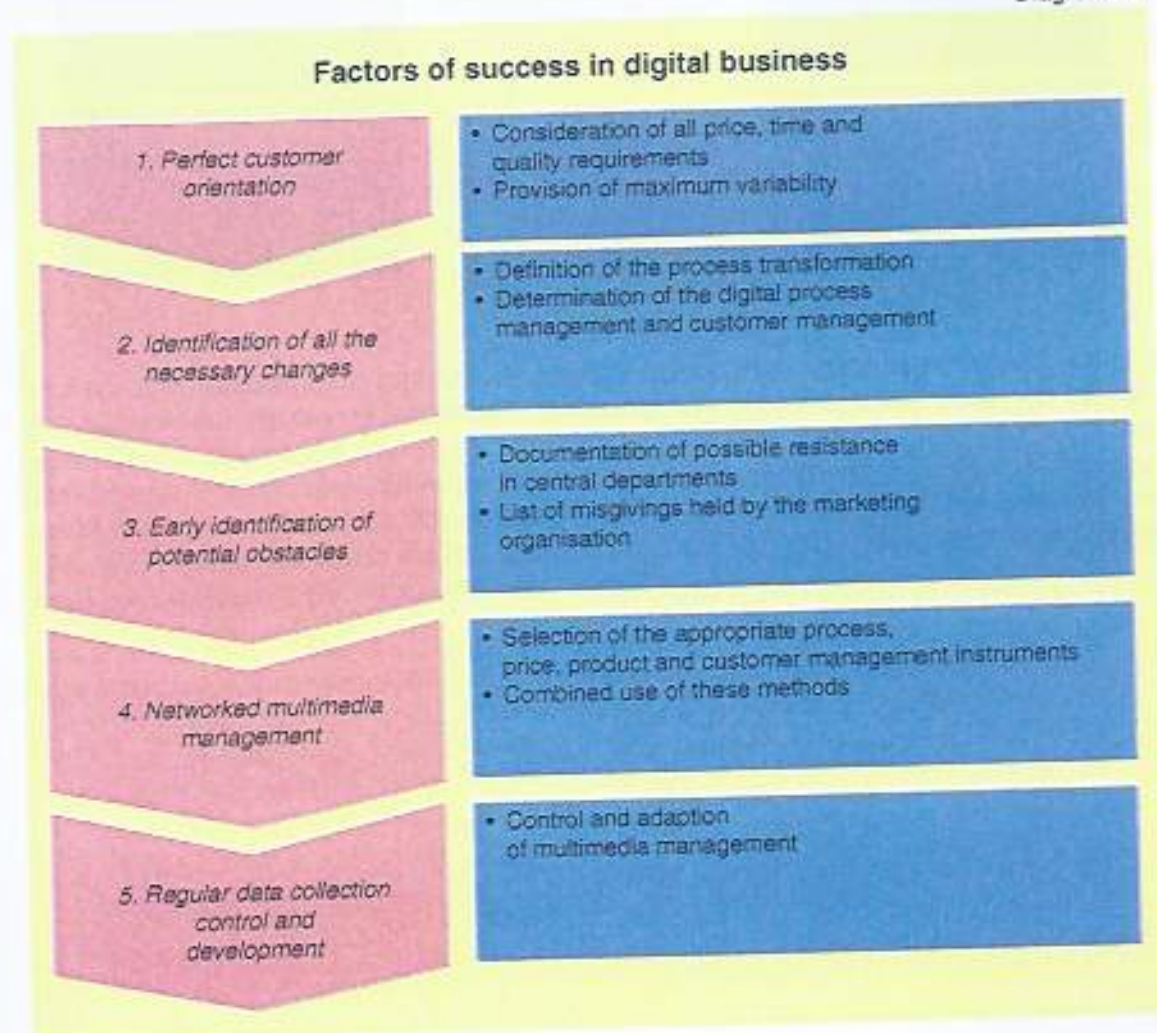
WWW server of service provider	Quotation system	Accounts management system	Evaluation and customer information system	Adaption
Installation of Internet servers, including all communication and security functions (firewalls, hardware, software)	Design and operation of a software system for: <ul style="list-style-type: none"> the collection evaluation of data provided by the WWW server electronic catalogue, data for the WWW server compilation of data for incorporation in the company's IT 	Design and operation of large-scale billing / collection / accounting systems: <ul style="list-style-type: none"> provision of transaction data for WWW server Accounting / bookkeeping transfer of compressed account entry data to the company IT 	Design and operation of a system: <ul style="list-style-type: none"> updating and evaluating mass data (database) addressing specific customers customer loyalty and fact-finding system e.g. offering chat forums 	Company IT Classic IT systems: <ul style="list-style-type: none"> adaption of data and formats medium term development modification of company IT

- Finally, an adaptation of the company's IT is necessary. This modification can be much more far-reaching if an appropriate business volume is attained, than would initially appear necessary. The extreme changes to processing times alone and the increased frequency of business processes will necessitate entirely new IP support in addition to the process changes.

3.5 Factors of Success

The success of a provider in the digital market depends on the proper use of digital business. There are five separate factors of success. Perfect orientation to customer needs is the starting point of all considerations. This customer orientation in digital marketing must facilitate the identification of all the necessary changes. Possible obstacles must also be taken into account at an early stage and overcome through the use of networked multimedia management. Finally, a permanent performance indicator must be installed which records changes in consumer behaviour and promotes the development of product, customer and process management.

Diagram 78

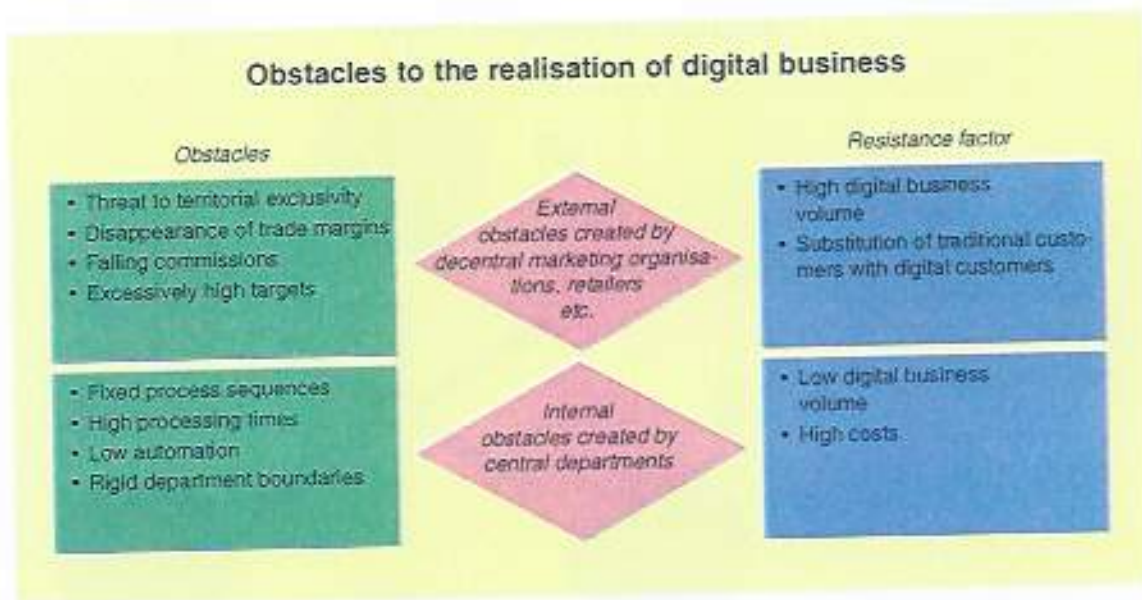


In addition to customer orientation and the necessity for change, particular importance should be attached to the early identification of potential obstacles.

The by no means adequate range of products available on the Internet can be generally accounted for by the failure of many companies to make the necessary organisational adaptations.

On the one hand, external obstacles exist which stem from the decentral marketing or retail organisation. These people fear losing trade margins, sales commission and exclusive rights to sales territories.

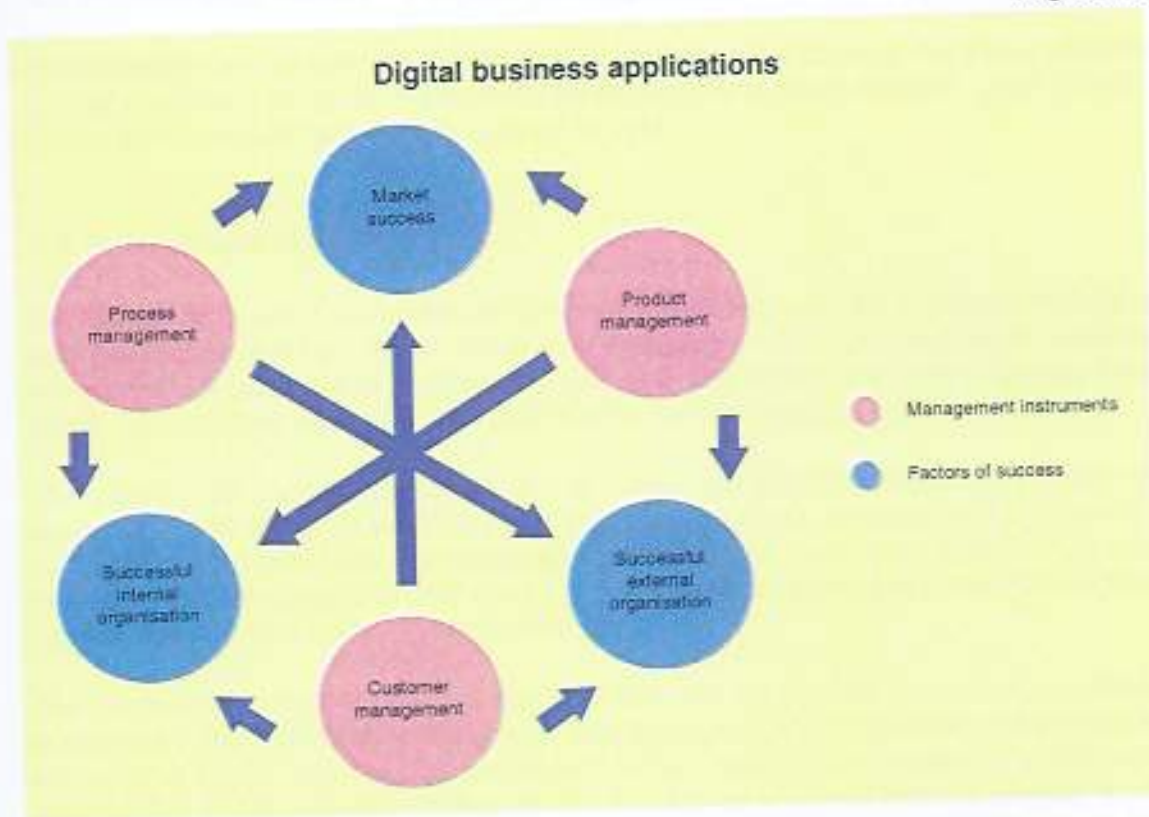
Diagram 79



The resulting resistance is higher, the greater the potential digital business volume and the possible substitution of traditional customers with customers who order via the network. On the other hand, internal obstacles can also arise if familiar processes are modified and the boundaries between departments become blurred as a result of comprehensive process integration. The accompanying resistance is greater, the lower the volume of digital business and the higher the costs incurred. This creates a dilemma which most companies are still struggling to resolve.

However, by networking digital business, these obstacles can be overcome.

Diagram 80



All previous comments regarding process structure, process transformation, IT support, price differentiation, product variants, communication/ advertising, customer recruitment, customer loyalty and customer services pertained to the realisation of digital business, taking into consideration the above obstacles. Thus, for example, young and older customer groups can be differentiated to ensure that conflicts with the marketing or retail organisation can be reduced. Products can also be differentiated. For instance, one single variant of a product can be developed (e.g. a video recorder), which is sold via the network. American Airline flights are one example of this. A number of its flights are only marketed via the network.

4. Examples of Digital Business in Various Branches of Industry

4.1 Publishing/ Media - Project Management Case Study

The following section explains the concept of a commercial channel. Particular attention is paid to product design in this respect, i.e. aspects of product variation, price differentiation and communication are discussed in detail.

4.1.1 Business Model

The idea is to develop a commercial channel, which functions as a central information and transaction medium for all aspects of business. It provides up-to-date business information for private and professional use. The first approaches have recently been made. For instance, Gruner & Jahr are offering several trade journals in T-Online.

The commercial channel should be offered via several platforms (Internet, on-line services, CD-ROM and ITV), which support the various product concepts and pricing alternatives, have an adequate user base and permit further subscriber growth. Important criteria in the selection of a platform for a commercial channel are performance, transaction security and home-banking capability.

The commercial channel has a uniform display and an intuitive user interface. When customers become familiar with content, look & feel, this should generate a high degree of customer loyalty. The use of a central pool of user-specific data makes a considerable contribution to the individualisation of the service as a whole. From a central home page, the user can access the individual sections containing various product blocks. For example these could include the following

- Money
- Savings/ financial security
- Business news
- Jobs/ careers
- Setting up a business/ business ideas
- Business relations
- Cars/ property

Individual product blocks can be selected according to the relevance of the product content to the target group. For example, in a property product block comparisons of rents, advertisements, auctions, tenancy law, estate agent lists or home financing can be evaluated in terms of specific target groups (e.g. tenants, estate agents, property managers, commercial tenants etc.).

The following diagram shows a model commercial channel:

Diagram 81



Because the commercial channel is a marketplace for a wide range of services, a series of partners and suppliers must be represented there. These particularly include banks, publishing firms, savings banks, insurance firms, estate agents and advertising agencies.

The remuneration for content providers is best structured according to intensity of use of the individual products and services. The pricing options are described in a later section.

The business model should be developed in a two-stage process:

I) Definition/ prioritisation of product blocks

- Compilation of possible product blocks
- Definition of target groups/ customers
- Elaboration of the product modules
- Elaboration of business plans/ evaluation of financial attractiveness
- Selection of product blocks

II) Business concept development for a core product

a) Product concept design

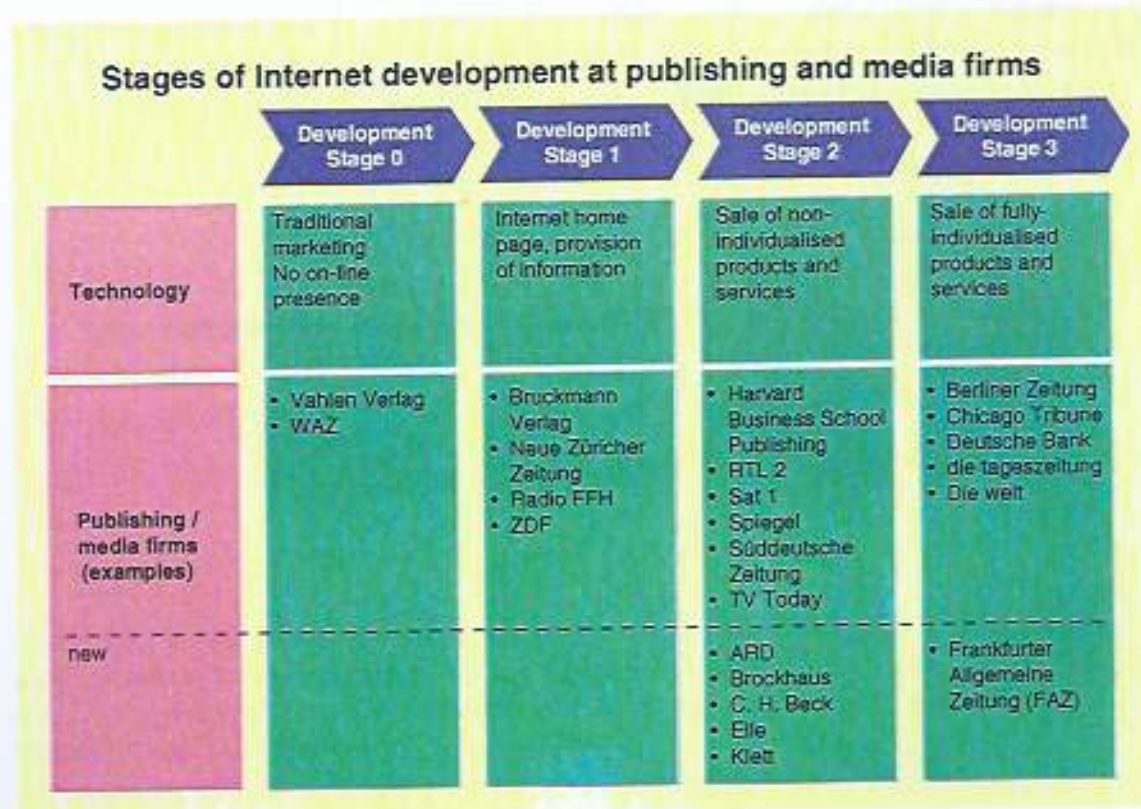
- Product concept components (information, transactions, communications, entertainment)
- Structure of multimedia utility (individualisation, integration of user-generated content, platform links, interface design).

b) Elaboration of a marketing concept

- Price
- Sales
- Platform selection/ combination

The following diagram shows an overview of the current stage of development of selected publishing and media firms.

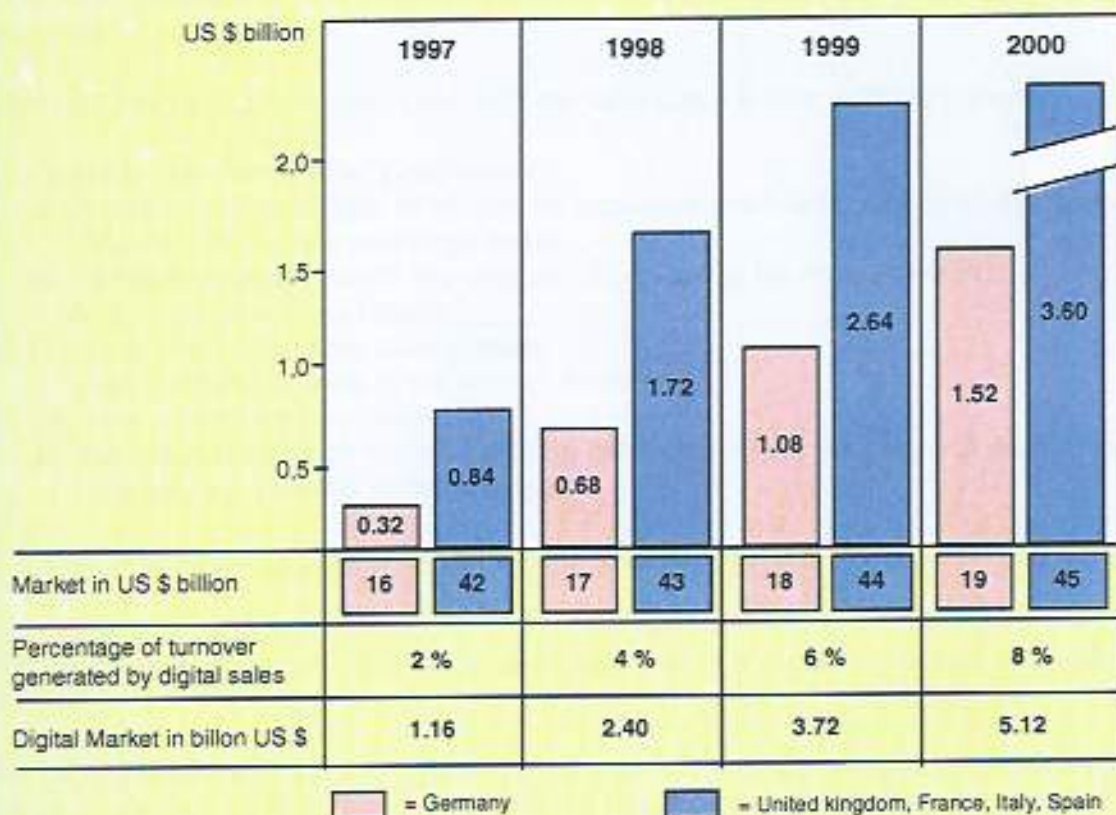
Diagram 82



Status: January/97

Diagram 83

Market for Electronic Publishing 1997 - 2000 in Europe



Press Turnover 1996 in Europe 58 billion US \$



Particularly in the publishing sector, there are a great many pioneering on-line providers. However, product variation will be decisive to the further acceptance and dissemination of this content i.e. an extension of the product, in contrast to the physical magazine, will be necessary.

4.1.2 Product Variations

The products offered in the commercial channel are all digitisable. They can be precisely adapted in terms of scope, up-to-dateness and other criteria to the needs of the individual consumers. This self-modification is feasible due to the interactivity of the medium.

The inclusion and interaction of the user can take place in many different ways:

1. One-way information flow, system-user:
 - Provision of information which can be accessed and read by the user, similar to Videotext (e.g. stock exchange rates)
 - Software products, which the user can download to his or her own PC (e.g. to prepare a tax return)
2. One-way information flow, user-system:
 - User business queries in the form of a pinboard
3. Two-way information flow, interactive
 - Interactive discussion forums involving different users or with experts on specific subjects (e.g. building society savings)

Digitisable products can be varied in terms of the dimensions of time, quality and costs.

The dimension of time:

The dimension of time pertains to the up-to-dateness of and delivery period for the product.

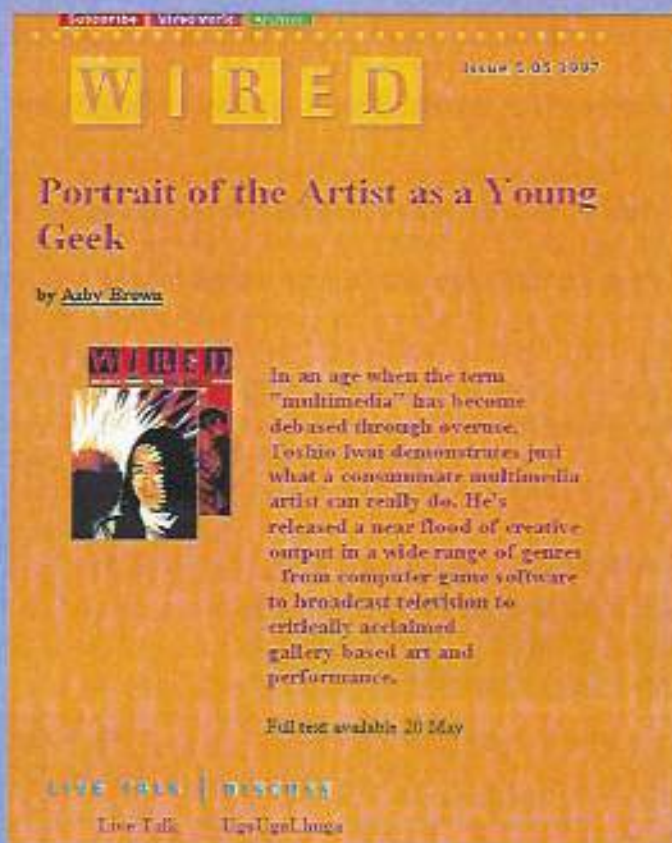
No other medium permits such fast and simple updating as the Internet and on-line services. In contrast to other media, users are not dependent upon publication and delivery dates. The latest information can be electronically processed on the spot and published in the commercial channel. This reflects increasing consumer information requirements.

The user has the opportunity to retrieve on-line information in varying degrees of up-to-dateness. Thus, in comparison to traditional printed media, he has considerably greater scope. For example, it is only possible to access the stock exchange rates and market data in the business section of a newspaper at the time of going to press. It is impossible to trace back stock exchange rates over time. However, when the commercial channel is used, the required data pertaining to a lengthy period can be displayed in order of date in a matter of seconds. Furthermore, corporate news in traditional media still predominantly relate to the present day. In the commercial channel, search functions permit an insight into the history of these companies.

Information can also be delivered at various times. On the one hand, it is possible to deliver data in a matter of seconds. On the other hand, periodic delivery could be requested e.g. delivery each day of user-specified data in the form of an interest profile or selected on the basis of previous search and utilisation behaviour. The pre-selected entries which are classified according to subject areas are displayed as lists of headlines. The

user can then decide whether to read the full text and take a closer look at the subjects. Links to related subject areas supplement the product range.

Wired Web Page



At hotwired, the "electronic equivalent" of Wired, various issues of the original wired magazine can be retrieved.

Dimension of quality:

The scope of information is specifically defined by the user. He has various options for individual adaptation with regard to the quantity of information and access to the information. A number of examples are given below.

In accordance with his preferences, the user can compile the data that are most relevant to him (e.g. stock exchange rate, job vacancies, a section of a trade journal) in a personal menu. Using this list, which includes the headlines of the relevant services, rapid access is provided. The personal menu can be called up using an icon. It is also feasible that the service in question can be directly called up via this icon.

The user has the option of creating a personal file. Access and file management is carried out by means of file headlines.

The system lists the most recently accessed pages or services in a protocol. The user can look at this overview in the form of a list. He can determine how many entries this list will contain. It is also possible to directly access the pages shown via the list.

An individualised news service is offered, which can be controlled in terms of time and event

The time-oriented news service can be realised in the form of a daily personal newsletter. The user states which information the system should provide him with. For example, he might request the stock exchange rate of various high-tech shares, job vacancies for managers and the weather report every morning.

The event-oriented provision of information is determined on the basis of an interest profile or key words, according to which all new information pertaining to the subject in question is sought in the form of on-going research (Info-Scout). The results of the search are compiled and displayed to the user. For example, the user is informed when new information on the subject of 'BMW' or 'European Waste Policy' have been found. Naturally, it is also possible to link search parameters in accordance with the Boolean formulas.

One innovative option is the integration of personalised business data in the screen saver. Depending on user preference, stock exchange rates, news or weather information can be incorporated (e.g. Pointcast)

Diagram 84

Individualising product areas		
	Money	Jobs and career
Individualised product content	<ul style="list-style-type: none"> • Stock exchange rates • Market reports • Broker recommendations • Newsletter 	<ul style="list-style-type: none"> • Job vacancies • Seminars
Utility steps	<ul style="list-style-type: none"> • User-profile (portfolio status, investment preferences, intervention limits) • Portfolio and information overview 	<ul style="list-style-type: none"> • Job-profile / professional interests • Display of pre-selected offers • Corporate information • On-line reply / contact establishment

Dimension of costs:

Because the user determines the scope of information to be retrieved himself, he can directly influence the costs that he will incur. Please refer to the following section on pricing.

4.1.3 Pricing

Pricing should reflect the interests of both the user and the provider.

The monthly charge to the user should not exceed the price of the corresponding printed media. Furthermore, the user should be aware of the additional utility of multimedia compared with traditional newspapers (e.g. search mechanisms, chat facility, 24 hour availability).

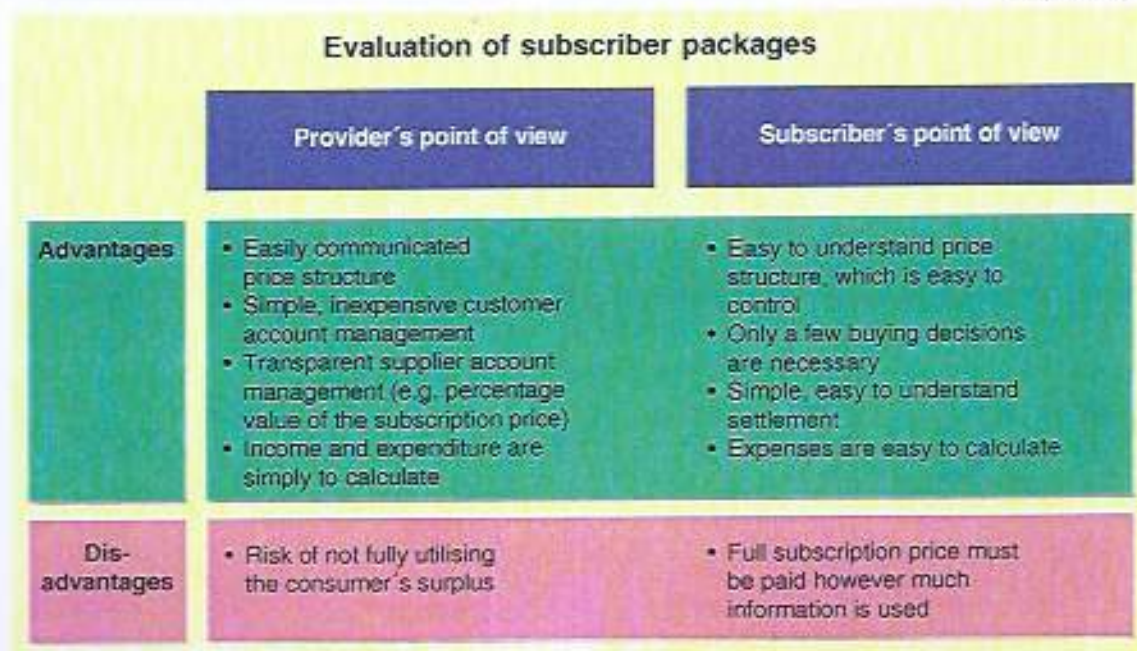
The precise determination of prices for the utilisation of the commercial channel and the service packages (subscription with different basic and additional services) can be made using a conjoint analysis. This analysis is based on the attributed product alternatives, which must be comparatively evaluated by means of a computer survey. In this respect, it is possible to measure the relative influence, i.e. contribution to utility, of the individual criteria which make up the overall preference evaluation and derive reference prices for the individual performance components. (In Germany, AOL also uses the Adaptive Conjoint Analysis (ACA) and the Decision Support System, PREFSIM, to determine prices and products). In order to recruit new customers and consolidate customer loyalty, it is practical to stagger prices in terms of time. e.g.:

- free or low-cost 4-week trial subscription
- 'normal' price for one year
- loyalty incentives/ discounts for long-term subscription in excess of one year's usage.

In principle, pricing can be based on a fixed user-dependent model, entirely user-oriented or a mixture of the two.

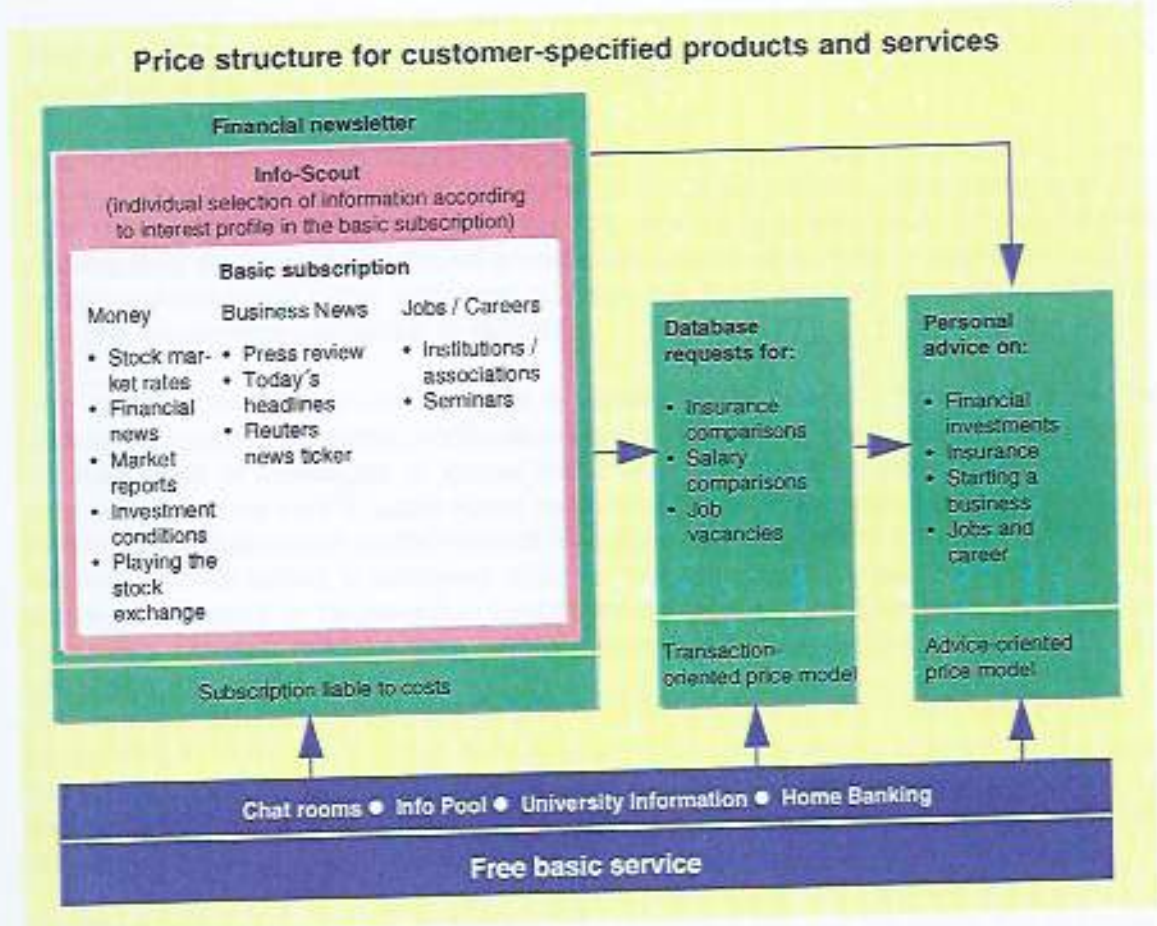
The advantages and disadvantages of subscriber packages are shown in the following diagram.

Diagram 85



It is possible to create a differentiated price structure in the form of a free basic service, plus a subscription fee and individual transaction and advice-oriented prices if products can be individually specified. The following diagram shows an overview of this type of price structure.

Diagram 86



4.1.4 Communication Instruments

In comparison to conventional media, the Internet and on-line services offer new perspectives with regard to advertising. The significance of advertising proceeds for a commercial channel will increase as these new technologies evolve into a mass media. For example, companies such as Telemedia (in conjunction with Lycos), I/PRO or the AOL subsidiary, AdOn, are already active in Germany.

In connection with the new multimedia technologies, infomercials are becoming increasingly important. Infomercials eliminate the boundaries between advertising and product information. They not only advertise the product (e.g. insurance, financial investments), they also provide additional product information (e.g. yield). Advertising is becoming a service which offers additional components, such as product and price information and information pertaining to delivery.

The commercial channel can be used to contact users directly. These people can be directly informed of the latest modifications and products by E-mail. The user can control the frequency of messages or ignore them. In connection with stored search masks, information can be sent to users about products and services which interest them. User transparency is achieved on the basis of his utilisation behaviour and demographic statements. The information is delivered direct to the users, which means that they do not actively participate. In target-group specific advertising, for example, property financing quotations are sent to users who earn above-average incomes and are in the 30 - 45 years age group and above.

By sending E-mails, the product or service provider will generally achieve greater success than he would via classic direct mail advertising. The content of E-mail cannot be seen until it is opened, so it is generally read. Furthermore, it is inexpensive to send E-mails.

Intelligent agents are playing an increasingly important role in advertising. For example, they can sort E-mail advertisements into those which are worth reading and those which should be ignored to prevent the user of a commercial channel from being 'inundated'.

Furthermore, user individuality is taken into consideration in advertising because the advertisements are only placed in specific areas of interest. New publications about successful wage negotiations and job interviews are therefore only found in the jobs and careers section.

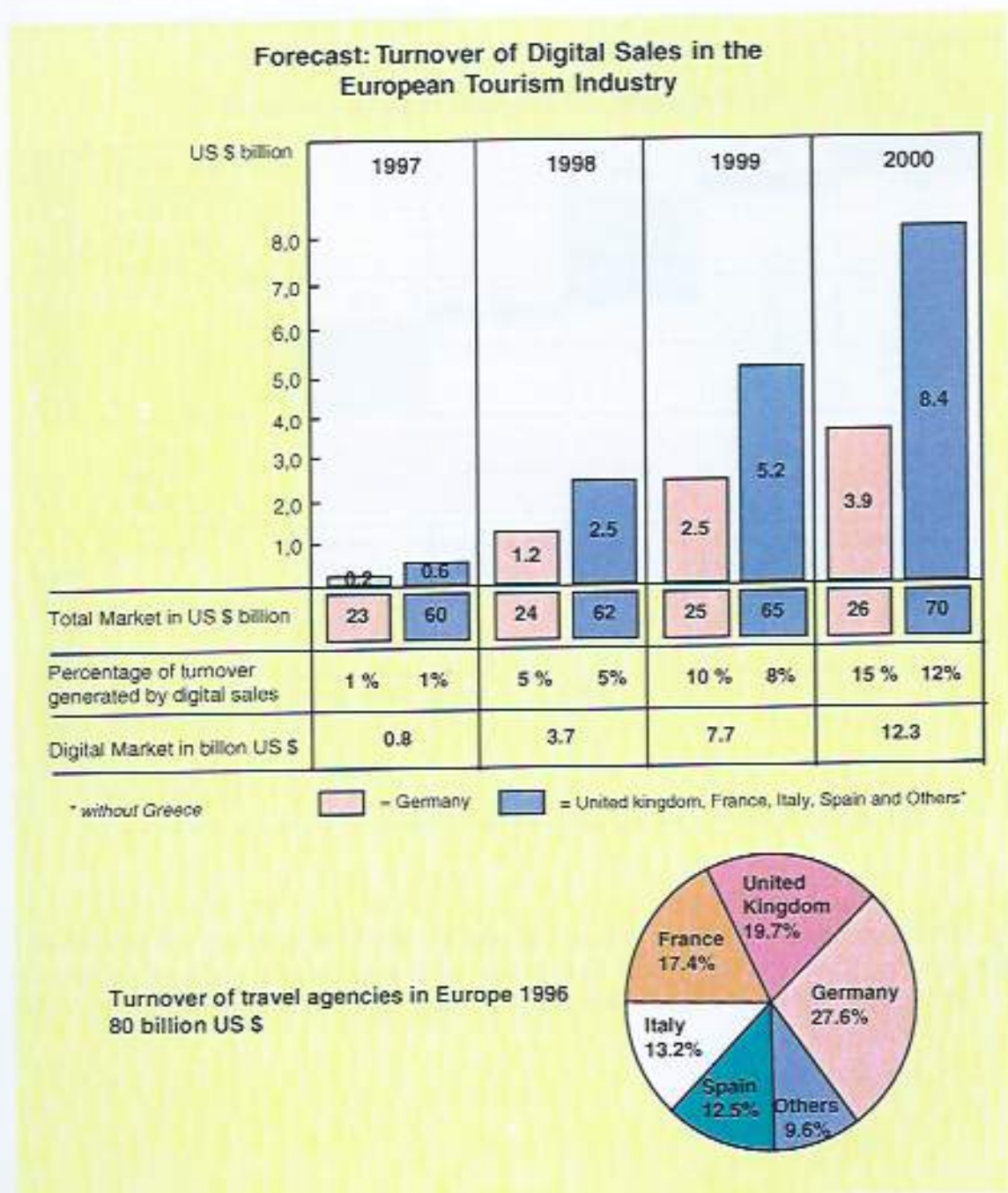
It is easy to link marketing activities with search mechanisms, where advertising is displayed via search engines. By entering key words, the actively searching user can quickly find the products and services that he is interested in. Therefore, it can be assumed that a user who is searching in Internet for the Deutsche Bank (e.g. investment opportunities), will also be interested in the products and prices of the Dresdner Bank or the Commerzbank. The advantage of target advertising in on-line media is its transparency.

4.2 The Tourism Industry - Customer Management Case Study

4.2.1 The Tourism Industry

The tourism industry is presently undergoing a process of change. The tour operator and travel agency sector is becoming increasingly concentrated. The travel agency market in Germany centres around the five 'giants', TUI, DER, ITS, NUR and LTU, which hold more than 66 per cent of the market.

Diagram 87

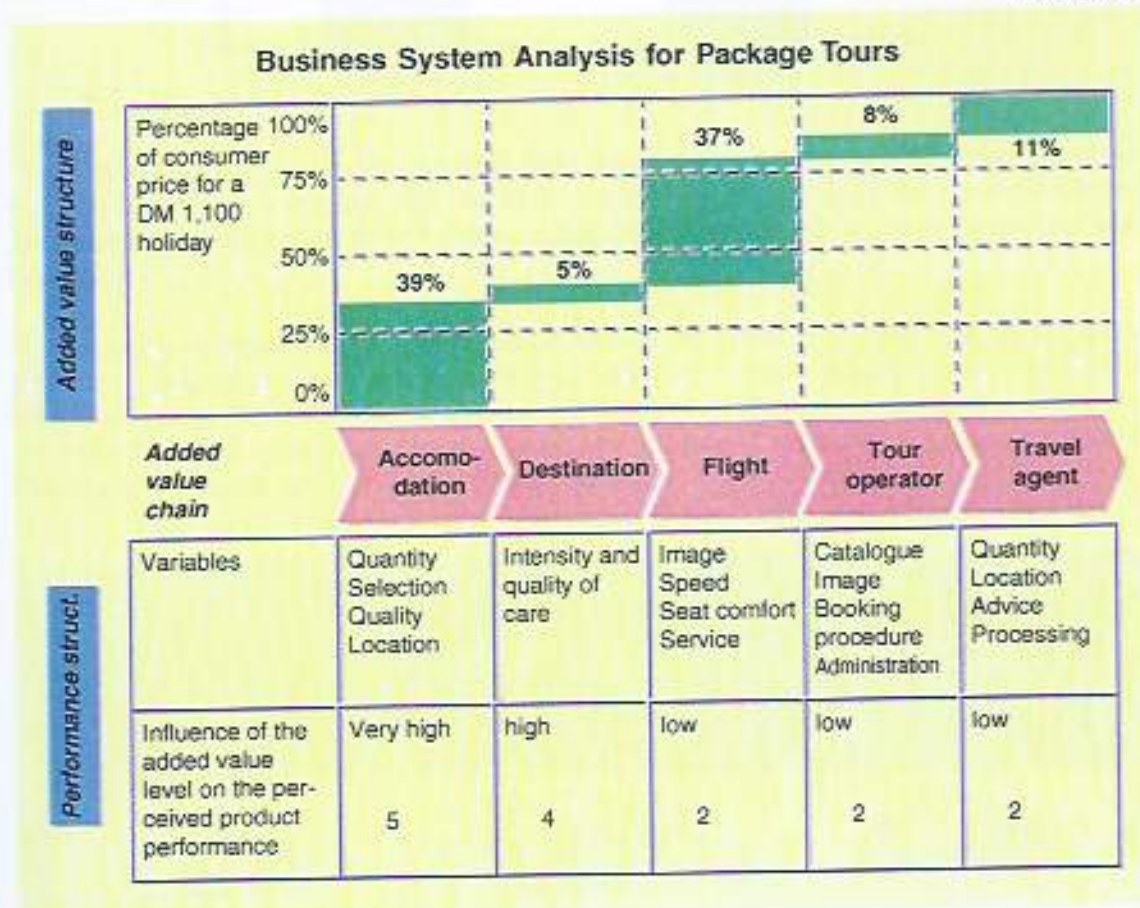


Source: ECTAA, Fitzpatrick, CMT Associates, Diebold

Over the last ten years, the number of travel agencies in Germany has doubled to approximately 13,000. In light of the increasing competitive pressure between travel agency chains, many individual agents have entered into joint ventures. Because an increasing number of tour operators use direct sales to avoid paying commission to travel agencies, the existence of these agencies is threatened.

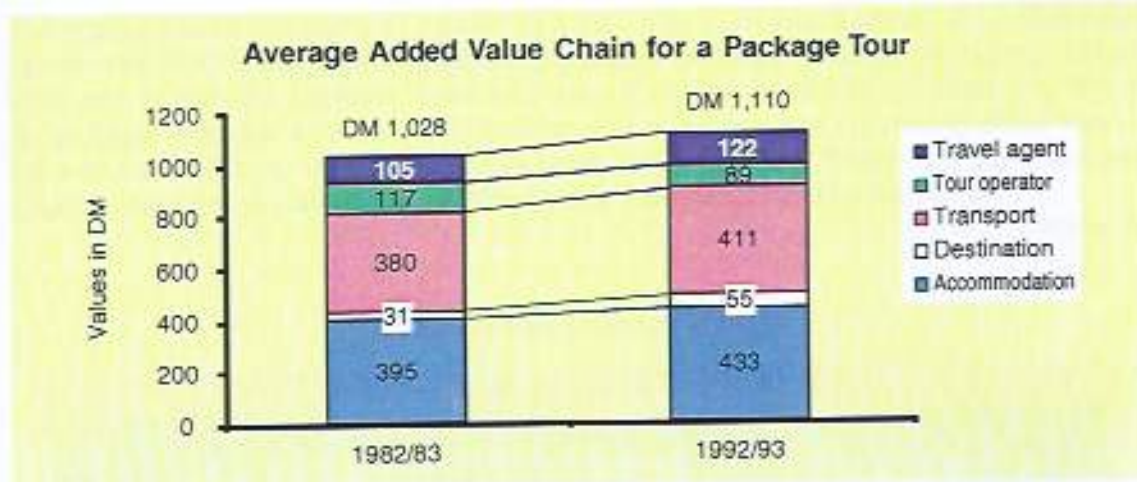
If we take a look at the price of an average package tour (adjusted to the rate of inflation), it is obvious that prices have fallen markedly. Operators, in particular, are negatively affected by this real fall in prices. In comparison, prices have increased in other sectors, such as accommodation and transport.

Diagram 88



The reason for this decline is the increasing number of holiday offers which can be substituted for other offers. There is an absence of differentiation criteria between the individual tour operators. A similar trend is also evident in the travel agency market.

Diagram 89



There are also changes to the demand side. Increasingly shorter working hours to combat unemployment are expected. The predominantly rigid time system is being replaced by flexible working hours which gives tourist consumers more scope to organise their leisure time.

The 'education explosion' has produced critical consumers who meticulously compare different products and services and have greater information requirements. The consumer is adapting his behaviour to the increasingly rapid changes in lifestyle. These critical, well-informed consumers have a 'live-for-the-moment' attitude. This also means that they have a greater need to 'experience' more.

Web. VIII

American Airlines Web Page

With the assistance of special software, the customer can book a holiday in Hawaii, as well as take advantage of many other services.



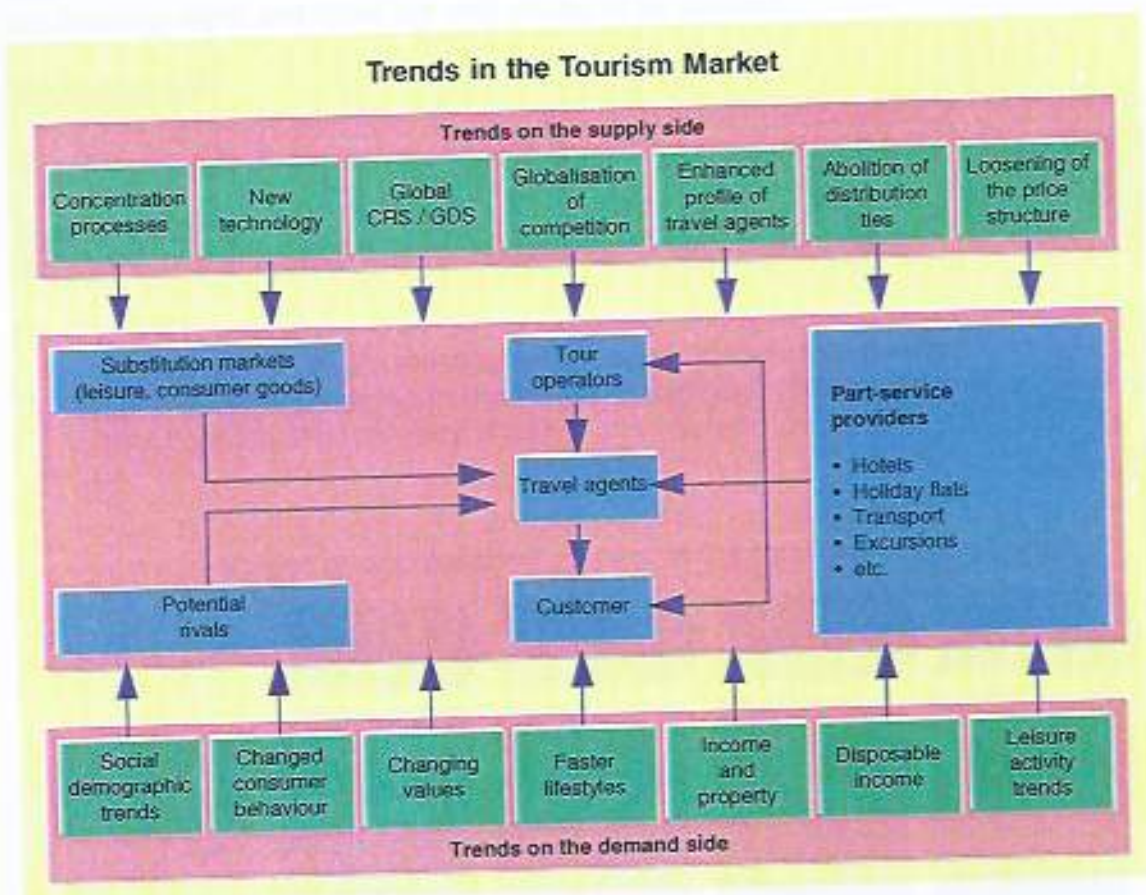



HAWAII

FAV HOME PAGE
INDEX
AA HOME PAGE

Increasing health concerns in society are resulting in higher demand for activity and fitness holidays. Niche suppliers of these types of package holidays are doing particularly well. In general, however, there has been a decline in individual holidays in favour of package holidays. In this sector, leading tour operators are organising adventure or recreational holidays. Quality demands have also increased. There is a general trend towards consumers demanding on-the-spot or last minute tourist services.

Diagram 90



As the Internet expands, more and more tour operators and travel agents are stepping onto the data highway. In the following analysis we will discuss some examples of Web pages. The success of a Web page depends on a number of key factors. The following description explains which criteria the selection is based on.

User interface

A clear, well-structured interface is important for the user. It means that he will not have to click through numerous Web pages to find the information he is seeking. Therefore, the Web page should have an intuitive display and not require any further explanation.

Loading times

It is irritating to sit and wait while the next page is configured. Fast configuration is a decisive factor which cannot be influenced by the service provider alone because different load times depend on the traffic at the server in question.

Content

The most important aspect of the Web page is the information displayed. Factors such as diversity, depth and detail are also crucial to its success.

Up-to-dateness

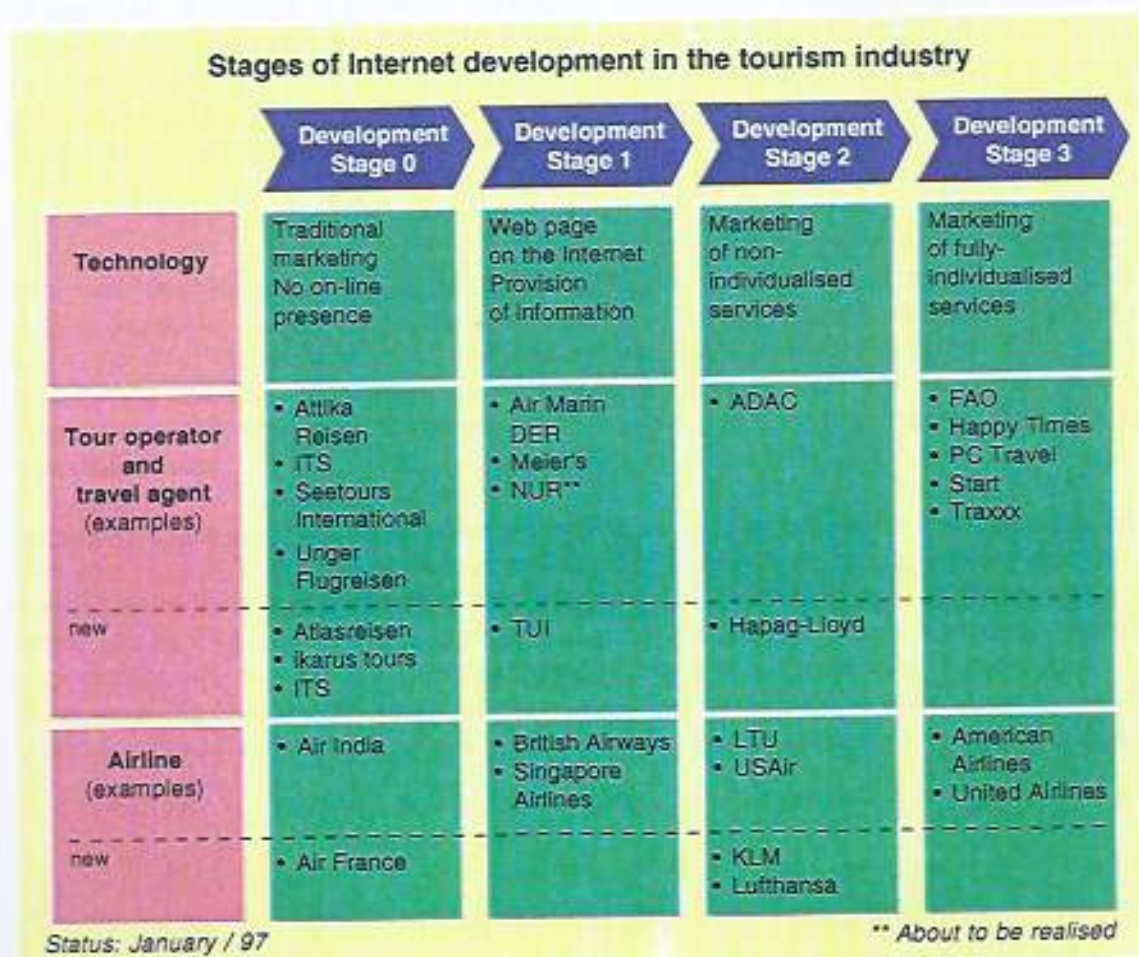
Often the provider creates Web pages and fails to update them regularly. The presentation of up-to-date products and services are critical, particularly in the tourism industry.

Functionality

Several factors are relevant in this respect:

- ☐ Which functions, e.g. chat, E-mail, home booking or vacancy queries, are used by the provider? How are these functions structured or implemented?
- ☐ Is the Internet presence marketed via advertising? What additional services or hyperlinks to complimentary providers are offered?

Diagram 91



The Internet World Travel Guide

This Internet tourist service is positioned as the top travel service on its unsold advertising spaces. The design gives the impression of exclusivity. The guide is international, well-structured and the information is short and to-the-point. There is a wide range of package tours offered, which are forwarded via links to external service providers.

Travelbook

In some cases, tour operators who are attempting to attract attention to their expertise and services in a non-commercial way provide interesting articles on the subject of tourism - 'countries-people-adventure'. A clear user interface and easy-to-use directories round off the compact service. However, this service is not a general provider, but a travel magazine. It does not include search engines and bookings. There are interesting links to travel-related subjects on an additional page.

FAO

FAO claims to be the world's leading Internet travel service for business travellers. It addresses the business traveller segment. These people can use FAO Business Travel Online free of charge. It provides up-to-date information, arranges flights, hotels, car rental or train reservations and flight tickets can be booked in real time. A presence on the mass tourism market is not integrated which means that no luxury holidays are offered. A vast range of discounts are offered to 'frequent customers'. The detailed feedback function permits reference back to customers.

Internet Travel Network

Internet Travel Network (ITN) appears to be the only service of its kind at present to be connected to the Galileo reservations system. This permits vacancy queries and on-line bookings. The flights booked via this reservation system are transferred to the travel agency via Internet which contacts the customer at his request and confirms the booking. The Seatop tour operator loads the ITN service in one of its frames. 'Travel' links are also offered.

Individual tour operators/ travel agents or service providers also offer their products and services on-line. There are already a vast number of small and medium-sized providers. Almost all of them offer sub-products or their entire product range on their pages. In many cases, pictures and descriptive text accompanies the offers. The user has the opportunity, with the aid of a booking mask, to make in a non-binding booking query. It is not possible to make an actual booking. As a further service, a telephone number or contact address with fax number is given. The LTU Web page is one example of this:

LTU

The user has the opportunity to obtain information on the entire range of LTU products. There are also descriptions of planes, kerosene consumption and detailed environmental facts and figures for the user. In a link to the LTU magazine it is possible to read excerpts of articles. Last minute news is provided in the form of a news flash. In contrast to other providers, there is no booking query function.

Web. IX



With multimedia, it is possible to reflect and meet consumer needs faster and with greater precision. The following sections highlight the scope of the Internet for customer recruitment, customer loyalty and customer services using the example of the tourism industry.

4.2.2 Customer Recruitment

In Section 3, we ascertained that the Internet is a 'pull' medium. Consumers must actively search for products, services and information. This is why external incentives are necessary to animate the consumer. Advertising is therefore of central importance to customer recruitment on the Internet. The insertion of advertising in search engines plays a particularly important role in this respect. Communities of interest and forums also make reference to Web pages, thereby increasing levels of awareness. A further means of increasing awareness is a hyperlink to frequently visited Web pages associated with the subject of travel.

Large providers make the transition by placing advertisements in magazines and running TV and radio commercials in addition to advertising on their own Internet pages. Presence on the Internet not only constitutes an additional service on the part of tourism providers, it also enhances the image/ prestige of the company.

However, initially, consumer interest for the company's own Web pages must be aroused. There are a number of ways of achieving this:

1) Linking marketing activities with search engines.

The tour operators /travel agents/ service providers have the opportunity to use familiar search engines, e.g. Flipper, Kolibri and Yahoo!, to place advertisements. They can also be placed in sub-sections, which are classified in terms of specific subjects such as 'travel'. This makes it easier for the consumer to find a page.

If the consumer creates a search mask, he can receive more detailed information. It is possible to store this search profile and to offer it to providers. The tour operator or service provider can then adapt its service to meet the customer's precise needs on the basis of an evaluation of this data.

2) Marketing products in communities of interest (forums)

A direct reference to a 'page' can be made in travel forums. These are visited by the majority of the target group. Infomercials can increase awareness and arouse interest. The target groups in question are familiar with the forums, so it is possible to go into more specific detail with regard to certain topics. There are forums for anglers, divers etc. and these are an ideal marketing platform, especially for the above niche provider, because the service and target group overlap to a large extent. The niche-like structure of the news groups and forums permit the providers to specifically address new customers.

3) Cross selling

Links to other commercial providers in the tourism sector generate a cross-selling effect. An interested customer uses hyperlinks to access further Web pages. If the design of this Web page is interesting, it is highly probable that he will be interested in the products and services offered on the page. The provider should also utilise the vast number of linked areas on the Internet. Frequently visited Web pages are ideal for such links. When possible, these should be complimentary to a company's own offer so that the cross-selling potential can be effectively utilised.

4) Advertising/ sponsoring

It is a good idea for a company to place an advertisement for its own Web pages on the frequently visited pages. This achieves higher penetration than a hyperlink alone. Internet advertising is presently limited to predominantly static images. To some extent, animation and sound effects are also possible. For example, a flashing banner could be used to draw attention to offers. This will obviously have a higher advertising impact than a conventional newspaper advertisement. Many Web page subscribers are willing to place advertisements because they are dependent upon sponsoring for their own Web pages.

On-line advertising through friends and acquaintances can also expand numbers of customers. The advertiser enters the required data in the mask which are then stored in a database. These customers can be contacted via mailings. Customers who recruit new customers are given small gifts or discounts, depending on the number of new customers they recruit.

In order to recruit new customers, it is necessary to address the customer requirements which have not been fully met by tour operators/ travel agents in the past. The items in the list below were said to be unavailable or require improvement in customer surveys. The list can be used for a customer recruitment analysis or as a guideline for improving customer loyalty.

- ☐ Constant availability
- ☐ Up-to-dateness
- ☐ Market transparency
- ☐ Detailed information
- ☐ Individual service/ advice
- ☐ Individual holiday offers
- ☐ Easy and simple booking
- ☐ Vacancy queries
- ☐ Proximity to travel agents
- ☐ Price comparison

Constant availability/ proximity to travel agency:

In contrast to a travel agent or tour operator, the Internet is available 24 hours a day. This makes it attractive to the travel industry all over the world. Constant availability provides extra convenience for the consumer, because he is not dependent on shop opening hours. He can request information and make bookings in accordance with his daily routine.

Smaller providers, for whom a comprehensive telephone advice service is often too expensive, can also benefit from the Internet. Customer queries can be answered by E-mail. The customer receives a personal response to his queries and doesn't need to contact the help desk.

The high availability also reflects the previously-mentioned change in consumer lifestyles, in that customers tend to make on-the-spot decisions these days. Shop closing times did not meet customer requirements in the past because many travel decisions are made in the home, with the family, and direct information queries were impossible.

Web. X

Travelocity Web Page



The on-line travel agent, Travelocity, is constantly available, individual, convenient and up-to-date.

Queries via the Internet are more convenient for consumers because they can make bookings in the comfort of their homes. This is clearly an added bonus through which new customers can be attracted. Due to the informal nature of a Web page, it is easier to transform initial interest into a booking.

Up-to-dateness

No other medium is as simple and quick to update as on-line media. In contrast to other media, customers are not dependent on publication dates. In comparison to TV, fixed transmission times do not have to be agreed. The latest offers can be electronically processed and displayed immediately. This reflects increasing consumer information requirements.

Customers who are interested in all the latest offers can obtain information regarding the most recent changes at the site or find out about product and service modifications through E-mail. If he so desires, the customer can control or block the frequency of messages. In connection with a suitable search mask/ preferences, special personal offers can be compiled. The information is then sent directly to the customer.

Market transparency/ price comparison

The market transparency for the user can be increased by a precise search profile. Using this profile, he can choose 'his holiday'. It is possible to put together a holiday using different accommodation, transport, destination and activity modules. This is an open access system, which means that the potential customer can put together a 'sample' holiday, which may arouse his interest. If he has any questions, he can always use E-mail or the hot-line to contact the tour operator/ travel agent or service provider.

Detailed information/ individualised service/ advice

Often, the customer is not satisfied by simply reading a brochure. Many customers would like to receive detailed personal advice. The interactivity of the Internet permits a direct response on the part of the consumer to an offer. Via chat or E-mail, the consumer can address personal queries to the provider.

Simple and convenient booking/ vacancy queries/ on-the-spot confirmation

Vacancy queries can be made via the Internet at any time. Reflecting the trend of on-the-spot decisions on the part of consumers, booking and confirmation procedures can be simplified on the Internet. Thus, in the business traveller segment, new customers can be attracted because fast processing is imperative to them. A customer states his destination and his desired mode of transport and, after an appropriate check, he directly receives confirmation.

4.2.3 Customer Loyalty

Customer loyalty plays a central role in the development of a multimedia strategy for the tourism industry. Due to the homogenous nature of services in the tourism market, consumers can substitute offers which results in a price/ quantity comparison. It is important that providers ensure that they stand out from competitors and thereby generate customer loyalty.

The traditional booking procedure for a package tour usually takes place via a travel agency. This gives the operator no opportunity to directly influence the customer. The individual service providers also had little opportunity in the past to directly address a wide public. The instruments described below can be used to promote customer loyalty in the tourism industry.

Frequent Usage Pricing: this type of system is already used by many providers. For example, Lufthansa has a Miles & More card, with which the holder receives free flights, depending on the number of miles he has flown with the airline. Internet can also be used to operate a similar system for various services. Depending on the frequency of usage of a certain tour operator/ service providers, discounts can be offered on further products. The providers can thereby negotiate various tariffs directly with the customers, which permits a flexible tariff structure. The more often a customer uses the service of one provider, the greater the financial consequences if he switches to another provider.

Web. XI

Lufthansa Web Page



On the product communication marketplace, Lufthansa InfoFlyway, potential customers can put together individual flight connections, as well as find out about the wide range of other offers.

Incentives: depending on usage, prizes can be raffled off on the Web page itself or with the assistance of a random generator. This gives the consumer the incentive to repeatedly return to the site. It would also be possible to send promotional gifts to customers who leave their address. The provision of a search profile permits the provider to send a variety of gifts which reflect user profiles.

Sending E-mail: sending E-mail to customers is a means to inform them of the latest product information. With the assistance of a stored profile, customer-specific information can also be sent. The form and manner of presentation can be adapted to the known utilisation behaviour of individual customers. It is impossible to guess the content of an E-mail if it is not opened, so all E-mails are read. In this respect, intelligent agents can be helpful. They can precisely communicate the preferences and interests of tourism customers and ensure that users are only sent the advertising information that reflects their profile or on the basis of previous searches that have been made.

Hyperlinks, communities of interest/ forums: are a further means of increasing customer loyalty. The consumer can exchange information with people who have the same interests and, if a customer regrets having purchased a particular product, this can be dispelled or reduced. Furthermore, it is possible to make travel contacts before taking a journey or to keep in contact with old acquaintances. Special areas offer user-generated travel reports or travel recommendations.

A forum with on-line experts can also increase consumer interest. Experts can be invited to discuss a subject with consumers. Expert advice increases degree of professionalism of the Web page. This type of image/ prestige enhancement is particularly important to providers with regard to performance differentiation and meets with a positive response from people with queries. This leads to higher customer satisfaction and customer loyalty. Furthermore, consumers should be able to request information and picture/ sound material pertaining to their holiday destination in a download area.

3D- multi-user systems: in addition to the standard chat function, these chat systems provide a '3D user world', which the consumer can move around in. Various hotels are represented in this tourism world which offer their products in 3D rooms. They activate the users' basic creative needs and boost their excitement in anticipation of the holiday.

4.2.4 Customer Service

The Internet is an information network which offers various possibilities to expand the service package of tourism industry providers. Hyperlinks permit the provider to expand his own services and the services of other complimentary providers, thereby offering the consumer a wide range of products. There are a number of different service categories.


1) Personalised offers

- ☐ By means of search mechanisms and stated preferences, personal queries can be made and a personalised offer put together. These profiles can be filed. If any changes and modifications are made, the customer can be contacted by E-mail.
- ☐ Direct communication is particularly helpful as regards performance differentiation. General information pertaining to the holiday destination, local conditions (visa, inoculations) can be requested. Hyperlinks can be used to indicate complimentary service providers in the tourism industry. A good example of this is travel insurance or a hyperlink to a home page offering an on-line dictionary.







Web. XII

Travelocity Web Page

Travelocity offers a partially fully comprehensive travel service package.



If you're a member, sign in. If not, create a new account through our [Sign Up](#) button.

 <h3>Flights</h3> <p>Track down the lowest fares to anywhere.</p>	 <h3>Retrieve Existing Reservations</h3> <p>Don't remember your last reservations? We do.</p>
 <h3>Cars</h3> <p>Check through our deals on wheels.</p>	 <h3>Hotels</h3> <p>Check in by checking out our nearly 35,000 hotels.</p>
 <h3>Cruises</h3> <p>Creates the perfect holiday for you and your family.</p>	 <h3>Bed & Breakfasts</h3> <p>Access to more than 20,000 private homes with breakfast and more from TripAdvisor.</p>

2) After sales:

When the customer has made a purchase, he can be offered additional services via multimedia.

- ☐ The provider can inform the customer about any product changes via E-mail.
- ☐ Additional information pertaining to the holiday destination can be provided via hyperlink or E-mail lists, e.g. the weather at the holiday destination, exchange rates or information on the traffic situation, such as plane arrival/ departure times.

3) Extras:

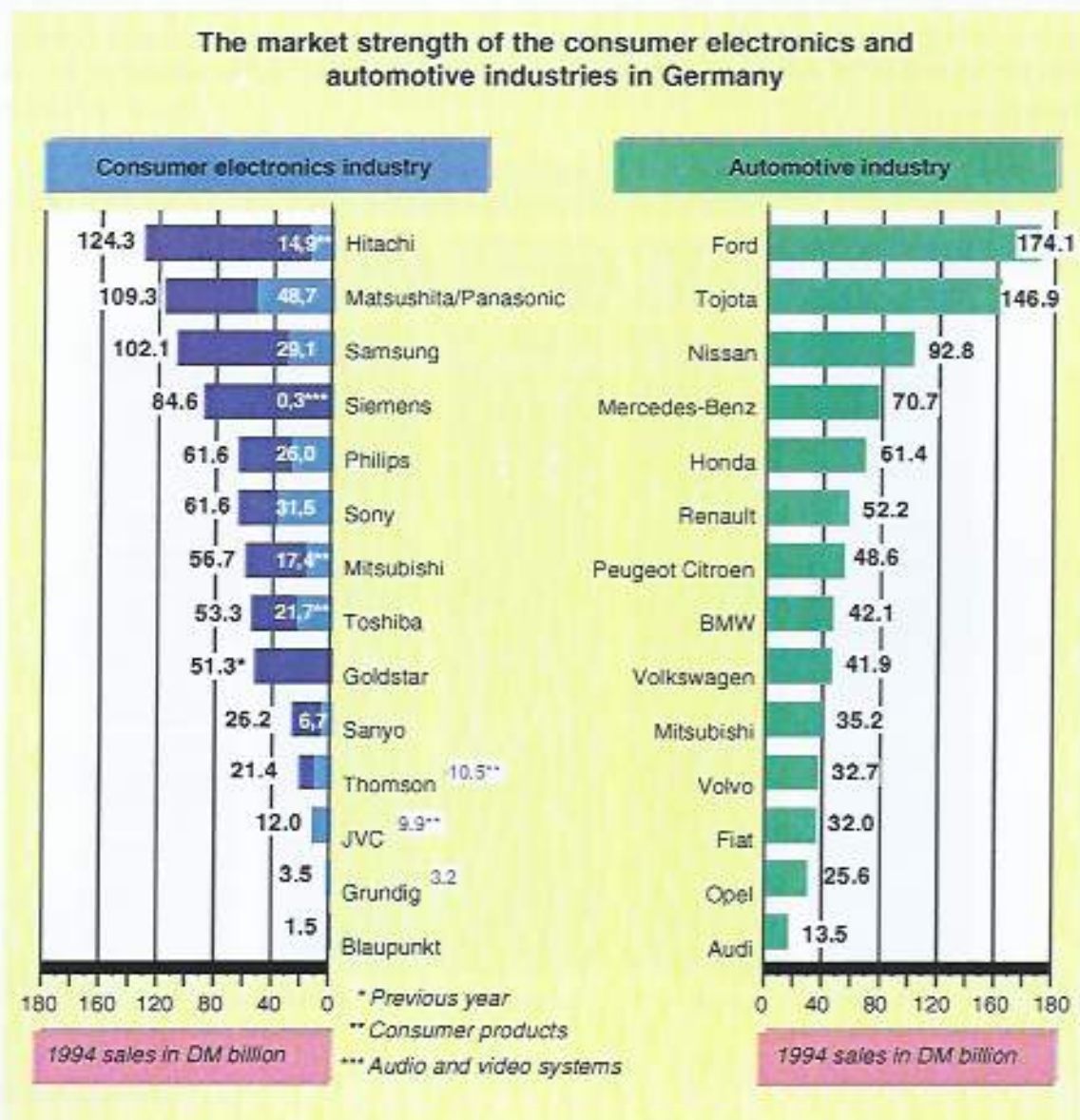
- ☐ The customer can insert small ads via on-line media, to obtain the equipment that he needs for his holiday, to offer equipment for sale or to exchange it. Personal advertisements can be used to seek holiday travel companions or house-sitters.
- ☐ Intelligent agents track the search and utilisation behaviour of a customer after he has made a purchase and, if appropriate, offer complimentary products (e.g. daily excursions at the holiday destination) or useful travel extras (e.g. travel equipment or clothing).

4.3 Manufacturers and Retailers - Process Management Case Study

4.3.1 The Automotive and Consumer Electronics Industries

The automotive and consumer electronics industries are two industries with considerable market strength. A comparison of the two branches shows the significance of the sales of the individual providers.

Diagram 92

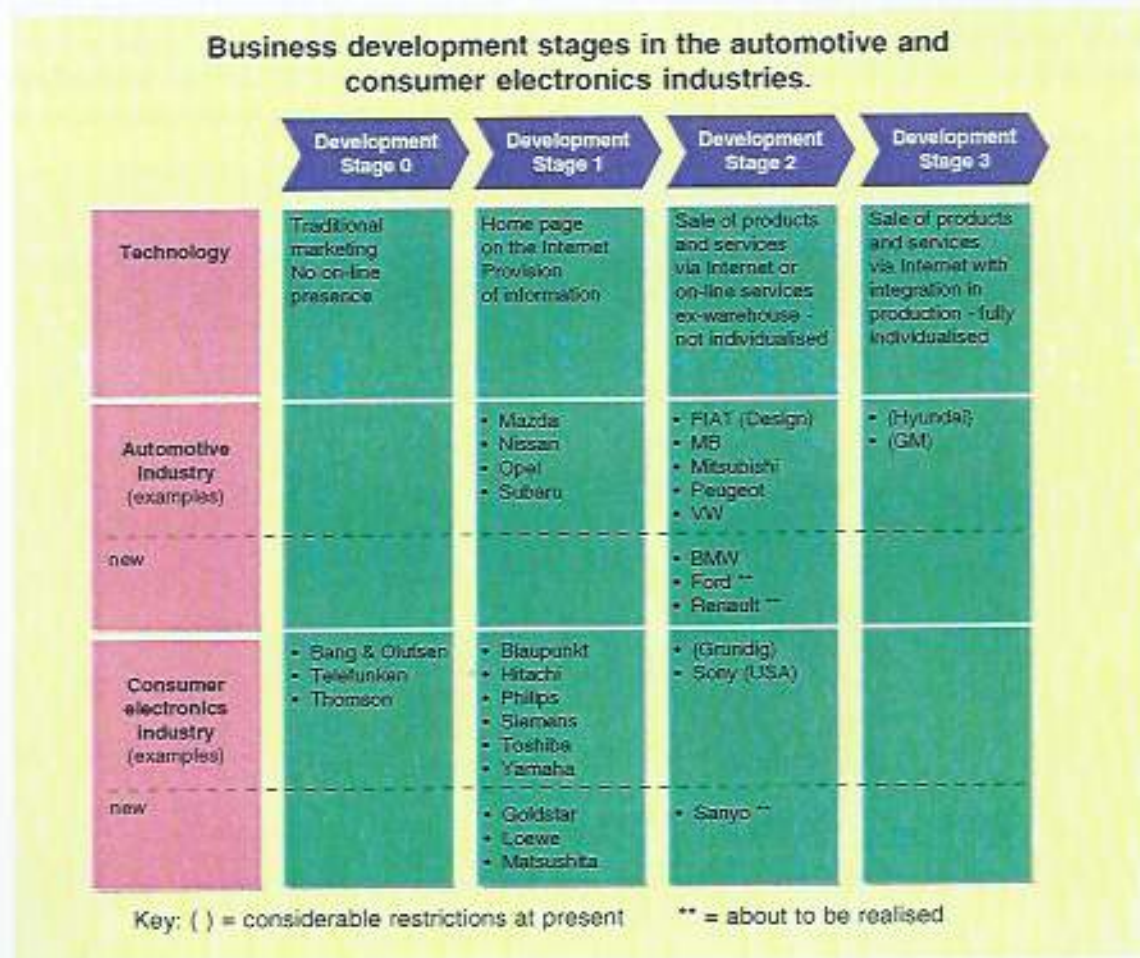


Most of these companies invest in electronic commerce. From a commercial point of view, it is critical that these suppliers plan a vast number of alliances. These alliances can involve companies in other industries. For example, a four-wheel drive manufacturer forming an alliance with an off-road magazine on the Internet to provide weekly information about new events.

Alliances can also be formed between rival manufacturers in the same industry to facilitate an Internet presence. In this case, the objective is for each company to increase the attractiveness of its own Internet presence to the greatest possible extent. Retailers are rarely involved. This also shows the explosive power that electronic commerce can have.

A strong alliance between manufacturers can easily eliminate the need for retailers, even though there is strong opposition to this at present. An increasing number of manufacturers of trademarked goods - e.g. Sony USA - are selling their products via the network direct to the consumers at a substantial discount. The status of digital business in the industries which have been used as an example indicates what trends we can expect in future.

Diagram 93



Status: January/97

However, it must be mentioned that retailers are not always pushed into the background. A number of manufacturers' home pages make explicit reference to retail outlets.

It is naturally also possible that digital sales could generate at least part of the commission due to agents on the basis of exclusive territory. At present, there are still a great many contracts which are restricting electronic commerce. However, the increasing quantities of gray imports by Audi and VW under Carpool, autoplus or Cyberline, which presently offer price discounts of up to 30% in T-Online, will put additional pressure on the market in future.

Today, almost all the automotive manufacturers included in this study have a home page on the Internet. In contrast, some of the surveyed consumer electronics manufacturers are positioned outside the Internet. Two companies, Loewe and Matsushita Electric, intend to follow competitors and join the Internet. The majority of companies restrict themselves to a presence in Internet via which they provide product and corporate information. Sony, in the consumer electronics branch, and the automobile manufacturers, Mercedes-Benz and Peugeot, are the only companies to sell their products via the Internet at present.

In the automotive sector, a further differentiation must be made in Stage 1 - Internet presence only. In addition to the standard provision of information on the home pages which are used to order brochures from most manufacturers, BMW and VW promotional merchandise, such as CD-ROMs, can be purchased and Mitsubishi offers a test drive reservation service. In the area of multimedia sales, Mercedes-Benz and Peugeot sell accessories, model cars and similar articles to on-line consumers.

Web. XIII



At Hyundai, individualised quotations including prices, accessories and colours can be requested.

The consumer electronics company, Sony Corporation of America, sells its products via the Internet. A global expansion of sales, which is presently restricted to the USA, is presently being developed in the form of the 'Sony Station' Web site. In a joint venture with VISA, entertainment products will be available at the Sony Station in addition to consumer electronics products. Grundig intends to form an alliance with Sony. Internet sales in this company are presently in the developmental stage.

4.3.2 Business Models

A joint description and comparison of Sony and Hyundai as examples of companies in these industries can be made in a number of respects:

Firstly, the automotive industry uses marketing channels which have entirely different structures to the marketing channels used by the consumer electronics industry. The dependency of the distributor on the manufacturer and brand loyalty is very high in the automotive segment, though it is often very low among consumer electronics retailers because they sell a wide variety of brands. At the same time, some automotive manufacturers are establishing their own sales network in Germany.

Diagram 94

Comparison of traditional marketing channels		
Method of retail	Automobile retail	Consumer electronics retail
Marketing channels	<ul style="list-style-type: none"> • Manufacturer's retail outlet • Distributors / retailers • Contractual workshops • Importers 	<ul style="list-style-type: none"> • Specialised retailers • Large-scale marketing • Mail order
Dependency of retailer on manufacturer	• Very high	• Usually low
Partner commitment	• Very high	• Often low
Exclusivity	• Usually only one brand	• Always a wide variety of brands

Secondly, Hyundai and Sony are at similar stages of multimedia development. However, automobile manufacturers only sell products ex-warehouse in exceptional cases. Each order is typically so different in terms of colour, fittings, engine power etc. that the cars are made to order. In extreme cases, every product, e.g. products from the MB factory in Wörth which manufactures commercial vehicles (in this case, the example of Mercedes), is unique.

In comparison, consumer electronics products are standardised, with a few exceptions.

Selling products ex-warehouse is therefore possible, even if product life cycles are short and storage costs are high. Thus, Sony is a manufacturer which sells its products ex-warehouse, whereas Hyundai manufactures individual vehicles to order.

At present, Sony has the most progressive business model. Whilst Mercedes-Benz, for example, only sells accessories at present, Sony offers its entire product range for sale on the Internet. All products, such as Camcorders, video recorders, CD-players, TVs etc. can be ordered at the click of a mouse.

Web. XIV

Sony Web Page

On-line products can be ordered directly in Sony Online.

SONY

Sony on line

Order online and free shipping

on music
Artist information, tour schedules, award clips, cover art, music video and special promotions.
Prong Live Fly. 2nd

on games
PlayStation video game information including version dates, videos, codes, and previews of upcoming titles.
"The truly perfect arcade translation..."
— DENZEL LAM/FA

on electronics
Product info for consumer electronics, business & professional products, computer products, employment apps.
Free CD's when you buy select Document[®] or CD Business products.

on movies
Intimate portraits in Columbia, TriStar, TriStar, & Sony Picture Classics films and home video.
Archie. Ask for the contact!

on television
Get involved with all your favorite Sony Television Entertainment TV shows and Game Show Network.
"Must About Five" results for
GameShow after the stylized

on gear
Shop for great entertainment-related merchandise and collectibles from Sony Signatures.
Play culture merchandise and collectibles

on theatres
Theatre schedules, show times, and features. SONY MCA Theatre & Music Theatre Theatre.
Code 34 for

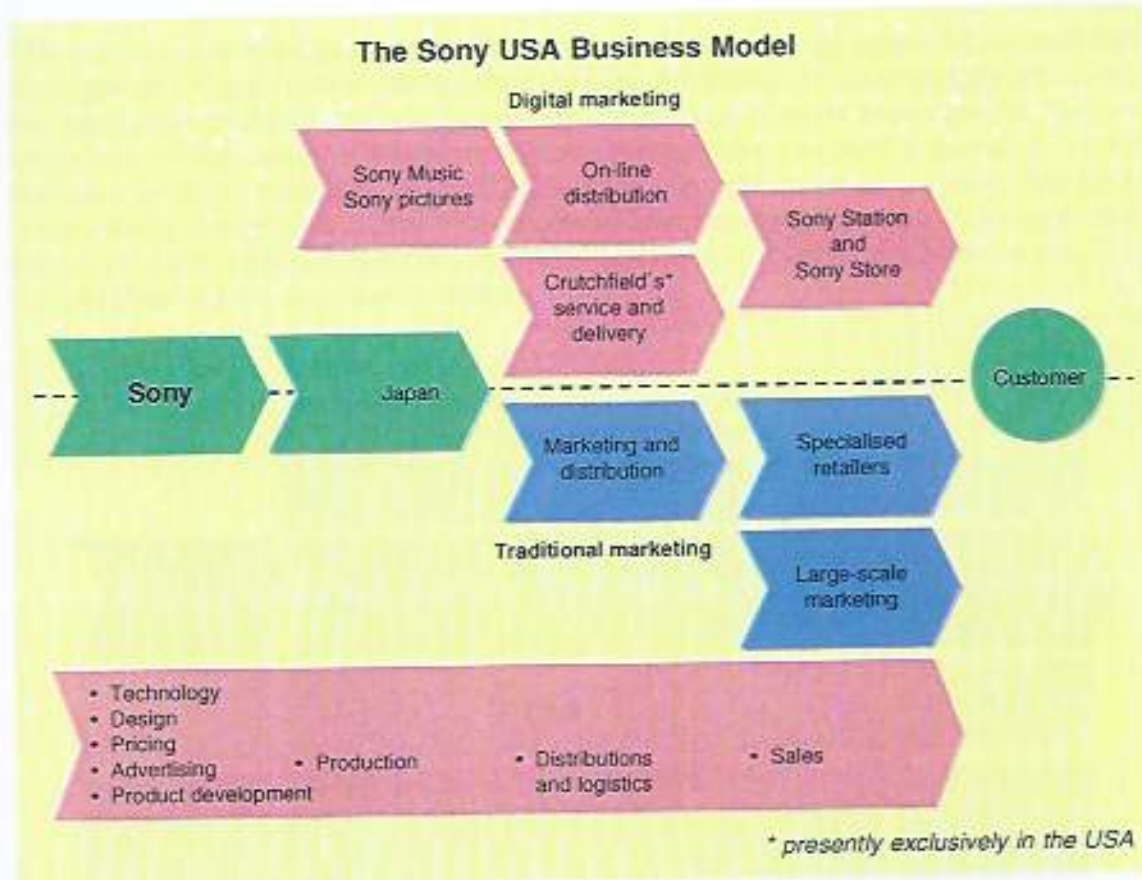
on air
Music & radio-based entertainment programming, multimed and entertainment news.
Sony Worldwide now with Java power!

search for

Not Sony Info? **Coming soon: Sony Station** **Sony Drive**
Explore the Sony WWW site in Tokyo

Distribution and service has been entrusted to Crutchfield's, a specialised distributor. Traditional marketing channels are also used parallel to this.

Diagram 95



The Sony business model can be broken down into 4 stages: design, pricing and product development are controlled by Sony. On the customer side, Sony is represented in traditional retail outlets, on the one hand, and the digital Sony Store and Sony Station on the other. The customer has the option of making a purchase through the traditional or digital channel.

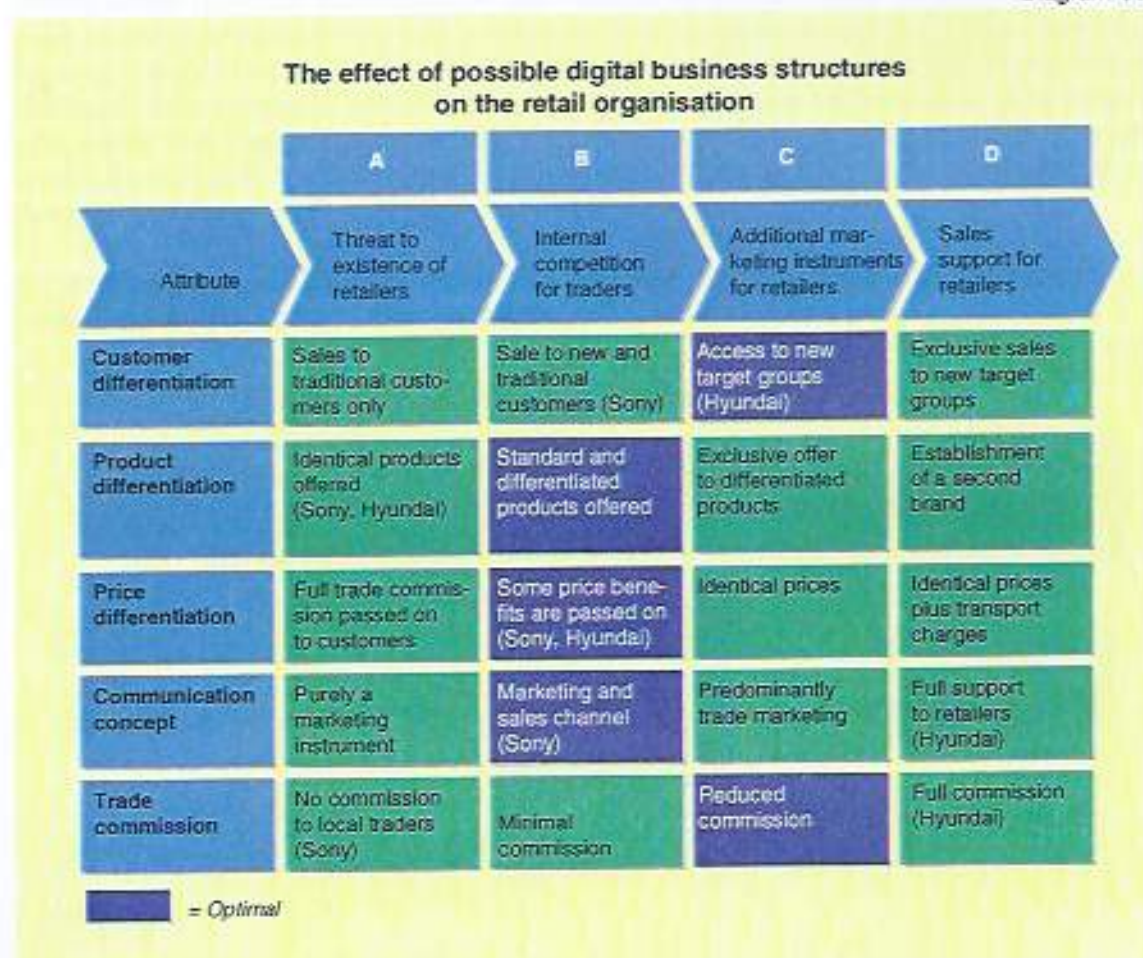
Digital sales is facilitated by Crutchfield's Sony Store. Crutchfield's handles service and deliveries. For a small fee, the merchandise ordered is delivered to customers within 2 days.

This digital marketing channel is flanked by Sony on-line entertainment elements. The attractiveness of Web pages is enhanced through films, music and similar products. The customer therefore has the opportunity to select a wide range of complimentary merchandise.

4.3.3 Organisation Management

The success and acceptance of digital sales depends to a large extent on organisation management. Organisation management is inward-looking. It fundamentally influences the perception of digital marketing channels by decision-makers in companies. Depending on how organisation management is structured in the company in question, digital business is either perceived as a sales support mechanism or as a threat. The latter often reflects the attitude of the retail organisation of some automotive manufacturers, even if business relations between the manufacturer and retailers are harmonious. This is highlighted by the example of Subaru.

Diagram 96



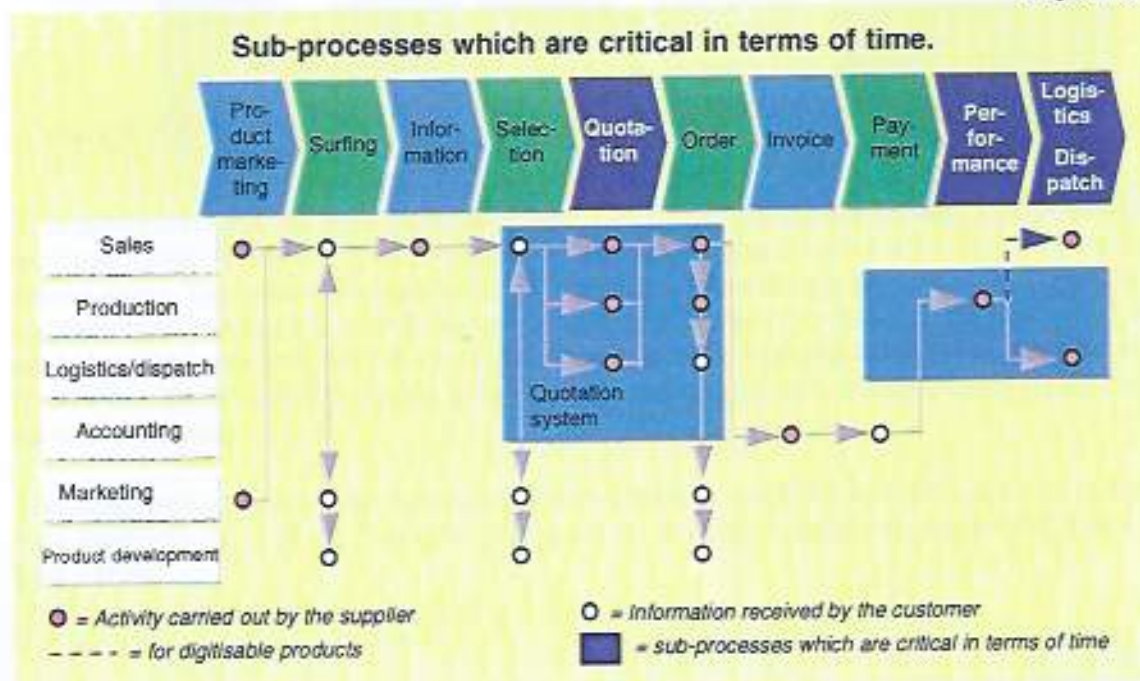
The Hyundai business case offers greater sales support to retailers, which means it reflects Case 'D'. Although new target groups are addressed through Internet presence (Case 'C') and the same products are offered (Case 'A'), their prices are identical (Case 'C'). The communications concept is designed to offer full support to retailers (Case 'D') and these are paid full commission (Case 'D').

4.3.4 Process Sequence Management

The management of the process sequence in digital sales is subject to several requirements which reinforce each other. A vast number of queries must be processed extremely quickly each day, taking into consideration all constraints such as delivery availability and delivery dates. These processes are fully automated and involve highly individualised communication with the consumer's PC. Because the customer is impatient and wants short response times, it is possible to identify a number of sub-processes which are critical in terms of time. These can be demonstrated in terms of an order for a Sony Camcorder.

In general, the quotation awaited by the customer is critical in terms of time, as are performance and logistics and dispatch.

Diagram 97



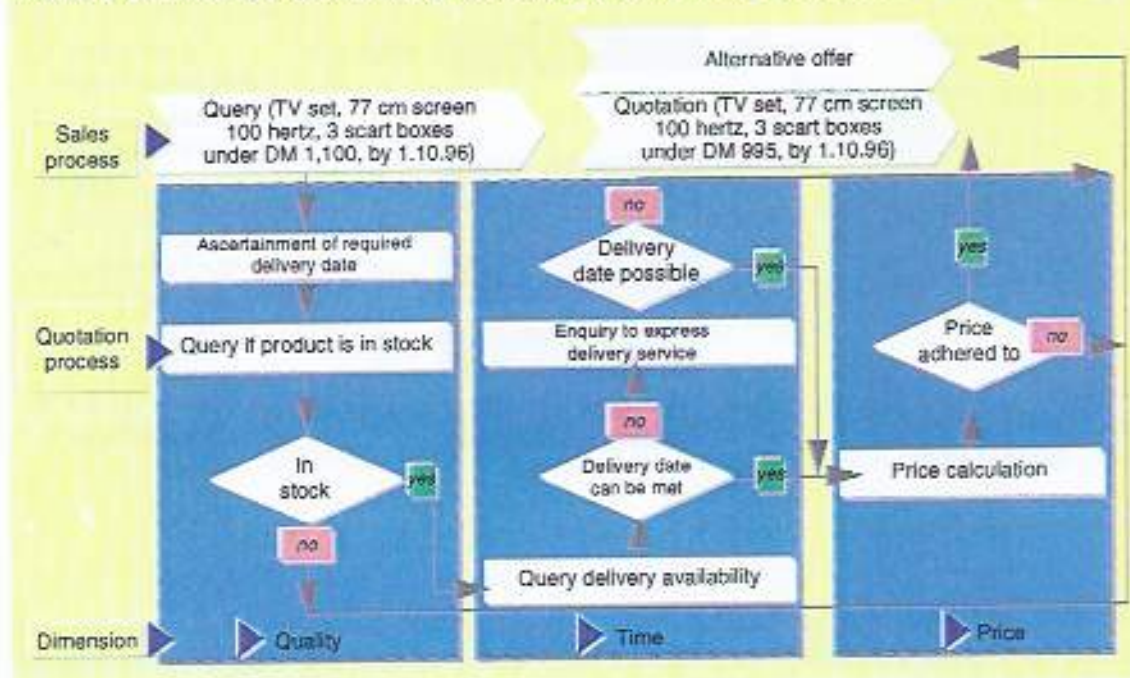
In many companies, a completely new quotation system must be developed, although performance and dispatch can be processed in the traditional way, if the products cannot be digitised.

The range of offers must be fully automated and updated on a regular basis with current information from the areas of production and logistics.

This information must then lead to a quotation process, such as the one which will soon be installed at Sony, in order to sell products in a matter of seconds from the warehouse and, at the same time, to guarantee availability and delivery.

Diagram 98

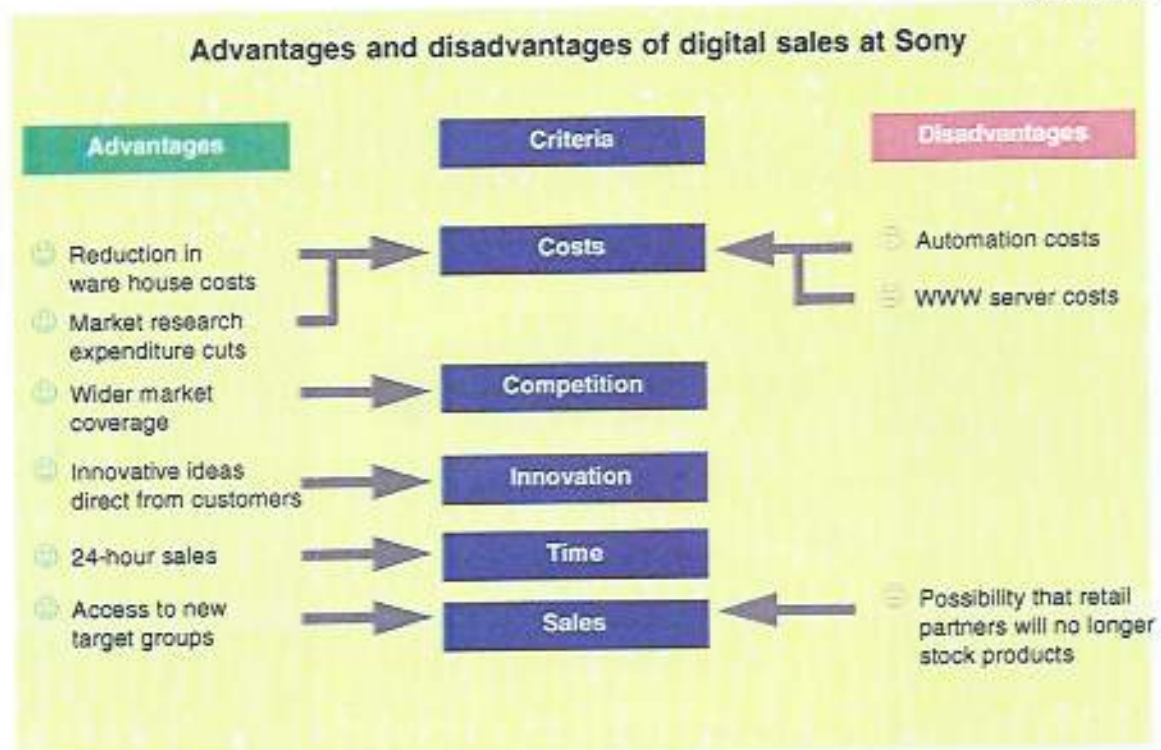
Future automated quotation process at a consumer electronics manufacturer.



This quotation process puts Sony at Stage 2 at present; the sale of standard products ex-warehouse. There are a vast number of advantages associated with digital ex-warehouse sales. The automated quotation process permits warehouse cost reductions. The availability of products is constantly monitored and follow-up orders can be forwarded in an automated process. Furthermore, impetus is directly injected from the market. Finally, 24-hour digital sales provides access to new target groups, which expect a 24-hour constant service.

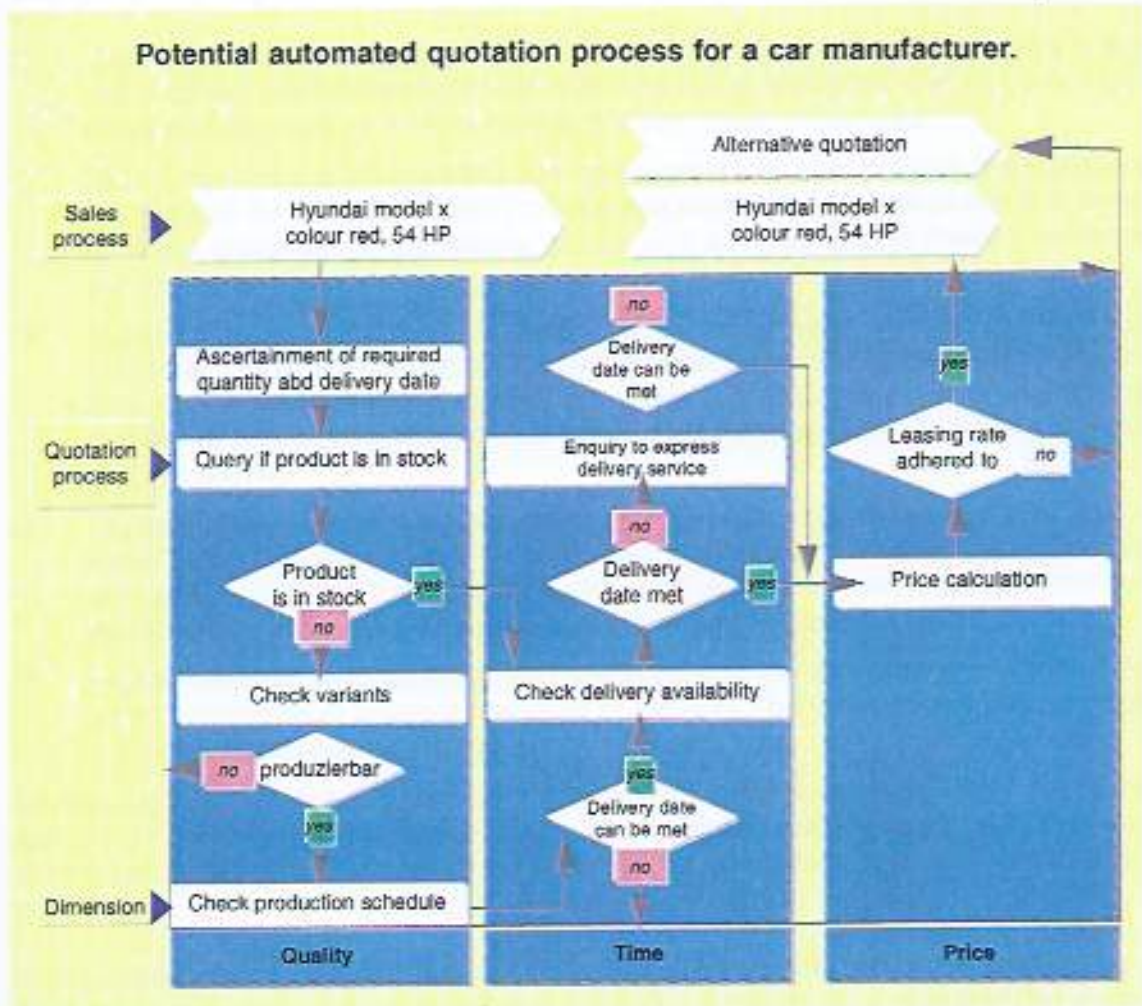
The disadvantages are high installation costs and the possibility of retail partners removing products from stock. The latter depends on the organisation management described earlier.

Diagram 99



In contrast to Sony, Hyundai predominantly sells individualised products. Internet sales would therefore be classified at Stage 3. At present, all vehicles can be individually configured via the Internet and detailed leasing quotations can be obtained. However, it is not possible to order a vehicle directly. The future automated quotation process must link the current inventory verification, the collation with the production plan and the delivery availability checks with the existing WWW server. This process sequence poses a real challenge to digital sales and offers a considerable competitive advantage for the provider.

Diagram 100



In future, the companies who have mastered these processes will benefit from digital business. The competition for speed, flexibility and efficiency will take place in a new environment: the digital market.

Conclusion: digital business as a management task

- ❑ Digital business is changing internal processes in companies. All the links in the value added and business process chain are being reordered. The size and organisational structure of corporate units are also being influenced.
- ❑ Digital business is precipitating the development of new product management instruments for product variation, pricing and advertising. The objective is to create target group-oriented products, prices and advertising and thereby enhance the appeal of digitally marketed goods.
- ❑ Digital business is affecting the division of labour between companies within the individual branches. The simple, global and inexpensive transferability of any information is simplifying the spatial distribution and outsourcing of an increasing number of corporate functions. The value added shares within branches of industry are shifting.
- ❑ Digital business is changing communication between companies and their customers. Innovative instruments for customer recruitment, customer loyalty and customer services, the inherent advantages of which multimedia consistently exploits, must be developed and realised via an appropriate infrastructure.
- ❑ Digital business is influencing joint ventures and the competitive situation between companies in different branches of industry. The value added shares in the individual branches are shifting.

Companies which do not become actively involved in these developments run the risk of losing their existing powerful status. Furthermore, digital business also offers new opportunities, particularly for small and medium-sized companies and newly-established companies.

In response to the question of how the content of this study can be of practical relevance to management executives in industry and public administration, one thing is beyond doubt:

digital business is a management task which must be accorded highest priority and can only be delegated to a limited extent.

List of Companies

No.	Company	Internet address
1.	1-800-Flowers	http://www.800-flowers.com
2.	A.C. Nielsen	http://www.nielsen.com
3.	ABN Amro	http://www.abnamro.nl
4.	ADAC	http://www.adac.de
5.	Advance Bank	http://www.advance-bank.de
6.	Ahold	http://www.ahold.nl
7.	Aegon Lebensversicherung	http://www.moneymaxx.de
8.	Air France	http://www.airfrance.fr
9.	Air India	—
10.	Air Marin	http://www.airmarin.de/AIRMARIN.HTM
11.	Airtours	—
12.	Allianz	http://www.allianz.de
13.	Alta Vista	http://altavista.digital.com
14.	Altours	—
15.	America Online	http://www.aol.com
16.	American Airlines	http://www.americanair.com
17.	Apple	http://www.apple.com
18.	ARD	http://www.ard.de/
19.	AT & T	—
20.	ATLAS	—
21.	ATT	—
22.	Attika Reisen	—
23.	Audi	http://www.audi.de
24.	Aufhauser	http://www.aufhauser.com
25.	Augsburger Allgemeine	Local mailbox 0821-7771777
26.	Bang & Olufsen	—
27.	Bank Brussels Lambert	http://www.bbl.de
28.	Bank 24	http://www.bank24.de
29.	BankNet	http://mkn.co.uk/bank
30.	Barclays Bank	http://www.barclays.com
31.	Bayerische Vereinsbank	http://www.ver einsbank.de
32.	C. H. Beck	http://www.beck.de
33.	Berliner Zeitung	http://www.BerlinOnline.de
34.	Bertelsmann	http://www.bertelsmann.de
35.	BfG Bank	under construction
36.	BHF-Bank	under construction
37.	Blaupunkt	http://www.blaupunkt.com ; http://www.blaupunkt.de
38.	BMW	http://www.bmw.de
39.	BNP	http://www.calvco.fr/BNP
40.	British Airways	http://www.british-airways.com
41.	British Telecom	http://www.british-telecom.com

42.	Brockhaus	http://www.duen.bifab.de/home.html
43.	Bruckmann Verlag	http://www.travelbook.de/bruck/
44.	Bucher	—
45.	CC Lederwaren	http://ourworld.compuserve.com/homepages/Burladingen
46.	Checkfree	—
47.	Chicago Tribune	—
48.	Coca-Cola	http://www.coca-cola.com
49.	comdirekt bank	http://www.comdirekt.de
50.	Commerzbank	http://www.commerzbank.de
51.	CompuServe	http://www.compuserve.com
52.	CONDOR	http://www.condor.de
53.	CosmosDirekt Versicherungen	http://www.cosmosdirekt.de
54.	Credit Lyonnais	http://deef.creditlyonnais.fr
55.	CUC International	http://www.cuc.com
60.	DER Deutsches Reisebüro	http://www.der.de
61.	Deutsche Bank	http://www.deutsche-bank.de
62.	Deutsche Telekom	http://www.dtag.de
63.	Deutscher Investment Trust	http://www.dit.de
64.	Deutsches InterNet- Organisationssystem (DINO)	http://www.dino-online.de
65.	Direkt Anlage Bank	http://www.diraba.de
66.	Dresdner Bank	http://www.dresdner-bank.de
67.	Elle	http://www.elle.de
68.	Europe Online	—
69.	FAO	http://www.fao.de
70.	Feria	—
71.	Fiat	http://www.fiat.de ; http://www.fiat.com
72.	First Virtual	http://www.fv.com
73.	Fischer	http://mail.condor.de/frame/partnet/veranstalter/fischer.de.html
74.	Flipper	http://flp.cs.tu-berlin/flipper
75.	Focus	http://www.focus.de
76.	Ford	http://www.ford.com ; http://www.ford.de
77.	Forrester Research	—
78.	Frankensport	—
79.	Frankfurter Allgemeine Zeitung	http://www.faz.de
80.	Frankfurter Sparkasse 1822	http://www.fraspa1822.de
81.	Frosch	—
82.	Gesellschaft für Konsum-, Markt-, und Absatzforschung (GfK)	—
83.	General Motors	http://www.gm.com
84.	Gibson	http://www.gibson.com
85.	Grundig	http://www.grundig.de
86.	Gruener + Jahr	—

87.	Hamburger Morgenpost	http://www.mopo.de
88.	Hapag-Lloyd	http://www.hapagloyd.de
89.	Happy Times	http://www.wuppertal.com/reise
90.	Harvard Business School Publishing	http://www.hitachi.co.jp ; http://www.hitachi.com
91.	Headline Today	—
92.	Hertie	—
93.	Hetzel	—
94.	Hilton	http://www.hilton.com
95.	Hitachi	http://www.hitachi.com
96.	HoGa Tours	http://www.ilk.de/hgts/
97.	Holiday	http://www.traxxx.de/holiday
98.	Holsteiner Courier	http://www.courier.de
99.	Holtzbrink	—
100.	Honda	http://www.honda.co.jp ; http://www.honda.com
101.	Hotwired	http://www.hotwired.com
102.	Hyundai	http://www.hmc.co.kr ; http://www.hyundai.de
103.	I/PRO	—
104.	IBM	http://www.ibm.com
105.	Ikarus tours	—
106.	Informationsgemeinschaft zur Festlegung und Verbreitung von Werbeträgern (IVW)	—
107.	InfoSeek	http://www2.infoseek.com
108.	Inktomi	http://inktomi.berkeley.edu
109.	Inter Chalet	—
110.	Internet Shopping Network	http://www.isn.com
111.	Internet Travel Network	http://www.itn.com
112.	Internet World Travel Guide, The	http://www.iwtg.com
113.	ITS	—
114.	Jahn	—
115.	Jet Reisen	—
116.	JVC	http://www.jvc-us.com
117.	Karstadt	http://www.karstadt.de
118.	Kaufhof	http://www.kaufhof.de
119.	Klett	http://www.klett.de
120.	KLM Airlines	http://www.klm.nl
121.	Kölner Express	—
122.	Kreutzer	http://www.kreutzer.de
123.	Levi's	—
124.	Loewe	http://www.loewe.de
125.	LTU	http://www.ltu.de
126.	Lucky-Goldstar	http://www.goldstar.co.kr

127. Lufthansa	http://www.lufthansa.com
128. Lycos	http://www.lycos.com
129. Mannheimer Morgen	http://www.mamo.de
130. Mastercard	http://www.mastercard.com
131. Matra Hachette	—
132. Matsushita	http://www.mei.co.jp
133. Mazda	http://www.mazda.com
134. MCI	—
135. Meier's	http://www.start.de/veranstalter1/mwr/index.htm
136. Mercedes-Benz	http://www.mercedes-benz.com
137. Metro	(http://www.metronet.de)
138. Microsoft	http://www.microsoft.com
139. Microsoft CarPoint	http://www.carpoin.msu
140. Mitsubishi	http://www.mitsubishi.com ; http://www.mitsubishi-motors.co.jp ; http://www.mitsubishi-motors.de
141. MSN	—
142. Neckermann Versand	http://www.neckermann.de
143. Netscape	http://www.netscape.com
144. Neue Presse, Hannover	Local mailbox, closed user groups
145. Neue Westphälische, Bielefeld	AOL, key word OWL
146. Neue Züricher Zeitung	http://www.nzz.ch
147. Newsweek	—
148. Nissan	http://www.nissan.co.jp ; http://www.nissan.de http://www.nissanmotors.com
149. Nordwest-Zeitung, Oldenburg	Local mailbox 0441-1761
150. NTT	—
151. NUR	Under construction
152. Nürnberger Nachrichten	http://www.osn.de/nn/
153. Öger Tours	http://www.öger.de
154. OnSale	http://www.onsale.com
155. Opel	http://www.opel.com
156. Oracle	http://www.oracle.com
157. Otto-Versand	http://win.bda.de/bda/int/otto
158. Passauer Neue Presse	http://www.vgp.de
159. Pathfinder	http://pathfinder.com
160. PC Travel	http://www.pctravel.com
161. Peek & Cloppenburg	—
162. Peugeot Citroen	http://www.peugeot.com ; http://www.citroen.ch
163. Philips	http://www.philips.com
164. Phoenix	—
165. Praktiker	http://www.praktiker.de
166. Prodigy	—
167. Progressive Networks	http://www.realaudio.com
168. Promodès	http://www.promodes.fr

169. Quelle-Versand	http://www.quelle.de
170. Radio FFH	http://ffh.germany.net
171. Rank Xerox	—
172. Reed Elsevier	—
173. Renault	http://www.renault1.com ; http://www.renault.com under construction
174. Reuters	http://www.reuters.com
175. Rhein-Neckar-Zeitung	T-Online: *rnz#
176. Rhein-Zeitung	http://rhein-zeitung.de
177. Rheinische Post, Düsseldorf	http://rp-online.de
178. RTL	http://www.rtl.de
179. RTL 2	http://www.rtl2.de
180. RWE	—
181. Saarbrücker Zeitung	http://www.sz-sb.de
182. Sal. Oppenheim	—
183. Samsonite	http://www.samsonite-europe.com under construction
184. Samsung	http://www.samsung.com
185. San Diego Daily Transcript	http://www.sddt.com
186. Sanyo	http://www.sanyo.co.jp
187. Sat 1	http://www.sat1.de
188. Schwäbisch Hall	http://www.swl.fh-heilbronn.de/bsk
189. Schwäbische Zeitung, Lokalausgabe	http://www.bvd.de
190. Schweizerische Bankgesellschaft	http://www.ubs.com
191. Schweriner Volkszeitung	http://www.hansenet.de/SVZ
192. Seatop	http://www.reise.de
193. Seetours	—
194. Siemens	http://www.siemens.de
195. Singapore Airlines	http://www.singaporeair.com
196. Sixt	http://www.sixt.de
197. Sony	http://www.sony.com ; http://www.sony.de
198. Sparda-Bank Hamburg	http://www.sparda-hh.de
199. Spiegel, Der	http://www.spiegel.de
200. Stadtparkasse Dortmund	http://www.stadtparkasse-dortmund.de ; http://www.sparkasse-dortmund.de
201. Start	http://www.start.de
202. Steigenberger	http://www.steigenberger.de
203. Studiosus	—
204. Subaru	http://www.subaru.com
205. Süddeutsche Zeitung	http://www.dw.gmd.de/sz
206. SUN	—
207. Tagesspiegel, Der	http://www.tagesspiegel-berlin.de
208. tageszeitung, die	http://www.taz.de
209. TCI	—
210. Telefunken	—

211. Theo Hector	http://www.infomarketing.de/hector
212. Thomson	im Aufbau
213. Time	—
214. Time Warner	—
215. Toshiba	http://www.toshiba.com
216. Toyota	http://www.toyota.co.jp ; http://www.toyota.com
217. Toys „R“ Us pg?	http://www.toysrus.com ; http://www.itl.net/cgi-bin/SN/doc=/uk/general/shop/toysrus
218. Transair	—
219. Travelbook	http://www.travelbook.de
220. Travelocity	http://www.travelocity.com
221. Traxxx	http://www.traxxx.de
222. TUI	http://www.tui.de
223. TV Today	http://www.tvtoday.de
224. TWA	http://www.twa.com
225. UAP	http://www.uap.fr
226. Unger Flugreisen	—
227. United Airlines	http://www.ual.com
228. US West	—
229. USAir	http://www.usair.com
230. Vahlen Verlag	—
231. Vebacom	—
232. Verband Deutscher Zeitschriftenverleger	http://www.vdz.de
233. Vereinsbank	http://www.vereinsbank.de
234. Viacom	—
235. VISA	http://www.visa.com
236. Vobis	http://www.vobis.de
237. Volkswagen	http://www.vw-online.de
238. Volvo	http://www.volvocars.com
239. Walt Disney	http://www2.disney.com
240. WAZ	(http://www.cww.de)
241. WDR 1	—
242. WebCrawler	http://webcrawler.com
243. Wells Fargo Bank	http://www.wellsfargo.com
244. Welt, Die	http://www.welt.de
245. Westphälische Nachrichten	http://www.wnonline.de
246. Winterthur	http://www.winterthur.ch
247. WOM	—
248. Yahoo!	http://www.yahoo.com
249. Yamaha	http://www.yamaha.co.jp ; http://www.yamaha.com
250. YellowPages	http://www.mcp.com
251. ZDF	http://www.zdf.de

Authors and Company Profiles

The 'DIGITAL BUSINESS' study is a joint project which involved Bertelsmann Telemedia and Diebold.

Telemedia is Bertelsmann AG's Multimedia Systems House and has its headquarters in Gütersloh. As a full-service provider, Telemedia realises integrated multimedia solutions, based on Internet technology.

On the basis of various feasibility studies, Telemedia develops alternative scenarios, features and platforms, as well as profitable marketing approaches. Chances and risks are analysed, as is the cost-benefit ratio of the utilisation of new technology. This also includes the integration of new communications systems in existing company structures.

Systems support and maintenance via the Bertelsmann network and computer centre and staff training round off the full-service offer.

The international Diebold Group, with headquarters in Eschborn, near Frankfurt, is one of the leading management and technology consulting firms. It has an excellent reputation as an IT consultancy firm.

Diebold has offices in Düsseldorf and Munich and subsidiaries and affiliated companies in Austria, Switzerland and Hungary. Since 1991, Diebold has been part of debis Systemhaus, which has generated around DM 2 billion in sales (1995) since it was founded in 1990. The company has a staff of approx. 6,500 and is now one of the largest manufacturer-neutral service companies in the IT branch.

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