

**BUSINESS IMPLICATIONS OF
MULTIMEDIA:
THE CASE OF SPAIN**

by

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96/10/CALT 2

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Working Paper CALT 2

**Business Implications of Multimedia:
The Case of Spain**

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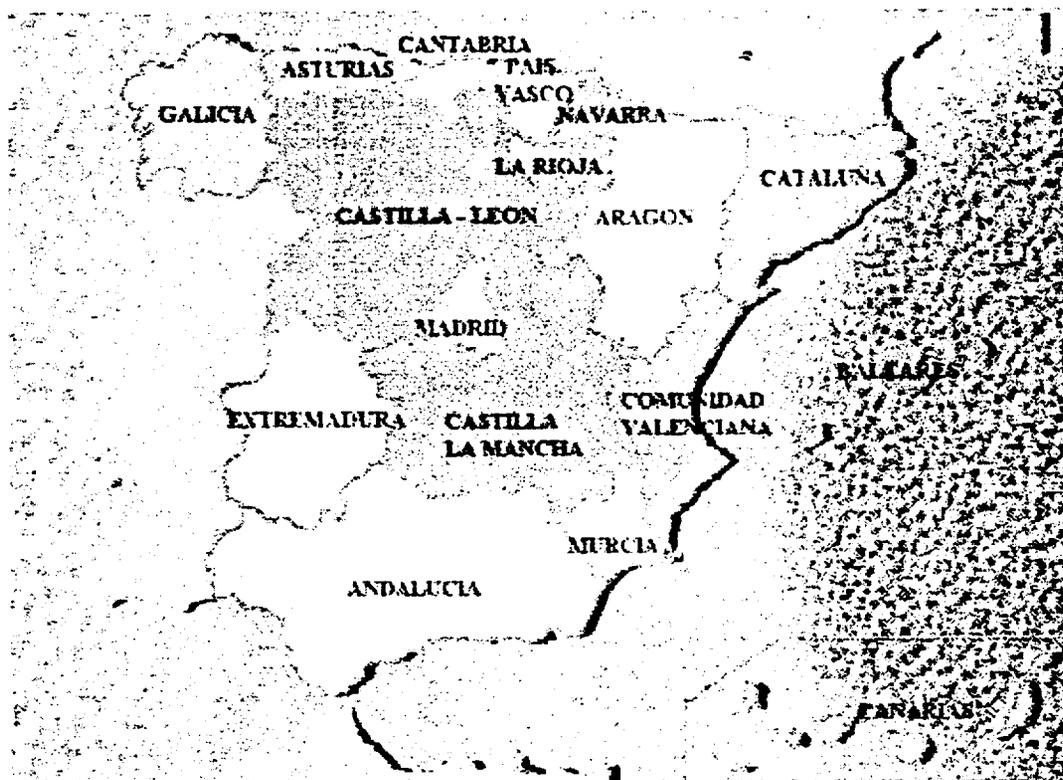
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Business Implications of Multimedia: The Case of Spain

A study conducted by Prof. Albert A. ANGEHRN and Alejandro LOZANO
at INSEAD, The European Institute of Business Administration, and the
Instituto Universitario Euroforum Escorial.

July 1995



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Part 1: OVERVIEW

1. Introduction

The aim of this study is to analyse the "Multimedia phenomenon" in order to provide up-to-date information and insights on its current impact on companies and on the development of European industry in general.

This report focuses particularly on Spain, contributing to a better understanding of:

- The current state and the development of the Multimedia industry in Spain.
- The key factors affecting this development.
- The dynamics of market acceptance of current and future Multimedia products and services generated by this development.
- The major transformation affecting industry in general derived from the spread of such products.

The report provides recent data on key players, regulations, strategies of telecommunication companies, experiences with market reaction to multimedia products and services, and multimedia-enabled transformations which are underway in Spain. Comparisons with other European countries and the US are provided, allowing a better understanding of the situation in Spain.

The special characteristics of the Spanish market in terms of regulation, infrastructure, management style, consumers, and their specific attitude towards the adoption of new technologies are also examined.

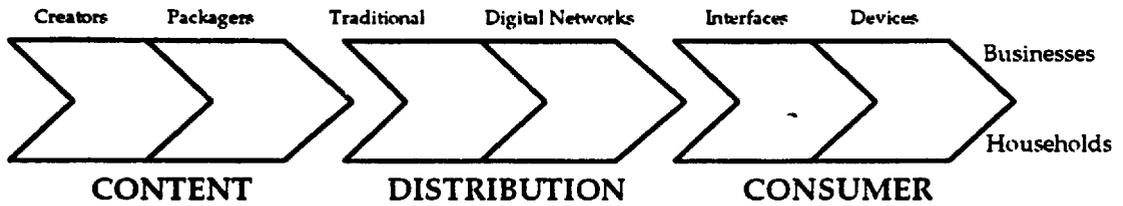
Future developments and key success factors in the new environment are also analysed, as well as the remaining obstacles for the development of Multimedia in Spain.

2. Structure and Key Points of the Report

In order to investigate the multimedia phenomenon in Spain, the report looks at the three major competitive arenas in which the future of the multimedia industry will be shaped. First, the report focuses on the production and packaging of the content that will feed the new

multimedia services (**Part 2: The CONTENT Arena**). It then moves on to analyse the distribution of this content, with a special emphasis on the infrastructure needed to make the new services a reality (**Part 3: The DISTRIBUTION Arena**). Third, the report concentrates on the consumer's position and the devices and interfaces that will allow multimedia to reach the general public (**Part 4: The CONSUMER Arena**).

The report follows a similar structure of analysis for each of the 3 domains illustrated above (Content, Distribution, and Consumer Environment). For each of the 3 domains, the report includes a section on the present situation and the key players, a section on government intervention, a section on future developments and a last section on key issues.



Present Situation

- Weak and fragmented industry, loosing shares to foreign producers
- Creative talent but limited by lack of industrial base and adequate distribution
- Strong cultural heritage
- Language and culture provide great opportunities
- General TV broadcasters in trouble
- Success of pay-TV (Canal Plus)
- Traditional print media entering publishing
- Limited digital network infrastructure
- Low (but increasing) device installed base
- Telecommunications monopoly challenged
- Demand for quality entertainment and potential for edutainment
- Mixed results for tele-shopping, tele-banking and similar on-line services
- High I.T. investments by corporations
- Lack of locally adapted user-friendly interfaces

Government Intervention

- EU protectionism-cultural policy
- Defence of the Spanish language
- Preservation of cultural heritage
- Subsidies
- Liberalisation of telecommunications by 1998
- New legislation on cable
- Consumers' education is key
- Issues: Ineffective interventions
- Issues: Telefonica's advantage
- Issues: Wire-less cable not contemplated
- Largely neglected by government

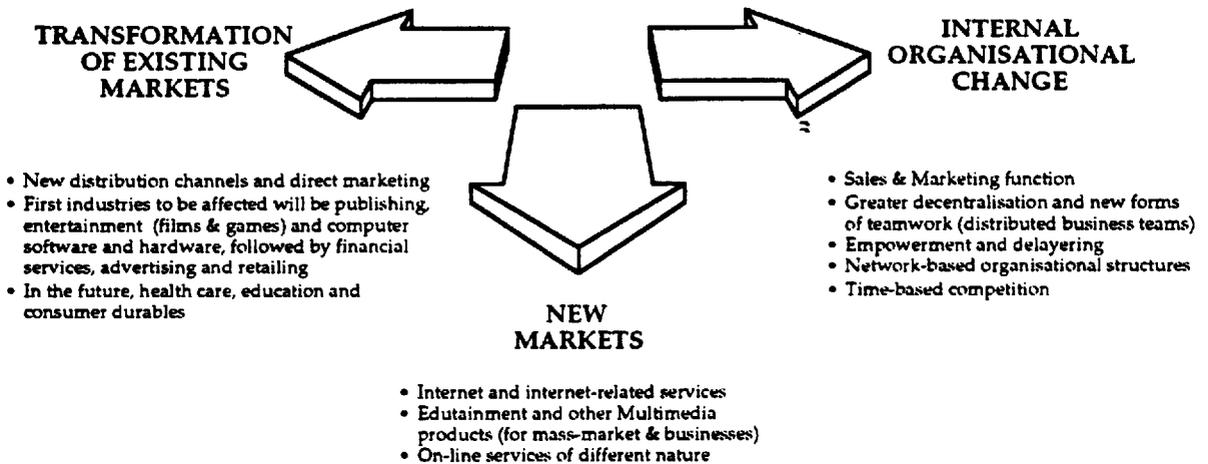
Future Developments

- Consolidation in the film and TV industries
- Specialisation for software industry
- Foreign domination
- Increased prices for quality content
- High investments in infrastructure
- New services reach the household
- Telefonica as main operator, linked to content and interface providers
- Difficulties for cable operators and TV broadcasters
- Lower cost of communications, reduced margins
- Increased education and exposure to on-line services
- Choice among old and new services with time as limiting factor
- Creation of standard interfaces (key to gain marketshare)
- Spillover effect to unrelated industries

Key Issues

- Adaptability to local tastes
- Segmentation
- Access to distribution channels
- Quality of Content
- Computer-supported content production
- Low cost
- Access to content (size)
- Technology
- User-friendliness
- Ownership of standards
- Mind-share
- Compatibility
- Opportunities: Content adapted to Spanish tastes
- Opportunities: Low cost communications
- Opportunities: Creation of standards in Spanish for different services (financial, health, etc.)
- Opportunities: Export markets to Spanish-speaking countries
- Opportunities: Value added services (integrated solutions)
- Edutainment (language and cultural heritage)

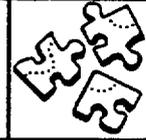
In the last part (Part 5: **BUSINESS IMPACT: A Spanish Perspective**), the report focuses on the impact of the multimedia phenomenon on business and companies in general. In fact, the new multimedia technologies are starting to have many and powerful effects on today's businesses. They are changing the structure of firms, their internal processes, and the markets in which they operate. They are even creating new markets. The process of transformation the new technologies have triggered has been compared many times with that of the Industrial Revolution. The firms, markets and societies resulting from this transformation may resemble those of today in the same way the industrial corporations of the late 19th Century resembled the artisans of the preceding century.



As indicated in Part 5, critical factors in successfully addressing this transformation will include (1) the capability and willingness of companies to **redesign their business processes** exploiting the new technological opportunities, (2) the speed at which key players in traditional markets (financial services, retailing, etc.) will be able to adapt to the changes by **acquiring new competencies** (e.g. through an appropriate network of alliances) and by **leveraging their image and brand names**, and (3) the speed at which today's companies and new entrants will be able to propose **innovative solutions** in the multimedia content, distribution and consumer arena.

Part 2: The CONTENT Arena

1. Present Situation



At first sight, its rich and diverse cultural heritage and the fact that its language is spoken by more than 400 million people around the world, should make Spain a world-class powerhouse for the creation of content, at least in the entertainment and education areas.

The multimedia revolution is dramatically increasing the demand for content, as its distribution becomes cheaper. At the same time, digitalisation creates new opportunities for the manipulation of data and the advent of interactivity opens the door to new forms of content.

In Spain however, industry remains weak and fragmented, with creative talent limited by lack of an industrial base and access to adequate distribution channels. The trend since the early 50's has been a constant erosion of market share to foreign competitors in all fields, while exports have remained limited and confined to the Latin American market.

1.1. Publishing

Remains one of the few areas in which local players dominate the market and have managed to build substantial exports over time, specially to other Spanish speaking countries. The main groups, Planeta, Anaya and Santillana, are increasing their international presence while setting up new divisions to deal with multimedia products and electronic publishing. Among the most active is Anaya Multimedia, which has started to release products on the market recently.

1.2. Television Programming

Although television is still dominated by foreign programmes, there has been a revival of local production in the last years, led by Antena 3 and to a lesser extent, TVE.

Successes such as the sitcom "Farmacia de Guardia", which has achieved the highest ratings, have led Antena 3 to increase its investment in the production of programmes.

The success of television programmes which mirror local culture and tastes reflects the potential demand for quality programming adapted to local tastes. However it is still too early to assess the export potential of



these programmes, specially in the Latin American market. Other productions by Antena 3, such as "Curro Gimenez II" have been produced with the broader Latin American market in sight.

1.3. Film Production

The dispersed Spanish film industry has been losing its share dramatically to American producers in the last decade. With very few box-office hits, it has relied heavily on government subsidies for survival and exports have remained weak. In the first ten months of 1994, Spanish films held an 8.31 per cent share of box-office revenues¹ with the figure for 1995 expected to be around 10 per cent.

The industry is undertaking a process of restructuring and consolidation and two groups are likely to emerge as leaders. The first one is formed by Elias Querejeta PC (production), Alta Films (distribution), Esicma (television distribution) and the French Lumière (distribution). The second one is PRISA's Sogepaq, with activities in production (with Sogetel and its agreement with Andres Vicente Gomez) and distribution (with a joint-venture with PolyGram, Sogepaq Distribucion).

These groups should provide the industrial infrastructure, financial muscle and distribution networks that the Spanish film industry lacks today.

1.4. Interactive Software

The Spanish software developers remain fragmented and focus mainly on business and technical applications.

In the last few years, however, new players have entered the market for interactive entertainment and education. The leading producers include BSI Multimedia, Dinamic Multimedia, Tower Communications (publisher of the first multimedia periodical on CD-ROM), Multimedia Ediciones (a joint-venture between Planeta and IBM) and Anaya Multimedia.

A total of 19 titles were launched on the market by Spanish producers in 1994². The local players are launching products in Spanish designed to suit local taste taking advantage of the market opportunity resulting from the fact that most interactive software available in Spain on CD-ROM is in English. As an example, Microsoft Home has only recently started to translate its titles into Spanish, and its popular encyclopedia, Encarta, devotes more space to Bill Gates than to Cervantes.

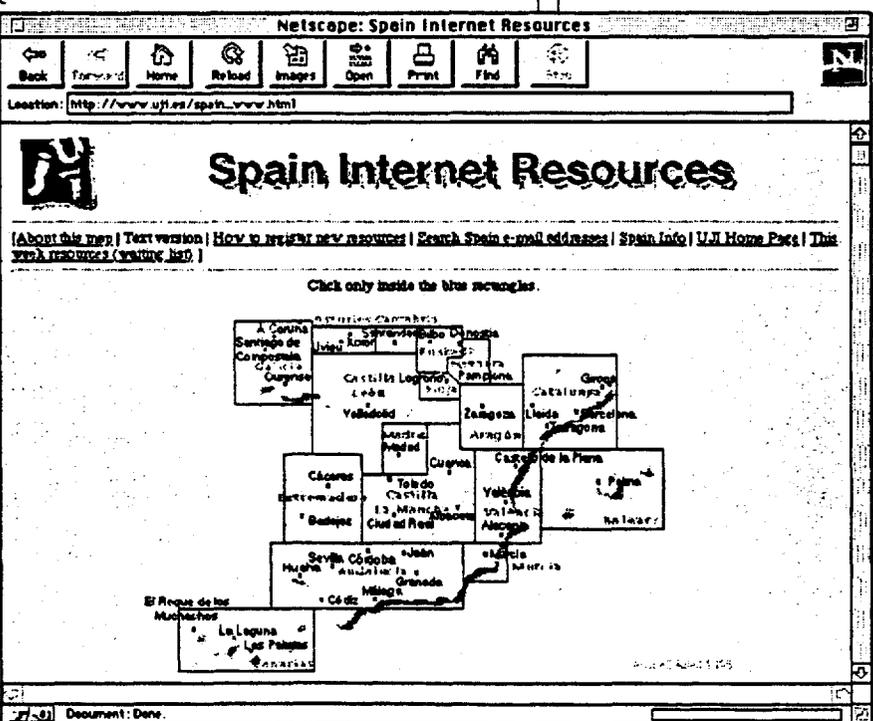
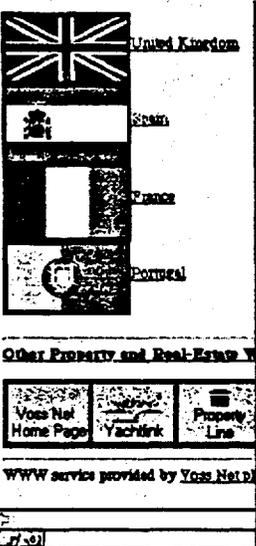
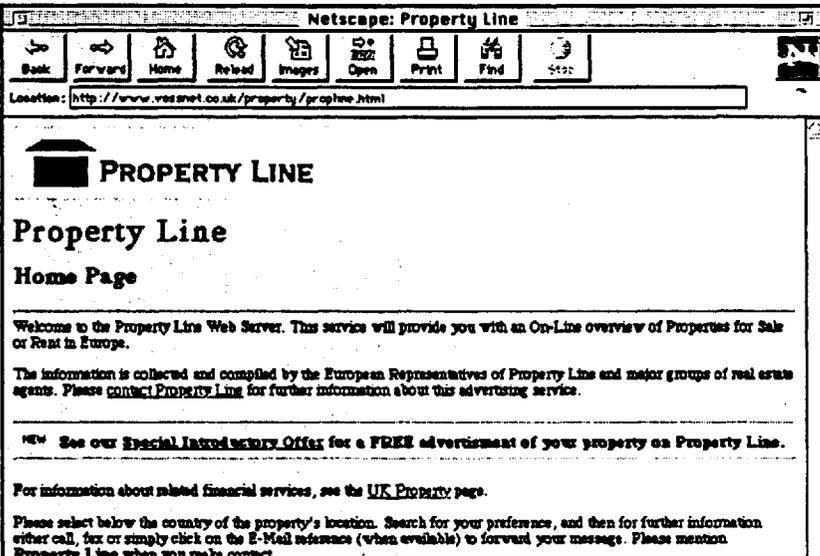
¹ Source: Datos del Instituto de Cinematografía

² Source: Fact & Figure 94. TFPL

1.5. Other Contents

Spain's strong cultural heritage and its standing as the world's first tourist destination create great opportunities for the production and/or packaging of content and its distribution in the new channels.

Web servers on Internet have recently started to include information about tourist destinations and other issues of interest to the Net surfers. Some start-ups are developing tourist and real estate pages on the WWW in Internet. However, one indicator of Spain's low starting-base is the fact that many of these pages are produced in Spanish, while the target audience is 99 per cent English-speaking.





2. Government Intervention



Government intervention in the content area is framed within the cultural policy and protectionism of the European Union, while putting special emphasis on the defence of the Spanish language and the preservation of cultural heritage.

The European-wide local content rules for distributors (**Television Without Frontiers Directive**) apply in Spain, but include significant exemptions that in practice reduce the effects of the Directive.

A policy of **subsidies** to the national film industry has been reshaped recently and has moved away from fixed pre-production subsidies to subsidising ticket sale revenues. The old system was criticised as heavily politicised. The new system still allows for pre-production subsidies to new film-makers while encouraging the production of more commercially-oriented films.

As for new content, several public institutions are participating in **educational projects** that lead to the creation of multimedia content, allowing for the creation of the necessary industrial base.

The defence and preservation of Spanish language and culture is pursued mainly by the **Instituto Cervantes**, which promotes the learning and use of Spanish abroad.

The Government has recently authorised loans by the **ICO (Instituto de Crédito Oficial)** to Antena 3 and RTVE for the production of films and television programmes.

Overall, the Government's policy can be described as ineffective and prone to demagogic stands on anecdotal issues (as with the conflict on keyboards with Spanish characters between the Spanish Government and the European Commission). In the last few years, however, there has been a shift towards more market-oriented measures and a longer term view.

3. Future Developments



Consolidation in the film and television programming industries is likely to continue with small players gravitating around three or four bigger production groups.

Antena 3 and PRISA, together with the Elias Querejeta group, are likely to lead this consolidation, but new players can be expected.

The big Spanish producers will focus on quality films and programmes designed to suit local demand. Greater attention will be placed on export markets, specially Latin America (including the Hispanic market in the US) and Europe.

New and smaller players will probably specialise in the adaptation of foreign formats to Spanish tastes and other niche markets. For these players links with foreign producers and distributors will be critical.

Business software developers will remain fragmented and will have to find niches to survive.

Producers of interactive edutainment software (software that educates and entertains simultaneously) will gravitate around the newly formed multimedia divisions of the big publishing groups. Those who do not will need to achieve critical mass and access to distribution channels around the world if they are to survive and many will end up being acquired by the big foreign developers as they establish a global presence.

The multimedia revolution will affect traditional content creation with the addition of interactivity. However, a significant portion of the content consumed will remain unchanged, while some will be adapted to allow for a more interactive use (television game shows for example).

Interactivity and new media represent, however, an opportunity for the creation of radically new products that will eventually dominate a significant share of the market. Examples of such products are electronic books, movie-games (combining a film and a video-game) or CD-ROM in general. The creation of such software requires the technical capabilities that very few players possess in Spain, although the spread of technology should help.

Multimedia is also affecting the way much of the content is created using mainly computers as development platforms. Movie and, above all, cartoon production are likely to increasingly integrate and apply multimedia technology.

4. Key Issues

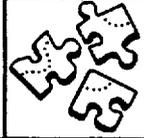


In terms of language, creative talent and cultural heritage, Spain is extremely well endowed to take advantage of the multimedia revolution through the content side. In this particular domain the following conclusions can be drawn:

- The lack of an industrial base can be overcome by the creation of bigger groups that will bring in the necessary management skills and financial resources.
- There is a great demand for quality content adapted to local needs and the big multinational producers have left that market demand unattended.
- Access to distribution channels, both at home and abroad will be critical for all, and small players will need to specialise in and focus on quality programming to survive.
- Multinational groups will start producing locally in the middle term, most probably through joint-ventures or acquisitions (to take advantage of local know-how).
- The growing market for edutainment presents a great opportunity for Spanish players to leverage on Spain's cultural heritage and the demand for Spanish language education around the world.
- Producers in Spain will have to incorporate multimedia technologies in the production of content in order to achieve quality cost-competitive products.
- Access to multimedia technology and know-how will also be critical in producing new content for the new media and fully exploiting the potential of interactivity.
- The higher capacity of the new networks will allow for the transmission of customised or specialised content providing access to the market to producer that up to now were excluded from the commercial circuits.

Part 3: The DISTRIBUTION Arena

1. Present Situation



New technologies, deregulation and liberalisation of telecommunications should greatly reduce the cost of communications while offering new distribution channels for content.

Two major events are shaping the multimedia revolution in terms of distribution:

- The great improvement in the capacity of data transmission, through the use of optic-fibre and the digitalisation and compression of data.
- The shift from distributive to interactive multimedia with the creation of multimedia networks that allow for interactivity.

Infrastructure for telecommunications and the distribution of content is the critical enabler of the multimedia revolution and it is in distribution where the stakes are higher for the multimedia players.

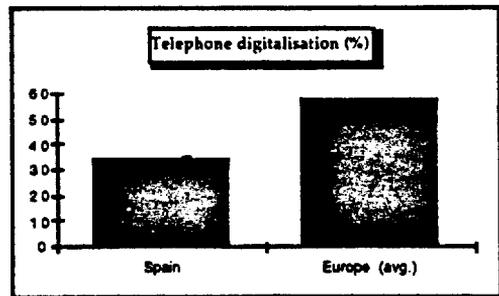
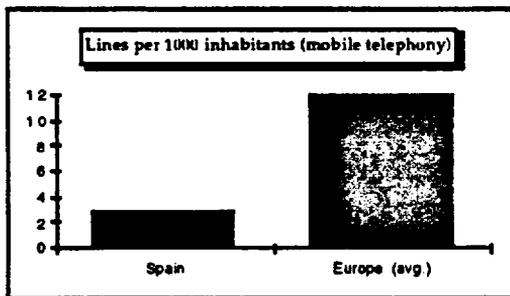
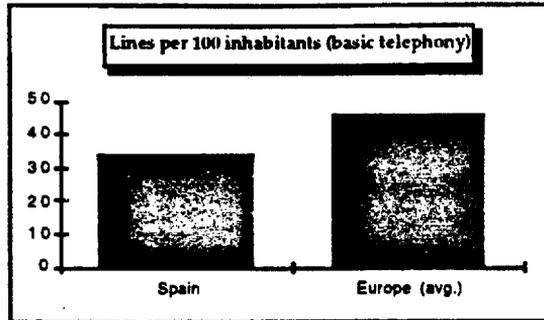
1.1. Telecommunications Infrastructure

Most telecommunications infrastructures in Spain are provided by Telefónica, although RENFE (Spanish Railways), the electrical utilities and the big financial institutions have created their own private data transmission networks. Finally, Retevisión, the public society in charge of managing the transport and broadcast of television signals in Spain, has made great investments in both optical fibre, transmission equipment and satellite technology.

Spain remains a laggard when compared with the main European countries in terms of penetration of basic telephony and mobile communications. There are 34 lines per 100 people and 3 mobile lines per 1,000 people, versus the European averages of 45 and 12 respectively. Telephone digitalisation stands at 34 per cent, versus the European average of 58 per cent.

Investments are being made, however, at a great pace. Telefónica has laid down 411,000 kilometres of optic fibre on the long distance network,

171,000 kilometres in the provincial network, 131,000 kilometres in subscriber networks and 70,000 kilometres in urban switches.



With its *Plan Foton*, Telefónica claims that more than 7.3 million households in all towns with a population over 50,000 will have access to optical fibre cable networks by the end of 1995.

In 1995, ISDN access will be available in all provinces and towns with a population over 50,000. The total offer of basic ISDN access will more than double in the next two years.

Although legislation regulating CATV has not been passed yet, various companies are investing huge amounts of money in the construction of modern cable networks. The Basque public company Euskalnet is creating an optical fibre cable network which covers the biggest towns of the Basque country with an investment of 50,000 million Pesetas (approximately US\$400) in the next ten years.

Most local CATV providers are upgrading their networks to wide-band capacity (normally coaxial with 550 MHz). Some CATV operators are installing OFTN-CTH networks with optic fibre and high capacity coaxial (750 MHz).

Finally, the second GSM operator, Airtel, which was awarded a licence after bidding more than US\$600 million, has been allowed to build its own infrastructure.

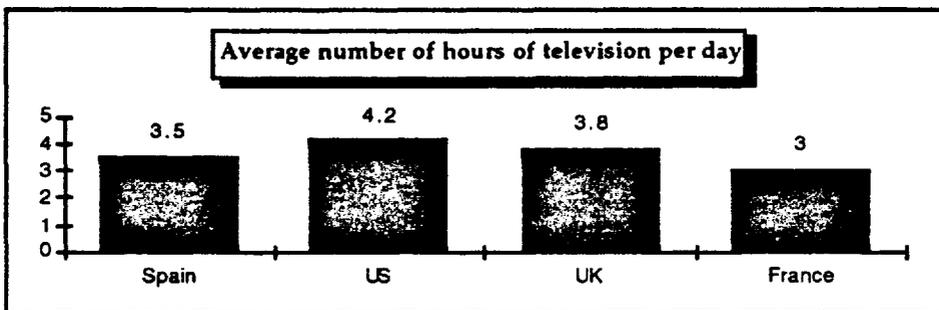
With the launch of the Hispasat satellites Spain has jumped ahead in terms of telecommunications infrastructure. The satellites are used for direct satellite television (five channels today but with capacity for 40-60 digital channels) and public, private and military transmissions.

1.2. Television Broadcasting

More than 99 per cent of Spaniards own at least one colour television, 21 per cent one with teletext and 11 per cent one with stereo sound³. The Spanish Television landscape includes 1 national public network (with two channels), RTVE, and 3 private ones: Tele 5, Antena 3 and Canal Plus Spain, the only pay-television network. Six regional public networks with a total of 8 channels complete the picture.

Spanish watch an average of 3.5 hours of television a day⁴, compared with 4.2 hours for Americans, 3.8 hours for British and 3.0 hours for French.

While the volume of television advertising has increased dramatically in the last few years (28 per cent in 1994), revenues have remained stagnant due to the economic situation and a ferocious price war. In 1994, only Antena 3 managed to increase its advertising revenues.



The picture is further darkened by the fact that the public networks compete in the same advertising markets while receiving huge public subsidies. RTVE lost more than 120,000 million pesetas (1 billion US dollars) in 1994, while none of the public regional networks made money.

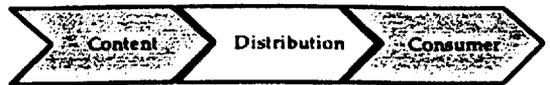
Tele 5 has run into serious financial difficulty and has lost a significant market share in the last two years. The network is being restructured and its two main shareholders Berlusconi and Kirch are said to be looking for potential buyers after deals with Mexico's Televisa and Spain's Grupo Correo came to a dead-end.

Antena 3 achieved great success in 1994, overtaking TVE1 (the main RTVE channel) in market share for the first time during two months and increasing its revenues substantially. It disclosed a gross profit of 3,507 million Pesetas for 1994 (around US\$28 million). Antena 3 has relied on local production of highly successful sitcoms and series to gain market share.

Canal Plus Spain is the only private network that has achieved significant financial success. It has become the third biggest pay-television network

³ Source: ANIEL

⁴ Source: Media Planning



in Europe with over 1 million subscribers and a market penetration above 10 per cent. The company disclosed revenues of more than 40,000 million Pesetas (US\$325 million) and a gross profit of 6,283 million Pesetas (US\$50 million) for 1994. With its programming focused on films and major sports events, Canal Plus has tapped on the great demand for quality entertainment in Spain.

RTVE finds itself in a dire financial situation and is refocusing in a sense which corresponds more to the task of a public broadcaster, with more information and cultural programmes. It plans to reduce advertising and increase prices, while relying on a rise in Government subsidies to compensate reduced income.

Around 450 local television stations operate in Spain. After operating in the dark, the local television stations will be finally allowed to transmit legally when the new proposed legislation is approved by the Parliament.

RTVE and Tele 5 have experimented with interactivity in their normal programming. Both experiences failed in economic terms, although Tele 5's much more limited (and cheaper) system came closer to a success. The systems relied on devices connected over normal telephone lines to achieve interactivity. RTVE offered several services, while Tele 5 focused on games.

1.3. Cinema and Video

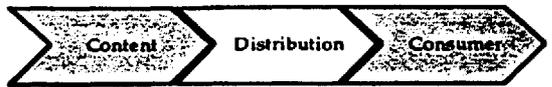
There were a total of 1791 cinemas in Spain at the end of 1994.

The trend towards a reduction in the number of cinemas has slowed down, as attendance bounces back. Following the trend in other western countries, new multi-cinemas with better access and parking are being opened, usually in big shopping centres. There is also a trend in Barcelona and Madrid to have more cinemas showing movies in their original language (almost all titles are shown dubbed in Spanish).

Total attendance in the 1791 cinemas in Spain was close to 89 million in 1994, up 7 per cent on 1993.

In 1994, 54 per cent of households owned at least one videocassette recorder (VCR). Between 80 and 85 per cent of the 46 million pre-recorded video tapes released in that year were sold directly to the public, while the rest went into video rentals.

While demand for VCRs fell by more than 25 per cent from 1989 to 1993 due to saturation of the market and the economic crisis, video rentals have remained fairly constant in volume and purchases of pre-recorded video tapes have increased substantially. They are sold today through many different channels, including newspaper stands and department stores.



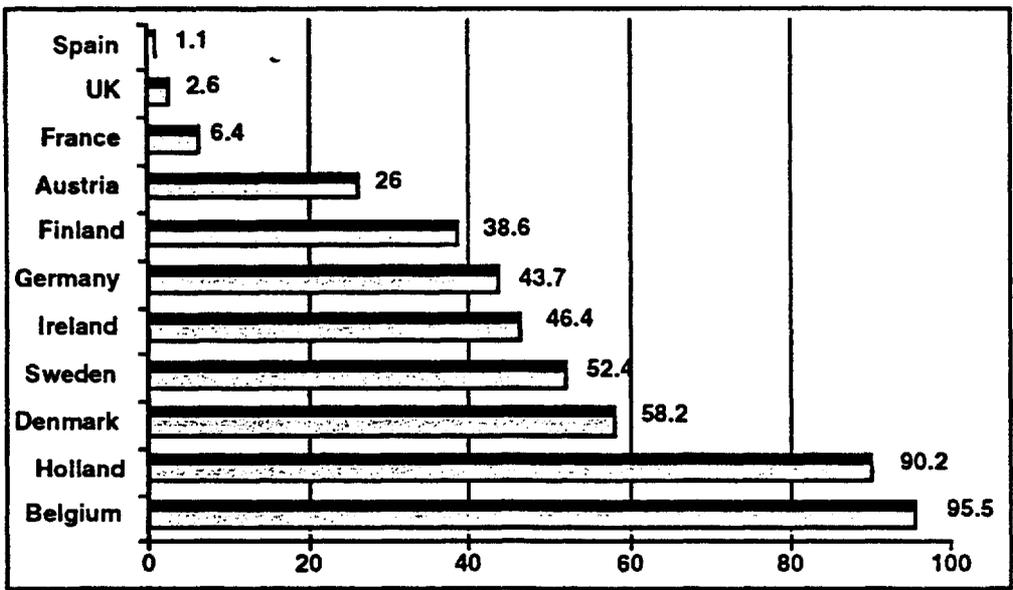
1.4. Cable Television

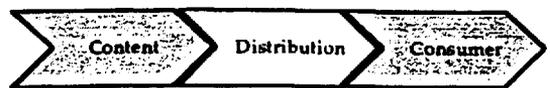
RTVE and Telefónica started work in cable television projects in Madrid and Barcelona in the 70's, but the efforts were halted due to lack of funds. Cable Television (CATV) was first developed in Spain in the early 80's by local players that started the so-called "videos comunitarios" in which neighbourhoods were cabled and received films and other programming from a single video server. These early CATV networks were very rudimentary and limited in size. Most operated illegally and paid no intellectual property rights to the owners of the transmitted content. The "videos comunitarios" filled a gap at a time when television offer was limited to the two (in many places in Spain one) public national channels and people demanded more films and local news. They were specially successful in areas where low income prevented people from owning a VCR. Some of the early CATV networks started to furnish local news programmes to their subscribers and grew in technical complexity and number of subscribers.

At the beginning of the 90's, more than 100,000 households were connected to professional cable networks. New investments were made to upgrade existing networks and average capacity increased from 4-5 channels to 24-60.

There are today a total of 920,000 households with access to CATV, of which 140,000 are connected, a penetration rate of 15 per cent. These figures are extremely low when compared with other European countries or the US. The average number of channels is 20, with a minimum of 9 and a maximum of 31. The average subscription fee is 1,600 Pesetas (\$13).

% of households subscribed to CATV





While legislation on CATV is still being discussed in Parliament, the CATV business landscape is already changing with the entry of big Spanish and foreign players.

Telefónica has recently created **Telefónica Servicios Multimedia (TSM)** to operate new media services and CATV. It is already participating either directly or through TSM in a variety of CATV projects. TSM will act as a CATV operator using Telefónica's infrastructure.

Madrid-based **Multitel** is one of Spain's most promising cable operators. It participates in the construction of cable networks (Multitel is part of cable syndicates such as Santander de Cable, Burgos Sistemas de Cable, Jerez de Cable and Zaragoza de Cable, some of them under construction), and in the acquisition of programmes through CPC (Compañía de Programación de Cable) which is partly owned by United International Holdings. It has also created Gepsa television, a publicity and marketing company specialised in cable and local television.

Grupo Z-Antena 3 is also positioning itself in the CATV business. It is participating in several projects for cable development such as Grupo Gallego de Empresas del Cable, Cable del Guadalquivir and others. It has reached agreements for ventures with Telefónica, Cirsa (a manufacturer of electronic entertainment equipment) and La Caixa (the main Savings Bank in Spain). It was recently announced that Endesa, the public electric utility, has acquired 4 per cent of the capital of Antena 3 television while another group belonging to the public holding, INI, has acquired 1 per cent. Endesa has been presented by Antena 3 management as an "industrial partner". The company wants to use its existing infrastructure (and its nice cash flow) to participate in CATV projects.

Grupo PRISA, through its partial ownership of Sogecable, is also active, participating in Grupo General de Cablevision in Madrid.

Other Spanish participants in CATV projects include the main banks (BBV, Banco Santander and Banco Central Hispano), the electrical utilities (Iberdrola, Hidrocantabrico and Sevillana de Electricidad among others), local newspapers, Spain's biggest retailer (El Corte Inglés) and groups of local investors.

Among the small professional cable operators, the most aggressive ones in terms of upgrading the network have been Procono (with presence in Málaga, Córdoba, Sevilla, Valencia and Madrid), Desarrollo y Sistemas de Cable in Elche (Alicante), Calviá 2000 in Mallorca, Tecamesa in Menorca, and Televisión, Servicio y Desarrollo in Leon, Benavente and Zamora.

Foreign players are also entering the CATV market in Spain. The most important ones include Time Warner and US West (participating in Cable y Televisión de Europa in Catalunya). Others such as TCI, Philips and smaller groups from Latin America, the US and Israel are participating in a variety of local CATV projects.

1.5. Satellite Television

In terms of satellite television, there were 350,000 individual antennas and 50,000 collective antennas in Spain at the end of 1994. A total of 838,000 households have access to satellite television (5.6 per cent of all households). Of this total, 308,000 receive the satellite's signal by cable⁵.

Up until recently, the only channel offered in Spanish was Mexico's Galavisión. Canal Plus started broadcasting its CanalSatélite from Astra in 1994. This package is made up of four channels (two movie channels, one documentary channel and one children's channel) and has proven popular with satellite viewers. In 1994, CanalSatélite had around 25,000 subscribers and revenues of 5,500 million Pesetas (US\$45 million).

Cotelsat's Hispasat is a package of five channels (Teledeporte and Canal Clásico by TVE, Canal 31 by Canal Plus, Antena 3 Satélite by Antena 3 television and Telesat 5 by Tele 5). According to Cotelsat, it had 3,000 individual subscribers at the end of February 1995, after the first two months of codified transmission. In June 1995, however, it was announced that Cotelsat would cease its operations due to disappointing results.

Multicanal/TPS, is the newest operator. It is transmitted from Miami through Intelsat K and distributed through 94 different CATV networks (with 34 others planning to include it). It has around 40,000 subscribers. Multicanal/TPS offers four channels: the Discovery Channel (documentaries), Canal Infantil (children), Canal Hollywood (24 hours of feature films) and Teleuno (series).

EU legislation on the liberalisation of satellite communications will be adopted in Spain after the summer of 1995, allowing the direct purchase of satellite capacity and services by operators.

1.6. The CD-ROM Market

There was an installed base of about 90,000 CD-ROM drives in Spain in 1994⁶, with a growth of over 200 per cent in the last two years. About 13 per cent of all drives installed are connected to Macintosh computers and the rest to IBM compatibles. The market is expected to keep booming in the next few years as the portion of new PCs sold that come with CD-ROM players increases dramatically.

Sales of CD-ROM titles are also booming, although still more than 65 per cent of sales are made by mail or through newstands.

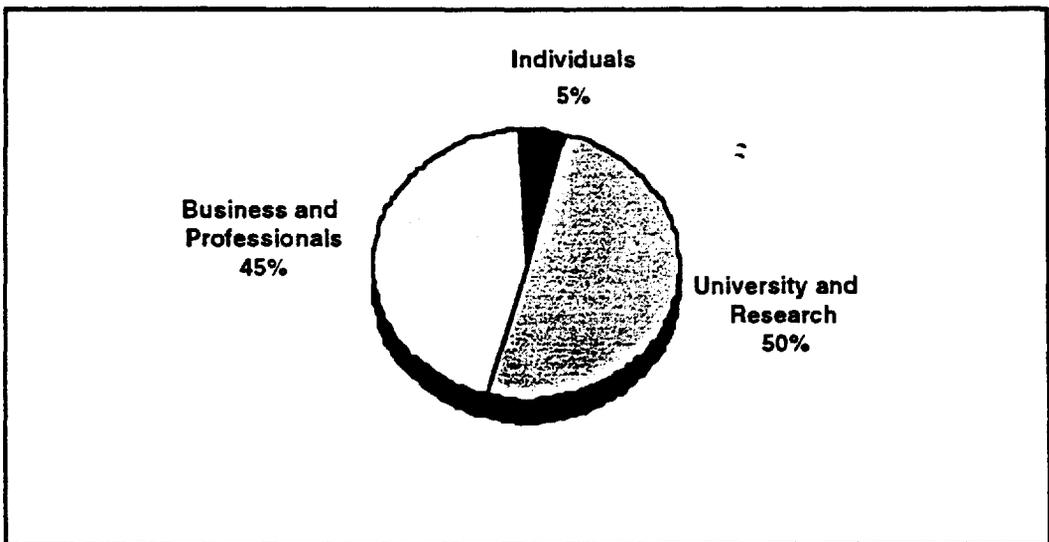
⁵ Source: FENITEL

⁶ Source: BSI Multimedia

1.7. Internet and On-line Services

Internet access and services have experienced enormous growth in 1994 and the first half of 1995. According to some estimates, there are around 30,000 Internet hosts in Spain. Estimating 5 to 10 users per host, we arrive at a figure of 150,000 to 300,000 Internet users in Spain. However, this figure has probably been increasing exponentially in the last few months. The breakdown of these 300,000 Internet users in Spain is illustrated below. Business and individual users are growing much more rapidly nowadays and should become a majority of all Internet users very soon.

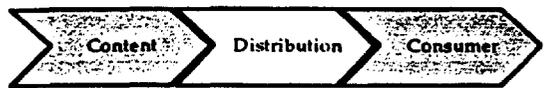
Internet Use



Until very recently, the only access provider was RedIris, a system created under the supervision of Fundesco and that today belongs to the Consejo Superior de Investigaciones Cientificas (public agency committed to all sorts of scientific research). RedIris is still the backbone of Internet in Spain, and provides access for 150,000 members of the research and education community through more than 33,000 computer terminals.

There were, at the time of printing of this study, 9 private Internet access providers (see Appendix I).

Among the private access providers, Servicom represents one of the more ambitious projects. It offers full Internet access and provides its own software for the interface and security. Its services include Electronic Mail, Private Corporate Networks, Database access, Buy-in Direct (teleshopping), Conferences (bulletin boards) and a Kiosk (on-line access to newspapers and magazines). It is also developing Electronic Data Interchange (E.D.I.) services, Mailfax and commercial space Web.



Within the other access providers, Goya S.T., a company born as a student venture, was the first to offer Internet access to the general public. IBM has recently started to offer Internet access in all major towns.

Ibertex, the ageing on-line service offered by Telefónica has an important subscriber and service provider base (more than 500 databases and services can be accessed through it), but its performance is well below that of the Internet. Telefónica plans to improve performance and the graphic interface and provide access to Internet through it.

Internet is not the only distribution channel for on-line services. For instance, Telefónica and Proseinsa have created **Sercicios y Contenidos por la Red (SCR)**, and, together with El Corte Inglés (Spain's biggest retailer), have launched **Teleline**, a true multimedia on-line service providing access to teleshopping and video-games. Users can dial up a number and connect with their computers via a modem. The service will be expanded in the future to offer financial services, Internet access and other services.

Sega is also planning to launch a **Sega Channel** for on-line video-games as soon as the new legislation on cable is passed by Parliament and CATV networks develop.

The new high capacity cable networks should allow for a whole array of new services. On-line financial services, security and education will be offered using the new networks. Within entertainment, Video on Demand (VOD) will allow the customer to see any film or programme at any time he/she wishes. The customer will be able to rewind and fast forward and will pay only for what he/she views (PPV, Pay per View). Telefónica is already testing out these services in Spain with real customers, even using the traditional copper lines for the transmission of films.

Videoconferencing will be another service with great potential once its costs come down, which will be made possible through the use of the new infrastructures and technologies.

2. Government Intervention



One of the main tasks that can be expected from the Government is the providing of a legislative framework for the development of the new services and infrastructures. The Spanish Government has failed to do so up to now and as a result Spain is lagging well behind other European countries in terms of regulation of the new services and infrastructures.

The Government views the arrival of new multimedia technologies and the deregulation of telecommunications as the main drivers for sustainable growth in Spain in the future.

On the other hand, it wants to avoid foreign dominance by favouring the creation of powerful Spanish groups able to compete internationally. Favourable treatment of Telefónica is one of the main strategies to achieve such goal.

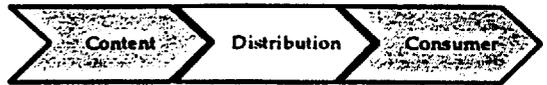
Within a move towards the liberalisation of telecommunications in Spain, the government awarded last year the second licence to operate GSM mobile communications to Airtel, after the consortium bid more than US\$600 million. Telefónica was granted a licence for free (apart from the two it holds for analogue mobile communications).

The Government has presented Parliament with a proposed legislation on Telecommunications by Cable that would regulate the incipient CATV industry and the new interactive services. However the current political climate makes it difficult to get this law passed before the end of the year, given the controversy it creates.

The draft sent to Parliament is facing strong opposition from nationalist parties and the conservative opposition. The former reject the role reserved to the central Government in awarding the licences to operate CATV services while the latter oppose the law because of the privileges it awards to Telefónica, which, in their view, will hinder opposition.

The main lines of the proposed legislation are:

- ⇒ A licence to operate CATV services will be awarded for each of the territories in which Spain is to be divided.
- ⇒ The territories will be decided by local authorities if they lie within a single city, by the regional authorities if they cover more than one city within a single region, and by the Ministry of Public Works, Transport and the Environment (MOPTMA) if they cover towns or cities in more than one region.



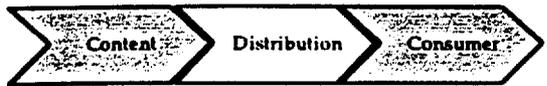
- ⇒ A minimum of 20,000 people must live within each territory. Towns with a population of less than 20,000 can group with other towns, but the result of these groupings cannot exceed a population of 1,500,000 or include a whole province.
- ⇒ After 1998, the MOPTMA will establish new territories with the towns which at that time do not belong to any territory.
- ⇒ The licence holder will be able to build its own infrastructure or use an existing one. It will be allowed to offer broadcasting and other value-added services.
- ⇒ At least 40 per cent of the programming must be supplied by independent programmers except if there are no programmes of sufficient quality available.

Telefónica will have the right to operate a cable licence in each local territory in which Spain is to be divided using its own infrastructure. It will be authorised to start CATV services six months after a second licence is awarded, while CATV companies will not be allowed to offer basic telephony services until 1998.

Existing CATV networks have 3 months after the law is passed to ask for a provisional licence if they have a favourable report from the local authorities and the agreement to apply for a CATV licence. If they do not respect the 3 month deadline or fail to obtain a definitive licence, they will be able to operate for three more years and after this period their network will revert to the Government.

Arguably, the main shortcomings of the proposed legislation are:

- It comes too late and it has not even been approved yet.
- The extremely favourable treatment for Telefónica as operator of the new services.
- The lack of coverage of wire-less cable and other digital technologies.
- The current definition of the territories for which licences to operate will be awarded may leave small towns in rural areas uncovered.
- Limits to foreign ownership will be hard to enforce. If successfully enforced, they will hinder investment and decrease competition.

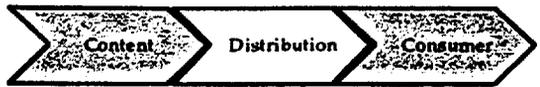


On the other hand, the main strong points of the proposed legislation are:

- The separation of the roles of operator, programmer and infrastructure provider, which should allow for greater competition (except for Telefónica's advantage).
- The coverage of all types of services, not only CATV. The new legislation covers in effect the new information highways.

As mentioned before, EU legislation on the liberalisation of satellite communications will be adopted in Spain after the summer of 1995.

With respect to existing private networks, the Spanish Government favours the view that they should not be liberalised yet within the EU. In the Government's view, given that the marginal cost of using these networks is close to zero, the liberalisation of its use would hinder the creation of new infrastructures, limiting competition in the long term. Given the very favourable treatment given to Telefónica with regard to the use of its existing network, the Government's position seems more an attempt to protect Telefónica's future earnings than a defence of free markets.



3. Future Developments



Many of the future developments in the infrastructure and distribution domains will depend on the legislation finally implemented.

CATV and alternative infrastructures. If the current proposed legislation is to be approved before the next general election, it will have to include some concessions either to the Conservatives, probably limiting Telefónica's ability to compete in the operation of new services such as CATV, or to the Catalan nationalists, giving more regulatory power to regional authorities.

In any case, since the liberalisation of private networks remains highly unlikely (in the whole of the EU), the future multimedia distribution and infrastructure landscape is likely to be dominated by Telefónica.

Depending on Telefónica's pricing policies and market demand for new services, new CATV operators are likely to start building their own infrastructures with a view to future interactivity (i.e. using wide-band networks).

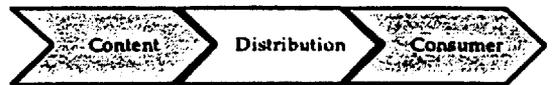
The real issue, however, is whether the huge investments necessary for the creation of the new cable networks will ever pay off. In order to evaluate this, it is necessary to compare the different wide-band infrastructures available, now or in the near future, for the transmission of data

Although much emphasis has been placed on the optic fibre cable networks like the new Information Superhighways, digital satellite and wire-less cable remain serious alternatives to high capacity cable networks.

Digital satellite can offer more than 500 channels using dishes of 60 centimetres in diameter. It has already achieved great commercial success. Although it cannot offer interactivity by itself, digital satellite can come very close to it from a user's perspective. First of all, given its capacity, it is a perfect vehicle for Near Video on Demand (NVOD).

With **NVOD**, the same film or programme is transmitted on different channels every 8-10 minutes. If the process is repeated with the ten biggest blockbusters, the customer can choose from his/her remote control which movie or programme he/she wants to watch and then wait an average of 4 to 5 minutes before it starts (in the meantime, he/she will be shown a channel with summaries of all the available programmes or advertising, or the news channel). NVOD is a cheaper alternative to VOD.

As for **teleshopping** and other interactive services, digital satellite can use existing telephone lines to receive the customer responses through a



smart decoder. In this case, a customer wishing to purchase an item shown on the teleshopping channel will be able to select it using the remote control, and the decoder, which is connected to a telephone plug, will make an automatic call placing the order. Video games can be downloaded from satellite while the desencryption code is sent over the telephone line to the decoder of those customers who have ordered it.

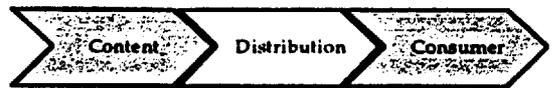
We have to keep in mind that in the UK, where CATV is fully liberalised, a single analogue satellite television network (BSkyB) has more than 2.5 million subscribers while all CATV operators have less than 650,000.

As for **wire-less cable**, it is being experimented commercially nowadays in places like New York and Glasgow. It consists of a digital network in which the signal is radio-transmitted from post to post over the air. The system uses high frequency radio links or the ISM band (normally used for microwave ovens and body scanners). Anti-jamming technology developed for the army allows it to steer around those parts of the spectrum that are being used by microwaves and body scanners without causing interference. As it saves the cost of laying cable lines underground, it requires only about a third of the investment in cable of a similar capacity.

Digital satellite and wire-less cable are two alternatives already available in terms of the underlying technology. Another one that may eventually achieve commercial success and undermine much of the investment in high capacity cable networks is the use of **normal telephone copper wires** to transmit digital television signals using data compression techniques and high-speed modems. Telephone companies around the world are experimenting with this system and are getting close to achieving standard television quality.

Electric utilities are experimenting with the use of their existing power line to transmit data to and from households. Some are able to offer 100,000 bits per second capacity on existing lines (compared with a maximum of 20,000 bites per second on a normal telephone line). As the technology becomes cheaper, it could turn any household's wiring into a sort of LAN network.

Competing technologies and new infrastructures should bring down the cost of communications dramatically over the next decade (a necessary requirement for the multimedia revolution to take place). The risk to telecommunications and CATV companies is that ever-increasing competition will cause a commoditisation of distribution, pushing margins down and threatening their ability to recoup their huge initial investments. In the UK, cable companies are making up their lower than expected subscription rates for CATV with the revenues generated by the basic telephony services they offer. They are already undercutting BT prices by 10 to 20 per cent and stealing away thousands of phone subscribers each month.



Television Broadcasting. As for the traditional television broadcasters, digitalisation will provide them with increased capacity, but their future looks doomed in terms of distribution. The alternatives they face are to cash in during the still long period of time before the new infrastructures and technologies are widely used or to become creators or packagers of content for its distribution through the new networks.

Cinema and Video. CATV competes directly with video rentals and VCRs, and the arrival of true VOD could signal their death. However, contrary to initial belief, cinemas are not suffering from cable or satellite. In fact, cinema attendance has shot up over the last few years in the UK and the US after a long period of decline and in spite of the growth of cable and satellite networks.

The explanation for the success of the cinema versus the new technologies has a lot to do with the radical transformation cinema promoters are undertaking. There is a move from big isolated cinemas to multi-cinemas within bigger entertainment or shopping centres. Ease of access, security and parking have proven to be key success factors in the UK and the US. Another explanation lies in the fact that people, no matter what they are offered at home, like to go out and a night at the movies is still felt to be more entertaining than a night at home watching the same movie on television.

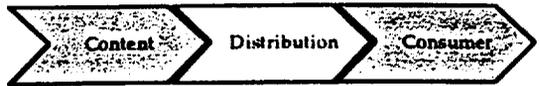
Satellite Television. As mentioned above, satellite television can be a serious contender for CATV, specially when digital technology is incorporated. The number of satellite dishes installed in Spain provide a good indicator of the potential of this distribution channel given the fact that the offering was extremely limited until very recently.

There are, however, two serious threats to the satellite position versus cable networks in the future, one technological and the other economical.

In terms of **technology**, when full interactivity is achieved with cable networks, satellite technology will be unable to match the performance optic-fibre with two-way transmission capabilities.

In **economic terms**, the satellite's disadvantage lies in the high cost of the individual connection (satellite dish). While the CATV operator has to make substantial up-front investment to lay cable in any given part of town, the cost of connecting an additional subscriber is very low. Once the initial investment has been made, it is in the interest and the ability of the CATV operator to beat the satellite provider in terms of price since its marginal costs are much lower.

Internet and other networks. We are witnessing today an Internet explosion all over the world. However, this is nothing compared to what Internet could become if and when security is improved. The only thing preventing commerce and a greater use of the Net for business is the fact



that security is still very weak. If that is solved, Internet may well become the electronic marketplace of tomorrow.

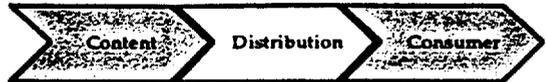
Its versatility and relatively low cost make it an ideal vehicle for exchange of information. Since it uses any infrastructure available, its capacity will increase with technological and infrastructure developments. Its possibilities are endless. Today it is possible to make telephone calls on Internet at zero cost (once access has been paid for) and even teleconferences (although of low quality).

Apart from developments in security, agent technology under development should make Internet much more practical and user-friendly as a means of obtaining information. So-called **Electronic Agents** work on the Net while the user is looking for the information that he/she has defined as important and these agents even make transactions on his/her behalf.

Internet access providers are likely to multiply as barriers of entry to the business are extremely low and demand will increase dramatically. In the longer term, smaller access providers will have to find niche opportunities for value-added Internet services as they face fierce competition from big players such as Microsoft, Apple, Telefónica, IBM and others. Of the existing players, Servicom seems well positioned in terms of strategy and technology to succeed in the future and has a chance of recreating in Europe the success of America On-Line or Compuserve.

CD-ROM. The high capacity, technological innovation and low cost of CD-ROM will assure them an important future as a way of distributing information for many years to come. As their cost comes down and their capacity increases, CD-ROM uses increase. Their high capacity makes them ideal vehicles for the transmission of video and graphics, and combined with networks (taking care of the transmission of text and numbers), they can provide great performance at low cost for most multimedia applications. The next generation of CD-ROM will have capacity for high definition movies in several languages and will be able to play on video recorders and computers. Although very high capacity networks are becoming available at affordable prices to the general public, CD-ROM, costing less than \$1 per unit to produce, will remain a great way to distribute content.

We can already find magazines and encyclopedias published on CD-ROM. Soon they will become a favourite way of distributing from product catalogues and promotional material to the latest movie releases.



4. Key Issues

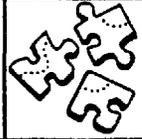


In terms of distribution, it is still unclear at this stage which technologies will dominate the future multimedia distribution landscape. Nevertheless, the following conclusions can be drawn:

- Market demand, more than technological excellence, will define the winners of tomorrow in the domain of multimedia distribution.
- With liberalisation, competing infrastructures and better technology, the cost of communications will be reduced dramatically over the next few decades.
- Distribution of content is likely to become a commodity business with very slim margins and fierce competition. The key success factor will be low cost (as the only way to increase margins and gain market share), technology (so as to be able to provide high value services and features that others are unable to match) or both.
- Customer base will become a critical asset as it increases bargaining power with the owners of quality content. Whoever has the highest subscriber base will be able to offer more for the rights of the prime movies and sports events that in turn will guarantee higher audiences. Operators of CATV will have to consolidate or form buying alliances in order to survive. Canal Plus, on the other hand, has an extremely advantageous starting position when it comes to securing the best content available with its existing customer base of more than 1 million households.
- Presence on the Internet will become more and more important as its use and performance improve. An early presence on the Net through a Web can be seen as a learning tool in order to prepare for the transformation of the Net into an electronic marketplace once security is improved.

Part 4: The CONSUMER Arena

1. Present Situation



One of the main obstacles faced by the new technologies arriving constantly on the marketplace in terms of multimedia has been the reluctance of consumers to pay for them.

Study after study show consumers willing to purchase a whole array of futuristic services. However, most of this research is made by conducting surveys in which the services are described to people and then these people are asked whether they would be willing to purchase them and how much they would be willing to spend on them. This is similar to asking someone from the 18th Century whether he would rather travel in business or economic class in today's airplanes and what he thinks of in-flight entertainment.

The unreliability of these studies has led most of the big media and telecommunications groups in the world to invest great amounts of resources in experimental trials in which "real" consumers are offered many of the services that will be generally available in the future at a cost. The information from these trials is key to evaluating customers' preferences and, above all, how much they would be willing to spend. Experimental trials of the new services are being conducted in the US (one of the most important ones being Time Warner's in Orlando), the UK (VOD by British Telecom) and most other advanced countries. In Spain, Telefónica is conducting similar experiments with a small group of customers.

Although little has been published about the results of these trials, they seem to indicate a somewhat lukewarm reaction from customers to the new services. After a period of experimentation, customers tend to settle for limited spending, mainly on movies and other entertainment services. The amount of money they are willing to spend on more sophisticated services (high definition versus standard television or VOD versus NVOD) appears today to be still very limited.

In the case of Spain, however, there are reasons to imagine a brighter future for the new technologies.

First of all, the success of Canal Plus illustrates that there is a strong demand for high quality entertainment, and that Spaniards are willing to pay a relatively high price for it.



The high level of video rentals and the fact that a significant portion of Canal Plus subscribers have also ordered a VCR decoder, suggest that Spaniards value being able to choose the time at which they view their favourite programme. This suggests a high potential for NVOD and VOD in Spain, if they can be offered at an affordable cost.

In terms of devices and interfaces, Canal Plus' installed base of over 1 million decoders (which will be upgraded to a digital model in the near future) represents a unique asset. Already, competing satellite packages such as Hispasat's have agreed to use the same decoder as the costs of building such an installed base would be prohibitive.

In terms of customer preferences, entertainment ranks very high. Other services such as **Teleshopping** or **Telebanking** have obtained mixed results, but they have not made use of the new multimedia technologies.

The success or failure of recently launched services, such as **Teleline** (on-line multimedia games and shopping), will provide valuable information about customer preferences and market potential.

There is an installed base of approximately 2.5 million personal computers in Spain, of which 9 per cent have modems and 4 per cent have CD-ROM drives. Both the installed PC base in homes and the percentage of PCs with modems and CD-ROM drives are increasingly dramatically.

Apart from the Canal Plus decoder (which does not allow for interactivity at present), there is no extended user interface in Spain.

On the corporate side, the huge investments made by all types of businesses in the last few years in Information Technology have increased corporate customers' ability to benefit from multimedia services. High-powered PCs and internal optic fibre LANs (Local Area Networks) offer the base to provide high value-added multimedia services such as PC-based videoconferencing and Electronic Meeting software.



2. Government Intervention



There are two main areas in which the government can affect the development of multimedia in terms of the consumer interfaces and devices:

- Education of consumers, and
- Creation of standards that foster technological development and market growth.

In terms of **education of consumers**, Spain's schools and universities still suffer from a disastrous information technology infrastructure. Access to computers and networks is limited to a few and most of the hardware and software used is obsolete. The other way to change consumer's behaviour is by providing new commercial services at affordable prices. This is limited by the lack of a legislative framework and arguably by Telefónica's dominant position.

With regard to the **creation of standards**, experiences in other countries over time show that in most cases the government's role should not be to try to impose them on the markets but rather to try to create conditions for their adoption. In some cases, however, coordinated action by several governments can impose standards to the market and foster demand and innovation. This however has to be done listening carefully to market demands and having competing standards selected on merit.

An example of ill-founded government action to regulate standards was the EU failed attempt to create a High Definition Television (HDTV) European Standard. The proposed analogue standard took too long to develop, only to be crushed by the digital American standard. European regulators failed to keep up with the pace of technological innovation and see that what the market demanded was digital television rather than high definition.

On the other hand, a concrete example of successful regulatory intervention to create a standard is the European GSM standard for digital mobile communications, which is now being adopted elsewhere in the world. This technically advanced standard resulted from much more careful listening to market demands and technological innovation and has succeeded in fostering both demand and innovation.

3. Future Developments



As new multimedia services become available at affordable prices to the general public and education of consumers improves, the critical factors for success in the multimedia environment will change.

With traditional products and services, the consumer's choice is limited mainly by disposable income. With the new multimedia products and services, spare time will increasingly become the limiting factor as the cost of technology comes down and choice increases. Already some studies have found evidence of falling rates of cable subscribers among users of Internet in the US⁷ even though the cost of cable subscriptions may be as little as \$15 (1,800 Pesetas) a month. People have a limited amount of spare time, and once cost becomes irrelevant, time will become the critical limiting factor for the consumption of new services.

For the new technologies to reach the average consumer, they will have to become user-friendly. Although much has been achieved in the field of computer software in this domain with the arrival of graphic interfaces (i.e. Windows and Macintosh), today's operating systems remain cryptic for the computer illiterate.

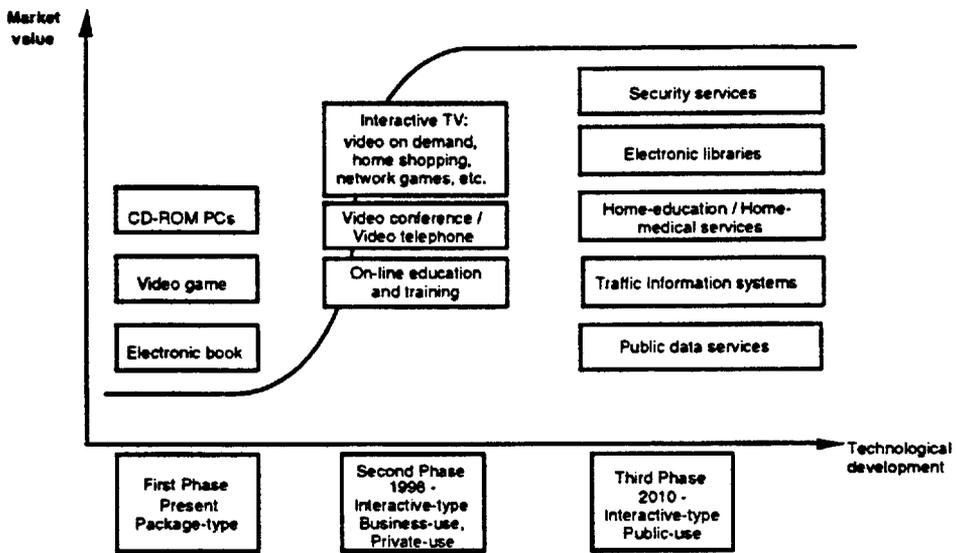
Systems and services become user-friendly by intuitive and creative design, but also by having people familiarise with the system. The emergence of standard interfaces for the various multimedia services in the pipeline will be one of the developments that will shape the multimedia landscape in the middle term. The failed attempt by Bill Gate's Microsoft to purchase the financial software producer Intuit illustrates the importance of having a widely-used interface in tomorrow's marketplace. What made Intuit specially valuable (and moved the Justice Department to block the deal on competition grounds) was the fact that millions of Americans had become familiarised with its easy-to-use financial software and used it to keep their domestic accounts.

Another likely development (which will be further explored in Section IV) is the spill-over of the new technologies to presently unrelated industries. As the Information Superhighways (high capacity networks) reach households and user-friendly software becomes widely available, a new and extremely cheap distribution channel will emerge. Although entertainment, media and advertising will be the first to be affected, soon other industries such as financial services, retailing or health-care will see the way they interrelate with consumers change dramatically.

⁷Source: The Economist, April 1995

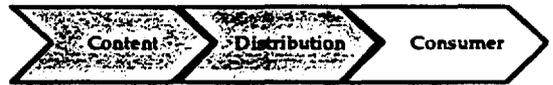


Evolution of the Multimedia Business



As the new technologies spread beyond media and entertainment to other industries, the fight to create/control the standards for each of these services will become critical. With distribution channels multiplying, control of the user interface people "know" how to use or are familiar with will be essential for market share. Once an interface has been accepted as standard in the market, the company which owns it will achieve great leveraging power in its negotiations with content producers and infrastructure providers and will be able to obtain the best from both at a low cost compared to its competitors. This in turn will help it attract new customers/users of its interface, starting a virtuous circle of revenues and profits. Thus many players will be keen to spend a great amount of resources impose their standards and competition will be fierce. Already many software companies are distributing their software for free on Internet with the hope of seeing it become a standard and then being able to profit from it by charging for updates.

Finally, the great variety of products and services that will be offered through the multimedia networks call for a consolidation in terms of user interfaces into a single *navigator* that allows the user to browse through the different services. In order for this navigation to be intuitive and user-friendly, real-world situations will have to be somehow recreated on the computer and television screen. For instance, several of the navigators currently under test in the US and Europe are based on the idea of recreating the experience of visiting a shopping mall. The consumers interact with the software by "walking through" the gallery of a shopping mall with the stores on either side giving entry to different services (cinemas lead to VOD services, department stores to on-line shopping, and bank branches provide direct access to financial services). Not many of these navigators are likely to succeed in any given market, so those that manage to capture a broad customer base will provide their owners with a very valuable asset.



4. Key Issues



As the new services become available and the multimedia market explodes, the ability to generate a large and loyal customer base will define power and success for the different businesses. The key aspects to achieve this will be:

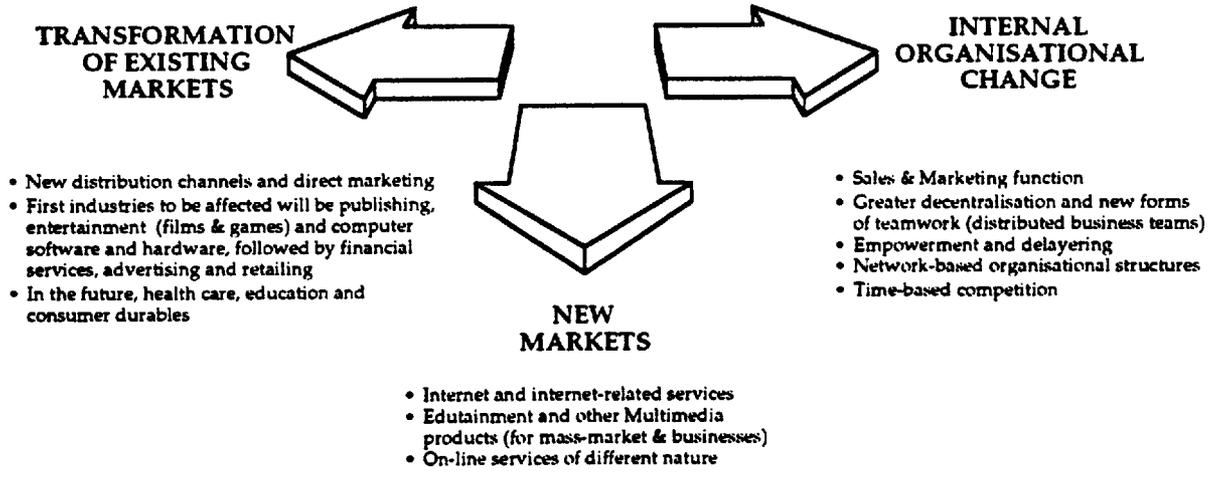
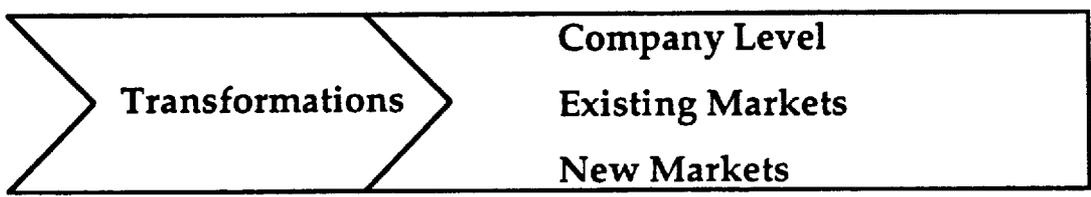
- ✓ **Ease of use.** People will stay away from cumbersome systems and buy user-friendly ones. And, what is most important, once they *know* how to use a system or service, they will stick to it.
- ✓ **Ownership of the standard.** Related to the previous point. Control of the standard will provide leveraging power to negotiate with other players on the multimedia value chain and maximise profits.
- ✓ **Mind-share.** As the number of services and options multiply, consumers will face an increasingly complex choice. Being first in the customer's mind will be critical for success. With time as a limiting factor, consumers will not spend much time exploring different options and will want to have someone else do that for them. Mind-share can be achieved through traditional brand awareness, but positioning within the interface will become critical (hence the prior point). To have one's products or services (be it a movie or a mutual fund) first or with brighter letters in the menu the consumer is facing will pay off handsomely.
- ✓ **Compatibility.** - As different players try to set standards for interfaces and devices, those who offer compatibility with existing and future ones will have a higher chance of succeeding. Consumers will be wary of locking themselves in systems that could soon become obsolete or fail. Compatibility will reduce costs associated with this uncertainty in the consumer's mind.

The fact that Spain clearly lags behind other advanced countries (and particularly the US) in the development of the new technologies, infrastructures and services creates an enormous opportunity for those who can create the new standards in terms of interfaces (in Spanish and suited to local tastes) and have them adopted. Those who achieve this are likely to be the winners of the multimedia revolution.

Part 5: BUSINESS IMPACT

A Spanish Perspective

The new multimedia technologies will have many and powerful effects on today's businesses. They will change the structure of firms, their internal processes, and the markets in which they operate. They will even create new markets. The process of transformation the new technologies have triggered has been compared many times with that of the Industrial Revolution. The firms, markets and societies resulting from this transformation may resemble those of today in the same way the industrial corporations of the late 19th Century resembled the artisans of the preceding century.



1. Changing How Companies Operate

Technology has already changed dramatically the way companies operate and organise themselves. These changes will accelerate as the pace of technological innovation increases and multimedia technologies become widely used.

1.1. Multimedia as an Enabler

The most immediate effect of multimedia technologies will be to reduce the **cost of communications** for corporations. However its most significant impact will be to enable corporations to operate in ways that are still unfeasible today.

Multimedia will be used to create new selling tools and provide direct access to customers. Multimedia catalogues of a company's products and services will be increasingly offered for on-line consultation. Interactive features will allow the customer to explore different options and possibilities without moving from his/her couch. For example, car manufacturers could have customers checking its different models on television and being able to change colours or interior design at the touch of a key on the remote control.

The new technologies can also facilitate greater access to information by a corporation's employees, thus increasing their empowerment and speeding up decision making.

The emergence of a virtual market will also reduce entry barriers and allow firms with limited resources to achieve greater audiences for their products, in effect increasing competition.

1.2. Fading of Boundaries

Networked multimedia will provide a virtual space in which to communicate, work, sell and compete. As suppliers, customers and competitors are brought into the same virtual space, traditional barriers among them will fade and a new market dynamic will emerge.

More powerful communications will allow for competitive out-sourcing of most activities performed within today's businesses. Firms will be able to conduct on-line market research for their designs and exchange them

with potential manufacturers to obtain competitive bidding and then sell the resulting product via on-line catalogues. In doing so, they will become virtual corporations in which the boundaries between each player are not clearly defined. Qualified workers will be able to auction their services on the electronic marketplace on a project basis. In summary, the very essence of firms and the relationship between capital, labour and markets will change.

Examples of Spain-related Internet services available for managers

The screenshot shows a Netscape browser window with the address bar at <http://www.strong.carlton.es/ES/Spain/economy/menu.htm>. The page title is "Economy" and it features a table of contents with the following items:

- Introduction
- Annex 1: 1939 - 1959
- Stability and Economic Development: 1959 - 1974
- The Economic Crisis of the Seventies: 1974 - 1982
- From Industrial Adjustment to Accession to E.E.C.
- The Growth Phase 1986 - 1992
- The End of Economic Expansion 1990 - 1992
- Scenarios for the Spanish economy 1990/1993 and 1
- The Labour Market in Spain
- Foreign Trade
- The Balance of Payments
- The Public Sector
- taxation
- Public Spending, Policy and the Budget
- The Financial System
- The Stock Market

Below the table of contents, there is a section titled "InterStand" with the subtitle "El escaparate Internet de los...". It lists various services and organizations:

- Alumbrs. Software de conexión
- Anaya Multimedia
- Asociación Fulbright
- ATI. Asociación de Técnicos de
- Antopistas de la información: el Verano de la Universidad Compl
- CREI. Centro Regional para la Eficiencia de la Información
- California software empresa de software, desarrolla aplicaciones Internet
- Cyberagents: Marketing and Research Services On-line
- Hispaworld Servicios Internet. Guía Turística de España
- InforEspaña: Guía Interactiva de Servicios Españoles
- Innovación. Boletín Semanal de Tendencias, Empresas y Tecnología
- Sema Group Sae - Diseño e Ingeniería de Software (DIS)
- Mai Simons (distribución de software)
- Ministerio para las Administraciones Públicas (Consejo Superior de Informática)
- Oficina Española de Patentes y Marcas (Ministerio de Industria y Energía)
- SERTEL: Información Turística sobre Baleares
- TECNIMAP 95

Overlaid on the right side of the browser window is another Netscape browser window titled "Netscape: EUnet - Pagina de entrada". The address bar shows <http://www.eunet.es/>. The page content includes:

Bienvenido a

EUnet

Connecting Europe since 1982

Goya Servicios Telemáticos, S.A.

El primer proveedor comercial de Internet en España

- Normativas: www.eunet.es
- Actualidad: un otros servicios de interés
- InterStand: el escaparate en Internet de los proveedores de información hospedados en Goya.
- Guías: Una colección de recursos accesibles por Internet incluye directorios (páginas blancas de personas y empresas de empresas y productos), mecanismos de búsqueda, programas, documentación, etc.
- Servicios y más
- Acuerdos de Goya y EUnet/Europa.

1.3. Multimedia and the Spanish Manager

How well the Spanish management style fits the new technologies is something that will be critical for the success of Spanish firms in a multimedia future. We are already witnessing how American firms are leapfrogging their Japanese rivals in the domain of new technologies and their commercial application. It can be argued that the entrepreneurial spirit, ingenuity and flexibility of the American firms is better suited for the new environment. Cohesion, discipline and other features of the Japanese firms may have been critical for them to achieve industrial excellence but may not be adapted to a new world of intangibles, creativity and networks.

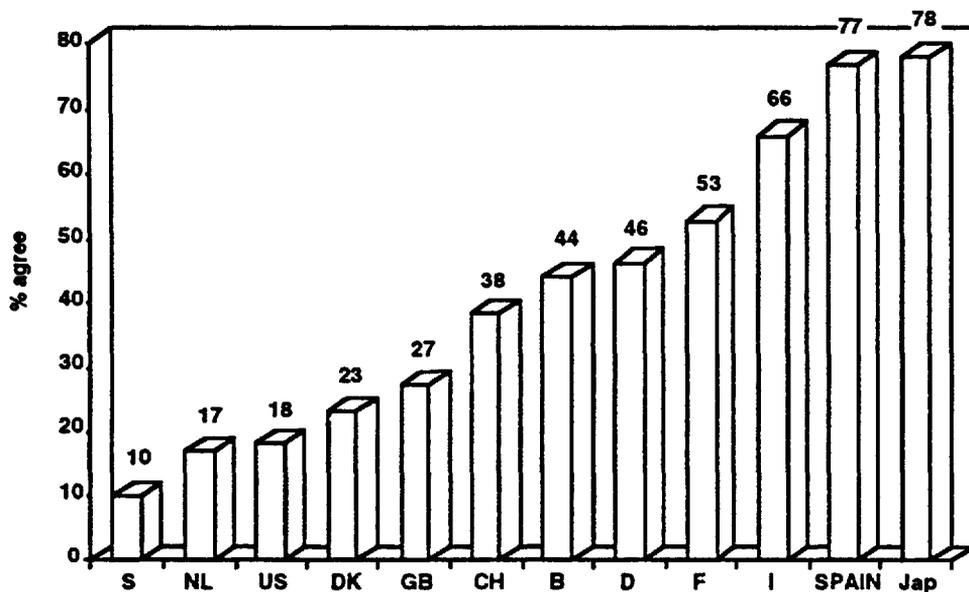
The prospects for Spanish firms are not bright when it comes to the adaptability of their management structures and teams to the new rules of the game.

Firms in Spain tend to be hierarchical with power concentrated among the few at the top and decisions imposed on the organisation. Great lip-service is paid to concepts such as empowerment or teamwork when they arrive, but, in practice, old ways of management prevail.

Different studies point to the fact that Spanish managers are more reluctant than their American and European counterparts to empower their employees.

Spanish Managers and Empowerment⁸

Is it important for a manager to have at hand precise answers to most of the questions that subordinates may raise about their work ?



⁸Source: Professor André Laurent, INSEAD.

The management systems necessary to survive in the new competitive environment call for greater decentralisation, empowerment and teamwork. How sensitive the 2 issues of "culture" and "resistance to change" are in Spain also resulted from a recent survey (May 1995) conducted⁹ with a group of Spanish top managers (President, CEO, and Managing Director level) at the "Euroforum-INSEAD Top Management Programme" and the "Management 1999 Programme" on Information Highways which took place at the Instituto Universitario Euroforum Escorial.

The Spanish top managers participating in the survey first indicated that they believe multimedia technology is creating several opportunities for Spanish businesses. In particular, 10 application fields were identified and ranked in terms of importance.

Key Application Domains for multimedia technologies in Spain

(ranked using a 10--Point Scale) ¹⁰

Rank	Mean	Key Application Domains
1	9.59	Education
2	8.73	Entertainment
3	8.59	Access to Knowledge and Information
4	8.48	Sales and Marketing Support
5	8.33	Access to Multimedia Databases
6	8.18	Health-case Applications
7	8.18	Telework
8	8.00	New Distribution Channels
9	8.00	Use of Videoconferences
10	7.82	Publishing

When asked to indicate which factors will influence the adoption speed of multimedia technologies in Spanish companies (and to rank these factors in order of importance), the group of top managers indicated "cultural change" as one of the top three factors.

⁹Source: A.A.Angehrn and P. Dalsgaard, "Multimedia in Spain: A top management survey", May 1995. Final Report of a session conducted with *GroupSystems V*, a groupware system supporting electronic meetings of different types and duration.

¹⁰Source: Spanish Executives participating in the "Euroforum-INSEAD Top Management Programme" and the "Management 1999 Programme" on Information Highways which took place at the Instituto Universitario Euroforum Escorial in May 1995.

Key Factors influencing the adoption speed of multimedia technologies in Spanish companies ¹¹

Rank	Key Factor
1	Concerns of long-term competitiveness
2	Traditional cost/benefit analysis
3	Cultural change
4	Technical constraints
5	Expected impact on economic growth
6	Flexible applicability of new technologies
7	Impact on companies' efficiency and effectiveness
8	Impact on solution of current, practical problems
9	Experiences in other countries
10	Expected new business opportunities

In addition, when asked to identify and rank the barriers preventing Spanish companies from taking advantage of the business opportunities created by multimedia technologies (see above), "culture" was indicated as the most important barrier.

Key Barriers preventing Spanish companies from taking advantage of the business opportunities created by multimedia technologies ¹¹

Rank	Key Barriers
1	Cultural Barriers
2	Political Barriers
3	Social Barriers
4	Infrastructural (telecom) Barriers
5	Technological Barriers
6	Economical Barriers
7	Educational Barriers
8	Know-how Barriers
9	Structural Barriers
10	Resistance to change work habits

¹¹Source: Spanish Executives participating in the "Euroforum-INSEAD Top Management Programme" and the "Management 1999 Programme" on Information Highways which took place at the Instituto Universitario Euroforum Escorial in May 1995.

2. Changing Markets and Industries

Very few industries, if any, will be untouched by the multimedia revolution. In fact some will be radically transformed and a few may even change beyond recognition.

2.1. Publishing

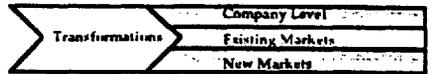
The publishing industry has been one of the first to experiment with multimedia technologies. The number of newspapers and magazines that have gone on-line has multiplied in the last year (in Spain El Mundo has set up an electronic paper on Servicom's network). The major publishing groups are setting up multimedia divisions focussing on the development and distribution of CD-ROMs. Electronic books and interactivity are the key words in the industry.

Printed text, however, is not bound to disappear in the foreseeable future as one of the main means of communication. Its low cost and high quality resolution remain unmatched by today's hardware (some experimental monitors have achieved near paper resolution but their cost remains prohibitive). Electronic books and on-line information are more likely to complement today's books and papers. Where capturing the reader's attention is key (such as in children's education) the former will play an important role. When fast access to large amounts of information and search capabilities are critical, electronic databases will provide the answer.

Thus, children's books, encyclopedias, reference books, as well as a new array of edutainment and database products are likely to form the backbone of the multimedia catalogue of publishing houses.

Spanish publishers have a great opportunity of positioning themselves as leaders and generators of content for the Spanish-speaking countries.

As networks reaching households increase their capacity and reduce their cost, much of the information accessible through printed paper and CD-ROM will start to be transported through wires or air waves. Publishers will have to concentrate on the generation and packaging of data and leave distribution aside. This will lower entry barriers for new content creators and small start-ups will be able to offer their products to ever-increasing audiences.



Technology will become a critical success factor and those able to produce the most sophisticated and attractive products at the lowest cost will be the ones to reap the benefits.

2.2. Entertainment

The entertainment industry has also been among the first to feel the impact of the new technologies. The process, however, is far from over.

By incorporating interactivity in its products, the industry is starting a whole new business. Movie-games in which the viewer is able to affect the outcome of the movie and play the characters in it is taking off with great momentum in the US.

The new technologies are also affecting fundamentally the production stage, pushing costs down. The strong bargaining position attained by producers, directors and actors in the last few years will be eroded as computers take on more and more of the roles presently played by humans (who were the stars in "Jurassic Park"?).

Availability of unlimited capacity for the distribution of content will push the cost of transmitting it to near zero in the long term. This will make it economically feasible to produce and transmit "alternative" content for reduced target audiences.

Diversity of programming will increase and barriers of entry will be greatly reduced. Producers of low-cost customised programming will be able to cash in on a diverse audience. Programmes suited for specific social groups (from the elderly to architects) will take market share from one-fits-all type of programming.

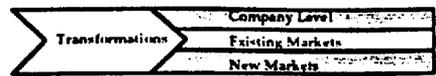
Computer-generated animation and recycling of old programmes will be two activities with great business potential.

2.3. Telecommunications

As the backbone of the multimedia revolution, the telecommunications industry is facing the greatest challenge in the new environment. Deregulation and increased competition are putting pressure on profits. At the same time, great investments are needed to build tomorrow's networks and telecom companies are rushing to do so in fear of being left behind by others.

Increasing capacity and deregulation are likely to turn telecommunications into a commodity business with probable over-capacity and little differentiation among the different players.

Telecom companies are reacting to this by concentrating on high value-added services (global networks, one-shop solutions etc.) and by expanding



into the value chain (through acquisitions, alliances or mergers) both in content creation and consumer interfaces and devices.

The key strengths of telecom companies, apart from their financial muscle and the monopolies many still hold, are their switching expertise and their complex invoicing systems. In the case of Telefónica, however, this is balanced in part by the burden of inherited inefficiencies of a bureaucratic organisation with little capacity for adaptation to rapidly changing customer needs.

2.4. Financial Services

On-line access to financial services will reshape the industry. The importance of branches for retail banking will diminish as well as the role of the commercial banks themselves. Technology will allow a widening pool of investors to have direct access to increasingly sophisticated financial products. Would-be debtors will be able to reach directly would-be investors in a process of disintermediation which will challenge the traditional bank role.

On the other hand, the banks' ability to assess and manage risk will be their key resource in the future as the increasing complexity of financial markets reduces the consumer's ability to choose among different financial products. Here too the banks will face competition from technology if they are unable to master it. Agent software (intelligent software that identifies user's preferences and works in its absence) will perform most of the advising role played today by banks. When a customer in the not-so-distant future decides to ask for a loan, he will only have to select a few menu items on his computer to have agents sent over the networks looking for the best loans available on the market for this customer's risk profile.

At the same time, the development of financial services on the Internet and the appearance of the first forms of electronic money mean that the next battle in the financial services arena may well be fought over a virtual territory with the likely winner being a small start-up which could be associated with a bank anywhere in the world.

Control of the consumer interface will be extremely important in the financial services industry. As consumers can make most of their banking transactions and investment decisions from their computer or television set, control of the software they use will be critical to position one's products.

Although telephone banking remains worlds apart from truly on-line financial services, it may well be used as the foundation for a new type of bank. The future, however, will witness a much greater transfer of bargaining power to the customer and an increasing shift of value towards the generation of information and advice (much of it through intelligent software) and away from intermediation.

2.5. Advertising

Advertising will also be facing a tough challenge when the new technologies take hold.

As consumers are free to choose what they want to watch on a minute per minute basis (with a wide choice of channels and services such as VOD), advertising faces the challenge of being able to put its message across. Today's zapping will be nothing compared with a future in which viewers download their favourite show over the telephone lines.

In this scenario, the advertising industry needs to react by incorporating its message into the content. This is a change that has been taking place in the last few years. As the number of television channels has increased, sponsorship of television programmes has multiplied.

Another solution relies on the same technology that is threatening the industry. The multimedia technologies will allow advertisers to radically alter the nature of their ads, making them fully interactive. The ads will need to offer value to the consumer in the form of information. The previously mentioned example of the car manufacturer's on-line catalogue of models available with all the different options in which the customer can choose to see on the screen the result of mixing different options provides an excellent illustration of what the future of advertising may look like. The positive side of such a scenario will be the fact that in the process the consumer will generate an enormous amount of valuable information that can then be used to adjust products and messages.

A good example of the radically different nature of advertising in an interactive world is offered by France's Minitel. Among the many services it includes, there is movie and cinema information. People connect from their homes to databases containing information about all the movies playing in every single cinema in France. The information can be browsed by city, cinema, movie, etc. However, the first thing to appear on the screen is the list of the ten movies that received the most queries in the last week. Most people do not go any further and instead select one of these movies (reflecting other people's preferences) to find out where it is playing. Imagine a list of the ten most popular car models of the week plus a window in which people can see the week's special offer by a particular manufacturer and you may be seeing the future of interactive advertising.

The good news for the advertising industry is that none of the services that will be offered through the multimedia networks is likely to generate enough revenues to pay for the huge investments needed to put the networks in place. Advertising is the most likely candidate to help foot the bill, so distributors of content are conceivably going to find room for it.

2.6. Retailing

The old saying in the industry goes that the three most important things in retailing are "location, location and location." The only difference may be that with multimedia networks in place, it will be the meaning of location what changes.

How a retailer is positioned in the consumer's interface-navigator and his or her mind (in terms of perceived quality, service and price) will be the equivalent to today's "location, location and location."

2.7. Other Industries

Networked multimedia will affect the distribution channels of many industries, from consulting to health-care.

In industries where the customers are the general public, control of the interface or positioning within it will be critical. In the health-care industry for example, those who can establish the standard in diagnosis aid software or on-line pharmacy will be more likely to prosper.

In industries where the audience is much more targeted and sophisticated (such as in consulting or CAD-CAM), technological excellence and value-added services will be the key success factors. More sophisticated buyers will be able to use more complex software and interfaces and search further in the networks for the services and products they need.

3. New Markets and Opportunities

The multimedia industry itself, a merge of telecommunications, entertainment, publishing and software, is already in the making. Markets such as edutainment, on-line information services, CD-ROMs or Internet access providers did not exist up until a few years ago.

These new markets represent enormous business opportunities for early movers. There are risks, however, in committing large amounts of resources today, given the fact that many of the services and products mentioned here have yet to achieve commercial success.

As the saying goes, Multimedia has proven to be a great business only for consultants so far. This, however, is not necessarily true. Edutainment, CD-ROM publishing and distribution of networked communications are providing great profits to those who have managed to position themselves in the right place at the right time. Small start-ups all over the globe are making a kill with new technologies on communications (telephone calls on Internet), security (commerce on Internet) or special effects (Lucas Films and "Jurassic Park").

The fact that Spain is lagging notoriously behind the US and some other European countries creates, however, opportunities that are easily overlooked.

First of all, the products and services created in the US and other countries have not been designed with the Spanish tastes and needs in mind. In fact, most of them are not even available in a Spanish version. There are great opportunities for customisation of foreign content and services to suit local conditions. Creation of local quality content and interfaces also offer great business potential.

Secondly, Spanish businesses (and authorities) have the opportunity to learn from mistakes made by others. Keeping an eye on developments abroad should allow Spanish businesses to incorporate those technologies that succeed and leave the others aside. Anyone watching the Internet and on-line services boom in the States over the last three years could have seen it coming to Spain (as it is in fact now doing).

However, just by looking at what other firms do, Spanish businesses will never exploit the full potential of the new technologies. It is necessary to risk and experiment. Spain is endowed with creative people, an impressive cultural heritage and a potential market of more than 400 million Spanish speakers. The challenge remains to create products with universal acceptance as Hollywood has managed to do for decades, or at least products that can appeal to the wider European or Latin American

markets. The famous "telenovelas" (soap operas) produced in countries like Venezuela are a good example of a commercially successful product in both Spain and Latin America. Millions of people around the world are learning Spanish, representing a huge potential market for edutainment products in Spanish language. Spain's position as the main tourist destination in the world is definitely an advantage in the borderless virtual world. Many of the 30 million users of Internet today will visit Spain sooner or later if they haven't done so yet.

Netscape: Hispaworld - Internet Services

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- Real-State Guide (En preparación/In developing)
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Para cualquier sugerencia o información, dejar mensaje en/For any suggested information mail to:

 juan@hispaworld.es

Document : Done.

Part 6: Concluding Remarks

For today's managers, multimedia represents both an opportunity and a threat. Business opportunities appear (and disappear) at breathtaking speed and technological innovation makes one day's successes the next day's failures. In such an environment, businesses face the difficult task of positioning themselves for tomorrow's markets without leaving today's unattended. The uncertainty created by the pace of technological innovation makes decision making even more difficult.

Based on a systematic approach to analyse multimedia developments in a given geographical sector, this report shows to which extent Spanish managers are reacting to this challenge, engaging in different forms of experiments. Experimentation in the multimedia domain does not appear to be related to locking precious resources in big projects of uncertain pay-off. Successful experimentation seems to result from loosening up the organisation so that employees can experiment with the new technologies, starting many low-cost projects even if they point in opposing directions. Successful experimentation also seems to imply a number of "cultural" changes including (1) accepting that employees "waste" time experimenting with new technologies and alternative ways of gathering information and structuring their work, (2) developing a more global vision of future business developments instead of thinking only locally (adopting, in this particular case, a Spain-centered attitude), and (3) being able to look at the new technologies as an opportunity for extending, rethinking, or repositioning traditional products and services.

Finally, given the business-oriented nature of this report, we omitted to mention a domain that multimedia is contributing in transforming significantly: management education. Innovative approaches to management education and training based on multimedia cases and business simulations have been proposed and successfully applied¹². In addition to contributing to the design and development of a new generation of educational products and services, the use of stand-alone and networked multimedia in training is becoming an effective way for companies to expose their employees to the new technologies and their potential business applications.

¹² Source: "Business Navigator: The Next Generation of Management Development Tools" A.A. Angehrn, Y. Doz, and J. Atherton, INSEAD WP 93/37/TM/SM, 1993.

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