ADVERTISING IN DIGITAL TELEVISION: THE SPANISH CASE

CHARO SÁDABA

Abstract

Over the last decade, the Spanish television market has radically changed, but television has never ceased being a favourite medium for advertisers, not only because of its potential to communicate emotions with a unique touch but above all because it reaches 98 per cent of Spanish households. In recent years, consumption of television has increased in Spain, now on the digital threshold, and there is already evidence from the U.S. that households with access to fully interactive digital television increase their overall consumption of the medium. And yet, Infoadex data on advertising spend in Spain during 2001 indicates that out of the 18% of the total media investment received by television, less than 1.7% of that was spent on non-commercial and nationwide television. This raises an important question: why does advertiser interest in digital television not grow at the same pace as audience acceptance of the new technology? The arrival of digital multi-channel television in 1997 means we must reconsider the concept of advertising in a medium in which the user pays for access to content. Advertising must now focus on becoming an added value service for the viewer, augmenting programme content. Digital television has the ability to increase segmentation of the audience and its interactive possibilities open the way towards creating new advertising messages. This paper explores the response of advertisers and other professional actors across the media sector. Its object is to establish an initial analysis of the reasons for the inhibited attitude of advertisers towards digital television. After a brief review of the present situation in Spain — with reference to the business models and the legal framework in which digital television is developing — we examine the role of advertising, using interviews with different professionals in the field, in order to identify the main barriers to advertising investment in digital television.

Charo Sádaba teaches in Media Management Department, School of Communication, University of Navarra, email: csadaba@unav.es.

Introduction

Even with the radical transformation that television in Spain has experienced during the last twelve years, it has never ceased being a favourite medium for advertisers, not only because of its potential to communicate emotions with a unique touch but above all because it can reach 98% of Spanish households. Moreover, in recent years, there has been a significant increase in the amount of advertising minutage consumed daily by television viewers, as is shown in the Table 1.

Table 1: Development of Advertising Consumption in Television 1991-2000

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Minutes watching TV per day	187	193	204	210	211	214	209	210	213	210
Minutes of advertising broadcast per day	452	646	712	887	911	939	1131	1261	1417	1386
Minutes of advertising watched per day	11	15	18	22	20	21	23	23	24	23
Spots broadcast per day	1.132	1.439	1.856	2.260	2.607	2.756	3.291	3.671	4.048	4.082
Spots watched per day	26	38	47	56	59	62	67	67	69	68

Source: Madinaveitia 2002, 153.

These trends materialise in a very positive orientation towards television when advertising investment is being planned. Television remains the medium that attracts the most investment from advertisers, at least in its analogue phase. The arrival of digital multichannel television in 1997 attracted the attention of advertising companies for two reasons, one potentially negative and other potentially positive. Firstly, the commitment to a model of digital pay-television — which developed out of the business model of analogue pay-television maintained since 1990 by Canal+ — made it necessary to reconsider the concept of advertising in a medium in which the user must pay for access to programme content. Advertising would from now on focus on becoming an added value service for the user of pay-TV. Secondly, certain qualities of digital multichannel television, such as the high level of audience segmentation that it allows and the interactive possibilities it offers, opened up innovative possibilities for creating new kinds of advertising messages. However, advertisers' response to these developments has not been as enthusiastic as expected.

The object of this article is to explore the reasons for advertisers' reticence about getting involved in digital television. After a brief review of the present situation regarding digital television in Spain, especially the business models and the legal framework in which it is developing, we will focus on the role of advertising in this new medium. The article builds upon the opinions of different professionals in the field using interviews, in order to identify the main barriers to advertising investment in digital television and the opportunities which advertisers should be attuned to.[1] We analyse this situation primarily from an advertising perspective.

Digital Television in Spain

Currently, digital television consists of multichannel satellite pay-television, represented by two platforms competing for the market: Canal Satélite Digital and Vía Digital.[2] Until a few months ago, this was complemented by a digital terrestrial television operator (DTT), Quiero TV, which terminated its service at the beginning of 2002. Multichannel television can be accessed through cable as well, but the signal is not digitised yet. There are also other viewer opportunities for pay television, but in terrestrial analogue format (the traditional Canal+).

This situation is expected to change in the medium term. In fact, two new DTT operators — Veo TV and Neo TV — with unscrambled signals in this case, announced their intention to launch new services in June 2002 but have recently decided to postpone the launch of their programmes, due to the absence of a sufficient number of digital receivers in Spain.

In January 1997, Canal Satélite Digital (CSD) started its activities as the only satellite digital television provider in Spain. It had accumulated valuable experience as the sole operator with a license for pay-television in the Spanish market — operating as Canal+ since 1990 — and it had a large customer portfolio: more than two million subscribers who received bonus offers in order to encourage them to switch to the new digital service. These advantages together with the contents offered and the novelty of the format — mostly pay-per-view soccer and feature films — led to the slow but steady expansion of CSD. In January 2002, CSD had more than 1.2 million subscribers. In September of the same year, Vía Digital (VD) started to compete with what had been the sole pay-television provider up until now. With an offer of similar content, but lacking the historical advantages that benefited CSD, VD has always lagged behind. In January 2002, VD had about 600,000 subscribers. Spanish television viewers now had potential access to 100 channels offered by two digital platforms, as well as the five national channels established in an earlier era.

Both digital platforms base their operations on three key elements: a wide multichannel offer, the availability of a decoder or converter in order to receive the signals and their associated services, and the requirement of a monthly payment, either in a fixed fee or a variable fee depending on the services availed of. Both CSD and VD offer to their subscribers the possibility of buying through pay-per-view certain audio-visual products such as soccer games and movie premieres, of sending SMS messages and accessing bank account statements. In addition, both are working on the development of a virtual shop on the television screen. Expenses generated by the subscriber could be detailed in the monthly bill.

In this way, subscribers originate approximately 80% of the total income of digital television companies. Advertising provides the rest. González Pacheco classifies the business models of the audio-visual sector as described in Table 2.

Table 2: Business Models in the Audiovisual Sector

BUSINESS MODELS	PUBLIC FINANCE	ADVERTISING	FIXED FEES	VARIABLE FEES	Merchandising and other business opportunities	INTERACTIVE SERVICES
State owned	Main	Target			Possible	Possible
Unscrambled analog		Main			Incipient	
Multichannel Pay-TV (cable, terrestrial satellite)		Complementary	Main	Main and growing	Complementary	Target
Unscrambled digital		Main		Possible	Complementary	Target

Source: González Pacheco 2000, 211.

Advertising plays only a complementary role in the business model for pay-television, but this may change. The conclusion of a Delphi survey, carried out by Arthur Andersen in collaboration with the University of Navarra's School of Communication in 1999, calls attention to the fact that 60% of those polled, executives from Spanish communication companies, believed that digital platforms will take advantage of their highly segmented audiences in order to achieve more balanced financing through a mixed system based on advertising and monthly fees (González Pacheco 2000).

In May 2002, CSD and VD announced their intention to merge, in order to achieve a viable business. The enormous economic losses that both platforms have generated — mainly because of the damaging price war resulting from an aggressive competition that drove up the costs associated with some exclusive content, particularly the broadcast rights of soccer games — have damaged the economic health of both companies.

This situation, together with the slowed growth in the number of households subscribing to pay-television during the last two years, certainly make it necessary to reconsider, according to CMT, "other formulas which combine unscrambled television services and pay services" (CMT 2002, 121).

Table 3: Evolution of the Number of Subscribers to Pay-Television (total and distributed by type of technology)

OPERATORS	1999	2000	% GROWTH 2000/1999	2001	% GROWTH 2001/2000
Satellite TV	1.253.604	1.684.622	34,38%	2.036.417	20,88
Terrestrial TV (non digital)	760.424	998.682	31,33	920.483	-7,83
Cable TV	103.785	298.176	187,30	587.829	97,14
TOTAL	2.117.813	2.981.480	40,78	3.544.729	18,89

Source: Comisión del Mercado de las Telecomunicaciones 2002, 128.

What is the legal framework in which the activities of digital satellite television unfold? The change of government that brought the conservative Partido Popular into power in 1996 accelerated the liberalisation of telecommunications that was already initiated by the Socialist government during the last phase of its mandate. In November 22, 1992, the 35/1992 Satellite Television Law was approved. This law was replaced a few years later by the 37/1995 Law of December 12, whose main contribution was to declare that satellite broadcasting was not to be considered a public service and therefore it would be free from the obligations of a government license, since the only requirement should be an authorisation to begin broadcasting.

On June 7, 1996, an approved Royal Decree established, among other things the creation of the Commission for the Telecommunications Market (CMT), as suggested by the European Directive 95/47, in order to separate the power to regulate from the power of control over this kind of broadcasting. Although there are many other laws and rules which affect satellite television, the 21/1997 Law of July 3, which regulates the Broadcasting of Competitions and Sports Events, should be also be mentioned. This law is intended to make sure that there aren't any events of general interest that will be taken out of the reach of people who do not subscribe to digital platforms. This has already had an effect on the broadcasting of certain soccer games, considered to be of general public interest, through unscrambled television signals.

Finally, after the announcement of the merging of CSD and VD, Spanish legal authorities are working to develop a new law to regulate concentration of ownership so that this merger can be allowed. The Spanish Court for Competition will pronounce on the merger in November 2002 and the government has committed to giving its own verdict soon after. The European Commission has already declared its concern, however, since it considers that this merger could compromise fair competition in other markets.

The Future of Digital Television

During the year 2000, right before the so-called burst of the "dot-com bubble" and in the middle of the rise of technology stock prices world-wide, Quiero TV became the first European operator to be licensed for pay-DTT. With its strong promotion of interactive possibilities, especially Internet access through the television set, in what looked like a very buoyant market, Christmas 2000 was the sweetest moment for Quiero TV. But several problems, such as market structures, technological problems, customer service issues and managerial error, prevented Quiero from attracting more than 200,000 subscribers, so it had to announce the closedown of its operations in March 2002. Four months later, the government took away its license because it failed to keep the conditions agreed.

Meanwhile, cable television continues growing slowly. The division of the State territory into zones and the presence by law of two operators in each one of them makes the economic viability of the cable venture more difficult. Cable currently reaches 15% of households but the signal is not yet digitised, although ONO, one of the most advanced operators, has announced that its system will be digitised by the end of 2002.

Finally, new platforms for digital terrestrial television with different coverage areas — local, regional and national — are beginning to emerge and they target different business models. In June 2002, Net and Veo TV, which offer private unscrambled DTT channels, launched their services. Government had already decided in April 2002 that both public general-interest and private television channels must broadcast in digital and analogue formats simultaneously, as an initial step towards the complete digitisation of all television signals in a switch-over which will take place in 2012.

Spanish legal authorities have committed to DTT as the optimum system for making digital television available to all Spanish households. Moreover, when the introduction of DTT was being designed, an especially significant role was assigned to pay-DTT, by reserving for it 14 out of the 21 channels available at a national level (CMT 2002).

It is not clear, however, which model of digital television will emerge as the definitive one. The main differences between them, satellite, cable and terrestrial, are summarised in the Table 4.

Table 4: Main Differences Between Distribution Systems of Digital Television

	SATELLITE	CABLE	TDT
IMPLEMMENTATION	Easy implementation Low costs	Difficult implementation High costs	Easy implementation Low costs
COVERAGE	Continental	Urban areas	National and local
OFFER	Many channels Limited interactivity	Many channels Unlimited interactivity	Few channels Limited interactivity
FEEDBACK CHANNEL	Limited (Telephone line 56 Kbytes/s)	Unlimited (50 MHz return=+300 Mbytes/s)	Limited (Telephone line 56 Kbytes/s)

Source: Casals Haesler 2002.

During the last five years, digital television in Spain has taken some definitive steps towards a general roll-out, but some questions still remain unresolved. For instance, it is still not clear what kind of digital television will succeed in the market. At the moment, the debate hindges around DTT or cable. Nor is it clear how final technical adjustments will be made, so that all households will have their sets ready to receive digital signals, or who will be the clear winners as service providers in the eventual marketplace. Despite all these questions, the reality is that the market is at a point of no return. Therefore the study of satellite digital television, which is already established in some areas for the past five years, provides some lessons about the opportunities and advantages that can apply across the total digital television system as it rolls out fully. This is particularly relevant to the question of advertising presence on digital channels. How is advertising designed for digital television? How is it progressing? What kind of advertiser interest exists in getting involved with the different platforms, the thematic channels, the interactive application providers? What will be the role of the media buyers, the agencies and advertisers themselves?

Advertising in Digital Television

During the first semester of 2002, Infoadex published its report about advertising investment in Spain during 2001. This outlines some data that are relevant to the question being examined here: out of 18% of the total investment received by televisions (2,096 million euros), only 0.3 % of the total spend and 1.7% of the television spend (37.3 million euros) were attributed to the category “other television” which includes digital television as well as the more than one thousand local television channels which broadcast all across Spanish territory. Compared to the 2000 data, the year-on-year increase was almost imperceptible (36 million euros). So although there are no more precise data available, it can be concluded that the amount invested in advertising in digital television is minimal.

This situation is in stark contrast with the investment that digital television channels themselves allocate to advertising with the object of attracting new subscribers: CSD spends more than 11 million euros and VD nearly 26 million. Thus, a key question is why the advertising spend on digital television is not growing at the same pace as the expansion of audiences.

Arenzana (2002, 94) points to a series of causes which, in his opinion, make more difficult the development on interactive services of digital television. These provide a context for understanding the little importance granted to advertising in this medium. They include an insufficient critical mass of users; the non existence of an agreed standard for service development; limitations on band width; not having a return channel installed for all users, and the post-dot-com scepticism that produces low interest across the advertising sector.

It is surprising that Arenzana includes the lack of interest among advertisers, when all the other reasons listed here could in themselves explain the lack of advertising investment in digital television. We deal here with a complex situation, where it is evident that there is no common will in the advertising sector to explore in a positive way the new business opportunities provided by digital television as an advertising medium.

Responses obtained from industry experts consulted for this article converge in many ways with Arenzana’s conclusions, but they bring more precision to the discussion by giving deeper insight into current perceptions of digital television among leaders in advertising. There are eight main obstacles that professionals encounter in trying to stimulate the increased presence of advertising in digital television:

1. The general outlook for advertising investment is currently very weak because of the sluggish state of the overall Spanish economy. The world-wide drop in advertising, particularly since the events of September 11, 2001, is matched in Spanish statistics. Investment in digital television has not increased because, generally speaking, less advertising investment has been a feature of the whole media sector. Spending cuts and reviews of investments are very common in all media, not just digital television.

2. In the middle of this depressed economic climate, some media are consolidating their positions with below-the-line advertising products and it should be noted that there is a cautiously positive attitude among some advertisers towards new ventures that carry considerable risk, despite the recent failure of a significant

number of on-line initiatives. But the mainstream advertisers, conscious of these failures, are not ready to invest without better control of risk in the Promised Land of "interactivity" or "customisation." Experimenting with new media and new formats has ceased being a priority for the majority of large advertisers.

3. The preconceived idea that pay television is television without advertising presents, according to Arnanz and Crusafon (2002, 30), an important barrier to investment. The actual situation is that is that while digital television was synonymous with pay television until now, this will soon change with the appearance of unscrambled DTT channels. Furthermore, pay channels have never actually turned away from including advertising in their programming, because, even if it is not a main source of income — it represents approximately 20% — they are conscious of its necessity and of the possibility of exploiting the concept of "added value" for viewers as well as advertisers.

Not all channels are equally receptive to advertising or have the same strategy. Some insist that they are not ready to open new windows to advertising, while others show their readiness to negotiate or to experiment with new formats to provide advertising for their audiences[3] . But there is certainly a feeling of caution among television providers about the possible negative reaction of subscribers, who are paying to receive channels that are currently largely advertisement free. This makes it more difficult to plan for the insertion of advertising in digital television.

4. The position of media buyers, who are ultimately responsible for where advertisers' money is invested, is crucial. Thematic channels and platform operators point to the closed attitude of media buyers as one of the most relevant obstacles to the development of advertising on digital television. This sceptical stance has its reasons, of course: media buyers argue that they lack relevant data to support decisions to plan for digital television in collaboration with their clients. Channel operators take a more hard-nosed approach, accusing them of taking very little interest on this new medium because, given the small advertising budgets for digital television, the commission earned by the buyer is relatively insignificant.

The usual methodology employed by advertising agencies is, essentially, incompatible with the reality of digital television in its infancy stage, funded by minority audiences. The television audience Gross Rating Point (GRP) is hardly adequate for buying advertising time when it is applied to very specialised channels with limited audiences. Even the most viewed channels on digital platforms are small in conventional television terms. Although there are more than two million digital households in total, the numbers of viewers for each channel in each platform are very low. Unlike conventional television, digital channels need to sell audiences in a qualitative way, according to their demographic structure.

Not all media buyers have a negative attitude, nor is the situation unchangeable, but it is inevitably related to the general economic configuration of the advertising market. Media planners are ultimately responsible for the efficient management of money invested in advertising and are therefore committed to media investments that can be supported with persuasive data to justify their decisions in the face of cautious advertisers who are reluctant to see their money wasted.

5. All interviewees agree about the absence of general audience data. Channel operators say they need a better flow of information from the platform operators,

Table 5: Segmented Audiences: Five Channels with Largest Shares

Canal Satellite Digital		Via Digital	
Canal+	14,7%	Antena 3	13,3%
Canal OT	7,3%	Fox Kids	8,9%
Nickelodeon	2,6%	Telecinco	8,2%
AXN	2,4%	FDF	4,7%
Disney	2,4%	Gran Via	4.3%

Source: Teleinforme, February 2002, 32-33 (data for January 2002).

particularly more precise data about subscribers and subscriber profiles that are produced for internal use by platform operators. Platforms have the most detailed information about their subscribers, including personal data, bank account information and information gathered by the set-top box about patterns of use of the television set. In addition, when an advertiser does decide to utilise an interactive application in a particular channel, the platform operator manages the operation from a technological point of view and data about the users' response become the property of the advertiser, not the channel. The need to pay off enormous development expenses explains the zeal with which platform operators protect their users' data. This gets even more complicated when protection of users' privacy is at stake. Accusations and prosecutions generated by inappropriate access to information that was held on the North American TIVO system, which monitored user's actions while they were watching television, have made it necessary to maximise protections in this sensitive area (PriceWaterhouseGlobal 2002).

If all set-top boxes are not connected to telephone lines, it is not possible to gather precise audience data in a reliable way. This task is entrusted to audience measuring companies, such as Sofres in Spain. Although little by little the size of the household research panel is being adjusted to the reality of digital television in Spain, Sofres has been accused of analysing only a very tiny sample of digital households and therefore, their data have been questioned. The fact that the traditional audience meter can not identify whether a user is watching particular programmes or has accessed the EPG or an interactive application, motivates very many of the complaints about audience research that are directed towards Sofres.

Recent months have seen the launch of more sophisticated software to measure digital audiences, such as Picture Matching and other solutions developed by technology companies to respond to the general demand for better audience data.[4] Definitive step have still to be taken in order to reach a consensus on research methodologies chosen and a system to validate the data retrieved. Digital channels also face the challenge of maximising audiences by offering better programming and more creative ways to interact with viewers, including competitions launched on Web pages, SMS messaging, Internet discussion fora etc.

6. Both CSD and VD have invested a huge amount of time and effort in developing their brands, but they have barely emphasised the content they offer. Channel operators therefore feel they are treated almost as the "enemy" because of the lack of data sharing with the platform and the absence of good channel-platform communication. In the CSD and VD corporate homepages, for instance, there is almost no information on the channels that are part of the services they offer. Channel operators see this inadequate relationship as an obstacle to further development.

7. According to interactive software developers, technology is also an impediment to the rolling-out of digital advertising. Since each platform uses a different middleware — Mediahighway on CSD and Open TV on VD — this doubles the production expenses for an interactive application. There are also various generations of set-top boxes on the market, the first of which were released in 1997, and not all of them handle interactive applications correctly. Very few of them have sufficient hard disk space, so it will be necessary to replace almost the whole set of boxes in the medium term in order to prepare receivers for new interactive possibilities.

8. The process of developing an advertising campaign in digital television is much more complex than for traditional television, and so there is inevitably confusion among advertisers about how to manage a campaign in this new media environment. There is as yet no standardised process and no pre-assigned set of professional roles, so substantial change in work practices is needed in advertising agencies, as well as in the management of interactive services, in the design of enabling technologies and in the digital channels themselves. In conventional television, advertising agencies are in charge of creativity, but in the digital environment creativity must be a product of collaboration between advertising agencies, interactive software designers, technological providers and television channels. Without proper preparation, advertisers could be significantly confused about how to manage a campaign in this new digital environment.

What Does Digital Television Offer to Advertisers?

"Advertisers will be wrong if they think that only media and advertising agencies will have to adapt to the new online advertising scenario"(Jansen 2002, 89). Advertisers must first of all tackle the challenge of demanding that agencies and media buyers examine the opportunities that digital media can offer to enhance their overall marketing strategies. Digital pay television offers an audience with a very attractive demographic profile. Subscribers to pay channels are predominantly high-income earners with children. These urban and technologically well-equipped households have been paying for long time for access to television. The obvious importance they attribute to television content is all the more striking when we remember that Spain has never had a licence fee imposed for television viewing.

The thematic focus of the channels paid for by subscribers tends to segment audiences in interesting ways for advertisers: golf lovers, extreme sports enthusiasts, those interested in current affairs, travel or *haute cuisine*. From the point of view of an advertising strategy, this segmentation facilitates a first level of customisation, whereby products and services are marketed to a tightly targeted audience. Digital advertising may actually be seen in a positive light by viewers themselves as adding value to the content they enjoy.

New advertising formats, customised for both viewer and advertiser, such as the integration of brands in programmes or new possibilities for playing with interactive applications, go far beyond the traditional, familiar 20 second spot. Interactivity will be exceptionally attractive for advertisers if it managed correctly. It is true that the return path is currently too slow and not appropriate for genuine interactivity, but there have been some experiments with interactive advertising in the Spanish market that are very promising.

Some brands and marketers are already active players in this area, maintaining a presence through conventional spots on the thematic channels. A few have tried new formats in interactive advertising, such as interactive banners or quizzes that ask for the direct response of the audience. The Chrysler Neon car spot introduced in December 1999 is a good example of this. After the conventional spot was broadcast, viewers were asked to click the “select” button on their remote controls to access the interactive application. There was a simple game, followed by a lot of information about the new car. Users could request a catalogue or a driving-test directly through the television set, using the set-top box connected to the domestic phone line. Table 6 shows how this campaign worked.

Table 6: An Example of Interactive Advertising Campaing

Marketer: Chrisler/Product: Neon
Timing: 12/99-02/00
Platform: Vía Digital
Technological Provider: Corporación Multimedia
Media Plan:
Channels used:
Gran Vía (209 times)
Gran Vía 2 (149 times)
Fútbol Total (5 times)
Time periods:
13:30-16:30: 50 spots
16:30-20:30: 130 spots
20:30-23:30: 180 spots
Possible audience: 224.882 viewers
24,99% of the audience accessed the interactive application: 56.205 viewers.
38,53% of them (21.658) played and won the game
5,77% (3.230) requested a product catalog
3,88% (2.181) asked for a driving-test.

Source:Fondevilla 2000.

Just a few advertisers are presently exploring new digital possibilities and in a very low-risk way, just on one platform, for example, but there is evidence of repeat trials, because of the good results obtained. Table 7 lists more recent digital advertising campaigns.

Table 7: Recent Interactive Advertising Experiments

MARKETER	YEAR	PLATFORM
Anesvad	2001	VD
Chrysler Neon	1999/00	VD
Nescafé	1999	VD
Peugeot 307	2001	CSD
Renault Carminat	2001	CSD
Renault Clio	2001	CSD/VD
Renault Laguna	2001	CSD/VD
Renault Scenic RX4	2000	CSD
Telefónica DOMO	2000	VD
Telefónica On-Line	2000/01	VD
Terra	2000	VD
Direct Seguros	2001	CSD
Telefónica ADSL	2001	VD

Source: Casals Haesler 2002.

Conclusions

There is plenty of confusion at present about the future of digital television as an advertising medium. There are so many steps and roles involved in the process of generating advertising for digital television that it is perceived to be an obscure field by both advertisers and consumers. In order to consolidate digital television as an advertising medium, there must be greater effort to standardise production processes and pricing structures.

Confidence in the medium in Spain is low because of a general lack of awareness about what interactive television can offer. The merger of CSD and VD would bring a breath of fresh air to the sector, as it will simplify production costs. But it is also necessary that greater collaborative effort be exerted on educating advertisers and the media sector generally, on what digital technology can achieve as it spreads through the population over the next ten years. From a research point of view, further work on business models for the new digital television ventures — both pay and free-to-air — is crucial, especially studies that are broader in focus than the fairly limited Spanish perspective that is outlined in this paper.

Notes:

1. Individuals and companies interviewed for this article include: Leonor Martinez and Cristina Montejo (AXN Spain); Manuel Martín and Francisco Solá (TVNET Techonologies); Ramón Montoro (Tecsidel); Jesús Solana (Fresh-IT); Carmina Crusafon (Media Park); Manuel Casals (Carat); and Jose Luis Gómez (Orbital).

2. For this overview, different information sources have been used, as compiled by www.tvdi.net.

3. While AXN — owned by Sony US- just looked to complete the space stablished for advertising, Media Park — owner of VD and producer of seven thematic channels for this platform — was open to new proposals and initiatives from advertisers.

4. Thales Information Systems presented some months ago iMEDIA (Intelligent Mediation Environment for Digital Interactive Advertising) as a possible solution (*Teleinforme* 2002, 77).

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