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Development of Digital TV in Europe

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1 Digital TV market overview

1.1 Roll-out of digital services

1.1.1 Satellite digital services

During 1998 and the first half of 1999, the market segment for digital satellite services has not experienced significant changes, at least not in the way that these services are provided.

Satellite digital TV offerings are still supplied by four operators:

- ✓ Canal Satellite, a subsidiary of the Canal+ group, the leading payTV service with more than 11,5 million subscribers throughout Europe at the end of 1998 – 5,9 million in France of which 1,3 million are digital; CanalSatellite uses the SES/Astra satellite system;
- ✓ Canal+ Numérique, also a subsidiary of the Canal+ group, is the second French digital service and a multiplexed version of the analogue TV channel Canal+ on the SES/Astra system;
- ✓ TPS (Télévision Par Satellite), a joint venture between France Télévision, M6, TF1, France Telecom and Lyonnaise Communication, which is broadcast via Eutelsat;
- ✓ ABsat, a service operated by the AB group, whose core activities are TV production and TV programmes distribution and sales.

Partly due to Canal+'s captive analogue and terrestrial customer base, and because of their earlier launch in April 1996, ***Canal Satellite,*** which at the end of 1998 stopped broadcasting analogue signals and ***Canal+ Numérique***, ***dominate the market with a 66% market share***.

With 615 000 satellite subscribers at the end of 1998, ***TPS represents one third of the subscriptions to digital satellite services on the French market***.

At the end of 1998, ABsat numbered less than 15 000 direct subscriptions. ***The AB group's strategy now appears to be to position itself as a "content provider"***, however, ***ABsat still operates, but with staff reduced to a minimum*** (only 15 employees)[1].

[1] Due to market failure and financial difficulties, the AB group has made more than a 1 000 people redundant since 1995,

More recently, the AB group's main goal seems to be to lower its breakeven point and to get rid of the more expensive activities. From this perspective, the following measures have been characteristic of the AB group's "stand-by" strategy:

- ✓ Thanks to statistical multiplexing, AB now only uses one Eutelsat transponder to broadcast all the TV channels it operates;
- ✓ The TV channel ABSport has been handed over to Pathé;
- ✓ Its four TV channels - CinePalace, Polar, Rire and Romance, whose programming is based on feature films, are due to stop by the end of 1999;
- ✓ The direct marketing of set-top boxes has been abandoned;
- ✓ The marketing operations dedicated to the promotion of ABsat (advertising campaigns, PSA, …) have been dropped;
- ✓ The financing of its remaining TV channels now goes through the "Découverte" and "Passions" options, which are part of CanalSatellite's and TPS' offers and are respectively marketed by these two DTV satellite packagers.

1.1.2 Cable digital services

The French cable industry is still dominated by 3 major cable operators who, in 1998, held 80% of the subscriptions to cable and nearly 85% of the homes passed by cable. At the end of 1998, France Telecom Câble counted more than 750 000 subscribers, representing a 29% market share. Lyonnaise Câble and NC Numéricâble respectively accounted for 26% and 24% of cable subscriptions.

In 1997 and 1998 these market players made the necessary investments in order to provide digital TV (offers) via the majority of their networks[2]. Given the process of digitalisation which has also been observed in the medium-sized independent cable networks in France, (Vidéopole, Régies, …), ***more than 85% of the homes passed by cable could potentially access digital signals by the end of 1998 (80% in 1997).***

Over the next three years, the French cable industry is expected to invest 1,1 billion Euros in its infrastructure. According to the AFCO, the professional association of French cable operators, these investments will not only aim at the implementation of new networks, but also at the upgrading of existing networks for Digital TV, High Speed Internet access or cable-telephony. The French cable infrastructure will becomes a real convergent platform.

NC Numéricable as well as Lyonnaise Câble and FTC now offer a digital TV service throughout their entire infrastructure. Between them they control 99% of the digital subscribers to cable, with a 56% market share for Lyonnaise Câble (28% for NC Numéricâble, 15% for FTC). However, the number of digital subscribers to cable remains far

[2] The 1G type networks mainly belonging to France Telecom Câble require huge investments to be upgraded for digital transmission. Their digitisation has therefore been delayed. Likewise, the upgrading of small-sized cable networks appears to be too costly in in relation to the revenues that could be generated from digital TV offers.

behind that of subscribers to satellite digital platforms: after one year of operation, at the end of 1998, the French digital services over cable only numbered 218 653 subscribers.

1998 and the first half of 1999 are also marked ***by financial deal-making in the French cable industry***. This trend is partly due to the cost of network digitisation and low expected profitability in the short term. . The new European cable directive which encourage telecom incumbents to either sell their TV cable assets or separate their phone and cable business, is also one of the reasons behind this restructuring process.

Indeed, foreign companies are increasingly present in the French cable operators structure of capital, particularly UPC, who already owned RCF, and who have recently purchased the Videopole and Time Warner France[3] networks. UPC therefore becomes the fourth largest French cable operator with 1,4 million homes passed and around 500 000 TV subscribers.

Furthermore France Telecom has:

- ✓ started selling its 1G type networks. In this way the US-backed company NTL was able to enter the French cable market when it purchased five of France Telecom's 1G networks
- ✓ recently launched a call for tender to sell the cable networks it owns but does not operate ("Plan câble" networks). This call for tender comprises 3,7 million homes passed with cable. An exclusivity stipulation concerns Lyonnaise Câble and NC numericâble, but only for the distribution of TV services. For Internet access and cable-telephony, the call is entirely open and could allow new entrants into the market.

1.1.3 The MMDS Situation

MMDS is still virtually non-existent in France. The first commercial test, which is an analogue test, is in progress in the city of Felletin in the Creuse; the subscription fee is 75 French francs per month. The subscribers receive 13 analogue TV channels. The first service level comprises the major national terrestrial and thematic channels, other programmes are optional.

Eventually, the network should be able to distribute more than 100 programmes

[3] Médiareseaux, Citéreseaux and Rhône vision câble

1.1.4 The terrestrial digital television situation

No real new measure regarding the launch of terrestrial digital television in France has been taken by the French government in the first half of 1999.

However, following publication of the “Trautmann” bill for the audio-visual sector[4], ***a consultation of the main French market players has been launched by the government*** in order to better define France’s path to DTTV. The consultation is based on a “white paper” which mainly endorses the conclusions of the “Cottet-Eymery” report for the French Ministry of Culture.

This report proposes a DTTV strategy favouring a free-to-air local and regional television service. ***The launch date proposed is late 2001,*** or early 2002, ***with licensing for the commercial spectrum starting in early 2000*** [5]***. A total of six multiplexes are recommended,*** each carrying four to six channels, representing 24 to 36 TV channels in all***. Four of these channels would*** be dedicated to free-to-air programming, including simulcasting of existing analogue terrestrial channels, and would ***cover 60 to 80% of the French population at launch***. ***Two multiplexes*** would be destined for premium pay services and ***would cover 50 to 60% at the outset. Analogue switch-off date is not envisaged until some time between 2010 and 2015.***

Once completed, this consultation could lead to a specific bill for DTTV, or to a text which would be appended to the new Audio-visual bill for its second reading.

Despite the on-going political debate on the future of DTV in France, the French public authorities still do not have a clear idea of how DTTV should be implemented. For the time being, nobody knows who is going to finance the 500 million Euros investment necessary to upgrade a terrestrial network of 250 transmitters, nor who will finance the production of the new free-to-air programming favoured by the “Eymery-Cottet” report.

DTTV in France is nevertheless attracting attention, notably:

- ✓ via a series of technical trials conducted by TDF in Brittany, with the collaboration of the French analogue terrestrial TV channels. In 1998 the DTTV offer was increased to become two multiplexes and it now covers 200 French TV households.
- ✓ through the issue of the availability of frequencies for DTTV, which arose with the recent interest of some local Press groups in local TV. This issue has forced the French Ministry of culture to take pragmatic measures so that the future development of DTTV won’t be hampered by the current development of analogue local TV channels and vice-versa. The Ministry, which did not favour a “frequency freeze policy” have therefore:

[4] The “Trautmann” bill pays little attention to the issues which arise from DTTV implementation. It only specifies that the CSA will be in charge of the attribution of digital terrestrial frequencies, but does not define the conditions which will have to be observed by applicants. These conditions will no doubt be outlined in a specific decree.

[5] It is unlikely that the new Audio-visual law will come into force before February 2000.

- asked the CSA to rapidly complete a spectrum study in order to detect which analogue frequencies can be attributed to new local TV channels without interfering with DTTV development;
- authorised the CSA to refuse the attribution of any new broadcasting license for local TV if it is proved that the use of the local analogue frequency requested may represent an impediment to DTTV development.

1.1.5 Market development

Generally speaking, French multi-channel packages were successful in 1998. The satellite market segment observed a tremendous annual growth (638 000 new subscribers) while cable recorded a sustained increase in its number of subscribers (+21%). At the end of 1998, 7,5 million French households had subscribed to a pay-TV service : 4.4 million to Canal Plus and 4.4 million to a multi-channel package (1,3 million had subscribed both to Canal Plus and another pay TV package).

The French digital PayTV market has therefore enjoyed a relatively high growth rate both in terms of subscribers and revenues: ***at the end of 1998, it amounted to 2 057 000 subscribers (+ 71%). It thus represented 47% of the total number of subscribers to a multi-channel package and one third of the total French payTV market revenues (823 million Euros)***

The number of subscribers to digital satellite services has reached 1 838 000, thus recording an annual growth of 53% and a total estimated annual turnover of 756 million Euros (409 in 1997). After a year of operation, cable digital services remain far behind digital satellite packages, both in terms of subscribers (219 000) and turnover (67 million Euros).

In 1998, digital satellite services accounted for nearly 90% of French digital TV subscribers and 91% of digital payTV revenues. Note that free-to air digital TV does not yet exist in France. This “domination” can be explained by the continuity observed in CanalSatellite’s and TPS’ promotional and advertising policies. It is estimated that, alongside the regular promotional offers (free dish / price offer…), these two market players each invested more than 50 million Euros in advertising campaigns in 1998.

Multiple subscription is increasing among French DTH and cable households. For instance, in December 1998, 61% of Canal Plus group French subscribers subscribed to both Canal Plus numérique and CanalSatellite. Likewise, it is certain that an increasing number of French TV households subscribe either to both Canal Plus and TPS, or to Canal Plus and cable, with some of them probably subscribing to TPS, Canal Plus and CanalSatellite!

The characteristics of TPS’ and CanalSatellite’s subscribers profiles demonstrate that French digital pay TV households are younger than the national average[6] and originate from families with at least one child between 0 and 14 years old[7]. They generally live in a small town of less than 20 000 inhabitants and have more TV, PC and video terminals than similar non-subscribers[8].

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[6] 50% of CanalSatellite’s subscribers are less than 50 years old. 35 year olds are over-represented in the TPS customer base.

[7] Families matching this criteria represent 70% of CanalSatellite’s subscribers and 42% of TPS’subscribers (against 27% for the national average).

[8] Respectively 42% and 45% of TPS’ and CanalSatellite’s subscribers are equipped with a PC (compared with less than 20% for the national average)

As a consequence of multi-channel package market development, thematic channels now reach more than 9 million individuals. The viewing share of thematic channels is therefore increasing (4,2% in 1998 compared with 3% in 1997) and with it, their advertising efficiency. In 1998, the total advertising turnover of thematic channels amounted to 94 million Euros, that is to say 3% of the total TV advertising revenues.

Yet, general interest terrestrial TV still represents the core of the French TV services available (nearly three quarters of French households received only the six national channels in 1998). ***Nevertheless, the weight of the French "alternative" TV offer, which is mainly broadcast in digital standard, is becoming progressively significant***: at the end of 1998, digital TV accounted for 11% of total TV market revenues (7% in 1997). Furthermore, according to a recent survey, 19% of French individuals aged 15 years and more intend to subscribe either to cable or satellite in the coming years, with nearly 5 million intending to do so by May 2000.

Table 1: DTV platforms in France

Name of the service	*Ownership End of 1998*	*Launch date*	*Nb of subscribers End of 1998*
Canal Plus numérique	34%Vivendi 15% Richemont* 4,1% CDC 2% Société Générale	April 1996	842 652
Canal Satellite	63% Canal Plus 18% Pathé 10% Warner Bros* 9% Vivendi	April 1996	1 108 436
TPS	25% TF1 25% France Télévision Etp (F.T et France TV) 25% Suez-Lyonnaise 25% M6	December 1996	615 000
Absat	50% MMP 40% C. Berda 10% JL Azoulay	December 1996	15 000
Lyonnaise câble	77% Suez-Lyonnaise 17% FTC 6% US West*	September 1997	123 134
NC numéricâble	63% Canal Plus 37% Exante*	April 1997	61 644
FTC	100% France Telecom	September 1997	33 267
Other cable-operator[9]	-	1998	1 212

* = foreign capital

[9] Vidéopole, Régies, SEM, Cuvelles…

1.1.6 Barriers to competition and market development

Barriers to competition

The launch of digital satellite TV in France has involved strong competition between CanalSatellite and TPS regarding film rights, since film channels appear to be the main determinant when TV households consider subscribing to a multi-channel package.

In light of this, TPS initiated legal action in 1998 against CanalSatellite in relation to the exclusivity rights that canal+ acquires, covering both subscription pay TV and pay-per-view in respect of feature films that the group finances (co-production and pre-purchase). TPS claimed that it constituted abuse of a dominant position since:

- ✓ under this condition a producer cannot pre-sell broadcast rights for pay-per-view to other TV operators[10] ;
- ✓ these exclusive rights concerns 80% of French feature film productions;
- ✓ because of these rights, TPS' pay-per-view service, Multivision can only schedule north-American feature films.

In the first quarter of 1999, the French Competition Council decided that CanalSatellite was indeed abusing its dominant position and that its co-production and rights pre-purchase policy constituted a barrier to competition in the payTV and pay-per-view market. In a recent ruling, the Paris Court of Appeal has confirmed the French Competition Council's decision.

Barriers to market development

- ✓ Given that Canal+ currently finances 80% of French feature film productions, the ruling by the Paris Court of Appeal mentioned above will almost certainly lead to a decrease in the price for rights paid by Canal+. If the price paid by TPS to broadcast these films does not fully compensate for this drop, then fewer French films will be produced, which may in turn have a negative impact on the subscription curve of the digital pay-TV satellite platforms in the medium term.
- ✓ The unfortunate experience of ABsat in the domain of direct marketing of subscriptions and digital decoders raises the issue of service "continuity" and final user satisfaction.
- ✓ ABsat as well as the cable-operators, and, to a lesser degree, TPS and CanalSatellite, on the basis of their customer agreements, prevent the consumer from any legal recourse when one or several TV channels is removed from their bouquet without a decrease in the tariff.
- ✓ Although the new audio-visual bill partly addresses this issue in the domain of cable, this lack of "customer care" could eventually constitute a barrier to market development.

[10] which is not relevant with the rules of feature films financing. In theory, a feature film producer generally seeks to maximise the financing of his project before going into production.

1.2 Details of services

1.2.1 Number and types of services

Currently, the vast majority of the French thematic channels are broadcast digitally and are encrypted[11]. The few exceptions include:

- ✓ the "barker" channels of the 3 French DTV satellite platforms ("ABsat", "Le Sésame", "Le Kiosque"…), "Fashion TV", "Game One" and "Grand Tourisme" which are digital free-to-air services;
- ✓ TV5, which is an international free-to-air service and uses analogue/digital simulcast over satellite.

Since December 1997, more than 10 new French-speaking thematic channels have been launched on the French market. This is representative of the continuous trend of thematic channel multiplication and hyper-segmentation experienced by the French TV market. If we exclude "barker" channels and TV guide programmes (10 or so), there are currently around 70 French-speaking thematic channels, 5 of which are French versions of foreign TV channels (Bloomberg TV, Cartoon Network, TNT, Fox Kids or 13ème rue).

Table 2: Structure of the French-speaking thematic TV market (End of June 1999)

Themes	*Number of TV channels*
"Barker" Channel / TV guide	9
Movie	14
Knowledge – Culture	13
Sport	9
Music	7
Entertainment	5
"Mini" generalist	5
Information	4
TV- shopping	4
Weather forecasts	2
Pay-per-view services	2
Others (Games, Employment, fashion,…)	7

The second half of 1999 should see the launch of at least 10 new thematic TV channels.

[11] Cable operators are responsible for providing the analogue version of some of these thematic channels to their subscribers: analogue conversion of the digital signal is therefore operated at cable head-ends.

Table 3: French thematic channel projects (1st half of 1999)

Promoters	*Name*	*Themes*	*Budget (MEuros)*
La Cinquième	Alix	Labour market and Employment	2,25 to 5
Cité des Sciences / Arte	Sciences	Sciences and New technologies	7
Igor Barrère	-	Medical training	-
M6	M6 Famille	Programmes for the family	7,5
M6 / France Telecom	Multi-TV	Multimedia	-
TF1	TF2	TV Series	7,5
FR3	-	Programmes on Paris life	-
TPS	Cinestar 3	Multiplexed version of Cinestar 1 and Cinestar2	-
TPS	Cinefix	Movies according to a monthly theme	-
CanalSatellite	-	Cine-Club	-
Groupe Defossé	-	Economic information	-

This last year has also been noteworthy for the launch of truly new interactive TV services. With the exception of the TV Guide and PPV programmes, the French TV market now numbers 24 permanent interactive TV services:

- ✓ 11 accessible on CanalSatellite, 6 of which are associated with TV channels (Eurosport, Canal Jimmy, Fox kids, MCM, Voyages, Spectacle…);
- ✓ 14 accessible on TPS, mainly oriented on e-commerce, games and information (sport, economics, culture, …).

In June 1999, the French audio-visual landscape consists of::

- ✓ 6 national terrestrial TV channels;
- ✓ around 70 French-speaking thematic channels broadcast over satellite and cable, of which 95% are original French thematic channels. A few of them, integrate a NVOD/PPV functionality;
- ✓ 35 foreign TV channels which have received a broadcasting license from the CSA and which are broadcast over satellite and cable;
- ✓ 24 permanent interactive TV services which can be accessed through CanalSatellite and TPS.

1.2.2 Details of the DTV offers

TPS and CanalSatellite

TPS and CanalSatellite packages each offer a full range of thematic channels (films, children, documentaries, music, sport, etc.). Most of these channels are exclusive to one satellite package, with the few exceptions being some of the AB channels (included in TPS' "Passions" and CanalSatellite's "Découverte" options) or, for instance, Eurosport which is offered by the two bouquets. Subscribers to these payTV packages also have non-exclusive access to numerous free digital satellite services, such as Cartoon Network or Fashion TV.

At the end of 1998, TPS numbered 110 TV, radio and interactive services of which 40 or so were French thematic TV channels. Since December 1997, TPS service line-up has taken onboard 9 new TV channels and a series of at least 10 interactive TV services without any increase in prices. In 1998, TPS organised its offer around 3 bundles ("Tout TPS", "TPS cinéma" and "TPS Thématique") and 3 options ("Passions" (AB TV channels), "Rhythms" (4 US music TV channels), "Music Choice" (Radio services)). 1998 and the first half of 1999 also experienced a multiplication of TPS' promotional offers (free dishes, "In 1998, all TPS for FF98", "In 99, all TPS for FF99"…)

At the same time, CanalSatellite services amounted to 62 French-speaking and 27 foreign TV channels, plus 40 radio stations and more than 10 interactive TV services generally associated to thematic TV channels. Since 1997, 8 new TV channels have been taken onboard in CanalSatellite's line-up. While TPS opted for promotional actions based on a significant decrease in price, CanalSatellite has maintained its first price offer of 16,8 Euros/month for CanalSatellite Thématiques (30 TV channels). The platform also proposes CanalSatellite Grand Spectacle (30 TV Channels + 4 Movie Channels + Disney Channels) for 22,7 Euros/month and 6 options priced between 4 and 12 Euros/month (Découverte, Chasse-Pêche-Nature, Classique Jazz, Téléchargement, Cinéma, Disney). CanalSatellite's promotional offers have consisted of massive TV advertising campaigns and a "free-dish" offer

Generally speaking, the French satellite DTV offers differ from the cable ones in that ***the two dominant platforms put emphasis on interactive TV services using OpenTV or Mediahighway technologies***. Up to now, given the very limited number of cable digital subscribers and the problems related to the network capacity management, the French cable operators have not got involved in interactive TV. Thus, though Mediahighway and Open TV are respectively incorporated in NC Numéricable and FTC or Lyonnaise cable's digital STB, no specific interactive TV offer have been developed on the French cable.

Now, in addition to their EGP and their PPV services, the two dominant satellite platforms offer ***real interactive direct marketing services*** (TPS boutique, Forum boutiques), ***transaction services*** (CATV, FNAC, PMU), ***information services*** (Meteo Express, L'œil du Hibou, Infoscore), ***and interactive games*** (Game One, Bandiagarra) ***accessible via the TV set. An increasing number of TV channels also develop their own interactive services*** (Canal Jimmy, Eurosport, Fox Kids, MCM, Voyages, …)

This position seems to be motivated by the threat presented by the multi-service capacity of cable, though the French cable infrastructure is still in the very early stages of Internet and telephony services development.

Lyonnaise Câble, NC numéricable and FTC

In June 1999, the French cable infrastructure still mainly provides TV services.

All three major cable operators try to differentiate their TV offers from those of the satellite bouquets by creating packages as exhaustive as possible thanks to the simulcrypt agreements they have with most of the thematic channels available on the satellite platforms.

However, they have implemented digital offers to their subscribers, following different strategies.

Lyonnaise Câble goes for an all-digital strategy aiming to equip each subscriber with a digital set-top box. Subscribers can access digital cable without subscribing to a basic analogue service. It proposes a selection of TV channels both from the Canal+ group and TPS as well as from ABsat.

NC Numéricâble maintains a cheap analogue service with digital options (that is to say that people have to subscribe to the basic analogue service in order to get access to the digital offer). One hundred TV channels are broadcast over NC's networks. NC's subscribers average monthly expenditure is 28,5 Euros.

France Telecom has opted for a marketing strategy in modular form, called "Modulo Câble", and which is currently available over 10 of its networks. "Modulo Câble" is based on a "Pick and Mix" principle and consists of 3 packages: "Modulo Direct" which allows a personal choice of 13 to 20 TV channels and can be provided in analogue or digital standard, "Modulo Cartes" (36 TV channels) and "Modulo Cinés" (20 TV channels). ***With "Modulo Câble", 60% of FTC's new subscribers are "digital subscribers" (compared with 15% previously).*** This marketing policy should therefore be rapidly extended to the rest of its networks

EPG constitutes the only kind of interactive TV service that French cable operators have developed. After network digitisation, their investments have been primarily dedicated to Internet access. Lyonnaise Câble has introduced PC access to the Internet via cable on six of its larger sites. Since June 1999, Internet access is also available on 10 FTC networks while NC Numericâble has announced that high speed Internet access will be available for 50% of the homes passed that it controls.

1.3 Operators and market structure

1.3.1 The "Trautman" bill

In May 1999, the French Parliament proceeded with a series of amendments to the new audio-visual bill at its first reading. This bill is likely to be passed after a second reading, that is to say not before February 2000. It considers a number of points which, among others, concern the general organisation of the French TV market and more particularly digital TV development in France. According to this bill:

- ✓ the TV channels broadcast over satellite and directed to a French audience will have to be officially recognised and authorised by the CSA (same regulation as cable channels). In addition, a new policy will specify what their obligations in terms of audio-visual production will be;
- ✓ the CSA will be in charge of the attribution of digital terrestrial frequencies. The conditions of application which will have to be observed will be identified in a specific policy;
- ✓ the French audio-visual sector will be subject to the general laws on competition (which was not previously the case);
- ✓ a holding company, called France Télévision, will be created to co-ordinate France 2, France 3, La Sept-Arte and La Cinquième programming policy and development;
- ✓ France 2 and France 3 advertising revenues will be limited to a maximum average of 10 minutes/hour in 2000 (compared with 12 previously) and of 8 minutes/hour in 2001. Public funding (reimbursement of license fee exemptions) will compensate this shortfall in earnings;
- ✓ the end of public TV channels' simulcasting exclusivly on TPS is decided. Furthermore, the law will prevent France 2, France 3 and Arte/La Cinquième from granting exclusive broadcasting rights to any DTV platform operator.

1.3.2 Evolution of market organisation and structure

- ✓ In 1998, the French TV market was marked by a series of financial moves. As mentioned above, the cable industry has experienced significant changes in its capital structure. Following Bolloré's speculative operation, Vivendi and Canal+ now participate in the Pathé Group while the Hachette-Filipacchi group is aiming to reinforce its position on the French TV market by engaging in discussion with Lyonnaise Câble.
- ✓ With the rapid penetration of CanalSatellite and TPS, the French thematic TV channels have also strengthened their competitive position in terms of revenues and profit. In 1998, the 7 "historical" French thematic channels recorded a total profit of 15 million Euros. However, in general, the French thematic channels now risk seeing their turnover "automatically" decrease with increasing competition and the hyper-segmentation of the cable and satellite packages line-up.

- ✓ With increasing competition in the domain of thematic channel production, changes in the relationships between the thematic TV channels and the French cable operators are also taking place. The current conflict between FTC and Planète illustrates quite clearly this evolution. In October 1998, FTC decided to withdraw Planète from its basic level in Biarritz and to replace it with Odyssee, (it had to pay Planète 5,15 FF per subcriber/month while Odyssee only costs 3 FF per subscriber/month). In June 1999, FTC withdrew Planète from five of its networks. In response to this Planète initiated legal action against FTC claiming that FTC's initiative will result in a negative impact on its turnover and on its capacity to support the French documentary production market.

1.3.3 Agreements between satellite operators, cable operators and DTTV operators

- ✓ AB Sat, the smaller satellite DTV service provider, having failed to establish its own subscriber base, and with not enough resources to rent and subsidise the decoder, has been looking for agreements with its two main competitors, CanalSatellite and TPS. A simulcrypt agreement has been reached with both players, together with a commercial agreement for cross-promotion. A similar agreement between TPS and CanalSatellite seems harder to reach, as both offers compete more directly.

- ✓ The cable-operators, who suffer no competition within their franchises, have initially chosen to remain neutral in the competition between the three satellite packages, willing to propose " the best " of the satellite packages over cable.

- ✓ With regards to the competition between several children's, sport and music channels to obtain carriage, cable-operators tend to choose among all proposed channels. However, as they need to differentiate their offer from those of the satellite operators, the cable operators try to conclude as many simulcrypt agreements as possible with thematic channels.

- ✓ Cable-operators include the channels in their own line-up, under their brand names, and retain subscription management, even for the movie channels. However, one exception is the Canal+ channel, which benefited from a "must carry" provision as a terrestrial analogue channel and used to manage directly its subscribers over cable. Due to its market power, Canal+ also keeps control of the subscribers to its digital multiplexed channel carried over cable, thanks to Simulcrypt agreements with two of the three major cable-operators, NC Numericâble and France Télécom Câble.

1.3.4 Vertical integration

Despite the strong vertical integration process which has taken place between digital TV platform provision and television channel edition, strong international brands (such as Disney or Fox,) ***as well as independent TV service editors***, such as FUN radio (50% of FUN TV), Infogrames (50% of Game One) and the Amaury group (100% of L'Equipe TV), ***have managed to enter the market.***

Only a few truly independent TV channels, such as Fashion TV, T.F.J or OMTV also offer thematic programmes. Their financing is totally private and not supported by a multinational communications group.

To a certain extent Hachette[12] and Pathé[13] groups are also, however, becoming inevitable French market players in the TV field.

While Hachette, through Europe1 Com., is said to be willing to take a strong position in the market segment of thematic channels production. Pathé is apparently working on the composition of a "mini-bouquet" of thematic TV channels.

In June 1999, Pathé already owned 22,5% of "Comédie!", 51% of "Pathé Sport" (formely ABsport) and 100% of Voyages; Pathé is also apparently involved in a TV channel project with the "Olympique Lyonnais" football club. Besides Pathé enjoys strong competitive advantages with its interests in the domain of film and TV production, and catalogue of audio-visual rights.

It is nevertheless to be observed ***that it is mainly through the launch of interactive TV services that real new entrants have emerged***. For instance, through its 3 interactive services, "FI, la chaîne financière" represents companies such as le Crédit Agricole, Vega Finance or Les Echos.

1998 has however experienced the strengthening of the Vivendi-Canal+ audio-visual chain integration with:

- ✓ Lyonnaise Câble's progressive withdrawal from the market segment of TV channel edition: Lyonnaise Câble has handed over its stakes in Planète (13%), Cinécinéma (18%) and Canal Jimmy (13%) to Multithématiques, a subsidiary of Canal+. However, the French cable operator still has stakes in Paris Première, Canal J and MCM.
- ✓ the Pathé-Vivendi-Canal+ "merger" which could possibly facilitate better market integration for Canal+ on a European level: indeed with this merger, Vivendi could take over Pathé's 17% stake in BskyB. The likelihood of such a strategic move has thus led to rumors about a possible merger between Canal Plus and BskyB.

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[12] Mainly positioned on books and multimedia production

[13] Pathé is mainly positioned on film distribution and exhibition industries. Its main shareholders are J. Seydoux (30,88%) Vivendi (16, 3%) and Canal+ (8,3%). In parallel, Pathé owns 20% of CanalSatellite's stakes. Pathé's 1998 turnover and profit have respectively been 333 and 31 million Euros

Table 4 : Main TV market players' participation in thematic TV channels capital

	Control(s)
TPS	Cinéstar1, Cinéstar2, Cinétoile, Teletoon, Infosport, Multivision
TF1	LCI, Odyssée, Shopping Avenue, Eurosport France
M6	Série Club, TEVA, M6 Music, Club Teleachat
National Public TV channels	Festival, Histoire, Mezzo, Regions
Canal+ Group	Canal Jimmy, Planète, Cinecinéfil, Cinécinemas, Cineclassics Seasons, C:, Spectacle, Eurosport, Comédie!, Demain, Le Kiosque
ABsat	RTL9, AB1, La Chaine Histoire, XXL, Mangas, Encyclopedia, Automobile, AB Animaux, Musique Classique, FIT TV, Chasse et Pêche, Escales, Nostalgie la TV, Action, Polar, Rire, Romance, Cinepalace

1.4 Technical issues

1.4.1 Decoder issues

In 1998, no significant events related to the specific domain of DTV decoders in France.

Quite the opposite is true for the United Kingdom where decoders are now supplied to the DTV subscribers free of charge. French DTV service operators continue to favour the renting of their specific STB.

Echostar has opted for a timid direct-sale policy for its "universal"[14] DTV STB in France, and the French Xcom manufacturer has planned to launch its Xsat set top box[15] at the end of 1999 No real initiative from the other consumer electronics manufacturers has been observed to directly market unsubsidised STBs to the consumer.

Furthermore, ABsat's decoder is being progressively withdrawn from the market, since ABsat is stopping direct marketing of its STB and has dropped any marketing actions dedicated to its own promotion.

In the discussions concerning France's path to DTTV, no debate concerning decoder issues has arisen.

Regarding APIs, although TPS and CanalSatellite do not use the same system, they both act to "open" the market for interactive services technical design and development. Indeed, with the help of TPS, IDP has developed software that allows advertisers and other facilities to produce and develop their own interactive applications using OpenTV. On the other hand, NPTV is the first company to obtain from Canal+ a Mediahighway license to develop interactive TV services

[14] That is to say, which offer a Multicrypt solution with a PCMCIA interface and Viaccess or Mediaguard module

[15] This will be the first STB which integrates the two French conditional access systems in use. So it can be considered as a real « universal » decoder

1.4.2 Widescreen (16:9)

In 1998, French TV set sales were boosted by the Football World Cup (4 million units, + 12%). With 300 000 units sold, widescreen can certainly be considered as the most successful format when market growth is considered. ***Thus the French installed base of 16:9 TV sets enjoyed a 50% annual increase, and in 1998 more than 800 000 French TV households had a widescreen TV set.***

Right from the start, TPS considered widescreen format as a means to differentiate its offer. Since September 1998, the national TV channels that are included in the TPS offer regularly broadcast prime-time programmes in 16:9 format.

1.4.3 Portable reception

Given the progress of debates on DTTV in France, discussions on portable and/or mobile TV reception today remain in the hands of TDF engineers.

From a general point of view, ***portable reception is perceived as a real means to differentiate digital terrestrial TV. This is a reason to support DTTV*** since the possibility to receive without any roof antennas offers two main attractions: first, in the domain of collective TV reception (no need for internal cable infrastructure), second for TV sets in vacation homes.

The trade-off between the cost of portable reception both in frequency and financial terms and business advantages will certainly be at the centre of the French regulatory body's decision process when considering possible paths to DTTV.

1.5 Conclusions

The French DTV market has shown strong dynamism in 1998. With a 71% growth rate, (that is to say a customer base of more than 2 million digital subscribers) and revenues getting closer to one billion Euros, (MEuros 823), the French digital pay-TV market certainly ranks first at European level with a penetration rate approaching 10% of TVHH.

The rapid development of CanalSatellite and TPS will have, with no doubt, largely contributed to this performance. TPS' success and ability to exist despite Canal Plus' market strength can certainly be qualified as a 1998 milestone. In particular, TPS' capability to obtain a share of TV soccer rights as well as to offer films of interest through legal actions and discussions with professionals in the cinema industry, demonstrates that valuable strategic choices have been taken. Thus the French market demonstrates that overcoming the advantage of the first mover is possible in the DTV domain.

The dynamism of the digital TV market has also in part taken the form of additional thematic TV channels, which now number 120 or so and achieve a 4,5% viewing share. Financial moves, particularly in the cable industry, as well as regards the French audio-visual dominant players' capital, have also been characteristic of 1998 (Pathé, Bouygues,…).

This last year has experienced, among other things, ABsat's failure to reach critical mass, and debates on the new audio-visual bill, which in its first version paid little attention to DTTV's development.

Indeed, debates on DTTV continue to progress slowly in France, which constitutes a very particular path towards the analogue broadcasting system switch-off. DTTV is supposed to be launched in 2001 in France. Further delay regarding the DTTV launching date would certainly jeopardise chances in the medium term for a DTTV Pay-TV offer to reach the critical mass with the increasing competition from digital cable and digital satellite. Opportunity of return on investment would in that case certainly lessen and with it not only initiative to launch a Pay-TV platform may be discouraged but most of the new Free-to-Air digital terrestrial TV services may proved to be unprofitable in the long term.

With DTV development and its increasing penetration via satellite and cable, as well as increasing competition in the domain of TV production, specific issues and problems arise:

✓ Though DTV has led to their short term economic strengthening, thematic TV channels risk in the medium term to see their turnover automatically decrease with the increasing competition in the market and the service line-up "hyper-segmentation" policy of DTV platform operators. If their relationships with the cable-operators deteriorate, as illustrated by the FTC-Planète conflict, they may also face a downturn in profits since cable revenues currently represent an average of 40% of their turnover.

- ✓ With the lack of "customer care" which has notably characterised ABsat's behaviour (TV channels removal without decrease in tariffs) and in some ways Canalsatellite's or TPS's customer contract, also arises the issue of service line-up continuity and the need to address the problem of consumer satisfaction through regulation.
- ✓ Although the French government has provided a solution to the dilemma between short term launch of analogue local TV channels and medium term development of digital terrestrial TV (moratorium on new local analogue TV channels), a series of essential issues still concern DTTV implementation and the associated frequency planning (transition cost, level of competition, policy regarding the decoder diffusion curve, portable reception, free-to-air programme financing,…).

The consultation of market players recently launched by the government is intended to provide the public authorities with pragmatic and efficient solutions so that, thanks to a clear regulatory framework, DTTV may experience rapid development and be able to compete effectively with satellite and cable DTV offers.

2 Key figures for the French market

2.1 Country fundamentals

	1993	1994	1995	1996	1997	1998	1999
Population (millions)		57,900	58,100	58,400	58,800	59,000	
Households (millions)		22,500	22,700	22,900	23,200	23,600	
GDP (in Euros billions)		1041,1	1181,8	1212,2	1253,9	1305,7	

2.2 Equipment

As of 31 of December	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*
TV households (millions)		21,100	21,200	21,500	21,800	22,200	
TV households (% of total households)		*93,8%*	*93,4%*	*93,9%*	*94,0%*	*94,1%*	-
TV Households with 2 TV sets or more (millions)		7,200	7,400	7,600	8,000	8,250	
TV Households with 2 TV sets or more (% of TV Households)		*34,1%*	*34,9%*	*35,3%*	*36,7%*	*37,2%*	-
TV Households with 16:9 Television sets (millions)		0,000	0,000	0,300	0,500	0,824	
TV Households with 16:9 Television sets (% of TV Households)		*0,0%*	*0,0%*	*1,4%*	*2,3%*	*3,7%*	-
VCR Households (millions)		14,100	14,600	15,500	16,100	16,500	
VCR Households (% of TV Households)		*66,8%*	*68,9%*	*72,1%*	*73,9%*	*74,3%*	-
Digital STB Households (millions)		0,000	0,000	0,300	1,200	2,058	
Digital STB Households (% of TV Households)		*0,0%*	*0,0%*	*1,4%*	*5,5%*	*9,3%*	-
IDTV Households (millions)		0,000	0,000	0,000	0,000	0,000	
Digital TV Households (% of TV households)		*0,0%*	*0,0%*	*0,0%*	*0,0%*	*0,0%*	-
Digital Households (millions)		0,000	0,000	0,300	1,200	2,058	
Digital Households (% of TV households)		*0,0%*	*0,0%*	*1,4%*	*5,5%*	*9,3%*	-

2.3 Access to DTV

Cable

	1993	1994	1995	1996	1997	1998	1999
Home passed (millions)	5,000	5,400	5,900	6,600	6,990		
of which digital (millions)	0	0	0	5,250	6,100		
Home passed (% of TV households)	0	0	0	30,3	31,5		-
of which digital (% of TV households)	0	0	0	24,1	27,5		-
Analogue Basic Subscribers (millions)	1,300	1,600	1,900	2,100	2,550		
Digital package subscribers (millions)	0	0	0	0,100	0,219		
Analogue Basic Subscribers (% of TV households)	6,2	7,5	8,8	9,6	11,5		-
Digital package subscribers (% of TV households)	0	0	0	0,5	1,0		-

Satellite

	1993	1994	1995	1996	1997	1998	1999
Satellite households (millions)	0,700	1,000	1,300	2,500	3,260		
Satellite households (% of TV households)	*3,3*	*4,7*	*6,0*	*11,5*	*14,7*		-
Satellite subscribers (millions)	0,200	0,300	0,500	1,200	1,838		
Satellite subscribers (% of TV households)	*0,9*	*1,4*	*2,3*	*5,5*	*8,3*		-
of which digital (millions)	0	0	0,300	1,100	1,838		
of which digital (% of TV households)	*0*	*0*	*1,4*	*5,0*	*8,3*		-

Terrestrial TV

	1993	1994	1995	1996	1997	1998	1999
Analogue Pay-TV services							
Pay-TV subscribers (millions)	3,900	4,100	4,200	4,300	4,440		
(% of TV households)	18,5	19,3	19,5	19,7	20,0		-
Digital TV services							
Homes covered (millions)	0	0	0	0	0		
(% of TV households)	0	0	0	0	0		-
IDTV households (millions)	0	0	0	0	0		
(% of TV households)	0	0	0	0	0		-
Pay-TV households (millions)	0	0	0	0	0		
(% of TV households)	0	0	0	0	0		-

2.4 Television market estimates*

Millions Euros	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*
Analogue TV Market							
Public funding	1638,794	1716,389	1854,506	1935,302	1857,326	1919,221	
Advertising	2198,609	2357,255	2548,409	2659,834	2792,826	2971,567	
Subscription	1392,137	1508,606	1655,106	1801,149	1694,132	1647,484	
Total analogue TV	5229,540	5582,250	6058,021	6396,286	6344,284	6538,272	
Digital TV Market							
Public funding	0,000	0,000	0,000	0,000	0,000	0,000	
Advertising	0,000	0,000	0,000	0,000	0,000	0,000	
Subscription	0,000	0,000	0,000	75,918	444,380	823,208	
Total digital TV	0,000	0,000	0,000	75,918	444,380	823,208	
TV Market							
Public funding	1638,794	1716,389	1854,506	1935,302	1857,326	1919,221	
Advertising	2198,609	2357,255	2548,409	2659,834	2792,826	2971,567	
Subscription	1392,137	1508,606	1655,106	1877,068	2138,512	2470,692	
Total TV market.	5229,540	5582,250	6058,021	6472,204	6788,664	7361,481	

** "**Public funding**" comprise grants and licence fees; "**Advertising**" also includes sponsoring expenditures whereas "**Subscriptions**" cover subscriptions to the basic multi-channel package as well as subscriptions to Premium pay-TV services.*