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de l'audiovisuel
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Development of Digital TV in Europe

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Greece

Prepared by Petros Iosifidis

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Contents

1 DIGITAL TV MARKET OVERVIEW 3

1.1 Roll-out of digital services 3

1.2 Details of DTV services 9

1.3 Operators and market structure 11

1.4 Technical Issues 15

1.5 Conclusion 16

2 KEY FIGURES FOR THE GREEK MARKET 17

2.1 Country fundamentals 17

2.2 Equipment 17

2.3 Television market estimates 18

2.4 Details of the subscription-TV market 18

1 Digital TV market overview

1.1 Roll-out of digital services

Background on the Greece TV Market

The Greek market is dominated by terrestrial reception. Up to the end of the 1980s, Greek viewers could only have access to the two TV channels of the national public broadcaster ERT (Hellenic Radio Television). At the threshold of the 1990s, the first private channels appeared and since then their number has increased significantly. Today, the private channels Mega TV and Antenna TV lead the market, while Alpha TV (ex Sky TV), Star Channel, TEMPO (ex New Channel) and ALTER (Channel 5) follow with respectable market shares. There are also about 160 local channels with a very limited audience. In 1989 the National Radio-Television Council (NRTC) was set up, as an independent authority, to supervise the radio and TV broadcasting sectors.

1.1.1 Satellite digital services

Public broadcaster ERT-S.A. participates in the national analogue satellite TV programs of EUTELSAT by broadcasting free-to-air programmes to the Greek community abroad. The private channel Antenna TV also broadcasts part of its programmes in analogue form to Australia and the United States.

Concerning analogue Pay-TV, since 1994, Nethold Multichoice Hellas, a subsidiary of NetMed Hellas, which is controlled by multinational company Netmed BV, has been providing 3 satellite TV services to Greek viewers. The Pay-TV operator, Nethold Multichoice Hellas, runs 3 analogue channels: Filmnet (films), Supersport (sports) and KTV (for children). The number of subscribers in June 2000 was approximately 380,000, corresponding to 11% household penetration.

In March 1998 the Greek Government announced that the development of digital encrypted services should not proceed without a specific regulatory framework. Such legislative initiative reflects the need to regulate new services in the digital environment by passing specific rules. The draft law was presented to the Parliament in June 1998 and became law in October that year (Law 2644/1998 *"on the provision of subscription radio and television services and related regulations"*, published in the Official Journal on October 13 1998). The law does not only deal with satellite TV. It covers all subscription radio and television services offered by analogue or digital means, via satellite, cable networks or terrestrial relays.

The above law sets the criteria for the award of licences for the provision of encrypred services. The award of licenses for the provision of terrestrial subscription services presupposes a call for tenders published by the Minister of Press and Mass Media. Concerning the provision of both satellite and cable pay-TV services, the law stipulates that the interested company be obliged to submit an application accompanied by the necessary documentation so as to guarantee pluralism and ensure transparency in the audiovisual sector. The National Radio-Television Council examines the application submitted by the parties concerned and gives an opinion to the Minister of Press and Mass Media. The final decision as to whether grant or reject the application rests with the Minister.

Within the framework of Law 2644/1998, in July 1999 Multichoice Hellas was granted a licence for the provision of subscription digital satellite services under the logo “NOVA”. However, until December 1999, when the necessary Agreement with the Greek state was signed, digital satellite services were provided experimentally. At this point, it is worth mentioning that the granting of a license should be accompanied by an Agreement with the Greek state, in which the state checks whether the company into question meets the criteria for the award of the license for the provision of encrypted services. In addition, the state assesses the technology to be used (i.e. the decoder) and checks (through the Ministry of Transport and Telecommunications) whether the company actually grants permission to broadcast by a satellite consortium. In the case of NOVA, this checking period took 6 months to complete. This relatively long period was actually a set back to NOVA plans, which had already launched its decoders for sale and concluded transmission contracts with a setellite consortium. On 20th of December 1999 the company was finally granted the official licence to broadcast digital TV channels on a subscription basis.

In March 2000, a second license for the provision of digital satellite services was granted to INTERACTIVE S.A., a subsidiary of the Greek multimedia company INTERSAT A.E. However, the necessary agreement with the Greek state has not been signed yet.

In June 2000, the National Radio-Television Council (NRTC) gave a favourable opinion to a third application submitted by ALPHA DIGITAL SYNTHESIS S.A. This company is expected to participate in a platform to be set up by ERT and OTE (see below). Finally in November 2000 the third licence for digital satellite services was granted by the Minister of Press and Mass Media to ALPHA DIGITAL SYNTHESIS S.A.. The next step will be the signing of the agreement with the Greek state.

ERT-A.E., the public broadcaster, within the framework of its subsidiary company set up by Law 2644/1998, has already proceeded to the signing of a Memorandum of Understanding (MOU) with OTE (the national telecommunications operator) and ALPHA DIGITAL SYNTHESIS S.A. for the establishment of another digital satellite platform. ERT’s subsidiary company will be entitled “"NEW PAY TV Company"” and will have the sole responsibility for the provision of subscription services. ERT will be the principal shareholder in that, whereas OTE and ALPHA will participate with smaller stakes. It has been announced that the telecoms operator OTE will set up another subsidiary, entitled “OTE MEDIA”, which will be responsible for the technology to be used and the interactive services to be offered. In this company, OTE will be the main shareholder (70%), whereas the other subsidiary “"NEW PAY TV Company"” will participate with a smaller stake (30%).

For the time being, the platform broadcasts experimentally. The three partners are in talks with satellite operators to finalise the tranasmission details. They are also with discussions with foreign and local content providers (public and private) to acquire the rights to broadcast premium programming. It is anticipated that the platform will start its official operation by the end of 2000. In the MOU, it is indicated that the three partners do not exclude future participation of more companies (with smaller stakes though) in the scheme. Private TV channel ANTENNA TV has already expressed an interest to participate.

1.1.2 Cable digital services

Until recently in Greece, it was forbidden by law to private operators to lay and operate cable infrastructure for telecommunications and/or brodcasting purposes. Only public broadcaster ERT and national telecom operator OTE could develop cable TV networks, set up subsidiary companies, and undertake contracts with private and local government organisations for providing cable TV services.

Law 2644/1998 *"on the provision of subscription radio and television services and related regulations"* abolishes this restriction. However, no private organisation has applied yet for a licence to deploy cable TV, partly because it is costly compared with wireless broadcasting and partly because it is more cost-effective to use the existing OTE infrastructure. The new law on Pay-TV establishes that local governments need a contract with the Greek State, to have the right to provide radio and TV services, in their territory, on a subscription basis through cable networks. For other bodies, the provision of such services is subject to a licence granted by the Press and Media Minister with the prior approval of the National Radio-Television Council.

The present infrastructure is quite limited. Experimental digital cable networks have been installed in two neighbourhoods in the capital Athens, and also in Komotini, Volos and the island of Mykonos. Cable TV network household penetration is below 1%. No cable TV services are presently offered, either digital or analogue. There is no network for analogue cable TV services.

1.1.3 Situation of MMDS

No developments have been reported in this area.

1.1.4 Situation of ADSL

ADSL is still subject to trials by OET, the incombent telecommunications operator.

1.1.5 Situation of terrestrial digital television

Digital Terrestrial Pay-TV is regulated by Law 2644/1998 (mentioned above), under the same terms as Digital Satellite Pay-TV. The current Government is basically favourable to the fair and ubiquitous development of Digital Terrestrial broadcasting. At the same time, it attempts to safeguard customer rights and avoid domination by any market operator. In this context, on October 14, 1999, the Minister of Press and Mass Media published a call for tenders for the award of two licences for the provision of subscription services offered by terrestrial means and with the use of the analogue method. Six (6) applications have been submitted to the Ministry of Press and the Mass Media. However, the call for tenders stipulates that operators that will be granted such licences may change the transmission method from analogue to digital. No date as been indicated by the Greek government for the granting of the licences.

The following six companies ahve applied:

a) Multichoice Hellas S.A.
b) Inter T.V. S.A.
c) Antenna Pay T.V. S.A.
d) Hellas View S.A.
e) ALPHA Direct T.V. S.A.
f) Terra Pay T.V. S.A.

It has to be stressed though that current key TV players do not seem very much interested in digital terrestrial television. The operators prefer to keep installation costs as low as possible and charge any up-front installation / equipment costs to the end-user. This purpose is best served with the provision of digital satellite services. Another important reason that restrains media players from entering this area is the spectrum shortage, because of the numerous terrestrial channels already available. In this context, it does not seem likely that DTTV will take off any time soon in Greece.

1.1.6 Market development

Since cable TV infrastructure in Greece is virtually non-existent, and Digital Terrestrial TV is not considered commercially viable, the market development will depend on the Digital Satellite services growth. Digital Satellite presents the advantages of cost-effective service deployment and universal coverage. However, given the small size of the Greek broadcasting market, it is anticipated that it will not sustain more than one digital platform, at best two. Given the relatively large number of applications so far (3), it is expected that the successful applicants will form alliances to be viable in the future.

Apart from the small size of the Greek market, two additional factors may prevent entry: the abundance of terrestrial free-to-air channels and the availability of satellite channels offered free of charge. On the first point, and as explained in section 1.1.1, Greek viewers have access to a large number of terrestrial free-to-air channels, the most popular of which are Mega TV, Antenna TV, Alpha TV, Star Channel, New Channel and Channel 5. On the second point, it should be mentioned that Public service broadcaster ERT broadcasts for free popular foreign channels such as CNN, MTV and TV5. The right of free reception of satellite TV in Greece is guaranteed by the Greek legislation, which complies with the respective provisions of the European Union and the European Council. Viewers may have access to any satellite TV programme that can be picked up by their receivers. Thus Greek viewers can currently choose between many different channels, terrestrial or satellite, without having to pay extra.

Still, there are some positive signs regarding Digital Pay-TV growth. The penetration of analogue Pay-TV services (350,000 subscribers corresponding to approximately 10.5% of TV households) is an indicator that potential demand exists, despite the availability of existing free-to-air channels. It should be emphasised though that the relative success of the analogue pay-TV platform is based on the offering of popular programming, such as sports and movies. In particular, NETHOLD MULTICHOICE HELLAS S.A. has acquired the exclusive rights to broadcast live the Greek football and basketball premierships. In addition, it has signed contracts with some of the biggest American studios for screening latest releases.

NOVA, currently the only satellite digital package in operation, has 18.462 subscribers. It is anticipated that NOVA will increase its subscriber base, as the parent company NETHOLD MULTICHOICE HELLAS S.A. has already signed exclusive agreements to broadcast sports and movies. It seems that the only way for Digital Pay-TV growth will be its ability to offer attractive programming. However, the acquisition of premium programming such as sport and new releases is very costly. It is not yet clear whether the three new operators (i.e. ERT-OTE-ALPHA, INTERACTIVE S.A. ALPHA DIGITAL SYNTHESIS S.A.) have the financial strength to offer that programming.

Concerning the origin of programmes, Greek viewers show a decided preference for domestic programming. For example, figures from AGB HELLAS reveal that quite a large number of Greek series from Mega TV and Antenna TV achieve an audience share of over 50%. Still, foreign productions, particularly US imports, constitute a significant part of the current TV programmes both in Free-To-Air TV and in Pay-TV. It is not then clear whether more domestic programming could represent a winning factor for the new Digital services. In any case, the limited amount of production capacity by national/local audio-visual producers will most certainly hamper the operators’ ability to offer more domestic programming.

It then seems logical for operators to offer a great deal of foreign programming. Still, this may be against the provisions set by Law 2644/1998. The new TV law actually requires that at least 25% of the broadcast output be in Greek language and 30% of the foreign programmes must be translated in Greek, either subtitled or dubbed. At least 25% of programming must be of European origin.This percentage should increase by 5% each year until it reaches 45%.

1.1.7 Barriers to competition or market development

Barriers to market development can be divided into two main categories: market barriers and regulatory barriers.

From the market point of view, Digital Satellite TV requires the purchase of additional equipment, which may be a heavy burden for the average Greek consumer, especially in the context of the general "economic austerity" climate prevailing over the past few years. The cost for the bouquet offered by NOVA (buying and installing the satellite antenna together with the set-top box) is 149.000 GDR, which amounts to approximately 410 EURO. It should be noted that the cost was initially 200,000 GDR, but it was cut down by half in early 2000. The monthly subscription fee is 15,500 GDR (approximately 46 EURO). So far, NOVA has made it clear that it will not subsidise the customer equipment purchases or offer rentals. This may prove an obstacle to the speedy development of the market. On the contrary, there is speculation that, access to the services offered by the subsidiary company of ERT – A.E. (with the participation of OTE and ALPHA), may be encouraged by means of financing set-top boxes.

The regulatory framework in the past presented some contradictions. In an arrangement unique to Greece, under the previous legislative framework (i.e. before the passing of Law 2644/1998), public broadcaster ERT had the exclusive rights of broadcasting encrypted television services. For this purpose, ERT was allowed to sign a contract with any Pay-TV operator intended to enter the market. The operator had to pay a fee to ERT for use of the terrestrial spectrum. Within this exclusive right, ERT had proceeded to the signing of a contract with NETHOLD MULTICHOICE HELLAS S.A. for use of three channels for the purposes of broadcasting the following encrypted services: Filmnet, Supersport, Kid-TV.

Law 2644/1998 laid down the possibility to renew such contracts until the completion of the procedure for the award of licences for the provision of subscription terrestrial services, following a call of tenders published by the Minister of Press and Mass Media (see above section 1.1.4). In other words, until the award of the two licences in the framework of the call for tenders published on October 14, 1999 by the Minister, the contracts signed between ERT and third parties remain in force and can be renewed. This is a transitory regulation, which permits the non-interruption of the provision of encrypted services to consumers by analogue means.

The criteria for the award of digital Pay-TV licences are strict. The candidate TV operator has to submit a quite detailed application (business plan, technology to be used, content to be broadcast, application fee, letter of guarantee etc.) for the provision of digital subscription services. Although the strict criteria for the award of digital Pay-TV licences may prevent market entry, their existence (and enforcement) allegedly provide a proportionate safeguard to transparency and pluralism.

According to Law 2644/1998, a licence is needed if the uplink signal transmission to the satellite takes place either directly or indirectly (e.g. part of the transmission) within the Greek territory. These complex procedures may represent a restraining factor for new operators, and even lead them to decide to locate their activities abroad.

According to the law, a provider can participate in no more than two different mass media (television of any type, radio of any type, newspapers). This is accompanied by many other specific restrictions. The law incorporates a number of provisions of 97/36 EU Directive (which amends the 89/552 EEC Directive).

1.2 Details of DTV services

NOVA, the first digital platform in Greece, started providing officially digital satellite services on 15.12.99. It has installed the digital platform and the ground transmission system, and has leased two transponders in the satellites Hot Bird 2 and Hot Bird 3 of Eutelsat (covering the entire Europe and the Mediterranean Basin). These are capable of offering up to 21 channels initially to Greek subscribers, with the perspective to go up to much more channels.

NOVA’s bouquet currently includes:

- The popular movie channels FILMNET and FILMAST, which broadcast new movies from abroad. The parent company NETHOLD MULTICHOICE HELLAS S.A. has signed agreements with the biggest studios in the USA to broadcast new releases to Greek subscribers.
- The sports channel SUPERSPORT, which broadcasts sport events from Greece and abroad. Its main attraction is the line coverage of the football and basketball matches of the Greek league.
- The Greek kids channel KTV.
- The satellite channels BBC WORLD, DISCOVERY, CARTOON NETWORK and CNN. Most of the programming is either subtitled or dubbed.

It is worth mentioning that all basic Greek terrestrial free-to-air channels are included in the basic NOVA package. The package also includes nine (9) radio stations.

In addition, since July 2000, NOVA’s subscribers have access to the pay-per-view channel NOVA CINEMA. This channel offers 10 latest movies per month on a pay-per-view basis. Subscribers can call NOVA’s customer services department and ask to watch a particular movie at a convenient time. The cost of the service is 500 GDR (1.4 EURO) per movie. Subscribers can keep the movie they have requested for 24 hours.

NOVA does not offer advanced interactive services at the moment. In fact, the decoder «Irdeto» (PANASAT IRD Decoder), chosen by the company, does not have any built-in modem and thus cannot support interactive services. The company has announced plans to offer two-way services, which it considers as commercially viable. However, it is not clear how it plans to upgrade the set-top-box in order to support such services.

Nova does not have any plans, either to subsidise the set-top-box, or provide a rental scheme of equipment purchase. It should be stressed though that it cut down substantially the cost of buying the necessary equipment (see Section 1.1.6). In addition, NOVA currently gives out for free a second satellite dish (plus free installation) to existing subscribers. Is seems that, through those offers, NOVA attempts to increase its subsriber base in the light of the forthcoming competition.

NOVA: Structure of the digital satellite TV offer

Type of Services offered in NOVA's package	Number in type	Comments
Free to air	5	Greek terrestrial free-to-air chanels are included in the NOVA package.
Pay-TV	12	Filmnet, Filmsat, TCM, Supersport, Supersport 2, KTV, BBC World, Discovery, Animal Planet, Travel, Cartoon Network, CNN.
Premium pay services	-	-
Pay-per-view	1	Nova Cinema. Offers movies on PPV basis. Started 1st July 2000.
Interactive TV services	-	Currently, NOVA does not offer interactive services.
EPG	Yes	EPG offers: Information about the daily and weekly programme with synopsis The ability to choose between Greek and English for the EPG, the menu and the sound Programme listings on screen at the touch of the TV Guide button Channel navigation without changing the programme on the screen A description and a synopsis, on screen, of every programme Electronical Parental Control, to protect younger viewers A reminder function, so as never to miss a favorite programme (New-Next EPG)
Internet services	-	NOVA plans to offer free Internet TV services to its subscribers from 2001.

NOVA: Pricing scheme of the digital satellite TV offer

Channels / Package	EUROs per month
NOVA	46

As far as the other platforms are concerned, and as mentioned above (Section 1.1.1.), in March 2000, a second license for the provision of digital satellite services was granted to INTERACTIVE S.A., a subsidiary of the Greek multimedia company INTERSAT A.E. However, the necessary agreement with the Greek state has not been signed yet. The company has announced that it will use the decoder Videoguard. The platform has not yet commenced transmissions.

A third application for the provision of digital satellite Pay-TV services has been submitted by ALPHA DIGITAL SYNTHESIS S.A. to the National Radio-Television Council. The company plans to use the decoder Videoguard. On Thursday 15 June 2000, the National Radio-Television Council, with unanimous decision, gave a favourable opinion. The next step for the granting of the licence is the official go ahead by the Minister of Press and Mass Media. The third and final step is the completion of necessary agreement with the Greek state.

ERT-A.E., the public broadcaster, within the framework of its subsidiary company set up by Law 2644/1998, has already proceeded to the signing of a Memorandum of Understanding (MOU) with OTE (the national telecommunications operator) and ALPHA DIGITAL SYNTHESIS S.A. for the establishment of another digital satellite platform. ERT's subsidiary company will be entitled “"NEW PAY TV Company"” and will have the sole responsibility for the provision of subscription services. ERT will be the principal shareholder in that, whereas OTE and ALPHA will participate with smaller stakes. It has been announced that the telecoms operator OTE will set up another subsidiary, entitled “OTE MEDIA”, which will be responsible for the technology to be used and the interactive services to be offered. In this company, OTE will be the main shareholder (70%), whereas the other subsidiary “"NEW PAY TV Company"” will participate with a smaller stake (30%). For the time being, the platform broadcasts experimentally.

1.3 Operators and market structure

The analogue terrestrial TV market

The analogue terrestrial TV market includes 10 commercial channels with national coverage and 3 public channels (see Table below). The market also includes approximately 160 local channels, with a very limited audience. The main private channels are Antenna TV and Mega Channel with 24.1 % and 21.2 % audience shares respectively.

Greek Analogue Terrestrial TV Operators

Channel	*Status*	*Income from*	*Audience share*
ET-1	Public	License fee & advertising	5.8
NET	Public	License fee & advertising	4.0
ET-3 (Greece)	Public	License fee & advertising	0.8
RIK (Cyprus)	Public	License fee & advertising	0.3
Mega TV	Private	Advertising	21.2
Antenna TV	Private	Advertising	24.1
Star Channel	Private	Advertising	13.1
ALPHA	Private	Advertising	15.6
TEMPO	Private	Advertising	6.0
Seven X	Private	Advertising	3.2
Macedonia TV	Private	Advertising	1.3
TV 902	Private	Advertising	1.2
Telecity	Private	Advertising	1.1
ALTER	Private	Advertising	4.5

Source: Auditors of Great Britain Hellas - AGB (1998/99).

Concentration of the analogue TV market

Levels of cross-media ownership have reached high levels since the deregulation of the audiovisual market in 1990. Most Greek publishers have moved to television (and radio, to a lesser extent) and now own significant stakes of the private channels. In particular, Mega Channel is owned by 'Tiletypos', a limited company quoted on the Athens stock market, which is owned by five of the main Athens daily newspapers and periodicals publishers. Antenna TV is owned by Minos Kyriakou, who is also active in shipping. Sky TV is owned by the Alafouzos family, a media and diverse enterprises consortium. They are the publishers of an Athenian morning newspaper and one radio station. The main shareholders of ALPHA T.V. S.A. are:

a) Entrepreneur Mr E. Tsotsoros
b) Entrepreneur A. Papadimitriou
c) ALPHA Communications Networks S.A.
d) Provoli Cinema and radio – TV company S.A.
e) Interamerican greek insurance company S.A.
f) Mantelord Investments limited

Advertising expenditure

The competition among the key players affected the quality of programming, driving them towards greater sensationalism for audience chasing, especially in news and talk shows. The advertising expenditure increased substantially too. According to market research company Media Services, total advertising axpenditure the first 4 months of year 2000 reached 160.2 Billion Greek Drachmas (BGD), which correspond to approximately 53 Million EURO, as compared with just 135 BGD in the same interval of year 1999 (approximately 42 Million EURO). This accounts for an increase of 19%. Television was the main beneficiary as it attracted almost half of advertising revenues (74.5 BGD). Periodicals, with 45 BGD, were in the second place. Newspapers attracted 33 BGD, while radio received 7.5 BGD from the total advertising cake the first four months of year 2000.

The number of daily spots per channel increased from 78 in 1990 to 140 in 1996 in the public service channels, versus 140 in 1990 and 1200 in 1996 for commercial channels.

This highly commercial style of private TV and the tendency towards sensationalism were not appreciated by the audience. Public broadcaster ERT, which had been declining in the past years, was recently restructured and started climbing back in audience shares. More specifically, the main channel ET-1 offers a wide range of programmes for all tastes, whereas NET, the second public channel, focuses mostly on news, current affairs, culture, the arts and documentaries. This restructuring enabled the company to gain back some of the lost ground. ET-1 now has 5.8% audience share as compared with just 4.5% in 1995, whereas NET has 4% as compared with 3.5% in 1995.

Pay-TV analogue and digital market

CBoth analogue and digital Pay-TV services are offered by the same company, MULTICHOICE HELLAS S.A (see table below). In addition, ‘TILETYPOS’, the consortium of the five largest newspaper publishers, is one of the main shareholders of the digital package NOVA.

Greek Pay-TV analogue and digital operators

OPERATORS	CHANNELS OFFERED	TRANSMISSION METHOD	NUMBER OF SUBSCRIBERS
MULTICHOICE HELLAS S.A.	Filmnet, Supersport, KTV	Analogue Terrestrial	350.000
MULTICHOICE HELLAS S.A.	NOVA	Digital DTH	18.000

Source: Company reports, April 2000.

NOVA is presently the only Digital Satellite Pay-TV in operation in Greece. MULTICHOICE HELLAS is owned by:

a) Myriad Developent BV (40%)
b) TILETIPOS S.A. (40%)
c) Lumier TV Ltd (18%)
d) Sunspot Leisure Ltd

NOVA has announced that it has invested 14 Billion Greek Drachmas - BGD (4.6 million EURO) for the purposes of financing and operating the digital platform. Gross revenues for the period 1.4.1999-31.3.2000 were 2.8 BGD (870 Million EURO) (company reports).

When it comes to the other digital satellite platforms, INTERACTIVE S.A., a subsidiary of the Greek multimedia company INTERSAT A.E., is the second company to hold a licence for the provision of digital satellite Pay-TV services. Enterpreneur Mr Batatoudis, president of the popular foodball team PAOK, owns 35.11% of the capital of INTERACTIVE S.A. It is anticipated that the company will start operations end 2000.

ALPHA DIGITAL SYNTHESIS S.A. is the third company, which recently submitted to the National Radio-Television Council an application for operating a digital platform. The main shareholder of ALPHA DIGITAL SYNTHESIS S.A. is entrepreneur Mr Tsotsoros with 35% stake, whereas smaller stakes are held by insurance company Interamerican (20%), Intertech (20%), Alpha Epikinonia Simvouleftiki (19.4%), Papadimitriou (5%) and Balis (0.6%). The company estimates the required expenditure for seting up and operating the platform to be 2.8 Billion Greek Drachmas (approximately 900.000 EURO). This amount includes expenses for infrastructure and the technology to be used, but excludes programming expenses. It is anticipated that the company will start operations end 2000.

ERT-A.E., the public broadcaster, within the framework of its subsidiary company set up by Law 2644/1998, has already proceeded to the signing of a Memorandum of Understanding (MOU) with OTE (the national telecommunications operator) and ALPHA DIGITAL SYNTHESIS S.A. for the establishment of another digital satellite platform. ERT's subsidiary company will be entitled “"NEW PAY TV Company"” and will have the sole responsibility for the provision of subscription services. ERT will be the principal shareholder in that, whereas OTE and ALPHA will participate with smaller stakes. It is anticipated that the telecoms operator OTE will set up another subsidiary, entitled “OTE MEDIA”, which will be responsible for the technology to be used and the interactive services to be offered. In this company, OTE will be the main shareholder, whereas the other subsidiary “"NEW PAY TV Company"” will participate with a smaller stake.

1.4 Technical Issues

1.4.1 Decoder Issues

NOVA employs the «Irdeto» (PANASAT IRD Decoder) Conditional Access System, which implies SimulCrypt-based solutions in case of the use of a competing technology by another DTV service provider, and is compatible with Philips Digital Video Equipment. The Decoder has been customised for Greece, therefore allowing the end user to select between different languages (Greek and English) in the Electronic Programme Guide (EPG) Menu. The subscribers also have access to teletext services. However the Decoder does not have any built-in modem and thus cannot support interactive services. This is the main reason that NOVA does not offer any advanced interactive services at the moment. The parent company NETHOLD MULTICHOICE HELLAS S.A. has declared that the Decoder capabilities will be expanded later on to interactivity, so as to enable NOVA to offer two-way services and free access to the Internet, which are considered commercially viable. Multichoice has not yet revealed the technical details of how it plans to upgrade the Decoder in order to support such services.

As far as the other platforms are concerned, ALPHA DIGITAL SYNTHESIS S.A. and INTERACTIVE S.A. have announced that they will use the system Videoguard, which has been adopted by BskyB in Britain. The other consortium ERT-OTE-ALPHA has not yet made any public announcements concerning the technology to be adopted.

1.4.2 16:9

The market of 16:9 television sets in Greece is still unformed but timidly growing over the past few years. The number of 16:9 sets sold to date is estimated at just 14,000. Some observers expect sales to grow faster, together with the Digital Satellite market. So far however NOVA has not made any announcement concerning plans to transmit in 16:9 format.

1.4.3 Portable reception

No developments have been reported in this area.

1.5 Conclusion

The Greek audiovisual market is dominated by terrestrial free-to-air TV reception. However, since 1994 analogue Pay-TV services are growing fast. In addition, 1999 events point to the likeliness of a favourable future for digital satellite TV development. At the end of that year, operator NOVA finally received the licence it had been waiting for since March 1998. The other three platforms ERT-OTE-ALPHA, INTERACTIVE S.A. and ALPHA DIGITAL SYNTHESIS S.A. are currently finalising plans to enter the digital satellite TV market. On the contrary, the future of either Digital Terrestrial TV or Digital Cable TV services does not seem to be so bright.

There are some doubts about the ability of the small Greek market to sustain more than one competing operator in Satellite Pay-TV, at best two. For this reason, it is anticipated that successful applicants will form alliances.

The small size of the market also raises doubts as to whether it can stimulate demand fast enough. The overabundance of analogue Free-To-Air channels makes it more difficult for the operators to build an attractive and diversified pay TV offer. The example of the Greek analogue Pay-TV market reveals that the key drivers for growth of digital TV services will be the offering of sports and latest movies. This argument is also supported by the example of neighbouring Italy, also crowded by hundreds of channels, where Pay-Tv Satellite took off recently thanks to premium contents such as exclusive football rights.

A strong barrier to market development in Greece may be the cost of purchasing the necessary equipment to receive digital satellite TV services. NOVA has recently reduced substantially the price of buying and installing the satellite dish. However, the monthly subscription cost remains relatively high. NOVA has made it clear that it does not plan to subsidise the set-top box. On the contrary, ERT-OTE-ALPHA has announced that they intend to subsidise the set-top-box when they commence operations. The growing competition may eventually lead to further reduction on the cost of purchasing the equipment.

A real uncertainty factor remains the Government interventionist policy and the complex regulatory framework. The Government does not want a repeat of the unregulated terrestrial TV market development in the 90s, where even today many local operators do not have a licence, creating serious problems for spectrum management. It does not want a monopolistic market either. However, the conditions set to apply for licences and other restraints may discourage competition, rather than encourage it. It is also unclear whether the Government intends to support in some way “national champion” alliances (i.e. the platform set up by national telecommunications operator OTE, public broadcaster ERT and commercial channel APPHA), rather than foreign-owned private companies (i.e. NOVA). The Government legislation “freeze” certainly influenced negatively Nova TV “first mover advantage”. It is anticipated that Government’s intentions will become clearer when all platforms will commence formal operations.

2 Key figures for the Greek market

2.1 Country fundamentals

Year	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*
Population (millions)	10.380	10.397	10.442	10.475	10.507	10.531	10.554
Households (million)	3.619	3.679	3.740	3.802	3.823	3.831	3.837
GNP (billions GDR)	-	24989343	27235205	29935080	33021832	35910654	38232647
GNP (billions ECUs)	-	83.239	89.629	98.824	107.337	119.323	131.022

Source: National Statistical Service – ESYE (http://www.statistics.gr/inetpub/wwwroot/gr/data/tables/htm).

2.2 Equipment

	1993	1994	1995	1996	1997	1998	1999
TV households (millions)	3430	-	4260	-	4880	-	5570
TV households (% of total households)	*95.4%*	-	*98%*	-	*99.0%*	-	*99.0%*
TV households with 2 TV sets or more (millions)	-	1.273	1.423	1.448	1.512	1.632	1.812
TV households *with 2 sets (% of total households)*	-	*38.0%*	*42.7%*	*43.3%*	*44.8%*	*48%*	*51%*
TV Households with 16:9 TV sets (thousands)	-	-	3.000	6.000	9.000	14.000	19.000
TV Households with 16:9 TV (% of total households)	-	-	*0.1%*	*0.2%*	*0.3%*	*0.4%*	*0.5%*
VCR Households (thousands)	980	-	1.166	1.220	1.310	1.380	1.465
VCR Households (% of total households)		-	*34.2%*	*35.4%*	*36.5%*	*37.7%*	*39.2%*
Digital STB Households (millions)		0	0	0	0	0	0
Digital STB (% of total households)							
Digital TV Households (millions)		0	0	0	0	0	0
Digital TV (% of total households)							
Digital Households (millions)		0	0	0	0	0	0

Source: Greek Institute for Audiovisual Media – Institute operating under the auspices of the Ministry of Press and the Mass Media.

Note: The biggest percentage increase in the number of households with a TV set took place between 1987 and 1991. That period, the average yearly increase of the number of TV households was 5.8%. At the same time, the percentage of households with a TV set was increased by 21% (in 1987, only 78% of the total households had a TV set, whereas that percentage reached 95% in the year 1991. Today it is 99%).

Note: The digital satellite bouquet NOVA entered the market in July 1999 and commenced operations officially in December 1999. NOVA has currently 18.462 subscribers. However, detailed data on household penetration are not yet available.

2.3 Television market estimates

Millions EUROs	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*
Analogue TV Market						
Licence fees	110.243	118.827	138.259	147.410	193.880	230.100
Advertising	660.025	949.968	502.993	513.485	520.280	540.200
Pay-TV	N/A	N/A	N/A	N/A	N/A	120.220*
Total analogue TV	770.268	1.068.795	641.252	660.895	714.160	880.520
Digital TV Market						
Licence fees	0	0	0	0	0	0
Advertising	0	0	0	0	0	0
Pay-TV	0	0	0	0	0	4.500**
Total digital TV						

Note: The license fee, which is paid by all Greek citizens to public broadcaster ERT S.A., is included in their electricity bill. The licence fee is paid bi-monthly and is currently set at 1.000 Greek Drachmas (approximately 3 EURO).

* Total gross of analogue subscription services for NETHOLD MULTICHOICE HELLS for the period March 1999 - March 2000 reached 34.4 Billion Greek Drachmas (approximately 120.2 million EUROs).

** Total gross of digital subscription services for NETHOLD MULTICHOICE HELLS for the period March 1999 - March 2000 reached 2.8 Billion Greek Drachmas (approximately 4.5 million EUROs).

2.4 Details of the subscription-TV market

Cable

	1994	*1995*	*1996*	*1997*	*1998*	*1999*
Homes passed (millions)	0	0	0	0	0	0
Of which digital (millions)	*0*	*0*	*0*	*0*	*0*	*0*
Homes passed (% of TV households)	*0*	*0*	*0*	*0*	0	*0*
Homes connected	0	0	0	0	0	0
Homes connected (% of TV households)						
Digital package subscribers (millions)	0	0	0	0	0	0

Satellite

	1994	*1995*	*1996*	*1997*	*1998*	*1999*
Satellite households (millions)	0	0	0	0	0	0
Satellite households *(% of TV households)*						
Satellite subscribers (millions)	0	0	0	0	0	0
Satellite subscribers (% of TV households)						
Of which digital (millions)	0	0	0	0	0	0