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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

Some background is necessary. The Greek market is dominated by terrestrial reception. Until the end of the 80s, Greek viewers could only choose between the two TV channels of the national public broadcaster ERT (Hellenic Radio Television). At the threshold of the 90s, 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 Sky TV, Star Channel, New Channel and 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 was created, as an independent authority to control the developments in radio and TV broadcasting.

Public broadcaster ERT participates in the national analogue satellite TV programmes 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.

The sole Pay-TV operator, Nethold Multichoice Hellas, runs 3 analogue terrestrial channels: Filmnet, Supersport and KTV (for kids). The number of subscribers in 1999 was approximately 300,000, corresponding to 9% household penetration.

Until July 1999, the only satellite TV services broadcast in Greece were therefore 3 Pay-TV analogue channels managed by Nethold Multichoice. The same operator established a joint venture, Nova TV, which in July 1999 launched a bouquet of Free-to-Air digital satellite channels. In December 1999 Nova received the official licence to broadcast digital satellite Pay-TV services. Other operators (Telecom operator Ote and commercial channel Antenna TV) have expressed interest to enter the market.

The Nova consortium, controlled by Nethold Multichoice, had planned the launch of a digital satellite bouquet in March 1998. However on 5th March 1998, the Greek Government announced that the launch of Pay-TV services could not proceed without a special law dedicated to subscription radio and television services. Its first effect was to stop Nova plans, which had already launched its decoders for sale and concluded transmission contracts with Eutelsat. The Draft Law "On the provision of subscription radio and television services and related regulations" [1] was presented in June 1998 and subsequently revised by the Parliament in November 1998. The Law established a complex regulatory framework to prevent vertical integration and assure pluralism, but did not regulate free-to-air satellite TV (see par.1.1.6 for details).

[1] Law 2644/1998

Nova's announcement at the time created surprise and worry among the other market actors, and stimulated a debate in the Government about the way to avoid risks of excessive market dominance by single operators. Public opinion believes that pressure on the Government by the owners of commercial channel Antenna TV and of telecom company Intracom (who had expressed interest in Digital TV but were not ready as soon as Nova) contributed to the "freeze" of the regulatory framework.

Nova TV considered a formal complaint to the the European Commission about the regulatory decisions delay. In July 1999 finally Nova received formal permission to launch a bouquet of Free-to-Air channels (both Greek and European). In mid-December 1999 the company was granted the official licence to broadcast Digital TV channels on a subscription basis.

Telecom Operator OTE is planning a National Digital Platform in co-operation with satellite operators and local content providers (public or private) with the ambition to be the second player to enter the Greek Digital TV market. However, the common feeling is that the venture is still at an early stage.

1.1.2 Cable digital services

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

The Law on the communications sector removes 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 reasonable 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 decided by the Press and Media Minister and also agreed by the National Radio-Television Council.

The present infrastructure is quite limited. Experimental digital cable networks have been installed in in two neighbourhoods of Athens and also in Komotini, Volos and the island of Mykonos. Less than 1% of the TV Households are passed by these networks. No cable TV services are presently offered on the network, 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 digital terrestrial television

Digital Terrestrial Pay-TV is regulated by the new Law 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, but avoiding dominance by any market operator and safeguarding customers' rights. In any case, though, the Government stated its intention to act only as a regulator and leave any initiative to market operators.

Current key TV players however do not seem very interested. New 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 served better by the provision of digital satellite services. In addition, an important reason that restrains media players from entering this area is the spectrum shortage, because of the numerous terrestrial channels already existing. In this context, it does not seem likely that DTTV will take off any time soon in Greece.

1.1.5 Market development

Since cable-tv infrastructures in Greece are 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 the common feeling in the Hellenic telecommunications/broadcasting sector is that the market dimension is limited and may possibly sustain no more than one operator, at best two.

Another problem is the rich analogue offer of thematic channels. Public service operator ERT for example broadcasts for free popular foreign channels such as CNN, MTV and TV5. Apparently, a (costly) effort to provide rich and innovative programming will be needed to support Digital Pay-TV growth.

The penetration of analogue Pay-TV services, though, (300,000 subscribers corresponding to 9% approximately of TV households) seems to prove that potential demand exists, even in face of an overabundant Free-To-Air programming offer.

Greek viewers show a decided preference for domestic programming. For example, AGB figures show that quite a large number of Greek series from Mega TV and Antenna TV achieve over 50% audience shares. But 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 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 constrain the operators ability to play this card. This may also create a problem for the operators, since the new TV law actually requires that at least 20% of the broadcast content must be in Greek language and 25% of the foreign programmes must be translated in Greek, either subtitled or dubbed. This last percentage of translated content is supposed to increase by 5% each year until it reaches 50%. At least 40% of programming must be of European origin.

1.1.6 Barriers to competition or market development

Barriers to market development include certain inherent market features. However, the major barriers seem to be still connected with the regulatory framework.

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 general “economic austerity” climate prevailing in the last years. The cost for buying and installing the satellite antenna («dish») and the associated set-top box to access Nova is estimated at 200,000 GDR [about 600 EURO] while the monthly subscription fee will range at around 15,000 GDR [45 EURO]. So far, Nova TV has made clear it will not subsidise customers’ equipment purchases or offer rental. This may prove a major constraint in the speed of market development.

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. Thus, viewers may have access to any satellite TV programme that can be picked up by their receivers.

However, the new law requires that Digital Satellite operators (both Free-to-Air Pay-TV ones) must request a licence to the Government and pay a relative fee (this is not required for analogue satellite operators). 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. According to the law, a licence is needed if the uplink signal transmission to the satellite takes place either directly or indirectly (eg 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 draft incorporates a number of provisions of 97/36 EU Directive (which amends the 89/552 EEC Directive).

1.2 Details of services

Nova TV - the only operator with a licence for Pay-TV Digital Satellite TV during the period under review - started to broadcast a Free-to Air digital bouquet in July 1999. Nova has already installed the digital platform and the ground transmission system, and has leased two transponders in the satellites Hot Bird 2 and Hot Bird 3 (covering the entire Europe and the Mediterranean Basin). These are capable of offering up to 16 channels initially to Greek subscribers, with the perspective to go up to 92 channels, along with provision of Internet access services in the near future.

In the first phase of market launch, Nova's bouquet will include its popular channels Filmnet, SuperSport and Filmsat (for movies); other channels mainly of European production (specialised programmes such as documentaries, sport, travelling, general entertainment; adults channel, Kids channel, BBC etc., all subtitled or translated to Greek); and other Greek channels. Multichoice, Nova's owner, is currently in negotiation with foreign broadcasters for the provision of their programmes to the Greek audience.

Nova does not plan to offer Pay-per-View and interactive services in its initial offer. Actually the decoder chosen by the company does not have any built-in modem and cannot allow any interactivity. The company does declare plans for offering two-way services and allow the users to make their choices, but it is not clear how it plans to manage the set-top-box eventual substitution or upgrading. Further services will also be offered as technology and socio-economic factors make such enhancements commercially viable.

Nova does not have any decoder subsidy or rental scheme .

1.3 Operators and market structure

Nova TV, presently the only Digital Satellite Pay-TV operator, is owned by:

- ✓ Dutch multinational company Nethold Multichoice (51%)
- ✓ Greek company TILETIPOS S.A. (42%), a joint venture of the the five largest newspaper publishers.
- ✓ Cypriot LTV with the remaining 7%.

The new investment declared by Nova for the digital platform is 14 billion GDR (4,600 Billion EURO) financed by a bank loan.

The analogue terrestrial TV market includes 5 main commercial channels, public service broadcaster ERT and approximately 160 local channels, with a very limited audience according to the Audio-Visual Media Services Institute.

Greek Analogue Terrestrial TV Operators

Channel	Status	Income from
ET-1	Public	License fee & advertising
ET-2	Public	License fee & advertising
ET-3 (Northern Greece)	Public	License fee & advertising
RIK (Cyprus)	Public	License fee & advertising
Mega TV	Private	Advertising
Antenna TV	Private	Advertising
Star Channel	Private	Advertising
Sky TV	Private	Advertising
FilmNet, Supersport, KTV	Private	Subscription (pay-TV)
New Channel	Private	Advertising
Seven X	Private	Advertising
Macedonia TV	Private	Advertising
Tiletora	Private	Advertising
Telecity	Private	Advertising
Channel 5	Private	Advertising

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 share increased substantially too. 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 was 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, thanks to quality programming. Together with telecom operator OTE, the broadcaster declared interest in applying for a second Digital TV licence in competition with Nova. No official announcements have been made yet. A consortium of mass-media players (possibly led by commercial channel Antenna TV) is also rumoured to be interested in entering the market.

Finally, the law establishes the creation of a subsidiary of ERT S.A. for the provision of subscription radio and television services, open to participation by other public or private agencies. ERT's share should be no less than 40%. Local Greek authorities are also allowed to provide cable or terrestrial (but not satellite) subscription services.

1.4 Technical Issues

1.4.1 Decoder Issues

Nova TV announced one year ago that they would employ the Irdeto 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 Integrated Receiver Decoder (IRD) will be customised for Greece, therefore allowing the end user to select different languages (Greek and English) in the Programme Guide (EPG) Menu. The decoders do not have in-built modems. Nova declared that the Set-Top Box capabilities would be expanded later on to include interactivity, but they have not revealed the technical details so it's not clear how this would be managed.

The subscriber will also have access to teletext services, but Nova has not publicly announced the Application Programming Interface.

However, because of the delay in the licence assignation procedures (more than one year), Nova previous technical choices may be revised and eventually changed. No details are known yet.

1.4.2 Widescreen (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 TV has not made any announcement concerning plans to transmit in 16:9 format.

1.5 Conclusion

The Greek market is still characterised by the dominance of terrestrial TV, but 1999 events point to the likeliness of a more favourable near future for Digital TV development. Operator Nova TV finally received at the end of the year the licence it had been waiting for since March 1998. Public broadcaster ERT and Telecom Operator OTE seem to be defining plans to enter the market as a second competing platform. On the contrary, there don't seem to be the conditions for the launch of Digital Terrestrial TV or Digital Cable TV services in the near future.

There are some doubts about the ability of the small Greek market to sustain more than one competing operator in Satellite Pay-TV, or even to stimulate demand fast enough. The overabundance of Free-To-Air channels will make more difficult for the operators to build an attractive and diversified offer. However, 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, shows that a smart operator can achieve this goal.

A stronger barrier to market development in Greece may be the cost of the set-top box and antenna's dish, which at least Nova TV does not seem ready to subsidy. Perhaps this choice will be made by the eventual second operator.

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. But the the conditions set to apply for licences and other restraints risk to discourage competition rather than encourage it. There is also some concern that the Government may be ready to support in some way "national champion" alliances, rather than foreign-owned private companies. The Government legislation "freeze" certainly influenced Nova TV's "first mover advantage" negatively. The further impacts of the new laws and of Government's choices for their implementation will be better understood next year, when the battle is finally joined on its natural ground: the market.

2 Key figures for the Greek market

2.1 Country fundamentals

Year	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*
Population (millions)	10.426	10.454	10.465	10.488	10.512	0
Households (millions)	3.679	3.74	3.802	3.863	3.831	0
GNP (billions ECUs)	83.239	89.629	98.824	107.337	119.323	0

2.2 Equipment

	1994	**1995**	**1996**	**1997**	**1998**	**1999**
TV households (millions)	3.349	3.332	3.343	3.376	3.400	0
TV households (% of total households)	*91.0%*	*89.1%*	*87.9%*	*87.4%*	*88.8%*	
TV households with 2 TV sets or more (millions)	1.273	1.423	1.448	1.512	1.632	0
TV households with 2 sets (% of total households)	*38.0%*	*42.7%*	*43.3%*	*44.8%*	*48%*	
TV Households with 16:9 TV sets (millions)		0.003	0.006	0.009	0.014	0
TV Households with 16:9 TV (% of total households)		*0.1%*	*0.2%*	*0.3%*	*0.4%*	
VCR Households (millions)	1.423	1.574	1.724	1.862	1.980	0
VCR Households (% of total households)	*42.5%*	*47.2%*	*51.6%*	*55.2%*	*58.2%*	
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

2.3 Access to DTV

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

Terrestrial TV

	1994	1995	1996	1997	1998	1999
Analogue TV Market						
Pay-TV subscribers (millions)	0	0	0	0	0	0
Digital TV Market						
Passed (millions)	0	0	0	0	0	0
Initialised (millions)	0	0	0	0	0	0
Pay-TV subscribers (millions)	0	0	0	0	0	0

XDSL

	1994	1995	1996	1997	1998	1999
Home passed (millions)	0	0	0	0	0	0
Basic subscribers (millions)	0	0	0	0	0	0
Optional services subscribers (millions)	0	0	0	0	0	0

2.4 Television market estimates*

Millions ECUs	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*
Analogue TV Market						
Public funding	110.243	118.827	138.259	147.410	193.880	0
Advertising	660.025	949.968	502.993	513.485	520.280	0
Pay-TV	N/A	N/A	N/A	N/A	N/A	0
Total analogue TV	770.268	1068.795	641.252	660.895	714.160	
Digital TV Market						
Public funding	0	0	0	0	0	0
Advertising	0	0	0	0	0	0
Pay-TV	0	0	0	0	0	0
Total digital TV						

There is a sort of license fee paid by citizens to ERT. It is included in their electricity bill.

** **"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.*