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Development of Digital TV in Europe

2000 Report

The Netherlands

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Final version – December 2000

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1. Digital TV market overview

1.1. Roll out of digital services

1.1.1. Satellite digital services

Several projects announced in 1999 have effectively been launched in 2000 or at least will be commercialised before the end of the year. Most of them concern in the first place the cable networks. This may explain, at least partially a slight repositioning of the only offer that existed untill now, namely the CANAL+ offer through satellite transmission. This offer has been enlarged in two ways:

Beyond offering TV services which are also available in analogue format, a new premium channel has been developed, exclusively with movies in 16:9 format.

Moreover, a special package at a relatively low price comprising about the 10 most popular channels on the cable, is intended to reach new target groups for pay-TV.

1.1.2. Cable digital services

Cable remains and will probably, with its 98% penetration, remain for some time the main infrastructure connecting households to broadcasting services, and more generally giving access to broadband applications. Up till now, cable operators enjoyed a de facto monopoly in analogue broadcasting. In this respect, several measures have been taken by the Dutch government in order to encourage infrastructure competition by promoting alternative ways of broadcasting TV services. One of these measures is the development of a major DVB-T project (see below).

However, several recent developments showed the necessity also to enhance competition on the cable networks themselves. The access rates applied by certain cable operators to service providers were skyrocketing; some of them had to retire from cable transmission. This has been, between others, the case of CANAL+ on the UPC networks and has made the object of a court case, finally won by CANAL+.

Cable operators try by all means to recover the important investments they engaged in to prepare their networks for digital transmission and interactive service provision:

Tiering their offer, reducing the standard package, which originally comprises 30 TV channels on average and offering different tiers of services beyond this base package.

Increasing access fees

Today, some consensus has been reach on both issues after two industry consultations, initiatives of the Ministry of Culture. Indeed, the two issues, cable access and service segmentation, have been adressed in two notices, respectively “kabelnota 1” and “kabelnota 2”, issued by the Ministry of Culture. The first one recognises the advantage of service segmentation in order to ensure decoder dissemination among the households and thus improving access to new broadcasting as well as new interactive services. However, it also pointed out the danger of denying access to lower income groups to a sufficiently large offer of channels. The second note establishes the conditions for introducing regulated access to cable, this in order to foster competition on the cable infrastructure itselves.

The increasing vertical integration of most of the cable operators could render reasonnable acces for third parties more difficult.

In this framework, roll-out of digital services on the cable evolves today towards a bunch of agreements. The three main market players, namely CASEMA, UPC and the association of 8 independent cable network operators, MEDIAKABEL[1], share either content, services, infrastructure and/or technology:

The takeover by UPC of ENECO's and GELrevision's networks, which both were shareholders in MEDIAKABEL, brings UPC to participate to the development of a competitive digital offer to its own, which moreover is commercialised today under the name Mr Zap.

MEDIAKABEL and CASEMA use of the same decoder technology, as well as they have done common service development. Indeed, MEDIAKABEL and CASEMA offer the same PPV service but through different user interfaces.

MEDIAKABEL and CASEMA, both broadcast content developed by UPC-TV.

Today, these cable operators should already count on the fact that CANAL+ has negotiated access to the networks of UPC and CASEMA for digital transmission of its services, starting from October 2000. This means that at least in the short run, various digital offers will coexist on the same networks. Consumers will rent a Canal+ decoder.

1.1.3. Situation of terrestrial digital television

Besides those offers or projects on the cable, an important terrestrial digital video broadcasting (DVB-T) project is being developed by the DIGITENNE consortium gathering various operators active in programming, service providing and infrastructure.

The DIGITENNE consortium, that has taken the initiative of offering nation-wide DVB-T, includes 5 main participants: NOZEMA (national analogue terrestrial broadcast infrastructure operator), NOS (co-ordination body for public broadcasting), VESTRA (association of 14 commercial broadcasters), CANAL+, KPN Telecom and NOB (a national broadcasting production company).

NOZEMA, which is at this moment a semi-public company[2], has been the only participant managing access to the terrestrial analogue broadcasting infrastructure. This monopoly ended on the 1 January 1998, and NOZEMA will probably be privatised in the very near future. NOZEMA is at this moment working on the construction of the network and will later on lease the capacity to DIGITENNE. This enables to maintain a separation between network management and service provision.

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[1] Multikabel, ENECO KabelTV & Telecom BV, Palet Kabelcom b.v.,UPC Nederland (earlier GelreVision), ZeelandNet BV, N.V. NutsbedrijvenMaastricht, Kabeltex B.V. and De Alkmaarse Kabel.

[2] 59% State-owned, 40% NOS (public broadcasting) and 1% Radio Nederland Wereldomroep.

Allthough frequency allocation takes more time than announced, DIGITENNE is well-positioned to obtain a license for the five multiplexes available. Discussions around the modalities for frequency allocation have delayed the project for some time however. Today discussion seems to lead to a beauty contest, which gives DIGITENNE all its chances to get all or a significant share of the frequencies. Once the decision will fall, DIGITENNE will transform into a joint venture between all parties.

Each of the parties associated in DIGITENNE clearly has its own motivations for participating in the joint venture. First, NOZEMA has to change to a digital platform, at the risk of losing the justification for its future existence. The participation of NOS might be understood as a way of protecting public broadcasting. The presence of VESTRA and CANAL+ is motivated by the availability of an alternative platform to cable, where in the past CANAL+ has been denied access.

In order to introduce interactivity capabilities, KPN will probably intervene for an upstream solution in interactive services. Recent participation of NOB may be linked to its active contribution to the development of multi-media services, and thus, content.

A first technical trial of DVB-T should start in January 2001 in Hilversum, Amsterdam, Haarlem and Almere. It will effectively be commercialised in May 2001. The digital network will continue to be rolled out in central Holland towards the end of 2001.

Services that will be made available by DIGITENNE will in the first place concern pure broadcasting services. A base package of 20 TV channels and 15 radio stations will be offered at a price below the price charged by the cable companies for their base package. Pay-TV will also be offered, namely, CANAL+ will offer access to CANAL+1, CANAL+2 and CANAL+ 16:9. Additionnaly, an EPG, games, teletext and a limited form of homeshopping will be available.

Emphasis is clearly put on the base package at a low price, positioning DVB-T clearly as a competitive broadcasting infrastructure next to the cable. More broadly, DIGITENNE is pursuing a multi-market strategy, or in other words, position themselves on different niche markets essentially based on portability, flexibility and cheapness arguments. So, it considers to be a good solution for second TV set market, for specific target groups as inland shipping, yachts and caravans, as well as low income groups.

1.1.4. Market development

It takes some time before announcements on important digital TV projects really come of the ground in the Netherlands. Surprisingly, it is MEDIAKABEL, which at the origin was a joint venture of Dutch independent cable operators[3], who, as first operator, commercialises today a digital offer on the cable.

MEDIAKABEL is a commercial company acting as services provider for the associated cable operators who are its shareholders:

It has built a common head-end station and all cable operators use a common set-top box.

[3] Today, UPC has a 35% share in MEDIAKABEL, through its take-over of the networks of ENECO and Gelrevision.

It also acts as content service providers as it negotiates prices with the content providers. Today, it does not develop proper content but it is certainly one of its objective to take a leading role in the Netherlands in interactive service development.

Also, it offers marketing services to the associated cable operators. The digital service offer is commercialised under the common brand name “MrZap”.

Finally, although the customer relation remains in the hands of the cable operator, a common SMS is used and the data about customers is first stored at MEDIAKABEL and then redistributed to the cable operator.

As said before, CASEMA has also entered the digital TV market through the commercialisation of a part of MrZap services, namely the PPV services, but under a separate brand (FilmTime). CASEMA has also an agreement with MEDIAKABEL to use its head-end station and ensure transmission of the digital signal.

Take-off of these services is however relatively slow. MEDIAKABEL, which started commercialisation of Mr Zap services in February 2000, had on the 30th of June 15.000 subscribers. CASEMA counts in august 2000 about 5.000 digital subscribers to its Filmtime PPV service (launched in May 2000).

Market is expected to take off however still this year. For instance, with CANAL+ who has negotiated digital access to certain cable networks of UPC counting from October 2000, intends to transform all its analogue subscribers at no cost without price charge for them to digital subscribers[4]. They expect to have already 30.000 digital customers at the end of 2000. Later in 2001, other networks of UPC will be open for CANAL+’s digital transmission, as well as several of CASEMA’s networks. In June 2000, there were 225,000 analogue pay-TV subscribers of CANAL+. Knowing they will be forced to transfer to digital reception, CANAL+’s share on the market might grow quite fast.

UPC also intends to launch digital TV services by the autumn 2000. They predict to have about 30.000 digital subscribers by the end of 2000. Their strategy is based on a forced swap of their 12.000 analogue PPV subscribers, as well as a part of their 30.000 chello subscribers in Amsterdam who have already a cable connection and thus modem for their internet access.

CANAL+ digital offer by satellite transmission continues to grow steadily. Beyond the original offer that has been commercialised for several years now [5]which has been extended in 1999 by a 16:9 channel, they developed for cable and satellite transmission a pluspackage they commercialize at a very low price in order to attract new targets groups for pay-TV. Digital subscribers to CANAL+Digitaal count in June 2000 about 40.000 subscribers.In August 2000, another 15.000 essentially new customers had a subscription to the pluspackage.

[4] Savings on the transition from analogue to digital transmission (half the price on the UPC network, for instance), will help financing the digital decoders.

[5] In fact, digital TV projects were developed quite early in the Netherlands. Already in 1996, Nethold, before being taken over by Canal +, had a two-tier digital offer on satellite comprising a basic free tier comprising all the public and commercial Dutch channels (except TV10/FoxKids) and a second tier concerning a premium channel of Nethold as well as several other foreign channels, which could be accessed by subscription. After the take over in June 1997 of Nethold’s activities by CANAL +, the second tier was redefined; it comprised two separate channels, CANAL + 1 and CANAL + 2.

Today, among the 300 000 households, which, in the Netherlands, receive TV by satellite, 160 000 are equipped with a satellite dish and a digital decoder. As of mid-1999, only 35 000 of these households have subscribed to the CANAL + digital offer.

Table 1 : Digital households and digital offer subscriptions in 1999

No. of TV households in the Netherlands	6 263 000
% of total households	94,4 %
Cable	
No. of households passed (cable)	6 138 000
% of total households	98 %
No. of households connected to cable	5 880 000
% of total households	93,8 %
No. of households connected to cable with digital decoder	
In 1999	**0**
% of total households	0 %
In June 2000	**20 000**
% of total households	0,32 %
Satellite	
No. of households with satellite antennas	380 000
% of TV households	6,1%
No. of households with satellite antennas and digital decoder	180 000
% of TV households	2,8%
No. of subscribers to the CANAL + digital offer	
In 1998	**20 000**
% of TV households	0,32%
In 1999	**30 000**
% of TV households	0,48%
In June 2000	**50 000**
% of TV households	0,79%

Source : O.E.A. 2000 Edition/L.E.N.T.I.C. estimation

The different figures above show the relatively small size of the satellite market, although it keeps a stable market penetration. However, today's positioning of CANAL+ on the cable for digital transmission of its services, shows the predominance of the cable on which the operator counts in order to extend its market.

Even if today's digital offer on the cable remains relatively restricted, the small size of demand still can also be explained by the relatively rich analogue TV offer. Most of the customers can receive a multi-channel provision (30 channels on average) through the CATV networks. One way intended by the cable operators to ensure faster dissemination of digital decoders was the segmentation of their offer and thus reducing the number of channels on the base package. Casema is the only one who up till now has reduced his basic package to 17 channels. Other intend to subsidize the decoder, either by financing the decoder exchange (from analogue to digital) with the gains realised by the reduced capacity to lease for digital transmission (CANAL+), either by extending the digital TV offer to other services (UPC, MEDIAKABEL).

1.1.5. Barriers to competition or market development

Several measures have been taken by the Dutch government in order to put an end to the de facto monopoly of the cable sector. One of these measures has been full support to DVB-T project development (see below). Also other measures confirm the will of the government to ensure competitive conditions on the cable infrastructure itself. Recently, the NMA (Nederlandse Mededinging Autoriteit), together with the OPTA, have fixed a joined framework for conflict resolution concerning access to cable between the cable operators and the channel providers.6 This move has followed the court case between CANAL+ and UPC on the access prices to UPC's networks for analogue transmission of CANAL+'s signal.

The framework, inspired of ONP principles, aims at equal treatment of channel providers by different measures:

- Firstly, the must-carry channels enjoy free access to the cable networks.
- Secondly, the other channel providers should not have to pay for the broadcasting costs of the must-carry channels. The access fees for these other channel providers should be cost-oriented.
- Finally, cable operators may not refuse access to their network, except for capacity restrictions, technical problems or when the channel provider does not accept to pay a cost-oriented access fee.

This will probably have some influence on the competitive situation of the cable market. This is already visible with the transmission from October 2000 of CANAL+ digital offer on certain networks of UPC.

6 This move has followed the court case between CANAL+ and UPC on the access prices to UPC's networks for analogue transmission of CANAL+'s signal. Beyond that, Canal+ did not find an agreement with the cable operators on the access fee for transmitting their digital signals on the cable. Recently, UPC has been required in November 1999 by the OPTA (Onafhankelijk Post- en Telecommunicatie Autoriteit, the national telecommunication regulator) to transmit CANAL+ digital offer at half the price of what CANAL+ pays today for analogue transmission.

1.2. Details of services

1.2.1. Number and types of services

Today, the Netherlands counts 2 full offers of digital TV: one, through satellite distribution, of CANAL+, another, through cable distribution, of Mediakabel.

1.2.2. Details of the DTV offers

1.2.2.1. CANAL+

At the end of 1999, CANAL+ started extending its original offer for digital transmission. Earlier, the CANAL + bouquet was organized in a two-tier offer. The basic tier has remained unchanged after the take-over of NETHOLD by CANAL +, in 1997. It still comprises the majority of public and commercial Dutch channels.

On the other hand, the digital pay-TV offer was progressively recomposed to offer only the *Canal + 1* and *Canal + 2* channels. These two channels are the same as those distributed in analogue form on the cable.

Thus, additionally, CANAL+ Nederland has developed together with CANAL+ Vlaanderen a new premium channel for exclusive 16:9 movies broadcasting, which is commercialised since December 1999. Finally, a small bouquet of a limited number of channels (with optional erotic and cinecinema channels) and at a relatively low price is commercialised since March 2000.

Channel line-up

Offer	Price per month
Basic tier (Dutch public and commercial channels)	Free
CANAL+1, CANAL+2, Canal+ 16:9	NLG 51,50 [7]
CANAL+ Pluspackage	NLG 11,95
- with optional cinecinemas	NLG 19,95
- with optional erotic channel	NLG 24,95
CANAL+1, CANAL+2, Canal+ 16:9	NLG 51,50 [8]

[7] Subscription only (decoder excluded)

[8] Subscription only (decoder excluded)

Major channel providers

Channels	Provider
Dutch public and commercial channels	
CANAL+1, CANAL+2, CANAL+ 16:9	CANAL+ Nederland
CANAL+ Pluspackage (Discovery channel, National Geographic Channel, Eurosport, BBC World, CNBC, Euronews, MTV Base, MTV Extra, VH 1, VH Classic, Muzzik)	

CANAL+ will commercialise in the very near future a PPV service. The different channels will also progressively be broadcast on the cable networks starting from october 2000. Moreover CANAL+1, CANAL+2 and CANAL+16:9 will be included in the DVB-T offer of DIGITENNE.

1.2.2.2. Mr Zap

Mr Zap is a service of digital interactive TV which has been launched in February 2000 on the different networks of the cable operators associated to Mediakabel[9].This service comprises four specific services:

- Watch a movie
- Watch television
- Listen to music
- Play games

TV Surfer, which is an EPG and navigator at the same time, helps the viewer to navigate between the different services, and aims at becoming in the longer run, a TV portal giving access to an important number of interactive services.

What the service “Watch television” concerns, it gives access to the base analogue programming as well as to a bouquet of thematic channels.

[9] Multikabel, ENECO KabelTV & Telecom BV, Palet Kabelcom b.v.,UPC Nederland (earlier GelreVision), ZeelandNet BV, N.V. NutsbedrijvenMaastricht, Kabeltex B.V. and De Alkmaarse Kabel.

Channel line-up

Offer	Price per month
Standard subscription comprising: . ANWB (traffic and weather) and Sky news . Two packages of thematic channels (choice between 6 package of three channels each comprising Extreme Sports, Film1, The Adult Channel, Landscape, FashionTV, Performance, VH-1, Travel Channel, CNBC) . 5 Music channels . 1 Game . PPV service (additional NLG 7,95/movie)	NLG 12,95[10]
Total subscription comprising: . All services available in the standard subscription . All thematic channels available in the different packages	NLG 17,90[11]
Music Choice (39 music audio channels)	NLG 9,95
Visionik (5 games)	NLG 4,95
Cinenova (movies 24h/24h)	NLG 24,95
ART Movies and ART Music (Arab television)	NLG 34,95
VIVA and Gala (Turkish television)	NLG 34,95
ZEE TV (Hindou television)	NLG 34,95
TVBS-E (Chinese television)	NLG 59,95

Major channel providers

Channels	Provider
Extreme Sports	UPC-TV
Film1	UPC-TV
Cinenova	UPC-TV
VH-1	MTV-Viacom
CNBC	NBC
Skynews	BskyB

The PPV service has been developed in association with CASEMA. This last one offer the service through a proper interface.

[10] Includes the rental of a MrZap box.

[11] Includes the rental of a MrZap box.

1.3. Operators and market structure

1.3.1. Concentration of the pay-TV market

Today, the pay-TV market in the Netherlands is principally dominated by 4 main actors: CASEMA, UPC, MEDIAKABEL and CANAL+. They all in a way or another develop agreements with each others. Each developed however distinct strategies for reaching development of the digital pay-TV market:

CASEMA has chosen the approach of starting with the segmentation of its analogue offer, reducing its base package to 17 channels, with the possibility of subscribing to plus-packages. The aim is to progressively get the customer used to pay-TV.

UPC and MEDIAKABEL have chosen for a differentiation strategy. Their standard analogue package is or will contain the same number of channels as before (about 30 channels), but their digital offer gives or will give an important number of options to meet customers needs. With its share in MEDIAKABEL, through the take-over of GelRevision's and ENECO's networks, UPC takes advantage of the launch of MrZap services as experimental platform for these services. Moreover, UPC makes an integrated offer of its different services (Internet, telephony and PlusTV on cable, its triple-play offer),which increases the differentiation possibilities. Moreover, UPC intends to take advantage of its actual analogue PPV subscribers to force their swap to digital television. In the same way, its Chello customers, who have an Internet access through cable connection, and thus who have already a cable modem, constitute another important base for increasing their marketshare for digital television.

CANAL+, as only non-cable operator, takes advantage of its established customer base by forcing transition to digital reception all existing analogue subscribers. If CANAL+ succeeds in developing the digital transmission of its services via the cable, they could have in a relatively short time about 225 000 digital decoders disseminated among their cable customers.

1.3.2. Agreements between satellite operators, cable operators and DTT operators

The recent evolution of CANAL+'s positioning on the cable for digital transmission12, modifies the assumptions that had been made before concerning the possible scenarios for a collaboration between CANAL+ and the cable operators or any other infrastructure operator as:

- CANAL+ could become exclusively a content provider, leaving conditional access management and control to the infrastructure operator;
- CANAL+ and the infrastructure operator could collaborate on the choice of the conditional access and share the management of it;

Neither of the two scenarios seems to become reality. No agreement has been reach with the cable operators on CA. In the coming year, there will probably be two offers with two different boxes on the cable, at least on the UPC's and the CASEMA's networks.

CANAL+ as a mere content provider, without having control on CA, which was the scenario suitable to DVB-T in the framework of the DIGITENNE consortium is not yet realised neither. DIGITENNE did not yet take a decision on CA yet.

What the cable operators is concerning, CASEMA and MEDIAKABEL, allthough they have no real agreement, use the same CA. Moreover, technology for the digital head-end of MEDIAKABEL has been provided by France TELECOM.

1.3.3. Vertical integration

It is clear that the cable operators in the Netherlands do consider that limitation of their activities to the transmission of television signal is not lucrative enough. This explains probably the important investments for network upgrading but also for take-overs and product development. Moreover, the cable companies even take the lead in interactive services and content development. Mediakabel and UPC are probably the most advanced in this way.

Although, Mediakabel does not develop or produces content itself, it enters in joint ventures with content providers. However, it already announced its will to take a leading position in interactive service provision. But again, this will happen through agreements with other service providers.

[12] Cfr.supra, CANAL+ will progressively stop analogue transmission of its services on the cable networks and replace all analogue decoders with digital decoders, at no cost for the subscriber. Digital transmission costs CANAL+ half the price of analogue transmission on the cable.

UPC pushes even further its vertical integration strategy of cable distribution and content. Even though the take-over of SBS by UPC didn't happen, they intend to continue to pursue their joint ventures with SBS in the areas of developing content for multiple distribution networks.

UPC also has other collaborations on content development. In may, they launched in Belgium and in the Netherlands a 24 hour Premium Movie channel, in association with Buena-vista International (BVI), a division of Disney Television, and Sony Pictures entertainment. This new channel, called CINENOVA, is also distributed on CASEMA's and MEDIAKABEL's networks. Beyond its broadcasting activities, UPC is working via its subsidiary, Chello, on interactive services development.

Most cable-operators are diversifying their activities in order to become full-service providers. A large number of cable operators are also either Internet access providers[13], or Internet backbone operators[14]. Some of them offer telephony services via cable[15], others have tests-sites working in this field. Three of them offer pay-per-view services[16] and seem in this way to pursue vertical integration.

1.4. Technical issues

1.4.1. Decoder issues

1.4.1.1. Satellite decoders

Historically, the digital offer, of Nethold firstly and later of CANAL +, was received via a IRDETO decoder. In October 1998, a new decoder, using SECA technology, was launched. It is intended to progressively replace the IRDETO decoder. During a transitional period the two access technologies remain in parallel use.

The SECA decoder includes possibilities to offer PPV services, Internet, 16:9 broadcast, and has an integrated modem. CANAL+ intends to use the same technology for the cable.

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[13] Casema, Telekabel, Multikabel, Zekatel, UPC…

[14] ENECO

[15] UPC adn CASEMA

[16] UPC (Moviehouse - analogue) and CASEMA (Filmtime) and Mediakabel in digital format with the Mr Zap offer (see supra).

Table 4 : Conditional access choice of CANAL+

Name of Decoder	SECA
API	Mediaguard
CA	Mediahighway
Available for sale/price	Yes / NLG 1,100
Available for rent/price	No
CA agreements	No

1.4.1.2. Cable decoders

Concerning the future digital offer of the cable operators, the technical choices have already been made. CASEMA and MEDIAKABEL have chosen the same DVB decoder, the Eurobox standard (API, Open TV and CA, Viaccess) with standard DVB return path.

Table 5 : Conditional access choice of MEDIAKABEL

Name of Decoder	Eurobox (constructor: Sagem)
API	Open TV
CA	Viaccess
Available for sale/price	N/A
Available for rent/price	Yes
CA agreements	No

UPC though had also chosen a DVB standard decoder but using American standards for the return path, developed by Microsoft[17] (called TV-PC). However, as Microsoft is not ready with its set-top box, they have chosen an alternative provider, namely Philips. And, as they generally develop a two-vendor strategy, they probably also will work with a Motorola box. Microsoft's technology will be needed for middleware solutions for the provision of interactive services.

1.4.1.3. Terrestrial decoders

The DIGITENNE members decided to use an open standard based on EuroMHEG for their API, and to migrate as soon as possible to the expected common European API DVB MHP which is under development in the DVB MHP group. Experiments have started in the Netherlands with the now-available UK-profile of MHEG5.

[17] Microsoft has a 7% share in UPC.

The use of EuroMHEG was foreseen for the first phase of introduction; however today, the box might not be ready for the first phase of introduction of DVB-T, which is scheduled for 2001. The partners are thinking of redefining their choice. No more information is available on this issue. Would CANAL+ have a chance to see its SECA decoder chosen ?

1.4.2. 16 :9

With its new 16 :9 premium channel, CANAL+ hopes attracting new customer to its digital offer. Moreover, what equipment is concerned, the number of household with installed 16 :9 TV-sets follows a steady growth.

Table 5 : Number of TV households with 16:9 set

	1996	1998	1999
Dutch households with installed 16:9 set	229 000	417 000	653 000

Source : E.A.O./Estimation LENTIC

1.4.3. Portable reception

As already mentioned above concerning the DVB-T project of the DIGITENNE consortium, they consider portability as a real issue. They position their future offer on different specific niche markets where portability can make the difference : the second TV set market, inland shipping, yachts and caravans… This positioning comes of course together with a real determination to compete directly with the cable networks.

1.5. Conclusion

Three main points should be mentioned in mid 2000 that may influence further development of the digital TV market in the Netherlands:

MEDIAKABEL, an association of 8 mainly independent cable-operators, has launched the first digital TV offer on the cable.

CANAL+ has negotiated access to UPC's and CASEMA's networks for transmission of its digital signal starting from october 2000. They intend to force transition of analogue to digital reception for their current subscriber base.

UPC will start testing its digital offer in september and will commercialise it in October in Amsterdam. They intend to have 30.000 boxes distributed by the end of 2000, in first instance by swapping an important part of their analogue PPV subscribers and attracting their current chello customers to digital TV services (the settled computer to get chello services is also a cable modem).

The other main cable operators, essentially CASEMA also have announced launch dates but nothing is already effective.

The actual players, CANAL+ and MEDIAKABEL develop a quite agressive strategy, probably with the hope to capture a potential first mover advantage :

They both have developped an offer at a relatively low price

They both pursue differentiation strategies offering multiple subscription formulas.

Even though, the figures are not convincing yet (MEDIAKABEL has 15 000 customer in june 2000 and CANAL+ still has to start its offer on the cable), it seems that competition on cable is expected to be tough. Moreover, after the summer 2000, DIGITENNE, the consortium working on a project of DVB-T, is expected to get a license for digital terrestrial transmission. Their positioning will clearly in first instance pursue the development of a competitive digital platform to cable.

2. Key figures for the Dutch market

2.1. Country fundamentals

	1993	1994	1995	1996	1997	1998	1999
Population (millions)		15.382	15.459	15.494	15.567	15.654	15.760
Households (millions)		6.032	6.125	6.235	6.354	6.548	6.635
GDP (in Euros billions)		284.400	304.000	312.000	325.500	340.334	

Source : OECD

2.2. Equipment

As of 31 December	1993	1994	1995	1996	1997	1998	1999
TV households (millions)		5.622	5.727	5.848	5.973	6.168	6.263
TV households (% of total households)		93.2%	93.5%	93.8%	94.0%	94.2%	94.4%
TV Households with 2 TV sets or more (millions)		1.574	1.775	1.924	1.971	2.159	2.380
TV Households with 2 TV sets or more (% of TV Households)		28.0%	31.0%	32.9%	33.0%	35.0%	38.0%
TV Households with 16:9 Television sets (millions)		0.144	0.180	0.232	0.290	0.362	0.653
TV Households with 16:9 Television sets (% of TV Households)		2.6%	3.1%	3.9%	4.8%	5.8%	10.4%
VCR Households (millions)		3.800	4.097	4.198	4.299	4.636	4.825
VCR Households (% of TV Households)		67.6%	71.5%	71.8%	72.0%	75.2%	77.0%
Digital STB Households (millions)		0.000	0.000	0.020	0.150	0.160	0.200
Digital STB Households (% of TV Households)		0.0%	0.0%	0.3%	2.5%	2.6%	3.2%
IDTV Households (millions)		0.000	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%	0.0%
Digital Households (millions)		0.000	0.000	0.010	0.150	0.160	0.200
Digital Households (% of TV households)		0.0%	0.0%	0.2%	2.5%	2.6%	3.2%

Source : E.A.O./L.E.N.T.I.C. estimation

2.3. Television market estimates

Millions Euros	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*
Analogue TV Market							
Licence fees		336.000	356.000	359.000	370.249	380.538	438.879
Advertising		349.000	375.000	366.000	389.200	413.700	438.200
Subscriptions		58.000	65.000	55.000	74.000	88.656	94.515
Total analogue TV		743.000	796.000	780.000	833.449	882.894	971.595
Digital TV Market							
Licence fees		0.000	0.000	0.000	0.000	0.000	
Advertising		0.000	0.000	0.000	0.000	0.000	
Subscriptions		0.000	0.000	3.000	5.000	8.063	11.019
Total digital TV		0.000	0.000	3.000	5.000	8.063	11.019
TV Market							
Licence fees		336.000	356.000	359.000	370.249	380.538	438.879
Advertising		349.000	375.000	366.000	389.200	413.700	413.700
Subscriptions		58.000	65.000	58.000	79.000	96.719	105.534
Total TV market.		743.000	796.000	783.000	838.449	890.957	982.613

Source : E.A.O./Trends/L.E.N.T.I.C. estimation

2.4. Details of the subscription-TV market

Cable

	1993	1994	1995	1996	1997	1998	1999
Home passed (millions)		5.442	5.567	5.702	5.847	6.045	6.138
of which digital (millions)		0.000	0.000	0.000	0.000	0.000	4.911
Home passed (% of TV households)		0.0%	0.0%	0.0%	0.0%	0.0%	98.0%
of which digital (% of TV households)		0.0%	0.0%	0.0%	0.0%	0.0%	78.4%
Analogue Basic Subscribers (millions)		5.350	5.510	5.544	5.596	5.760	5.870
Digital package subscribers (millions)		0.000	0.000	0.000	0.000	0.000	0.020
Analogue Basic Subscribers (% of TV households)		95.2%	96.2%	94.8%	93.7%	93.4%	93.7
Digital package subscribers (% of TV households)		0.0%	0.0%	0.0%	0.0%	0.0%	0.3%

Source : E.A.O./L.E.N.T.I.C. estimation

Satellite

	1993	1994	1995	1996	1997	1998	1999
Satellite households (millions)		0.160	0.200	0.250	0.320	0.330	0.380
Satellite households (% of TV households)		2.8%	3.5%	4.3%	5.4%	5.4%	6.1%
Satellite subscribers (millions)		0.000	0.000	0.010	0.020	0.030	0.050
Satellite subscribers (% of TV households)		0.0%	0.0%	0.2%	0.3%	0.5%	0.8%
of which digital (millions)		0.000	0.000	0.010	0.020	0.030	0.050
of which digital (% of TV households)		0.0%	0.0%	0.2%	0.3%	0.5%	0.8%

Source : L.E.N.T.I.C. estimation