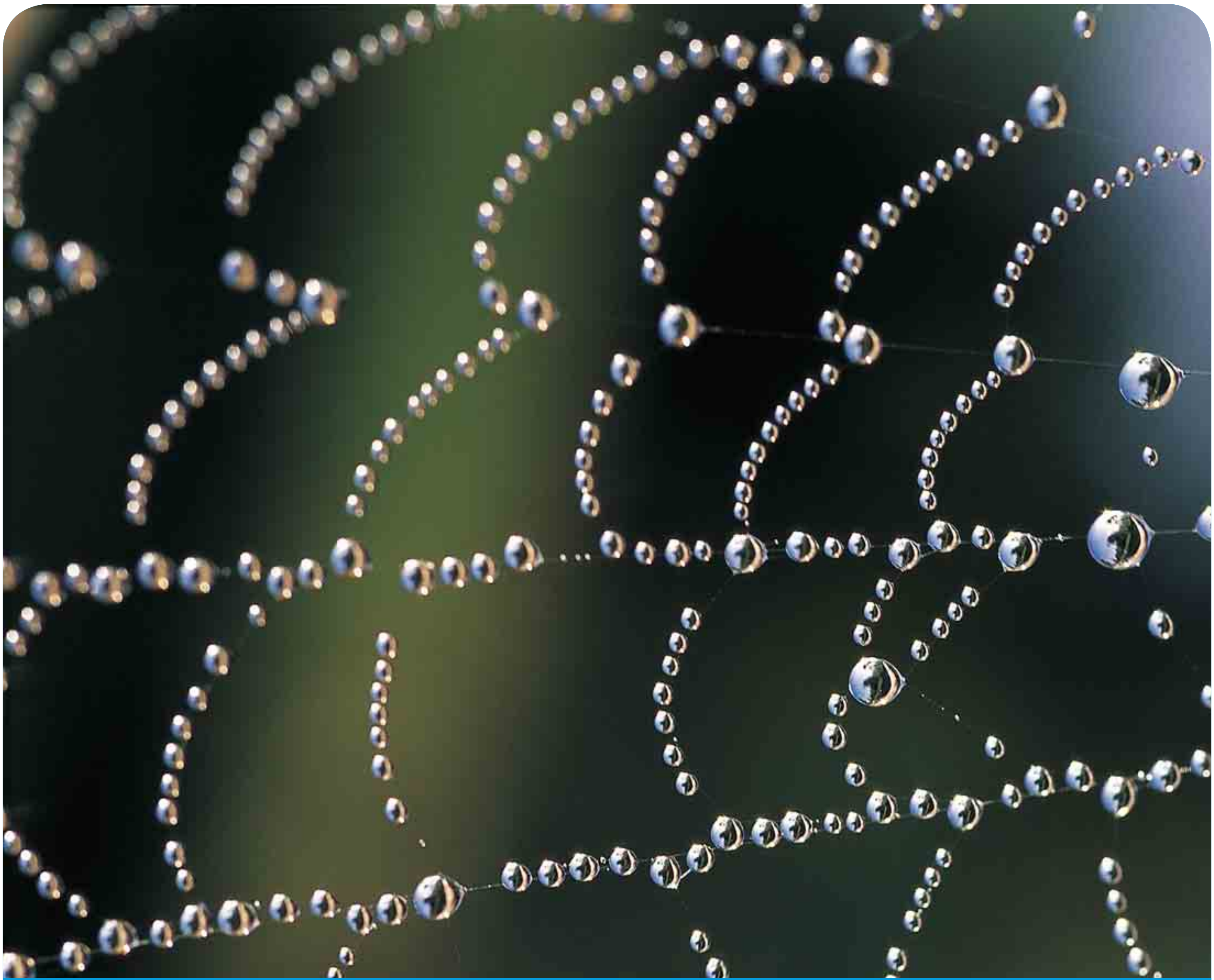

Digital infrastructures for the distribution of broadcasting services
English Summary

Report under the authority of The Dutch Ministry of Economic Affairs in cooperation with the Dutch Ministry of Education, Culture and Science

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Summary

Background and Key Questions

The Dutch Ministry of Economic Affairs (hereinafter referred to as: EZ) in cooperation with the Dutch Ministry of Education, Culture and Science (hereinafter referred to as: OC&W) has asked PricewaterhouseCoopers Advisory N.V. (PwC) to carry out a survey on the functioning of the infrastructure market for the distribution of broadcasting services, developments related to (the use of) these infrastructures and the government's role in these developments. EZ and OC&W asked PwC to address three key questions:

- What is the status of the broadcasting infrastructure market at the present time and how is this market expected to develop over the next three years?
- What are the key anticipated impacts of digitisation on the functioning of the broadcasting infrastructures market and which related issues are expected to emerge (e.g. in relation to the market forces)?
- In addition to the above, are there any other issues that should be highlighted in relation to the functioning of the market for broadcasting infrastructures over the short term (0-3 years) and over the medium term (3-6 years)?

This report will form the basis for a policy document that contains the cabinet's vision of the market for the distribution of broadcasting services. The Minister of Economic Affairs has informed the House of Representatives that this document will be submitted to it at the start of the new government's term of office.[1]

PwC has developed an overview of the current broadcasting infrastructures market on the basis of interviews and desk research using three different lines of inquiry:

- the value chain for broadcasting services in the Netherlands and, in particular, the impact of digitisation on this value chain;
- the infrastructures for the distribution of broadcasting services;
- the current range of available digital broadcasting products and services and the emergence of new products and services.

A review was subsequently conducted to determine the implications of broadcasting developments for viewers/listeners and to identify the anticipated trends and developments related to the use of digital media. Finally, the role of the government and the key areas requiring government attention in relation to digitisation are addressed.

The value chain and digitisation

Four groups of companies are involved in the value chain of infrastructures for the distribution of broadcasting services. Our analysis therefore makes a distinction between: producers of content, bundlers of content (broadcasting companies), service providers and distributors.

1 *Dutch Parliamentary Document II (2006), "Vragen en antwoorden over de EZ-begroting voor het jaar 2007" [Questions and Answers about the EZ Budget Estimates for 2007], 2006-2007 Assembly, 30800 XIII, no. 14, Appendix 1, Answer to Question 28.*

The developments in the value chain are strongly affected by the rapid advance of digitisation. Conversely, the pace and intensity of digitisation are related to developments in the broadcasting infrastructure market. Triggers that specifically motivate companies in the value chain to digitise include the improved signal quality, increased possibilities in terms of quantities (due to the fact that digital transmission requires less bandwidth than analogue transmission), expansion of services (additional functionality) and the possibility of invoicing consumers directly due to controlled access.

Digitisation has and will continue to lead to two fundamental changes in the value chain:

1. Convergence:
   First, digitisation makes it possible to distribute services – which were previously network-bound, such as TV and telephony – across a single network. This makes it possible for cable networks, originally only used for the distribution of radio and television signals, to offer broadband Internet access and telephony services. Conversely, networks that were originally intended to provide telecommunication services can now also be used to distribute broadcasting services.
2. Increased capacity:
   The transition from analogue to digital technologies makes it possible to make more efficient use of networks and therefore increases the available capacity. A well-known example is the ability of cable networks to transmit six digital channels instead of only one analogue channel across the same bandwidth. The reduction in the scarcity of transmission capacity, such as that experienced by analogue cable and the ether, allows for an increase in the supply of channels and (types of) services.

As a result, digitisation leads to increased opportunities for market initiatives and an increased dynamic in the value chain, which in turn unleashes a struggle for economic power. We anticipate multiple consequences.

- The competition between cable companies and telecommunication companies will increase over the coming years.
- Service providers and distributors will increasingly offer media and communication bundles in order to strengthen their position in traditional markets and at the same time to take on the competition in adjacent markets. This bundling of services by the broadcasting markets on the one hand and the fixed telephone service markets on the other hand, targeted at the intermediary broadband Internet access market, results in a multi-play supply provided by both the traditional KPN telephony provider and the cable operators. KPN and the large cable operators (UPC and Casema/Multikabel/Essent) would appear to have the best foundation required for them to gain a leading position as providers of bundled services. The strong starting position of each of these two types of network companies could result in a duopoly in the area of bundled services.
- Service providers and distributors make use of the freed up transmission capacity to offer a broader package of content and even to provide exclusive content. This results in increased demand for content and consequently strengthens the negotiating position of content providers in the value chain in relation to the service providers. In contrast, service providers are strengthening their position in the chain by acquiring access to other infrastructures (KPN) – for example through strategic acquisitions – or by increasing in size through mergers (cable operators).
- The emergence of the Internet as a content distribution medium creates opportunities for content owners and independent producers to sell content to consumers outside the bundler's (e.g. broadcasting companies') channel.

Comparison of infrastructures for the distribution of broadcasting services

Digitisation has two distinct impacts on infrastructure:

1. Digitisation creates new opportunities for the distribution of broadcasting services. Recently introduced platforms for the distribution of broadcasting services include IPTL via DSL, digital ether (DVB-T) and mobile broadcasting. This will be complemented by other platforms in the near future, such as Wimax and FttH.
2. Furthermore, digitisation allows more efficient use to be made of infrastructures originally based on analogue technologies. As a result there currently exists more capacity and functionality for (the distribution of) broadcasting services.

Cable is still the most important infrastructure for broadcasting services in the Netherlands at the present time, reaching 94% of Dutch households. IPTV via DSL is gaining ground and may be viewed as a promising newcomer for the distribution of broadcasting services. While the IPTV (ADSL2+) carrier has achieved national coverage, the characteristics of ADSL technology and the bandwidth required for IPTV are such that only approximately 60% of Dutch households can receive IPTV, for the time being.

Infrastructures that do not rely on wiring or cabling, satellite and digital ether, in part have different characteristics compared with cable and DSL. For example, satellite and DVB-T do not have a return channel, which precludes interactivity (e.g. for on-demand services or Internet functionality). In addition, both of these infrastructures are less suited to the delivery of Internet and telephony services. New wireless technologies such as UMTS/HSPA and Wimax do provide return channels and are therefore suited to interactive applications.

Satellite capacity (number of transmitted channels) is greater than that of cable and IPTV via DSL. On the other hand, DVB-T's capacity is very limited (currently approx. 25 channels in the Randstad and only public/regional broadcasting services throughout the rest of the Netherlands).

Fibre (Fibre to the Home) infrastructure, at a minimum, offers the same potential as cable and DSL, however, the limited coverage and the high initial investment costs mean that this infrastructure will not have a significant impact over the next 3 years.

The current (digital) service offering and the emergence of new broadcasting products and services

Analogue services currently still play an important role. Cable companies are the only providers of RTV packages via wired networks. In addition, FM and AM providers have been providing radio services over the ether for many years. From the outset, the analogue packages transmitted over cable in the Netherlands have been fairly broad. Analogue packages can be received by consumers without the need for a decoder and it is possible to view different channels on different television sets at the same time.

The digital packages available at the present time consist of an average of 120 channels that are often distributed in the form of a basic package that can be expanded with additional packages. Current price levels of different suppliers for comparable packages are reasonably close. The introduction of digital television has not caused prices to increase, at least for the time being: on the contrary, increasing competition firstly puts pressure on prices, and secondly, it creates differentiation in terms of the packages provided.

The transmission capacity freed up as a result of the digitisation of infrastructures makes it possible to distribute new products and services. At the present time, the services (packages with digital television and radio channels) offered are already being enriched with peripheral equipment such as the set-top box and the PVR (Personal Video Recorder) and associated services, such as the EPG (Electronic Programme Guide), VoD (Video-on-Demand) and Delay TV.

Interactive television and HDTV (High Definition TV) are considered as promising new services for the medium and long term. Fundamental integration of TV and radio with other communication services (e-mail, telephony) will also be a factor over time, in addition to the increased use of mobile functionality (music, video and radio via a mobile telephone or in the car).

Three long-term trends are evident that form the basis for the development of (digital) broadcasting services in general and television in particular. First, television will be transformed into an increasingly more intense medium. Aside from the traditional model of sitting back to watch television and flick channels, watching television will become a more active experience due to the fact that navigation through the available content (films, series, shows) will become increasingly easier and more user friendly. Furthermore, the addition of interactivity will make it possible to add a gaming element to television.

The second trend is the fragmentation of content and the decoupling of pre-packaged programme bundles (the channels) into separate programmes that the consumer puts together personally (using PVRs, VoD, Delay TV). Aside from the content produced by TV producers and broadcasters, which will retain its importance, the consumer will increasingly become a producer of content ('user-generated content'), which means that, in a manner of speaking, there are 16 million potential producers in the Netherlands.

The third trend is the fusion of the Internet and television at the service and equipment level. There are already examples of televisions that are capable of wirelessly playing files stored on a computer and websites that allow consumers to upload short films and to select the films that will ultimately be broadcast via a television channel. Over time we will only use 'dumb screens' whose design and size will primarily be determined by location (think of large flat screens in the living room, a smaller screen at the back of a car and a mini screen for the mobile telephone). The driving force behind these screens will be a plethora of equipment and services.

Digitisation and the impact on viewers/listeners

Digitisation of broadcasting services translates into an expansion and broadening of the range of both television and radio services provided. An important issue that arises here is: "Is the consumer getting what he/she wants?" Three elements are of particular importance to viewers/listeners: supply, price and clear insight into the available supply.

Digitisation also translates into an increase in supply. This increase affects the number of channels and also promotes the creation of new functionality and applications to enhance the user experience. These developments are still in their initial stages, but recent figures show that they are progressing rapidly. Digitisation could result in a decrease in supply for certain groups of consumers (particularly those that do not have a need for the additional functionality and quality provided by digital television and radio). However, the political establishment is looking into how to provide a good fit between supply and consumer demand. This is apparent in the commitment made by the cabinet to allow consumers to have a say at the broadcasting level. This would represent a shift in responsibility away from programme boards to the consumer.

Consumer prices for television and radio (via cable) are currently actively controlled. New providers of these services could put pressure on current rates. Furthermore, the increase in the bundled sale of TV, Internet and telephony services also puts pressure on consumer rates for broadcasting services.

Due to the growing supply, it is becoming more difficult to get a clear insight into the available supply. Aside from the traditional analogue RTV package, new services, infrastructures and service bundles play an increasingly important role. In particular, the increase in the sales of bundled services mentioned earlier, also indirectly lessens the consumer's ability to obtain a clear insight into available broadcast services.

The role of the government

PwC has identified three levels related to the digitisation of broadcasting that are important to the government and where it can intervene: market regulation, innovation/renewal and consumer interests. If government intervention is desirable, the government will have to determine the level at which it wants to intervene in the market and what the potential impact would be on other levels, since the three are highly interdependent.

The central role of the government in the area of market regulation is to ensure that there is a level playing field for all market players. The supervision provided by the NMa [Netherlands Competition Authority] and OPTA [Independent Post and Telecommunications Authority] is used for this purpose. Given the trend in marketing product bundles, it is important in terms of supervision to realise that potential actions related to individual services affect the supply of bundled media and communication services. In addition, we would like to highlight several points that require attention in relation to the application of the current European and national regulatory framework for the electronic communications sector. These are not so much related to the system selected by the supervisor for defining markets, determining if there exists significant market power and imposing appropriate restraints: rather, these points of focus are relevant to the application of such systems. For example, the intended flexibility of the European system is for the most part negated by the markets defined at the European level – which can only be deviated from with great difficulty. Furthermore, market analyses are highly time-consuming at the moment, which carries the risk that the supervisor will be overtaken by events, particularly in view of the rapid pace of developments in the telecommunication and media sector. Another issue that arises is whether the period during which the decisions based on the market analyses remain in effect (three years) provides market players and investors with sufficient assurance and whether the range of measures that the OPTA can impose is adequate.

There is a dilemma in relation to the government's role in the area of innovation. On the one hand, too little competition provides too little impetus (and need) for innovation as a means of fighting off competition and achieving improved margins. On the other hand, in the case of too much competition, the costs of innovation outweigh the expected additional profits. There is one aspect that the government definitely needs to look into: the evolution of prices and new services in the fixed telephony and broadband markets has, to a large extent, been motivated by the entry of new players in each market. In the case of the Internet, the ISPs in particular played an important role, for telephony it was the cable companies and in case of TV, it is the telecom companies. The incumbents of each market segment (KPN and/or the cable companies) had and will continue to have to follow.

The following describes how we view the government's role in relation to consumer interests:
- broadcasting as a medium for gathering news and influencing public opinion;
- the importance of an acceptable price for a specific package;
- the importance of freedom of choice and transparency.

The government's role is to secure/protect these consumer interests.

Focus points for the government in relation to digitisation

The market developments resulting from digitisation and the government's role sketched out above give rise to a number of points related to digitisation for consideration by the government.[2] The desired action to be taken by the government in relation to each focus point is identified: (1) Monitor, (2) Stimulate/Facilitate or (3) Intervene.

	Focus Point	Government Action
Market Regulation	I The trend towards two dominant (groups of) market players offering bundled services II Growing overlap in the responsibilities of government regulatory bodies	I Monitor II Monitor
Innovation	III There is a significant lack of clarity concerning copyright IV Digitisation of radio is off to a slow start in the Netherlands V Legislation, regulations and policy in markets that are subject to rapid technological developments VI Consumption of digital broadcasting services	III Intervene IV Stimulate/ Facilitate V Monitor VI Stimulate
Consumer	VII Protect consumer interests related to the social functions performed by media services VIII Guarantee a basic package (at an acceptable price) IX Transparency	VII Monitor VIII Monitor IX Monitor/ Stimulate

2 *The focus points are presented in arbitrary sequence.*

I. The trend towards two dominant (groups of) market players offering bundled services

KPN and the cable companies are the only enterprises that currently possess their own wired-access networks and are able to offer a broad package of services through their own networks. As a result, they appear to be best positioned to deliver media and communication services bundles. We expect that over the medium to long term, this market will be characterised as a market with two fixed infrastructures held by KPN and the cable companies respectively, with various other infrastructures existing around its periphery (satellite, UMTS/HSPA, DVB-H, digital ether and fibre). This trend towards two dominant (groups of) market players offering bundled services could have major implications in terms of market regulation and innovation. The role of the government in this respect consists of creating a level playing field for all market players.

In our opinion, this trend does not require additional government intervention for the time being, aside from the supervision currently provided by the regulatory bodies (EZ, NMa, and OPTA). However, in view of the importance of this trend to competition and innovation, the government needs to monitor this situation.

II. Increasing overlap in the responsibilities of government regulatory bodies

The increasing overlap in the responsibilities of different regulatory bodies is a point of concern for the government. This duplication can result in a lack of clarity and procedural complexities for market players. It can also lead to the inequitable treatment of market players by the government, with the resulting possibly negative impacts on market regulation.

There has always been an unavoidable amount of overlap in the tasks performed within the government. This overlap is currently increasing due to the trend towards market convergence, which implies extensive market changes. The level of collaboration itself between different government entities appears to be good at the present time, but in light of the abovementioned lack of clarity and procedural complexities and to prevent the risk of treating market players inequitably – in part due to the trend towards convergence – it is important for the government to monitor the division of tasks and the collaboration between various regulatory bodies.

III There is a significant lack of clarity concerning copyright

The current lack of clarity concerning copyright (particularly in relation to new services) can lead to reduced levels of innovation by market players in relation to digital broadcasting services or products.

Especially for infrastructure providers, there has been a lack of clarity. They presently lack full insight into the level of compensation due in exchange for the use of copyright of programmes and/or services. Due to this lack of clarity, infrastructure providers and other parties in the value chain are unable to gain prior insight into the costs associated with passing on new products and/or services. As a result, the business cases for new products and/or services are shrouded in uncertainty and infrastructure providers are likely to be less easily inclined to invest in (new) applications. In light of the fact that (new) applications are crucial for the development of the digital broadcasting market, this lack of clarity impedes the development of this market. It is therefore important that the government intervenes to reduce this lack of clarity.

IV Digitisation of radio is off to a slow start in the Netherlands

Aside from the fact that no commercial permits for TDAB frequencies (one of the radio digitising options) have as yet been issued, the limited interest on the part of market players also plays a role in the slow start-up of digital radio in the Netherlands. The government's role in this area (digitisation of radio) on the one hand consists of being sufficiently transparent and on the other hand of creating room for innovation. Despite the fact that the government has already launched several initiatives in this area, it remains important to be as transparent as possible, for example in relation to the assignment of frequencies. It therefore continues to be appropriate for the government to play a stimulating and facilitating role in this area.

V Legislation, regulations and policy in markets are subject to rapid technological developments

Since the government wants to stimulate innovation, it is important that regulations, the application of these regulations and supervision be clear to market players. Via the coordination or insistence on collective and/or open standards, much clarity is being created. However, given the current pace of developments in the field of broadcasting, it is questionable whether the government should play an active role in coordinating or imposing standards. In addition, in view of the limited size of the Dutch market, the Dutch government plays an even more modest role than governments in larger countries. Furthermore, the European Commission has indicated that it does not consider it necessary to impose standards. In consideration of the above, it is important for the government to monitor that there is sufficient room for innovation and that any unnecessary lack of clarity be eliminated.

VI Consumption of digital broadcasting services

In relation to the consumption of digital broadcasting services, we consider it desirable that the government continues to play the stimulating role it has currently adopted. The penetration of digital television in the Netherlands had a slow start in comparison with other countries, however during this year it has been very successful. To maintain momentum in terms of growth in number of users and supply, it is also important for the government to stimulate the consumption of digital broadcasting services. Digital radio in the Netherlands is still in its infancy. To encourage market players to innovate and to prevent the Netherlands from lagging behind other countries, it is essential for the government to play a stimulating role.

VII Protect consumer interests related to the social responsibilities of media services

This is a point of focus at the present time and it will always remain a point of focus for the government to protect the public interests related to the social functions performed by media services. The public interest in broadcasting services as a medium for gathering news and forming public opinion deviates from the primary interests of the private parties delivering the broadcasting services. This is why the government needs to monitor these public interests.

VIII Guarantee a basic package (at an acceptable price)

Current market developments, in terms of a market with increased competition, appear to be moving towards integration with the supply of RTV services. Increased market forces normally lead to increased pressure and consequently put pressure on rates. An increasing number of suppliers are, in the meantime, offering a low-priced basic package that includes all popular channels (KPN Digitenne, Tele2, CanalDigitaal). Due to the government's role related to the public interests mentioned above, the government has a responsibility to ensure the availability of a basic package at an acceptable price. In view of existing supervision and regulations, it is currently sufficient for the government to monitor the supply and the associated rates.

IX Transparency

It is the government's responsibility to monitor the importance of freedom of choice and transparency for viewers/listeners. We currently do not perceive a role for the government in terms of the transparency of the supply and switching thresholds. Freedom of choice and transparency must continue to be monitored on an ongoing basis by the government, however. In view of the fact that digital radio is not widely known, the government could consider measures designed to make digital radio more known by adopting a stimulating role (also see focus point VI).

*connectedthinking

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