



Report

A closer look at Online video platforms

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Summary

The Netherlands Authority for Consumers and Markets (ACM) has conducted a market study into ‘online platforms that stream videos’: websites and apps that offer videos that users can watch online. Examples are YouTube, Facebook, Dumptert (a Dutch video sharing site owned by Telegraaf Media Groep), and Vimeo. With this study, we wanted to answer two main questions:

1. How does the market for online video platforms function?
2. What anticompetitive risks and risks to consumers exist in this market?

In this report, we present the results of our market study in two parts.

Part 1: How does the market for online video platforms function?

We describe the 10 most important online video platforms that are active in the Netherlands. These platforms differ from each other in the content that they show, in the extent to which they are open to content from third parties, and in the way they offer their services and generate revenues. These differences in business models determine with whom they compete and how they connect the three sides of their market. Those three sides are:

- offering video content
- the use of video content by consumers
- the online advertising chain

Offering video content

Many different content providers are active on online video platforms. These include more traditional participants such as broadcasters and film distributors. However, they also include other parties that produce content (whether or not professionally). More and more platforms have a business model in which third parties that offer content share in the advertising revenues. In this way, content providers gain new opportunities to market their content.

The use of video content by consumers

Online video platforms compete for consumer attention: the consumers of the video content. These users may pay a subscription fee. Alternatively, they may watch ‘free’ content and see advertisements in return. These advertisements generate revenues for the platform and the content providers. In online advertising, consumer data are becoming increasingly important. We explore this in this study.

The online advertising chain

For a lot of online video platforms, both large and small, online advertisements are the main source of income. There are many different types of online advertising space. Online video advertisements represent a small but fast-growing part of the online advertising space.

We distinguish two ways to market online advertising space:

- Using technical tools that automate the trading process to a very high degree, and, by doing so, match supply and demand (programmatic trade). Video platforms auction their advertising space in real-time with ‘selling technology’. Advertisers make use of ‘buying technology’.

- Through other methods (non-programmatic trade). This includes ‘classic’ direct buying from video platforms by e-mail or by phone. It also includes buying through intermediaries that bundle advertising space from many different video platforms and then resell it to advertisers, sometimes through advanced auctions.

There are video platforms that offer the technology to market advertising space. Advertising systems differ in the extent to which they are open to technological solutions from other market participants. For instance, the advertising space on Facebook is only available through Facebook’s systems.

The role of consumer data in online advertising

More and more often, video platforms use consumer data, when selling advertising space. With these data, advertisers determine what advertising space they want to buy, and at what price. By using these data, intermediaries are able to sell advertising space based on the relevance of the advertisement for the user. Market participants collect different types of consumer data, and in different ways. By making a purchase or creating an account, users provide information themselves. Browsers and smartphone apps transfer data automatically. Furthermore, market participants are able to buy or exchange data.

Market positions

At the end of part 1, we identify the market positions of the most important competitors in the field of advertising space and technological solutions to market this advertising space. YouTube and Facebook are the biggest providers of online video advertising space in the Netherlands. Google is also a major provider of technology in the Netherlands.

Part 2: Risk analysis

We have identified scenarios in which anticompetitive risks could occur. We have subsequently investigated whether these scenarios actually occur in markets. We have analyzed three scenarios:

- In scenario 1, the collection of consumer data by online video platforms leads to market power (and the potential abuse thereof).
- In scenario 2, market distortion occurs because a video platform bundles advertising space with its own technology to market this advertising space. An example of market distortion is the exclusion of competitors.
- In scenario 3, publishers are highly dependent on a large market participant for their reach and revenues.

Scenarios with wider market dimensions were not included in this study.

Scenario 1: market power through data collection

This risk occurs if incumbent market participants get a head start, and new entrants will never be able to catch up. Yet, our findings suggest that even though data are becoming increasingly important in online advertising, they do not seem to be a necessary prerequisite for entering the video platform market. Competitors are able to enter this market, and then subsequently start collecting data with which they generate advertising revenues. This possibility is not affected by the data held by other market participants. Therefore, the relationship between data collection and market power requires assessment on a case-by-case basis.

Scenario 2: market distortion due to the bundling of advertising space with trade technology

Are large video platforms able to harm competition on the market for trade technology, if they only open their advertising space using their own technological solutions? Such harm is possible, if a platform uses its dominant position in advertising space to gain a dominant position in trade technology. However, this scenario does not seem likely. There is no platform with a dominant position in advertising space. Furthermore, sufficient competing methods of trading advertising space are available in the market. There seem to be few barriers to entry on the market for the technology that is used to market advertising space.

Scenario 3: dependence on a large market participant

We have assessed whether publishers are highly dependent on a large market participant for their reach and advertising revenues. Currently, this does not seem to be the case. Publishers are also able to reach users in other ways than through large market participants such as Facebook and Google. Those large market participants do not seem to apply access conditions that limit publishers in their opportunities to compete.

Scenarios: conclusions and considerations

Currently, we do not see any anticompetitive problems in the market that could be related to the three investigated scenarios. There is sufficient competition between market participants, and the market is sufficiently dynamic. However, the likelihood of anticompetitive problems and the impact thereof are strongly related to further market developments. We will keep a critical eye on such developments over the next couple of years.

Risks of unfair general terms and conditions

Lastly, we have checked the general terms and conditions of online video platforms against the European 'Directive on unfair terms'. All reviewed general conditions turn out to contain unfair or potentially unfair conditions. Those conditions could, directly or indirectly, put consumers at a disadvantage. Most risks are found with international providers. ACM wishes to tackle this problem together with consumer authorities at international level. ACM will also focus on informing Dutch consumers about these risks.

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1 Introduction: background of this market study

The topic of 'online consumers' is high on ACM's agenda. Consumers use the internet to look for information, make purchases, watch movies, and play games. And they increasingly use it to listen to music, and watch television, films, vlogs, and other video content. Online platforms make all of these transactions possible. They offer consumers major benefits such as making it easier to compare, review, and purchase products and services from a wide range, but also the opportunity to become active as a provider of goods and services themselves (think, for example, of Airbnb, or, as in this market study, of vloggers).

Questions about online platforms

An online platform is attractive for consumers if its offerings are abundant and varied. The more consumers access a platform, the more attractive it becomes for a provider to offer its products or services on that platform. These effects thus reinforce each other. In this way, economies of scale and efficiencies arise for consumers and business. In practice, we see that online platforms can become very big very fast because of these so-called network effects. These strong positions on the market raise questions, both among consumers and businesses as well as among national and international competition authorities. Do new initiatives have fewer opportunities? Are larger platforms able to bundle services, which can then only be used in combination with the platform? And does this 'market power' not lead to idleness, warding off competition, and a lack of innovation?

A closer look at online video platforms

Based on literature and efforts of the European Commission and other authorities, much is already known about online platforms in general¹. ACM has taken a closer look specifically at online video platforms. It is a relatively new, very dynamic, and fast-growing market. Consumers are spending more and more time on online video. This market is thus becoming increasingly important in economic terms, when thinking of, for example, advertising expenditure. There is a constant stream of new initiatives and new market participants. Think of the 2016 launch of Facebook Live in the Netherlands², or the development of video platforms by incumbent media firms. There is a lot of competition between international and national participants, and ACM has received indications about anticompetitive risks in this sector.

How did we carry out this market study?

ACM is authorized to carry out market studies.³ As an integrated regulator, we have looked at online video platforms from a competition-law perspective and a consumer-protection perspective. We have looked not just at the platforms themselves, but also at the firms that are somehow connected to them, such as media agencies, digital marketplaces where advertisement space is bought and sold, and producers of video content.

In the market study, ACM pays attention to:

- the distribution of online videos
- the various business models of platforms (e.g. subscription-based or free)

¹ See, for example, 'Competition Law and Data' (research report from the German Bundeskartellamt (Bkarta) and the French Autorité de la Concurrence), May 2016, and ACM's contribution 'Large platforms, big problems?', A consideration of online platforms from a competitive perspective', September 2016.

² <http://www.marketingtribune.nl/media/weblog/2017/01/2017-wordt-het-jaar-van-live-video/index.xml> (in Dutch)

³ The statutory basis for this instrument can be found in Section 2, paragraph 4 of the Establishment Act of ACM.

- the various advertisement options on platforms
- the role of user data in targeted advertisements

For this study, we held discussions with market participants, independent experts, and scientists. Some participants were asked to provide ACM with additional information in writing. We have also taken a closer look at the literature about these types of markets.

Contents

This study consists of two parts, in which we answer our two main questions:

1. How does the market for online video platforms function?
2. What risks exist for consumers and for competition on this market?

In part 1, we describe the [10 most important online video platforms](#) in the Netherlands, their business models, and how they connect the three sides of their market: [content providers](#), [users/consumers](#) and the [online advertising chain](#). We describe the trade in advertising space and the role of [consumer information \(data\)](#) that comes with it. We explain the difference between [programmatic trade](#) (by means of 'buying' and 'selling technology') and non-programmatic trade (other methods). At the end of this part, we identify the [market positions](#) of the most important competitors in the field of advertising space and technological solutions.

In part 2, we investigate three scenarios that could lead to anticompetitive risks. In [scenario 1](#), the collection of consumer data by online video platforms results in market power (and the potential abuse thereof). In [scenario 2](#), market distortion arises because a video platform bundles advertising space with its own trade technology. In [scenario 3](#), publishers are highly dependent on a large market participant for their reach and revenues. Lastly, we comment on the [general terms and conditions of online video platforms](#).

2 The functioning of online video platforms

In this part of the report, we describe the market for online streaming video platforms and its functioning.

First we consider the [market characteristics](#): what online video platforms are operating on which markets, what are their business models, and how do they compete with each other? Video platforms often compete in multi-sided markets. We therefore describe how markets are defined in multi-sided markets, as market definition is an important intermediate step in assessing any participants' dominant position.

We then consider the various sides of the market in detail. Online video platforms connect various participants with each other: video content providers with consumers, content providers with advertisers, and advertisers with consumers. After describing the market characteristics of online video platforms, we describe in turn:

- [The content side of platforms](#);
- [The user side of platforms](#);
- [The online advertising side of the platforms](#).

Advertising is the main source of income for many online video platforms. To generate this income, the platforms increasingly make use of consumer data. ACM has therefore conducted a more in-depth analysis of the functioning of the online advertising chain, and of the role that data collection and processing play in it.

Finally, we have mapped out the market positions of the key competitors. This is useful when assessing the possible anticompetitive risks (see [part 2 of this report](#)).

2.1 Market characteristics of online video platforms

In this market study, ACM has examined the market for online video platforms in the Netherlands. These platforms are internet sites and mobile apps on which video content can be displayed and viewed.

This section covers the following:

1. [The main online video platforms in the Netherlands;](#)
2. [The business models of these platforms;](#)
3. [The way in which these platforms compete;](#)
4. [The consequences of market characteristics for market definition.](#)

2.1.1 Main online video platforms in the Netherlands

Below, we describe the main online video platforms at national level.⁴ This description includes the characteristics and business models of these online video platforms.

Dailymotion

Dailymotion is an online video platform on which users can find, share and upload professional and amateur videos. The content originates from users, independent content providers and partners. Dailymotion is viewed by three billion people worldwide each month. Display and video advertisements shown before or within video productions contribute to Dailymotion's turnover. The Dailymotion video player can be adapted to meet the requirements of sites that use it.

Dumpert

Dumpert is an online video platform of Dutch media company Telegraaf Media Groep (TMG). The content on Dumpert is generated by users, but there is editorial scrutiny. Other sources also post videos. Since Dumpert is an aggregator, content is gathered from the whole of the web. Dumpert's business model consists of pre-roll advertisements and branded content. Display advertisements are also shown. In addition to Dumpert, TMG also operates Telegraaf TV and Telegraaf Vandaag, on which self-produced news videos are shown.

Facebook

Facebook is a social network site on which users can share messages, pictures, videos and other content with each other. Although the platform is not specifically aimed at showing videos, video content, and video advertisements are increasingly shown. The content and advertisements are prompted by the interaction which Facebook has with the consumer through Facebook apps and products and/or services offered by third parties. Consumers can choose not to see any targeted advertisements, advertisements from particular advertisers and/or for certain products or services. The advertiser determines the formats of the advertisements. Facebook does not draw any

⁴ In this section, we discuss various providers of online video services that, strictly speaking, do not fulfil the economic definition of a platform because they only provide services for one type of customer. These are online video services on which users cannot post content themselves and on which no advertisements are shown. Specifically, these are: Netflix, Videoland (a video-on-demand service owned by RTL Nederland), NPO+ (the paid video service of Dutch public broadcaster NPO), NLziet (an on-demand platform offering programmes from all three major broadcasting groups in the Netherlands (NPO, RTL and SBS), and RTL XL premium. As these providers offer users video services and may therefore compete with genuine video platforms, ACM has included them in the market description for the sake of completeness.

distinction between text, picture or video advertisements. All formats compete for the same advertising space. Facebook does not offer the possibility of placing advertisements alongside video content. The advertiser's bid and the quality of the advertisement determine where an advertisement is placed on the website.

Netflix

Netflix is an online video streaming service offering movies, series, documentaries and other video programs. The business model consists solely of the sale of subscriptions that can be cancelled monthly. Netflix does not sell any advertising space. Netflix focuses on the production and distribution of series/films with the aim of providing the best possible overall offering. In that way, it attracts more subscribers, and existing subscribers continue to value the service. Content is commissioned or purchased under license. Netflix has a relatively large number of own productions (Netflix originals), which result from outsourcing to third parties or from entirely in-house production.

NLziet

NLziet is the online service of Dutch television stations NPO, RTL and SBS. It enables viewers to watch series, documentaries, drama, reality television, current affairs, talk shows and entertainment from the above television stations on a catch-up or pre-broadcast basis. Subscribers pay a monthly subscription fee and do not see any advertisements. The NLziet offering is being expanded to include live television in 2017.⁵

NPO gemist and NPO+

NPO has various several online video platforms. One of these is the NPO gemist catch-up TV channel of the Dutch public service broadcaster. This service is free and also carries advertisements supplied by STER, the provider of advertising for the public broadcasting system in the Netherlands. In addition, there is NPO+, a video service with higher picture quality and no advertisements that is offered on a subscription basis.

RTL XL

RTL XL is an online catch-up service from RTL Nederland for programs broadcast on the RTL television stations. RTL's business model consists of the sale of advertising and subscriptions. The service has a variant on which the programs can be viewed free of charge with commercial breaks. There is also a paid variant, RTL XL Premium, on which the programs can be viewed without advertising. All video content from RTL Nederland can be found on the RTL XL online platform. The platform includes RTL Gemist, films and series. RTL XL offers online advertising space, which can be combined with advertising on the RTL television channels.

Vimeo

Vimeo is an online video platform on which content providers can upload their videos and share them with viewers. It operates both free and paid subscription models. Paid services supplied to content providers are Vimeo OTT and Vimeo On Demand. Content providers can thus create their own audience and/or bring an audience across from other platforms which lack the technology. Vimeo On Demand enables third parties to monetize their own content by means of paid subscriptions taken out by viewers. In this way, the content provider sells directly to the purchaser. Both the content and the types of content provider on Vimeo are very diverse. Vimeo focuses mainly on providers of

⁵ TotaalTV, NLziet moet in 2017 met online live tv doorbreken, <http://www.totaaltv.nl/nieuws/nlziet-moet-in-2017-met-online-live-tv-doorbreken/>.

serious content (e.g. churches, government bodies, start-ups, and fitness instructors providing content with a particular purpose). In this regard, Vimeo differs from YouTube, which also shows 'less serious' videos. Vimeo focuses on content of high technical quality, for example as a result of the type of camera used. The level of the content is between user-generated and professional. Vimeo offers no advertising in the form of advertisements shown before, during or after the video productions.

Videoland

Videoland is an online video service from RTL Nederland that claims to have the largest and most varied offering of series and movies in the Netherlands. Videoland offers thousands of titles from the Netherlands and abroad and can thus serve a large number of users. Videoland uses a business model in which subscribers can watch paid-for series and movies. Videoland is also increasingly active in the production of its own series (e.g. Zwarte Tulp and Nieuwe Tijden).

YouTube

YouTube is an online video platform owned by Google. It is a site and an app on which users can view and publish videos free of charge. YouTube offers advertising space before, during and after the viewing of video productions. Users who publish a video production on the site can decide whether to share in the advertising revenues which YouTube generates with their videos. Content ID enables content owners to easily identify their content on YouTube and decide whether and how to generate earnings from their own content. This system also makes it possible to identify content that breaches content providers' copyright and to take appropriate action.

2.1.2 Business models of online video platforms













In this section, ACM discusses the main features of the business models of online video platforms.

Characteristic differences

The characteristic differences between the business models lie both in the method of payment for the services and in the types of content and content providers on which the platforms focus. There are platforms that only produce their own content or purchase content and sell it on to viewers (with or without added advertisements). These platforms are to some extent comparable to traditional television channels and are one-sided in nature. There are also platforms that use a two-sided model offering third parties ('content creators') the possibility of posting their content for viewers to watch. The business models range from purely advertising-based (such as YouTube) to models that rely solely on income from subscribers (such as Netflix) or from the sale of content on demand (such as the video-on-demand services provided by Vimeo). There are also hybrid forms of these business models.

Figure 1 classifies the examined video platforms on the basis of the aspects described above. The various aspects are assessed in greater depth below.

Figure 1: Platforms and associated income and number of sides

	Advertising model	Subscription or payment model
Closed, 1 side (focused on viewer)	 	   
Open, 2 sides (focused on viewers and content creators)	   	 

The platforms examined by ACM use two different business models: an advertising model and a subscription or payment model.

The advertising model

The advertising model is characterized by the income generated from the sale of advertising space on the platform. Digital platforms boost the effectiveness of advertising campaigns by making it possible to target specific groups, based on the personal data supplied by consumers themselves. Online video platforms that use this business model include Facebook, YouTube, Dumpert, RTL XL and NPO gemist.

The subscription or payment model

In this model, the platforms offer a service or product directly against payment of a regular fee or a fee per consumed unit. There are no other participants involved in supplying these services. Examples of services that use a payment or subscription model are Netflix, Videoland, Vimeo, NPO+ and RTL XL Premium. In the case of Netflix and Videoland, subscribers pay a fixed monthly fee that provides unlimited access to movies and series. NPO+ and RTL XL also charge a monthly subscription fee. Vimeo also uses a subscription model but distinguishes itself from others in that it is not the viewers but the content providers who pay for the ability to upload content.

Another key aspect of the business model is the extent to which the online video platforms allow content creators to show their content free or for payment on the video platform.

Focused only on the viewer

There are online video platforms that focus mainly on selling content they have produced themselves or reselling content purchased from content providers. These platforms have a closed character on

the content side because not everyone can post content on the platform. The following platforms are examples of this: NPO uitzending gemist, RTL XL, Netflix and Videoland. Indirect network effects between the content side (see 2.1.3) and the viewer side play no role in these platforms.

Focused on viewers and creators

Another part of the video platforms is aimed mainly at offering an open platform on which creators can post content. For example, anyone with an account can post content on YouTube, Facebook, Dailymotion, Dumpert or Vimeo. The content can range from family videos and vlogs to professional or semi-professional productions. The posting of that content can be free of charge (as in the case of YouTube, Dumpert and Dailymotion) but can also be paid for, as in the case of Vimeo.

2.1.3 Competition between online video platforms

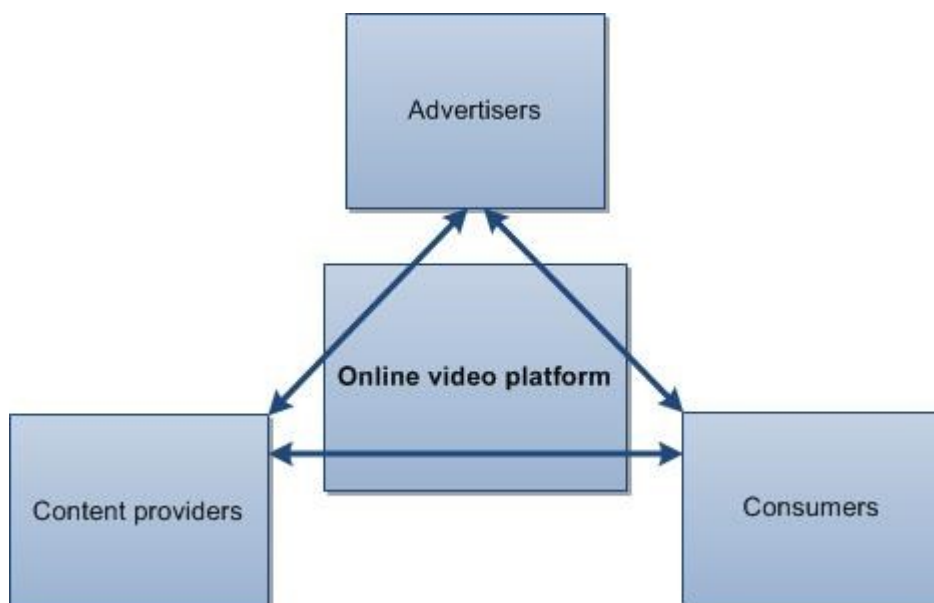
In the previous section, we have classified the business models of different online video platforms in various main categories. Below, we consider the way in which online video platforms compete with each other.

Online video platforms are part of multi-sided markets (see Figure 2). On the basis of the business models described above, we can distinguish the following types of markets on various sides of the platforms:

- Markets in which online video platforms compete with each other for the attention of viewers.
- Markets in which online video platforms compete with each other for 'content attractive to viewers', which is offered by content providers.
- Markets in which online video platforms compete with each other in selling online advertising space.

These different markets and the platforms' competitive positions are closely associated with each other, however, due to the multi-sided character of the platforms. Below, ACM outlines the positions of the various platforms in the different types of market.

Figure 2: The multi-sided nature of an online video platform



Multi-sided markets and network effects

One important characteristic of multi-sided markets is the presence of indirect network effects where one side of the market takes account of the activities of the other. Advertisers' choice of a platform is prompted by the number of users and the type of viewers on a platform. There are also certain platforms that are attractive to certain advertisers due to the content they provide (a sport-themed channel, for example, is attractive to sportswear suppliers).

Indirect network effects are not equally strong on all platforms. For example, in the case of platforms using a subscription/payment model, indirect network effects will generally play a less important role, or will even be absent. Direct network effects similarly do not occur, or do not occur to a large extent, on every platform. Whether a particular platform attracts more users will be important for its users, in the case of Facebook, but for NPO gemist users, it will not be important. After all, the users of NPO gemist have no contact with each other, whereas Facebook users do.

Competition on the consumer or viewer side

All online video platforms compete with each other for the attention of viewers, as they depend on viewers for their income. In the case of platforms with an advertising model, the number of actual or potential viewers is one of the factors that determines advertising income. However, viewers have only a limited amount of time available, which they divide among different platforms. In that sense, online video platforms compete not only with each other for the attention of viewers, but possibly also for the attention of viewers on traditional media and with other providers of video services such as Netflix and Videoland. In practice, over the past ten years, the average time consumers spend watching television has remained steady at around three hours per day⁶, with the proportion of that time devoted to delayed viewing and video on demand gradually increasing. There is no systematic measurement of the total time devoted to watching all online video platforms. Research by Telecompaper⁷ shows that consumers in the Netherlands spent approximately 35 minutes per day watching video content via the internet in 2016⁸ and watched an average of 109 minutes of live TV per day.

Competition on the content side

Attractive content is extremely important to gain viewers' attention. Online video platforms compete for attractive content in various ways.

Platforms aimed primarily at showing self-produced content (such as NPO gemist, RTL XL and NLziet) are not active as buyers of content, but are active as providers of content for viewers. The content they show has generally also been available on other channels (such as TV). Platforms aimed at showing third-party content without payment by viewers generate income in other ways, such as charging for the uploading of content (Vimeo) or selling advertising space with the uploaded content (YouTube, Dailymotion). All platforms that show third-party content therefore have a relationship with content providers in some way or other. We discuss the main providers of content in the Netherlands in section 2.2.

⁶ Stichting Kijkonderzoek, Annual Reports 2006 – 2016. <https://kijkonderzoek.nl/jaaroverzichten>.

⁷ Telecompaper, Video Behaviour of Dutch Consumers 2016 Q4.

⁸ This includes watching TV shows, movies, series and short videos on the internet. Viewing of video-on-demand services from providers such as Netflix and Videoland and from providers of television signals (e.g. Ziggo and KPN) is not included.

In addition, there are also participants operating on the content side that resell third-party content (such as Netflix and Videoland). They compete particularly with each other and with more traditional media channels in the purchasing of specific content, such as rights to show movies, series or sport. These platforms therefore operate as purchasers of specific content, for which they pay the content providers. However, both Netflix and Videoland are also increasingly active themselves as producers of content.

Competition on the advertiser side

Not all platforms are active on this side, because only some of them use an advertising model. The platforms with an advertising model compete with each other in the markets for online advertisements, where they offer advertising space on the websites that they operate. The platforms compete with each other and possibly also with other media. The advantage of online advertising compared to advertising on traditional media lies in the potential to reach specific groups of individuals and even specific individuals on a targeted basis. This increases the value of an advertisement for the advertiser. For the viewer, advertisers can create both positive and negative value. On the one hand, the viewer has the advantage that the advertisements he sees are more relevant to him. On the other hand, a viewer may be irritated if he is overwhelmed by advertisements. The platforms therefore aim for an optimum amount of advertising that maximizes their revenues without causing viewers to switch off.

It can be seen from the above that the examined online video platforms we examined in different markets, compete with each other on various sides of the platforms and possibly also with other services. Also, it is clear that the competitive behavior on one side of the platform is partly influenced by the competition situation on other sides. These interactions are caused by indirect network effects. In the following section, we will deal in greater detail with the consequences of the indirect network effects for the market-definition method used in multi-sided markets.

2.1.4 Market definition in multi-sided markets

The main aim of defining relevant markets is to identify the products and/or services that exert competitive pressure on each other. By defining a relevant market, it is possible to identify a group of products or services that are substitutes for each other to such an extent that the companies that supply these products and services can be seen as competitors. This means they restrict each other's potential to increase prices, limit quantities, and/or lower quality.

One or more relevant markets

A recurrent question in the definition of relevant markets in multi-sided platforms is whether a relevant market must be defined on both sides of the platform or whether it is sufficient to define one relevant market encompassing both sides of the platform. Filistrucchi et al. answer this question on the basis of a distinction between so-called transaction markets and non-transaction markets⁹. Transaction markets exist when transactions take place between participants on both sides of a platform. Examples are hotel booking sites, which facilitate transactions between consumers and hotels, or credit card systems, which facilitate transactions between consumers and retailers. Non-transaction markets are characterized by the absence of a transaction between participants on both sides of the platform. Examples of these are newspapers. Newspapers sell advertising space to

⁹ L. Filistrucchi, D. Geradin, E. van Damme, P. Affeldt, Market Definition in Two Sided Markets – Theory and Practice, *Journal of Competition Law & Economics* (2014) 10 (2): 293-339.

advertisers and printed news bulletins to readers. However, no direct transactions take place between the advertisers and readers via the platform.

According to Filistrucchi et al., in the case of transaction markets it is sufficient to define one relevant market encompassing both sides of the platform, since in that case a platform is active on both sides of the market or not at all. In order to be able to facilitate payment transactions, the platform must be able to provide services for both sellers and buyers. On both the seller side and the buyer side, there are possible alternatives for the payment transaction. The question of whether the alternatives are also substitutes depends in turn on whether they are seen as an alternative for both sellers and buyers. They only form part of the market if both see it that way. The substitutes, too, must therefore be active on both sides. That means the size of the relevant market is the same on both sides of the platform.

In the case of non-transaction markets, that is not necessarily so. For example, it is conceivable that, from the viewers' perspective, free-to-air television (which is financed from advertising revenues and for which viewers do not pay the provider) constitutes a substitute for pay television (for which viewers do pay the provider but which carries no advertisements). In that case, the provider of free-to-air television and the provider of pay television would both be active in a market for television services for viewers, while only the provider of free-to-air television operates in a market for the supply of advertising space. He may compete in that market with providers of advertising space on other media. In the case of non-transaction markets, the platform therefore offers various products or services to different types of end-users on both sides. The same platforms that compete with each other on one side of the market therefore do not necessarily encounter each other in markets on the other sides. In the case of non-transaction markets, that makes it necessary to define a relevant market on both sides of the platform. This is the only way to make a correct assessment of the competitive pressure that a platform experiences.

In ACM's judgement, the online video platforms fall within the category of non-transaction markets. A platform such as YouTube, for example, allows the user to view a music video without entering into a transaction with the producer of that music video. At the same time, YouTube sells the advertiser the possibility of serving an advertisement to the user who may, but will not necessarily, enter into a transaction with the advertiser as a result. Even if the user enters into a transaction with the advertiser, it will not be on the YouTube platform. The same analysis applies to the other online video platforms, although not all platforms operate on all three of the sides referred to in section 2.1.3. NPO gemist, for example, does not offer the possibility of uploading content and Vimeo provides no advertising services. This means that, in a competition analysis, relevant markets must be defined on the various sides of the platforms.

2.1.5 Summary

It has been discussed above that online video platforms differ from each other with regard to, for example, the content shown, openness to content and the way in which they provide their services and generate income. These differences in business models determine with whom and how the platforms compete. The multi-sidedness of their business model and the fact that online video platforms do not facilitate transactions between participants on different sides of the platform mean that it is possible to define separate relevant markets on different sides of the platforms in which the platforms compete with each other and with other participants. This concerns the user side, the advertiser side and the content provider side. In the analysis of players' market positions in these relevant markets, account must be taken of the fact that interactions between these various relevant

markets exist as a result of indirect network effects.

2.2 The content side of the market

An extremely wide range of different types of content is offered on online video platforms. It ranges from feature films, series, television programs, music videos, documentaries, short news items, instructional videos, promotional videos, and amateur videos, to vlogs and family or association videos. The providers are therefore very diverse. ACM has interviewed a number of content providers or their representatives.

In addition, a substantial part of the content on online video platforms is supplied by an extremely diverse group of creators. These may be consumers, but also businesses that want to display their own video material, such as advertising agencies, film makers, training institutes, associations, sport federations and many other organizations.

Below, we first describe which participants offer video content on online video platforms in the Netherlands. Then we deal with these participants' business models.

2.2.1 Providers of video content

Providers of video content include consumers, distribution companies for films and series, broadcasters, media companies, and vloggers.

Consumers

On some platforms the consumer is a provider of content. In the case of YouTube, Facebook, Dailymotion, and Dumpert, consumers are possibly the largest providers in terms of volume. We have not investigated why consumers supply video content. However, it is generally known that the platforms are used to exchange video content between consumers in a context of social interaction. There is wide diversity here: for example, from amusing bloopers to actual or alleged police abuse. There is also a group of consumers who use the platforms as a possible route to commercial success. Vloggers are an example of these, as is Justin Bieber, who started out as an uploading consumer.

Film distributors

One of the largest independent film distributors in the Benelux countries in cinema, home entertainment, video on demand, and TV (pay TV and free TV) is Dutch Filmworks. Dutch Filmworks only buys and commercially exploits broadcast rights for the Dutch-language area. In the case of content that can be viewed on video-on-demand services such as Netflix and Videoland, the broadcast rights are sold to the platforms by the producers themselves or through distributors such as Dutch Filmworks. Online streaming then constitutes one or more of the "windows" in which the content is shown, alongside cinema broadcasting, pay television and free-to-air television. The relationship between Dutch Filmworks and the online video platforms is not very close. Dutch Filmworks makes particular use of platforms such as Facebook and YouTube to market new films.

Broadcasters

The broadcasting organizations NPO, RTL and SBS are all important providers of online video content for the Dutch-language area. Their online video content mainly comprises programs, series and movies that have already been broadcast on their television channels. NPO offers its video content on its own platforms (NPO gemist and NPO Plus). NPO does not operate on YouTube, Facebook, and Twitter, because it cannot be subservient to third-party profit. The broadcasting organizations themselves, however, do operate on these platforms with their own programs. They use these platforms as a kind of moving shop window and as a way of maintaining direct contact with their viewing audience and thus achieving interaction. The public broadcasting organizations also increasingly operate on YouTube with channels for their own content. Examples are S1 TV (Social1fluencers/SBS) and Boos (BNN/VARA). The commercial broadcasters also offer content on their own platforms. RTL on RTL XL and SBS on Kijk.nl.

Media companies

The media companies Telegraaf Media Groep and Sanoma are important providers of video content in the Dutch-language area alongside the broadcasting organizations. Telegraaf Media Groep (TMG) publishes daily newspapers and magazines and operates a number of radio stations. In particular TMG produces news videos, which can be viewed on its own platform and on mobile applications. Sanoma is also a publisher of magazines and an operator of websites related to magazines. Sanoma also operates the news site NU.nl that shows news videos. In addition to the broadcasting activities of the sister company SBS, Sanoma supplies video content with the titles Linda TV, Libelle TV and Veronica. These channels show self-produced video content and video productions from contracted vloggers.

Vloggers and other creators

Another important category of content providers comprises vloggers and other creators. These are individuals who post video content that they have produced themselves on their own YouTube channels. YouTube is an attractive platform for these content providers, because it offers the possibility of sharing in the advertising income generated by means of video advertisements shown before, during and after the vlogs. Vloggers can also generate income by showing branded products on their vlogs and producing sponsored content.

2.2.2 Business models of content providers

The content providers market their content in various ways. Distributors of movies and series traditionally sell their rights to participants such as Netflix, Videoland, the broadcasters and providers of video on demand. The broadcasting organizations and media companies that produce their own content mainly exploit it through advertising sales on their own platforms, but also sell the rights to other participants. Providers of content on YouTube (such as vloggers) and Dailymotion can share in the revenues generated by the platforms through the sale of advertising space with the content. They can also monetize the content themselves by having it sponsored, for example through product placement in the vlogs. The content is then known as branded content.

The interviews reveal that the providers of premium content such as series, movies and television programs also use YouTube and Facebook to a limited extent to draw attention to their content and prompt users of those platforms to click through to their own sites or platforms. Content providers express a reluctance to do so, because they believe it limits their scope to market premium content (see section 3.3). YouTube, for example, allows the content provider to take a share of more than

half of the advertising revenues.¹⁰ By comparison, the possibilities open to content providers to share in Facebook advertising revenues are more limited and still developing.¹¹

Providers of premium content, such as series, movies, and television programs, cite the uploading of illegal copies as a major threat to their business model. YouTube's Content ID service plays an important role in this regard. It enables content providers to upload their content in the background, so that illegal content can be detected. If illegal content is detected, YouTube offers the original content's rights owner the possibility of removing it or receiving the associated advertising income.

2.2.3 Summary

A wide range of content providers operate on the content side of the online video platforms. In addition to the more traditional content providers such as broadcasters and film distributors, there is an extremely diverse group of content providers producing content for online platforms, either professionally or otherwise. This appears to have resulted particularly from the rise of online video platforms using a business model that is open to third-party content. This has given content providers new possibilities for marketing the content they produce through sharing in advertising revenues.

¹⁰ See: <http://www.investopedia.com/articles/personal-finance/032615/how-youtube-ad-revenue-works.asp>.

¹¹ See, for example: Poynter.org, Facebook wants to make it easier for publishers to make money, <http://www.poynter.org/2016/facebook-wants-to-make-it-easier-for-publishers-to-make-money/429916/>.

2.3 The user side of the market

Online streaming video platforms compete not only in the provision of content, but also to gain users and the attention of users. This section covers the following:

1. [The competition process and the participants' market positions](#)
2. [The transaction between platforms and consumers](#)

2.3.1 Competition for users, users' attention and market positions

The provision of video content is 'heterogeneous'. That means video content differs in terms of characteristics such as duration, technical quality, subject and purpose. We nevertheless consider video content to be a single product in this market study. An examination of whether different types of video content are interchangeable (or substitutable) would be outside the scope of this market study. Moreover, the offering of online streaming video platforms, and other providers of video content, is also heterogeneous. On YouTube, for example, the offering ranges from amateur videos to feature films and music.

Providers

There are many providers of video content in the Netherlands. Section 2.1.1 has already listed the main online video platforms in the Netherlands. In addition, video can be consumed through, for example, TV (including linear TV), video-on-demand services such as HBO and MyPrime, and purchased DVDs. Users thus have a wide choice of providers. Furthermore, consumers practice multi-homing, using different providers. This is understandable, because many offerings can be consumed free of charge (albeit usually with advertisements).

Users

YouTube and Facebook are the online streaming video platforms with the largest number of users and the highest daily reach. According to Newcom, 7.5 million people in the Netherlands use YouTube, of whom 1.7 million use it daily (the growth in daily use compared to the previous year was 31 percent). For Facebook these figures are 10.4 million and 7.5 million respectively.¹² It should be noted that watching video is only one of the possible activities on Facebook. Moreover, it is not the most important activity. 58 percent of Facebook users state that they watch videos on Facebook. Users frequently cite six other activities, including answering messages, posting photos and viewing their timeline.¹³ Furthermore, in the case of YouTube, too, watching videos is not the only activity. Many users cite listening to music as an important activity, even if they listen to music by means of a video.¹⁴

¹² Newcom Research & Consultancy B.V., National Social Media Survey 2017, January 2017, p. 6.

¹³ Ruigrok NetPanel, What's happening online: inzicht in jouw generatie, 2016, p. 19, see: http://onderzoek.netpanel.nl/jambo/stream/Whats_Happening_Online_2016.pdf.

¹⁴ Ibid, p. 21.

Market positions

To assess the market positions of online streaming video platforms in the user market we use the number of viewing minutes. According to Telecompaper, Dutch consumers watched an average of 287 minutes of video content per day in the final quarter of 2016. The bulk of this remains viewing on linear TV and this proportion has been more or less stable for some time. Telecompaper also draws a distinction between video content via the internet (including providers such as Dailymotion, Dumptert, Facebook, the advertising-based variant of RTL XL, YouTube, and Vimeo) and video-on-demand services (including providers such as MyPrime, Netflix, NLziet, the paid version of RTL XL, and Videoland). An average of 35 minutes is devoted to the first category and 20 minutes to the second category.¹⁵

The average Dutch consumer spent approximately three minutes per day on YouTube in 2015. This average is made up of an average daily reach of 12 percent of the Dutch population aged 13 and over, multiplied by 24 minutes which a YouTube user devotes on average to watching YouTube.¹⁶ Younger viewers, however, devote a relatively larger portion of their time to online video content and video-on-demand services, but even this group watches more linear TV than video content via the internet.¹⁷

ACM has not carried out a precise market definition exercise in this market study. The above figures nevertheless provide a strong indication that there are no online streaming video platforms that have a dominant position in the user market. Even if the product market is limited to the categories of video content via the internet used by Telecompaper, YouTube's market share does not exceed 10 percent.¹⁸ It is likely, however, that online streaming video platforms also face competition from video-on-demand services such as Netflix and content distributed by TV. Furthermore, YouTube could experience competition from music services such as Spotify, because YouTube is also widely used to listen to music. These are further indications that there is no online video platform with a dominant position in the user market.

2.3.2 The transaction between platforms and consumers

Consumers can use online video platforms in different ways. For example, they can watch video only, they can create an account enabling them, for example, to save favorites or share suggestions, they can upload videos, open a channel, and share in the revenues generated from advertisements shown with their videos. In all these cases, they use the services provided by the platform.

¹⁵ Telecompaper, Video behaviour of Dutch consumers 2016 Q4, March 2017, p. 32.

¹⁶ EGTA based on GFK Media Efficiency Panel, p. 12. See: <http://spot.nl/wp-content/uploads/2016/06/20160607-PEPPTV-TV-vs-OLV-Dutch-version.pdf>. Newcom (2017) arrives at a similar daily reach, namely 1.7 million people in the Netherlands, equivalent to 12 percent of the Dutch population aged 15 and over. See: Newcom Research & Consultancy B.V., National Social Media Survey 2017, January 2017, p. 6.

¹⁷ See: Telecompaper, Video behaviour of Dutch consumers 2016 Q4, March 2017, p. 35. See also: Ruigrok NetPanel, What's happening online: inzicht in jouw generatie, 2016, p. 12. See also: Newcom Research & Consultancy B.V., National Social Media Survey 2017, January 2017, p. 13.

¹⁸ This would amount to 3 minutes divided by 35 minutes, which is equivalent to 8.6 percent.

The price for the user

Providers of video services generally collect users' data or personal information. In some cases, it is even possible to argue that a user pays with data or personal information because the provider requires no payment for the service. Just as with goods and services for which a price is charged, even where users "pay with their personal data," it is possible to ask whether the price is reasonable in proportion to the value of the services provided. If it is, we can conclude that consumers are getting a reasonable deal.

It is not easy to answer this question, however. Both the value of the service for the user and the value of the consideration provided by the user are difficult to determine. In many cases, there appear to be no market prices that provide information on the value of a service. An obvious suggestion would be to deduce the value of advertisement-based services for users from market prices for comparable paid services. Video streaming services offer a variety of content, however. That makes it difficult to use the price of paid services as an indication of the value of advertisement-based services. In some cases, a provider offers both a paid and an advertisement-based service. However, the price of the paid version does not necessarily indicate the value of the service for the user. That is because the price also includes remuneration for the avoidance of advertisements. Finally, the price for users in two-sided markets may be lower than the value of the service in order to attract more users, and hence more content providers.

Determining the consideration provided by the user is even more complex. First, the primary means of payment is usually the acceptance of advertisements. This makes it necessary to determine users' (positive or negative) valuation of advertisements.¹⁹ This is not easy, even in the case of services that have a paid version. Users opting for the advertising-based variant are evidently unwilling to pay the financial price to avoid advertisements, but that is only an upper limit of the costs of advertisements for the user. Second, it is necessary to ascertain the value that users place on the sharing of data and personal information with the provider. The economic literature shows that such consumer valuations vary and are content-dependent, making it difficult to determine a single value.²⁰ Furthermore, consumers state that they attach great value to their privacy, but they do not appear to act accordingly. This is known as the 'privacy paradox'.²¹

A possible cause of the privacy paradox is consumers' unfamiliarity with the data that are collected, why it is collected and for how long. As a result, it is difficult for the consumer to assess current and future costs of data sharing. Another possible explanation is that user behavior is determined by heuristics and biases, such as the 'immediate gratification bias'.²² This states that users do not take

¹⁹ Research into the use of ad blockers (IAB Adblockers research, November 2015, see:

<https://iab.nl/nieuws/onderzoek-toont-grootste-irritaties-bij-internetadverenties/>) shows that users and potential users of ad blockers place a low value on advertisements and many are annoyed or irritated by them. This study also shows a low readiness to pay for the advertisement-free provision of a general website. The readiness is significantly higher when people are asked if they are prepared to pay for the advertisement-free use of video sites, for example. Of those surveyed who are prepared to pay for such use, 51 percent would be willing to pay less than €2.50 per month, while 49 percent would pay more.

²⁰ See Acquisti, Taylor and Wagman (2016), The Economics of Privacy. *Journal of Economics Literature*, 54(2): 442-492.

²¹ Ibid.

²² See Acquisti, Brandimarte and Loewenstein (2015), Privacy and Human Behaviour in the Age of Information, *Science*, 347(6221): 509-514.

sufficient account of a possible violation of privacy in their decision because they want to enjoy an immediate benefit, such as access to a website or service. In addition, social or societal pressure can influence privacy choices, such as the desire to be active in a social network in which friends are also active.

A further complicating factor in determining the value of data and personal information is that it is often used to improve the service (for example by making recommendations) and personalize advertisements. The provision of data by the user thus also affects the value of advertisement space and the quality of the service itself.

Finally, even if it is possible to determine reliably how valuable the service is for the user and to determine the the consideration the question remains whether a provider is making a reasonable offer overall. This requires at least insight into the costs incurred by the provider and a clear normative framework governing how much of the value of the relationship between the platform and the users should accrue to the latter group. The foregoing shows that ascertaining in economic terms whether consumers get a reasonable deal requires a complex examination, the success of which is uncertain at the outset. ACM has therefore not explored this question in the context of this market study.

2.3.3 Summary

On the user side of the market, there is competition for the attention of users and market participants. Consumers/users can use online video platforms in different ways. If users of these platforms receive a free service and provide personal information, it may be queried whether that relationship is reasonable. However, it is not an easy question to answer.

2.4 The online advertising side of the market

In this chapter, we discuss the functioning of the online advertising market in greater detail. The following points are dealt with below:

1. [The online advertising market in brief](#)
2. [The online advertising ecosystem](#)
3. [Vertical integration and openness of systems](#)
4. [The role of data in online advertising](#)

2.4.1 The online advertising market in brief

Online advertising consists of showing advertisements to users of internet sites and mobile apps. Those advertisements are shown in certain places on the screen of the user's device, for example in search results or before, during or after watching a video. What advertisement the user sees is determined in various ways. In some cases, the operator of the website or app (hereafter: publisher) has reserved the space for a particular advertising campaign, so all users see the same advertisement. For example, the users of a cookery website see advertisements for pans. The necessary agreements between the publisher and the advertiser can be entered into in advance. Another possibility is using information on the user to show an advertisement aimed specifically at that user. A male visitor between the ages of 40 and 50, for example, will be served an advertisement for a car, while a user who has just looked for holiday flights will see advertisements from an airline. In the case of online advertisements, the possibilities for defining a target audience on the basis of data are almost infinite. Online advertising space is traded by means of an auction, possibly in real time. In real-time auctions, the available advertising space is sold within a few dozen milliseconds after the user loads an app or web page. The trading process therefore relies heavily on advanced technical solutions.

Concise overview of the market

Advertisers can choose from many different channels and advertising formats to reach their target audience. An initial distinction is between offline advertising channels (such as newspapers, magazines, television) and online advertising channels. In online advertising space, a distinction can be drawn between various advertising formats. The Interactive Advertising Bureau (hereinafter: IAB), for example, draws a distinction between search ads, classified ads and display ads.

- **Search ads** are advertisements shown in search results, as in the case of the search engines Google Search and Bing.
- **Classified ads** are short notices under a particular heading, such as 'vacancies' or offers 'for sale' on a particular part of a website (or a page in a newspaper).
- **Display advertising** comprises advertising formats such as banners, interruptive advertisements²³ and video²⁴.

According to IAB (2016), the total size of the market for online advertising space in the Netherlands in the first half of 2016 was €835 million.²⁵ Search advertising and display advertising each make up

²³ Interruptive advertisements are rich media formats, such as the takeover of an entire webpage with an advertisement or a banner that moves as the user scrolls up or down the page.

²⁴ 'Video' means: showing a video advertisement before ('pre-roll'), during ('mid-roll'), or after ('post-roll') the video content and video advertisements that are not integrated in the video content.

²⁵ See: IAB, IAB Report on Online Advertising Spend: The Netherlands H1 2016, September 2016, p. 5.

around 40 percent of this turnover.²⁶ Online video advertising represents around 8 percent of this turnover. This is the fastest-growing format, however, with growth of 55 percent compared to the previous year.²⁷ Spending on the various types of offline advertising has remained almost static or declined for a number of years, while expenditure on online advertising space is growing fast. In the Netherlands, spending on online advertising in the first half of 2016 exceeded spending on offline advertising. Advertising on mobile devices (smartphones and tablets) now accounts for 32 percent of all display advertising in the Netherlands, and grew by 61 percent in the first half of 2016 compared to the previous year.²⁸ In the mobile category, advertising on mobile apps is growing strongly. The Facebook Audience Network, which sells advertising space on third-party mobile apps and websites, for example, focuses exclusively on advertising on mobile devices.

By far the largest providers of online video advertising space in the Netherlands are Google and Facebook, with market shares of several dozen percent. There are also a number of players with market shares of several percent, such as SBS, TMG and Sanoma. Finally, there are very many small providers of online advertising space. In principle, anyone who provides a website or app can create advertising space on it and offer this space to advertisers. Section 2.5 contains a more detailed examination of the market positions of advertising space providers.

2.4.2 The online advertising ecosystem

In this section, we outline the types of players and the methods used in the trading of online advertising space.

2.4.2.1 Providers of online advertising space

In this report, ACM divides providers of online advertising space into two types:

1. Operators of websites and apps (also known as ‘publishers’); and
2. Ad networks.

In the first case, the advertiser and publisher have direct contact and agree the terms of the transaction. Such transactions are referred to as ‘direct deals’. In the second case, publishers arrange for all or part of their advertising space to be sold by an ad network.

Ad networks manage advertising space on behalf of multiple publishers and determine the sales strategy (e.g. distribution channels, floor prices and use of data).²⁹ The advantage of this is that publishers can place their advertising space with a single provider, while advertisers have a one-stop shop for much more advertising space. Advertisers usually do not know precisely with which publisher their advertisement will be placed when they purchase from an ad network, but they do receive information on the context of the advertisement and the user.

²⁶ Ibidem, p. 6.

²⁷ Ibidem, p. 7.

²⁸ Ibidem, p. 9.

²⁹ The term ad network is sometimes also used in the market for other participants that sell or resell advertising space on behalf of third parties. These participants are not significant for our analysis and the above definition is therefore used in this report.

2.4.2.2 Different trading methods for online advertising space

In this report, ACM distinguishes two ways in which online advertising space is traded: programmatic and non-programmatic trading.

Non-programmatic trading is the simplest to describe and comprises, for example, the ‘classic’ telephone or e-mail contact. This still involves the conclusion of direct deals. In this category, we include the purchasing of advertising space from ad networks such as the Facebook Audience Network or the Google Display Network. It is fairly easy for advertisers to purchase advertising space through these networks. Advertisers make a budget available and/or determine their maximum price for advertising space, define their advertising goals and the target audience within the scope provided by the network, and then upload their advertisement. The ad network then allocates the available advertising space among the affiliated advertisers, and ensures that the right advertisement is shown in each sold advertising space. Auctions are used to allocate advertising space among advertisers. The role of auctions is discussed in more detail in section 2.4.2.3.

Programmatic trading is a method of relevance mainly to display advertising space. By ‘programmatic trading,’ ACM means the trading method in which publishers and advertisers use technical solutions that allow a high degree of automation of the trading process. This requires, in any case, the use of ad servers. Publishers use a supply-side platform (**SSP**) and advertisers use a demand-side platform (**DSP**). The participants involved in this method of trading are referred to below collectively as the programmatic ecosystem.

In 2015, 30 percent of the online display advertising space in the Netherlands was sold by means of programmatic trading. This remains a relatively modest share. This is because large players such as Facebook and Google provide the majority of their advertising space through their ad networks. Nevertheless, the proportion grew by 30 percent compared to the previous year. Moreover, in the spring of 2015, Google decided to offer an important YouTube advertising format (TrueView) additionally on a programmatic basis.³⁰ Programmatic trading is expected to account for a considerably larger share of sales of online display advertising in the future.

The programmatic ecosystem is described in greater detail below. We begin with a description of SSPs and DSPs.

Supply-side platforms (SSPs) give publishers the necessary technology to sell advertising space programmatically. The function of an SSP consists of generating the highest possible revenue for the advertising space on behalf of the publisher. In an SSP, publishers can choose how and to whom their advertising space is sold and under what conditions. For example, they can hold private auctions, blacklist potential buyers, choose different sales channels and set reserve prices at auctions. The cost of an SSP for the publisher is usually a percentage of the price of the sold advertising space.

Demand-side platforms (DSPs) give advertisers the technology to purchase advertising space from SSPs and ad exchanges. The function of a DSP consists of purchasing the desired advertising space for the advertiser at the lowest possible price. Essentially, the DSP is a software application that enables advertising space to be purchased from multiple channels by automated means. At auctions, DSPs use an algorithm that determines a bid based on all kinds of variables, such as the

³⁰ See: <https://doubleclick-advertisers.googleblog.com/2015/04/trueview-in-dbm.html>.

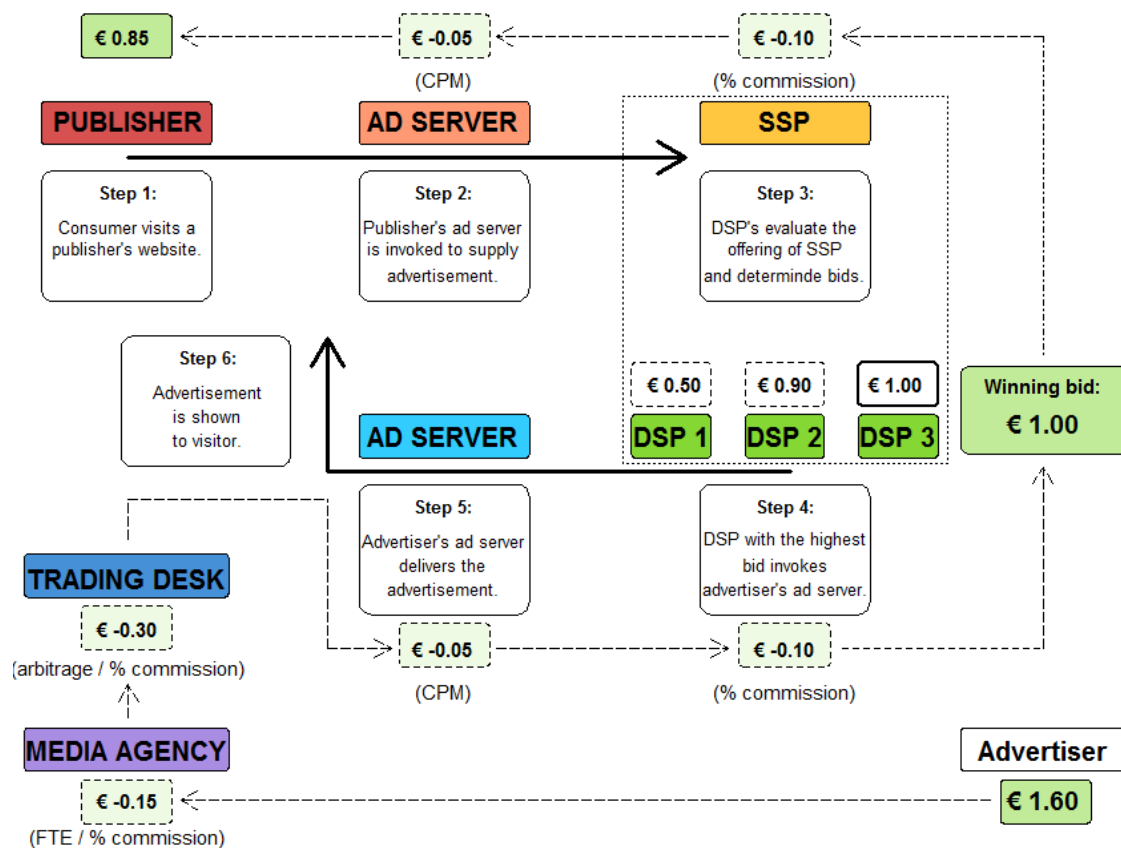
characteristics of the user and the features of the website or app on which the advertising space is shown. The cost of a DSP for the advertiser is usually a percentage of the auction price of the purchased advertising space.

For programmatic trading, both the publisher and the advertiser require at least another technical solution: an ad server.

Ad servers fill sold advertising space with the right advertisement. Both the publisher and the advertiser need an ad server for programmatic trading. The publisher's ad server records the available advertising space when a user visits the website, and then determines which advertisement should be served in it. The ad server determines whether the advertising space will be filled with advertisements of advertisers who have entered into a direct deal or have purchased the ad space through an ad network, or whether the advertisement is offered in a real-time auction (open or otherwise). The ad server of the advertiser who has purchased the space supplies the advertisement with which the purchased space is to be filled. Ad servers are also used to place cookies and thus also offer analytical and/or verification features. The price for using ad servers is generally determined on a cost-per-mille (CPM) basis. In many cases, ad serving technology is integrated with an SSP or DSP.

Figure 3 shows what happens when advertising space is traded programmatically. The solid arrows show the communication flow between the participants involved. The broken arrows on the outside show the direction of the monetary flow between the participants. The figures used are fictitious. This graphic also includes media agencies and trading desks, which are discussed further in section 2.4.2.4.

Figure 3: The programmatic ecosystem³¹



As stated previously, publishers can create conditions governing trading through their SSP and/or ad server. These concern matters such as the number of potential purchasers. A publisher can use a programmatic method, for example, to conclude a direct deal with an advertiser reserving a specified advertising space, in advance, for a fixed price. Another example is that programmatic trading enables the publisher to set up a private marketplace. This means a select number of purchasers are invited to bid for certain advertising space. Finally, publishers can offer their advertising space on an open ad exchange. On an ad exchange, the publisher can only exclude purchasers on the basis of a blacklist.³²

An **ad exchange** is a platform that brings together buyers and sellers of advertising space. Ad exchanges offer and auction individual impressions. Advertisers need a DSP to purchase on an exchange.

The difference between trading through an ad network and trading through an ad exchange is that, in an ad network, the buyer gains access to a predefined audience, whereas in the case of an ad

³¹ For convenience, no ad exchange has been included in the graphic. An ad exchange is located in principle between the SSP and DSPs. The graphic also shows a first-price auction, whereas in practice the price is determined by the second-highest bid.

³² For the possibilities offered by programmatic trading see for example: https://www.iab.com/wp-content/uploads/2015/06/IAB_Digital_Simplified_Programmatic_Sept_2013.pdf.

exchange, individual advertising space is auctioned. On the ad exchange, the advertiser determines its bid for each advertising space. In the case of an ad network, the advertiser draws up campaign goals and a budget. An ad network allocates the available advertising space among the affiliated advertisers partly on this basis. This does not preclude ad networks from offering all or part of their inventory of impressions on an ad exchange.

2.4.2.3 The role of auctions

Unless a seller and an advertiser negotiate directly with each other (either programmatically or otherwise), online advertising space is sold through auctions. A lot of advertising space is sold by means of **Real Time Bidding (RTB)** on ad exchanges. In this process, as soon as a user loads an app or web page, the buyer and the price of an individual impression (a display on a website or in an app) are determined programmatically, usually in a few dozen milliseconds, by means of an auction. When advertising space is offered in a real-time auction, information is sent at the same time concerning the website, the user and other characteristics that enable the advertiser to determine its valuation of the advertising space. DSPs convert all this information into a specific bid for the advertising space. Real-time bidding takes place on ad exchanges, but it is also possible to bid in real-time if the publisher sets up a private marketplace. In a real-time auction, the winner of the advertising space is usually the participant that bids the highest price. This participant has to pay the amount of the second-highest bid. A feature of such second-price auctions is that it is optimal for bidders to bid their actual valuation for the advertising space.³³

In some auctions, the winner is determined not only on the basis of the level of the bid, but also on the basis of the expected relevance of the advertisement to the user and the quality of the advertisement in general. In these auctions, at least two parameters (bid, quality) are converted into a value using a specified formula. The bidders are then ranked on the basis of this value. The highest-ranked bidder pays a price that is just sufficient to win the auction, having regard to its own quality score and the bids and quality scores of the other bidders. These auctions take place in real-time in the sense that an auction is held when a user visits the webpage or uses the app, but the advertisers do not bid in real-time. With the provider of the advertising space they determine factors such as the target audience, the goals of the advertising campaign, the number of advertisements per user, and a budget. When advertising space becomes available, the auction mechanism determines the advertiser to which the impression is allocated and at what price.

2.4.2.4 Other services in the online advertising value chain

Below, we discuss some of the other types of providers of services and products that form part of the online advertising value chain. For the sake of completeness, we note that these participants provide services that not only make the programmatic ecosystem more valuable, but that can also add value when advertising space is traded by a different method.

A **media agency** advises advertisers on setting up a campaign and allocating the budget among the various advertising channels. Media agencies sometimes also produce the advertisement, or outsource this task. A media agency is usually paid on the basis of the number of hours worked or a percentage of the budget for a campaign.

A **trading desk** evaluates the available advertising channels and designs a

³³ See, for example: Paul Klemperer (1999), "Auction Theory: A Guide to the Literature". *The Journal of Economic Surveys*, 13(3): 227–286.

bid strategy. For example, higher bids can be made for advertising space to which a particular target audience/user devotes more time. Trading desks can be paid on the basis of a commission on the value of the purchased advertising space. A trading desk can also generate income by purchasing the advertising space itself and selling it on with a mark-up to the advertiser.³⁴ Arbitrage is also possible. For example, advertising space can be purchased on a cost-per-impression (CPI) basis and sold on a cost-per-click (CPC) basis. Trading desks can also be part of a media agency and can charge on the basis of the number of hours worked.

Data management platforms (DMPs) offer data solutions or data to all participants in the chain. Impressions that are offered together with information on the visitor are generally worth more to the advertiser. DMPs actually organize all data held by a participant on advertising space, campaigns and users. Participants on the advertiser side, for example, can use DMPs to determine more effectively which impressions are of most value to them. DMPs also offer verification services that make it possible, among other things, to verify whether the reserved advertisements have been offered to the relevant target audience, have been displayed in the right place or have prompted reactions from visitors. DMPs apply a fixed scale of charges or charge rates based on CPM.

Verification and analytics services check the quality of the offered advertising space and allow more informed choices when purchasing advertisements. For example, it is possible to check whether a person will actually see the advertisement or whether the website is harmful to the advertiser's brand (no pornography must be shown, for example), and/or whether the advertisement is actually visible.³⁵ The generated data can also be used to optimize the campaign. CPM-based rates are normally used for this purpose.

2.4.3 Vertical integration and openness of systems

In this section, we consider two characteristics on the advertising side of the market. First, we consider the fact that some large participants in the online advertising market are vertically integrated to a greater or lesser extent. The next aspect concerns the openness of advertising systems.

2.4.3.1 Vertical integration in the advertising chain

Ad networks, such as the Facebook Audience Network and the Google Display Network are actually vertically integrated solutions for both publishers and advertisers. With ad networks, advertisers can advertise on affiliated sites and apps by uploading an advertisement, defining a target audience and making a budget available. Publishers can arrange for their advertising space to be sold by an ad network. To enable all this, ad networks determine what advertising space is offered to what participants under what conditions (similar to SSP technology), they have an algorithm that determines the winner of the auction (similar to DSP technology), and they have technology to place the right advertisement in sold advertising space (similar to ad serving technology for advertisers). Ad networks can therefore be seen as 'programmatic ecosystems' in themselves.

In addition to vertically integrated ad networks, there is even more vertical integration in the sense that a number of market participants operate as providers of multiple technical solutions in the programmatic ecosystem. The following table summarizes the activities of a number of major global players.

³⁴ Such a participant can also be referred to as an 'ad network'.

³⁵ An advertisement will not necessarily be visible to the user, for example if visibility requires a website visitor to scroll down.

Table 1: Degree of vertical integration in a number of market participants

Participant / Activity	Google	Facebook	WPP ³⁶
Publisher	Among others <i>Google Search</i> , <i>YouTube</i> , and <i>Google Maps</i>	Facebook, Instagram	-
Ad network	Google Display Network (GDN)	Facebook Audience Network (FAN)	Triad Retail Media
Ad serving (publishers)	DoubleClick for Publishers (DFP)		AppNexus
SSP / Ad exchange	DoubleClick Ad Exchange (AdX)	Facebook Exchange (FBX)*	AppNexus
DSP	DoubleClick Bid Manager (DBM)		AppNexus
Ad serving (advertisers)	DoubleClick Campaign Manager (DCM)	Atlas	Medialets
DMP, attribution, verification	Google Analytics, DoubleClick Audience Center (DAC)	Atlas	Xaxis, Turbine, plista, comScore, Medialets
Trading desk	-		Xaxis, The Exchange Lab, BannerConnect et al.
Media agency	-		Group M et al.

* FBX is being discontinued³⁷

Google and Facebook are therefore also active in the programmatic ecosystem outside their ad networks and the sale of advertising space on their own websites. Google provides services for third parties at every step in the value chain as shown in Table 1. Facebook is active in verification services and ad serving for third parties with its Atlas platform and sells advertising space on mobile websites and third-party apps through the Facebook Audience Network.

The WPP investment group has interests in a large number of companies at all steps of the advertising chain. The AppNexus ad exchange is also vertically integrated with an SSP and offers DSP services. US companies Yahoo! and AOL are also integrated in this way.

Vertical integration also takes place to a lesser extent among smaller participants. Almost all DSPs and SSPs also offer ad serving. Integration between ad exchanges and SSPs also takes place, for example, in Rubicon Project and OpenX. On the advertiser side, players such as Salesforce, Adobe, Oracle, IBM and Experian also offer integrated solutions for advertisers, which include trading desk activities, DMP, analytics and/or DSP functionalities.

2.4.3.2 Openness of advertising systems

In the programmatic ecosystem, publishers and advertisers can each choose different providers of ad servers and SSP/DSP technology. The interviews with market participants show that practically all relevant DSPs are associated with all relevant SSPs/exchanges. That means advertising space can

³⁶ The table also refers to participants in which WPP has a minority interest (e.g. AppNexus).

³⁷ See: <http://www.adweek.com/digital/facebook-shutting-down-its-desktop-based-ad-retargeting-exchange-171686/>.

be purchased on almost every DSP through almost all SSP/exchanges. Generally, the quality of the connections between an SSP and a DSP are good, even if the products are offered by different providers. It is possible that technical systems of different providers will work slightly less well with each other. That can result, for example, in systems communicating at a lower speed. This has not been clearly demonstrated by the ACM market study, however.

Due to the way in which ad networks operate, it is not possible to use a DSP to purchase advertising space programmatically from an ad network.³⁸ After all, ad networks sell no advertising space at impression level but do sell access to an audience, and ad networks themselves have an algorithm that turns the advertiser's campaign objectives and budget into a bid for available advertising space. Although a DSP cannot therefore be used to purchase individual advertising space from an ad network, ad networks do often make other forms of compatibility possible. DSPs can be connected to the ad network, for example, by means of an Application Programming Interface (API). This has the advantage that possible functionalities of a DSP other than bidding for individual impressions, such as designing a campaign, measuring effectiveness or simply keeping track of the total campaign spending, can also be used when advertising space is purchased from the ad network.

In this context, we describe the programmatic ecosystem as '**open**' because both sides of the market, publishers and advertisers, each have a free choice of a technical solution to be able to trade with each other. We refer to ad networks in this context as '**closed**' because they offer a total solution designed by the provider for publishers and advertisers. Publishers and advertisers have little or no freedom in their choice of technical solutions.

Open and closed systems exist alongside each other in the online advertising market. Publishers can choose how they offer their advertising space: by means of direct deals, an ad network, the programmatic ecosystem, or a combination of all three. This choice determines the possible ways in which advertisers can purchase the advertising space they require. For example, advertising space on Facebook is only available through the Facebook systems. Another example is advertising space on YouTube. That is available through the Google Display Network and in the programmatic ecosystem, but on condition that Google's DSP DoubleClick Bid Manager is used (see 3.2).

Advantages of open and closed advertising systems

Open and closed systems can both have advantages for competition and efficiency. In the overview study *The Economics of Open and Closed Systems* (2014) the Competition and Markets Authority in the United Kingdom (CMA) and the Autorité de la Concurrence in France identify the following advantages.

Open systems can be good for competition and efficiency because they:

- Reduce switching costs;
- Maximize direct and indirect network effects;
- Maximize the potential economies of scale for component providers;
- Allow more competition between interchangeable components within the system;
- Lower barriers to entry for providers of part of the system because it is not necessary to enter with a complete system;
- Provide incentives for investments in components of the system because the investment can

³⁸ We enter a caveat here as there may be a doubt whether an ad network can offer all or part of its offering on an open exchange.

be used for various complements of the component.

Closed systems can deliver advantages for competition and efficiency because they:

- Promote competition between different systems;
- Incentivize investments because future profits can be generated within the system, and do not drain away to third parties;
- Ensure tight integration of components in the system, delivering better quality;
- Offer a solution for information asymmetry between participants in the chain and solve free-rider problems.

Both types of system can therefore have advantages for competition and benefit efficiency (efficiency of openness is an inefficiency of a closed system, and vice versa). This means that even companies that are dominant in at least one step of the value chain can choose both an open or a closed system for procompetitive reasons. However, there may also be anti-competitive incentives to keep a system closed.³⁹ Such incentives arise more frequently in vertically integrated companies. This is because vertically integrated companies are less dependent on other participants in the value chain in the operation of their product or service, since vertically integrated companies are able to offer end-users a total solution. Non-vertically integrated companies offer a component that is only of value to end-users if it is combined with a complement offered by another company.

Example

A participant that only offers ad serving technology for advertisers and is dominant in this market cannot strengthen its position in the ad serving technology market by making its ad server incompatible with the DSPs of other companies. That is because the ad server is only useful to advertisers if it can work with a DSP. Openness is therefore the only way in which such a participant can earn money. But if the company also offered a DSP, it could possibly transfer its dominant position in the ad serving market to the market for DSPs by making its ad server incompatible with competitors' DSPs. Whether and when such incentives, and possibilities, exist differs from case to case.

³⁹ For a number of conceivable situations, see for example: Competition and Markets Authority and Autorité de la Concurrence (2014), *The Economics of Open and Closed Systems*, p. 21-24.

2.4.4 The role of data in online advertising

User data play an important role in the online advertising value chain. Below, we examine various aspects of the role of data, namely:

1. [Advertising campaigns](#)
2. [Data collection](#)
3. [Identification of a user](#)
4. [Certainty of data and identity](#)
5. [Who collects what data](#)

2.4.4.1 The use of data for advertising campaigns

Data are used on a large scale to optimize advertising campaigns. Broadly speaking, we can distinguish two types of advertising campaigns.

1. General campaigns, which are intended, for example, to increase brand awareness or the "brand significance".
2. Action-oriented campaigns, which are more focused on actions by individual consumers, such as clicking through or making a purchase.

Our research shows that general advertising campaigns are usually based on relatively few characteristics of the user. Many campaigns focus only on basic characteristics such as gender, age, income or broad interest. These are used to define broad, potentially interested, target audiences. Facebook, for example, offers the possibility of defining a target audience on the basis of demographic data, location, interests, behavior and connections on Facebook.⁴⁰ According to interviewees, it is rare that more than two user characteristics are used.

Detailed user data play a more important role in action-oriented campaigns. The clearest example of this is 'retargeting', whereby a user is shown advertisements for products that he has recently viewed online. It is deduced from this that the user is a potential purchaser of the product. That makes it relatively worthwhile to show this user an advertisement.

Some publishers also use user data to determine which advertiser wins the auction. Ad networks, such as the Facebook Audience Network, use data collected by Facebook, for example, to gauge how successful an advertisement is in achieving the advertiser's goal. This plays a part in determining whether the advertiser wins the auction.⁴¹ Essentially, this means that Facebook assesses which users in the target audience specified by the advertiser are more or less relevant to the advertiser. For this purpose, Facebook uses data, for example, on whether or not the user has clicked on the advertiser's previous advertisements, data on previous purchases from the advertiser, or on Facebook's observations of the user's interests.

2.4.4.2 Data collection for online advertising

There are a number of ways in which users' data and data concerning users are collected for use in online advertisements.

Direct supply by users

One important and basic form of data collection is one in which users provide information themselves. This is the case, for example, when a purchase is made or a user account is created

⁴⁰ See: <https://nl-nl.facebook.com/business/learn/facebook-ads-choose-audience>.

⁴¹ For a description of this, see: <https://nl-nl.facebook.com/business/help/430291176997542>.

and maintained. Both advertisers and publishers collect data on users in this way. There are big differences, however, in the quantity and nature of these data. In the case of an advertiser, for example, the data may relate to the purchase history or have been supplied as a result of participation in competitions or surveys. The data supplied to publishers are of a diverse nature. In the case of publishers such as TMG or NPO, it can result from comments left by users on a video or active sharing with others. For publishers with more integrated services, such as Google and Facebook, the supplied data may additionally consist of all content that the user himself places within the wider platform.

Collection through the browser

This includes various methods whereby users can be recognized on the web. The best-known method is placing and reading cookies, but this is only one of the possibilities, alongside, for example, browser fingerprinting or tracking pixels. In practice, a combination of methods and techniques is often used, and one or more unique identifiers are saved via the browser or smartphone app on the user's device.

Reading these saved identifiers makes it possible to recognize the user. As a result, at each visit – when the user is recognized – data are added to the user's profile. These data are, in most cases, context-related, for example with the addition of an interest based on the subject of the visited web page. This also includes data such as the IP address used, language settings, the browser used, and the device or type of device.

Collection through smartphone apps

Data collection through smartphone apps differs from collection through the browser. The browser process has no predefined technical limit with regard to the number of participants involved in a transaction. The browser processes the code that is offered, and this code may differ every time.

However, an app is software that cannot be modified, except in the case of updates. An app publisher who wishes to generate income from showing advertisements must thus place code in the app. Unless the publisher obtains and places the advertisements himself, this means the publisher has to choose one or at most a few participants that supply the advertisements and include these participants' code in the supplied app.

This code⁴² handles not only the supply of the advertisements, but also the collection of data on the user. What data can be collected depends greatly on the app and the rights that the user has given the app for access to data. A browser can actually only access data that are present in the browser itself. An app on a smartphone can be given rights to read data in other apps. Examples of this are access to the address book and location determination.

Purchase and/or exchange of data

A third possibility for data collection and enrichment of user profiles is purchasing data from and/or exchanging data with third parties. This involves not only data obtained online, but also so-called offline data on users. Examples of these offline data include the purchase history from loyalty programs, and credit and income information. In this regard it is important to know either the actual identity of a user or at least to have a unique shared characteristic for a user.

⁴² Also known as Software Development Kits (SDK).

2.4.4.3 Identification of a user

An important part of online advertising is correct identification of the user. This applies to each participant individually and to all participants involved in a specific advertisement.

As described earlier, a website's ability to recognize a user through the browser by means of a unique identifier is important for data collection for advertisements. But this recognition is also important for identity checks with the other participants in the chain. This is known by various names including 'cookie matching', whereby the identifiers are exchanged in the browser using various technical methods. In simple terms, these methods consist of the question: this user is known to me as identity 1234, by what identity is he known to you?

This means that for each participant in the advertising chain, comparison tables are created between the participant's own identifier for a user and the identifiers used by affiliated participants in the chain. This enables an advertiser to identify a unique user who is visiting a publisher at that time. These processes operate in real-time: the comparison and recognition take place in milliseconds.

In the case of a website, it is possible that participants of all kinds will be active via the browser simultaneously without any prior knowledge of precisely which participants these are. For example: in an auction, it is not known in advance who will win the auction and hence which participants will ultimately conduct all the associated transactions. A DSP that has won an auction will consequently be present in the browser in addition to the publisher and his SSP. Depending on the situation, the DSP can invoke other participants, such as an ad server to supply the advertisement or a DMP to measure a campaign. Research shows that synchronizing identifiers between these participants via the browser is a method frequently used by a majority of the most common third parties.⁴³

2.4.4.4 Certainty of data and identity

The various data collection and user recognition methods currently in operation do not all deliver the same degree of certainty. There are various reasons for this. A simple example is the browser on a PC that is used by several people. The visit behavior of multiple users will then be recorded under a single identifier. As a result, it is possible that an advertisement will be shown that appears to match the user profile, but ultimately does not appeal to the interests of the actual person using the browser.

In addition, identifiers that are placed via browsers are not permanent. Users can deliberately remove them.

Importance of logged-in user

The certainty of data collection and identification of the user via the browser increases if the user is logged into a user account. In practical terms, this possibility is only open to publishers and all or some advertisers, since these are the participants from which the user may purchase services and/or products.

A user confirms his identity by logging-in. All actions by the user and all collected data can then be linked directly to a unique, user-created identity. If a user does not unsubscribe or does not have to

⁴³ Steven Englehardt and Arvind Narayanan. 2016. Online Tracking: A 1-million-site Measurement and Analysis. In Proceedings of the 2016 ACM SIGSAC Conference on Computer and Communications Security (CCS '16). ACM, New York, NY, USA, 1388-1401. DOI: <https://doi.org/10.1145/2976749.2978313>.

log in again each time, it is possible in the case of shared equipment that someone will be working under the logged-in identity of another person. The logging-in of a user does not therefore offer complete certainty.

The logging-in by a user makes it possible to track him when a different device is used or identifiers have been deleted from the browser. In these cases, a new identifier is created, but after logging in, this is replaced by the existing identifier.

Most publishers and advertisers can only rely on this kind of certainty for their own websites. Participants such as Facebook and Google are also able to track logged-in users on other participants' websites. That is due, on the one hand, to the inclusion of like buttons, for example, and, on the other hand, to the services provided in the advertising chain. In this way, they are able to collect data on the behavior of 'their' users on other participants' websites.

Smartphone versus PC

The smartphone brings greater certainty with regard to identity and data collection. This is because a smartphone is linked to a single person and rarely used by more than one person, or, in any case, far less than a PC or tablet. This means that data collection through the smartphone's browser can be linked with greater certainty to the users' identity.

A second important contribution concerns the unique identifiers that are supplied by the operating system and/or the participant's unique identifiers in apps themselves. These are not modifiable – or are much less modifiable – than identifiers in a browser, as they are impossible for the user to delete or modify, or less easy for him to delete or modify than via the browser.

With these permanent or long-life identifiers, a user profile can be enriched with data continuously. This applies both to app publishers and to the market participants that enable advertisements to be shown in apps.

As described earlier, software is available to place advertisements in apps. This has to be supplied by the app publisher with the app. In this way, the data collection for the advertisements takes place through the app, but is not necessarily carried out by the app publisher itself.

Major suppliers of in-app advertising software include Google (AdMob) and Facebook (Facebook Audience Network).⁴⁴

Source of the data

The certainty of data and identity is of great importance to advertisers. It plays a role in the selection of the target audience, the bidding for advertising space for a particular user, and the measurement of the success of a campaign.

Interviews with market participants during the market study show that self-collected data are seen as most reliable. It also emerged in the interviews that a limited set of parameters is used in the case of programmatic advertising. The use of data on users from third-party sources appears to play a less

⁴⁴ For current figures, see for example: <https://mightysignal.com/top-ios-sdks?tag=2>. For iOS, see: <https://www.appbrain.com/stats/libraries/details/facebook/facebook>. And for Android, see: <https://www.appbrain.com/stats/libraries/details/admob/admob>.

important role and appears to be limited to those profile parameters that offer the greatest certainty.

This is despite the emergence of DMPs that make it possible to combine the participant's own data with third-party data (purchased or otherwise). A possible factor here is that a successful combination requires a high degree of certainty about the identity of the user.

2.4.4.5 Overview of data collection for each participant

Section 2.4.4.2 showed how data are collected. In the following table, we set out who collects what data.

Table 2: Who collects what data

PARTICIPANT	COLLECTED DATA
Publisher	The data that a publisher can collect on a user are very varied and can be very detailed. This mainly depends on the offering and the user interaction. After all, a large social network has more diverse content than an online news site, and can also acquire knowledge through communications or relationships between users. The logging-in of a user gives the publisher a high degree of certainty about the actual or assumed identity and the data collected under it. The publisher is therefore able to draw up a broad user profile, depending on the situation. This profile can consist of interests, accurate and current location details, relationships with other users, and a wide range of demographic data.
Advertiser	If the advertiser has a direct relationship with the user, for example as a customer, there is a high degree of certainty about the actual or assumed identity and the purchase history. If there is no direct relationship, the user's visit to the website of the advertiser or a third party can be recorded by means of unique identifiers. In this way, potential interest can be linked to a unique identifier. Techniques such as 'cookie matching' enable combinations with the participant's own data or third-party data to be used to enrich the profile.
Ad server	The supply of the actual advertisements means that the ad server collects data via the browser or the app. The data that can be collected on individual users depend on the number of invocations and the diversity of supplied advertisements, as this determines how often a specific user is seen and what interests can be recorded via the website and/or the supplied advertisement.
SSP/Ad exchange	An SSP can collect a user's data through the websites or apps affiliated with it. The degree to which the SSP is able to do so depends on the quantity and diversity of its customers.
DSP	The DSP that wins an auction is thus able to collect the user's data via the user's browser when supplying the advertisement. As in the case of the SSP, the amount and diversity of customers and/or supplied advertisements determines how often a user can be seen and how diverse the collected data may be.
DMP	The role of DMPs is to enable user profiles to be supplemented with data and/or to derive greater certainty from supplied data by combining data from multiple sources. In this way, the DMP offers the affiliated participants the possibility of building up a better or more certain user profile or using such a profile for campaign purposes. However, it may also actively collect users' data itself and combine them with data from affiliated participants and/or purchased third-party data.
Verification and analytics services	These services collect data for supervision purposes. For example, supervision of the correct supply of an advertisement or attendant action by a user. This is done particularly by providing unique identifiers so that the success of a campaign can be measured through a third party. In principle, data collection could be limited here to the synchronization of unique identifiers.
Vertically integrated participants	The more the above functions are vertically integrated, the more extensive, current, certain and detailed the collection of data on a user is.

2.4.5 Summary

Advertising is the main source of income for many online video platforms. To generate this income, they make increasing use of consumer data.

There are many providers of online advertising space, from small websites to large platforms such as Facebook and YouTube. There are also many different types of online advertising space, of which online video advertising makes up a small but growing part. ACM distinguishes two methods by which online advertising space is traded. In the first method, programmatic trading, the provider uses so-called supply-side platforms (SSPs) that help providers to sell advertising space at the best price. Buyers use so-called demand-side platforms (DSPs), which determine an optimum bid for buyers. A lot of advertising space is auctioned in real-time by means of programmatic trading. The advertising space is offered at auctions with information on the user on the basis of which advertisers can determine their bid.

The second method, non-programmatic trading, comprises all other purchasing methods. This includes, for example, 'classic' direct purchasing from the provider by e-mail or telephone, and sometimes also purchasing from ad networks. An ad network is a participant that combines the advertising space of many different providers and sells it on to advertisers. Some ad networks use advanced auctions for this purpose, in which the advertising space is not awarded only on the basis of the bid, but also on the basis of the relevance and quality of the advertisement (in contrast to the real-time auctions in programmatic trading).

The system of publishers, SSPs, DSPs, ad networks and all other participants is often referred to as the online advertising ecosystem. Within this ecosystem, there is vertical integration. Some providers of advertising space also offer technology to trade advertising space (including SSP and DSP technology). In addition, advertising systems differ in the extent to which they are open or closed. As a result, some advertising space cannot be purchased, using purchasing technology of certain providers.

2.5 Market positions of the main players

In this section, ACM provides an overview of the activities and market positions of the main participants. We look particularly at the main players' positions with regard to advertising space and SSP and DSP services. Finally, we deal briefly with the dynamics in the markets.

2.5.1 Providers of advertising space in the Netherlands

Google is the largest player in online advertisements, with global online advertising revenues of \$67 billion in 2015⁴⁵. Google is an important provider of online advertising space on its own sites, including its search engine and, in particular, YouTube for online video advertisements. Google is by far the largest provider of online search advertising space in the Netherlands, with a market share of over 90 percent⁴⁶. Table 3 shows the market shares of the publishers in the Dutch market for online display and video advertising space. The market shares are based on participants' turnover figures available to ACM and on public information on the total online advertising market in the Netherlands⁴⁷. Google is a major provider of online video advertising space in the Netherlands, with a share of [20-40] percent in 2014, 2015 and 2016.⁴⁸

Facebook is also a major provider of online advertising space on its social networks Facebook and Instagram. Global turnover amounted to \$18 billion in 2015⁴⁹. Facebook is a large and growing provider of online video advertising space in the Netherlands with a share of approximately [20-40] percent in 2016. Facebook also has a strong position as a provider of display advertising space (of which online video forms part), with a share of approximately [20-40] percent.

The main Dutch providers of online video advertising space in the Netherlands are Sanoma/SBS, Telegraaf Media Groep and RTL and Ster. These publishers sell online advertising space, including video, on the websites that they operate. The Dutch providers referred to here each represent [0-20] percent of the offering of online video and display advertising space in the Netherlands.

⁴⁵ Alphabet Inc. (2016) *Annual Report on Form 10-K*, https://abc.xyz/investor/pdf/20151231_alphabet_10K.pdf.

⁴⁶ See: <http://gs.statcounter.com/search-engine-market-share/all/netherlands>.

⁴⁷ IAB report on Online Advertising Spend. *The Netherlands 2016*, April 2017.

⁴⁸ For the question of whether YouTube has a dominant position, see section 3.2.2.3.

⁴⁹ Facebook Inc. (2016), *Annual Report 2015*, https://s21.q4cdn.com/399680738/files/doc_financials/annual_reports/2015-Annual-Report.pdf.

Table 3: Market positions of a number of important publishers in the Netherlands, as a percentage of total advertising expenditure in the Netherlands

	DISPLAY			VIDEO		
	2014	2015	2016	2014	2015	2016
YouTube	0-20%	0-20%	0-20%	20-40%	20-40%	20-40%
Facebook	0-20%	20-40%	20-40%	0-20%	20-40%	20-40%
TMG	0-20%	0-20%	0-20%	0-20%	0-20%	0-20%
Sanoma	0-20%	0-20%	0-20%	0-20%	0-20%	0-20%
RTL	0-20%	0-20%	0-20%	0-20%	0-20%	0-20%
Ster	0-20%	0-20%	0-20%	0-20%	0-20%	0-20%

2.5.2 Providers of SSP services

Major SSPs and/or ad exchanges in the Netherlands include DoubleClick Ad Exchange, Improve Digital, Rubicon Project, AppNexus, PubMatic, Index Exchange, and OpenX. SpotX, FreeWheel/StickyAds, and smartclip are important SSPs specifically for online video advertising space. Table 4 shows the market positions of a number of participants.

The market shares are based on information available to ACM on the value of advertising space traded by participants in the Netherlands, public information concerning the value of programmatically traded display advertising space in the Netherlands⁵⁰, and public information on the value of programmatically traded video advertising space in the Netherlands⁵¹. ACM uses public information on the size of the market because not all participants responded to ACM's requests for information. In the case of programmatically traded video advertising space, ACM does not have information for 2016. ACM only has sufficient information to assess the positions in Dutch markets. However, the relevant market is probably at least of a European scale, as SSP technology can be used everywhere.

The table shows that DoubleClick Ad Exchange and Improve Digital are the largest SSPs/ad exchanges in the Netherlands and have a stable share of [20-40] percent. Rubicon Project has a share of [0-20] percent. There are also specialist video SSPs, namely Videology, SpotX and Freewheel. These participants serve an aggregate of [0-20] percent of the market.

Table 4: Market position of a number of important SSPs in the Netherlands, as a percentage of total programmatic advertising expenditure in the Netherlands

	DISPLAY			VIDEO	
	2014	2015	2016	2014	2015
DoubleClick Ad Exchange	20-40%	20-40%	20-40%	40-60%	20-40%
Improve Digital	20-40%	20-40%	20-40%	0-20%	0-20%
Rubicon Project	0-20%	0-20%	0-20%	-	0-20%
Video SSPs (aggregate)	0-20%	0-20%	0-20%	0-20%	20-40%

⁵⁰ Ibid.

⁵¹ IAB Nederland. *Programmatic Trading. The Netherlands 2015*, April 2016.

2.5.3 Providers of DSP services

On the demand side, there are a large number of DSPs such as DoubleClick Bid Manager, Adform, AppNexus, MediaMath, the Trade Desk, Turn, DataXu, RocketFuel, Radium One, Platform 161 and (mainly) video DSPs TubeMogul, Videology and Brightroll. Table 5 shows the market positions of DoubleClick Bid Manager, MediaMath and video DSPs TubeMogul and Videology. The table shows that the position of DBM is growing in the Netherlands.

The sources for this table are the same as for the table of market shares of SSPs. As stated earlier, ACM only has sufficient information to assess the positions in Dutch markets. However, the relevant market is probably at least European, as this technology can be used everywhere. In addition, ACM has insufficient information to determine the positions of a number of presumably large DSPs in the Netherlands.

Table 5: Market positions of a number of important DSPs in the Netherlands, as a percentage of total programmatic advertising expenditure in the Netherlands

	DISPLAY			VIDEO	
	2014	2015	2016	2014	2015
DoubleClick Bid Manager	0-20%	0-20%	20-40%	0-20%	20-40%
MediaMath	0-20%	0-20%	0-20%	0-20%	0-20%
Video DSPs (aggregated)	0-20%	0-20%	0-20%	0-20%	0-20%

2.5.4 Dynamics in the markets

The market positions presented above show that Google and Facebook have strong positions compared with their competitors. Despite the high degree of concentration, there are indications that the markets remain very dynamic, innovative, and competitive. According to our discussion partners, the prices for Google and Facebook products are generally not significantly higher than for products sold by other players.

There are also clear trends in the markets towards automation, data use, richer formats and mobile advertising. Examples of relevant recent developments include:

- 'Header bidding technology', to which both market leaders are responding;
- The use of verification services, which are being given increasing space (including within the closed systems of Google and Facebook);
- The emergence of programmatic TV advertisements;
- Increasingly frequent use of data management platforms;
- The emergence of extensive advertising platforms integrated on the demand side.

3 Risk analysis of online video platforms

On the basis of the market study, ACM has determined what risks exist in the markets associated with online streaming video platforms. If there are clear risks, or if a problem is already arising, we can determine whether and when intervention is required.

What potential risks has ACM investigated?

In this part of the report, we first consider three possible scenarios in which competition problems may arise. These three scenarios have been chosen on the basis of research into relevant literature, signals received by ACM and interviews with experts and market participants. We have taken the scope of the market study – online video platforms – as our starting point. The problem scenarios therefore relate only to online video platforms and the markets in which they operate. The following scenarios are covered in this part of the report:

1. A scenario in which the collection of data by online streaming video platforms can lead to market power (and the potential abuse thereof);
2. A scenario in which the bundling of advertising space with advertising technology leads to market distortion (through the exclusion of competitors);
3. A scenario in which providers of videos (the publishers) have too little scope to generate earnings directly with their own content, for example because a video platform has become an essential platform for them.

In addition to this analysis of the competition risks, ACM has assessed the risks in the general terms and conditions of online video platforms. The question is whether the consumer suffers any disadvantage due to the general terms and conditions (or individual provisions of these) on the use of online video platforms.

What possible risks has ACM not examined?

The relevant literature on online platforms and interviews with experts and market participants also cite other scenarios that apparently pose risks to competition. Experts and market participants point, for example, to an emerging duopoly between Facebook and Google, which they consider to be appropriating an increasingly large part of the online advertising market(s) in Europe and the Netherlands. Such a duopoly could have harmful effects if the constituent parties compete less with each other. That could result, for example, from extensive differentiation or tacit collusion, or from there being little or no competition from outsiders. This should inevitably be reflected in reduced dynamics in the market.

Our research into the online advertising market shows, however, that Facebook and Google are currently competing strongly with each other in online advertising space, and that the market dynamics remain strong (see section 2.5). Hence, there are no grounds to describe this as a scenario in this report.

Various authors also point to other scenarios. Examples are:

- The concept of “Frenemies”, in which a number of so-called super platforms compete with each other but are also dependent on each other with regard to access to each other's platforms.⁵²
- The concept of “mologopoly”, in which on the one hand a number of large technology

⁵² Ezrachi, A. and M. Stucke, *Virtual Competition: The promise and perils of the algorithm-driven economy*, London, 2016.

companies have total or near monopolies in their own market and on the other hand compete with each other as an oligopoly because they enter each other's markets.⁵³

The characteristic feature of the latter scenarios is that they relate to competition between a number of large technology companies. Those companies operate their own platforms in a much wider range of markets than the markets in which online video platforms operate. Due to the cross-market nature of these scenarios, ACM has not examined them further in this market study. We have, of course, analyzed the positions of a number of these participants in the markets that are relevant to online video platforms.

In June 2017, the European Commission fined Google for giving illegal advantage to Google's price comparison website, Google Shopping.⁵⁴ The European Commission judged that Google had abused its dominant position in the market for general search engines by giving Google Shopping a better position in the search results than competing price comparison websites. ACM has not examined a comparable scenario for video services because that would be outside the scope of the market study. Furthermore, ACM has no indication that the importance of the positioning in search results for video platforms is comparable to that for price comparison sites.

Guide for readers

For each problem scenario, we first provide a commentary below. This is followed by the analysis. On the basis of the facts and circumstances, we try to assess the extent to which the possible risks actually arise.

For a better understanding of the problem scenarios and the facts and circumstances referred to, see [part 1 of this report](#), in which we describe in detail how the online video platforms market works.

⁵³ Petit, N., Technology Giants, the Moligopoly Hypothesis and Holistic Competition: A Primer, October 2016, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2856502.

⁵⁴ See: [http://europa.eu/rapid/press-release MEMO-17-1785_en.htm](http://europa.eu/rapid/press-release_MEMO-17-1785_en.htm).

3.1 Market power as a result of data collection

First, we address the question of whether the collection of data through online streaming video platforms can lead to dominant economic positions in markets in which these video platforms operate.

*By **data** we mean data that online video platforms collect concerning users, such as location, gender, age, interests and their viewing patterns and behavior on the platform. These data are used for the services provided by the video platforms. This could include providing targeted online advertising and recommending particular content. A detailed description of the role of data in online advertising can be found in section 2.4.4.*

3.1.1 Potential risks in this scenario

We see two possible situations in which data can contribute to the creation of market power.⁵⁵ The first situation can arise in specific markets in which data (for example: financial data, tariff data and healthcare data) are traded. As in markets for physical products, companies in markets in which information is traded, can also occupy such a strong position as to create a dominant position. ACM's study has not indicated the existence of a market for consumer data for online advertising in which one or more suppliers has market power. For that reason, ACM has not examined this scenario further.

The second situation may arise in markets for products and services in which data constitute an important input in their production and/or provision, so-called data-driven services. This situation is described below.

'Feedback loop' in markets for data-driven services

Holding, and being able to process, a large volume of data on users of their services can give participants in a particular market a competitive advantage. Scale and network effects can play an important role in that regard. If the use of data leads to a considerable improvement in the quality of the services, that will attract more users. As a result, companies can collect more data and further improve their services, in turn attracting yet more users. This mechanism is known as the 'feedback loop'.⁵⁶ The scale and network effects in data collection and processing could become so large as a result of this mechanism, that others are no longer able to match them. In that case, data represent a barrier to entry to certain relevant markets. That means the incumbent's position in those markets is no longer threatened by entry.

There is much debate around the question of whether data erect barriers to entry and imply market power. Some authors argue that data do not erect barriers to entry, partly because data are available everywhere, can be collected cheaply, and processed by a large number of companies, and rapidly lose value.⁵⁷ Others see data-driven acquisitions and the provision of free services as proof that data

⁵⁵ See, for example, the literature cited in: ACM, Grote platforms, grote problemen?, Een beschouwing van online platforms vanuit mededingingsperspectief, September 2016.

⁵⁶ Sokol, D. & Roisin Comerford, Does antitrust have a role to play in regulating big data?, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2723693, 27 January 2016.

⁵⁷ See, for example: Tucker, D.S. and H.B. Wellford, Big Mistakes Regarding Big Data, Antitrust Source, December 2014; Lerner, A.V., The Role of Big Data in Online Platform Competition, Discussion Paper, August 26, 2014; Lambrecht, A. and C.E. Tucker, Can big data protect a firm from competition, CPI Antitrust Chronicle, January 2017.

can give companies unique advantages. Furthermore, some data are apparently not easy for every company to collect, or in any event not on a comparable scale. If competitors cannot collect data on a sufficient scale, a company with greater scale could become dominant due to data collection.⁵⁸

The above problem scenario concerning data power relates to competition and entry into markets for data-driven services. In recent theoretical economic research, this theory of harm has been expanded to incorporate the notion that a company with a dominant position based on data would be able to transfer this position to markets that were originally not data-driven.⁵⁹ If market entry costs are not so high that they prevent entry and the company succeeds in introducing a data-driven business model into that market, that company can in principle dominate every market, and thus also originally non-data-driven markets⁶⁰, over the longer term. An assessment of the probability of this scenario in non-data-driven markets would be outside the scope of this market study.

Below, we consider in greater detail the probability of the 'feedback loop' situation, in data-driven markets, arising in one or more of the markets in which online streaming video platforms operate.

3.1.2 Risk analysis of 'data power' in the online advertising market

The essence of the 'feedback loop' is that a participant that has access to a large volume of data, compared to its competitors, has a lasting competitive advantage in the field of online advertising. For the analysis below, we first consider the existence of market power in a specific relevant market. We then consider the importance of data.

3.1.2.1 Market definition and market power

It is not easy to determine whether a particular company active in the online advertising markets has such a position that we can speak of data power. Data can constitute a barrier to entry to relevant markets. This is the case if data form an essential input in the provision of online advertising space and economies of scale and network effects play an important role in the collection and processing of the relevant data. In these circumstances, the competitive advantage of the incumbent(s) is no longer threatened by possible competition from entrants.

In this regard, we note that the existence of barriers to entry is a necessary precondition for the existence of market power in a particular relevant market. The existence of barriers to entry does not mean, however, that there cannot be effective competition in a market. A market can still be competitive if there are barriers to entry. The analysis therefore primarily concerns an assessment of the position of the incumbents in a market, how that position depends on advantages in the field of data collection, and whether that produces a lasting competitive advantage compared with other participants.

3.1.2.2 The importance of data

Data constitute important input in the provision of online advertising space (see section 2.4.4). The combination of advertising space with user data makes the offered advertising space more valuable to the advertiser. This therefore gives providers of online advertising space an incentive to collect as

⁵⁸ See, for example: Grunes, A.P. and M.E. Stucke, No Mistake About It: The Important Role of Antitrust in the Era of Big Data; Prüfer J. and C. Schottmüller, Competing with big data, TILEC discussion paper No. 2017-006, February 2017; Stucke M.E. and A.P. Grunes, Big Data and Competition Policy, Oxford University Press, New York, 2016.

⁵⁹ See: Prüfer J. and C. Schottmüller, Competing with big data, TILEC discussion paper No. 2017-006, February 2017.

⁶⁰ The authors call these: "traditional markets".

much data as possible. The collection of information through cookies and similar technologies, however, is limited to a certain extent by the behavior of end-users (for example, refusing to accept cookies, not agreeing to the use of data, regular deletion of cookies or the setting of limits in browsers). These restrictions apply, however, to all providers of online advertising space, and, as such, do not, therefore, lead to differences in competitive positions among providers of online advertising space.

The availability of certain input can give a company a lasting competitive advantage. This depends on a number of factors. In order to give a lasting competitive advantage, data must fulfil the following criteria as input⁶¹:

1. Not replicable
2. Scarce
3. Valuable
4. Not substitutable

Below, we deal with each of these criteria in the context of the markets in which online video platforms operate.

Criterion 1: Data are not replicable

Data are generally non-competitive. Data are not inaccessible to other participants simply because they have been collected by a participant. Participants are therefore, in principle, able to collect (replicate) the same data. Another general characteristic of data is that the marginal costs of producing and processing collected data are very low. The consequence of these two characteristics is that large datasets are likely to be very replicable.

Limits in replicability

In practice, however, there are limits to that replicability. This is a consequence of the closed nature of advertising systems (see section 2.4.3). It is not possible, for example, for third parties to collect information on Facebook users through the Facebook site and apps, whereas Facebook can collect information on its users on third-party sites by means of 'like' buttons and cookies.

The role of economies of scale and network effects

Replicability can also be influenced by economies of scale and network effects, and there do appear to be economies of scale in the collection and processing of data. Having data on more users could increase the likelihood that a provider of advertising space will give access to certain niches that are attractive to specialist advertisers (the so-called long tail). The likelihood that a participant will have information on users with very specific characteristics is then greater in platforms with many users than in platforms with few users. Participants with a larger and diverse group of users can thus more often meet a specific targeting requirement. The study shows, however, that, in practice, only a small number of characteristics are currently targeted in the online advertising (see section 2.4.4). This reduces the advantage of having a larger and, hence, more diverse group of users. Moreover, it is also possible that websites with niche content for a specific group of users are more attractive to particular advertisers.

Availability of alternative sources

Replicability is also determined by the availability of alternative sources of data. Throughout the

⁶¹ Lambrecht, A. & C.E. Tucker, Can big data protect a firm from competition, CPI Antitrust Chronicle January 2017.

online advertising chain, there are various participants that have specialized in the collection, aggregation, processing, analysis, and sale of information on consumers. Examples are: Experian and Acxiom. This information can be used to enrich the information available to advertisers ('first-party data') and publishers ('second-party data') from their own sources. For example, a user of Doubleclick Bid Manager can use the data of a large number of external data providers ('third-party data'). The combination of first-party data that the advertisers collect themselves with third-party data available in the market enables advertisements to be offered and purchased in an even more targeted way than on the basis of first-party data alone. The availability of third-party data is the same for all relevant participants, and thus cannot give rise to a lasting competitive advantage. Furthermore, various interviewed participants state that the quality of third-party data is lower than the quality of first- and second-party data.

Technical facilities

A particular participant could have a competitive advantage if there were major differences between participants in terms of the technical facilities for the collection of end-users' data. In that case, there could be less potential for replicating data for certain participants. Data collection technologies are easily accessible in online advertising markets. There are many participants that offer these technologies or provide services based on them. Hence, there appear to be few differences in the accessibility of technical solutions.

The ability to track users

The study does show that the ability to track users across various devices (so-called 'cross-device tracking') offers a competitive advantage in the provision of online advertising space (see section 2.4.4). It is easier to determine what the characteristics of the user are by using a log-in system than by matching data from different website or application providers. Participants without a log-in system can use statistical modelling to identify characteristics of users of different devices. That enables the characteristics to be determined with a degree of certainty. As a result of the log-in function on their own websites and applications, as well as those of third parties (log-in function, like and share buttons), Google and Facebook in particular (but also other providers of online advertising space) are better able to track users on a large part of the internet. This also applies if the users are using different devices.⁶² During the market study, many publishers stated that they also tried to track users by means of log-in profiles, so as to make them recommendations or to show them advertisements on that basis. However, the users of their services are less inclined to log-in than users on large platforms. There are also large market participants that are introducing new services allowing cross-device tracking of users even without a log-in system. An example of this is a new Adobe service that works by matching data from different websites.⁶³ In addition, for some advertising applications, the long-term tracking of users offers little benefit. A 'retargeting campaign', for example, can be carried out on the basis of up-to-date first-party data. This simply concerns data on users who have recently searched for a particular product.

Some participants may have an advantage by being able to identify particular characteristics of users. That is because they have log-in facilities and a large number of users. On the other hand, ACM's market study also shows that other participants are endeavoring to gain advantage through

⁶² This advantage is further strengthened by the fact that users, particularly on mobile applications, often remain logged-in without realizing it.

⁶³ Business Insider (2016), Adobe has figured out a clever way to track people as they switch between devices, <http://www.businessinsider.com/adobe-launches-marketing-cloud-device-co-op-2016-3?international=true&r=US&IR=T>.

technological innovations. It has also become clear that this advantage is not significant for all advertising applications.

Criterion 2: Data are scarce

At first sight, it seems unlikely that data are scarce in a general sense. As stated above, the technologies used for data collection by website operators are easily accessible for everyone who wishes to provide online advertising services. Owners of websites can use these technologies themselves to collect data and use data management platforms to process data. They can also outsource the entire process to third parties that collect data on their websites concerning users of the relevant sites. Another factor is that, as a result of their visits to various social networks, the use of certain applications, the entry of search terms and visits to websites, internet users leave similar information about their requirements and preferences in very many places. Data can therefore, in principle, also be collected by many different participants. The nature of the collected data, however, may differ between types of applications. Users on social networks, for example, will naturally reveal more information about themselves (in some cases willingly) than on other types of websites.

Criterion 3: Data are valuable

As described earlier, data are valuable input for the online advertising market. However, it is not easy to determine the absolute value of the data as input and then to determine whether this value is high or low. The value of the data for the providers and buyers of online advertising space is an important part of the discussion concerning data power. The value of the data is reflected in a higher price charged for online advertisements than for advertisements in which data play no role, or a less important role.⁶⁴ The determination of this price requires extensive research, with a relevant comparison being made with other forms of advertising, and explanatory variables for the price of advertising space also being analyzed as far as possible (see also 2.3.2). ACM has not carried out such research in the context of this market study.

In the assessment of the value of data, another important factor is the extent of any decline in additional revenues from the collection of more data. Collecting more data can mean that a platform is better able to identify users' characteristics, and, hence, offer more effective advertisements. In statistical terms, the ability to better identify characteristics as a result of greater scale means that the estimation error decreases. The improvements in the estimation error decrease, however, as the population steadily grows. This means decreasing additional revenues are generated from the collection of data.⁶⁵

Another aspect of the value of data concerns the extent to which the collected data retain their value over time. In the context of online advertising, this appears to depend particularly on the use of the data. A retargeting campaign, for example, inevitably requires fresh data. A retargeting campaign is a campaign in which a user, who has shown interest in a particular product, is shown advertisements for that product. An example is where someone who has just visited a site relating to cars receives advertisements for a particular make of car. For other purposes, such as brand awareness, it is

⁶⁴ See, for example: Howard Beales J. & J. Eisenach, An empirical analysis of the value of information sharing in the market for online content, Navigant Economics, January 2014, <http://www.aboutaHds.info/resource/fullvalueinfofstudy.pdf>.

⁶⁵ See, for example: Enric Junqué de Fortuny, David Martens & Forster Provost, Predictive Modeling with big data. Is bigger really better?, Big Data, Vol. 1 No. 4, December 2013, pp. 215 – 226, and Stucke M.E. and A.P. Grunes, Big Data and Competition Policy, Oxford University Press, New York, 2016, pp 172-181.

sufficient to use less up-to-date information. A number of interviewed participants state that the shelf life of data is usually limited to a maximum of six months. Finally, we note that learning effects also play a role in the value of data. The longer the period over which data are collected, the more accurate the picture gained of the characteristics of users. As a result, it is possible to advertise on a more targeted basis, which could translate into a higher value for the advertising space.

Criterion 4: Data are not substitutable

The question of whether data are non-substitutable is actually the same as the question of whether data are 'essential input', precluding successful entry into the respective market. In the case of the online advertising markets, we have already ascertained that data constitute important input. Entering the online advertising markets is not an isolated action, however. Due to the multi-sided character of the business models of online platforms (see 2.1.2), entry into an online market is always associated with (or is even the consequence of) entry into another market. The online video platforms examined in this market study are active on the markets for online advertising space, but also compete with each other to a greater or lesser extent for the attention of the viewer.

In order to be successful as a provider of online advertising space, it is necessary to have an online platform that attracts a sufficiently large user base. The ability of an online platform to reach a sufficiently large user base depends primarily on whether the online platform meets a need of consumers and not necessarily on the volume or nature of the data to which the operator of the platform has access. The success of the WhatsApp communication platform as a substitute for other communication services, for example, is due not to specific data available to WhatsApp, but to the lower costs and new, superior functionalities compared with SMS. Another example of successful entry without using data is Snapchat. This app is popular particularly among younger people between the ages of 15 and 19⁶⁶.

With regard to competition between online video platforms for the viewer's attention, ACM notes, on the basis of discussions with market participants, that the ability to access a large volume of data on users does not appear to play a very prominent role. Various online video platforms collect user data to recommend relevant content. Although this is clearly intended to improve the service for the viewer and to keep the user on the platform longer, we have the impression that, for online video platforms, other factors, such as the size of the content portfolio or the nature of the content, are more important competition parameters than the quality of the recommendations.

This illustrates that the ability to access large volumes of data may well constitute important input for the ability to sell online advertisement space, but that successful entry into online advertising is also highly dependent on the ability to offer a service or application that meets a particular need of end-users. In this market study, ACM has not received any indications that entry into markets in which online platforms operate is largely influenced by any advantages certain participants have in the field of data collection and/or processing.

3.1.3 Conclusion

The question is whether the collection of data can contribute to the emergence of market power on the markets on which online video platforms operate. We have described two possible situations in which data can contribute to the emergence of market power. The first was related to the possible existence of a relevant market for consumer data for online advertising in which one or more

⁶⁶ Newcom Research & Consultancy B.V., National Social Media Survey 2017.

suppliers of ‘third-party data’ has market power. We currently have no indications that this situation exists.

In the second situation, the question was whether data can erect barriers to entry. ACM has examined this hypothesis for the online video platform market. Data do not appear to be a necessary precondition for entry into the markets in which video platforms operate. This is partly due to the nature of the services that the platforms offer and the current market dynamics. However, this does not mean that having data cannot constitute a barrier to entry into other markets. The relationship between data and market power must therefore be assessed on a case-by-case basis in the specific context of the market(s) concerned.

ACM has assessed the possible consequences of data collection for competition in the markets in which online video platforms operate. The foregoing therefore relates only to this and should not detract from any assessment of data collection from the perspective of consumers and/or privacy.

3.2 Bundling of advertising space with advertising technology

Open and closed systems coexist on online advertising markets. Publishers can choose how they offer their advertising space: by means of direct deals, through an ad network, the programmatic ecosystem, or a combination of all three. This choice determines the possible ways in which advertisers can purchase the advertising space they require (see section 2.4.3). Examples of closed systems are: The Facebook Audience Network and the Google Display Network. The providers of these systems are themselves also relatively large providers of online advertising space. Advertising space on Facebook is only available through the Facebook system. A concrete example of bundling cited by interviewed participants and about which ACM has received indications is the bundling of advertising space on YouTube with Google's advertising technology.

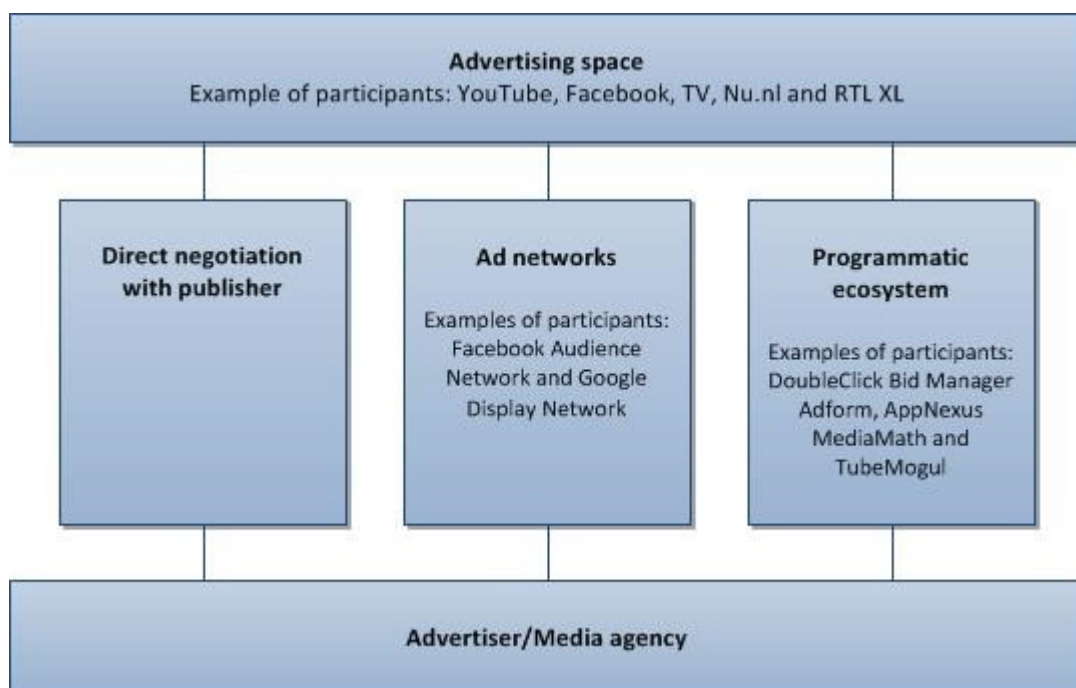
Google offers advertising space on YouTube in three ways, namely:

1. On its own ad network (Google Display Network)
2. By means of direct negotiation with advertisers
3. In the programmatic ecosystem

In the third case, however, Google applies a restriction whereby this advertising space can only be purchased using Google's own advertising technology, DoubleClick Bid Manager (DBM). The question is whether this bundling of YouTube's advertising space with Google's technology poses a risk to competition.

Figure 4 shows a schematic representation of the advertising side of the market. A detailed description can be found in section 2.4 of this report.

Figure 4: Schematic representation of online advertising side of the market



Relevant abbreviations and terms in this section:

- **Ad network:** This manages the advertising space of multiple publishers and determines the sales strategy.
- **DSP⁶⁷:** This stands for '*demand-side platform*', which facilitates the programmatic purchasing of advertising space.
- **DBM:** This stands for 'DoubleClick Bid Manager', Google's own DSP.
- **Programmatic purchasing:** Automated purchasing with the aid of DSP technology, among others, for example real-time bidding at an advertising auction, see section 2.4.2.2.
- **Multi-homing:** This means that the consumer uses multiple providers of video content.
- **Single-homing:** This means that the consumer uses only one provider of video content.
- **Targeting:** This means showing advertisements to specifically selected target audiences.

3.2.1 Potential risks in this scenario

The use of open and closed systems in the advertising chain and their advantages for competition and efficiency are described in section 2.4.3.2. The implication of using closed systems is that the advertiser has no freedom or less freedom in the choice of technical solutions, for example to purchase advertisements or to use data from outside the system for targeted advertising (such as advertisers' own data on their customers). Instead, an advertiser has to use solutions that are built into the system. This type of restriction can lead to inefficiencies for advertisers. For example, they need a DSP to purchase advertising space on ad exchanges, but cannot use the DSP in the same way to purchase advertising space within ad networks. Another example is that it is difficult for advertisers to optimize their campaign across all the various possible advertising channels. This is because the targeting options provided by the ad network differ from the way in which an advertiser would seek to 'target' on the basis of his own user data.

From a competition perspective, there is a possible problem with bundling YouTube's advertising space with Google's DSP, DoubleClick Bid Manager (DBM). This linkage enables any possible position of marketpower held by Google in advertising space to be transferred to a market for DSP technology. The result is a supra-competitive price for DSP technology.

Theory of harm: supra-competitive price for DSP technology

This theory of harm applies if users of DSP technology (such as advertisers or media agencies) consider YouTube advertisements to be such an important product that either they switch from their current DSP to DBM in order to advertise on YouTube, or that other DSPs are no longer an alternative for current users of DBM because they cannot offer advertisements on YouTube. DBM is then no longer disciplined by other DSPs and Google can charge a supra-competitive price for the use of DBM.⁶⁸

⁶⁷ In practice not all participants that fulfil the above definition are known as DSPs. There may also be differences in the specific offering of companies that fall within this definition. No further detail is required for our analyses.

⁶⁸ This theory of harm has similarities with the recent European Commission case on the advantage given to Google Shopping, see: http://europa.eu/rapid/press-release_MEMO-17-1785_en.htm. As in that case, the question here is whether a vertically integrated company with a dominant position in the upstream market gives advantage to its own services in the downstream market at the expense of competition. However, the European Commission investigated markets other than those covered here, namely the market for general search engines and the market for price comparison websites. Below, ACM examines the markets for online video advertising and DSP technology. The different market circumstances can lead to different assessments on matters such as the existence of a dominant position and actual or possible effects of the examined behavior on competition. For example, the European

According to ACM, there are two relevant questions in this problem scenario:

1. Does YouTube have a dominant position?
2. Does the link between Youtube and DBM lead to exclusion?

First, in order for this theory of harm to be valid, Google would have to have a dominant position with YouTube in the market for advertising space. Such a dominant position would exist if YouTube were such an attractive advertising channel for advertisers that there were no good alternatives. If this condition is not fulfilled, users of competing DSPs will not switch to DBM in order to purchase YouTube advertising space. And DBM users will not experience barriers in switching to another DSP.⁶⁹

Second, the link between YouTube and DBM must indeed result in competitors of DBM being excluded, or so marginalized, that DBM becomes dominant. One of the important factors is whether end-users of DSP technology practice multi-homing (i.e. use multiple DSPs simultaneously). Another significant factor is whether alternative purchasing methods are an alternative to DSP technology. Examples are non-programmatic methods of direct purchasing and purchasing through ad networks (see section 2.4). Furthermore, there must be barriers to entry in the market for DSP technology. Only then can Google permanently charge supra-competitive prices for its DSP technology.

Below, we deal with each of the two elements in the problem scenario. Each of these two elements must be fulfilled in order to conclude that there is a competition problem in this scenario. If the competition is harmed, we must weigh that up against possible efficiency advantages resulting from the link.

3.2.2 Risk analysis of a possible dominant position of YouTube

The first step in analyzing this possible problem scenario is to answer the question of whether YouTube has a dominant position in a relevant market for advertising space. For that, it is necessary to ascertain what forms of advertising and what providers of advertising exert competitive pressure on YouTube advertising. In the context of this market study, ACM has examined possible products that are or may be an alternative to advertisements on YouTube. The products constitute the relevant market. For this, we have used insights from other competition cases and insights gained in our own market study. A conclusive market definition is outside the scope of this market study. Therefore, in the remainder of the analysis, we use various *possible* relevant markets in which we determine the position of YouTube.

3.2.2.1 Insights from market definitions in other competition cases

One of the first competition cases featuring markets for online advertising was the merger between Google and DoubleClick in 2008. In its decision on this merger, the European Commission defined

Commission has determined that Google has a dominant position in the market for general search engines, but ACM does not consider it plausible that YouTube also has a dominant position in the market for online video advertising.

⁶⁹ In the remainder of the report, ACM assumes that DBM has access to all YouTube advertising space. Where this is not the case, it is less likely that DBM will gain a dominant position, due to the fact that it is the only DSP with access to YouTube advertising space. This means that ACM's conclusion, namely that this risk is limited, is conservative. ACM's market study, however, indicates that DBM has access to at least 70 percent of the available advertising space on YouTube, including the popular TrueView format.

national markets for the provision of online advertising space.⁷⁰ The European Commission based its conclusion on the following arguments:

- a) The potential for targeted advertising is much better online.
- b) Online advertising offers more possibilities for determining how many and which viewers have seen the advertisement, allowing rapid retargeting.
- c) The price mechanism differs from that of offline advertising space, because here payment is possible on a cost-per-click (CPC) and cost-per-impression (CPI) basis.⁷¹

The Commission judged that the geographic dimension of these markets was national. due to different consumer preferences, languages, and cultures. The Commission left open the question of whether the market for the provision of online advertising space should be further subdivided into markets for search advertising and non-search advertising. The European Commission came to the same conclusion in its assessment of the mergers between Facebook and WhatsApp,⁷² and Microsoft and Yahoo!⁷³

3.2.2.2 Insights from ACM's market study

The market study shows that advertising on YouTube faces competitive pressure at least from other providers of online video advertising space, for a number of reasons. The offered products and prices are comparable, advertisers see other providers of online video advertisements as alternatives to YouTube and the providers see each other as important competitors. The narrowest possible market in which we determine the position of YouTube is thus a market for online video advertisements.

Competitive pressure from other online advertising formats

The market study has produced various indications that the relevant market may be wider than online video advertising alone. First, there is the possibility of competitive pressure from online advertising formats other than video. Although video advertising still has a relatively modest share of total online advertising expenditure in the Netherlands, this method of advertising is becoming increasingly popular. Growth in the first half of 2016, compared with the first half of 2015, amounted to 55 percent.⁷⁴ Reflective of this growth, there are a number of DSPs and SSPs that currently focus primarily on trading in video advertisements, such as SpotX, FreeWheel/StickyAds, TubeMogul and Videology. Market participants attribute the growing popularity of video advertisements to the fact that video can contain more of a message than a banner or magazine advertisement. Video advertisements are therefore used particularly for branding purposes as opposed to advertisements that seek to elicit certain actions by the user, such as making a purchase (conversion). In the case of video advertisements, the possibilities for interaction with the user (by clicking, for example) are more limited than in the case of other formats. In this case, more frequent use is made of cost-per-mille (CPM) than cost-per-click (CPC) as a payment method. The above suggests that video advertising can be distinguished from other forms of online advertising. Some interviewed market participants state, however, that online advertising in general is increasingly focused primarily on branding, and that the distinction between branding and conversion is thus becoming blurred. This suggests that video advertising is experiencing competition from many more online formats.

⁷⁰ Case COMP/M.4731 – Google/DoubleClick, decision of the European Commission.

⁷¹ In the case of Facebook, for instance, further payment options are also possible, such as payment per user action ('liking', for example).

⁷² Case COMP/M.7217 – Facebook/WhatsApp, decision of the European Commission.

⁷³ Case COMP/M.5727 - Microsoft/Yahoo! Search Business, decision of the European Commission.

⁷⁴ IAB (2016b).

All things considered, ACM's market study therefore gives no clear answer to the question of whether YouTube only faces competition from other online video advertising space or additionally from other online advertising formats, including display, such as banners, or even search advertising. In the remainder of the analysis, ACM therefore includes a possible market for online display advertising space, and a possible market for online advertising, which comprises not only display advertising formats but also search advertising.

Competitive pressure from offline video advertisements

A second question is whether YouTube faces competitive pressure from offline video advertisements on TV. The market study has produced indications that the basis on which the Commission defined markets for online advertising space in *Google/DoubleClick* continues to apply at present. Interviewed market participants state that, due to the availability of more user data, online advertising offers more possibilities for targeted advertising and retargeting, and for campaign analysis (who was reached and how often). Participants also state that video advertising on TV attracts a lower price per advertisement than online video advertising. Although the required budgets are large, the price per advertisement per viewer is low because the reach is extensive. The price difference is an indication that advertising on TV is a different market from online video advertising. Due to the large budgets required, in the case of small advertisers, TV advertisements are probably not a substitute for online video advertisements. The market study shows that large advertisers conduct some campaigns both online and offline.⁷⁵ These advertisers choose TV due to the low cost per viewer and the extensive reach. Advertising on TV is therefore possibly a substitute in the case of large advertisers.

ACM therefore believes it is possible that, in the case of large advertisers, TV advertisements and online video advertising could at present be substitutes, but that is currently less likely in the case of small advertisers. The market study has not shown where the precise boundary should be drawn between large and small advertisers. In the future, the distinction between online video advertising and video advertising on TV will presumably fade due to the development of programmatic trading in TV advertisements (see also the following section). For this reason, in the remainder of the analysis, we allow for the possibility of a market for video advertising encompassing both online and TV.

In line with the European Commission's analysis in *Google/DoubleClick*, we assume that markets for advertising space are national in nature due to different consumer preferences, languages, and cultures.

3.2.2.3 Market position and market power of YouTube

In this section, we investigate whether it is plausible that YouTube has a dominant position. Based on the analysis in the previous section, we have considered a number of possible relevant product markets for advertising space in the Netherlands⁷⁶, namely for:

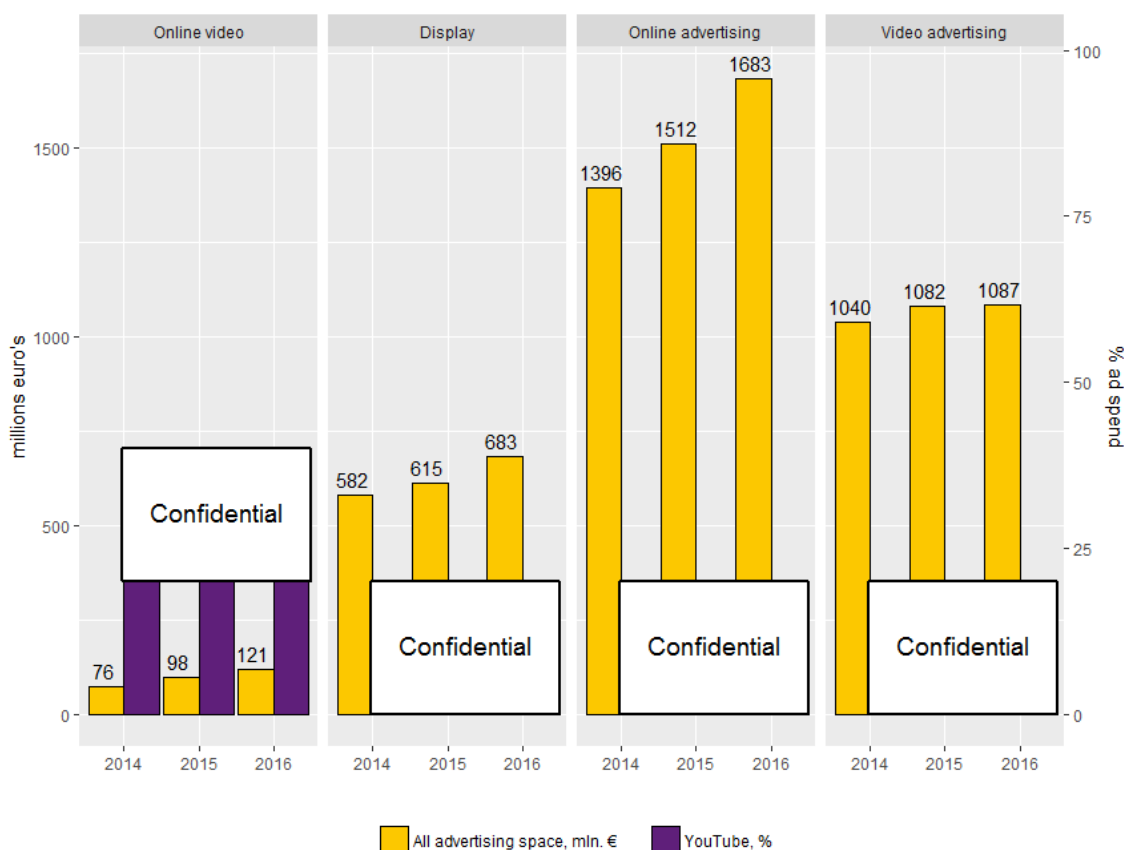
1. Online video advertising
2. Online display advertising
3. Online advertising
4. Video advertising, both online and on TV

⁷⁵ See, for example: IAB Europe Attitudes to Digital Video Advertising, November 2016.

⁷⁶ This market study contains an exploration of possible problems. It is therefore sufficient here to use possible relevant markets.

Figure 5 shows the total size of each of these potentially relevant markets expressed in millions of euros, based on IAB (2017)⁷⁷ and YouTube's market share. ACM has calculated this share on the basis of data received from market participants.

Figure 5: Market size of the Netherlands, in millions of euros, and market share of YouTube, 2014-2016



These figures suggest that even if a relatively narrow market for online video advertising is defined, YouTube's market share is not so large that it points to a dominant position. Facebook's market share in this narrow market is significant at [20-40] percent in 2016.

In a wider market for online advertising, YouTube's market share is negligibly small. Against this, it could be argued that part of the online advertising space is not genuinely competing with YouTube advertising space, because search advertising space in the Netherlands is offered almost exclusively by Google Search. If we add all turnover from search advertisements in the Netherlands to YouTube, the market share in a market for online advertising rises to approximately [40-60] percent in 2014-2016. On the basis of the theory of harm, however, it is less logical to take account of Google's position in search advertisements. This is because search advertisements are not purchased through a DSP. Google's position in search advertisements cannot therefore be transferred to the market for DSP technology.

⁷⁷ See: IAB report on Online Advertising Spend. The Netherlands 2016, April 2017.

Other relevant factors

In dynamic markets such as the online advertising market, market shares are not sufficiently informative to determine that a dominant position exists. Therefore, it is also important to assess other factors that can point to market power.

The market study shows that YouTube has a number of advantages compared with some competitors. First, it has a large number of visitors. Second, Google has access to a large volume of user data with which advertisements can be better targeted at the audience. Third, YouTube has a log-in function that makes it easier to track if users change device. Facebook, however, also offers these advantages. And in markets for online advertising, including video, Facebook is a strong competitor for YouTube. These advantages therefore do not point to YouTube having a dominant position.

Furthermore, market participants state that advertising on TV will probably also be traded programmatically in future. As a result, the differences between online video and TV advertisements will decrease and the plausible market will consequently grow, offering more opportunities for all participants. The first steps in this development are already taking place. For example, the TV manufacturer Philips and the advertising platform 'Improve Digital' are set to collaborate to offer programmatic advertising on smart TVs.⁷⁸

Interim conclusion

All things considered, it is not plausible that YouTube has a dominant position in a relevant market for advertising space in The Netherlands.

3.2.3 Risk analysis of exclusion as a result of linkage

If YouTube did have a dominant position, we would move to the assessment of the second element of the theory of harm: the question of whether, through the linkage between YouTube and DBM, Google is able to exclude DBM's competitors from a market for DSP technology. Our analysis below is therefore based on an assumption that YouTube has a dominant position.

In order to determine whether Google is able to exclude DBM's competitors as a result of the linking of advertising space with DBM's DSP technology, we need to ascertain which participants are competitors of DBM and whether DBM already has a strong position compared to these participants. To this end, we must first define the relevant market for DSP technology and determine DBM's position in it. We will then assess the potential effect of the link on competition in the market for DSP technology.

3.2.3.1 The relevant market for DSP technology

As described in section 2.4.2, there are several ways of purchasing online advertising space. A distinction can be drawn between programmatic and non-programmatic trading. DSP technology is part of the programmatic ecosystem. In the context of market definition, the question therefore arises as to whether non-programmatic purchasing methods are a substitute for programmatic purchasing.

A difference is that the use of DSPs, which provide access to the programmatic ecosystem, allows access to a larger selection of advertising space. This is in contrast to direct deals, where it is necessary to negotiate with individual publishers. Among these, there are ad networks that bundle

⁷⁸ See: <http://nederlandsmedianieuws.nl/media-nieuws/TP-Vision-Philips-smart-TV-klant-bij-Improve-Digital>.

the offerings of several publishers, such as the Google Display Network and the Facebook Audience Network. Although the scale of these networks is considerable, it is smaller than that of the programmatic ecosystem as a whole. Nevertheless, the scale of the offering is not important for all campaigns, and, in some cases advertising among a limited number of publishers will be sufficient.

A second difference is that programmatic trading offers possibilities for more effective advertising that are not available in the case of non-programmatic trading. First, more detailed collection and use of data is possible. In the case of programmatic purchasing, advertising space is purchased per individual impression. As a result, more detailed information is available on the effectiveness of the campaign. In the case of non-programmatic purchasing, generally no raw data on the effectiveness of the campaign is shared. However, providers do report on the effectiveness of the campaign in a general sense. Second, in the case of programmatic purchasing, it is easier to use first-party data. With the aid of cookies, for example, advertisers can recognize users who are also included in their own databases. In that way, advertisers can determine whether these users are more or less valuable to them. On the other hand, even in the case of ad networks, there are extensive possibilities for defining target audiences. On the basis of this market study, ACM was ultimately unable to determine whether DSP technology experiences competition from non-programmatic purchasing methods.

Another question is whether a distinction can be drawn in terms of advertising formats when defining the market for DSP technology. An example is the distinction between DSP technology for video advertising space on the one hand, and for display advertising space on the other. There are DSPs that focus mainly on video advertising space, such as TubeMogul or Videology. But many DSPs, including large ones, offer possibilities for all display advertising space, such as DBM, Turn and The Trade Desk. This is an indication that it is relatively easy for providers to offer video advertising facilities additionally, if they do not already do so.

The market study has not produced any indications that services offered by video DSPs differ greatly from services offered by general DSPs. We therefore draw no further distinction between advertising formats, and assume that providers of DSP technology for video and providers of DSP technology for other display formats are in competition with each other.

With regard to the geographic size of the market, it seems likely that the market for DSP technology is at least of European scale. This is because the technology can be used everywhere, and there are a number of large participants operating on a European if not global scale, such as DBM, MediaMath, AppNexus and TubeMogul.

3.2.3.2 The position of DBM in the market for DSP technology

In the remainder of the analysis, we assume that non-programmatic purchasing methods are not a substitute for programmatic purchasing. We therefore assume a market for DSP technology in which no distinction is drawn between video and other forms of display advertising. ACM makes this assumption in order to investigate whether – on the basis of the narrowest possible market – a competition problem could possibly still exist.

In the event that non-programmatic purchasing is a substitute for DSP technology, the theory of harm is, in any event, implausible, since in that case everyone who wants to purchase YouTube has an alternative to DBM. Furthermore, ACM has no indications that Google is pricing YouTube significantly higher in direct deals and 'Google Display Network' (GDN) compared to DBM, which would make DBM de facto the only relevant channel for its purchasers. On the contrary, most

YouTube space is still sold through direct deals and GDN.

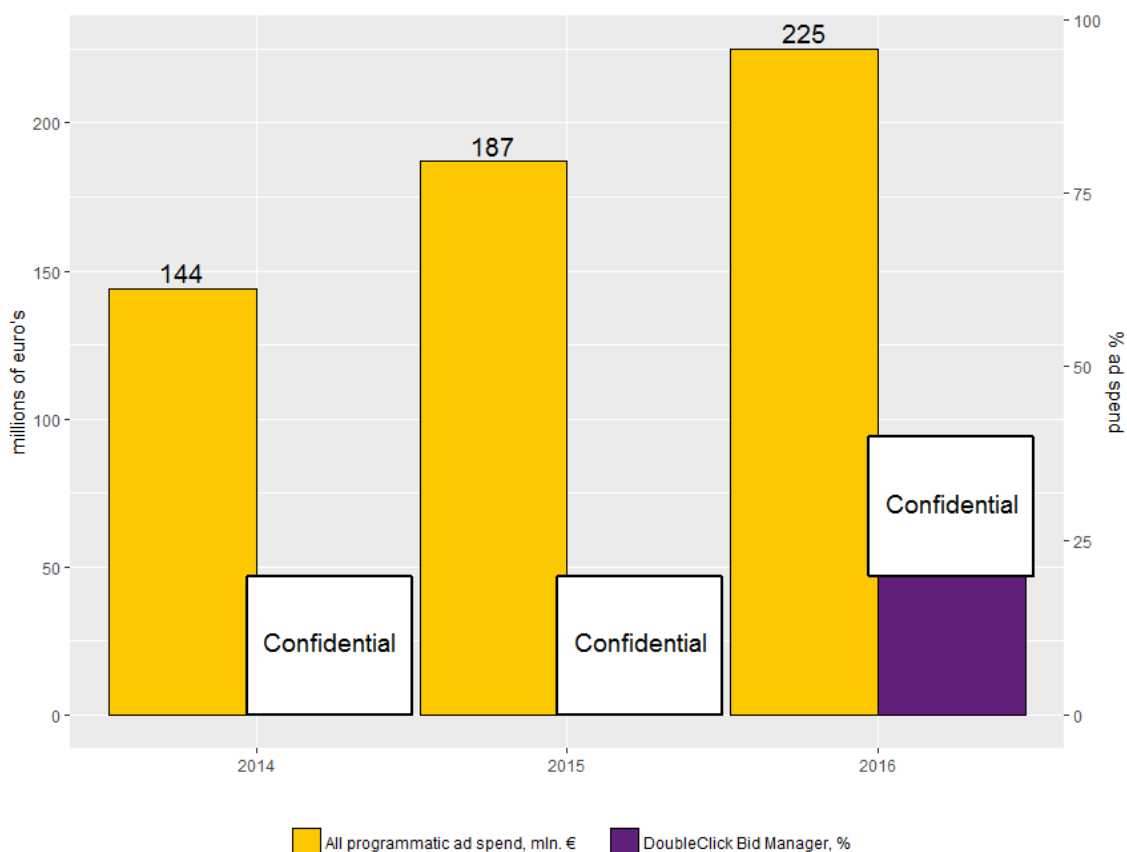
This analysis has two important limitations. First, the market study has provided insufficient information on the turnover of individual providers. There is consequently no estimate of the market shares of possible major competitors of DBM. For the same reason, it is not possible to calculate market shares on the basis of the direct income of the participants themselves. For some participants, however, we do know the value of the advertising space purchased with their product. We can compare this with publicly known estimates of the total value of the programmatically traded advertising space⁷⁹, as a result of which market shares of individual participants can be estimated. Second, the market study has produced insufficient information to outline the market positions of participants in a European market for DSP technology. We therefore confine ourselves to the situation in the Netherlands. ACM cannot assess the extent to which the situation in the Netherlands is representative of Europe.

Figure 6 reports the value of the advertising space traded programmatically in the Netherlands in millions of euros, and DBM's share of it as a percentage, for the years 2014-2016.⁸⁰

⁷⁹ See: *IAB report on Online Advertising Spend. The Netherlands 2016*, April 2017.

⁸⁰ Source: information requests from ACM and *IAB report on Online Advertising Spend. The Netherlands 2016*, April 2017.

Figure 6: Market size of the Netherlands, in millions of euros, and DBM market share, 2014-2016



This chart shows that DBM has grown into a significant player in the Netherlands in recent years. This does not yet mean, however, that the link between YouTube and DBM is the sole cause of this. The data available to ACM suggest that there are at least other reasons for the growth of DBM in addition to the link with YouTube.

3.2.3.3 The effect of the linkage on competition

In this section, we assess the possible effect of the linkage on competition in the market for DSP technology. There are dozens of DSPs operating in display advertising in the Netherlands, and also a large number of DSPs operating for specific video advertising in Europe.⁸¹ This in itself is already a strong indication that there is still robust competition in the market for DSPs. Furthermore, there are several global technology companies operating in online advertising, which could presumably offer their own DSPs. There are even advertisers that have their own DSP technology (Groupon and Amazon, for example⁸²).

The market study also shows that some DSPs focus exclusively on online video advertising, but that many DSPs are or can be used for display advertising in general (of which online video advertising is

⁸¹ See the overviews of the industry produced by Improve Digital, http://www.improvedigital.com/main/wp-content/uploads/market-maps/MarketMap_Netherlands.pdf, and http://www.improvedigital.com/main/wp-content/uploads/market-maps/MarketMap_Europe_Video.pdf.

⁸² See: <https://adexchanger.com/data-driven-thinking/when-programmatic-in-house-is-really-not-in-house/>

part). In the Netherlands, the online display advertising market as a whole, is more than five times larger than the market for online video advertising (in 2016). This suggests that many DSPs that do not have access to YouTube can still represent substantial value for advertisers.

The market study also shows a mixed picture with regard to multi-homing: the practice whereby advertisers use multiple DSPs. Interviewed market participants state that it is expensive to use multiple DSPs, particularly due to the budget agreements with the DSPs and the personnel costs. In the case of multi-homing, employees of a media agency, trading desk or advertiser have to use multiple software packages, manage data across all systems, etc. In practice, however, multi-homing does occur significantly. In some cases, different DSPs are even used for the same campaign.

No barriers to entry

Finally, there appear to be no significant barriers to entry in the market for DSP technology. This is evident from the mere fact that there are very many providers of this technology, both in the Netherlands and in Europe. The market study has also produced no indications to the contrary.

Interim conclusion

Even if a narrow market for DSP technology is defined, it is not plausible that competitors of DBM are being excluded from the market for DSP technology as a result of the linkage.

3.2.4 Conclusion

ACM concludes that it is unlikely that Google could monopolize the market for DSP technology by only offering YouTube advertising space through DBM in the programmatic ecosystem. There are four reasons for this:

1. It is unlikely that YouTube has a dominant position as a provider of advertising space.
2. There is a real possibility that DBM will experience competition from non-programmatic purchasing methods.
3. Multi-homing is practiced by DSP users.
4. There appear to be few barriers to entry in the market for DSP technology.

Since harm to competition is implausible, it is not necessary to examine possible efficiencies of, or justifications for, the link between YouTube and DBM.

3.3 Dependence on large market players to reach users

During ACM's market study, a number of publishers pointed to a growing dependence on Facebook and YouTube. That dependence particularly concerns the attraction of visitors to their own websites. These participants use Facebook and YouTube to entice visitors to their content by posting links to their own sites and posting some of their content (for example trailers for films or series) on them. The participants believe it is unfair that they feel compelled to post all or part of their content on Facebook, whereas Facebook does not allow users who post content on Facebook to share in advertising income that Facebook generates with the content they post.⁸³ Another question is whether there is a problem with the use of algorithms to show content. A number of participants state that Facebook's algorithms are set up in such a way that links to video content of participants who operate their own platforms are given less relevance on the timeline than video material posted by users on Facebook itself.

3.3.1 Possible problem scenario

It is conceivable that Facebook constitutes a 'bottleneck' to which other participants would need to have access in order to reach users. In that situation, Facebook can be seen as a vertically integrated participant that is active, on the one hand, as a provider of a platform that competes for users' attention, and, on the other hand, operates as a provider of online advertising space. Facebook could use its position as a platform provider, to exclude competitors from the market for online advertising space in a number of ways⁸⁴:

- Facebook could impose unfavorable access conditions;
- Facebook could set up its algorithms in such a way that they place the content of competing providers of advertising space less prominently than the content of participants not competing with Facebook.

As a result of such practices, competing providers of online advertising space would be less able to entice visitors to their websites, and, hence, generate advertising income. The effect of this would be a reduction in the quality of content and/or higher prices for online advertising space.

Theory of harm: exclusion of competition

According to ACM, there are two relevant questions in this problem scenario:

1. Does Facebook constitute a 'bottleneck' to which other participants need access in order to reach consumers?
2. Do the access conditions or less prominent placement eliminate competition in the market for online advertisements?

The first question is whether Facebook constitutes a 'bottleneck' to which other participants need access in order to reach consumers. That would be the case if access to Facebook's platform constituted input that was *objectively indispensable* in order to compete effectively in a downstream market. The second question is whether the access conditions or less prominent placement, eliminate competition in the market for online advertisements. If access were refused or

⁸³ This is much less of a factor in the case of YouTube because content providers on this platform can share in the advertising revenues.

⁸⁴ In this case, it can be concluded that a refusal of access is unlikely. With regard to the posting of content and links to content, Facebook is by its nature an open platform on which anyone with an account can post content and links free of charge.

unreasonable access conditions were imposed with the same consequence, this would probably result in the elimination of effective competition in the downstream market and hence in harm to users.

In the problem analysis below, we again assume that the possible national relevant market(s) for online advertising space are as previously described. In these markets, national publishers such as TMG, RTL, Sanoma/SBS are in competition with international providers such as Google and Facebook.

3.3.2 Risk analysis

In this analysis, ACM assesses the aforementioned possible problem scenario. We first consider the bottleneck problem and the fact that no sharing in advertising income is permitted. We then consider the operation of algorithms that determine the order of presentation of content.

3.3.2.1 Facebook as a ‘bottleneck’

With regard to the first condition, it can be stated that Facebook currently constitutes an important route by which users access the content and platforms on the internet. But there are still many alternative routes by which users can access content platforms on the internet and vice versa (for example, through search engines, YouTube, other social media, directly through browsers, own apps). In addition, attention can be drawn to online content in other ways, for example through print media or television. Users are also not limited in terms of their ability to access content on certain platforms or websites. Currently, therefore, it cannot be stated that for advertising purposes, access to Facebook is a service that constitutes essential input in order to compete in the market for online advertisements, including video.

3.3.2.2 Access conditions

If there were essential input, the next question would be whether the conditions under which access is granted could hinder competition in a related market. In this regard, it is relevant that posting content on Facebook is in itself cost-free, but it could lead to an incremental loss of advertising income for the participant that posts the content on Facebook, since the content is viewed on Facebook and not elsewhere. The posting of content on Facebook nevertheless also generates additional gains for publishers in the form of extra traffic. The interviews with market participants also show that these participants take a conscious approach to this. They ensure that they are present on Facebook to draw attention to their content, but exercise restraint by only posting trailers, short clips and links to their own platform and sites. They publish the valuable content only on their own sites and platforms. In that way, they appear to be weighing up the opportunity costs of Facebook as an advertising medium (by possibly sacrificing advertising income) against the gains from using Facebook as an advertising medium (by selling more advertising space on their own sites and platforms). The fact that no direct income can be generated from advertisements on Facebook clearly does not deter these participants from using this platform to generate traffic.

Hence, it does not appear that Facebook's policy with regard to sharing in advertising revenues impedes publishers' potential to compete in the market for online advertising space, including video.

There are also indications that Facebook is changing its policy on sharing in advertising income by third parties. For example, the company has made it possible for third parties to exploit advertising

space themselves within "Instant Articles,"⁸⁵ and has recently announced that it will start offering advertising space between posted videos and sharing the revenues with the publishers of videos.⁸⁶

3.3.2.3 Less prominent placement of third-party content on Facebook

With regard to the indications of less prominent placement of third-party content on Facebook, ACM notes the following. We can also see this as one of the conditions under which Facebook offers third parties access.

In addition to the fact that there must be essential input, a number of other conditions must be fulfilled in order to designate this as a competition problem.

It would have to be clear, for example, that:

1. Third-party content is actually placed less prominently on a consistent and systematic basis.
2. There is no objective justification for such behavior.
3. This behavior leads, or may lead, to publishers of this content being impeded in their ability to compete on the market for online advertising space.

The indications that ACM has received in the context of the market study are not sufficiently concrete to fulfil these conditions. The examination of whether third-party content is being placed less prominently on a consistent and systematic basis would require an in-depth investigation of the way in which the Facebook algorithms operate. Furthermore, it would be necessary to examine whether the efficiency of the operation of these algorithms could justify any less prominent placement. Partly having regard to the conclusion that access to Facebook currently does not constitute essential input, we currently see no reason to examine these indications further.

3.3.3 Conclusion

In this section, the central question was whether national publishers would be heavily dependent on large market participants if Facebook and Google used their position to impede competition. That would give rise to a competition problem if access to Facebook constituted essential input for other publishers to compete in the market for online advertisements, including video. That does not appear to be the case at present, having regard to the other possibilities for reaching users. Furthermore, there do not appear to be any access conditions that lead to other publishers being impeded in their ability to compete.

⁸⁵ See, for example: Poynter, Facebook wants to make it easier for publishers to make money, <http://www.poynter.org/2016/facebook-wants-to-make-it-easier-for-publishers-to-make-money/429916/>.

⁸⁶ See, for example: Recode, Facebook is going to start showing ads in the middle of its videos and sharing the money with publishers, <http://www.recode.net/2017/1/9/14211466/facebook-video-advertising-midroll>.

ACM wishes to stress that the above conclusion relates to the market situation at the time of publication of this market study. The markets concerned are very dynamic, and sudden and powerful changes can lead to rapid differences in the participants' positions. The analysis could turn out differently if the market were to develop in such a way that access to Facebook did constitute essential input for competition in the market for online advertising space. ACM currently has no indications of this, but cannot rule it out.

Furthermore, we note that ACM has assessed this situation from the competition perspective. It is not possible to rule out a different assessment of this situation from other perspectives – such as press freedom, media diversity or accessibility of national content.

3.4 Consumers disadvantaged by general terms and conditions

Finally, ACM assesses whether the general terms and conditions of online video platforms contain terms that can be detrimental to the consumer. The reason for this is that during this market study, ACM's attention was drawn on several occasions to possible problems in the general terms and conditions of the platforms.

General terms and conditions are the method commonly used to conclude a legal agreement without individual negotiation on the conditions. They simplify transactions between consumers and providers. Without general terms and conditions, they would have to conclude agreements on each transaction concerning, for example, rights and obligations. Consumers and platforms cannot negotiate a separate agreement for every uploaded or viewed video. General terms and conditions thus form the basis for a large part of the agreements between providers and consumers. Examples of matters set out in the general terms and conditions include:

- The method and time of supply of the product or service
- The moment and method of payment
- The grounds on which the agreement can be terminated
- Rights and/or duties that continue after termination
- Liability and possible compensation
- Return, repair and/or warranty provisions
- Rights in the event of complaints and/or disputes

A general description of the user side of the market can be found in section 2.3 of this report.

In order to give an assessment of the risks, we have carried out an 'accelerated analysis' of the general terms and conditions of online video platforms. We note the following:

- This accelerated analysis is intended to assess whether and to what extent potentially unfair terms arise in the platforms' general terms and conditions.
- We have also assessed whether particular characteristics of platforms, such as their size and business model, are related to the existence of unfair terms.
- The accelerated analysis is not intended to detect violations. In many cases, that would require a full legal analysis.

3.4.1 Possible problem scenario

The question that ACM seeks to answer is whether the consumer is disadvantaged by the general terms and conditions, or individual provisions in them, on the use of online video platforms. For this, we use the European 'Directive on unfair terms'.⁸⁷

A term (condition or combination of conditions) is considered unfair here if it seriously distorts the balance between the rights and duties resulting from the agreement to the detriment of the consumer.⁸⁸ The existence of unfair terms in general terms and conditions can unjustly give consumers the impression that they have entered into far-reaching obligations or surrendered rights.

⁸⁷ See: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31993L0013:en:HTML>.

⁸⁸ The Directive presents a series of unfair terms in the accompanying annex. The Directive refers to this as 'an indicative and non-exhaustive list of the terms which may be regarded as unfair'. A term does not therefore necessarily have to be in this list to be assessed as unfair. This assessment is carried out, for example, by an official examination by a court.

Conversely, it can also mean that a company believes it is permitted to do or omit certain things. From both perspectives, the agreement may be to the detriment of the consumer.

In the Netherlands there was already legislation on general terms and conditions before the European Directive. This existing legislation has been left unchanged or amended only slightly on the basis of the Directive. The Dutch legislation⁸⁹ refers to terms that are unreasonably onerous for the consumer. A distinction is drawn here between terms that are in any case unreasonably onerous⁹⁰ and terms that are assumed to be unreasonably onerous⁹¹. In summary, in the latter category the provider must demonstrate successfully to the court that it is nonetheless reasonable to include the term in the specific case. In the accelerated analysis, ACM has carried out an assessment against the European Directive for the purposes of international comparability.

3.4.2 Risk analysis

The accelerated analysis was carried out on the general terms and conditions of six online video platforms. The selection was made by us on, among other aspects, the following aspects of the platforms: the size in terms of users, the business model, and the national place of business or origin of the platforms. We also assessed the general terms and conditions of four other platforms, including two search engines and two review sites.⁹² This was to check whether any problems relating to general terms and conditions were unique to online video platforms.

The European consumer authorities, including ACM, have carried out an extensive analysis – under the leadership of the French consumer authority (DGCCRF) and with the support of the European Commission – of a number of unfair terms in general terms and conditions of social media platforms. The general terms and conditions covered by this analysis were not the same as those included in ACM's accelerated analysis for this market study.⁹³

3.4.2.1 Findings of ACM's accelerated analysis of general terms and conditions

ACM's main finding is that *all* general terms and conditions of the analyzed online video platforms contain unfair or potentially unfair terms. The number of unfair or potentially unfair terms varies depending on the platform and ranges from 2 to 15. The average is over seven unfair or potentially unfair terms.

Examples of unfair terms we encountered are⁹⁴:

- Exclusion of Dutch law or the competence of the Dutch courts.
- Unilateral amendment of the general terms and conditions without clear and timely notice being given to the consumer and without the consumer being given the possibility of

⁸⁹ Dutch Civil Code Book 6, 6.5.3, sections 6:231 to 6:247 (see: http://wetten.overheid.nl/BWBR0005289/2017-03-10#Boek6_Titeldeel5_Afdeling3).

⁹⁰ Section 6.236 of the Dutch Civil Code, also known as the 'black list'.

⁹¹ Section 6.237 of the Dutch Civil Code, also known as the 'grey list'.

⁹² In the selection of the platforms in this control group a further criterion was that they had no direct or group relationship with the online video platforms.

⁹³ See the press release of the European Commission of 17 March 2017: http://europa.eu/rapid/press-release_IP-17-631_en.htm.

⁹⁴ The unfair terms identified in the European analysis correspond to a number that ACM also encountered in this accelerated analysis.

dissolving the agreement.

- Exclusion of any form of liability for the service supplied.
- Termination of the agreement by the platform on the basis of unclear rules or unilaterally without stating reasons.

We also have two other – more general – observations.

First, we are struck by the poor readability of all the reviewed general terms and conditions. The language used is complex, and many clauses can be interpreted in different ways. The complexity and size are also due to the incorporation of terms for other services and/or the possible uses of the service, including, for example, commercial or professional use.

In addition, a common observation is that the platforms implicitly or explicitly incorporate the privacy statement as part of the general terms and conditions. This privacy statement is an obligation resulting from privacy legislation.⁹⁵ In short, this states that the consumer must be informed of the use of personal data and information, and the storing or access of data. The consumer must grant explicit consent for this, and must be able to make a free choice. The obligation in the general terms and conditions to accept the privacy statement is at odds with this provision. In this light, it could also be seen as a potentially unfair term.

3.4.2.2 Relationship with platform characteristics

A follow-up question in this analysis is whether there is a relationship between certain platform characteristics and the occurrence of unfair or potentially unfair terms. In the table below, we have established a relationship between our main findings and a number of platform characteristics.

⁹⁵ The European Directive on the protection of personal data (see: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31995L0046:en:HTML>) forms the basis for the Dutch Personal Data Protection Act (see: <http://wetten.overheid.nl/BWBR0011468/2017-03-10>) and the European e-Privacy Directive (see: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32002L0058:en:HTML>) amended by Directive 2009/136/EC (see: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:337:0011:0036:en:PDF>) and in the Netherlands is part of the Telecommunications Act (see: <http://wetten.overheid.nl/BWBR0009950/2017-03-10#Hoofdstuk11>).

Table 6: Relationship between findings and platform characteristics

Characteristics	Results of accelerated analysis
Distinction between platforms in terms of the possibility of content being supplied by the consumer	On most platforms, it is possible for the consumer, after creating an account, to post his own content, for example by providing a comment, a rating or participating in a discussion. On three of the video platforms the consumer can also upload videos himself. An important observation here is that all platforms on which the consumer himself can post digital content also contain various unfair or potentially unfair terms with regard to, for example, obtaining a broad license for the supplied content and the consumer's liability for this digital content. This to a large extent determines the quantity of potentially unfair terms.
Distinction between platforms based on the business model	Most platforms have a business model based on advertising income for which data are collected and used. Platforms with other business models have relatively fewer unfair terms.
Distinction between platforms in terms of national or international provider	Six of the platforms operate internationally and four nationally. The general terms and conditions with an above-average number of unfair terms belong to international platforms, but the lowest-scoring platform also operates internationally. The national platforms rank in the middle between these two groups of international platforms with regard to the number of unfair terms.
Distinction between platforms in terms of size	The platforms with the largest size in terms of users and a wider range of diverse and possibly integrated digital services have more unfair or potentially unfair clauses.

The above shows that a number of aspects of the platforms appear to play a role in the quantity of unfair terms in general terms and conditions. The highest scores are found for internationally operating platforms with a large user base and a business model based on the use of personal data and information for advertising income.

3.4.3 ACM's oversight of general terms and conditions

The accelerated analysis shows that the general terms and conditions of online video platforms contain unfair or potentially unfair terms that may directly or indirectly disadvantage the consumer. That may justifiably raise the question as to why ACM does not take direct action to combat this.

In the first place, this analysis forms no basis for enforcement. That would require a full legal analysis. In the assessment of whether ACM will prioritize such a full investigation, three factors play a role in this case.

First, enforcement involves penalizing a company for the past or discontinuing a specific practice, possible on a mandatory basis. In this case, this would amount in the first instance to the deletion of specific unfair terms. In the case of enforcement, ACM can only assess whether a term complies with the laws and regulations. With enforcement, ACM cannot prescribe – or can only prescribe in very specific cases – what the text of a term should be. In all the terms and conditions studied, however, there are a large number of terms that involve the interests of the consumer as well as the provider. Enforcing the removal of these terms without there being a good alternative may consequently be counterproductive or have an undesirable effect.

Second, the joint action by the European consumer authorities and the accelerated analysis by ACM clearly show that unfair terms occur widely. They also show that most risks arise in the case of large international providers. This is therefore also a strong argument for an international approach to this problem.

Third, the accelerated analysis shows that consumer and privacy legislation are becoming intertwined due to the incorporation of the privacy statement in the general terms and conditions. This occurs particularly in the case of providers that collect consumer data for advertising income. Privacy legislation consequently plays an important role in any possible action by ACM. This action could after all affect the rights and duties originating in the privacy legislation.

3.4.4 Conclusion

In view of the foregoing, there would be no logical reason for selective or specific national supervision of general terms and conditions based only on consumer legislation in the online streaming video market. Hence, ACM seeks to approach the issue within the European partnership between consumer authorities and international cooperation with the members of ICPEN⁹⁶.

ACM also wishes to invest in raising awareness among Dutch consumers of the occurrence of unfair terms. It is important that the consumer knows that not every term in the general terms and conditions is necessarily binding. And that even acceptance of general terms and conditions does not automatically mean that all terms are or remain binding.

ACM will also consult the Dutch Data Protection Authority with regard to the intertwining of consumer legislation and privacy legislation insofar as it relates to the overlapping of rights and duties for/of consumers and platforms and oversight thereof.

⁹⁶ International Consumer Protection and Enforcement Network: <https://www.icpen.org>.

Appendix A – List of interviewed participants

Participant	Category
Adform	Advertising chain
Buma-Stemra	Content provider
Commissariaat voor de Media (Dutch Media Authority)	Regulator
comScore	Advertising chain
Dailymotion	Online video platform
Dentsu Aegis	Advertising chain
Dutch Filmworks	Content provider
Facebook Ireland	Publisher
Freewheel	Advertising chain
Google / YouTube	Publisher Online video platform
GroupM	Advertising chain
IAB Nederland	Advertising chain
Improve Digital	Advertising chain
Institute of Information Law (IVIR)	Academia
Mark and Mini	Advertising chain
Massarius	Advertising chain
Mediamath	Advertising chain
MediaPlus	Publisher
MediaScience	Advertising chain
Netflix	Online video streaming service
NPO	Online video platform
Omnicom	Advertising chain
RTL Nederland / Videoland	Publisher Online video streaming service
Rubicon Project	Advertising chain
Sanoma Media Netherlands B.V. / SBS	Publisher
Social1nfluencers	Content provider
SpotX	Advertising chain
Ster	Publisher
Telegraaf Media Groep (TMG) / Dumpert	Publisher Online video platform
TubeMogul (Adobe)	Advertising chain
University of Amsterdam	Academia
Videology	Advertising chain
Vimeo	Online video platform