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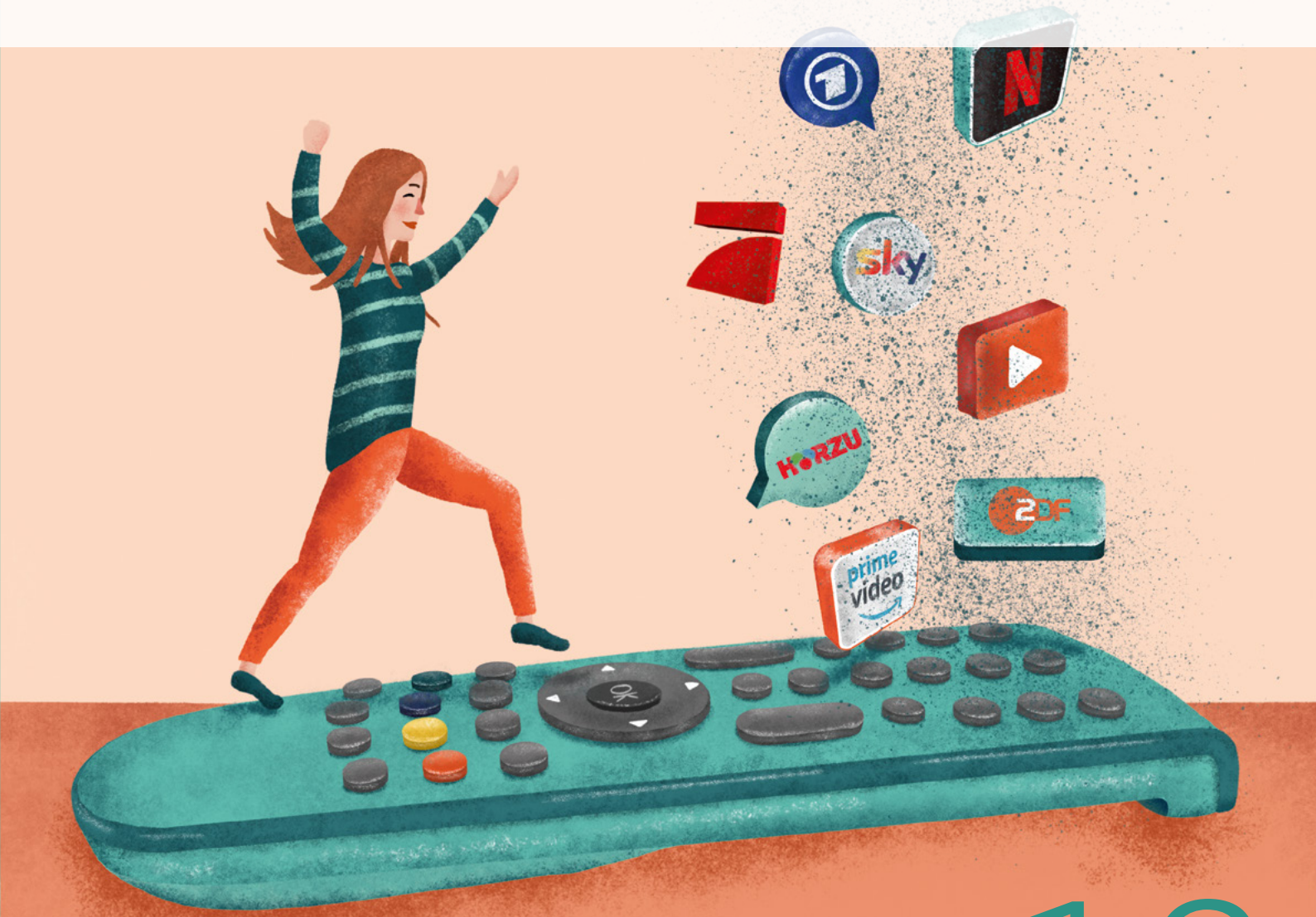
VIDEO

Digitisation

Digitisation complete – how linear is the future of television?



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Digitisation 2018
Video

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Preface

Cornelia Holsten

Chairwoman of the Commission on Licensing and Supervision (ZAK) of the German media authorities

Thomas Fuchs

Coordinator of the expert committee on communications networks, technology and convergence of the German media authorities

How quickly time goes by! For the 14th year in a row now, the German media authorities have published their report on digitisation, offering a full account of the various changes in the means used to transmit broadcast media. Next year, as if to mark the 15th anniversary of the report on digitisation, the digitisation of all means of television transmission in Germany will be complete when the last analogue cable television signals are switched off in 2019. This does not, however, mean an end to the challenges facing us, the German media authorities. For a long time now, we have also been keeping track of convergent media usage and the devices used in TV households. Once again, this year's document clearly indicates that non-linear services are very popular with viewers. Private TV broadcasters have caught on to this and are increasingly responding to this shift by offering on-demand services. Young adults in particular are now using VOD and streaming services more frequently than traditional television; small wonder, considering how ubiquitous convergent devices have become. The industry needs to find out why viewers are interested in particular kinds of programming, when and why they prefer classic linear programming or VOD options, and what kinds of content are better suited to the linear model or the on-demand model. Furthermore, the industry must assess whether convergence can be achieved in the audience flow between television and VOD and to what extent curated and / or algorithm-based recommendation systems will be accepted by viewers in the future.

In our report on digitisation, we wish to devote as much attention as necessary to these developments, both in our survey and in the presentation of the results. To this end, the survey was split in two for the first time this year, resulting in the publication of two separate reports, one for video and one for audio. As always, you can rely on this report on visual media to include facts and data concerning the use of moving images, gathered from a representative survey conducted by Kantar TNS on our behalf. The report is only able to provide some insight into these issues, but the results of the study are available in their entirety on our website. As usual, the report includes perspectives from elsewhere in Europe, since we are indeed inter-

ested in the state of affairs surrounding digital TV households and the success of HD programming in neighbouring countries.

Credit for our current direction towards the complete digitisation of TV households is due in no small part to the various information campaigns carried out by all parties involved and moderated by the German media authorities. This joint approach was the result of many long discussions, frequent meetings, telephone conversations, and patiently voting on a variety of issues. Consumers were informed at the same time as specialist retailers, politicians, and the press, leaving everyone enough time to adapt to the changes in technology. And there was much to explain in order to keep TV audiences up to date: new equipment, new frequencies, old and new antennas, and new locations. Changes in the digital world are not slowing down; they are only changing in character – and the German media authorities are looking forward to accompanying them as mediators in future as well.

At the same time, there is much anticipation in the industry concerning the drafting of a new Interstate Treaty on Broadcasting and Telemedia that looks like it will finally provide an up-to-date regulatory framework for media and broadcasting. Legislators acknowledge the changes in technology and media and are striving to adapt the legal regulations accordingly. This development is indeed a welcome one. The need to consider the interests of all parties involved, some of which diverge quite significantly, makes this process both difficult and exciting. As always, the German media authorities are committed to achieving the greatest possible diversity of opinions and providers. This is our promise to you!

Content


GATE
KEEPER
BEEP

Search engines and social media – gatekeepers of the digital society?

Regulation of intermediaries according to aspects of media diversity

Dr Anja Zimmer

The world is digital. Media diversity should be too.

Public life is undergoing rapid change in the digital society. For many people, Web 2.0 was synonymous with the decentralised, open, and participatory culture of the Internet. There was hope for a new, perhaps more democratic, kind of public. Today, however, we must instead grapple with fundamental questions and challenges facing society, policymakers, and regulatory systems.

One important issue is the question of what role search engines and social networks play in the way we use media. More and more people depend on these platforms to get their information. Particularly among younger people, digital services like Facebook and Google are replacing "classic" forms of media such as television, radio, and newspapers. Search engines and social networks mediate content for users seeking information, which is why they are frequently referred to as media intermediaries, digital intermediaries, or internet intermediaries, depending on the context.

There are undoubtedly more media options available on the market today than ever before. In addition to classic forms of media, there are new journalistic formats, blogs, user-generated content, and specific networks for exchanging information. The flood of available information would be unmanageable without intermediaries. This is why search engines in particular are understood to "open gateways". However, receiving more information does not automatically mean that one is better informed. On the contrary, it often makes it more difficult to identify which information is relevant and reliable. This is where intermediaries again come into play. They help determine which topics we notice, how much coverage certain information receives, and which media stands out against the mix of communications we receive. In this way, intermediaries can quickly develop into "gatekeepers", and this poses new challenges for efforts to ensure diversity.

Factors such as the design of algorithms, the number of personal networks, the kind of digital content people share and the way they share it, and the architecture of digital intermediaries determine how information is aggregated, selected, and

presented to us. Information is selected according to algorithms that automatically sort the flood of information based on the criteria set by the companies that operate these services, which gives them a decisive influence on media diversity. Since the respective algorithms continue to be closely guarded trade secrets, it is not possible to determine details about the criteria used to select content and present it to the user.

Legislative considerations

For some time now, the federal government of Germany and the various state governments have concerned themselves with the question of how media diversity can be protected on a permanent basis. Back in 2016, the Federal and State Commission identified a need for action; guidelines included, among others, issues of "transparency" and "non-discrimination". The Interstate Broadcasting Commission has taken these issues into account in its draft for an Interstate Treaty on Broadcasting and Telemedia (this would be the 23rd amended version of the Interstate Treaty on Broadcasting and Telemedia) and defined them in concrete terms. According to current considerations, the media authorities are to be responsible for implementing these provisions. The media authorities have also called for minimum regulatory standards for intermediaries.

What exactly are intermediaries?

Regulation requires the definition of certain terms, since legal requirements can only be implemented if it is clear who is actually being indicated. It is important to always start with the question of who has influence on the formation of opinions. Regulation shall be applied and must be applied to all who, due to their popularity with users and the high market share that comes with this, have a significant impact on what information users are presented with on a daily basis, and in what form.

Search engines

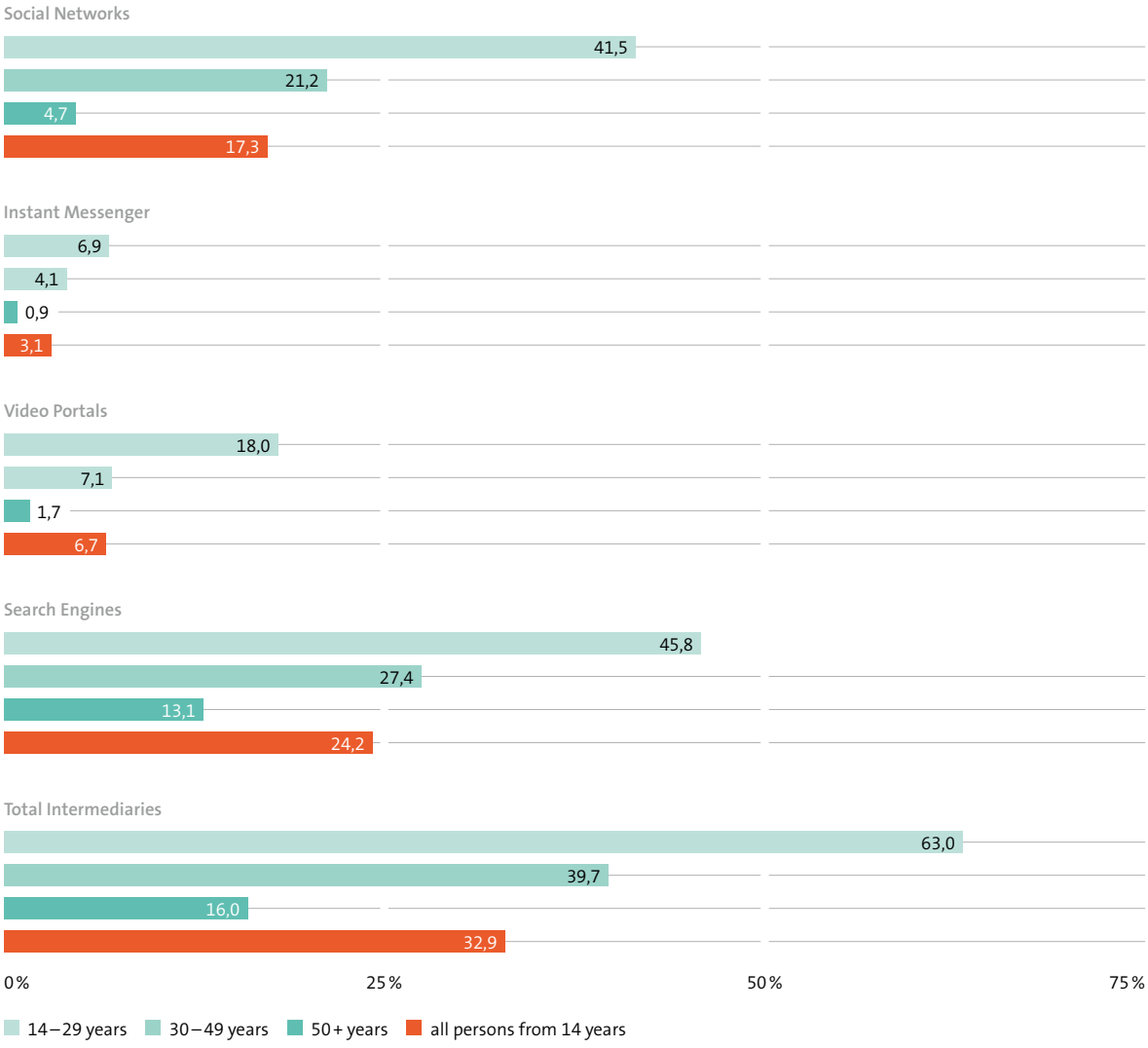
The term "search engine" is always used to refer to a service that assists users in finding content. Based on the design of its underlying algorithm, a search engine decides, for example, whether a particular newspaper article or a television programme will be displayed on the first page of the search results or on the seventh. Sometimes it may even decide that an article will not displayed at all because it violates the search engine's guidelines or simply because certain formats are not searchable. Here, search engines play a similar role to the way newspapers are arranged at a news kiosk or channels are listed on television. If a publication is not on display, no one is going to buy it, and if a channel is number 500 in the list of channels, it is unlikely to be found.

However, the business model of search engines differs significantly from that of classic broadcasting platforms: rather than seeking to present the customer or viewer with attractive content and sell it to them, they aim to connect them to the content as intensively as possible. The more a user searches and the better he / she gets at finding things that are interesting to him / her, the more data can be collected, and the more advertisements can be sold. Whether users are searching for media content or shoes, it does not matter. Search engines thus have a dual nature: in the advertising market they compete with classic media, and as platforms they make it possible to find them.

Search engines also ahead with individuals between the ages of **14 and 29**.

Fig. 1

Daily reach, use of intermediaries for informative purposes, by category and age



Source: KANTAR TNS – MedienGewichtungsStudie 2017-II; Data in per cent; daily reach = usage yesterday;
Basis: 70.094 million people from 14 years of age in Germany, n = 2.800; 14,498 million people 14–29 years, n = 344;
21,084 million people 30–49 years, n = 792; 34,512 million people 50+ years, n = 1.664

10 CLAIMS for digital media pluralism

1. The world is digital. Media pluralism needs to be, too.
2. Let's talk more! A network is needed to (re)invent digital media pluralism.
3. Hate speech is a threat to open dialogue. We need to counter it collectively.
4. Free and strong journalism is a precondition for democracy. Let's defend it!
5. We need to find new methods to monitor media pluralism. Academia, are you in?!
6. Better access to data is needed to safeguard media pluralism.
7. Surveillance endangers freedom of opinion.
8. Technology is part of the solution. Let's create more diversity by design.
9. Dear brothers and sisters of the regulatory world, we need to reinvent the way we work.
10. Let's change the law to safeguard transparency and freedom from discrimination.

Social media

Social networks have even more influence on the selection of content. They are used intensively by people between the ages of 14–49 to get an overview of current topics. 71% of respondents of the KANTAR TNS MedienGewichtungsStudie 2017-II (media importance study) say that they use different forms of social media because they provide a good overview of various perspectives on current issues – even though they do place much less trust in them than in classic forms of media.

To provide some form of orientation when it comes to the content that receives "likes" or gets shared amongst friends, programmers use algorithms to decide which content the user actually sees. Not only do they typically specify in which order the content appears, they also select which content appears at all.

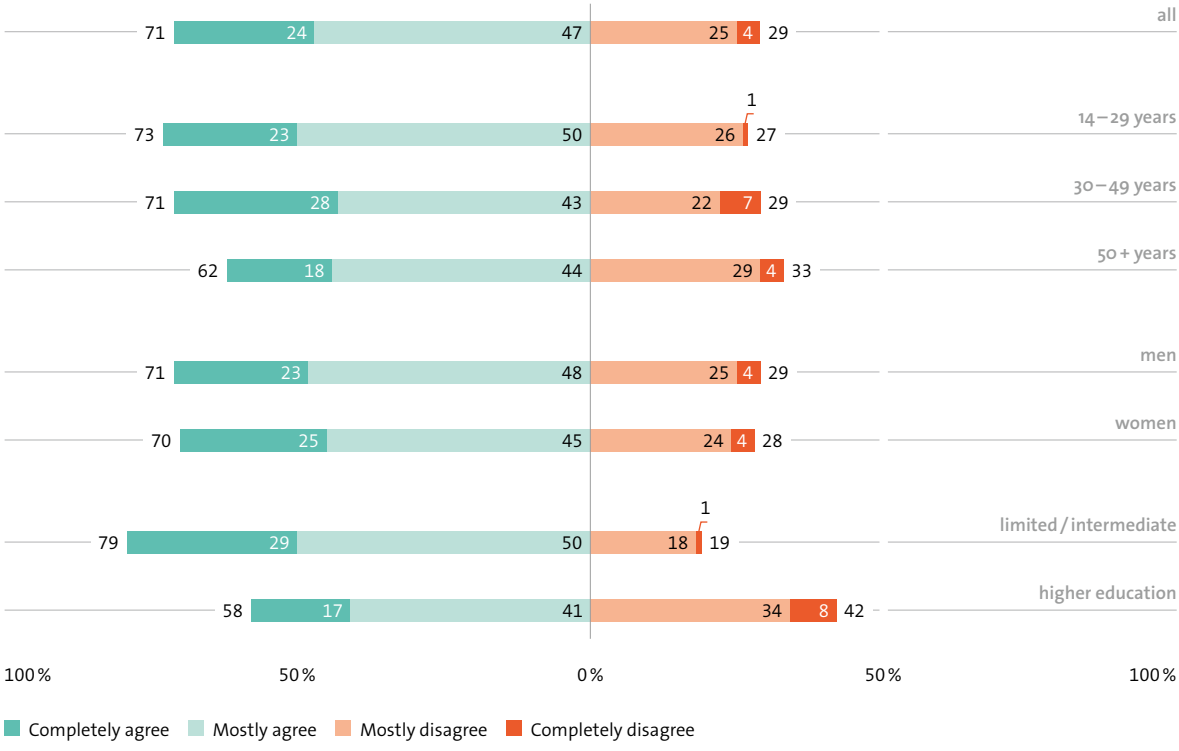
Business models play a pivotal role here, as well. In principle, the company that provides the service (at least within the context of a given set of community standards) does not care which content is viewed by users. All that matters to them is that they use the service as often as possible and stay around for a while. But what if the selection criteria lead to echo chambers in social networks? What if the strong emphasis on interaction leads to ever-growing radicalisation? If polarising content turns out to have the greatest power to connect people? Or if what keeps users hooked is made-up stories, "fake news"? And what is to be done if content arises that promotes hate or is harmful to minors? Here, as well, it is incumbent upon legislators to decide where the lines are to be drawn.

Just above **70 %** value different opinions on social media.

Fig. 2

Statements about social media use for informative purposes

“I use social media because it offers me **a good overview** of different perspectives on different topics.”



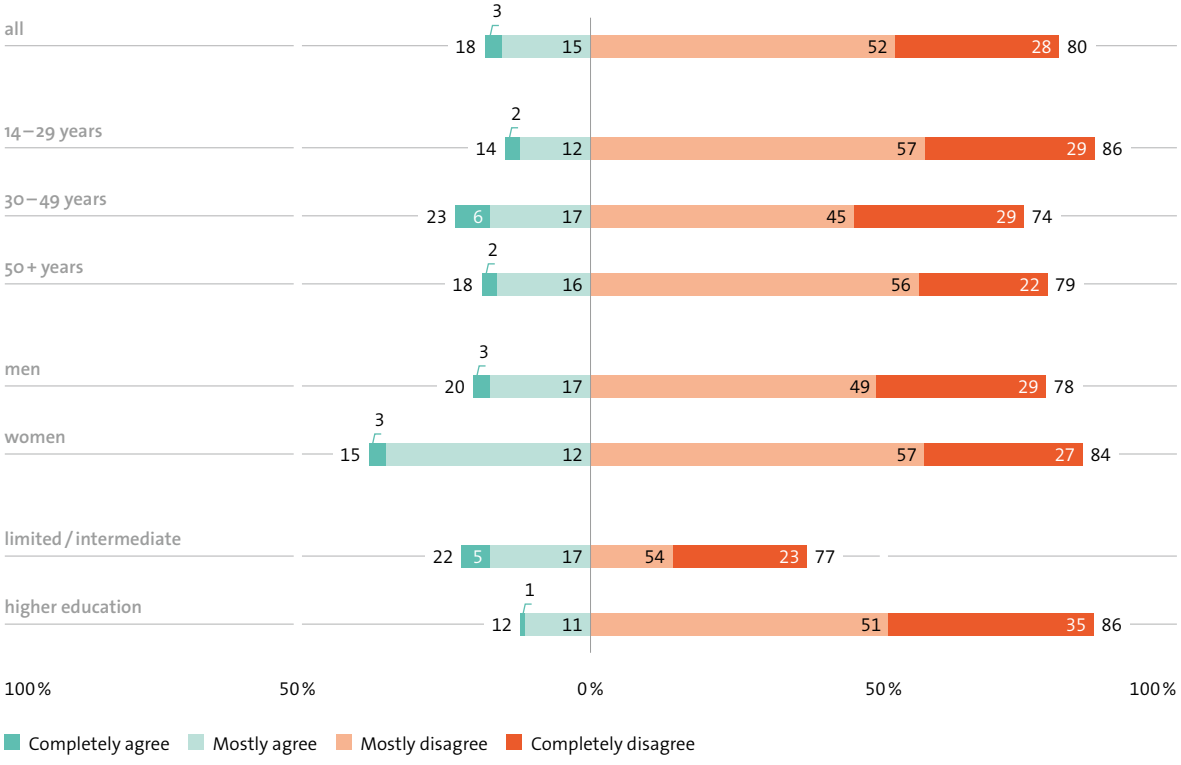
Source: KANTAR TNS – MedienGewichtungsStudie 2017-II; Data in per cent;
Basis: 15.695 million people from 14 years of age in Germany who used social media to get information yesterday; n = 554

One in five individuals trusts social media more than classic forms of media.

Fig. 3

Statements about social media use for informative purposes

“I **trust the information** on social media more than in classic forms of media like TV, radio, and newspapers.”



Source: KANTAR TNS – MedienGewichtungsStudie 2017-II; Data in per cent;
Basis: 15.695 million people from 14 years of age in Germany who used social media to get information yesterday; n=554

Legal definition of media intermediaries

It is not an easy task to provide a single legal definition for the range of services available, each with different functions, business models, and associated risks. The Broadcasting Commission introduces the term “media intermediary” in its discussion draft, which is defined as “any telecommunications medium that within its range of services aggregates, selects, and makes accessible to the general public third-party journalistic / editorial content,

without offering it as a single combined package". In arriving at this definition, the states have chosen to make certain fundamental distinctions:

- A media intermediary involves media, but not exclusively: it is enough if journalistic / editorial content makes up part of the services offered; it may also include functions like social messaging or recommended shopping lists, to name some examples.

- Unlike the platforms defined by the Interstate Treaty on Broadcasting and Telemedia, it is not a matter of providing a (finite) combined package. The focus is on mediation between the user and content that is in essence freely available.

- The most important thing they all have in common is the selection decision. In order to ensure diversity and not to unintentionally exclude services from the scope of application, this requires the widest possible formulation.

A general definition such as this allows initial topics to be addressed and, particularly where similar issues arise, initial solutions to be found. This is a good start for creating minimum standards and gaining additional insight. Regulatory practice will in time show whether this "one-size-fits-all" approach is the right one in the long run. This will require additional research and, above all, additional information. This is where regulations pertaining to transparency and disclosure come into play.

Minimum regulatory standards

The objective of media regulation is to protect diversity. To ensure media diversity, it is not only classic broadcasting platforms that have to comply with minimum regulatory standards, but also the media intermediaries, which are at least as important in the presentation and selection of media content. In addition to regulations relating to transparency and non-discrimination, it is also indispensable that there be requirements to provide information to bodies in charge of media oversight.

Transparency

Users often do not know which mechanisms are used to select, compile, and display the information in content such as a Google search, a recommendation, or a Facebook newsfeed. At this time, some companies do provide more or less extensive information about the criteria they incorporate into their decisions. To date, however, this is only done on a voluntary basis, and the possibility of an information deficit cannot, therefore, be ruled out.

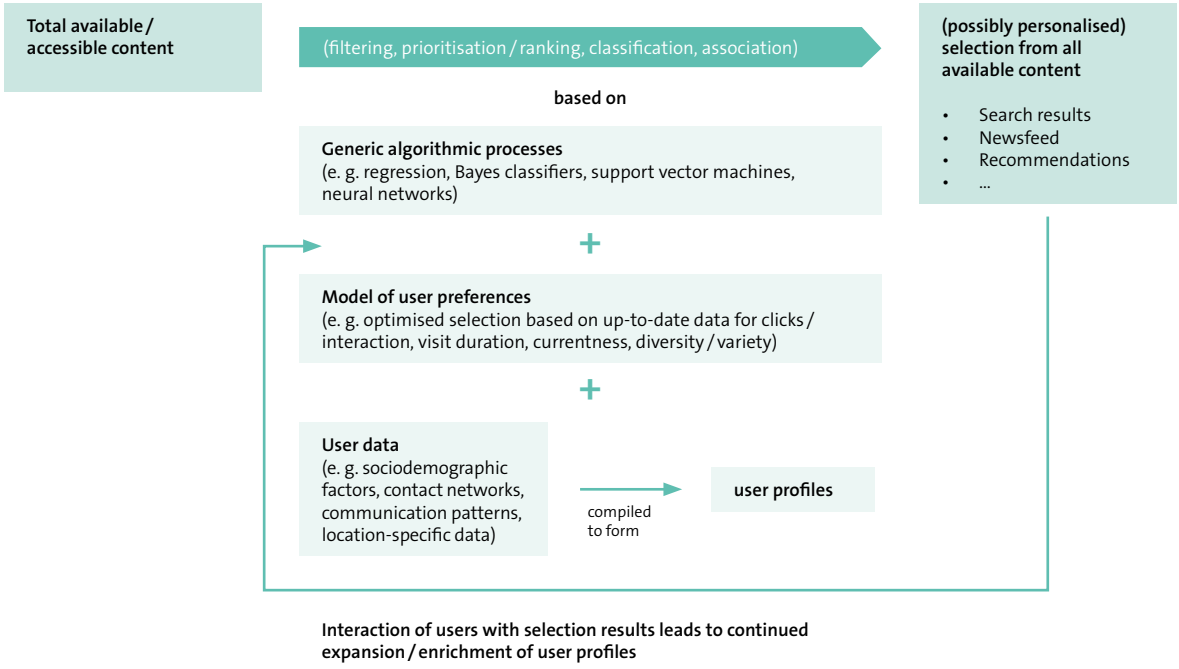
In order to establish clear rules here, the discussion draft of the Broadcasting Commission seeks to oblige media intermediaries to provide certain necessary information. This includes criteria on access to and retention of content, the aggregation, selection, presentation, and weighting of content, in addition to information about how the algorithms used function.

This corresponds to the direction being taken by the European Commission in its proposal that the European Parliament and the Council provide a regulation for promoting fairness and transparency for commercial users of online placement services, which also stipulates that an obligation to provide such information to the user be included.

Which specific information will be required to create transparency will have to be determined on a case-by-case basis. It is possible that different business models might come into play here. One such case is expressly regulated in the Broadcasting

Fig. 4

Selection algorithm



Schematic representation of an algorithm-based personalisation system; Source: Hans-Bredow-Institut, 2018

Commission's discussion draft: If a media intermediary specialises in a certain subject area, this information must be included in the layout and design of the content or service. This is an important point, and here too, the question arises of what this means when it comes to certain services that dominate the market.

Social bots

Transparency also includes information about whether content was created by a human being or was generated automatically. Bots – i. e., computer programmes that automatically perform certain tasks without human intervention – are employed in many areas. This topic is not to be underestimated when it comes to social networks, where so-called social bots participate in communication and can automatically respond to certain inputs. This can become a problem in certain situations, such as when large numbers of them participate in discussions without being recognisable as bots. Not only does this tend to increase the distribution of content, but in certain circumstances it may also be used to deliberately manipulate people by such means as disseminating misinformation, falsifying statistics, or creating the impression that a single opinion has become that of the majority. In the worst cases, users are intimidated and deterred from expressing their own opinions.

The consequences of this are evident in many debates on politically volatile issues, such as how to deal with refugees, Brexit, or the liberalisation of abortion policies in Ireland. And this requires very little money to do. In order to create more transparency here as well, the Broadcasting Commission's discussion draft calls for expanded labelling requirements. When automated entities are identified as such, the hope is that their influence on public opinion may be reduced. This is an important initial step.

Dissemination of information und usability

Just as important as the "if" is the "how"; i. e., the question of where the information is found and how it is presented. A 120-page text hidden in the depths of the terms and conditions would hardly lead to users being better informed. Thus, the information must be easy to find and understand. In this regard, no limits are set on the imagination of the company providing the service. Intermediaries use different means, whether it be a 10-point list or a visual format such as an animated video. This does not solve the problem that, according to experience, few users are interested in such information. The question of what users are to do when they do not agree with the terms and conditions also remains unanswered. As long as there are alternatives, this is no problem. It becomes more difficult with services that dominate the market.

Prohibition of discriminatory misuse

This makes it clear what special significance the prohibition of discriminatory misuse has. Should at least those intermediaries who play an important role in forming opinions be obliged not to actively discriminate in the presentation of information? Is that enough? Can this preserve the variety of journalistic / editorial content and prevent (deliberate) influence on the opinions of users? These questions are currently under very intense discussion, as they reach deep into the business models of the various companies providing these services. One possible solution may be the principle of non-discrimination, which already applies to the regulation of broadcasting platforms. It would need to be clarified, however, what this means for intermediaries. How might such a concept look for providers that pertains to the selection of the business model and is becoming more and more important in terms of customisation?

It will be easy to reach an agreement that media intermediaries should not manipulate or exert undue influence on what content their users are made aware of that might be relevant to forming their opinions. It is surely equally undeniable that preference for one's own content, especially in companies that dominate the market, is critical. Moreover, recommendations should not be bought and sold. When money changes hands, this is advertising, and it is to be labelled as such. But this will not suffice.

Non-discrimination does not mean that intermediaries are always obligated to observe neutrality. They must, however, be measured by their own statements and guiding principles. Special requirements must also apply to journalistic / editorial content. The selection and presentation of content always leads to creation of different algorithms, but this should not be done for improper reasons. For example, what would happen if certain journalistic / editorial content were always moved to the bottom of the ranking because advertising is excluded or difficult to sell in that particular field? Or because users supposedly only look for "feel-good" content? What if an intermediary decided to exclude a content provider for reporting negatively about it? Since this all leads to considerable

loss of reach and consequences for refinancing, it must be ensured that intermediaries – particularly those with a dominant position in the market – do not unfairly block or treat content unequally without there being some objective reason for doing so. Reasons justifying unequal treatment must be interpreted against a background of ensuring diversity and freedom of broadcasting.

The discussion draft of the Broadcasting Commission partly addresses this: it prohibits the unfair obstruction and unequal treatment journalistic/editorial content that is not justified based on objective reasons; however, only if the media intermediary has a particularly high influence on the noticeability of the content in question. It is not clear how this "particularly high influence on noticeability" should be determined. Does this refer to market power? If so, then some specific questions must be answered. For example, whether, according to antitrust law, a market share of about 40 per cent is sufficient. Or does this (also) refer to influence on public opinion? Would it then suffice if a social network is used as a source of information by perhaps 30 per cent of persons aged 14–29?

The draft provides for further restrictions. For example, it is to be considered discrimination particularly if there is a deliberate and purposeful deviation from a general policy in favour of or at the expense of certain content. This is subjective and might not be easy to prove.

Furthermore, violations can only be enforced by the very services to which these regulations are meant to apply. This regulation has already failed in regulating broadcast platforms. The greater the share of the market dominated by an intermediary, the more likely it is that content providers will shy away from making complaints. To prevent this from happening, there must be an entity in place to provide media oversight in an official capacity.

Obligations to provide information

In order to provide effective oversight, the media authorities must also be able to obtain a comprehensive and meaningful overview of how the intermediaries' aggregation, selection, and presentation mechanisms work. Without a proper understanding of these issues, there is no way to sensibly monitor compliance with transparency obligations and the prohibition of discriminatory misuse. It is not only the media authorities who are left with insufficient knowledge about how these algorithms function and which input data they use. While intermediaries are constantly improving their algorithms, analysing users, optimising their business models, and conducting studies to back it all up, regulators, NGOs, and independent research organisations are often left in the dark. Using arguments of data privacy and trade secrets, access is denied, or at least limited. To counterbalance this, intermediaries must be required to answer open-ended questions and periodically provide information about their activities. To this end, the media authorities urgently require comprehensive information access rights.

Ensuring the enforcement of the law

In order to ensure effective regulation with regard to the safeguarding of media diversity, it is necessary to provide some additional requirements. This includes certain matters of course, such as the designation of an authorised recipient. And, of course, it must be ensured that the scope of the Interstate Treaty on Broadcasting and Telemedia is broad enough to cover companies that do not have a registered headquarters in Germany. Otherwise it would be all too easy to bypass these regulations.

Absolutely crucial to the success or failure of these endeavours, however, will be the creation of effective measures for enforcing the law. Currently, the Interstate Treaty on Broadcasting and Telemedia is eloquently silent on some points regarding the oversight of journalistic / editorial telecommunications media, in terms of both prohibitions and regulatory offences. If this trend should continue with regard to media intermediaries, it will soon become apparent that these regulations have no teeth. Without appropriate provisions for penalties such as those in the Network Enforcement Act (NetzDG), any attempt at regulation will be difficult. If there are no consequences to be feared that will also be felt, many companies will hardly feel obligated to implement the requirements.

New tasks for the media authorities

The discussion draft of the Broadcasting Commission stipulates that the media authorities will be responsible for the regulation of intermediaries in future with regard to aspects of media diversity. They are predestined for this role based on their competences and experience – even if this task requires a change of perspective and a certain will to think differently. But one thing at a time:

The main task of the media authorities is to safeguard the diversity of opinions and media. They do this by granting licenses for radio and television programmes, promoting media competence, and monitoring compliance with legislation relating to advertising the protection of minors – not only in broadcast programmes but also in other forms of telecommunications media. Furthermore, the media authorities are responsible for the regulation of broadcasting platforms such as GIGA TV (Vodafone) or EntertainTV (Deutsche Telekom), which decide on the selection and bundling of content. Platform regulation aims to ensure non-discriminatory access for TV and radio channels.

Intermediaries, at least in the areas of presenting and recommending information, perform certain functions similar to those of broadcasting platforms, even though the selection criteria and mechanisms are clearly more sophisticated. As such, the principles and experience from the field of platform regulation provide a basis on which to build effective regulations for intermediaries. Furthermore, the media authorities have the right to self-administration and statutory authority, and a necessary degree of independence from the state.

Let's talk! To redefine digital media diversity, we need a better exchange between regulatory bodies, academia, media, and civil society.

But this alone will not be enough. It will be necessary to rethink the concept of ensuring diversity. This requires a "dialogue" on diversity. A model project for this is the Media Policy Lab of the media authority of Berlin-Brandenburg, a think tank that works with research institutions, media, and NGOs to deal with the interdisciplinary question of how intermediaries influence the media landscape. At present, the knowledge of how people actually use digital media to obtain information and how they use intermediaries lies largely with the intermediaries themselves. For them, the processes by which people form opinions are becoming increasingly transparent due to the data they have access to. The public, on the other hand, knows less and less about the mechanisms and influences that shape the formation of political opinions. This asymmetrical distribution of knowledge is a serious obstacle for regulation, but also for research. Better networking in this regard can provide a basis for new regulatory approaches.

Google and the German federal election: #Datenspende and the possibility of "black box" approaches

How this can work is demonstrated by the project known as #Datenspende ("data donation"). A research group led by Prof. Katharina Zweig researched how strongly algorithms personalised search results shortly before the 2017 general election. The search results for about 15 predefined names of parties and politicians were automatically retrieved and evaluated. The sample included the search results from more than 1,500 volunteer data donors, who learned about the study from outlets like Spiegel Online. A total of 8 million data sets were evaluated.

The study showed that the personalisation of Google search results was less pronounced than was initially assumed; it was at less than 20 per cent; i. e., about two search results of the first ten varied. This confirms the general impression that media diversity and freedom of information are not in acute danger in Germany. However, the results of the study are not representative because, due to the voluntary nature of participation in the project, it does not reflect the societal average. It merely depicts a snapshot.

One important and lasting bonus value of the study is its methodology. The Google search results were provided to the initiators of the project by asking Internet users to install a browser plug-in on their computers. This plug-in then searched Google News and Google Search for the predefined names every four hours. It was not necessary to officially cooperate with Google, and no trade secrets had to be revealed. The design of the study shows that – at least in certain cases – so-called "black box" approaches, which do not require access to internal business data, are possible and useful.

At the same time, it also shows the limits of this type of research: if a black box study such as this one produces further enquiries that can only be answered by the intermediary, the end of the road is quickly reached. Currently, academic research and regulation must rely on voluntary cooperation; intermediaries are not obligated to provide information. The establishment of legal rights to access information is therefore urgently required.

Data access: Better access to data is essential to ensuring media diversity.

It will be up to regulatory bodies to further develop the methodology used by #Datenspende project and to transfer it to other intermediaries, such as social networks. This will not be an easy task, as barriers are created by the proprietary use of algorithms and the commercial collection of data, the protection of trade secrets, as well as the general terms and conditions of digital services. These can, however, be overcome. Thus, among other things, the Media Policy Lab is working on finding new approaches to striking a balance between the interests of businesses in protecting their trade secrets, data protection and privacy, and the need for access to data for regulatory purposes. In collaboration with various experts in academia, new ideas are being developed on how to monitor digital media diversity.

One of the ideas that have been suggested is to increase transparency by way of a dynamic interface to the intermediary's data, which is made available on a continuous basis for the purpose of collecting and analysing data. On the one hand, this would verify the data of transparency reports. On the other hand, this quick access could enable a timely sci-

entific understanding of current events. What does it help to find out two years after an election that it was influenced by foreign countries?

Another idea is to put together an in-house audit team. This might include media representatives and independent experts who could, for example, review and monitor information delivered to the company directly. The team could be granted immediate access to data, with a confidentiality agreement to protect trade secrets.

An entirely different – and essentially lower-threshold – approach would be to start with the terms and conditions governing social networks. If, in certain cases, "scrawling" (i. e., monitoring and making technical enquiries) of one's own user data were to be permitted, this would make it possible to conduct considerably more extensive studies without internal access to data. It would be possible for users to send their content automatically (and anonymously) to media regulators or research centres.

Dear brothers and sisters of the regulatory world, we need to reinvent the way we work.

Every regulator must have at least as much knowledge and flexibility as the company he / she oversees, and this also applies to media regulation. If the media authorities are tasked with regulating intermediaries, it will not work without adapting to the user-centred and interdisciplinary working practices of digital companies. It would be helpful to have agile, fast-acting competence teams that have specialist expertise and are able to make quick decisions. The decentralised structures of the media authorities are a good place to start. Of course, at one point or another, new fields of competence would have to be filled, in areas like statistics, data analytics, or machine learning. This can also be achieved within the structures at the federal level. In Germany, oversight in many areas is the responsibility of the states. For instance, the public prosecutor's offices, with which the media authorities often work together on matters relating to the protection of minors, are just as organised at the federal level as the tax authorities, for example. International companies are also used to abiding by national regulations, even those that are implemented by state authorities.

Prospects: What comes next?

The current discussion on minimum standards for intermediaries is an important first step on the path to ensuring digital media diversity. At the same time, we should think about how things will continue in the medium term. Only with timely preparation and foresight can regulatory issues be tackled and made sustainable for the foreseeable future. This requires the participation of lawmakers and the media authorities.

This begins with information access rights. We will need to continue trying to determine which information is necessary to effectively ensure diversity. To do so, we will have to identify and monitor possible risks in the future as well. It can be assumed that questions will arise that go beyond how algorithms function. Some initial keywords here are political advertising, microtargeting, and privileged treatment of partners.

There is also a need to think about the privileged searchability of content offering public value already discussed in the area of platform regulation. Initiatives of some intermediaries are already going in this direction. Lawmakers should follow these developments.

One thing we should be focusing on is strengthening the user's freedom of choice. What good are transparency guidelines if there are no alternatives? For example, being able to choose between different display options can promote diversity without the need for legislative restrictions. How would it be, for example, if the user could switch between a non-personalised and a personalised view with a simple click? Or, if, every morning, the user was offered the choice between differently curated newsfeeds, and he / she could actively choose one of them? And would we not have real diversity if the user had a say in the incorporation of external sources?

Perhaps diversity can also be strengthened via technology, maybe by obligations regarding interoperability, open interfaces, and increased data portability. This would make it easier for competitors or open source projects to create alternatives using an intermediary's platform. And perhaps one day you will be told, "Bring your own algorithm"...


TO DO'S

Digitisation in Germany: facts and figures

Current status of the digitisation of TV reception and the use of digital TV and video in Germany

June 2018

Dr Simon Berghofer

This year's report on digitisation is the fourteenth edition of this publication. In all likelihood, by the 15th anniversary of this report next year, the means used to transmit TV signals in Germany will be completely digitised. However, the report on digitisation has for a long time now reported on more than just "where things are" when it comes to the digitisation of broadcast, satellite, and cable television; it also provides comprehensive documentation of the development of digital video transmission and use in Germany. Thus, the completion of the digitisation process does not mean that the German media authorities will be finished with their commitment to research in this area. For upon closer examination, it becomes clear that the revolutionary changes in television and video are only just beginning.

The results of this year's survey clearly illustrate these trends: The delinearisation of moving images consumed is proceeding at an accelerated pace, while high-definition (HD) television is becoming the standard in many households. Users no longer choose what to watch on their own, but are actively supported by recommendation systems and other aids. Hardly any TV broadcaster or platform provider can afford to forego offering its own VOD selection; at the same time, competition from overseas continues to grow. And viewers? Viewers are going in different directions – they love their smartphones more than their TVs, and they can suddenly imagine living without a TV provider, just "watching TV" over the Internet. Welcome to the wonderful new world of digital video.

Platform providers, broadcast programmers, and regulatory bodies – every party involved needs solid data on which to base their decisions. For fourteen years now, the German media authorities have published the report on digitisation, providing valid facts and data representative of the general population, collected by Kantar TNS. This has contributed to a better understanding of the revolution in digital video and has helped with managing it. The study examines the digitisation and distribution of the various means of television reception at the household level and provides information about the kinds of equipment used in German-speaking TV households. It also documents the personal use of digital video content (including VOD, live stream-

ing, etc.) on smart TVs and connected TVs, smartphones, and other digital devices. The following report is only able to offer a brief overview of the multi-faceted results of the study. More information and results can be found on the website of the German media authorities.

Part I: Digitisation and distribution of means of TV reception

Out of a total of 38.697 million German-speaking TV households, only 1.216 million (3.1 %) still receive television programmes in an exclusively analogue manner. All others households receive their TV signal digitally on at least one household device. The rate of digitisation of TV households has thus risen to just short of 97 %; only around half a million households continue to receive both digital and analogue television signals (on a second TV set, for example). This brings the number of households receiving television in an exclusively digital manner to 36.924 million, or 95.4 %.

The last bastion of analogue television: cable TV

After satellite broadcasting switched completely to digital transmission in 2012, the cable network is the last remaining means of TV transmission in Germany that supplies households with analogue TV signals. In this area as well, the digitisation process has been systematically advanced for several years now, under the management and guidance of the German media authorities. Discontinuing analogue broadcasting significantly reduces the bandwidth required to transmit TV signals and frees up additional capacities for the transmission of things like HDTV and UHD signals, as well as for high-speed Internet connections.

When satellite transmission went digital a few years ago, the parties involved agreed to a binding deadline for deactivating analogue signals when 80 % of households had switched to digital. For digital cable, this threshold has been exceeded throughout Germany. The rate of digitisation has risen by an additional 4.3 percentage points since spring 2017; it now stands at 92.9 %. The total and permanent digitisation of all means of TV transmission will take place around the turn of the year.

The number of analogue households remaining was reduced by 50 % last year

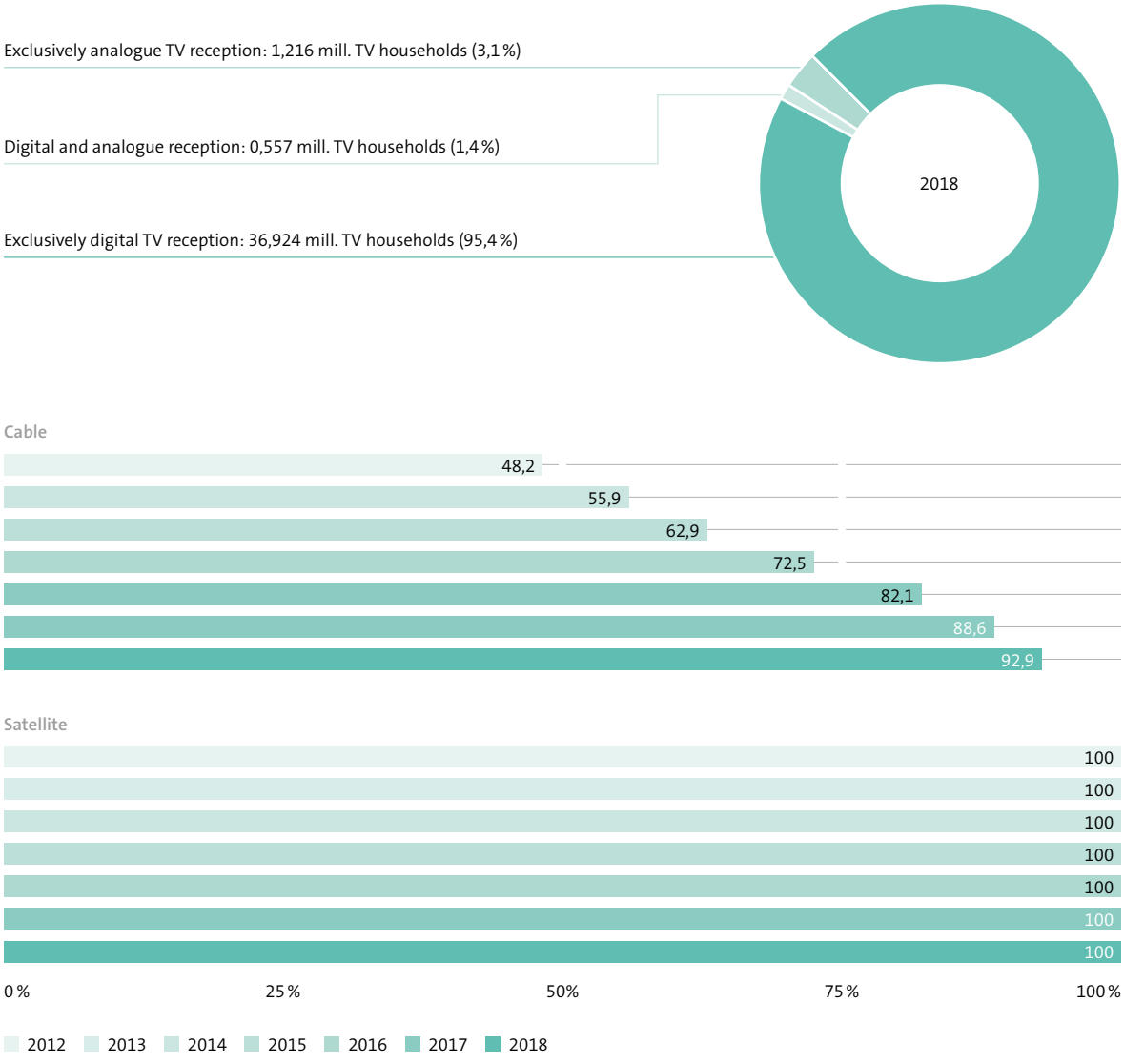
If the decision to immediately deactivate analogue cable transmission had been made at the time the current report on digitisation was created (June 2018), around 1.2 million households would have been left without TV reception. If all households receiving analogue TV on another device are added to this number, about 1.75 million households would be affected at the present time. This corresponds to about 4.5 % of German TV households. Compared to last year, the number of households that still need to "make the jump" into the age of digital television has been reduced by nearly half. This shows that all parties involved take the objective of full digitisation by the end of 2018 seriously.

The digitisation of cable is on the rise in all German states, and regional differences are decreasing

Of the major cable network operators, Unitymedia was the first to completely discontinue analogue transmission in the summer of 2017, exclusively transmitting television signals in digital form ever

Fig. 1

State of digitisation for various means of transmission



Source: Kantar TNS; Basis for 2018: 38,697 million TV households in Germany
18,201 / 17,656 / 17,860 / 17,933 / 17,474 / 17,564 / 17,467 million cable TV households //
17,320 / 17,624 / 17,779 / 18,079 / 17,687 / 17,502 / 17,409 million satellite TV households

since. In the so-called "Unity states" of Baden-Württemberg, Hesse, and North Rhine-Westphalia, 97 % of households now receive cable TV digitally. The few remaining analogue households in these states receive their cable television signals from smaller, often local or regional cable providers. Other states also show impressive rates of digitisation ranging from 88 % (Bremen) to 93 % (Berlin). The gap between first and last place has dropped into the single-digit range at only nine percentage points, five and a half percentage points fewer than in 2017.

A look at the cable network operators shows that the complete digitisation of cable TV is close at hand. Compared to last year, Vodafone has also followed suit. In the spring of 2018, over 93 % of the provider's households reported receiving their television programming digitally. When taken together, the two market leaders – Unitymedia and Vodafone – cover over three-quarters of the German cable television market. The remaining households are distributed across a range of smaller companies that are heterogeneous in their profile. Many of them have already digitised completely, others still need to undergo the final transition; however, hardly any provider drops below the mark of 90 % of households receiving signals digitally.

The 85 % mark has now been reached not only on a national average, but also in each individual state. This means that Germany is ready to make the leap into the era of totally digitised television.

Satellite and cable reception remain on par, IPTV overtakes terrestrial broadcast TV

This year, once again, there have been few changes in the way the various means of transmission are distributed. Cable and satellite reception continue to be the most widespread means of TV reception, both supplying a similar number of households. Approx. 17.467 million households receive their television signals via cable, while a slightly lower number, 17.409 million, receive them via satellite. Thus, each one supplies 45 % of German-language TV households.

Compared with last year, terrestrial broadcast TV has continued to lose the most ground, dropping one more percentage point over the previous year. It is now used by 6.4 % of TV households, which equates to about 2.479 million households overall. Over 90 % of households capable of receiving terrestrial broadcast TV have now switched to the DTT T2 standard, introduced in 2017. This corresponds to 5.8 % of all German-speaking TV households.

IPTV in particular was able to gain ground – both proportionately and in absolute terms. At a total of 3.060 million, more households are now supplied via managed IP networks such as those operated by Deutsche Telekom, Vodafone, and 1&1. This corresponds to 7.9 % of TV households. If one adds the 0.5 % of households that indicate that they receive video exclusively via (open) IP networks, the share increases to a total of 8.4 %. This means that more households are now supplied via IP networks than via terrestrial broadcasting.

First cord-cutters spotted in Germany

With managed IPTV, a minimum bandwidth is ensured for the transmission of the television signal; as such, signals are transmitted in a manner similar to a digital cable network. However, IPTV can also be transmitted via OTT, i. e. via the "open" Internet. A similar phenomenon called "cord-cutting", has become established in the US for the past sever-

al years. These TV households no longer use any of the "classic" means of TV transmission such as cable, satellite, terrestrial broadcast, or managed IPTV, but instead receive programming on their television exclusively via the open Internet. They use platforms such as Zattoo or Waipu, which bundle the TV programming and distribute it across the Internet. Many television providers also offer live streams of their programming, along with comprehensive VOD offers, over the Internet. In Germany, the number of cord cutters has so far remained comparatively low, at only half a percent of TV households. In principle, however, the number of users who forego using any of the classic means of TV transmission could increase. In one out of every eight TV households (11.7 %), users indicate that, in future, they can imagine using OTT as the exclusive means of receiving TV at home. As might be expected, younger television users in particular consider this conceivable. More than half of the potential cord cutters (52.1 %) are under 30 years of age, far more than one in three between 30 and 50 years old (36.8 %), and just over one in ten 50 years or older. This corresponds to the overall trend in how the younger generation uses video, which increasingly focuses on OTT options (cf. Part II).

The majority of TV households have smart TV

"Cord cutters" must have a television with Internet connection in their household. Here, the TV is connected to the Internet either directly as a smart TV or as a connected TV via a peripheral device. At this time, 51.6 % of households have at least one smart TV, which corresponds to almost 20 million households; however, the total number of smart devices in German-speaking households is higher, at 24.441 million, as one in nine households have two smart TVs. Of all TV households, 1.6 % have three or more smart TVs. In a little over one third of all TV households, smart TVs are used exclusively.

Examining the various means of TV transmission, it appears that smart TVs are most frequently found in IPTV households. Two thirds (66 %) of these households have at least one of these devices. In digital satellite and cable households, slightly more than one in two households has at least one smart TV (satellite 54.0 %; digital cable 53.5 %). This figure is somewhat lower for households receiving terrestrial broadcasts, at 41.7 %. It is hardly surprising that only a fraction of analogue cable households also own a smart TV; they amount to only about 1.7 % of households.

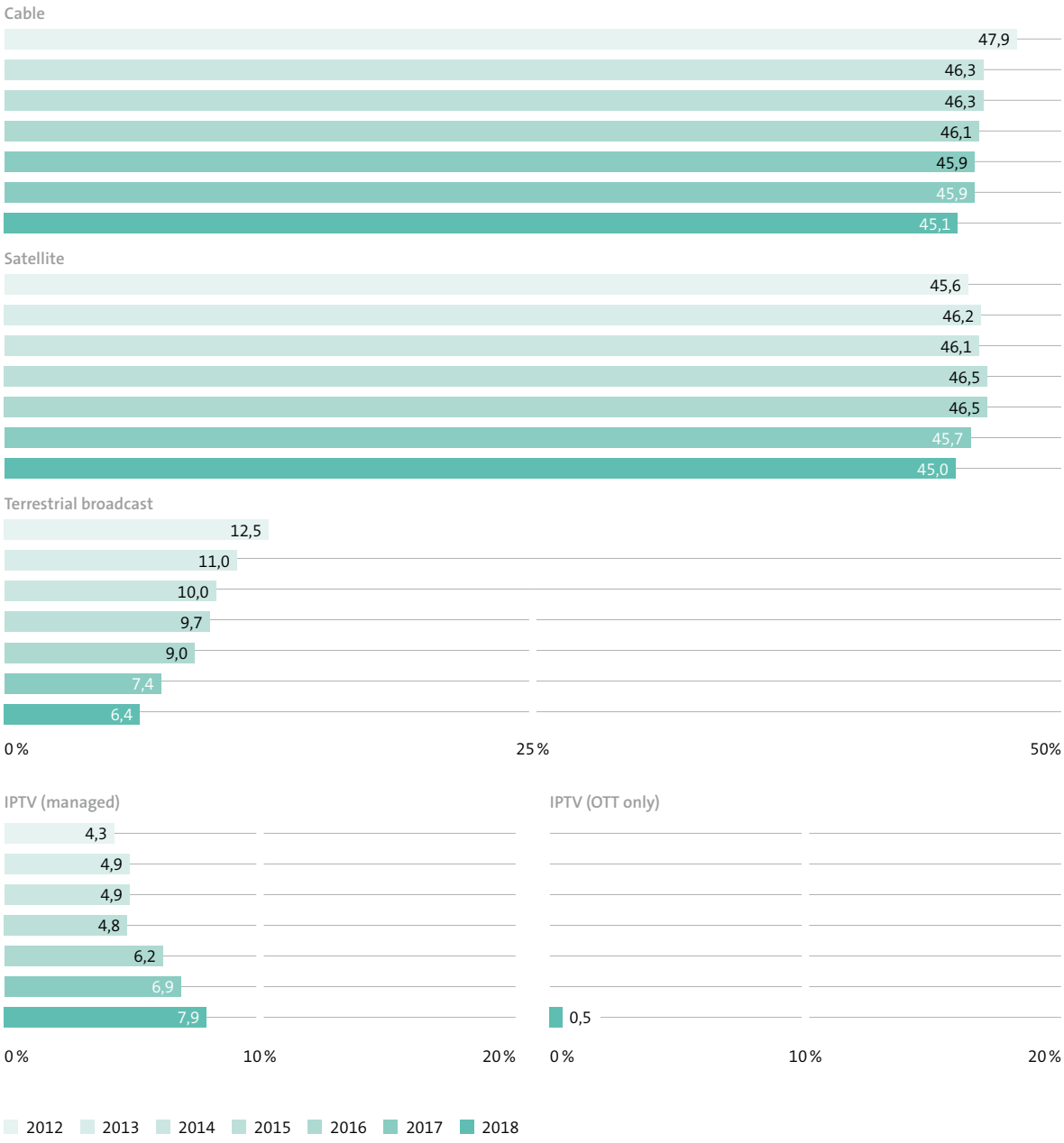
Almost half of all households have a television that is connected to the Internet

Smart TVs are not always used in a "smart" manner. The connection rate of smart TVs falls just short of 62 %, which means that around 12.346 million German-speaking households have connected their device to the Internet. This allows them to access additional services such as media libraries, VOD, or live streams directly on their TV via OTT. A little over 3.529 million TV households have two or more smart TVs, and almost half (46.4 %) of these are connected to the Internet – approx. 1.638 million devices in total. One fifth of German-speaking TV households have connected all the smart TVs they have to the Internet.

However, television sets may also be made "smart" by connecting peripheral technology to the TV set, which includes "smart sticks" such as Google's Chromecast or Amazon's Fire Stick, as well as game consoles, Blu-Ray players, laptops, and other devices. If these connected TVs are considered in ad-

Fig. 2

Distribution of means of transmission



Sum > 100 % attributable to multiple means of reception
Source: Kantar TNS; Basis: 37,977 / 38,157 / 38,557 / 38,899 / 38,076 / 38,306 / 38,697 million TV households in Germany

dition to the smart TVs, this would then indicate that almost half of TV households in Germany have access to at least one television set that is connected to the Internet. This corresponds to more than 19 million households.

HDTV continues to gain ground

The technological capacity to receive high-definition television lies at 80 percent of all German television households. In absolute figures, this amounts to a total of around 31 million households with HD-capable televisions, two-and-a-half million more than last year. When this is broken down by means of transmission, terrestrial broadcast TV now has the greatest HDTV potential. The new DTT T2 HD standard can only be received with the help of an HD-capable set-top box or HD-capable television; i. e. every DTT T2 HD household must have such a device. Of all terrestrial broadcast households, 97 % have the devices necessary to receive high-definition television; the remaining 3 % of DTT households have not yet updated to the new terrestrial DTT T2 HD standard. The number of IPTV households with an HDTV device has continued to increase slightly and now amounts to 2.7 million households as of spring 2018 (approx. 200 thousand more than last year). Just over three-quarters (78 %) of households that receive television via cable have the equipment required to receive high-definition television; meanwhile, the HDTV availability rate for digital cable households is 83 %. Among all digital means of transmission – a prerequisite to receive HDTV – a considerable number of households with HD potential receive their broadcasts via satellite (80 %).

Nearly 26 million HD-only households

To date, for most households with HDTV devices, it's the primary TV set; however, around one in five TV households (19.8 %) already have at least one additional HDTV set. Particularly considering the potential discontinuation of SD broadcasting, it is of interest to know how many households have HDTV sets exclusively. The "HD only" rate lies at 67 % of all TV households, or approx. 25.928 million households in total.

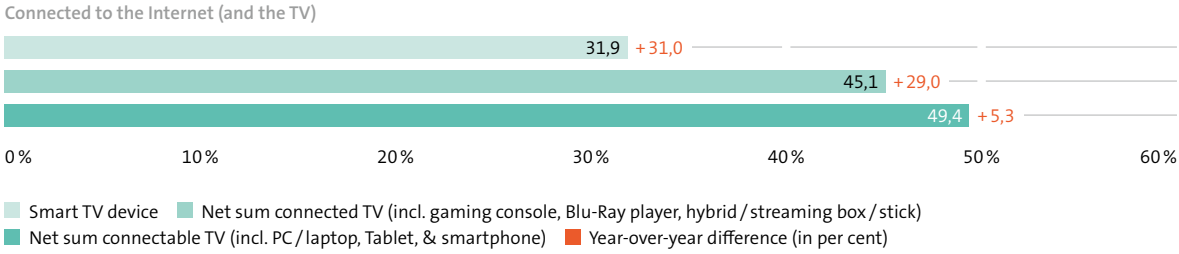
Even if a household does have the technological capabilities to receive HD, this does not automatically mean that high-definition television is actually viewed there. Hardware can, for example, be connected via analogue connections, SD TVs can be connected to state-of-the-art UHD receivers, etc.; 69.4 % of TV households confirmed that they do actually receive HDTV programming. This is an increase of 5.8 % compared to last year. When looking at the distribution of HD across the various means of transmission, the growth of HD has been supported in large part thanks to the conversion to DTT T2 HD for terrestrial broadcast households. Nine out of ten households that receive broadcasts via a terrestrial antenna now watch high-definition television; with IP television, the rate lies at 86.1 %, followed by satellite (70.0 %) and cable households (62.3 %).

Hardly any growth in HD reception of privately operated channels

While public TV programming can be received in HD quality via all means of transmission at no additional cost to viewers, programming from privately operated networks can usually only be viewed in HD at a fee. The reception of TV from privately operated networks in high-resolution quality remains stable compared to last year, at 28 % of

Fig. 3

Connected TV – connected to the Internet



Source: Kantar TNS; Basis: 38.697 million TV households in Germany

all TV households. In absolute figures and across all means of transmission, this indicates a slight growth of approx. 200,000 households. Looking at the various means of transmission individually, it appears that the increase in distribution of content in HDTV quality is above all attributable to cable households. DTT T2 HD also showed a slight increase, whereas fewer satellite and IPTV households indicate that they also receive programming in HD from privately operated networks.

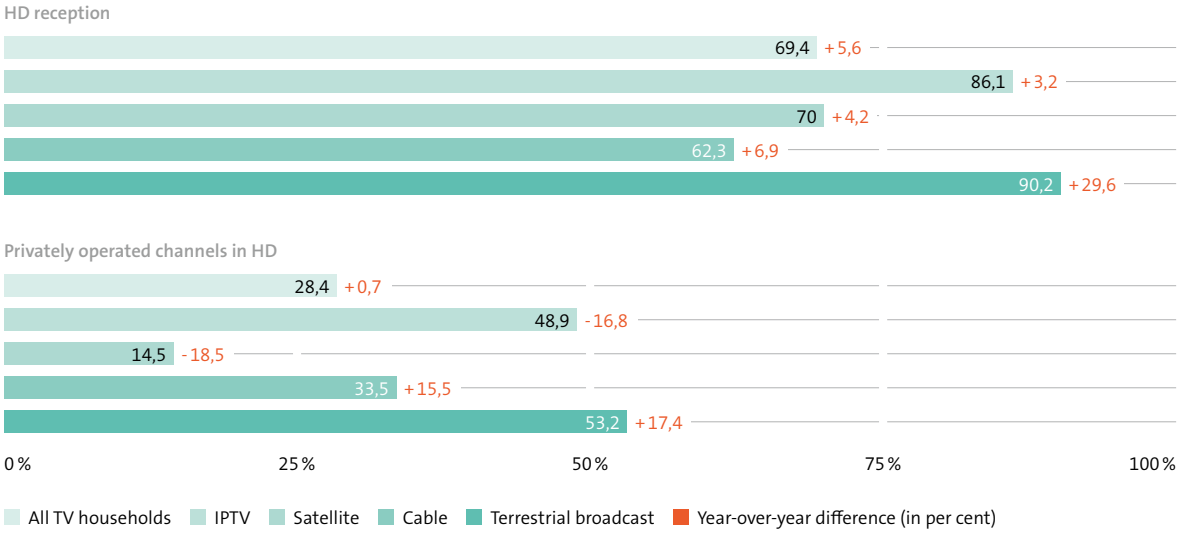
In the realm of satellite TV, two new platforms offering HD packages with privately operated channels were introduced in the first quarter of 2018. Previously, HD+ had a monopoly on the HD distribution of privately operated television programming via satellite; however, viewers could also subscribe to the HD+ package via other providers (directly via Sky, for example). The introduction of Diveo and Freenet TV Sat means that there is now competition in the satellite-based HD market for the first time. Since these new options were still being launched on the market at the time the survey was being conducted, no statement can yet be made as to whether the diversification of platforms also provides an impetus for growth.

Continued rapid growth of UHD

The next generation of the HD standard is also leading to an increase in the potential to receive high-definition programming. The number of households with devices capable of receiving ultra HD (UHD) or 4K programming has more than doubled over last year. Over 14 % of TV households now have a UHD television set. The growing popularity of UHD and 4K televisions is certainly also attributable to increases in the availability of content. In addition to the pay-TV provider Sky, several privately operated networks have started offering programming in UHD. Starting this year, these include the two large groups of privately operated channels offered by the media enterprises RTL and ProSiebenSat.1. Even if the total range at this time remains rather modest compared to "conventional" HD, it is highly likely that this development will continue to contribute to more households owning UHD devices in future. In addition, more and more options in UHD format are available online. As a matter of fact, 68 % of households with UHD devices have at least one smart TV connected to the Internet. Considering all viewing options,

Fig. 4

HD reception and privately operated channels in HD



Source: Kantar TNS; Basis: 38.697 million TV households; 17.467 million cable households; 17.409 million satellite households; 2.479 million terrestrial households; 3.060 million IPTV households

78.5 % of UHD households can use OTT content on their TV set, and almost 40 % of them have subscribed to a fee-based VOD service.

Part II: Use of digital video

Online video transmission is increasing in popularity amongst all age groups. As indicated in the first part of this article, over 190 thousand households already receive programming on their television sets exclusively “over the top”. This year, for the first time, smartphones have replaced televisions as the most important display device, not only among the younger generations, but for the population at large. The use of non-linear video has shown a particularly sizeable increase this year, overshadowing classic television consumption.

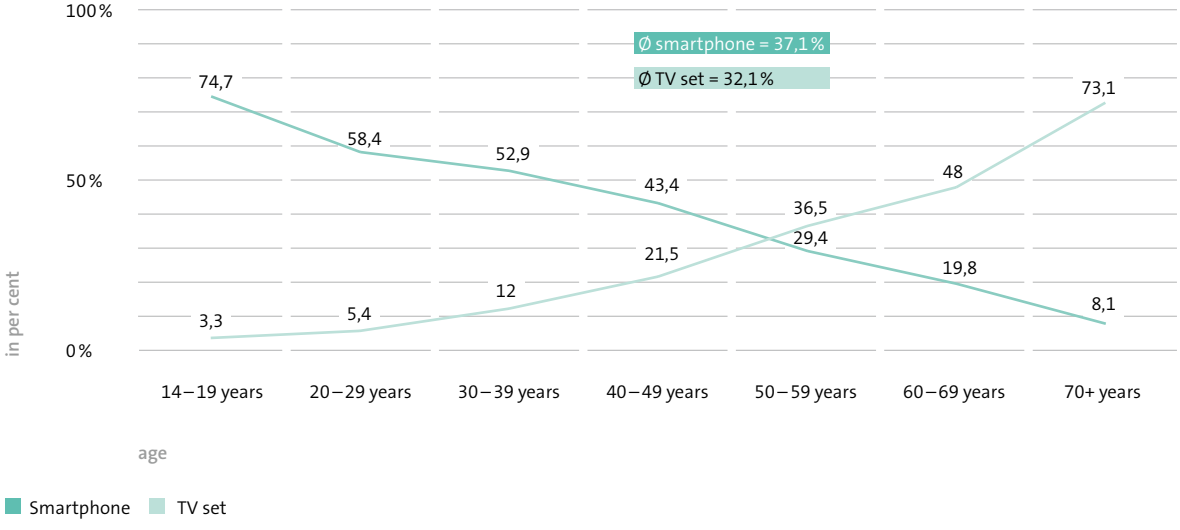
Smartphones replace TVs as the most important display device for the first time

For the first time, the television set has had to relinquish its leading position as the most important display device. This year, when asked about which of the available display devices was most important overall, around 37 % of people 14 years or older choose their smartphone. Televisions narrowly outperformed smartphones last year, at 33.3 % (approx. 0.8 percentage points ahead of smartphones); this year's figure dropped to 32.1 %. Laptops (11.0 %) and desktop PCs (10.5 %) are significantly less important, with rates declining slightly as well. Tablets have managed to gain some ground as the most important display device (4.7 %), but still land at the bottom of the list.

Only in the age category of 50 and over are televisions considered the most important display device, ahead of smartphones. In the age category of 50–69, however, not even half consider their TV set to be the most important device. Only among over 70-year-olds do television sets continue to represent the most important screens for almost three quarters of those surveyed, with only 8 % mentioning the smartphone as the most important device. The younger generation is almost the mirror image of this. Only 3.3 % of 14–19 year-olds consider televisions the most important device, for almost three quarters of them, it is their smartphone (cf. Fig. 5). Among 14–29-year-olds, smartphones (63.9 %) clearly outperform televisions as well (4.7 %).

Fig. 5

Most important device with a screen: television vs. smartphone by age



Source Kantar TNS; Basis: German-speaking population aged 14 and over
(14–19 years: 4,904; 20–29 years: 9,676; 30–39 years: 9,810; 40–49 years: 11,206; 50–59 years: 12,756; 60–69 years: 9,349; 70+ years: 12,393)

Television remains the most important device for video use across all age groups

When asked about video consumption, however, things look somewhat different. For 63.1 % of people aged 14 and over, televisions are still the most important devices for video use, followed by laptops (10.5 %), smartphones (9.3 %), desktop PCs (7.2 %), and tablets (5.2 %). Smartphones (+26 %) have gained most ground in terms of video consumption, replacing desktop PCs as the third-most important devices for video use. The growing popularity in the use of smartphones for mobile video use shows that previous projections for "mobile TV" via DVB-H are only now becoming a reality. With larger screens and higher resolutions, the availability of a comprehensive (broadband) infrastructure, and a variety of attractive content optimised for different usage scenarios, smartphones are becoming increasingly important as devices for receiving and playing video.

Those 30 years of age and older have clear preferences. More than one in two mention television as their favoured video device, with this preference for television clearly correlating to age, rising to 88.8 % among those over 70. 14–29-year-olds also name the television set (31.9 %) as their video device of choice; however, the trend continues towards mobile devices for the youngest of these. A quarter of 14–19-year-olds indicate that smartphones are their most important device for receiving video content, with TV leading the way, though only a few percentage points ahead of mobile phones. Things are quite similar among those aged 20–29: 32.4 % say that TVs are the most important device for receiving TV, followed by laptops (23.7 %), PCs (15.5 %), and smartphones (14.5 %). Whether the differences between age groups are generational or cohort effects, i. e. whether the comparatively strong preference for watching videos on smartphone among 14–19-year-olds will "grow with age" or whether they will switch to other devices as they grow older, will only become apparent in the long term. In any case, it can be ruled out that this is solely attributable to cohort effects. The popularity of smartphones as the most important device for receiving video increased from 0.9 million to 1.4 million people among those 50 years of age and older – this corresponds to an impressive growth of 56 %.

Among under-30s, the non-linear use of video takes first place

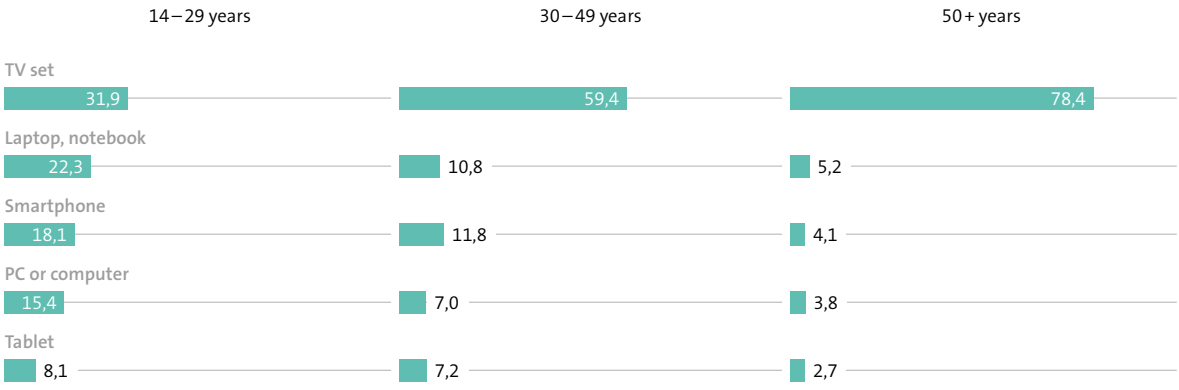
A little over two out of three (67.6 %) respondents primarily consume linear media, such as classic television or live streams on the Internet. Almost one in four of them, on the other hand, use broadcasts they record themselves or VOD offers; 5.9 % say that they use both equally frequently. For 14–29-year-olds, this ratio is almost reversed: 61.9 % are non-linear users. Only 28.8 % say they mainly use linear media. The tipping point at which viewers primarily use video in a linear manner falls in the age category between 30–39 years old; of these, 50 % consume linear media on average. Those over 40 have a clear preference for linear media.

Television's viewing share for video use dwindles, VOD gains much ground

When respondents are asked to specify how much time they spent watching video, "classic television viewing" still takes up the lion's share at around 65 %. This share is, however, declining significantly. Last year, it only declined by two percentage points over the previous year; this year, it dropped by another five percentage points. The relative share of VOD use, on the other hand, has grown since 2016, initially growing from 16 % to 18 % between the year

Fig. 6

Most important device for video, by age cohort (in per cent)

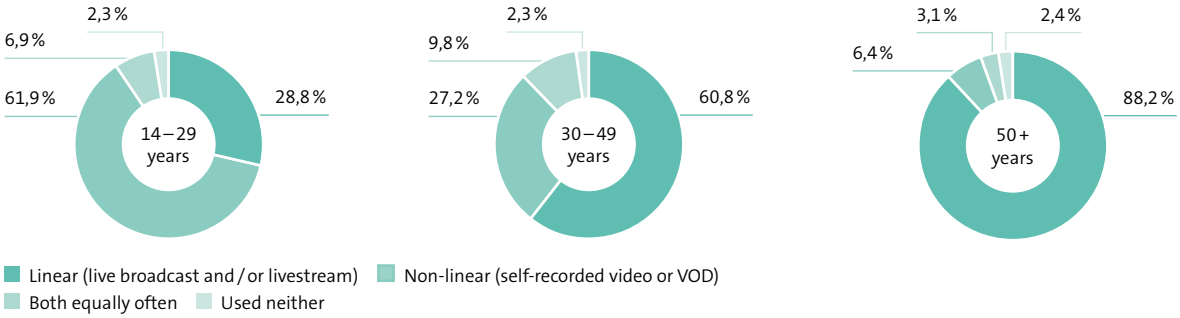


Source: Kantar TNS; Basis: 14.580 million persons aged 14–29; 21.016 million persons aged 30–49; 34.498 million persons 50 and over.

before last and last year and leaping to 23 percentage points this year. This corresponds to a growth of 44 % over the last two years. The constant availability of desired programming content via VOD also impacts the viewing of self-recorded programmes, which falls back to 6 % (-1 percentage point) of the overall time spent watching video. By contrast, the use of live streaming options is still below the 5 % mark, remaining the same as last year.

Fig. 7

Linear vs non-linear use of video, by age cohort (in per cent)



Source: Kantar TNS; Basis: 14.580 million persons aged 14–29; 21.016 million persons aged 30–49; 34.498 million persons 50 and over.

The growth of VOD can be explained, on the one hand, by the ever-growing range and ever-increasing quality of the content on offer. The large VOD platforms now offer users an extensive selection that previously could only be found on illegal streaming and download sites. While these sites provided unreliable content often plagued by choppy or interrupted playback, professional providers rely on well-developed content delivery networks (CDN) that ensure stable transmission. In addition, a large number of attractive viewing options are now available online either in advance or as exclusive content. This ranges from YouTube content to in-house productions by the major VOD providers; many TV channels also offer films and shows either in advance or as entire series for online "binge watching".

Young people watch VOD; older people watch telly

As with preferences for different devices, the distribution of time spent watching video also varies widely between age groups. 30–49-year-olds in particular are spending less time viewing classic television than last year, increasingly making use of online content. In this age group, VOD usage has risen to 27.1 %, which means a growth of more than one third. Among 14–29 year-olds, VOD now takes up more than half of the total time spent watching, at 55.8 %; whereas linear TV usage has dropped by a further ten percentage points, to 28.7 %. Those most faithful to "classic" television are still aged 40 and over. In the age group between 40 and 49, they spend two-thirds of their time watching video with linear television; for those aged between 50 and 59, this increases to three-quarters. The time spent watching classic television increases with age in an almost linear manner, reaching over 90 % among those over 70. The trend for spending time using VOD, on the other hand, runs in the opposite direction (cf. Fig. 8).

OTT already the most important means for receiving video for a quarter of the population

Looking at how video is supplied by means of reception, it becomes apparent that the use of video via the open Internet is continuing to catch up with the "classic" means of receiving TV. More than a quarter of those surveyed primarily use OTT as their means of receiving videos, though at 68.8 %, the classic means of TV transmission remain the primary source. Only 2.1 % of respondents say they use both equally. OTT is thus gaining ground as the primary means of reception, logging an increase of 6 percentage points over last year.

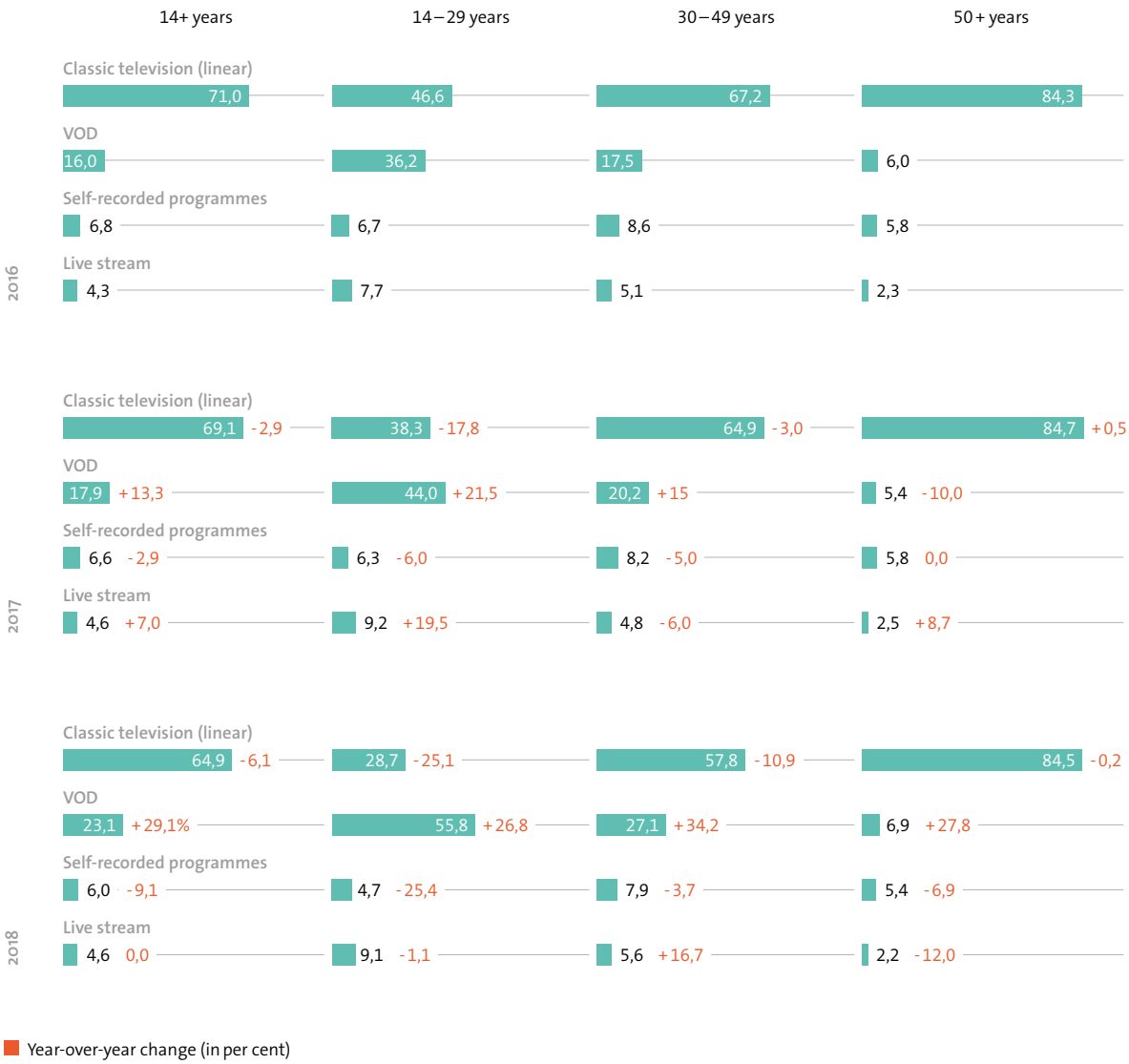
Those between the ages of 14 and 29 use OTT video offers particularly often. Of all viewers in this age group, 92.7 % use the Internet as a means of transmission; 39.6 % make daily use of VOD or live streaming, another 28.6 % use such options several times a week. 42.1 % of 14–29-year-olds watch video on their TV in this manner at least several times a week, and almost a third (30.8 %) use their smartphones. Non-linear programming clearly dominates among heavy users as well: At 95.5 %, almost all of them indicate that they use VOD; almost one-fifth of 14–29-year-olds use live streams at least several times a week.

VOD usage: streaming services almost on par with media libraries

TV providers are only able to keep up with the online offers of other providers to a limited extent. Around 24 million people in Germany use YouTube, which corresponds to more than one third (34.2 %)

Fig. 8

Average usage share linear/non-linear (in per cent)



Source: Kantar TNS; Basis: persons aged 14 and over in Germany (2016: 69,241 million; 2017: 69,563 million; 2018: 70,094 million)

of the population over the age of 14, making the video portal the most frequently used VOD provider in the country. On the other hand, the media libraries of the television networks have exceeded the 20 million mark for the first time this year, reaching over 31.2 % of the population with the content they offer. Almost one in three (29.3 %) viewers use Amazon (Prime) Video, Netflix, or another streaming service, which shows a growth of 27 % over last year. This places them not far behind the media libraries of the TV networks. Around 11.4 million people watch on-demand videos on social networks, 4.3 percentage points more than last year.

Streaming services outpace the media libraries of TV stations among 14–29 year-olds

For the second time in a row, Netflix has shown considerable growth in the VOD realm. The streaming service has grown by a whopping 75 % over last year and is now being used regularly by 19.2 % of the population, only just behind its competitor Amazon (Prime) Video (19.5 %). The content offered by the two market leaders in the VOD subscriber market each reach around 13.5 million people, thus reaching more users – despite of the paywall – than the media libraries of the privately operated channels, which regularly reach 11.6 million users. However, it should be noted that streaming VOD subscriptions are often "shared" between users and also offer free trial periods.

While the use of media libraries on average still ranks ahead of streaming services for the general population, the situation looks quite different for younger users between 14 and 29 years of age, who show a particular affinity for VOD. At 70.4 %, the majority of the younger population are availing themselves of streaming services, which clearly outperform the media libraries of TV channels with a lead of 13.9 percentage points. Last year, the gap between the two groups of providers was only 1.1 percentage points. While media libraries have shown a growth of "only" 7 % over last year, the use of streaming services has grown more than four times as fast (+27 %). More than half of the persons in this age group use Netflix (54.4 %), slightly ahead of Amazon Video (46.4 %). Videos on social networking sites are watched by 44.8 % of this age cohort. In comparison, the media libraries of the privately operated channels lag somewhat behind; however, they are still used by more than one third of 14–29-year-olds (35.2 %). Public channels reach nearly half of this age cohort, at 48.8 %.

Live streaming: content from TV channels especially popular

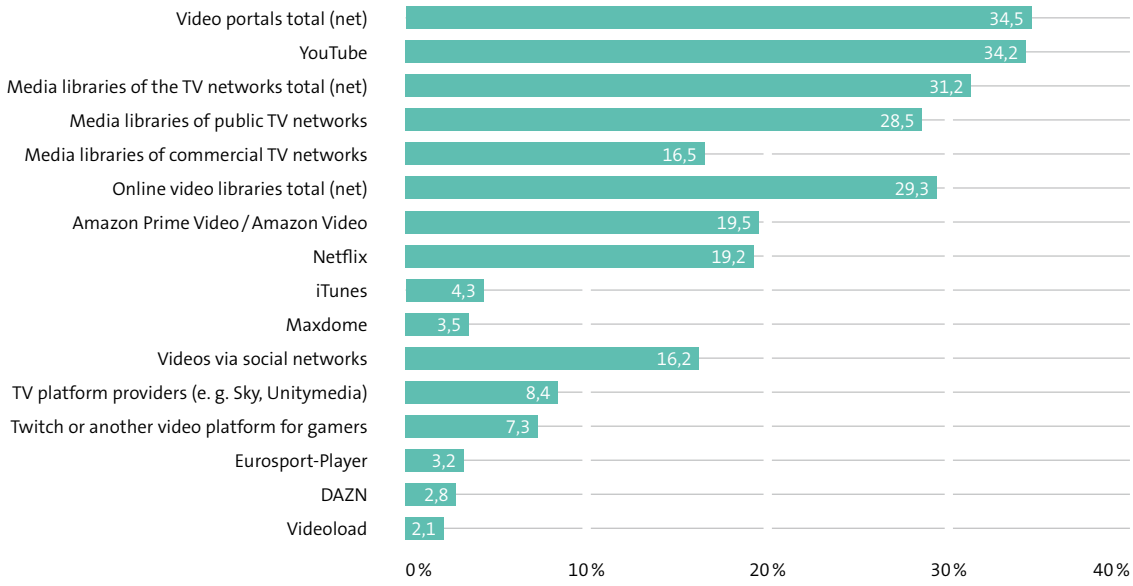
Despite its comparatively low share of the overall viewing time, over 26 million people in Germany have used online live streaming offers before, which corresponds to about 37.3 % of the population over 14 years of age. Nearly 15 million people are regular users, which means that they access live streaming services at least once a month. The majority of them use live streams from TV channels (59.1 %). More than half (50.6 %) of them indicate that they watch live content on YouTube; a little over a fifth (22.4 %) do so on Facebook or another social network. Special content from channels that offer content solely via the Internet (21.0 %), gaming platforms such as Twitch (18.9 %), and live sports broadcasts on Eurosport Player or DAZN (16.9 %) are also viewed by many respondents.

People are willing to pay for VOD in particular

Among the content viewed live or on demand via the Internet, various sources such as YouTube or the media libraries of public networks are availa-

Fig. 9

VOD content used



Source: Kantar TNS; Basis: 70.094 million persons aged 14 and over in Germany; 29.379 million persons aged 14 and over in Germany were surveyed, who used VOD (professional content) at least once a month (2018)

ble for the user free of charge. Others are funded by direct subscription payments or by charging a fee for individual access. The growth in streaming services in particular suggests that Internet users are increasingly willing to pay for video content. And in fact, willingness to pay has increased over the past year. In 2017, only about one in five (20.7 %) users paid for video content offered over the Internet; this year, more than one in four (27.9 %) said they would also use paid content. Payment is mostly for VOD (26.3 %), whereas only a fraction of the population (5.6 %) pay an extra fee for the use of live streams. Most people under 30 years of age are willing to pay for online video content. Two thirds (65.2 %) of these pay for VOD, and one in eight (12.6 %) use paid live streams.

Device and software interfaces influence programme selection

Users must be able to find video content in order for it to be successfully monetised. In the analogue world, choosing a programme was comparatively easy: After connecting the television, the user had to search through all the channels one time, after which the various networks were manually assigned to the channels of the TV set. If you wanted to "watch TV", you could grab the programme guide on your coffee table, choose whatever you would like to watch, and press the remote control – or simply just surf through the channels. Things were similar for non-linear video use: For "on-demand" viewing, one went to the video store or browsed through one's VHS collection; the search

was at best limited to finding the right tape in the wrong case. If you couldn't decide, you asked the employee at the video store or your friends to help you. The world of digital video looks quite similar in principle; however, the channel, programme guide, video store, and the employee are now bundled together in a single device. With options ranging from electronic programme guides (EPGs) to algorithm-based recommendations, the influence of user interfaces on devices and the design of apps and platforms has grown.

Smart TVs and set-top boxes are usually equipped with a logical channel numbering (LCN) function, i. e. the order of the TV channels on the device is automatically preconfigured and updated by a technical provider (usually the platform provider). The location of the channels within these lists greatly influences whether viewers can find programmes or not; this rings particularly true for smaller and less well-known television networks. Generally speaking, however, receiving devices offer the possibility of customising the sequence of channels. Channels can be assigned manually, or a list of favourites created by which selected programmes can be accessed directly via the remote control. Nevertheless, more than a third (39.2 %) of people in digital TV households say they have never adjusted the pre-set channel list of their TV or set-top box. This corresponds to almost 26 million TV users. Slightly over half (52 %) of them do not sort the channels because they are satisfied with the pre-sets, just under one in four (23.7 %) do not change the pre-set channel list because it is too time-consuming, and for a little over 15 % of them, re-sorting is too complicated.

Younger people are particularly reluctant to spend time configuring the list (29.9 % of those under 30 years of age), while older people often say that this is too difficult for them (20.7 % of those over 50 years of age). Device manufacturers should take note of this and make their interfaces more user-friendly.

One third of the population uses electronic recommendation systems

The various user interfaces and apps offer more than just the possibility of customising the navigation functions. An increasing number of them recommend programmes directly. Users are actively informed of video content that may be of interest to them via various applications such as the electronic programme guide or within the apps of the streaming services. Recommendation systems may be curated, or they may recommend content on the basis of algorithms. Curated recommendation systems are usually geared less towards the individual and more closely resemble the recommendations of a programme guide. Algorithm-based systems, on the other hand, recommend programmes based on usage statistics. Either they are based on the usage patterns of others ("Other viewers also like..."; "Viewers who watched film X also watch film Y"), or make use of individual user profiles to recommend content ("Recommended for you", "If you liked A, you will also like B", "Films with actor X").

Nearly one third (32.7 %) of the population use these electronic recommendation systems, one fifth (20.3 %) at least occasionally and 7.4 % frequently. The systems that are used most frequently by far are those that generate recommendations based on the user's own viewing habits (85.2 %); curated systems (68.1 %) and recommendations based on the viewing habits of others (67.5 %) are used by over two thirds of users. The same applies to these systems as does to OTT: Younger viewers are more likely to use recommendation systems,

and use them more frequently. Among 14–29-year-olds, this is about seven out of ten users, in the age group of 30 to 49 years, the number still lies above 40 %, among those over 70, only just over one in ten use them. In addition, men (38 %) use these services much more frequently than women (28.0 %).

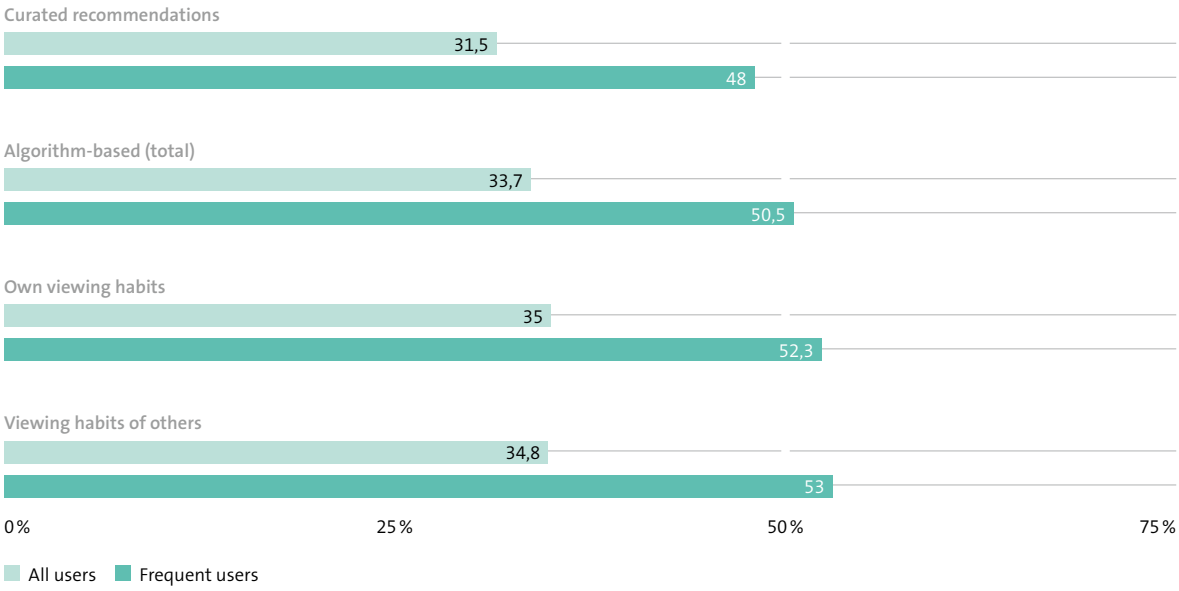
Users of algorithm-based systems particularly satisfied, positive assessment overall

Only 16.1 % of users of recommendation systems find the recommendations to be predominantly or almost always unsuitable, about half (50.6 %) of them describe them as occasionally suitable, and just under a third (32.1 %) state that the systems always or mostly provide suitable content recommendations. The assessment of the accuracy of these systems paints a similar picture. People who frequently use such systems tend to rate the overall accuracy higher; here too, algorithm-based systems outperform curated recommendations (cf. Fig. 10).

Over seven out of ten (70.4 %) users of automated recommendation systems consider them useful. Although almost everyone (91.1 %) is aware that their data are being stored, over half (52.2 %) of users agree that such systems feel a little unsettling but that the advantages still outweigh these concerns. Nearly 15 % of users of recommendation systems have a somewhat negative attitude towards them. As expected, the older population is more critical of recommendation systems. Only just over one in four viewers (25.6 %) who agree that such recommendation systems should actually be banned are under 30 years old, although this age group represents 44 % of users. Scepticism among women towards these systems is also above average.

Fig. 10

Recommendation systems



Source: Kantar TNS; Basis: 22.923 million persons who use curated or algorithm-based recommendation systems

Conclusion

The results of the report on digitisation clearly show that even today, linear TV programming faces considerable competition from content transmitted via IP-based networks. At this time, younger users in particular are increasingly using VOD options, and the trend clearly indicates that the older generation are also making use of convenient VOD services. Although classic linear television viewing will certainly not die out, less attention is being paid to it when directly compared with other media. Broadcast programmers have naturally been adjusting their strategy to these trends for some time already, offering a variety of means for viewing their products. Nevertheless, as always, there is a continued need for the development of the right strategies and alliances. Currently, discussion primarily focuses on how the industry can position itself to confront growing international competition. As the survey shows, Netflix and Amazon have for some been diverting the attention of younger viewers away from the German TV networks. If the growth of streaming services as seen over the last few years continues, they will take over the leading position in the VOD sector amongst the general public, a position which is currently held by the media libraries of the various TV providers. Above all, this is what has recently driven the debate about a joint VOD service from German television providers. Even though prior attempts

have failed due to antitrust regulations (think of "Germany's Gold" and "Amazonas"), an initial collaboration between ProSiebenSat.1 and Discovery has been approved. If more of such collaborations are initiated or expanded in future, this will allow even small providers to draw the attention of the public with the content they offer – across all platforms and means of transmission.

The same applies to "traditional" television broadcasting. The current data paint a clear picture: More and more households are equipped with HD and UHD-capable receivers. More than two thirds of households already own HDTV sets exclusively. The discontinuation of SD broadcasting of public channels via satellite is slated for mid-2020. Obviously, privately operated television providers should also consider a possible switch to HD. This does not necessarily disadvantage smaller providers, either – the principle of equal opportunities and non-discrimination must also be retained in a future HD (and possibly UHD) era.

At the same time, full digitisation and transmission via IP-based networks also offer completely new possibilities in the communication of advertising. Televisions are increasingly able to be addressed directly, maybe even able to return information, which allows for the targeted management of advertising content. These advertising formats are already widely used online: One day, you buy some shoes on Amazon and the next day you are continuously shown ads for new socks. In the TV sector, this degree of customisation is rather unlikely in the immediate future. Nevertheless, the full digitisation of infrastructure and household devices, along with an ever-growing number of "smart" televisions, contributes to increasingly precise programmatic advertising. This carries with it opportunities and risks for small, as well as local and regional, programme providers, particularly resulting from the increasingly fragmented focus of viewers.

The final step into the wonderful new world of digital television has almost been completed. However, the developments outlined above clearly show that even after the full transition to digitised TV, challenges will continue to exist. For many years now, the report on digitisation has not only surveyed the degree of digitisation in the means of transmitting broadcast media, but has also comprehensively documented the latest developments and trends in the market for linear and non-linear video – and will continue to do so even after the last analogue households are cut off at the beginning of next year.

Methodology

Bifurcation of the survey

Unlike in previous years, the survey for the digitalisation report this year was split into a video and a radio survey for the first time. The division into two separate surveys had become necessary to limit the duration of the survey interview and at the same time to enable the content and themes of the digitalisation report to be developed further. For video, the comparability of the results with previous years and the valid extrapolation of the existing time series was ensured by maintaining the established structure of the questionnaire. The question topics for radio were outsourced and adapted. A test study conducted in parallel with the 2017 digitalisation report has shown that the changeover in methodology does not lead to any significant deviations in the results.

Survey method and population of the video digitalisation report

The study was carried out by Kantar TNS Media Research on behalf of the German media authorities, with the participation of Media Broadcast, SES / Astra Germany, Sky, Unitymedia, and Vodafone. As in previous years, it was conducted via computer-assisted telephone interviewing (CATI). To take better account of the proportion of the population that can only or mainly be reached via mobile communications, it was carried out as a so-called dual-frame telephone survey, i. e. with a combination of fixed and mobile telephone numbers (80 to 20 percent). The ADM telephone sample system for fixed and mobile network numbers was the basis for selection. The survey was conducted between 07 / 05 and 21 / 06 / 2018.

The population of this survey is formed by the German-speaking resident population aged 14 years and over. It thus corresponds to the definition that also forms the basis for the media analysis (ma) (= German households plus households with EU-28 head of household plus households with non-EU head of household with completed school education).

This year, the population comprises 40.219 million households. Of these, 96.2 percent have at least one TV. The TV reception results are based on these 38.697 million TV households.

Sampling and number of cases

The 2018 survey is based on a net number of 7,501 interviews. Until 2012, the person interviewed was the one in the household who said that they knew best about television reception. As in the last five years, in 2018 the respondent was randomly selected so that personal use could be reported as well. At the personal level, the population comprises 70.094 million persons aged 14 and over.

As in previous years, the sample was spread disproportionately in order to guarantee a minimum number of cases for each individual federal state. Therefore, in a sub-sample, persons aged 14 – 29 were targeted to increase their share in the net sample. In households with more than one person in this age group, one of these 14 – 29-year-olds was randomly selected.

The two sampling frames (landline and mobile) and the "14 – 29 age-group interviews" were merged by design weighting to give a representative picture of the population.

Definition and surveying of the transmission modes

Since this survey focuses on the reception prospects of TV households, TV sets that are connected to a satellite master antenna system but do not need their own receiver for TV reception (SMATV-CH households) are counted as cable reception. Accordingly, only TV sets with their own satellite receiver are counted as satellite reception.

All the transmission modes used for the first device in the household are recorded. If applicable, the transmission modes for additional TV sets in the household are summarised, as in the previous year. If a TV household receives both terrestrial and satellite, for example, with a first, second, or further device, both ways are recorded when surveying the transmission types. Since some households have several reception modes, this results in a total of more than 100 percent (see, for example, Fig. 2).

When recording the transmission type (analogue or digital), cable reception is an exception: TV households with cable reception that have a TV set connected to a digital cable receiver, are – if the respective provider still provides analogue cable TV signals in principle – technically still able to watch analogue TV. For the sake of uniform presentation with the other reception modes, all cable TV sets with digital receivers are identified as digital receiving units.

Digitisation in international markets: facts and figures

European TV market closing the gap to become fully digital

Ricardo Topham

In Europe 93 per cent of television reception is digital as of year-end 2017, compared to 91 per cent the previous year. In parallel, the transition from SD to HD continues at a solid pace: 57 per cent of TV homes that are currently enjoying HD content, up from 53 per cent in Year-End 2017. HDTV is becoming the new standard for broadcasting as end users are looking for a better picture quality. At the same time, viewers are demanding more flexibility in terms of video consumption: TVs are becoming smart and connected, linear and non-linear video consumption happens now on both TV set and further devices.

All these trends on the European television market in 2017 are underlined by the data collected in the annual Satellite Monitor survey conducted by SES which monitors the progress of TV reception within the footprint of the European SES satellite fleet.

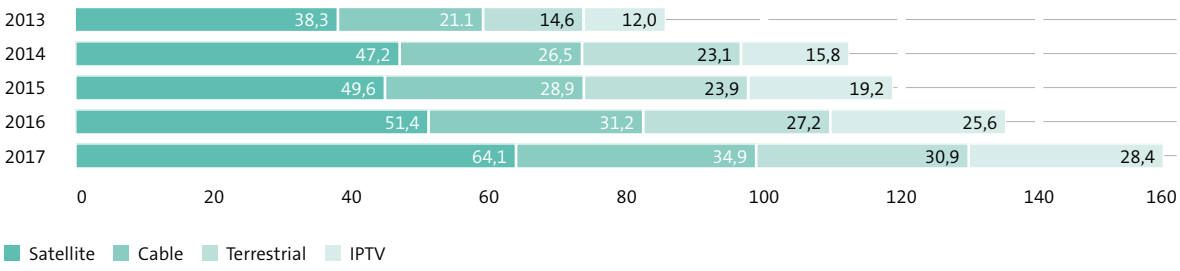
Status of digitisation in Europe

At the end of 2017, digitisation of European TV households had increased from 91 per cent (2016) to 93 per cent at present. Expressed in the number of households in Europe, 256 of the 276 million TV homes now have digital TV reception resorting to one of the four modes of reception (satellite, cable, DTT, IPTV and / or DSL-TV). Compared to the end of 2016, the number of analogue TV homes decreased by 3.2 million, now only 19.8 million remain to be switched to digital TV reception.

High-definition (HDTV) once again proved to be the driver of digitisation. HDTV has continued to grow, thus offering one of the key benefits of digital television reception: 158 million TV homes are enjoying HD at present, corresponding to 57 per cent per cent of all TV households. This includes 64 million satellite homes placing satellite at the top spot of the audience reach of HDTV platforms. The share of HDTV households among satellite homes has now reached 59 per cent. A further 35 million households receive their HDTV channels via digital cable, 31 million via DTT and 28 million via IPTV.

Fig. 1

European HDTV homes per infrastructure (in million)



Source: SES Satellite Monitor Year End 2017

Infrastructure progress

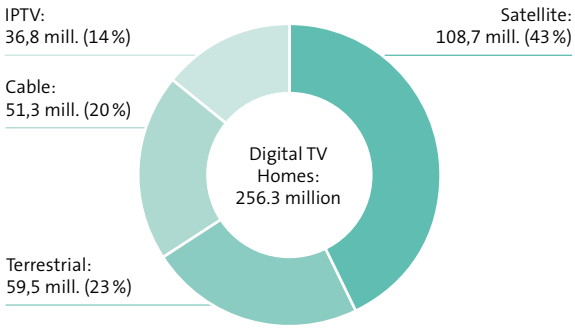
In the course of this development, the share of digital households related to the various transmission routes did not see any major changes:

The market share of 42 per cent puts satellite at the top of the digital reception league with 109 million households, followed by DTT at 59 million households (corresponding to a market share of 23 per cent) and digital cable attracting 48 million households (20 per cent of the total) while IPTV brings up the rear with 37 million (14 per cent).

The remaining 20 million analogue TV homes in Europe are shared between cable (14 million) and terrestrial (6 million).

Fig. 2

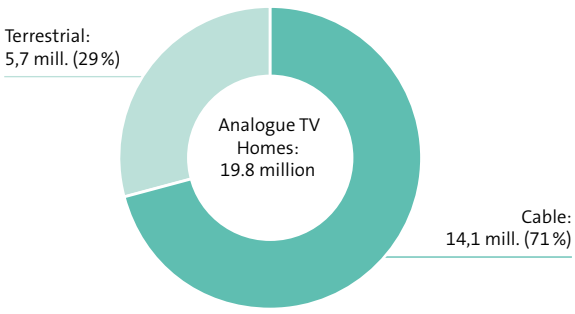
Modes of digital TV reception in Europe



Source: SES Satellite Monitor Year End 2017

Fig. 3

Modes of TV reception among analogue TV homes in Europe



Source: SES Satellite Monitor Year End 2017

The majority (14 million) of analogue homes receives its television via cable, which equates to 22 per cent cent of cable homes across Europe are still awaiting digitisation. Regarding terrestrial, 91 per cent of homes now receive digital television providing an extended range of channels.

Comparison by regions

As could already be noted over the last years, there is still a clear West-East divide. In Western Europe, 98 per cent of TV households have already gone digital whereas in Eastern Europe, digitisation has only reached 81 per cent to date. The regional discrepancy is also evident when comparing the status of cable homes: 92 per cent of cable households in Western Europe are digital versus 55 per cent in Eastern Europe. The difference is even more marked for terrestrial reception: while in Western Europe almost all terrestrial TV homes use DTT (99 per cent), the rate in Eastern Europe is 65 per cent.

In eight West European countries digitisation have reached or are nearing completion: the Austria, Finland, France, Ireland, Italy, Spain, Switzerland, and the UK. A further fourteen countries rank above the European digitisation average of 93 per cent and are thus well en route to full digitisation while sixteen countries surveyed rank below the average level of digitisation. This is the case mainly for markets in Eastern Europe where both the cable networks and the terrestrial infrastructure are lagging behind.

The difference between Western and Eastern Europe can also be noted when analysing HDTV: 119 of 158 million HD homes are located in Western Europe, corresponding to 68 per cent of all TV households in the respective regions; the 3 million HD homes in Eastern Europe correspond to a regional share of 39 per cent. A similar picture emerges when looking at satellite reception: 39 million satellite HD households in Western Europe (74 per cent of satellite homes overall) compare with 16 million satellite HD households (or 44 per cent) in Eastern Europe.

Status of digitisation in Germany[1]

The German market is characterised by great stability of the reception routes. After the exceptional year 2012 which featured the switch-off of the analogue satellite signal with a resulting great leap in digitisation, there has been hardly any change regarding the rate of digitisation last year at a slight increase from 94 per cent to 97 per cent putting Germany above the European average.

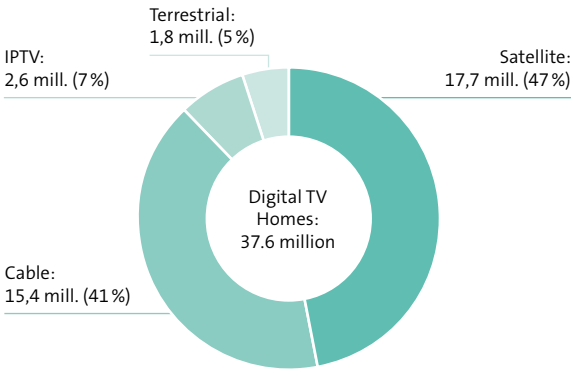
All transmission routes are fully digitised except cable, still supplying 1 million or 6 per cent of cable homes with analogue television.

Similar to the comparison across Europe overall, the shares held within the digital market showed hardly any changes over last year: Digital cable is the mode of supply for 41 per cent of digital television households, DTT is available in 5 per cent and IPTV is used by 7 per cent of German homes while satellite reception in Germany at 47 per cent presents the most popular route of transmission for digital television.

1 To allow for a comparison with the data available for the other countries in Europe, the figures are based on the data of the SES Satellite Monitor (Year End 2017); this explains the difference to the data contained in the Facts and Figures section of this report. Further information on the differences can be found in the "Methodology" section.

Fig. 4

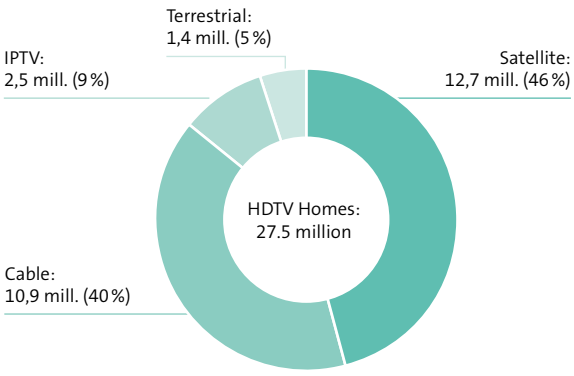
Modes of TV reception among digital TV homes in Germany



Source: SES Satellite Monitor Year End 2017

Fig. 5

Modes of TV reception among HDTV homes in Germany



Source: SES Satellite Monitor Year End 2017

HDTV development is also on a stable course in Germany. Between the end of 2016 and the end of 2017, 5 million television households in Germany upgraded their equipment to allow for HDTV reception, thereby reaching 27.5 million HD homes.

This corresponds to a HD share of 71 per cent of all German television households, which has allowed it to surpass the average in Western Europe (68 per cent).

Satellite continues to dominate HDTV reception at 13 million HD homes corresponding to a market share of 46 per cent. Cable follows in second place with 11 million and an HD market share of 40 per cent. IPTV has moved up to close to 2.5 million and takes 9 per cent of the HD market while, at Year-End 2017, DTT was supplying 1.4 Mio. homes with HD content.

Ultra HD is emerging

Consumers are looking for better picture quality and, while the transition from SD to HD continues, Ultra HD is emerging both in terms of TV sets and TV channels.

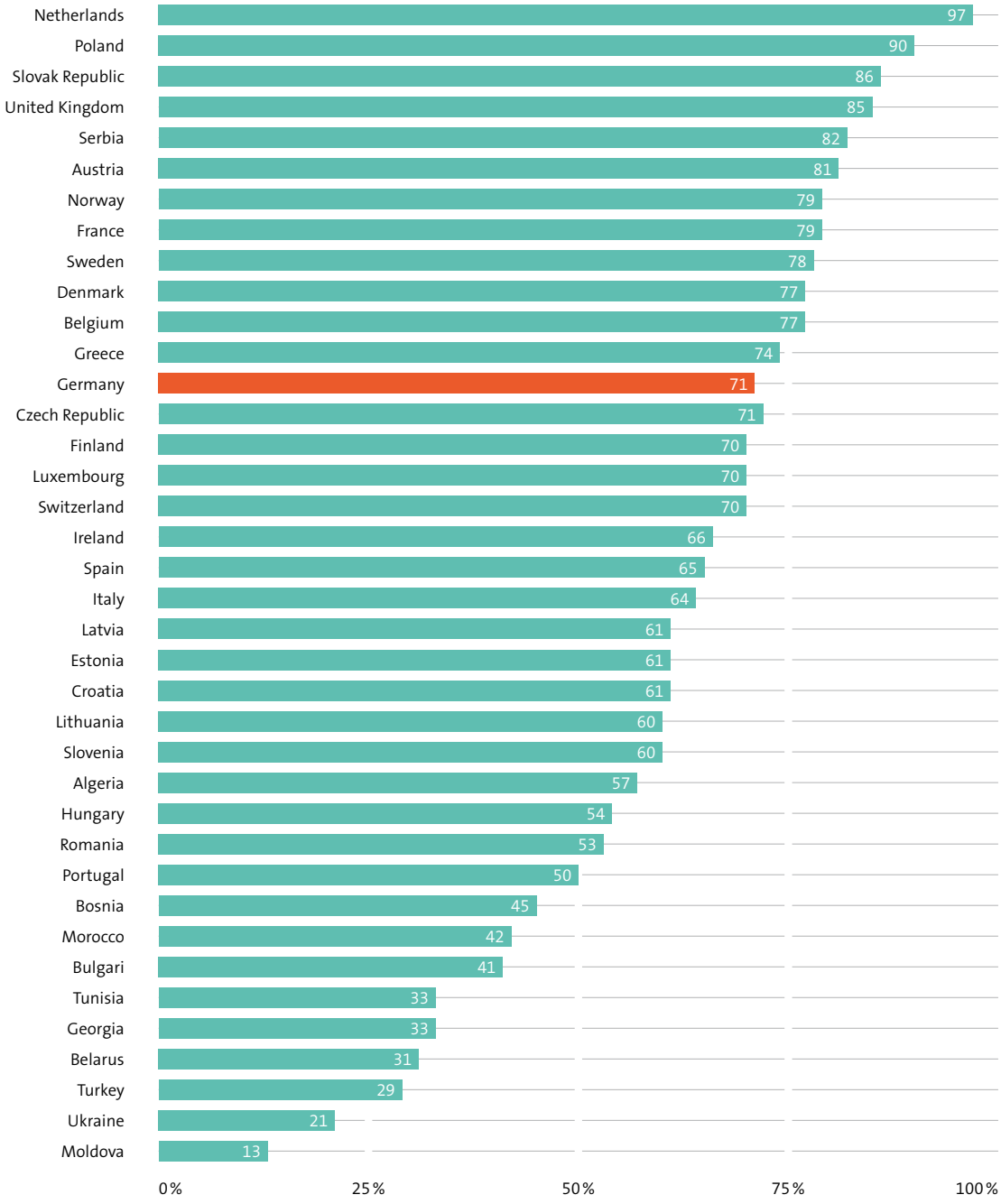
At Q1 2018, over 100 TV channels are broadcast in Ultra HD worldwide. Almost half of them are hosted on SES satellites serving mainly the European and North American markets.

63 per cent of the German TV homes have already heard about Ultra HD (compared to 57 per cent at year-end 2016). This is well above the European average of 50 per cent.

In terms of ownership, 9.7 per cent own already an Ultra HD TV screen, perfectly in line with the European average of 9.8 per cent.

Fig. 6

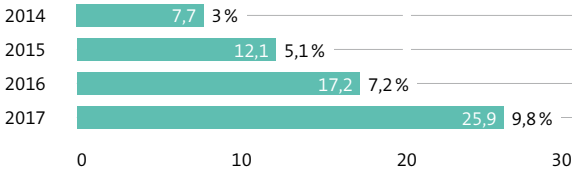
Percentage of HDTV among all Satellite homes (per country)



Source: SES Satellite Monitor Year End 2017

Fig. 7

TV homes equipped with Ultra HD / 4K screens in Europe:



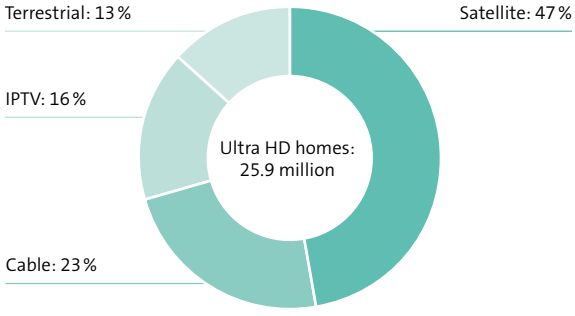
Source: SES Satellite Monitor Year End 2017

The number of Ultra HD screens in Europe has gradually increased over the past years, tripling from 6 million in 2014 to over 17 million in 2016. As of the end of 2017, almost 10 per cent of European homes are already equipped with an Ultra HD screen.

Satellite leads the way among the UHD-ready homes (homes owning an Ultra HD screen). Almost half of the Ultra HD ready homes (47 per cent) in Europe are satellite homes.

Fig. 8

Percentage of UHD ready homes by mode of reception



Source: SES Satellite Monitor Year End 2017

The rise of OTT in Europe

Consumers watch high quality TV on their large screens while they use complementary offers, including on-demand services, on other platforms and alternative screens.

OTT offers a great variety of video content. End-users can either watch live web TV on any device, such as TV programs at the same time as they are broadcast on the "traditional" television set.

They can also watch programmes over the internet on demand, derived from the broadcasters' media libraries, from VOD providers such as Netflix or Amazon, from video-sharing websites such as YouTube or through social networks, just to name a few examples.

Despite the emergence of OTT services such as Netflix and Amazon in the past years, the proportion of TV homes over the total number of homes in Europe has remained at similar levels.

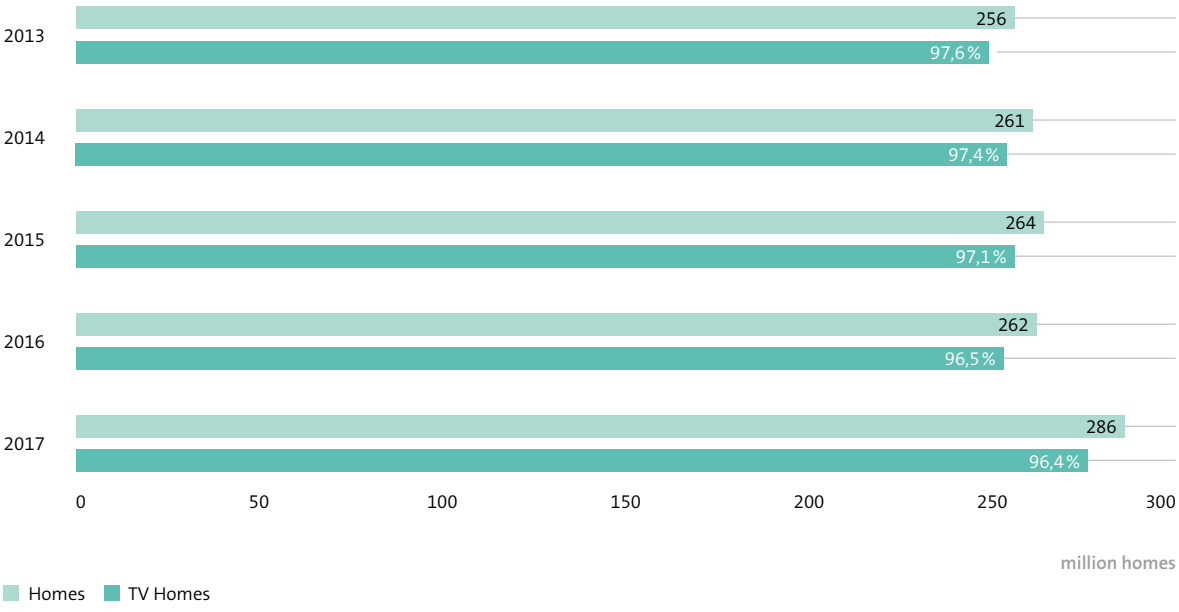
At Year-End 2016, for the first time, SES Satellite Monitors research included the OTT landscape: 19 countries were surveyed regarding OTT and further nine in year-end 2017 representing a sample of 249 million homes and in year-end 2017.

Out of them, 53 per cent claimed that they consume OTT on any device.

OTT consumption is well-established on a variety of devices, but non-TV devices are by far the most popular (60 per cent), 29 per cent use both TV sets and non-TV devices, and a mere 11 per cent of homes use only the TV for this. This highlights the complementarity of OTT to traditional linear TV. In

Fig. 9

Number of Homes & TV Homes and TV penetration rate (in per cent) in Europe



Source: SES Satellite Monitor Year End 2017

almost two-third of the cases OTT is consumed on non-TV devices and in another quarter TV sets and non-TV devices are used interchangeably.

Homes viewing OTT have a slight preference for consuming non-linear video content (86 per cent) than linear (73 per cent).

The trend that we see here is a diversification of the video offer: people want to use different screens and different forms of consumption at the same time.

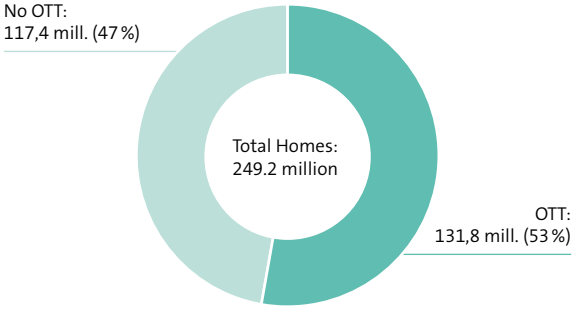
When it comes to paying for OTT services or to using them for free, consumers prefer for a large majority (72 per cent) enjoying the OTT services available for free only. A quarter pay for certain services in addition.

Conclusion and outlook

Full digitisation of the television markets in Europe is slowly approaching and will happen sooner rather than later. In 2017, many countries again took major steps forward towards full digitisation and barely 20 million currently remain analogue. For the remaining analogue homes the question is not whether they will switch to a digital television infrastructure, but only when this will happen. HDTV will continue to act as the catalyst and main driver

Fig. 10

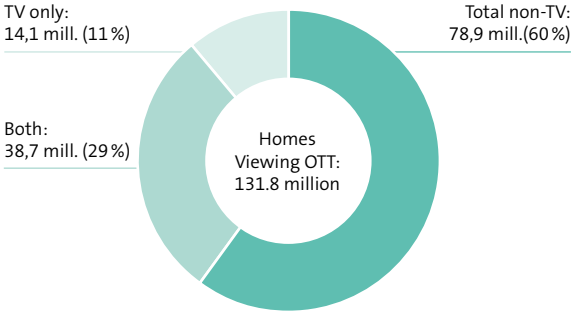
Homes that consume OTT on any device



Source: SES Satellite Monitor Year End 2017

Fig. 11

Devices used for OTT consumption

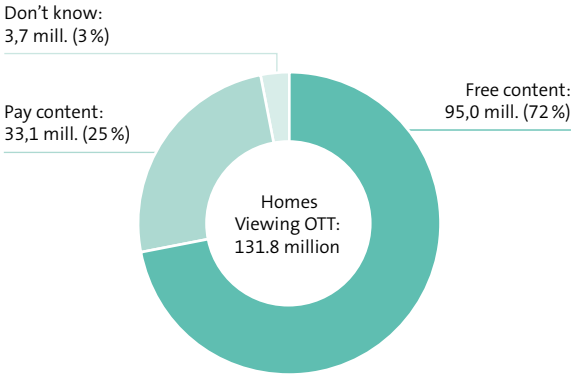


Source: SES Satellite Monitor Year End 2017

for digitisation over the coming years. In the more advanced markets meanwhile the next stage of the evolution is already there: Ultra HD / 4K will allow for an incredible television experience with four times the picture resolution of HDTV, and will ensure that the future of television will be anything but boring. Commercial transmissions of Ultra HD channels are well established via SES satellites. While picture quality matters more and more for the end consumers, they are also enjoying a wider offer in terms of video content from the internet on a variety of devices (smart TV, mobile devices, etc.). The complementarity of OTT to traditional linear TV allows an even greater diversification of the video offer: consumers can now use different screens and different forms of consumption simultaneously.

Fig. 12

Type of video content (pay versus free only) used by European homes:



Source: SES Satellite Monitor Year End 2017

The remit of the media authorities regulating platforms

Platform regulation as laid down in German broadcasting law aims at securing equal access to networks and platforms and at ensuring that the broadcasting offers can be found by viewers. The infrastructures of the networks and the user surfaces are to be found in a central position between the broadcasters and the viewers, and can potentially impact access to the audience for the broadcasters and thus ultimately affect the free formation of opinion. This scenario necessitates an independent institution regulating this sector.

Ensuring findability on user surfaces

User surfaces, electronic programme guides (EPG in short), navigators or listings show the content available, allowing direct access to content for a viewer. The media authorities ensure equal opportunities and non-discrimination for all broadcasting content to be found via these surfaces. This comprises, among other things, that differing providers offering the same category of content are listed in a comparable fashion. The criteria adopted by platform providers for listing content are published on the website of the media authorities to help making this transparent. The empirical survey conducted in the framework of the report on digitisation proves that pre-set listings still have considerable importance. At the same time, the relevance of app portals provided on smart TV sets is enjoying a noticeable increase.

Regulation at present applies only to the user surfaces provided by platform operators. For this reason, the media authorities advocate an extension of regulation to cover all user surfaces including, among others, smart TV sets, home screens or set-top boxes which present an overview of all broadcast services available and allow individual services to be accessed directly.

Ensuring equal access to platforms

With the scarcity of transmission capacities having come to its end, the must-carry provisions have somewhat shifted out of focus. In turn, the economic terms applying to content distribution are gaining considerable relevance as the significance of HDTV increases and the platform operators now market HD content. The structure of the payment

schemes must pass the criterion of plurality of opinions. The media authorities verify whether comparable offers are distributed at comparable terms on the basis of the contractual agreements reached between broadcasters and platform operators.

Alongside the traditional routes of transmission, OTT platforms are becoming more and more important, permitting audiences to access broadcast offers and comparable video content; this is shown in the facts and figures section of the report on digitisation. In this context the media authorities also pay attention to the developments in politics and media legislation as regards net neutrality. Here, too, plurality commands that individual offers are not granted preferential treatment.

Transparency and cooperation

For the media authorities, transparency in the broadcasting sector constitutes a key objective. To this end, they regularly go public organising events and issue publications including this report on digitisation; they offer information and conduct debates on topical issues. Platform regulation is handled in the Commission on Licensing and Supervision (ZAK) of the media authorities. Alongside this cooperation of the media authorities among themselves, the regulators also exchange views and positions with the Federal Network Agency and the Federal Cartel Office. Regarding the introduction of DTT2 HD, for instance, the issue of cooperation among market players was discussed with the Federal Cartel Office while the necessary capacity requirements were developed jointly with the Federal Network Agency and the German states. This well-established cooperation should now be underpinned by a stronger legal provision, thus attributing the appropriate relevance to securing pluralism in the process.

Accompanying the process of transformation – the media authorities as moderators

The progress of technology results in changes of the broadcast transmission infrastructures at irregular intervals. The media authorities have been accompanying these processes of transformation for several years already. They are involved in the switchover to the new terrestrial television standard DTT2 HD procedure which will continue until 2019 in some areas; in this process the media authorities moderated a Round Table of the major television groups and the association of commercial broadcasters (VPRT) to ensure a joint approach. The communication policy in particular necessitated a thorough exchange of views and positions in advance of informing the general public and the experts.

In the context of the impending switch-off of analogue cable transmission the media authorities initially conducted several meetings with the industry seeking to develop a joint line from the differing positions of content providers, network operators and the housing industry. The Round Table on the switchover of cable from analogue to digital transmission now provides a platform for all players involved to determine the concrete conditions for the switchover. The data in this report on digitisation outline the aspects that need to be taken into consideration for a consumer-friendly switchover.

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Simon Berghofer studied journalism and communication science, political science, and modern German literature at the Free University of Berlin. After graduation, he worked for several years as a pre- and post-doc (research associate) at the Department of Communication Policy and Media Economics of the Institute for Media and Communication Studies of the Free University. Here he researched, taught, and earned a doctorate in media regulation, media markets, and media governance. Since the beginning of 2018, he has been responsible for various research projects in digitalisation and convergence in the Joint Management Office of the German media authorities. He also deals with issues of platform regulation and works with the technical committee on networks, technology, and convergence.

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Ricardo Topham completed his telecommunication engineering studies in 2010, followed by an M.Sc. in telecommunication technologies at the University of Las Palmas de Gran Canaria and an M.Sc. in space management at the International Space University. During the summer of 2012 he was a visiting researcher in NASA Goddard Space Flight Center. He then worked as a strategic planning and market analysis consultant for Euroconsult from 2012 to 2015. Ricardo joined SES S.A. in Betzdorf (Luxembourg) in 2015 as a senior business and market analyst within the Marketing department, to lead the market research projects globally. Since then he has become the key contributor to the Satellite Monitors project, a survey conducted among private homes to find out about the development of TV reception in 38 countries in Europe and 5 countries in Africa.

Dr Anja Zimmer

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Dr Anja Zimmer has been the director of the media authority Berlin-Brandenburg (mabb) since March 15th, 2016. Most recently before that, Dr Zimmer worked as managing director of the German Journalists Association North Rhine-Westphalia. Previously, she was a partner with focus on media and telecommunications law at the law firm Beiten Burkhardt in Frankfurt am Main, and as senior manager of government relations at Deutsche Telekom she was responsible for media policy and regulation. Dr Anja Zimmer worked as a lawyer for media law, telecommunications, and antitrust law as well as multimedia law at the international law firm Lovells. She also worked as a consultant at the State Broadcasting Corporation of North Rhine-Westphalia and as a civil servant in the Foreign Office.

The 14th annual Report on Digitisation published by the German media authorities brings changes with it, and not just in the way broadcast media is transmitted and media is used. For the first time ever, the topics of video and audio will each receive an independent report in order to provide sufficient space to elaborate on the exciting developments happening in each area. The last step in the world of digital television is as good as complete. However, for a long time now, the Report on Digitisation has not only been measuring the degree to which the transmission of broadcast media has become digitised; it also comprehensively documents the latest trends in the market for both linear and non-linear video media.

The focal point of the 2018 Report on Digitisation: Video is the end of the analogue cable signal. Remaining households that still receive analogue broadcasts will need to switch to digital reception by the end of the year. Other households already arrived at that point a long time ago, and this year, research again shows that streaming services are very popular with viewers. Young adults in particular are now more likely to watch video-on-demand services than classic television. More than two thirds of households in Germany already have HDTVs exclusively. Even outside of Germany, HDTV is spreading at a rapid pace, as the comparison of European countries shows. In 2018, many countries took major steps towards total digitisation.

Additionally, the industry continues to address the issue of how to deal with intermediaries. In order to ensure media diversity, it is particularly interesting, from the perspective of regulation, to note the role that search engines and social networks play in media use. In this regard, it is crucial to understand how algorithms work, but issues of transparency and how information is disseminated need to be considered as well. Are we dealing more with mediators of information or gatekeepers?

The reports on digitisation for both video and audio media, as well as all other detailed research results, can be found on our website www.die-medienanstalten.de under “Publications”.