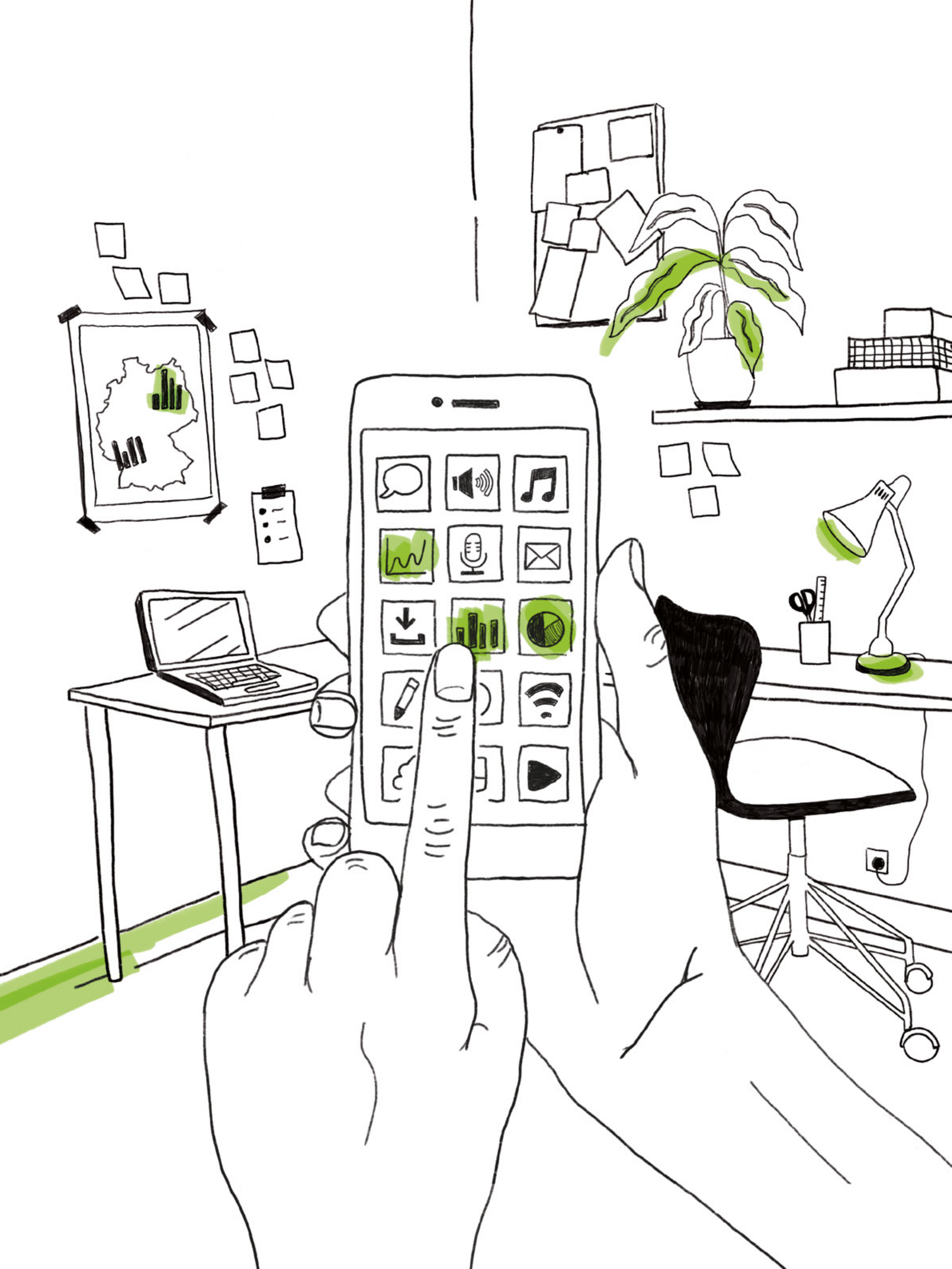

Digitisation in Germany:
Facts and Figures

Current Findings on Digital Television Transmission and Video Consumption in Germany

September 2020

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The Corona pandemic makes this year a special one: The extraordinary situation which impacts all walks of life, indeed the entire society, quite naturally also exerts its effects on the current survey regarding the annual report on digitisation of video consumption. The survey was conducted among a representative cross-section of the population during the months of May and June – at that time, the very strict restrictions applying for social contacts and leaving your home in Germany had already been eased again, but everyday life for most people during the field period had still not returned to "normal". The exceptional situation is also mirrored in some of the findings established during the current survey. The results detailed in the first part of this article on the distribution of television transmission infrastructures and television sets and other devices available in households as a tendency show few to no "Corona effects" as could be expected. The developments of video consumption described in the second part of this report, however, must be viewed against the background of the pandemic. A large number of persons still worked from home during the field period, schools and kindergartens in many regions were still closed, and strict rules for social distancing and hygiene continued to apply. In other words: Everyday life was entirely dominated by the pandemic, and naturally, it also left its mark on the consumption of media. Media usage normally follows set routines and habits; they were suspended. Furthermore, people experienced a greater need for information and entertainment than ever before. The data of the current survey clearly reflect this scenario: Consumption of moving image content – and especially "traditional" television consumption – could gain considerable ground. This is strong indication of the fact how important the offers provided by the television services remain for everyone – and all the more so when it really matters.

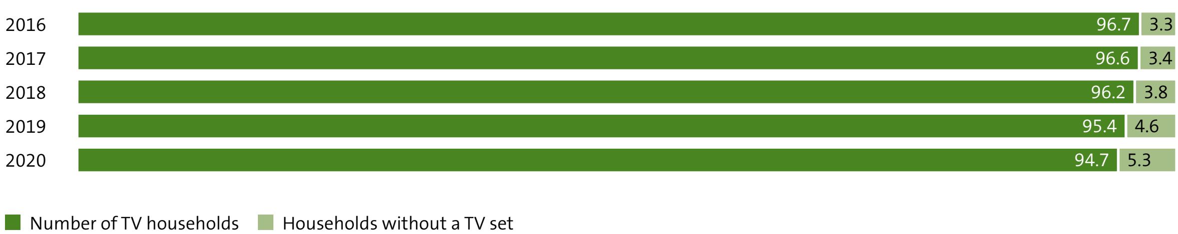
Part I: Devices and Infrastructure

The number of television households, i.e. homes where at least 1 television set can be found, continues to maintain its persistently high level. Around 38.5 million homes own a TV set; this corresponds to the level of last year. Looking at the total number of households in Germany, just under 95 percent

In average every
TV-Household owns
1,6 TV sets

Fig. 1

Five-year trend in TV households (in percent)



Basis: 39.372 / 39.672 / 40.219 / 40.350 / 40.684 million households in Germany (n = 8,281)

continue to keep a TV set at their disposal; this constitutes only a minor reduction compared to last year. Looking at the tendency over 5 years, however, the decline in the relative number of households with a TV set is 2 percentage points.

The majority of German television households has 1 television set at home; this corresponds to around 60 percent of TV households in Germany. Four out of ten households have 2 sets (28 percent) or 3 sets (12 percent). The trend of the last 5 years reveals a slight increase of multiple-set households; it comes to approx. 2 percentage points, taking the average availability of receivers per household to 1.57 sets per household.

Reception infrastructures: IP-based TV transmission continues to expand

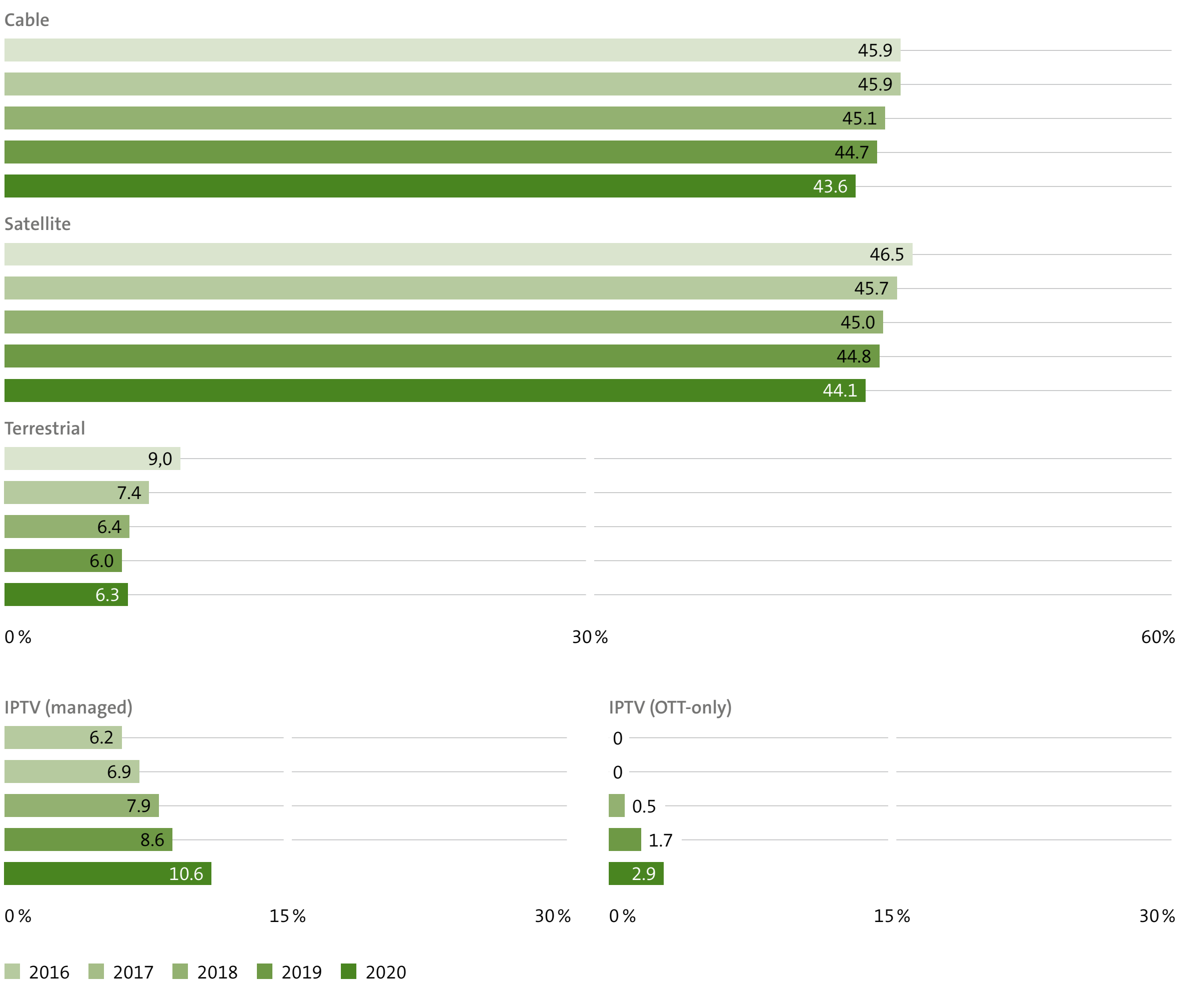
The largest section of German TV households still receives television signals via cable or satellite. Satellite reception at just under 17 million households narrowly tops cable households (16.8 million). Both modes of transmission therefore each cover approx. 44 percent of German television households; compared to last year the rate has gone down by 1 percentage point.

With the switchover of terrestrial television reception to DTT T-2 HD completed, terrestrial reception has settled at 6 percent of German television households over the last 3 years; before that time, it had struggled with a downwards move for several years. However, in 2020 terrestrial reception picked up again slightly over the year before and now stands at a good 2.4 million households in Germany which watch television via DTT T-2 HD.

The increase was particularly pronounced for TV households receiving their television diet via IP-based networks. This applies both as regards the transmission of the IPTV signal in “closed” networks which are operated, for instance, by Telekom, Vodafone or 1&1, but also by a number of regional providers, as well as for the so-called “open” networks. Close on 11 percent of German TV households receive their television signals via

Fig.2

Distribution of transmission routes



Total > 100 percent due to multiple types of reception; Basis: 38.076 / 38.306 / 38.697 / 38.491 / 38.520 million television households in Germany (n = 7,786)

IPTV. The rate has gone up by 2 percentage points compared to 2019 and now stands at 4.1 million households.

Cord-cutting at the TV set tops 1 million households

The number of households receiving television services via so-called “open” IP networks has grown to more than 1.1 million. These homes do not connect the television receiver to a traditional mode of reception such as cable, satellite, terrestrial or IPTV, but connect exclusively to the internet. Television content is then consumed resorting to apps installed on streaming sticks or the user interface of the smart TV set. Such functionalities are available from internet-based television platforms including Zattoo or waipu.tv, but are also offered by traditional platform providers including Vodafone or Telekom that market their programme packages as so-called OTT offers. And the television broadcasters are also active in this field by offering various products. Both the media libraries of the public-service corporations and the offers of the commercial broadcasters including Joyn or TV-Now provide attractive live television services available directly on the smart TV set via the world-wide web, alongside catch-up and other on-demand services (see also Part II of this article). The number of these so-called "cord-cutting" households saw a great upsurge over the last year – almost 3 percent of German television households have by now done away completely with traditional television reception and consume their entire TV diet via the internet.

Definition of Cord-Cutting Households

The report on digitisation analyses the number of cord-cutting television households in several steps: First, the type of set used is established. Once the various types have been identified, consumers are asked (with support) for the route of transmission via which they receive a television programme. If none of the four transmission infrastructures (satellite, cable, DTT or IPTV) is explicitly confirmed, there will be a further question concerning the form of television reception for the set. If a viewer states that the set is exclusively connected to the internet, the respective household will be classified as an OTT-only household.

More than eight out of ten television households own at least one HDTV receiver

The completion of the digitisation of television transmission infrastructures last year provided the pre-condition for households being in a position to receive TV services in HD quality – high image resolution requires digital transmission. Viewers can now choose from a large variety of television services available in HD quality, and the majority of German households have meanwhile also acquired HDTV receivers permitting them to watch television in full HD quality.

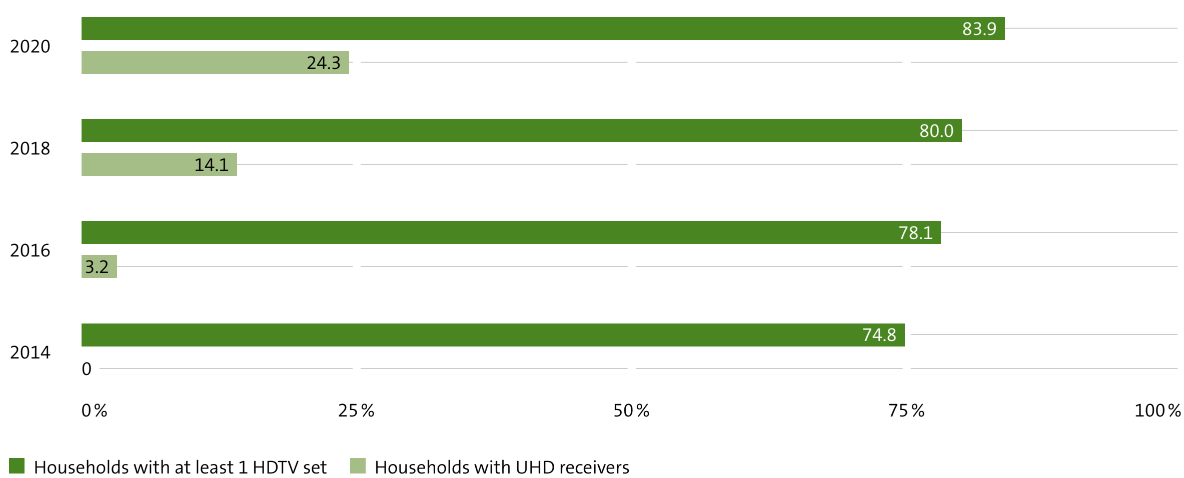
More than four out of five TV households (84 percent) have at least one HDTV set at their disposal; this corresponds to an increase by 1.5 percentage points compared to last year. The completion of the switchover of terrestrial transmission to DTT HD now results in all DVB-T2 HD households owning receivers for high-resolution television reception. As regards IPTV households, nine out of ten homes (93 percent) feature almost complete provision with HDTV receivers as well. In cable households, a good 84 percent own an HDTV receiver while for satellite homes, the rate is 81 percent.

An HDTV set at home today represents the standard supply for most households. In addition, second and third sets are by now also increasingly being replaced by HDTV receivers. More than a quarter (27 percent) of television households have 2 (20 percent) or 3 (7 percent) HDTV receivers at home. As would be the case, this also pushes up the number of homes using exclusively modern high-resolution receivers. A good seven out of ten

Seven out of ten **TV households** own only HDTV sets

Fig. 3

Development of households equipped with HDTV / UHD receivers



Basis: 38.557 / 38.076 / 38.697 / 38.520 million television households in Germany (n = 7,786)

(71 percent) television households employ HDTV-ready receivers only – this is an increase of 3 percentage points compared to last year.

One quarter of German TV homes owns a UHD TV receiver

The way in which households equip themselves with TV receivers mirrors the situation in the shops: Older models allowing for SD reception only are hardly to be found anywhere these days – if a television set is replaced or a new receiver is acquired, it will usually be an HDTV-ready device. Screens with a diagonal of more than 45 inch enjoy particular popularity, and when buying a new set, many consumers will go for an HD-ready device.[1] Just under a quarter (24 percent) of television households in Germany own at least 1 UHD television receiver. The number of UHD homes has risen by a further 5 percentage points compared to last year and has now reached 9.3 million. The growth rate in the last years has been quite impressive – over the last 3 years alone, UHD receiver provision in households has risen by 10 percentage points, irrespective of the fact that the choice of UHD content is still rather limited. This is proof of the fact that the acquisition of an UHD set is frequently also guided by the intention of making television reception at home future-proof.

HD reception leaps up

Not all homes owning an HDTV set will receive their television services in HD quality (see also info box 2). More than three quarters (78 percent) of TV households watch television services in HD quality, increasing the rate by 6 percentage points

1 See https://gfu.de/markt-zahlen/hemix/; https://www.gfk.com/de/presse/4k-wird-zum-standard-bei-modernen-tv-geraeten.

over last year. The rate corresponds to just under 30 million households in Germany. Comparing the routes of transmission, cable transmission for the second year in succession shows the strongest increase for HD quality reception. The rate of cable households receiving their television services in HD quality is a good 10 percentage points higher than last year and has exceeded 13 million homes. Reception of content in HD quality via satellite comes a close second at 12.9 million homes with IPTV next, being applied in 3.7 million households. Terrestrial reception increased by 8 percentage points which is equivalent to 2.4 million households receiving HDTV. The reason for this is that following the completion of switchover to DTT T-2 HD, all terrestrial households can now receive HD content.

The majority of commercial television services is available in HD quality only if the users subscribe to an HD package of a TV platform provider. Such packages are available for all types of infrastructure. The total number of households receiving commercial HDTV went up by 2 percentage points last year compared to the year before and has now reached 12.7 million homes; this is equivalent to 33 percent of TV households. More than four out of ten cable households (43 percent) also receive commercial HD content; this is an increase by 5 percentage points over last year, making cable the driver of growth for HDTV-usage last year. Satellite and IPTV homes also experienced slight increases with a little more than every sixth (17 percent) satellite household receiving commercial services in HD quality while for IPTV the rate is slightly in excess of every second home (53 percent). Reception of commercial HD content via terrestrial transmission, however, is going down – around four out of ten terrestrial homes, according to their own information, receive commercial content in high-resolution quality. This corresponds to a minus of 9 percentage points compared to last year.

Spotlight on SD households

Most television services in Germany are transmitted via all transmission infrastructures both as multicast and in SD as well as in HD quality. As the name already indicates, DTT T-2 HD providing terrestrial transmission presents the only exception. The infrastructure was switched over completely to the HD standard last year. With the growing penetration of HDTV in households, the question was raised by the Commission stipulating the financial needs of public-service providers and others, how

HDTV-Equipment and HDTV-Reception

The report on digitisation distinguishes between households equipped with HDTV receivers and actual HDTV reception. All public-services offers are available free-to-air in HD quality; as a consequence, each home equipped with an HDTV receiver can receive HDTV in theory. This is not, however, always the case in practice; reasons could be that hardware components within the video equipment in a household are not HD-ready or the signal strength or bandwidth is insufficient for reception within the home. Another factor preventing HD content from being found or hard to find could be that no update of the programme listing or list of favourites has been made.

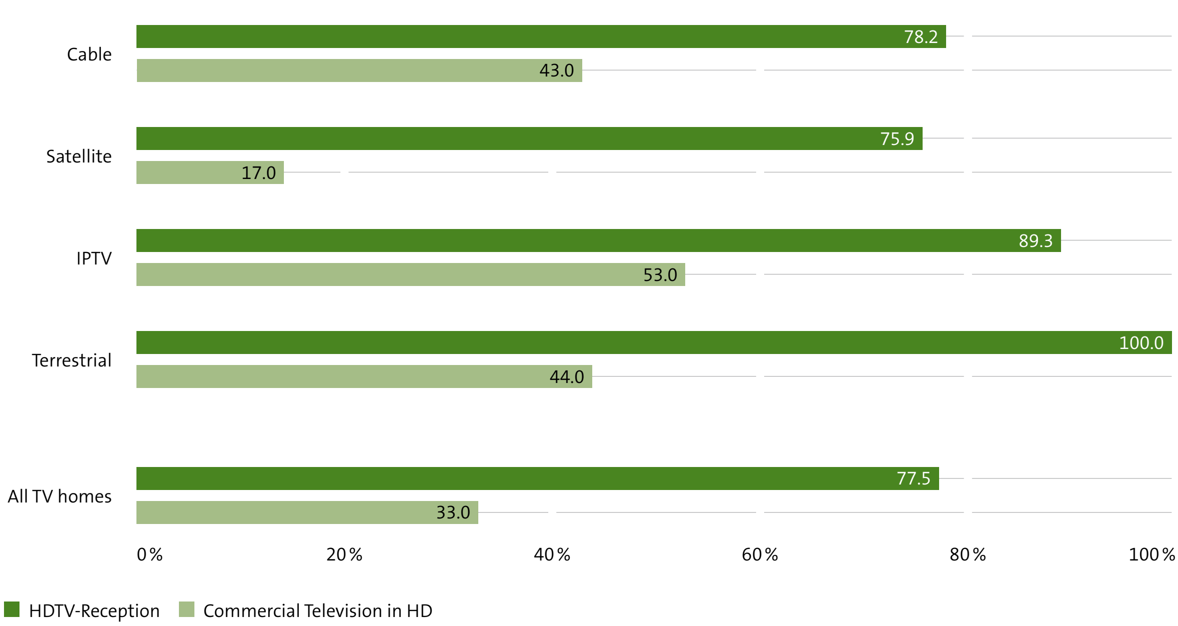
long cost-intensive multicasting in differing transmission standards should be continued. The ARD network of regional public-service broadcasters decided to discontinue SD transmission via satellite with effect from January 2021. However, due to the Corona pandemic, the decision has since been revised. But it is interesting all the same to take a detailed look at the homes which would be directly affected by HD switch-off.

Still nearly 7.6 million TV households watch television only in SD quality

Looking at all transmission infrastructures, just under 20 percent of the 38.5 million television households in Germany receive television content in SD quality only. The number of SD-only homes thus comes to 7.6 million. Compared to the average of the population, SD only households tend to be more often female, of higher age and mostly single. In addition, they do earn their own income in below-average numbers and have a smaller average net income at their disposal – this, however, is also linked to the comparatively high num-

Fig. 4

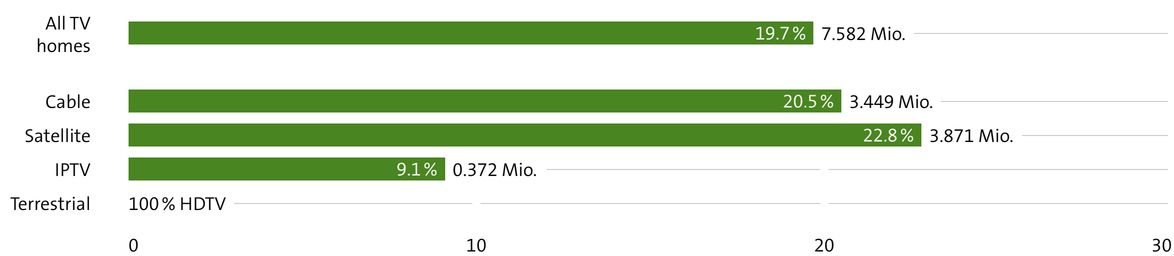
HDTV-Reception and Commercial Television in HD



Basis: 38.520 million TV households in Germany (n = 7,786); 16.802 million cable households (n = 3,345); 16.983 million satellite households (n = 3,500); 2.410 million terrestrial households (n = 535); 4.093 million IPTV households (n = 941)

Fig. 5

SD-only households by mode of reception (in percent / million)



Basis: 38.520 million TV households in Germany (n = 7,786); 16.802 million cable households (n = 3,345); 16.983 million satellite households (n = 3,500); 4.093 million IPTV households (n = 941); 2.410 million terrestrial households (n = 535)

ber of single households. Looking at the SD-only households by route of transmission, the largest share of SD-only homes is found among satellite homes (23 percent) or cable homes (21 percent). Few SD-only households (9 percent) receive their TV content via ITPV by comparison.

SD switch-off via satellite would effect almost 3.9 million households

Switch-off of SD content transmission via satellite would thus have an impact on a little less than 3.9 million households receiving television via satellite; they would have to take according action if they want to continue receiving the service offers of providers transmitting their content in HD quality only. Possible options range from re-sorting the list of programmes via re-configuring the listing, or possibly replacing the receiver device. A change of receiver would affect around 8.2 million HDTV sets in households opting for satellite reception overall with 4.6 million sets not being the TV set used most frequently, but the second or third set in the home.

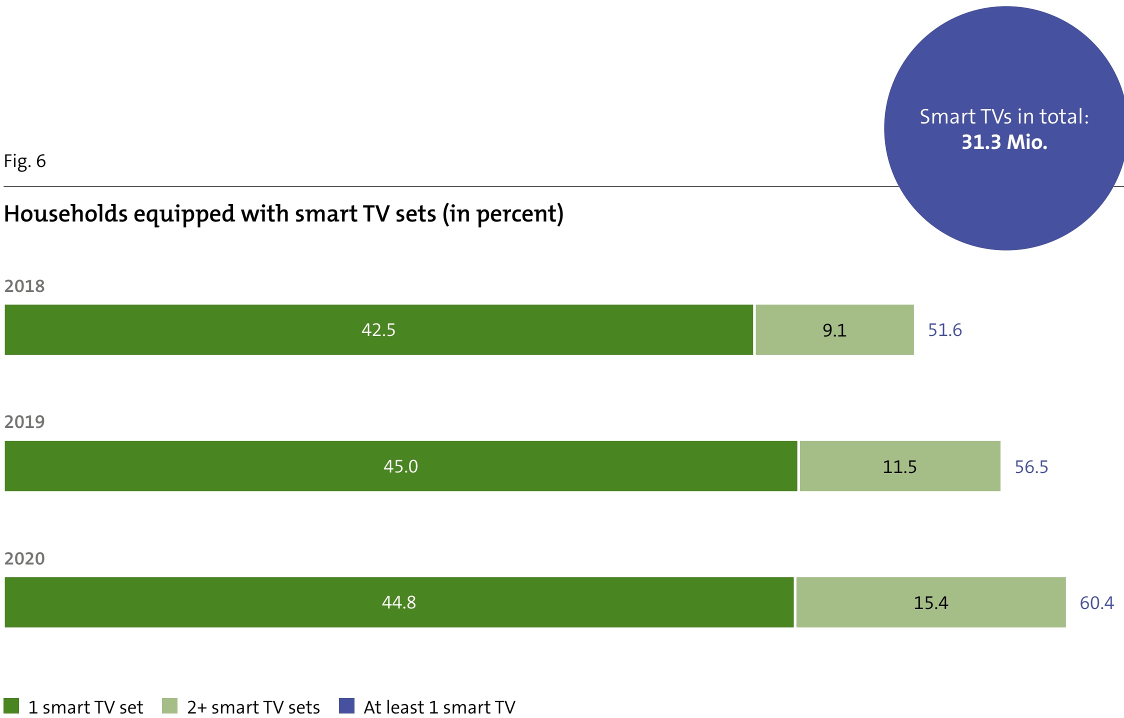
More than half of all television households own at least one smart TV set

Most receivers on offer today are not just HDTV receivers but also so-called Smart TV sets. Once they are connected to the internet or the home network, they can offer a wide range of additional functions based in the network as a specific benefit.

Well over 23 million households in Germany already own at least 1 smart TV set; this is equivalent to 60 percent of German television homes. Compared to last year, the rate of households equipped with smart TV receivers has risen by just under 4 percentage points, thereby continuing the growth trend of recent years. In particular multiple-set provision in households has grown, with over 15 percent of households having 2 or more smart TV sets at their disposal. The penetration of smart TV sets has reached 43 percent, i.e. four out of ten households use nothing other than “smart” TV sets.

Fig. 6

Households equipped with smart TV sets (in percent)



Basis: 38.076 / 38.306 / 38.697 / 38.491 / 38,520 million TV households in Germany (n = 7,786)

When distinguishing by mode of transmission it transpires that in excess of three quarters (76 percent) of IPTV and OTT households have internet-ready smart TV sets at their disposal – this is little surprise considering that persons living in these IP homes tend to be more interested in technology and of younger age. The provision of smart TV sets in DTT T-2 HD households is also above average at 69 percent – followed by cable and satellite at 59 percent each, and thus only slightly below average. In four out of ten (41 percent) smart TV households a set manufactured by Samsung (Korea) can be found with Sony and Philips lagging far behind at 12 percent of households each and LG and Panasonic at each 11 percent. Other brands are found in fewer than 5 percent of German smart TV households.

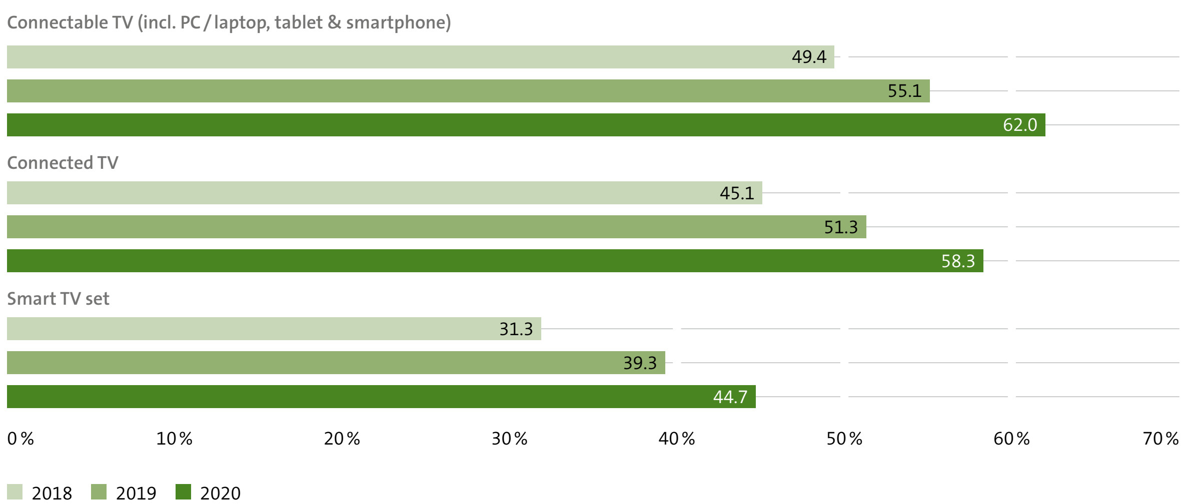
Three quarters of all smart TV sets are connected to the internet

Notwithstanding the fact that smart TV sets increasingly represents standard TV features in German television households, not all consumers use all the functions they provide. As the key pre-condition for most "smart" additional functions, the device has to be connected to the internet. This is not, however, the case in every households owning a smart TV set. The connection rate for smart TVs to the internet has continually grown over the last years and has by now reached 74 percent of smart TV households. As a result, well over 17 million television households can make use of additional offers such as HbbTV, media libraries and apps with the help of the smart TV. In relation to the total number of television households in Germany, this is equivalent to slightly less than half (45 percent).

In **44 %** of TV households all existing TV sets are connected to the Internet

Fig. 7

Connected TV



Basis: 38.697 / 38.491 / 38.520 million TV households in Germany (n = 7,786)

Alongside the connection of the smart TV set to the internet, however, there are a number of other possibilities for connecting the television set to the internet, thereby making it "smart", so to speak. This can be achieved by resorting to peripheral devices such as streaming sticks, set-top boxes (connected TV), or by connecting the television sets to the internet using a computer or smartphone (connectable TV). Taking into consideration all possibilities for linking the television set to the internet, the internet connection rate for television set increases to almost two thirds (62 percent) of TV households in Germany. In four out of ten households (44 percent) all television sets in the home are connected to the internet.

Part II: Consumption of Digital Moving Images

This year, Covid-19 is exerting a profound impact on our lives – the lockdown and social distancing requirements affect daily life and daily routines of everyone in Germany to this day. This, of course, also applies for media consumption. The results of the report on digitisation in 2020 covering the consumption of moving images must therefore be looked at through "Corona glasses" – that is to say that the specific conditions prevailing before and during the field stage should always be taken into account when interpreting the findings and the trends. Determining which of the developments observed in consumption behaviour of users are specifically attributable to the pandemic and which changes could turn into permanent trends during and after this crisis can therefore be reliably determined only in retrospect.

More than nine out of ten persons in Germany have access to “traditional” television

Digital video consumption has become increasingly differentiated in recent years. Whereas 10 years ago, video material was watched at home via the television set, PC and laptop, or in the cinema, video usage now takes place any time and any place. However, the television set is still the central point for video consumption, and access to a TV set allowing for “traditional television watching” continues to be possible for just under 94 percent of the population, resorting to either cable, satellite, IPTV or DTT T-2 HD reception. Among younger audiences, access to “traditional television reception” is on the way down, with around every sixth viewer (16 percent) aged between 20 and 29 years no longer having any access to a television set featuring traditional reception. And even among the age group 30–39, every eighth viewer (12 percent) already foregoes watching traditional TV. The number of viewers aged less than 30 years who no longer access traditional television receivers has thus almost doubled over the last 3 years. This does not, however, mean that these viewers have waved goodbye to television services, but merely indicates their preference for other types of screen and the internet as a route of transmission.

Nine out of ten persons can consume video content via the internet

One reason for this trend is the fact that video-ready screens are available everywhere: On average, receiver penetration of internet-ready screens in the population comes to just under 91 percent, an increase of 3 percentage points compared to last year. Among consumers aged less than 50 years, more or less every person owns at least 1 such device. But the older generation is catching up at an above-average rate, with the share of viewers aged 70plus having grown by almost 14 percentage points compared to last year; it now stands at a little less than 69 percent.

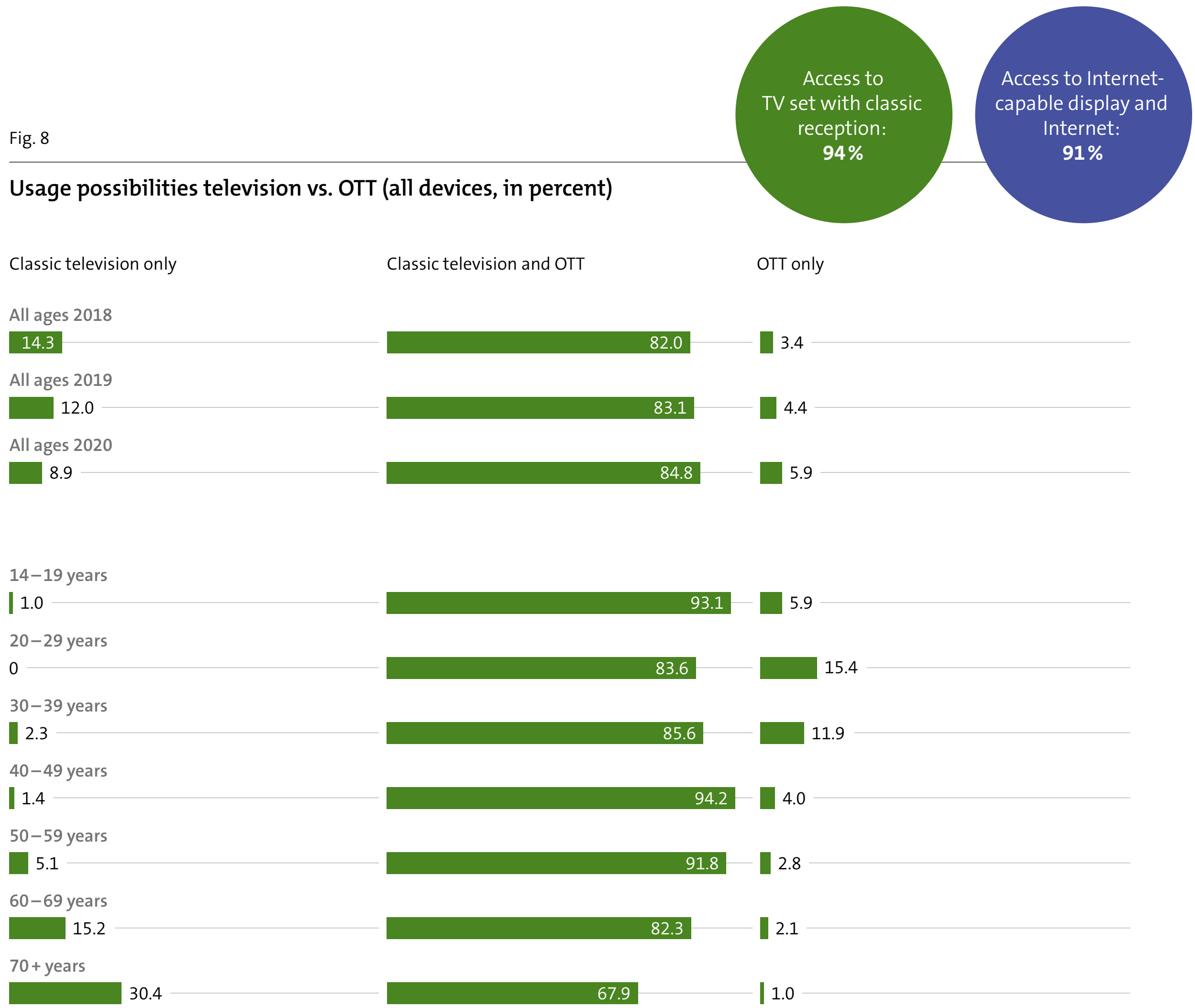
During the pandemic, the television set has regained in relevance

Most Germans can chose from a wide array of receivers for video consumption. Notwithstanding that, however, the “telly” still presents the key device for most of them, with 58 percent of persons aged 14 years or more in Germany naming it as the most important device for consuming video content. This rate is 1 percentage point above the figure for last year and presents a turnaround of the downwards tendency noticed in recent years. As regards this return to the big screen the special situation this year has to be taken into account, however. The ban on meeting other people due to Covid-19 and the crisis overall have resulted in many people having more time at their hands at home and consequently spending more time watching television or consuming VOD content. This fact can have an impact on the relevance attributed to the different types of receiver; whether the move back to the “box” will persist in the future therefore remains to be seen.

Laptops and PCs also enjoy popularity for video consumption, even though at a considerably lower rate than the television set. Taken together, around one fifth of the population (9 percent for each of the 2 types of receiver) considers them the most important type of device for video consumption. For approximately every ninth person (11 percent),

Fig. 8

Usage possibilities television vs. OTT (all devices, in percent)



Missing values at 100 % = none of these; Basis: 70.598 Million persons aged 14 years or older in Germany (n = 8,281)

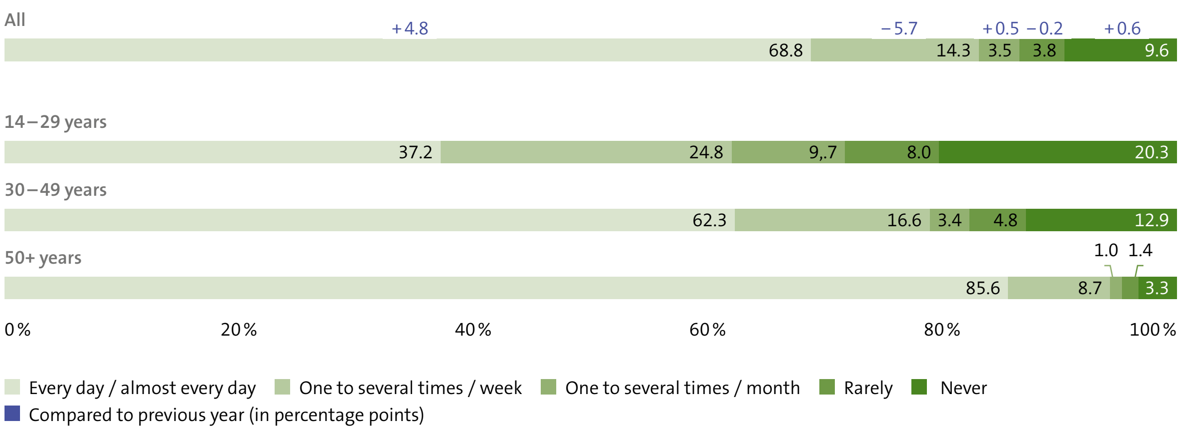
the smartphone leads the list while the tablet is named by only 5 percent of viewers in Germany as their main reception device for video consumption. The preference for a receiver illustrates a marked difference between the generations: Far more than half of consumers aged 40 years or older consider the television set the key device for video consumption while more than half of the audience aged less than 40 years express a preference for other gear such as the laptop, PC or smartphone. These findings also show the downward tendency regarding access to traditional television receivers by younger persons as outlined above.

More persons use the TV set for “traditional” television consumption

Even though many television receivers are now connected to the internet, reception via the television set continues to be dominated by “traditi-

Fig. 9

Traditional TV consumption via the TV set



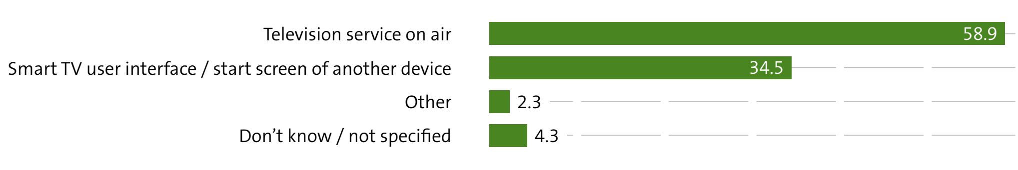
Missing values at 100 % = none of these; Basis: 70.598 million persons aged 14 years or older in Germany (n = 8,281)

onal" linear TV consumption. Almost nine out of ten persons (87 percent) aged 14 years or older in Germany regularly watch television, i.e. at least once a month. More than two thirds (69 percent) switch the TV set on every day. In comparison to last year, this represents an increase by 5 percentage points for daily TV usage. One reason for this increase can be assumed to be up-to-date reports on the Corona crisis and the specific situation for everyone during lockdown.

Comparing the generations, clear distinctions can be made out for television consumption: Every fifth person (20 percent) aged less than 30 years in Germany does not use a television set for wat-

Fig. 10

First screen when the TV set has been switched on (OTT consumers at the TV set)



Basis: 27.741 million persons aged 14 years or older using OTT via the TV set at least once a month (n = 3,169) ching TV. Regarding viewers aged 50plus, almost three quarters switch on the television set (almost) every day. As a matter of fact, younger consumers in many cases lack the technical equipment for traditional television consumption – they tend to use other reception devices and/or the internet for TV consumption.

Traditional television consumption via connected TV also on the up

Traditional television consumption for viewers using a receiver connected to the internet also went up compared to last year. A little fewer than 44 million persons – equivalent to 62 percent of the population aged 14 years or older – have access to 1 connected TV as a minimum. Almost two thirds of them resort to OTT offers at least once a month, meaning that they use their television set[2] for consuming on-demand content or live-streaming offers. The total corresponds to just under 27.5 million persons.

Looking at OTT consumption and television usage of this group of persons, the comparison shows that compared to last year, the number of viewers predominantly going for traditional television has increased by 5 percentage points to 55 percent– with a simultaneous downwards development of predominant OTT consumption via the TV set. This development runs counter to the trend observed in recent years: During the last 5 years, a slow but steady decline of traditional television consumption was noted alongside a corresponding upwards shift of OTT usage via connected television. This reversal of the development is proof that viewers not only "netflixed" and streamed during the crisis, but have increasingly gone back to traditional television and linear services . This exemplifies the major significance of television as a source of information during a crisis – an observation which is also confirmed by other studies.[3]

More than one third of users consuming OTT via the TV set must navigate to access TV content

Video consumption via the television set, i.e. whether a viewer opts for a linear offer or another content which is frequently internet-based, will depend not least on the ease of finding the linear range of offers. State-of-the-art smart TV sets, set-top boxes or streaming sticks in particular provide a wide range of differing options to consumers via the user interface. In fact, the direct route to linear services no longer constitutes a standard feature of many TV sets: More than one third (35 percent) of the around 28 million regular OTT consumers using a TV set first face a user interface after switching on the set, and consequently first have to interact with the set to get to the traditional television services.

Pre-configured user interfaces of smart TV sets steer findability

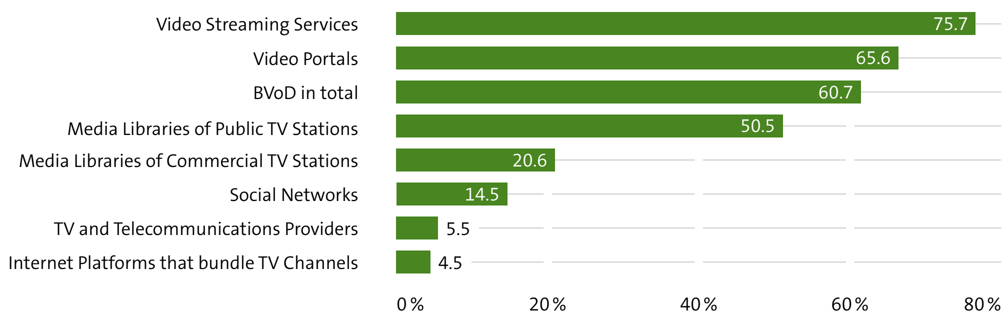
Television receivers with pre-configured features including the user interface can turn into a significant bottleneck, also as regards OTT video content. Some 19.7 million persons in Germany consume OTT content via their smart TV device at least once a month, and of these, two thirds (64 percent) resort to the apps available on the user interface of their set for doing so.

2 The figure refers to the only TV set in the household or the TV set used most frequently.

3 See, for instance, the study of the German media authorities concerning information behaviour during the Corona pandemic (https://www.die-medienanstalten.de/corona-studie).

Abb. 11

Video Apps used on the smart TV



Basis: 19.651 million persons aged 14 years or older, using OTT at least once a month on a smart TV (n = 2,314)

Apps will be successful if they are already pre-installed on the smart TV and if they are easy to find. If not, they lose dramatically in (potential) range as more than half (56 percent) of regular viewers consuming OTT content via the smart TV do not bother to adjust the interface or the apps of their sets. It is therefore all the more important that access to and findability of content on the user interface are devised in a non-discriminatory fashion. All offers should have an equal chance of being discovered, irrespective of whether the app relates to a leading VOD streaming provider or a small television service.

Streaming services, video platforms and media libraries dominate OTT consumption via smart TV

OTT content is accessed via the user interface of the smart TV set at least once a month by just under 13 million viewers. Three out of four (76 percent) consumers resort to the apps provided by streaming services such as Netflix or Amazon Prime. Two thirds (66 percent) use the apps of video platforms as YouTube. More than six out of ten persons (61 Percent) use Apps offered by public or commercial TV-Broadcasters (BVoD) on the Smart-TV. These include the media libraries of the public-service broadcasters and commercial apps as Joyn and TV Now. Alongside the established internet providers of video content, a number of social networking sites also allow for the consumption of video content directly via the smart TV. In this case, the video is accessed either directly via the app installed on the smartphone and reproduced on the television screen with the aid of a specific functionality, or an adapted app is installed directly on the smart TV set. A little more than every seventh person regularly consuming OTT content via smart TV (15 percent) stated that they use the smart TV for watching videos availab-le in social networking sites in this way on the big screen of their smart TV set.

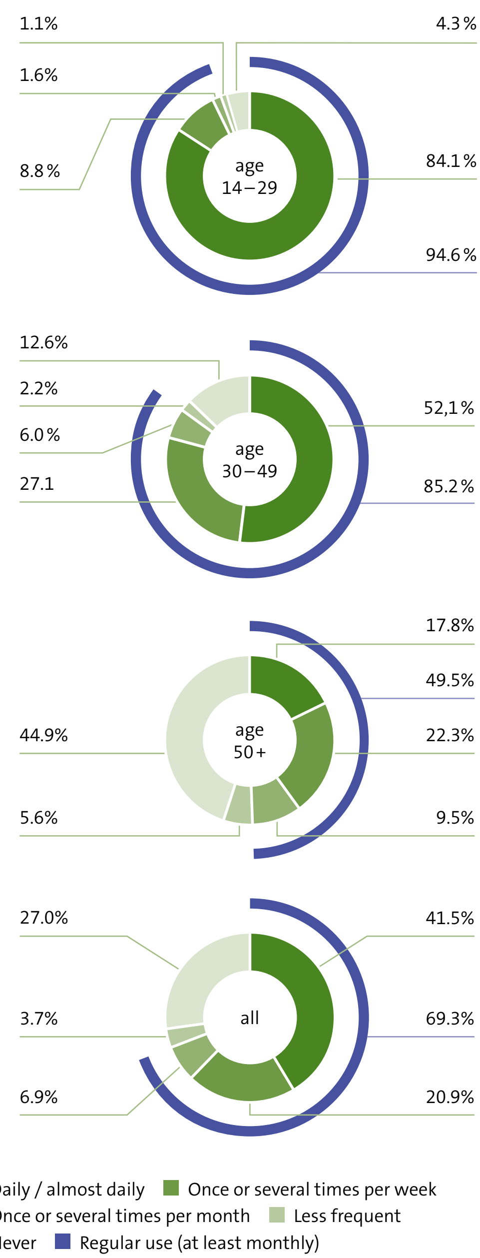
Video consumption via the internet cracks the 50 million

As stated before, the specific situation this year has pushed up media and video consumption overall; users more frequently resorted to media content of all types and across all modes of transmission. As a result, not only did TV consumption go up, but the number of consumers watching videos via the internet saw an increase of 11 percent compared to last year. Around 51.5 million persons in Germany consumed video content via the internet at least rarely; this corresponds to a little less than three quarters (73 percent) of the population aged 14 years or older. The overall majority of these persons are regular consumers. Just under 43.7 million persons (69 percent) of viewers aged 14 years or older consume video content via the internet at least once a month, and four out of ten (42 percent) do so every day.

The fact that internet-based video consumption is omnipresent by now is also evident when looking at consumption by age groups. Across nearly all age groups, more than half of viewers attributable to an age group regularly consume video content available via the internet; the rate remains clearly below the 50 percent threshold only for viewers aged 70 years or older who thus rank below the average of the population. It also comes as little surprise that online video consumption is most popular among younger consumers. Among those aged less than 30 years, almost everyone watches videos via the internet at least once a month – regular usage reaches almost 95 percent for this age group.

Fig. 12

Consumption of online video content by age



Basis: 70.598 million persons aged 14 years or older in Germany (n = 8,281); 14.467 million persons aged 14–29 years (n = 1,336); 20.818 million persons 30–49 years (n = 1,937); 35.313 million persons aged 50 years and more (n = 5,008)

Online videos are mostly watched via the TV set or the smartphone

The television set with a connection to the internet continues to enjoy the greatest popularity among all devices; this also applies to the consumption of online video content. Just under two thirds (64 percent) of the 43.7 million regular users watch online videos via the big screen. However, the small screen of the smartphone is also gaining in popularity: Well over half (56 percent) of regular online video consumers resort to the mobile phone for watching videos. Comparing reception devices, the smartphone thus overtakes the PC and laptop (53 percent) for the first time while the tablet ranges in fourth place at 28 percent of regular OTT consumption.

Almost a quarter of the population consumes online videos on the go

A little under 16.3 million persons consume video content via the internet using mobile devices while being out and about. This is equivalent to almost a quarter of the population (23 percent). Approxi-

Providers of online video content

Video platforms such as YouTube or Twitch enable both professional providers and consumers to distribute video material via their platforms. Parts of these offers are thus not under the control of the platforms as regards selection or design. Similarly, videos are uploaded by private persons or professional providers via social networking sites such as Facebook or Instagram. Social networks, however, tend to be specialising less on video content than video platforms.

Offers of **video streaming services** including Netflix, Amazon Prime or DAZN, on the other hand, tend to be pre-selected and curated by the providers of the streaming service in question who pre-select the available on-demand content and/or establish broadcasting or service schedules for linear broadcasting offers. As a rule, consumers pay a fixed subscription rate which is usually due on a monthly basis (SVOD), or they pay per transaction for on-demand consumption of individual offers (TVOD). Some providers combine both models and offer content on the basis of both a subscription and a transaction regime.

A large number of offers provided by television service providers are also available via the internet (**OTT television content**), including both the media libraries made available by the public-service corporations, the platforms developed by the commercial television services such as Joyn and TV-Now as well as internet-based broadcasting platforms such as Zattoo or waipu.tv as well as other web-based video services offered by television channels. All OTT television offers as a common feature have a close link to “traditional” television, mostly utilising the range of services offered by television channels in the form of live TV, VOD or catch-up offers. As is the case for the streaming services, providers are operating with different business models, ranging from funding exclusively through the licence fee to advertising funded provision (AVOD), payments for a single content (TVOD) to subscription formats (SVOD).

mately every sixth person (16 percent) also resorts to their mobile internet access when doing so; this adds around 6 percentage points to last year's rate for both categories. The number of persons consuming videos via the internet while being on the move has been growing consistently for years. One reason can be assumed to be the improving broadband supply for mobile receivers (expansion of the mobile networks, more public WiFi access points etc.) while another might be the expansion of available mobile content. The number of providers expanding the development of video apps for mobile usage via the smart phone is also growing: One example is the platform TikTok which enjoys considerable popularity especially among younger consumers. However, Facebook and Instagram have also expanded their video functionalities. Quibi which entered the German market only in March of this year also provides short mobile videos; the SVoD platform provides series optimised for the smartphone with instalments not exceeding a maximum duration of 10 minutes. Furthermore, mobile video consumption certainly also benefits from the demand for moving image content which has grown overall since the beginning of the Covid-19 pandemic.

Just under half of regular OTT consumers pay for online video content

The business models developed by the providers of online video content vary greatly. Some providers are funded by fees or advertising, thereby appearing to be available for free to consumers, while many other offers can be fully used only provided the consumer takes out a subscription or pays directly for an offer (see also info box 3). Nearly half of the just under 44 million regular users of online video content opt for the pay version and pay for video consumption.

YouTube is used most frequently among online video platforms

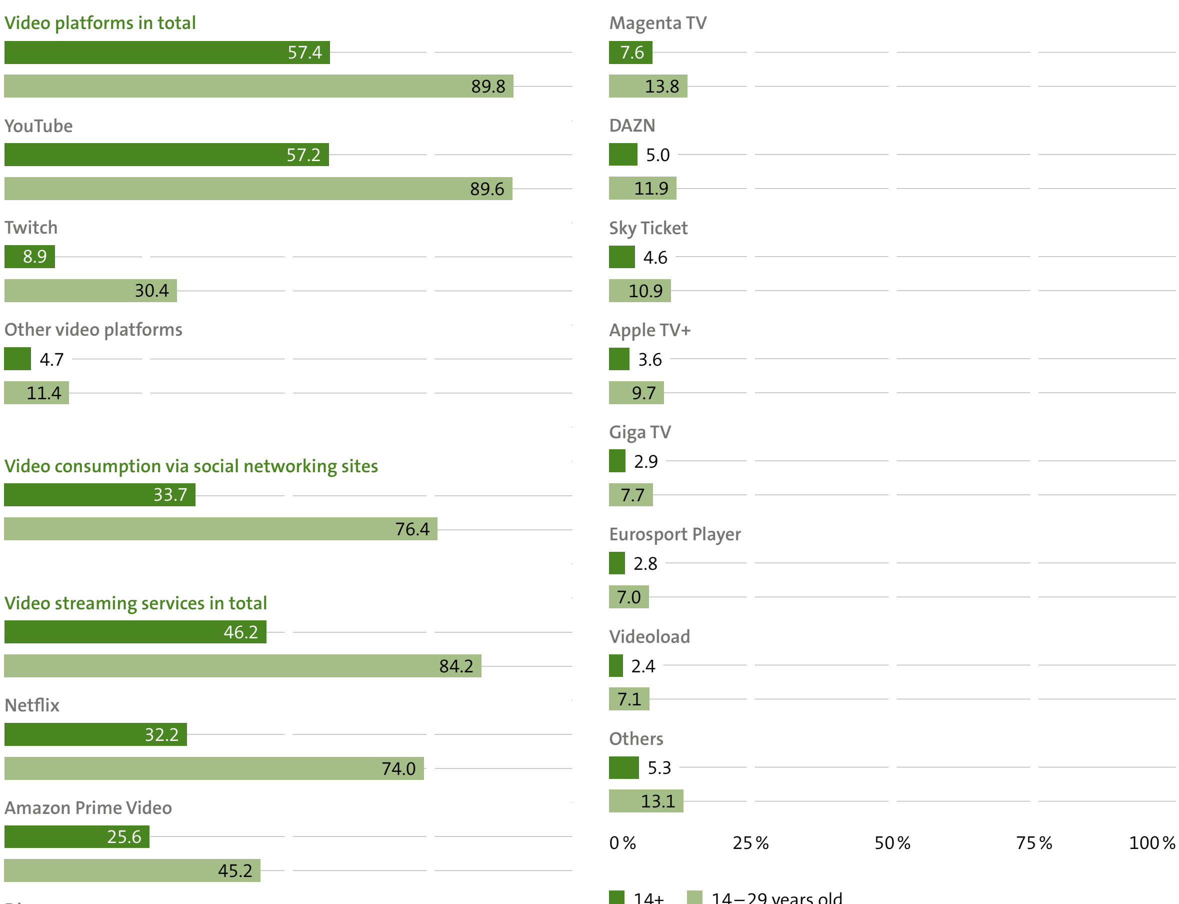
Well over half (57 percent) of persons aged 14 years or older living in Germany resorts to video platforms at least once a month. In this sector, YouTube enjoys a clear lead, with the video platform which is part of the Google parent company being regularly used by a little under 40.4 million persons in Germany on a regular basis; this makes it the video provider in the internet to which consumers turn most frequently. Looking at video platforms funded through advertising, the platform Twitch must also be named – specializing in particular on eSports, the hybrid offer involving live streams, linear television content and VOD catch-up content enjoys great popularity especially among viewers aged below 30 years and is regularly used by a little less than one third (30 percent) of viewers in this age group.

Disney+ instantly among the TOP 3 video streaming services

Video streaming services are also increasingly popular with around 32.6 million persons regularly consuming content provided by Netflix, Amazon Prime and others; this corresponds to slightly less than half the population aged 14 years or older. The restrictions imposed due to the pandemic keeping people at home provided a boost for video streaming providers who gained a large number of new customers during the lockdown. The high numbers of consumers recorded for this year must therefore also be analysed with a view to the current Corona situation. However, the number of users of video streaming services had been increasing continually in the last few years already. Right at the beginning of the lockdown, Disney+ and Apple TV+ started their offers as 2 new providers on the German video streaming market, both backed by

Fig. 13a

Regular online video consumption by provider



Basis: 70.598 million persons aged 14 years or older in Germany (n = 8,281), 14.467 million people aged 14 – 29 years (n = 1,336)

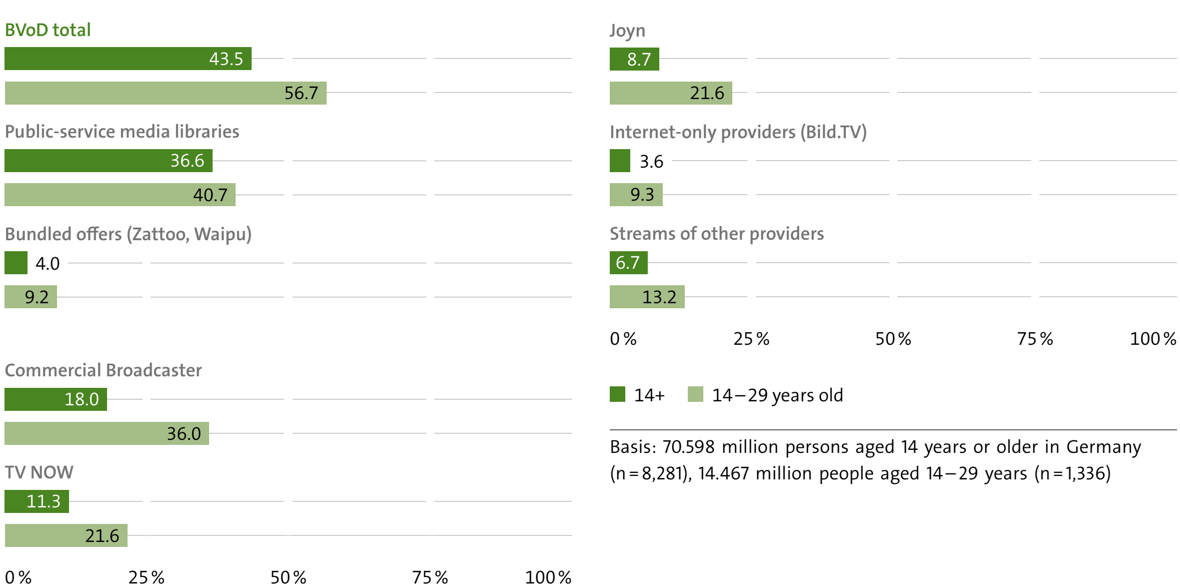
major parent companies. The most popular services to date, Netflix and Amazon Prime Video, could retain their top positions despite the newly arrived competition: Around one third (32 percent) of the population aged 14 years or older in Germany regularly consume videos available via Netflix while the rate for Amazon Prime Video is a little over one quarter (26 percent). But whereas last year, Netflix and Amazon were positioned almost head-to-head, the Palo Alto-based provider this year gained a clear lead. The entry of Disney into the German streaming market had been awaited with great anticipation. With its offer Disney+, the world's biggest entertainment company managed to achieve a share of almost 12 percent in the population group aged 14 years or older on a regular basis within a very short period of time and thus secured third place in one go directly behind the two market leaders. Apple TV+ is struggling to keep up with the successful entry of Disney+ in the market and is used by less than 4 percent of consumers aged 14 years or older in Germany at least once a month – despite a free one-year subscription for owners of new Apple devices. As a result, Apple TV+ ranges in the midfield of the remainder of streaming providers which are not positioned among the "Big Three". A large number of these video streaming providers are marketed in more comprehensive programme packages of the TV platform providers alongside linear TV in HD quality or specialise in thematic areas such as live transmission of sports events.

More than four out of ten persons consume OTT television content

More or less all German television content providers have by now made their own content available across the internet. The public-service providers offer a comprehensive choice of contents funded through the licence fee in their media libraries, but the commercial broadcasting groups have also set up platforms individually or in co-operations providing a large variety of offers both live and on demand. Other television providers bank on independent distribution via live streams or have

Fig. 13b

Regular Usage of BVoD



Basis: 70.598 million persons aged 14 years or older in Germany (n = 8,281), 14.467 million people aged 14–29 years (n = 1,336) their content distributed via internet-based service platforms such as Zattoo or waipu.tv. Such OTT television offers enjoy great popularity among consumers and can achieve similarly high regular consumption rates as the video streaming services. Just under 31 million persons regularly consume TV-based content offers via the internet; this corresponds to a little less than 44 percent of the population aged 14 years or older. In excess of one third (37 percent) of the population regularly consume the free content available in the media libraries of public-service broadcasts, and around every fifth user (18 percent) consumes online content offered by commercial television providers. The online offers of the commercial television stations are particularly popular among younger viewers: Just over every third consumer (34.2 percent) regularly uses Joyn, TV-Now or streaming content provided by other commercial television stations.

Conclusion

In year 2 of the television transmission routes being fully digital, the situation as regards the transmission infrastructures continues to be stable. Cable and satellite reception are upholding their dominant positions among infrastructures, even though there is a slight downwards trend. Terrestrial reception could stabilise its position following the completion of switchover to the DTT T-2 HD standard. Only IP can show a continued upwards trend, both for "traditional" IPTV and also for the number of cord-cutting households. But there might be more movement as regards the distribution of consumption across infrastructures in the near future. This will depend on the outcome of the current debate concerning the planned discontinuation of the so-called "utilities privilege" (in rented accommodation, the cable fees are charged alongside the other incremental costs with the rent) which applies for rented accommodation supplied with cable TV reception and might result in a restructuring of the cable market. Another factor could be the deliberations of ARD to stop SD transmission via satellite which could also impact the distribution of transmission infrastructures. The current survey shows that a switch-off of SD transmission of the services of ARD would affect at least 3.9 million satellite households with well over 8 million TV sets – one would have to wait and see how the households affected would react to a potential reduction of the range of services offered. The switch-off had originally been scheduled for January of this year but was suspended for the time being due to the Corona situation. Whether and when this issue is put up on the agenda again remains to be seen – not least because ZDF, the second major public-service broadcaster, has thus far decided to proceed in a different way.

The results of this year's report on digitisation show one fact very clearly: Notwithstanding the fact that video content is consumed via a large range of devices by now, the television set continues to be the core device for the greatest part of the population. This also applies for households regularly consuming video offers via the internet. Almost two thirds of these households watch online video content on the big screen – more so than via the mobile phone or the tablet. However, the television set now does no longer automatically switch to "television" when activated. Almost a third of those viewers who also consume video content via the internet first has to interact with the TV set in order to access "traditional" television services. User interfaces as a consequence are gaining an ever more significant role as regards the television sets or other devices – they determine the range of choices available to a user and exert considerable influence on whether a content offered is noticed at all. It is therefore all the more important that they are devised in a transparent manner and that the available content can be found in a non-discriminatory fashion – two key aspects clearly specified in the Interstate Media Treaty by the legislator which the media authorities will monitor carefully in the future with a view to their being adhered to.

As regards the video consumption in Germany it is clearly evident that the Corona crisis has given a strong boost to the need for information and entertainment. Providers of online video content and of traditional television content could benefit equally from this demand – moving image consumption increased everywhere. Looking at the television set which presents the most popular video receiver for Germans, the daily consumption of traditional TV services experienced a specific upturn; as regards connected TV, traditional television could also expand its lead over OTT consumption. Both developments underline the importance of traditional linear television for the people in Germany, above all during the Corona crisis. But the providers of online video offers also benefited from the large demand for entertaining content during the Covid-19 crisis. This becomes clear when looking at the outcome of the “streaming wars” as the advance announcements called them, namely Disney+ and Apple TV+ entering the German video streaming market. Disney+ managed to gain third place with its offer behind Netflix and Amazon Prime. However, in a direct comparison it is noticeable that fewer persons in Germany resort to the offer of the world’s largest entertainment company than the OTT offers of the commercial television providers.