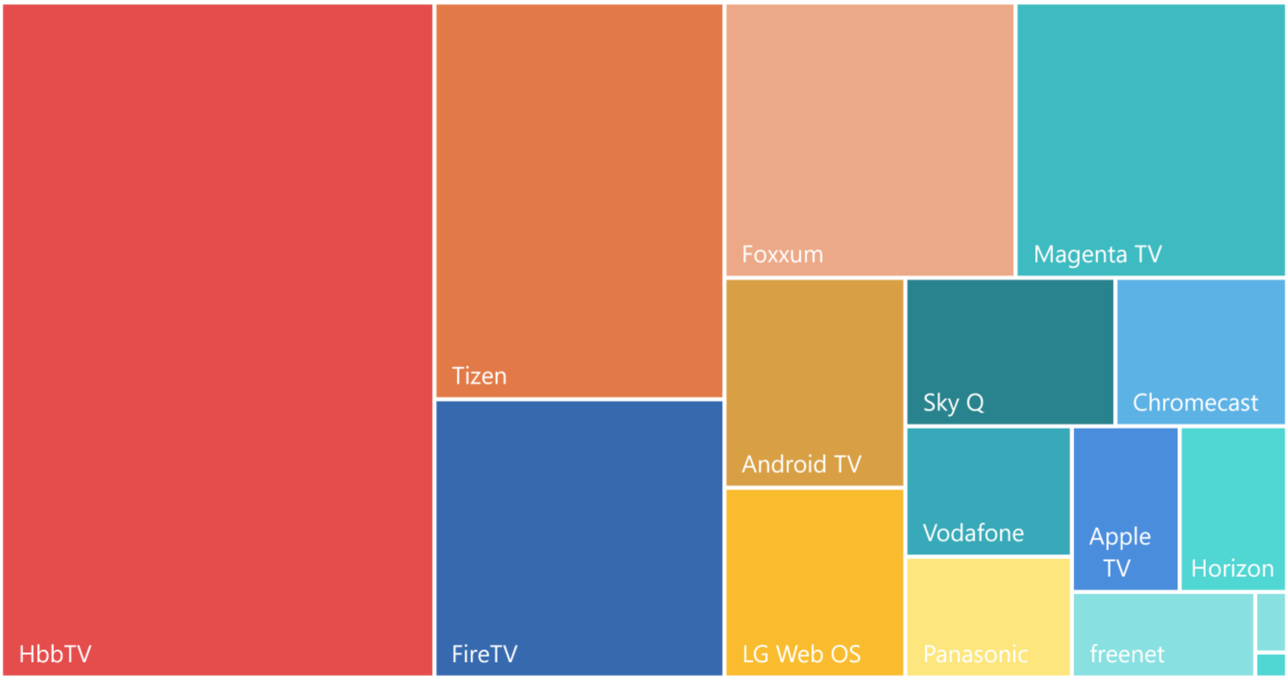


# TV App Platforms in Germany

Update 2020

Register Here for Future Updates:
https://mailchi.mp/teravolt/platformreach

**Tobias Künkel**

TeraVolt GmbH · contact@teravolt.tv · www.teravolt.tv

**Content**

# Editorial

The digital transformation of the TV sector offers opportunities for established and new content providers. While 15 years ago, there still were high barriers to market entry; today, even small rights owners and producers can reach their audience directly in the living room. The reason: In addition to the established TV platforms, many new platforms offer the chance of generating reach on TV screens.

For more than ten years, we have supported our clients in realizing this reach with innovative TV cases. Moreover, we are in constant conversations about which devices can be used to reach customers: Smart TVs, Managed Platforms (MVPDs), Web, Mobile? The available data is inconsistent.

To advise our clients in the best possible way, we have combined the available sources of technical reach into a market model that has been reviewed and commented on by an expert panel. This panel includes representatives of established and new TV platforms as well as public and private broadcasters. The sources and expert statements combine to form a consistent picture of German households' equipment with connected TV devices.

The focus is on the respective current platform generations, which also support TV applications from third-party providers, at least to a limited extent. Legacy TV platforms are not covered here.

We received great feedback on our efforts and decided to include this in our update 2020. In addition to the technical reach, we added an analysis of the actual device usage. We hope this provides value to service providers who plan to address German living rooms.

I hope you enjoy reading and look forward to your feedback!

**Tobias Künkel**

Managing Partner

Office: +49 40 2986770

t.kuenkel@teravolt.tv

# About TeraVolt

TeraVolt GmbH is an owner-managed agency for enhanced TV, based in Hamburg, Germany. Founded in 2006, TeraVolt specializes in the development of pioneering digital TV experiences. The agency provides its customers with tailor-made solutions, from market-specific consultation to the creation and technical implementation of innovative products. Its product portfolio includes professional services, consulting, and TV/VoD, Sports, and Advertising applications. With a headquarter based in Hamburg, TeraVolt consists of a highly experienced management team and 45 strategy-, product- and technology experts.

## How can we help?

Clients who have viewed this study might be interested in:

**Presentation of the results** and derivation on measures of your market approach in Germany

**Access to TeraVolt Testlab** with all treated platforms, remote and on-site

**Update alerts** and documentation of platform features

24/7 **Multi-Device Testing** and Monitoring

**App development** on all TV platforms

Contact us now.

https://www.teravolt.tv/



# Context

Connected TV screens are a centerpiece of the distribution strategy of most broadcasters, TV platforms, and VoD services. For most of them, resources are limited, and it is crucial to prioritize development efforts. We cover two questions in this whitepaper: technical reach and actual device usage of TV platforms with app support. Besides this, it is essential to analyze other topics to define the optimal market approach carefully.

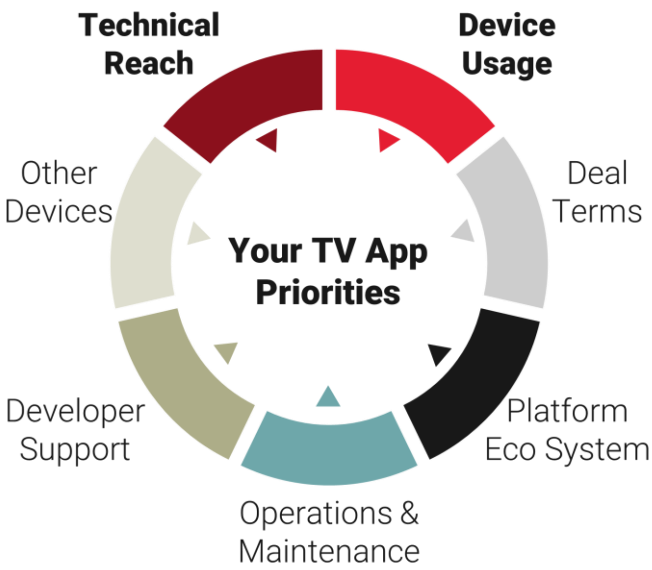


*Figure 1 Prioritization Criteria TV App Platforms*

These further criteria are:

- Importance to distribute to **Other Devices** and platforms besides connected TVs.
- Quality of **Developer Support**: Good SDKs, documentation, and developer support do not only keep teams happier but also save money during initial and ongoing development. Best practice example: Apple tvOS.
- Annual costs for **Operations and Maintenance** are often overlooked and can vary between 10% and >40% of the initial development efforts. Best practice example: Amazon Fire TV.
- The surrounding **Platform Eco System** defines many technical implications, and if app providers can use business enablers like user identification, direct user billing, data generation, content promotions, and co-marketing. Best practice example: Magenta TV.
- The **Deal Terms** of the platform define revenue shares (e.g., often 30% for new subscriptions), business restrictions, and other critical commercial factors.

All these aspects have a significant impact on the success of your TV app activities. In this whitepaper, we will analyze the technical reach and device usage.

# Key findings

## Technical Reach

Connected TV platforms have been here for a while and gained significant technical reach in the last years. This trend will continue as there are still many households without connected TVs or outdated ones.

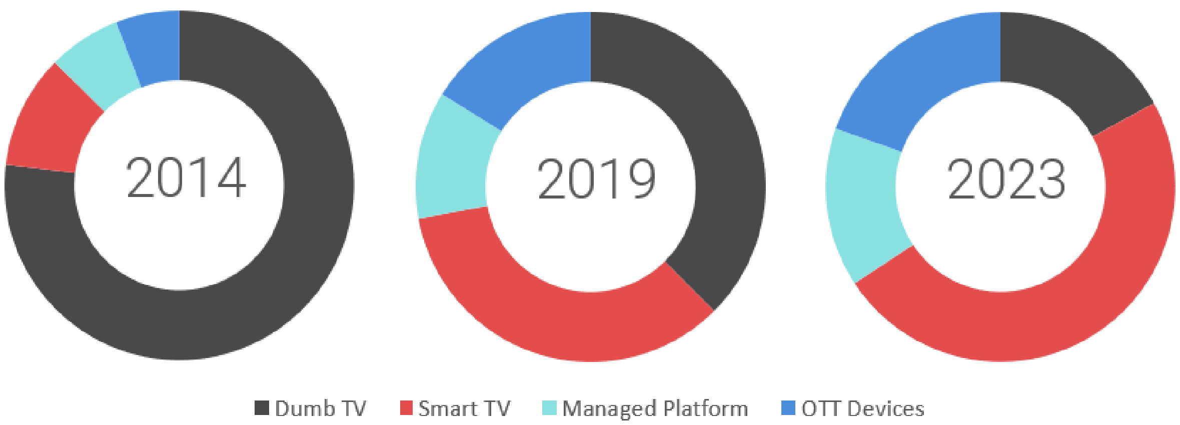


*Figure 2 Proportion of German TV households with at least one TV device that supports TV apps in 2020*

Current TV platforms enable third-party providers to offer their content and services on the TV set. When deciding on investments in TV apps, the following figures on platform reach should be taken into consideration:

## Platforms behind the scenes

A closer look reveals a limited number of technical platforms that are the basis for all apps provided. These are (number of connected households, sorted by technical reach):

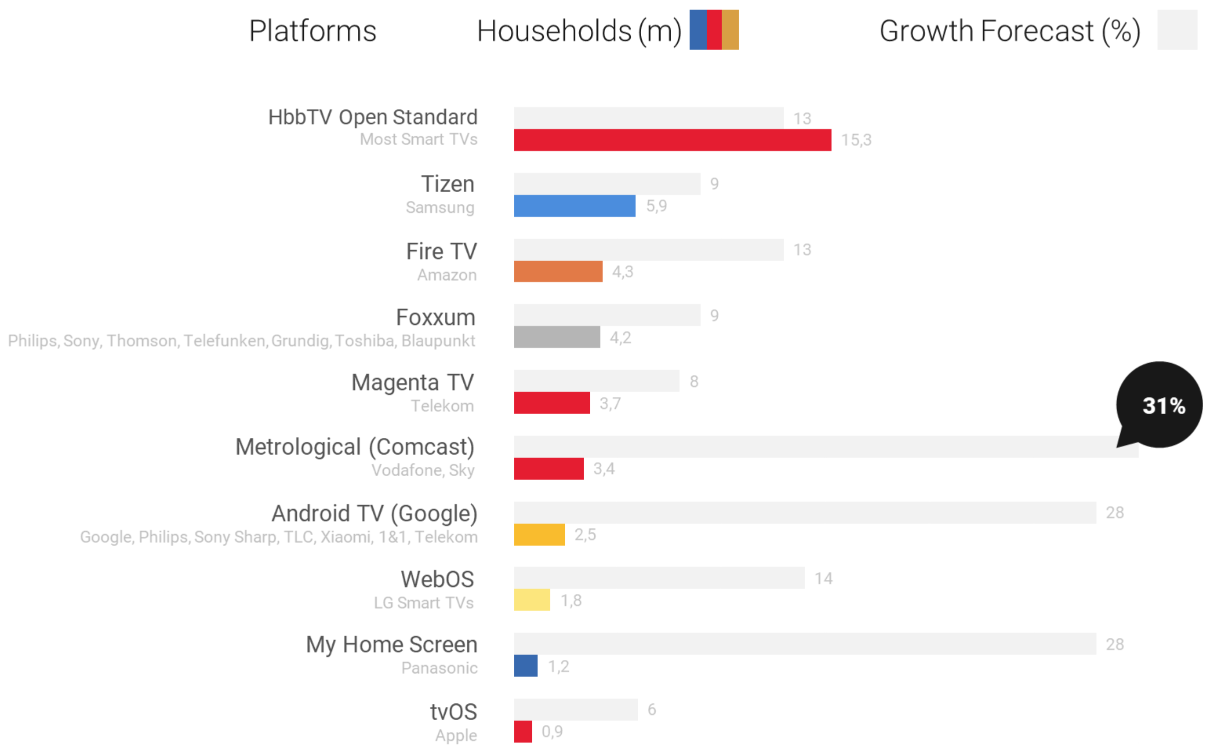


*Figure 3 Technical reach and expected growth rates of TV app platforms in Germany 2020 (connected in million households and %)*

It will be exciting to see how the consolidation will continue as app providers will focus their efforts on platforms with high reach and user engagement. Smaller platforms may struggle to maintain their app portfolio and receive high-quality updates.

## Platform Usage

Apart from the technical reach, there is another indicator that is relevant: actual platform usage. This was modeled based on assumption, panel data, and feedback of the expert panel.

When ordered by technical reach, Fire TV and the Foxxum app store take place number 3 and 4 after HbbTV and Tizen. But when ranked by actual usage, Magenta TV and the Metrological app platform (used by Vodafone and soon also Sky Q) take over.

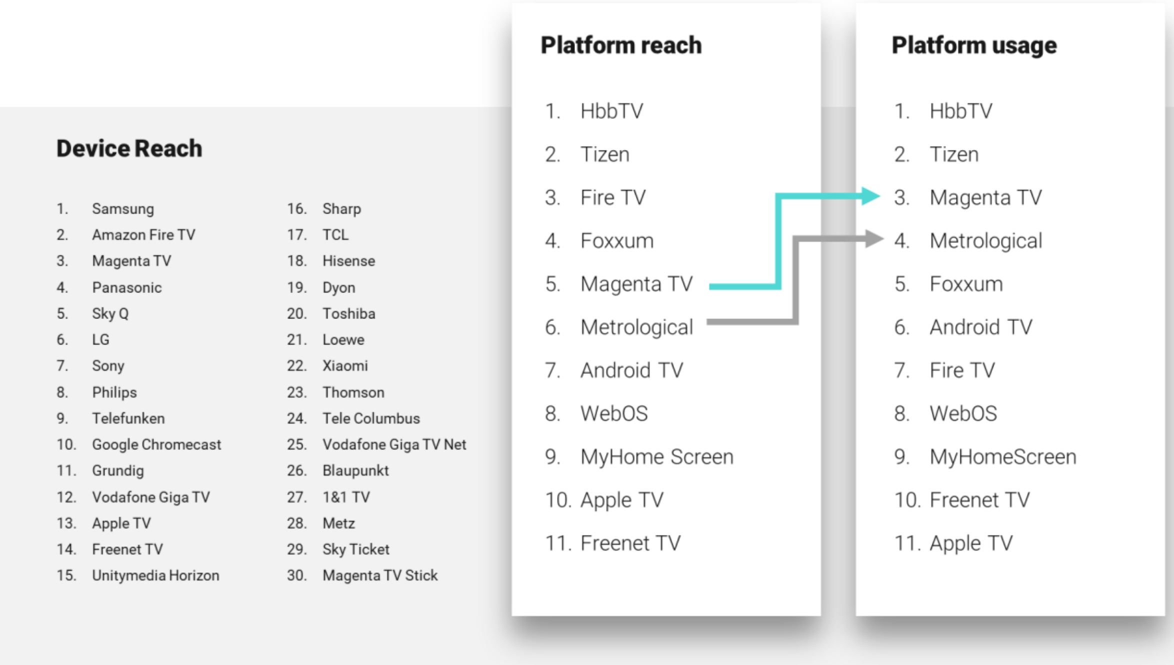


*Figure 4 Device Reach, Platform Reach and Platform Usage 2020 in Germany compared*

# TV App Platforms

## Smart TV in Germany

Since the introduction of "smart" televisions in 2008, market penetration has increased steadily: Today, around 56.4% of all TV households have at least one smart TV set (Die Medienanstalten, 2019). A large proportion of the approximately 6 million TVs sold annually (GfK , 2018) now belong to this category. Accordingly, we forecast an increase in market penetration to 77% (28.6 million households) in 2023.

As early as 2019, every second Smart TV sold replaced an older model. However, these older models often remain in households and increase the number of devices per household: By 2019, every TV household already has an average of 1.24 Smart TVs (Die Medienanstalten, 2019). According to the expert panel, this figure will rise to 1.38 by 2023.

In their 2019 Digitization Report, the media institutions state that by 2019 56,4% of households had at least one connected device (Die Medienanstalten, 2019). This indicates that today 74% of all Smart TVs are connected to the Internet. The feedback of the expert panel supports these figures. We forecast that this ratio will rise to over 84% in 2023 so that around 64% of German TV households will have a smart TV set connected to the Internet (25 million).

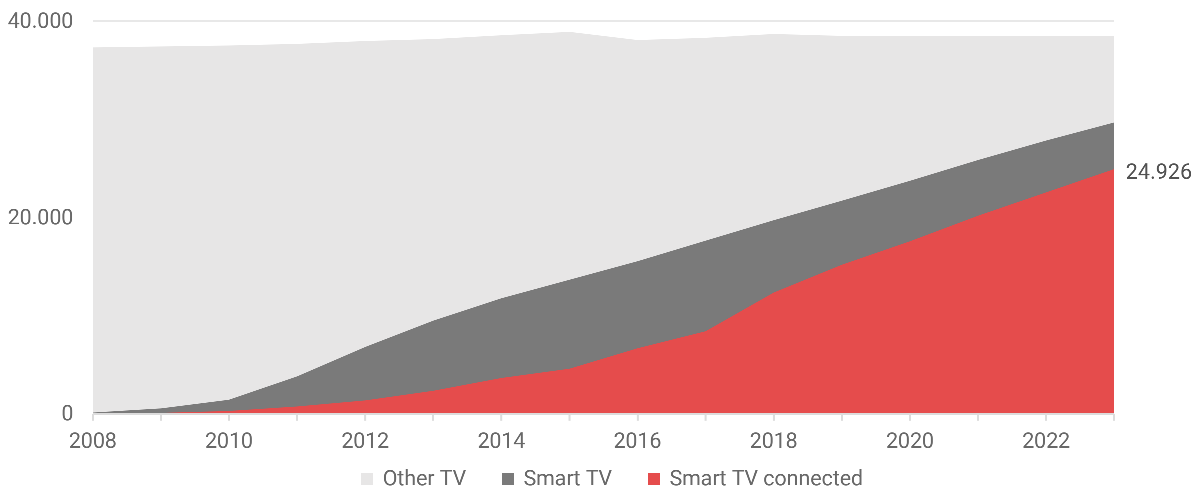


*Figure 5 Proportion of German TV households with Smart TV and Smart TV connected to the Internet (in thousands)*

## Smart TV App Platforms

Five different operating systems dominate the German Smart TV landscape: Tizen (Samsung), WebOS (LG), Firefox OS (Panasonic), Android TV (Sony, Philips, Sharp, and others), and Linux/Foxxum (Toshiba, Hisense, Grundig, and others). These represent the latest generation of platforms. Also, various legacy systems are in the field but not covered here.

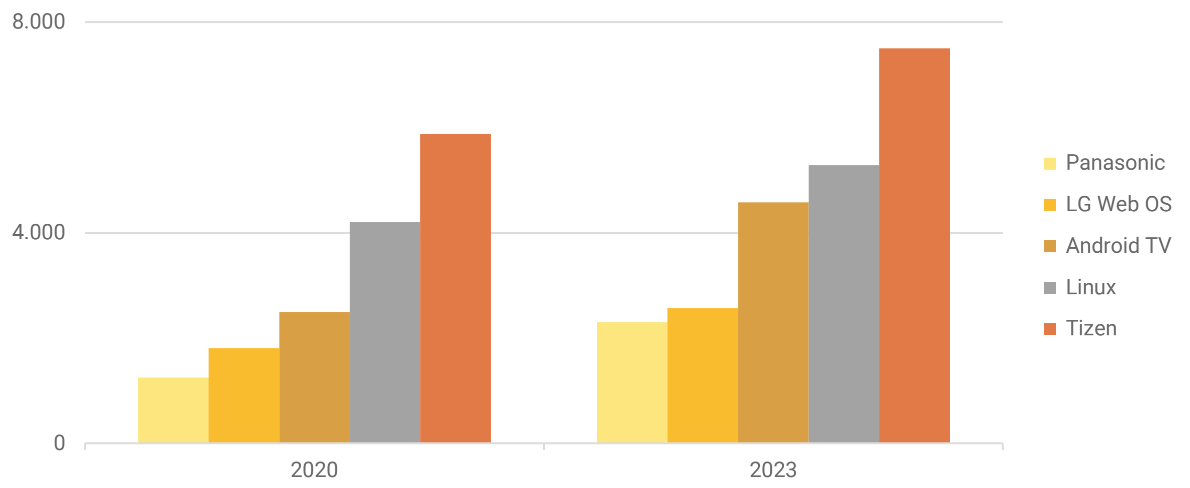


*Figure 6 Technical reach of Smart TV platforms in German TV households (connected, in thousands)*

### Samsung Tizen

Die Medienanstalten (2019) reports that 40% of all Smart TV households in Germany are equipped with a Samsung TV. Most of them are using a version of Samsung's Tizen operating system. So, with 5.9 million households, Tizen TVs represent the second largest installed base of all platforms analyzed (only topped by HbbTV). Samsung actively updates the platform every year. Developers report comparatively high efforts to implement and maintain apps for the various platform iterations.

### Google Android TV

Android TV is of particular importance for TV app providers as it is used by several manufacturers of smart TV sets and other TV devices. In recent years Philips, Sony, Vestel, Sharp, Metz, Thomson, TCL, Telefunken, Grundig, Toshiba, Hisense, Blaupunkt, others have chosen to use Google's operating system and its TV app store. Some of the vendors use Android TV only in parts of their device lineup.

Also, Deutsche Telekom, Vodafone, and 1&1 (currently) offer OTT versions of their TV products based on Android TV. Including these devices, we are forecasting above-average growth in the number of Android TV households from 2.4 million today to 4.6 million in 2023.

The Android TV ecosystem is managed very well by Google, and developers report comparatively few issues during implementation and maintenance.

From the point of view of app providers, another argument in favor of Android TV is that Android TV is also used on Amazon's Fire TV sets. Existing Android TV apps can be made available on Fire TV with an additional 10-20% development effort. This adds up to 10.5 million households that can be reached with one TV app development effort.

## Linux based Smart TVs

A hidden German champion is often overlooked in the Smart TV app market: Kiel-based Foxxum GmbH provides a TV app portal to a wide range of device manufacturers (Telefunken, Grundig, Toshiba, Philips, Sony, Vestel, Sharp,  Thomson, Hisense, Blaupunkt, and others). Some of the vendors use the Foxxum app store only in parts of their device lineup. The technical reach of these devices sums up to 4.2 million households, more than Android TV, Panasonic, or LG.

The Foxxum app store is available internationally. Developing and maintaining apps in the platform justifies some attention since the Foxxum portal is available on a broad range of devices, many of them in the low- and medium price segment.

## Other Smart TV App Platforms

Samsung, Panasonic, LG, and recently Hisense operates an own application platform for their devices.

Since 2014 LG is using WebOS as its Smart TV platform. The applications can be developed with comparatively low efforts in HTML/CSS and run reliably on most LG Smart TVs. WebOS currently reaches 1.8 million households.

With "My Home Screen", Panasonic is using its own solution based on Firefox TV. This results in a reach of currently around 1.2 million households. Although the growth forecasts of the expert panel are rather carful, our analysis indicates higher growth rates for the Panasonic platform.

In 2019 Hisense announced to roll out its Vidaa OS platform globally. Although the technical reach is currently low, this platform could become relevant in the next years, especially as Hisense aims to license Vidaa to other manufacturers.

Lastly, the US cable giant Comcast announced plans to provide its X1 platform to Smart TV manufacturers (Clover, 2020).

# TV Apps on OTT Devices

## Amazon Fire TV

In addition to the smart TV sets mentioned above, Amazon's Fire TV devices are also based on Android TV. With 10%-20% additional development efforts, an existing Android TV app can be brought to Fire TV.

Amazon does not publish numbers for the German market, but in 2019, there are 37 million active Fire TV users worldwide (Amazon Germany, 2019). With the help of Amazon Prime's customer numbers in the USA and Germany, this is transferred to the German market.

Accordingly, the number of German households with a connected Fire-TV set will rise from 4.3 million today to 6.0 million in 2023. However, some feedback from our expert panel suggests that this number is too conservative.

There is only a limited number of devices in the field, and Amazon is spending high efforts on the SDK, documentation, and developer support. This means low costs of initial development and maintenance.

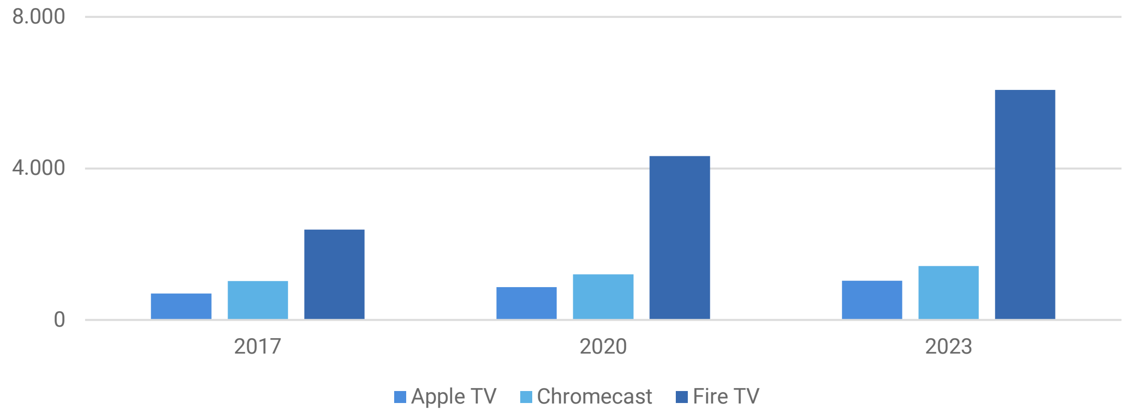


*Figure 7 Installed base of OTT Devices from Apple, Amazon, and Google in German TV households (connected, in thousands)*

## Apple TV

For 2019, Apple has stated that it has sold 13 million Apple TV sets in the USA. This is also supported by Strategy Analytics (Strategy Analytics, 2019). The installed base in Germany is derived by comparing Apple's sales in Germany and the USA (approx. 11% in 2018). Based on our expert group's feedback, it is assumed that German consumers are somewhat less Apple-affine than US consumers. This results in approximately 0.9 million households with Apple TVs in 2019 (assuming a linear development from the launch in 2007), increasing to 1.0 million in 2023.

Just like Amazon, Apple provides high-quality developer support and has a well-managed, small device portfolio in the field. Although most iOS developers should not struggle with a tvOS implementation, it requires specific know-how compared to browser-based TV apps.

## Google Chromecast

The expert panel's assessments of Google's Chromecast devices vary, and Google only announced in 2017 that 55 million devices were sold worldwide. This indicated worldwide annual sales of 10 to 15 million Chromecast devices.

Based on a breakdown according to Google's revenue in the USA and in Germany, this results in annual sales of 350.000 units in Germany. The installed base is correspondingly estimated at 1.2 million households.

But 2020 is a turning point in the Chromecast device lineup. Until now, Chromecast devices did not include full TV apps but were used to cast content from phones and PCs to the TV set. Now, Google presented a completely new version of its TV devices. The new Chromecasts come with a remote control and a full version of the latest Android TV. This also includes the well-filled Play Store. With that move, Google is starting to directly compete with Amazon, although there is a lot of ground to catch up.

## Roku

With over 30 million active users in the USA, Roku represents an exciting opportunity for content providers to address customers on their TV sets (Cooper, 2019). In Germany, Sky uses this platform to offer its OTT product Sky Ticket on TV. The expert panel believes that the reach of the platform is currently of little relevance. However, Roku has announced its intention to grow internationally in the future.

## TV Apps on Operator Platforms (MVPDs)

Operator platforms (or: Multi-Channel Video Programming Distributors – MVPDs) are the established TV platforms that deliver linear TV to the households. They usually require a subscription and a dedicated set top box. New (virtual) MVPDs like Amazon Prime, Waipu, or Zattoo have been entering the market in the last years and are increasing the innovation pressure to the established platforms. Vodafone and Deutsche Telekom reacted on this with OTT versions of their TV platform products. Some of the new MVPDs cannot contribute reach to 3rd party TV apps, these are not the focus of this study.

### Magenta TV

On Deutsche Telekom's TV platform, browser apps can be made available in a non-standardized software stack. Deutsche Telekom has communicated the number of customers several times in recent years:

- November 2013: 2.12 million customers (White, 2013)
- August 2019: 3.4 million customers (White, 2019)
- March 2020: 3,68 million customers (Deutsche Telekom, 2020)

In 2019, Deutsche Telekom announced its goal to grow its customer base to 5 million within three years (Saal, 2019), (DPA, 2019).. Based on this, we assume that the number of customers will grow from 3.7 million today to 4.6 million in 2023. Part of the growth is generated by the OTT product (Magenta TV Stick) introduced in October 2019, which is based on Android TV.

The development efforts of TV apps are comparatively high as there is only a small app portfolio by partners made available on several set-top boxes. On the other hand, Deutsche Telekom spends high efforts on editorial promotions, recommendations, deep integration of 3rd party content, and superior user experience. Content partners profit from this by high user activation and usage rates.

## Metrological App Store

In the future, one of the most important standards for TV apps will be the Metrological platform. Until recently, Metrological was an independent startup from the Netherlands that offered a managed app store to various cable TV platforms such as Unitymedia in Germany.

Metrological was purchased by Comcast in 2019, followed by Sky's announcement to roll out the Metrological app store in their territories.

Once a Metrological app is developed and approved, it can be made available on all supported devices. Due to this, the technical reach of Sky Q and the compatible Vodafone platforms is summarized. For some providers of TV apps it may be another strong argument that Metro app store is also available in other territories.

Metrological relies on the JavaScript-based Lightning framework to create high-performing TV apps. There is a well-documented SDK, training, and direct developer support available. Lightning apps are also highly portable and can be made available easily on other browser-based TV app platforms. The app store is actively managed by Metrological to minimize maintenance efforts for TV app providers.

### Vodafone TV platforms

Vodafone has selected Metrological to make TV apps available on Giga TV and future products (Briel, 2019). The distribution of the Horizon platform to new customers has been ceased, and Vodafone is expected to present a successor product to the GigaTV platform in late 2020. This new platform will be made available on the existing hardware base, which indicates a rapid growth of reach (stated in (Kaltura, 2020)). In addition, the rollout could benefit from several synergy effects resulting from the acquisition of Unitymedia by Vodafone, which operates throughout Europe:

- Comprehensive marketing to approx. 13.5 million existing TV customers in the cable network (homes connected) and a further 12 million households that can be connected (homes passed)
- Marketing potential in numerous households with the predecessor versions of the current platforms (legacy inventory)
- Resources for product development in the Vodafone Group

Vodafone has not communicated any customer numbers. Therefore, the expert panel made partly speculative assumptions: The technical reach of Vodafone's platforms with app support would increase from 1.6 million today to 3.5 million households in 2023.

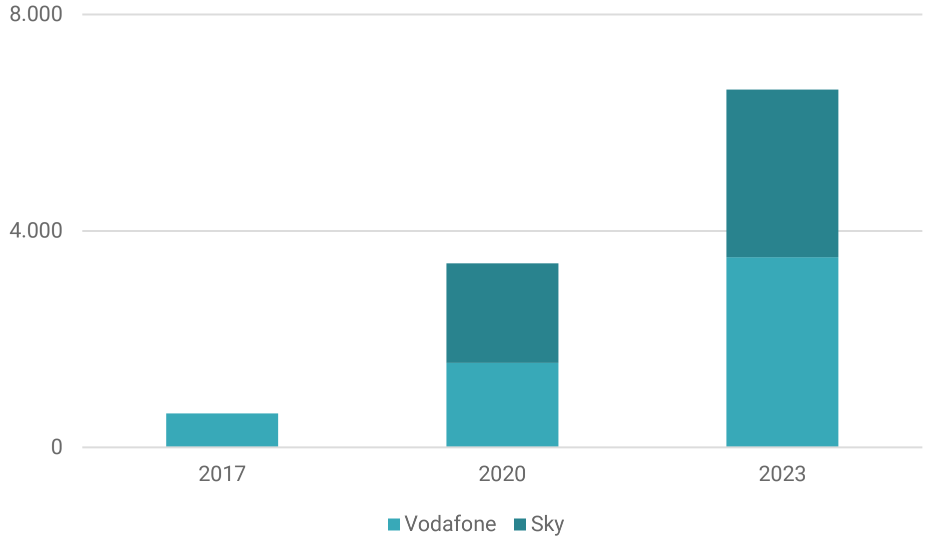


*Figure 8 Technical reach of operator platforms that support Metrological Lightning Apps (connected, in thousands, Sky Q support currently announced)*

**Sky Q**

Sky communicated 1.5 million users of its Sky Q platform in March 2019 (Daun, 2019). Accordingly, the assumptions about the course of the rollout are made by the expert panel.

- Initially, 1.3 million existing customers were migrated to Sky Q.
- Since the market launch in 2018, Sky has gained/migrated 20.000 Sky Q customers per month.

End of 2020, we expect 1,9 million connected Sky Q households, and Sky announced to roll out the Metrological app store soon in the UK, Germany, and Italy. This is the reason we summarize Sky Q in the Metrological footprint.

**Tele Columbus**

Tele Columbus is Germanys largest independent TV cable operator and uses the Metrological app on current devices. The available data is not sufficient for a qualified estimation.

# Deep Dive HbbTV

## HbbTV as a TV platform?

At this point, it may be necessary to explain why the HbbTV standard is listed as a separate platform. Smart TV devices that support this standard provide a consistent technical base for broadcasters and content providers. The implementation of HbbTV applications is comparatively complex. The reasons for this are the divergent hardware basis, different software versions, and often incomplete implementations of the standard by the manufacturers. Nevertheless, broadcasters, in particular, can address all households with HbbTV sets through content and services at comparatively low costs and with virtually no dependencies on platform operators. The costs per household reached and the user engagement quota area strong argument for this option.

## HbbTV overall

Today more than 85% of all Smart TVs sold are supporting HbbTV (GfK , 2018). As a result, 15.3 million German households have at least one HbbTV-enabled device connected to the Internet by 2020.

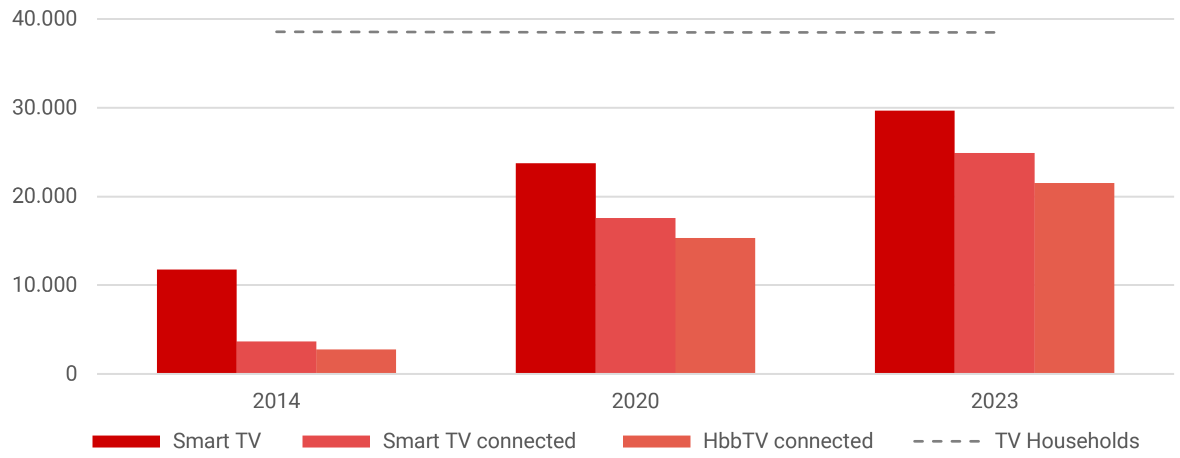


*Figure 9 Share of HbbTV smart TV sets with and without internet connection (connected, in thousands)*

“Dumb” TVs are constantly replaced with Smart TVs, also the connection rate increases, so the number of HbbTV households rises to 21.5 million (56% of all TV households) in 2023.

## HbbTV Versions

The different versions of HbbTV provide various important features, which are of central importance in developing services. For example:

- HbbTV 1.5 enables the use of HTTP adaptive streaming (based on MPEG-DASH) and offers the possibility to provide video content with DRM protection.
- HbbTV 2.0.* enables the precise overlay of linear advertising spots (Dynamic Ad Insertion).

It is therefore worth looking at the market penetration of the HbbTV versions. Some assumptions are made for this purpose:

- Until 2013, all HbbTV sets were delivered with the 1.0 standards. With the introduction of versions 1.5 and 2.0, this share drops to 21% of the total stock in 2023.
- The share of HbbTV 1.5 sets in the total population will increase to a maximum of 55% from 2019 onwards.
- The share of HbbTV 2.0.* sets in the total stock of all HbbTV sets increases from 5% in 2019 to 24% in 2023.

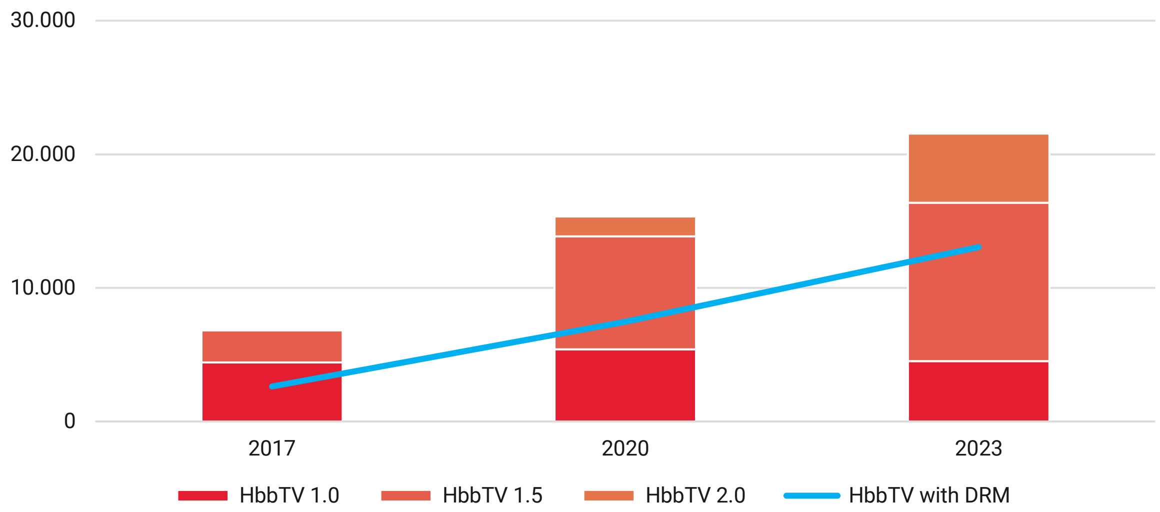


*Figure 10 TV households with a Smart TV that supports HbbTV 1.2, 1.5 or 2.0 and DRM (connected, in thousands)*

## DRM and HbbTV

The support of DRM solutions is a key feature that device manufacturers can provide from version HbbTV 1.5 onwards. However, the implementation shows that the information provided by the manufacturers is partly incorrect. Therefore, providers must (de)activate their services depending on the series and year of the Smart TVs. A device database that lists the specific device capabilities is currently under development. However, nearly 50% of the existing HbbTV sets already support DRM solutions (see Figure 6) according to the expert panel's TeraVolt device tests and statements.

Microsoft's DRM solution Playready is particularly relevant. More than 7.4 million households currently represent the largest installed hardware base for the secure distribution of video content in the living room. We forecast that this lead will increase significantly up to 13 million households by 2023.

## HbbTV Operator Apps

One of the latest extensions of the HbbTV standard was the option to provide "operator apps." This feature enables TV platforms to directly bring their services to Smart TVs without the need for external set top boxes. With this, the HbbTV standard becomes highly relevant not only for broadcasters but also for MVPDs. In order to offer an operator app, platforms and manufacturers need to cooperate closely.

Today Panasonic, Samsung, and Vestel Smart TVs support operator apps in large parts of their current device lineup. This adds up to 1,4 million households with a connected device in 2020, growing to 3,7 million connected households with operator app support in 2023.

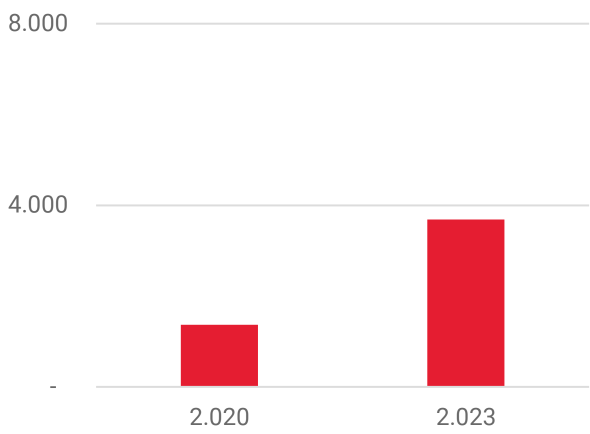


*Figure 11 TV households with a connected Smart TV that supports operator apps (connected, in thousands)*

# Platform Usage

After the initial release in 2019, we were asked to include assumptions on the actual device usage. A good start: The data on average TV consumption of the German population is easily available. The complexity lies in the fact that many households have two or more TV devices installed, for instance, a GigaTV set top box connected to a Samsung Smart TV. This raises the question, to what extent they are used and which of them to prioritize.

## Thesis: Linear TV Usage Drives overall TV Platform Usage

Smart TVs are selected by many criteria: panel, image quality, brand loyalty, features, and app capabilities. Operator TV platforms (MVPDs) and OTT sticks are purchased to a higher extend for their specific TV capabilities. So, it is more likely that the platform functionality  is actively used on these devices, at least for a limited time. Most of these cause ongoing costs, so users will be incentivized to use the products regularly.

**Step 1: Basic Usage Model:**

We set up four general assumptions on user preferences for certain TV devices:

- If households only own Smart TVs, then 100% of TV usage happens here.
- If households own an operator set top box and a Smart TV: on average, 80-90% of TV usage takes place on the operator box.
- If households own an OTT Stick and a Smart TV: on average, 70-80% of TV usage occurs on Smart TV.
- When watching linear TV on a connected, compatible Smart TV, users are technically in a HbbTV context (meaning: can access  a HbbTV app with one click).

These assumptions are based on an average TV consumption of 211 minutes per day in Germany in 2019.

**Step 2: Weighted Device Usage.**

The expert panel provided data on actual device usage of TV apps on various devices. In addition, additional data is available via the consumer panel on connected TV devices and portals by Facit Germany (Facit, 2020). With this information, we can introduce factors that pay tribute to the fact that some app platforms are used more actively than others.

| App Usage above Average | App Usage Below Average | Average App Usage or no reliable Data |
|---|---|---|
| Android TV | 1&1 TV | HbbTV |
| Apple TV | Chromecast | Tizen |
| Fire TV | Foxxum | Vodafone platforms |
| | Freenet TV | WebOS |
| | Magenta TV | |
| | MyHomeScreen | |
| | Sky Q | |
| | Web OS | |

*Figure 12 Usage rate of TV apps on TV app platforms in Germany 2020 (in alphabetical order)*

**Step 3: Multiplication and Ranking**

The result is an indication of which TV platforms users spend their daily TV consumption time on and can thus be addressed with TV app services:

| 2020 Ranking by tech reach | 2020 Ranking by total device usage | 2023 Ranking by tech reach | 2023 Ranking by total device usage |
|---|---|---|---|
| 1. HbbTV | 1. HbbTV | 1. HbbTV | 1. HbbTV |
| 2. Tizen | 2. Tizen | 2. Tizen | 2. Metrological |
| 3. Fire TV | 3. Magenta TV | 3. Fire TV | 3. Magenta TV |
| 4. Foxxum | 4. Metrological | 4. Foxxum | 4. Tizen |
| 5. Magenta TV | 5. Foxxum | 5. Magenta TV | 5. Android TV |
| 6. Metrological | 6. Android TV | 6. Android TV | 6. Foxxum |
| 7. Android TV | 7. Fire TV | 7. Metrological | 7. Fire TV |
| 8. WebOS | 8. WebOS | 8. WebOS | 8. WebOS |
| 9. MyHome Screen | 9. MyHomeScreen | 9. MyHome Screen | 9. MyHomeScreen |
| 10. Apple TV | 10. Freenet TV | 10. Apple TV | 10. Apple TV |
| 11. Freenet TV | 11. Apple TV | 11. freenet TV | |

*Figure 13 TV Platforms Ranked by Technical Reach and Usage in Germany 2020 and 2023*

## The Potential of MVPDs

The high relevance of managed platforms like Magenta TV and Vodafone TV becomes obvious when taking actual device usage into account. Users take active purchase decisions for these products and pay monthly – this makes a high motivation to use them reasonably. Solutions like the Metrological app store reduce development efforts. Lastly, the giant customer base of Vodafone and the ambitions of Deutsche Telekom promises high growth rates of app-enabled devices in the MVPD networks.

So, TV apps on operator platforms reach ever more households: from currently 7.5 million to 11 million in three years. These platforms are attractive partners for app providers: they are highly focused on the German market and have a strong need to differentiate. They employ local editorial teams, provide recommendations, and have built up promotional screen estate for partners.

## Consolidation of Smart TV App Platforms

The high market share in device sales guarantees a top 5 position to Samsung in terms of reach and usage. LG and Panasonic operate their solutions and represent a still very significant but smaller technical footprint. Google's Android TV and Foxxum are both available on a broad range of brands and devices, although our expert panel has higher growth expectations for Android TV.

## Google finally gets in the Ring with Amazon

Amazon's Fire TV is present in millions of TV households but is used only to a limited extend for linear TV. This means lower usage rates compared, for example, to Smart TVs. Just recently, Google decided to compete with Amazon with a new Chromecast directly. App providers can watch this competition quite relaxed as they can make their services available on both platforms with little additional efforts.

# Outlook

## Updates

Following the positive feedback in the run-up to publication, the market model is to be updated regularly. For this, we are dependent on feedback and suggestions and are pleased about interest in the expert panel's participation.

Register Here for Future Updates:
https://mailchi.mp/teravolt/platformreach

## Other Markets

We are planning to extend this analysis to further European territories. Please let us know if you are interested in cooperating on this.

# References


ALM. (2018). *Anteil der TV-Haushalte in Deutschland mit internetfähigem Fernsehgerät (Smart-TV) im Haushalt in den Jahren 2013 bis 2018.* . Von Statista GmbH: https://de.statista.com/statistik/daten/studie/325527/umfrage/anteil-der-tv-haushalte-in-deutschland-mit-smart-tv/ abgerufen

Amazon Deutschland. (03. September 2019). *Fire TV Event - Live aus Berlin, Zeit 11:01*. Von aboutamazon.de: https://blog.aboutamazon.de/unterhaltung/fire-tv-event-live-aus-berlin abgerufen

Briel, R. (23. 01 2019). *Vodafone Germany selects Metrological for GigaTV apps and OTT experience*. Von Broadband TV News : https://www.broadbandtvnews.com/2019/01/23/vodafone-germany-selects-metrological-for-gigatv-app-and-ott-experience/ abgerufen

Clover, J. (16. Sept. 2020). *Comcast wants to channel Smart TVs for global service*. Von Broadband TV News: https://www.broadbandtvnews.com/2020/09/16/comcast-wants-to-channel-smart-tvs-for-global-service/ abgerufen

Cooper, D. (05. September 2019). *Roku has 29.1 million active users (and no profit)*. Von engadget.com: https://www.engadget.com/2019/05/09/roku-q1-2019/ abgerufen

Daun. (01. März 2019). *Sky feiert 1,5 Millionen Sky Q Kunden*. Von Infosat: https://www.infosat.de/digital-tv/sky-feiert-15-millionen-sky-q-kunden abgerufen

Deutsche Telekom. (31. May 2020). Von Telekom Finanzergebnisse: https://www.telekom.com/de/investor-relations/finanzpublikationen/finanzergebnisse/finanzergebnisse-2020 abgerufen

Die Medienanstalten. (Oktober 2019). *Video Digitalisierungsbericht 2019*. Von die-medienanstalten.de: https://www.die-medienanstalten.de/fileadmin/user_upload/die_medienanstalten/Publikationen/Digibericht_Video_19/Medienanstalten_Chartreport_Digitalisierungsbericht_Video_2019_web.pdf abgerufen

Diverse. (2019). *Android TV - Wikidpedia*. Von Wikidpedia.de: https://de.wikipedia.org/wiki/Android_TV#cite_note-6 abgerufen

DPA. (2019. Oktober 2019). *Magenta TV: Telekom will mit exklusiven Inhalten 1,5 Millionen Neukunden gewinnen*. Von Meedia.de: https://meedia.de/2019/10/28/magenta-tv-telekom-will-mit-exklusiven-inhalten-15-millionen-neukunden-gewinnen/ abgerufen

Facit. (2020). *Connected TV 2020.* Munich.

GfK . (2018). *Retail & Technology, POS Tracking 2017.* Von GfK: in SevenOne Media: ADDRESSABLE TV. Zugriff: 05. August 2019. https://www.sevenonemedia.de/documents/924471/2421057/Basic+information+%28market%2C+usage+and+advertising%29/dce3ff10-2da1-2d0c-044b-0987ddcd29b5?version=1.15 abgerufen

GfK. (2018). *Retail & Technology, POS Tracking 2016-2017.*

Kaltura. (July 2020). *Webinar - Vodafone Tv, Legacy Enablement and Migration*. Von http://corp.kaltura.com: https://corp.kaltura.com/resources/vodafone-tv-legacy-enablement-and-migration/?onDemand abgerufen

Mantel, U. (23. Juli 2019). *Übernahme durch Vodafone: Horizon hat keine Zukunft*. Von DWDL.de: https://www.dwdl.de/nachrichten/73276/uebernahme_durch_vodafone_horizon_hat_keine_zukunft/ abgerufen

Saal, M. (28. 10 2019). *Horizont*. Von Telekom peilt für Magenta TV fünf Millionen Kunden an: https://www.horizont.net/medien/nachrichten/magenta-tv-telekom-will-mit-exklusiven-inhalten-fuenf-millionen-kunden-gewinnen-178551 abgerufen

Schering, S. (03. August 2017). *Drei-Millionen-Marke durchbrochen: Entertain setzt Wachstum fort*. Von Quotenmeter.de: http://www.quotenmeter.de/n/109206/telekom-freut-sich-ueber-3-4-millionen-magenta-tv-kunden abgerufen

SevenOne Media. (2018). *Anteil der mit dem Internet verbundenen SmartTVs, welche HbbTV unterstützen (Adserver Tracking and self-reported)*. Von https://www.sevenonemedia.de/: https://www.sevenonemedia.de/documents/924471/2421057/Basic+information+%28market%2C+usage+and+advertising%29/dce3ff10-2da1-2d0c-044b-0987ddcd29b5?version=1.15 abgerufen

Statistisches Bundesamt. (30. Oktober 2018). *Anteil der privaten Haushalte in Deutschland mit Personal Computern von 2000 bis 2018*. Von destatis.de: https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Einkommen-Konsum-Lebensbedingungen/Ausstattung-Gebrauchsgueter/Tabellen/liste-infotechnik-d.html abgerufen

Strategy Analytics. (2019). *Roku Stretches Lead As #1 Streaming TV Platform in US After Record*. Von strategyanalytics.com: https://news.strategyanalytics.com/press-release/intelligent-home/roku-stretches-lead-1-streaming-tv-platform-us-after-record-q1 abgerufen

VGChartz. (September 2018). *Verkaufszahlen der PlayStation 3 in Deutschland in den Jahren 2007 bis 2017*. Von Statista.de: https://de.statista.com/statistik/daten/studie/74215/umfrage/verkaufszahlen-der-playstation-3-in-deutschland-seit-2007/ abgerufen

VGChartz. (September 2018). *Verkaufszahlen der Xbox 360 in Deutschland von 2005 bis 2017 (in 1.000 Stück)*. Von Statista.de: https://de.statista.com/statistik/daten/studie/74203/umfrage/verkaufszahlen-der-xbox-360-in-deutschland-seit-2005/ abgerufen

VGChartz. (August 2019). *Verkaufszahlen der PlayStation 4 in Deutschland in den Jahren 2013 bis 2018*. Von Statista.de: https://de.statista.com/statistik/daten/studie/689586/umfrage/absatz-der-spielkonsole-ps4-in-deutschland/ abgerufen

VGChartz. (August 2019). *Verkaufszahlen der Xbox One in Deutschland in den Jahren 2013 bis 2018*. Von Statista.de: https://de.statista.com/statistik/daten/studie/689588/umfrage/absatz-der-spielkonsole-xbox-one-in-deutschland/ abgerufen

Weiss, M. (07. November 2013). *Zweistelliger Zuwachs: Telekom gewinnt zahlreiche Entertain-Kunden*. Von Quotenmeter.de: http://www.quotenmeter.de/n/67222/zweistelliger-zuwachs-telekom-gewinnt-zahlreiche-entertain-kunden abgerufen

Weiss, M. (02. August 2019). *Telekom freut sich über 3,4 Millionen Magenta TV-Kunden*. Von Quotenmeter.de: http://www.quotenmeter.de/n/109206/telekom-freut-sich-ueber-3-4-millionen-magenta-tv-kunden abgerufen

## Methodology

The data of this study is based on the evaluation of the secondary sources mentioned above. As described in the chapters, these were combined in a market model. Where complete data is not available over time, they have been interpolated.

The panel currently consists of experts who work for major private and public broadcasters, established and new TV platforms, associations, and other companies. The statements of the experts were used for the interpolation of the data and the forecasts.

## Disclaimer

TeraVolt does not warrant the completeness or accuracy of the information contained in this study. Liability claims regarding damage caused using any information provided, including any kind of incomplete or incorrect information, will therefore be rejected.

## Imprint (German)



Author: Tobias Künkel, Graphics: Robert Seibicke-Jähnert

Editorial deadline: Sept. 1st 2020

Address: TeraVolt GmbH, Lagerstraße 34a, 20357 Hamburg, Germany, Phone: +49 40 29 8677 0

contact@teravolt.tv www.teravolt.tv