

Optimizing the Smart TV Experience

A Parks Associates Whitepaper Developed in Cooperation with Applicaster

The Applicaster logo, consisting of the word "applicaster" in a lowercase, sans-serif font. The background of the bottom section of the cover is a dark blue-tinted image of a modern living room with a large television set and a coffee table.

applicaster

Optimizing the Smart TV Experience

Through technological advancements and skyrocketing usage, the smart TV continues to be the centerpiece of the connected home and consumer viewing.

This whitepaper highlights the evolution of video and the TV in the home, the role of technology in pushing the smart TV further to the forefront of the in-home video viewing experience, the impact of COVID-19 and disruption on video consumption, and the future state of the smart TV experience. It also addresses the importance of integrating a video offering within the smart TV app ecosystem to help drive content discovery and create an optimal user experience that better attracts, engages, and retains video customers.

The COVID-19 health crisis has fundamentally impacted the lifestyles and routines of all consumers. Shelter-in-place orders and work-at-home mandates have driven in-home video consumption to unprecedented levels, with nearly 3 in 10 US broadband households reporting an increase in usage of online video services and nearly 1 in 5 reporting an increased use of pay-TV services.

Evolution of Video in the Home

The use of video has continued to evolve over nearly a century. From the broadcast-only era through the current “stay-home” state brought on by the COVID-19 crisis, video has played a central role in entertaining, informing, and connecting households across the globe.

76% of US broadband households subscribed to an OTT service in Q1 2020, while adoption of traditional pay-TV services decreased to **62%**.

From Q1 2019 to Q1 2020, more than **6 million** US broadband households cut the cord on their traditional pay-TV service, primarily transitioning to OTT services or broadcast TV via antennas.

7 in 10 US broadband households own at least one internet-connected video device.

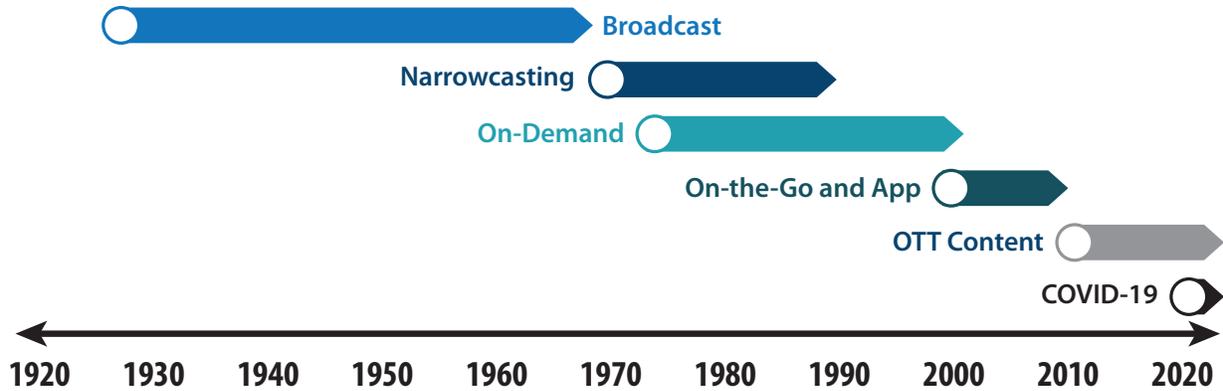
The smart TV is now a mainstream product with **more than half of US broadband households** owning at least one.



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Six Stages of Video Evolution

At the center of the at-home video ecosystem is the TV, which has evolved to become the hub of the connected home. Six stages of disruption and highlights of each era showcase the evolution of video and the TV.



Stage 1: Broadcast Era

- Video signals are first transmitted over-the-air to reach a broad audience via TVs
- In the US, the emergence of the “Big 3” broadcast networks: ABC, CBS, and NBC
- Through live newscasts, broadcasters are able to deliver news and information nationally

Stage 2: Narrowcasting Era

- Video signals are transmitted to a localized set of households based on geography and target audience via cable television
- Paid cable channels such as HBO offer exclusive premium content
- Turner, through CNN, expands the nightly newscast to the 24-hour news experience that changes how consumers access news and information

Stage 3: On-Demand Era

- VCRs, an early example of a component device, allow recording of television programs to watch later
- Modern internet delivers information and entertainment online, and YouTube emerges, as does iTunes video marketplace
- VOD platforms, DVRs from TiVo, and on-demand OTT services deliver more control to customers to access video content when, where, and how they want it
- Smart TVs integrate online interactive features for streaming and other activities

Stage 4: On-the-Go and App Era

- Slingbox, a placeshifting streaming device to connect to at-home video devices while on the go, is introduced
- With a sleek design, multiple features, and ease of use, the iPhone transforms the video experience into an on-the-go app-based first environment
- Smart TV operating systems, such as Android TV, integrate advanced online video features into an app-based unified platform to power at-home online video experience and better democratize app development

Stage 5: OTT Content Era

- Explosive OTT service growth spurs proliferation of original content from a variety of online sources
- Digital-first productions create content specifically for online platforms (e.g., Funny or Die)
- Exponential increase in content drives the use of apps and connected entertainment devices, such as streaming media players and gaming consoles with smart TV as hub

Stage 6: COVID-19 Era

- Shelter-in-place orders and work-at-home mandates force consumers to be homebound to consume video
- Video consumption levels skyrocket across various devices and services
- Smart TV remains the primary video device and the gateway to the connected home
- Original content production comes to a halt

Technological Advancements in Smart TVs

Technological advancements continually push the smart TV's development and applications. For example, there have been great strides made in video quality, which has progressed from standard definition to 4K and now 8K high definition. Advanced audio and video capabilities have also emerged, including high dynamic range (HDR), Dolby Vision, and Dolby Atmos.

Other important advancements in smart TVs have been made to further evolve the device.

Operating Systems

The emergence of the television operating system has revolutionized how the smart TV can be utilized in the home. Android TV, Roku TV, and Fire TV, among others, allow seamless integration of advanced features and functionality via a streamlined platform that is augmented with software updates.

Smart TV operating systems are also enhancing the content discovery capabilities of TVs with advanced universal search and data-driven recommendation engines. The launch of Android TV was especially significant because it was not tied to a specific device or family of devices. It represented an out-of-the box operating system and user interface solution that could be white-labeled across a variety of manufacturers and platforms. Participating manufacturers utilizing Android TV could also take advantage of the integration of the Google Play Store ecosystem to manage video apps and other applications.

Streamlined App Development Process

The development process for smart TV apps has become much more streamlined. TV software development kits (SDKs) encourage companies from all levels of technical ability and expertise to develop and manage apps. Quality controls for functionality and operation, stability, and conformity to content rating restrictions have been integrated into the process to provide a more seamless app development experience.

App Stores and Smart TV Home Screen

A major advancement for smart TVs has been the development of managed app stores from Samsung, LG, and others using third-party solutions. These stores and marketplaces provide a structured environment to support management over the course of the entire app lifecycle, from submission through launch to software updates. Individual apps can be better promoted and accessed through app stores and marketplaces. The home screen of the smart TV has now become a prominent place to launch apps, with high-profile positions such as the rail along the bottom of the screen representing prime real estate.

The push of apps to the forefront through app stores and the home screen has accelerated design and development as well as content discovery throughout the smart TV ecosystem.

Voice Control

The integration of voice control capabilities into smart TVs via personal assistants such as Amazon Alexa, Google Assistant, and others has been a major step forward. This integration eases the discovery of video apps and their associated content. The voice-enabled remote control has become one of the more useful and successful methods of easing and augmenting the user experience.

The integration of voice control in TVs through a variety of methods has increased significantly.

In Q1 2020, 30% of TV owners report their most used TV has a voice-enabled remote control, voice assistant, or can be controlled by a smart speaker versus 10% reporting voice controls in Q1 2019.

Other Advancements

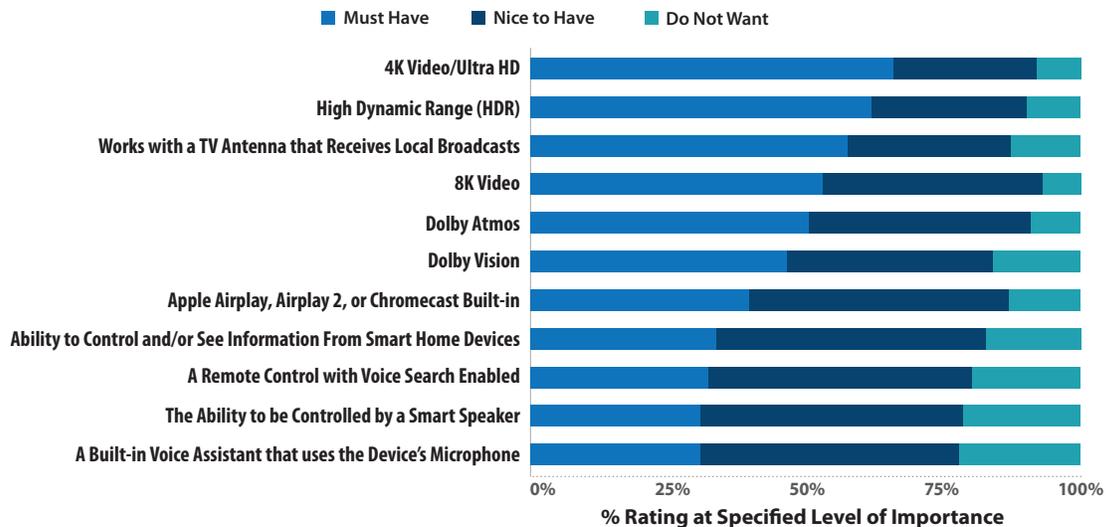
The smart TV has closed the gap with mobile devices for a better app-based video experience through a variety of other developments. The number of apps and associated breadth of features continues to increase. The introduction of HTML5 browsers has optimized apps to run on the smart TV and better render the apps. Remote controls from a variety of sources, including pay-TV services and smart TV manufacturers, have integrated dedicated video service buttons, giving consumers more power to choose apps immediately at TV launch. Finally, the co-viewing experience between mobile devices and smart TVs has been better integrated to promote more seamless cross-device engagement with video content.

Consumer Attitudes Towards Smart TV Features

Video consumers continue to value the benefits of smart TV features. Advanced audio and video features such as 4K Ultra HD, 8K Ultra HD, HDR, and Dolby Atmos are considered more essential in the purchase process for buyers. However, newer features such as integration with smart home devices and voice control are gaining momentum.

Important Features when Buying Current Smart TV

US Broadband Households Using Smart TV Most Often to Access Content Online and Having Specified Features

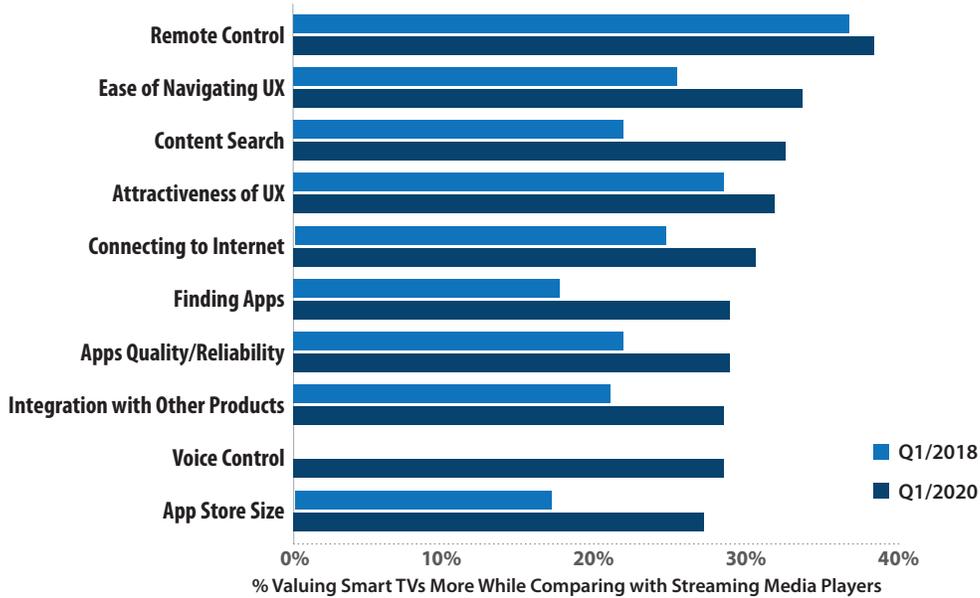


One-third of US-based smart TV purchasers cite newer features such as voice control and smart home device integration as “must-have.”

The smart TV continues to improve its perceived value across a variety of key features and technologies. Among households that own both a smart TV and a streaming media player, the percentage who believe the smart TV is better increased across all measured features. From ease of navigation to content discovery to the size of the app store, the smart TV provides considerable value for its feature set among at-home video consumers.

Features where Smart TV is preferred over SMP among Households with Both Devices

US Broadband Households Owning Both Streaming Media Player and Smart TV

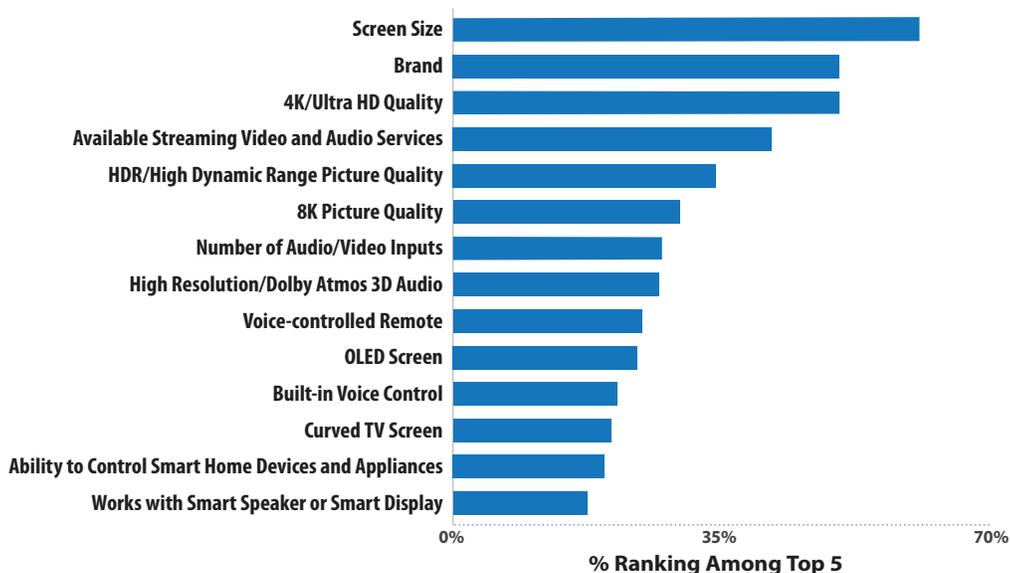


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Finally, the importance of available apps continues to rise among consumers planning to buy a new smart TV. While more standard considerations such as screen size, brand, and video quality are most important, the amount of available streaming video and audio apps is also deemed very valuable. **As more consumers use the smart TV to search for content, the importance of the depth and breadth of available streaming video apps will continue to accelerate.**

Top Purchase Considerations for Future TV

US Broadband Households Intending to Buy TV



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Impact of COVID-19 on Video Consumption

The COVID-19 crisis has dramatically changed how households are consuming video from both a device and service perspective. Consumer habits have shifted dramatically and will continue to do so even as states lift shelter-in-place orders.

Between Q1 2019 and Q1 2020, consumers subscribing to an OTT video service jumped to 76%, equal to roughly six million more US broadband households that subscribe to an OTT service than the year before.

Impact on Device Consumption

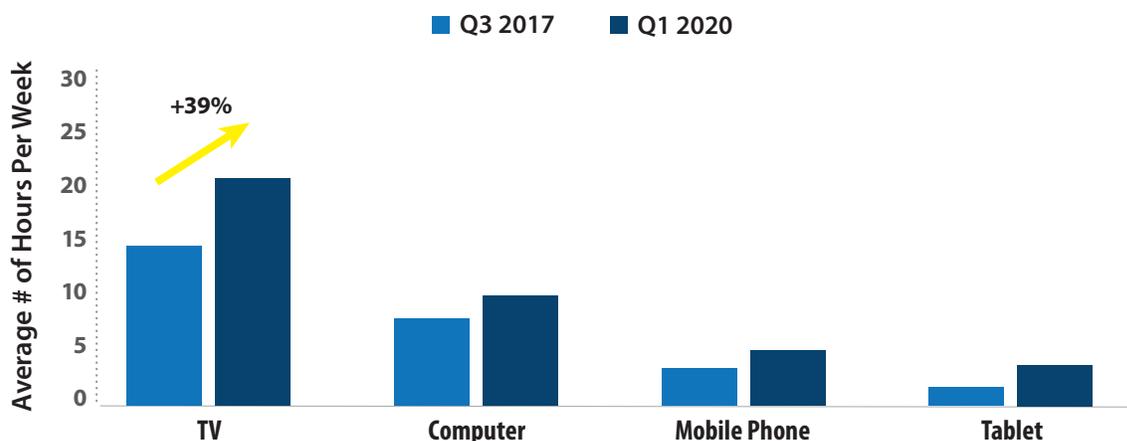
The TV has always been the primary device to consume video in the home. However, the disruption to daily lives during this global pandemic has pushed the video device further to the front of the connected home ecosystem.

This consumption level, based on Parks Associates survey data from the last three weeks of March 2020, as the pandemic was moving through its first stage in the US, is more than double the average weekly consumption on computers and more than five times that of mobile devices.

US broadband households are consuming on average more than 20 hours of video content weekly on the smart TV, an increase of nearly 40% from 2017.

Total Average Video Consumption by Platform (2017-2020)

US Broadband Households

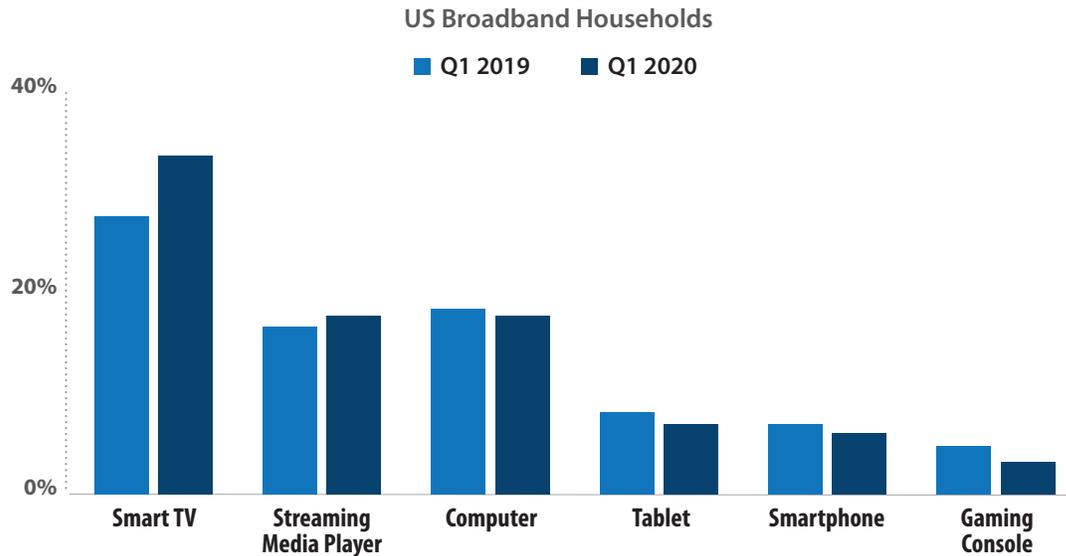


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The COVID-19-related transition of work-at-home and shelter-in-place has pushed usage of the smart TV to never-before-seen levels and further separates it from other video devices.

Nearly one-third of US broadband households cite a smart TV as their primary streaming video device, nearly double the rate of streaming media players and computers.

Primary Methods of Streaming Online Videos (2019-2020)



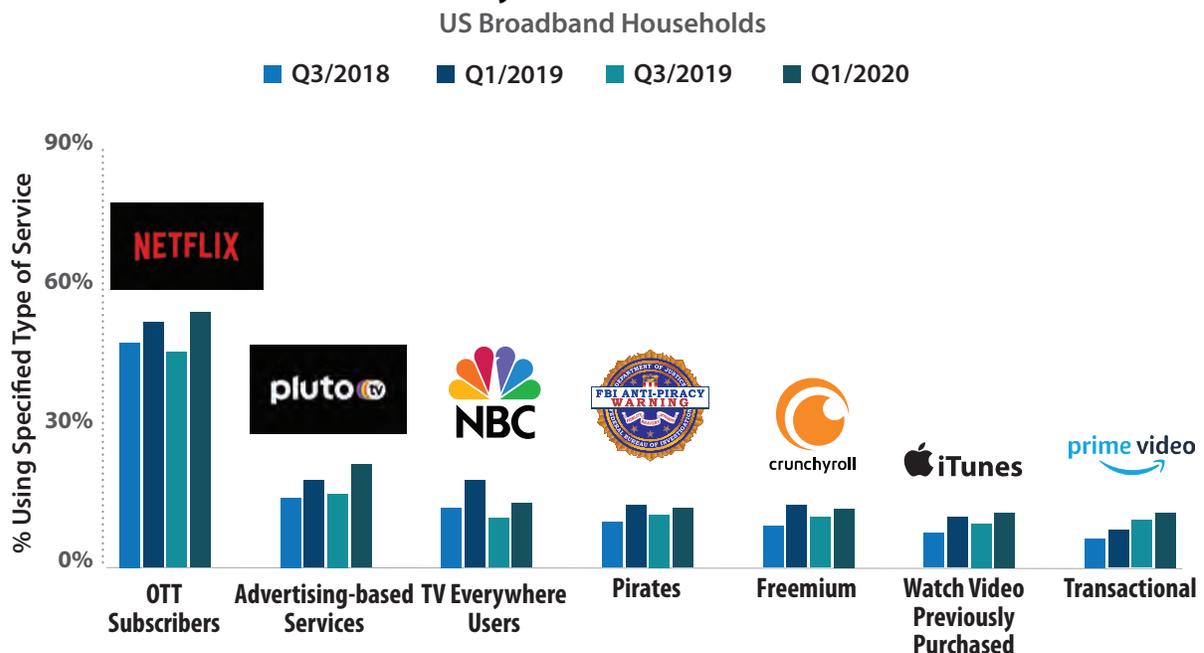
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Impact on Service Consumption

The COVID-19 crisis has also impacted which services homebound households are using. Nowhere is the impact more evident than with OTT video services. OTT service consumption in the US has increased across a variety of business models in Q1 2020. For example, use of subscription-based services such as Netflix has spiked 8 points to 53%.

Consumer usage of different OTT service types has also increased. The spike in service consumption is forcing all providers to develop and maintain apps on a variety of connected devices, particularly smart TVs, to better compete and meet consumer demand.

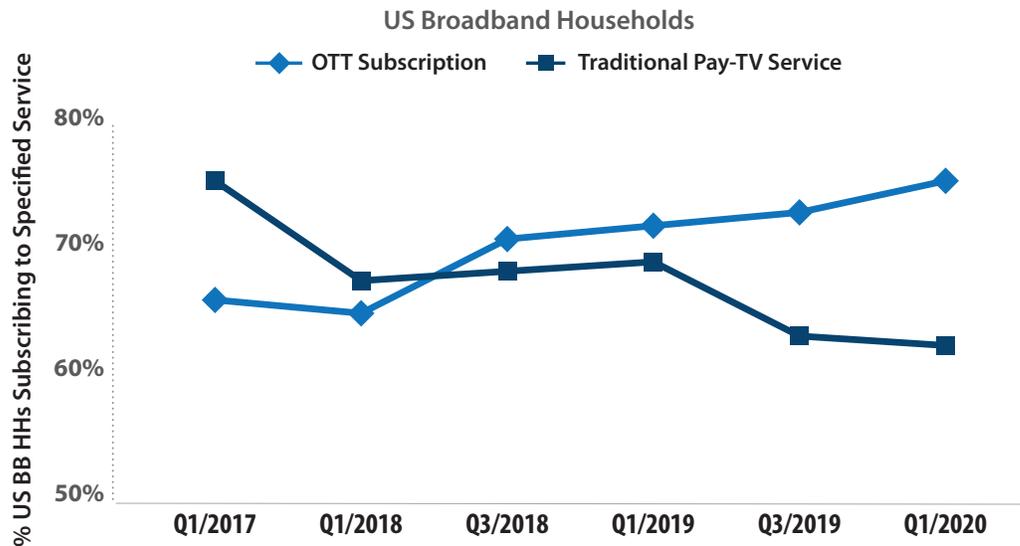
OTT Service Use by Business Model (2018-2020)



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The increase in the OTT subscription rate has led to a further widening of the gap between OTT subscriptions and the adoption of traditional pay-TV services from cable and satellite providers. OTT adoption now outpaces pay-TV by nearly 15 percentage points.

Penetration of Traditional vs. OTT Video Services



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Subscriber losses from traditional pay-TV services have been taking place for years. The severe economic impacts of COVID-19 are exacerbating the cord-cutting issues faced by traditional providers and their higher-priced offerings. Consumers are putting their personal finances to much tighter scrutiny to weigh which services to keep and which ones to cancel, extending the gap between OTT and pay-TV.

Though traditional pay-TV adoption continues to wane and lose subscribers to OTT, it is still a viable method to view video for the majority of US households.

The continued rise of the smart TV for delivering video content during this challenging time is an incredible opportunity for service and content providers to create, develop, and maintain video apps that are optimized for the smart TV. The jump in service consumption is also an opportune time for service providers to evaluate which business models and approaches are best to grow their subscriber and revenue bases.

As consumer appetite grows, providers must integrate their offering within the smart TV app ecosystem in order to attract, engage, and retain households that are starved for video content.

The smart TV is a multi-purpose device that can deliver a traditional pay-TV experience as well as OTT, thus ensuring its place at the forefront of the in-home video experience no matter the source.

The Future of the Smart TV

The role of the smart TV will continue to evolve through the COVID-19 crisis and beyond in order to remain front and center in the connected home. There are several advancements to watch as the smart TV continues its development.

- The expansion of the market footprint for ATSC 3.0 or NextGen TV, originally launched in South Korea in 2017, will continue in earnest in the near future. In fact, several broadcast stations in Las Vegas launched NextGen TV in late May 2020, with expansion in other markets planned soon.

This new set of standards for over-the-air transmission of broadcast television has several benefits that deliver an interactive and customizable audio and visual experience:

- better signal reception
- 4K HDR video support
- immersive audio via Dolby Atmos and DTS-X
- on-demand video
- access to enriched interactive content
- an upgraded emergency alert system



- NextGen TV does not require a separate tuner or an antenna and a TV with a built-in Next Gen tuner, which could be a boon for smart TV manufacturers. Samsung, LG, and Sony are already developing ATSC 3.0-enabled devices. The ability to add on key features and the customizable nature of the technology will potentially lengthen the product lifecycle and reduce the need for purchases of component devices, thus pushing the next wave of smart TVs further into the fore.
- Data and analytics will continue to drive the personalization and universal search capabilities of the in-home video experience via the smart TV. An individual video app can currently make content recommendations, but a smart TV cannot make recommendations based on consumer behavior within individual apps unless that app is open on the device. This will need to change to push the value of the device forward. One area that has gained traction is use of data and analytics through the smart TV's operating system. Currently, for example, if a user searches for content on their Apple TV device, tvOS will allow for universal search and trigger content recommendations by showing all the apps that feature the desired content and then the user can choose which app to launch to view the content.
- Push notifications will play a more prominent role on smart TVs. While push notifications have become ubiquitous on mobile devices, this technology has not been utilized fully on smart TVs beyond operating system updates. There is the potential for use of push notifications to notify the user of new apps to download, personalized recommendations, new app features, and other alerts to improve the interactivity of the user experience.

Conclusion

This current era, marked by the COVID-19 pandemic, has accelerated in-home video consumption to levels never before seen. While the smart TV has been a mainstay of the home entertainment experience for many years now, technological advancements, the continued proliferation of video apps, and the improved interoperability and connectivity with other devices has pushed the smart TV to even greater heights in the home.

As households across the world emerge from the COVID-19 era to a “new normal,” the smart TV will continue to be the heartbeat of the connected home.

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For over 10 years, Applicaster has been at the forefront of simplifying direct-to-consumer app design and delivery across mobile, connected devices and connected TVs. With its open APIs and extensive partner marketplace, Applicaster's SaaS platform, Zapp, provides an open-ended, modular plug-in architecture within which customers can build and scale their multi-device media app strategy. From prototyping all the way to monetizing, Applicaster helps companies build better user experiences and extend the brand to their audiences' devices of choice.

Applicaster has offices in New York, San Jose, Miami, London, and Tel Aviv, and sales operations in many other countries across the globe.

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About Parks Associates

Parks Associates is an internationally recognized market research and consulting company specializing in emerging consumer technology products and services.

Founded in 1986, Parks Associates creates research capital for companies ranging from Fortune 500 to small start-ups through market reports, primary studies, consumer research, custom research, workshops, executive conferences, and annual service subscriptions.

The company's expertise includes the Broadband of Things (IoT), digital media and platforms, entertainment and gaming, home networks, Broadband and television services, digital health, mobile applications and services, support services, consumer apps, advanced advertising, consumer electronics, energy management, and home control systems and security.

For more information, visit parksassociates.com or contact us at 972.490.1113, info@parksassociates.com.

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Steve is a research director at Parks Associates, specializing in entertainment content and services. He brings over fifteen years experience in a variety of market research and marketing strategy roles including several in the emerging technology and media space.

Steve earned both his BS in Telecommunication with a concentration in Business and his MA in Mass Communications from the University of Florida.

INDUSTRY EXPERTISE: Entertainment content and services, consumer behavior on emerging technology markets

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for Emerging Consumer Technologies

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Video Services

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Home Security