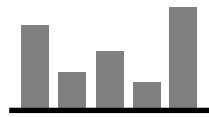




# A clearer picture of growth: **2016 global 4K/UHD industry survey**

---



2 0 1 6 E D I T I O N

Published July 2016  
A joint project of:



© 2016 SNL Kagan, an offering of S&P Global Market Intelligence.

All rights reserved.

One SNL Plaza, Charlottesville, VA 22902

Phone: 866.296.3743

[www.snlkagan.com](http://www.snlkagan.com)

© 2016 Irdeto, All Rights Reserved.

Taurus Avenue 105, 2132 LS Hoofddorp, The Netherlands

Phone: +31 23 556 2000

[www.irdeto.com](http://www.irdeto.com)

**Contents**

**Executive summary** ..... 2

**Introduction** ..... 3

    Linear UHD services by region (*chart*) .....3

**Video service providers trying to anticipate mass adoption with service launches.** ..... 4

    4K launch plan vs. 4K adoption expectation (*chart*) .....4

    4K launch plan vs. 4K adoption expectation, by region (*chart*) .....5

**Launching 4K services and consumers' willingness to pay extra for them** ..... 6

    Plans for making 4K/UHD TV content available (*chart*) .....6

    Ranking of 4K TVs in driving 4K/UHD consumption, by planned content offering (*chart*) .....6

    Willingness of consumers to pay extra for 4K/UHD TV content (*chart*) .....7

**Business drivers for 4K UHD and consumption by device: Retaining the home platform** ..... 8

    Rating of 4K/UHD TV business drivers (*chart*) .....8

    Devices driving the most 4K UHD consumption (*chart*) .....9

    Devices driving the most 4K UHD consumption, by region (*chart*) .....10

**Live sports expected to be the most popular 4K UHD content** ..... 10

    Most popular 4K UHD content (*chart*) .....10

    4K UHD content availability is top concern (*chart*) .....11

    Delivering SD/HD/4K/HDR variants a top concern (*chart*) .....12

**Dominant distribution channels for 4K UHD content split evenly; OTT expected to rise quickly** .... 12

    Anticipated domination of 4K/UHD content delivery (*chart*) .....12

**Device capabilities and bandwidth top technology and business concerns** ..... 13

    Business/tech factors with the highest impact on 4K/UHD TV success (*chart*) .....13

    Business/tech factors with the highest impact on 4K/UHD success: Available bandwidth (*chart*) .14

    Business/tech factors with the highest impact on 4K/UHD success: Device capabilities (*chart*) .14

**Many options for protecting 4K UHD content; no single method is foolproof.**..... 15

    Most effective methods for protecting 4K UHD (*chart*) .....15

    Content protection viewed as most effective security method for near-term launches (*chart*) . . .16

**Conclusion** ..... 17

**Methodology** ..... 18

    Survey respondents, by region (*chart*) .....18

    Survey respondents, by decision-making responsibility (*chart*) .....18

    Survey respondents, by management level (*chart*) .....18

## About the Publishers

SNL Kagan, an offering of S&P Global Market Intelligence, is the ultimate resource for complete financial intelligence and analytics on the broad and dynamic media & communications industry, including the broadcasting, cable, TV network, motion picture, wireline, wireless, satellite, and Internet media sectors. The SNL Kagan suite of products integrates comprehensive data, forecasts, expert analysis and breaking news into an electronic database and analytical tools that are available online and updated around the clock. Whether you're an investment banker or media company executive, a research analyst or a portfolio manager, SNL Kagan provides you with unlimited 24/7 access to the relevant information you need to understand evolving trends, anticipate change and make the best decisions. SNL Kagan combines the 40-year heritage of Kagan Research with parent company S&P Global's years of experience in providing essential guidance to Wall Street and America's top corporations.

[www.snl.com](http://www.snl.com) - [www.SNLKagan.com](http://www.SNLKagan.com)

Irdeto is a world leader in digital platform security, working with pay-media operators, content creators, software application providers and connected device manufacturers to protect valuable digital assets for nearly 50 years. We protect digital platforms and assets across multiple industries, such as media & entertainment, payments, and automotive. Our solutions and services enable our customers to protect their revenue, create new offerings and fight cybercrime.

[www.irdeto.com](http://www.irdeto.com)

## Production Team

**Consulting Director**

Jeff Heynen

**Editor**

Christie Van Gaal

**Graphic Artist**

JC Mangaran

Unless allowed by a full site license, databook material may not be reproduced, retransmitted electronically, including via email, intranet or Internet, or recopied in any form, in whole or in part, without prior written permission, whether for internal business use or otherwise. Violators risk criminal penalties and civil damages of up to \$150,000 per offense. We vigorously prosecute copyright infringers. Site licenses are available (for license information contact sales@snl.com). © 2016 SNL Kagan, an offering of S&P Global Market Intelligence. All rights reserved.

This research report is prepared and circulated for general informational purposes only and is not an offer, nor a solicitation to make an offer, to buy or sell any securities or options, futures or other derivatives related to such securities. Investors should seek financial advice regarding the appropriateness of investment strategies discussed or recommended in this research report. The information contained herein was obtained from sources SNL Kagan believes to be reliable, however SNL Kagan has not independently verified all the information given in this document. Accordingly, no representation or warranty, express or implied, is made as to the accuracy, completeness or fairness of the information and opinions contained in this research report. Some of the information in this report may be based on historical information, which may not have been updated. Statements regarding past performance may not be indicative of future returns and statements regarding future prospects may not be realized. All opinions and estimates expressed are our current opinions and estimates as of the date appearing on this material only and are subject to change without notice. SNL Kagan is an offering of S&P Global Market Intelligence, a division of S&P Global (NYSE:SPGI). SNL Kagan, its parent, its affiliates or employees preparing this report may have a position in securities of any company or derivatives related to such securities referred to or recommended in this report. An employee of SNL Kagan, its parent or affiliates may be a director of a company referred to or recommended in this report. SNL Kagan, its parent or affiliates may perform for, or solicit business from, any entity mentioned in this report.

**A clearer picture of growth:  
2016 global 4K/UHD  
industry survey**

## Executive summary

A survey of 475 global video service providers, including pay TV and OTT operators, and content producers around the world reveals a firm commitment to 4K UHD content and services. 96% of respondents believe that a majority of consumers and video service providers will adopt 4K UHD TV by 2020. Correspondingly, 88% of total respondents say they will launch 4K UHD content by 2020, with 78% saying they will have launched content by 2018, in anticipation of the expected adoption rates.

4K UHD content and service rollouts are driven by the need to maintain a strong presence in subscribers' homes, as well as by a desire to differentiate from an increasing number of competitors. In addition, as 64% of respondents believe that consumers are willing to pay an extra 10-30% on the top of their current package for 4K content, increasing ARPU (Average Revenue per User) is also considered a strong driver, especially in the APAC region.

When it comes to which devices will drive the most consumption of 4K content, 70% of video service providers and content producers say that 4K TVs/Connected TVs will be the primary devices. And what will consumers be watching on those devices? 65% and 59% of respondents perceived Live Sports and Early Release movies, respectively, to be the most consumed 4K UHD content.

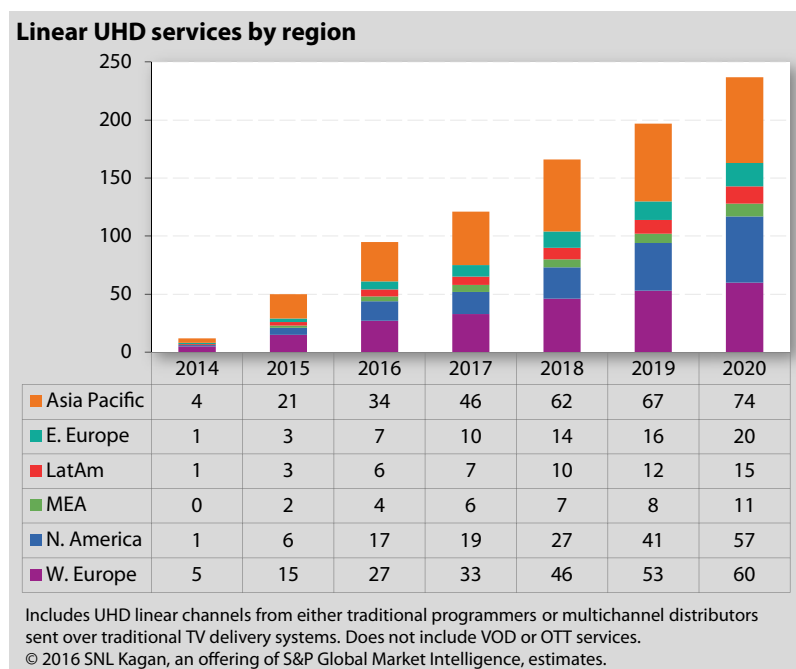
However, concerns remain for respondents. Device capabilities and available bandwidth are viewed as having the highest impact on the success of 4K UHD rollouts. Additionally, protecting premium video content through a variety of methods, including Internet piracy detection services, content protection and Internet piracy analytics is high on the priority list for both video service providers and content producers.

This report provides more information about the specific plans and strategies among global and regional video service providers and content producers for 4K UHD content development and distribution.

**Introduction**

4K UHD content and channels continue to grow at a rapid rate. The improved screen resolution is viewed by content owners, pay TV operators and OTT providers as critical to providing consumers with a more immersive and compelling viewing experience.

According to SNL Kagan’s 2016 report, [Ultra high definition content & services: Asia remains on top](#), global demand for UHD content and services has already pushed the number of linear networks delivering UHD to 50 at the end of 2015. The total number of linear UHD channels is expected to jump to 237 by 2020. These figures do not include VOD or OTT systems, which have already seen a significant increase in the number of available UHD titles.



With TV set manufacturers already flooding global markets with 4K-capable displays, the global stage is set for a significant ramp up in the availability of 4K UHD programming and services around the world.

To provide some depth and insight into these projections, Irdeto commissioned SNL Kagan to survey 475 global video service providers, content producers and organizations with combined pay TV and content production operations. The goal of the survey was to determine their plans for delivering 4K UHD content and services and to understand the business, technology and competitive factors driving their decisions. For this survey, video service providers are defined as cable, satellite, terrestrial, telco and OTT providers. Content producers are defined as film or TV studios, sports leagues and broadcasters.

*For more details on the survey methodology and respondent demographics, please see the methodology section.*

**Video service providers trying to anticipate mass adoption with service launches**

96% of respondents believe that a majority of consumers and video service providers will adopt 4K UHD TV by 2020. Correspondingly, 88% of total respondents say they will launch 4K UHD content by 2020, with 78% saying they will have launched content by 2018, in anticipation of the expected adoption rates.

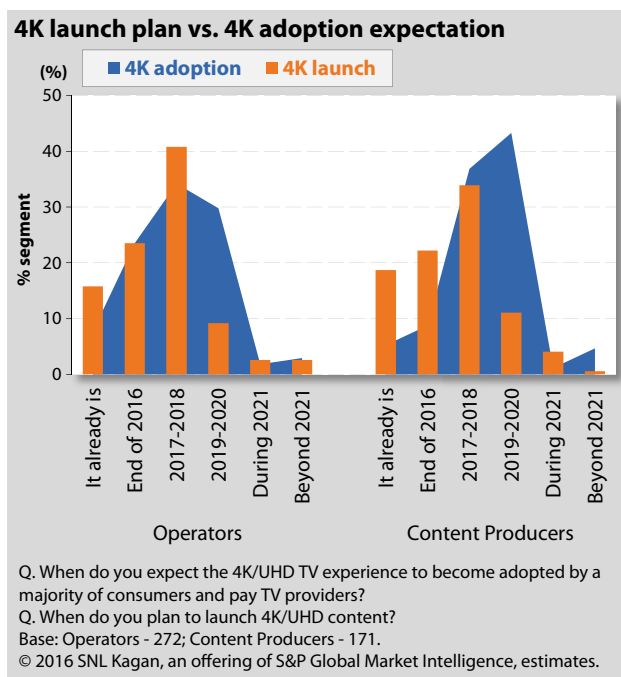
Content producers and video service providers are nearly all aligned in their plans for 4K UHD content and service launches, with operators being slightly more aggressive in their estimate of launches. 80% of video service providers say they will launch pay TV content

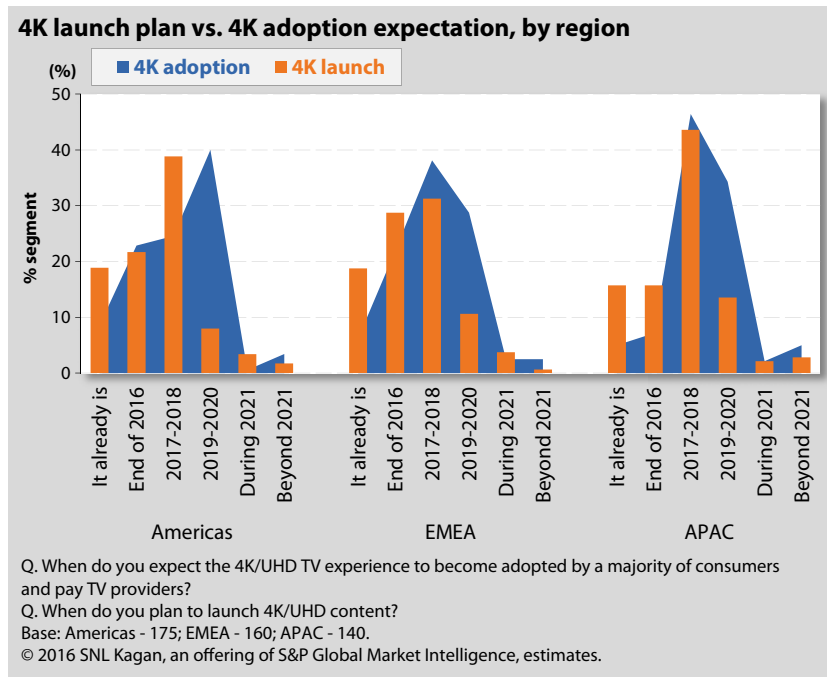
by 2018. Among those, more than half (41% ) plan to launch during 2017-2018. 75% of content producers plan to launch 4K UHD content by 2018. Among those, 22% and 34% of content producer respondents plan to launch at the end of 2016 and during 2017-2018 respectively.

Traditional pay TV providers are being driven to move quickly on UHD content by OTT providers. And once a major pay TV provider begins to offer UHD content, others will quickly fall in-line to not be viewed by consumers as a technology laggard. From the results, it is clear that video service providers want and need to be ready to offer 4K UHD content from the get-go. Otherwise, consumers will be more inclined to switch.

Though aggregated responses show uniformity across the different business verticals, there are some notable differences when the data is examined on a regional

basis. For example, in Asia-Pacific, where video service providers in Japan and Korea have had UHD content offerings since 2014, 46% of respondents believe that mass adoption will be achieved between 2017-2018. Similarly, in EMEA, where video service providers in France, U.K. and Russia either have launched or are launching UHD content in 2016, 38% of respondents believe mass adoption will be achieved between 2017-2018. Meanwhile, in the Americas, where the sheer number of video service providers is lower and also where, in the case of Latin America, HD services were only recently rolled out, only 25% believe mass adoption will be achieved between 2017-2018.





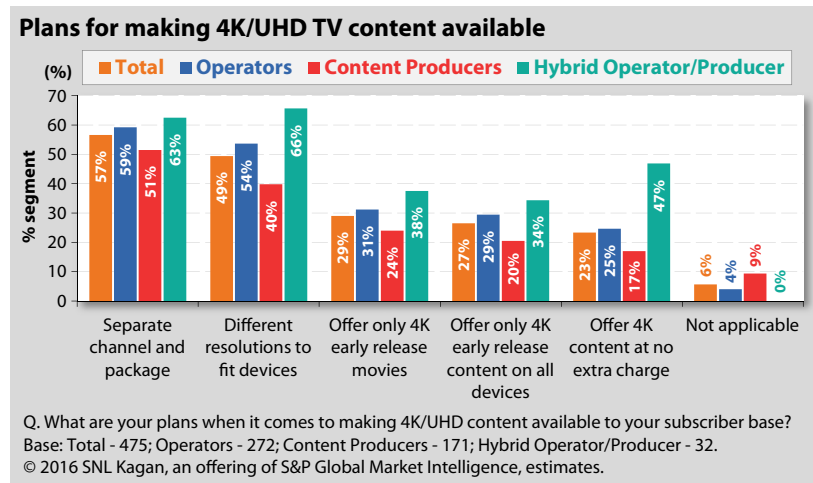
From a regional perspective, respondents show a more committed launch window of 2017-2018. These results correspond with our forecasts for linear UHD service rollouts by region. With video service providers and content producers in Japan, Korea, France and U.K. already well underway with 4K services, these results are clearly in-line with our expectations.

The most interesting point from the data is that video service providers in both the Americas and EMEA are planning to launch 4K UHD services before they believe they will reach mass adoption. APAC-based operators; however, are trying to time their launch to match their expectations for mass adoption.

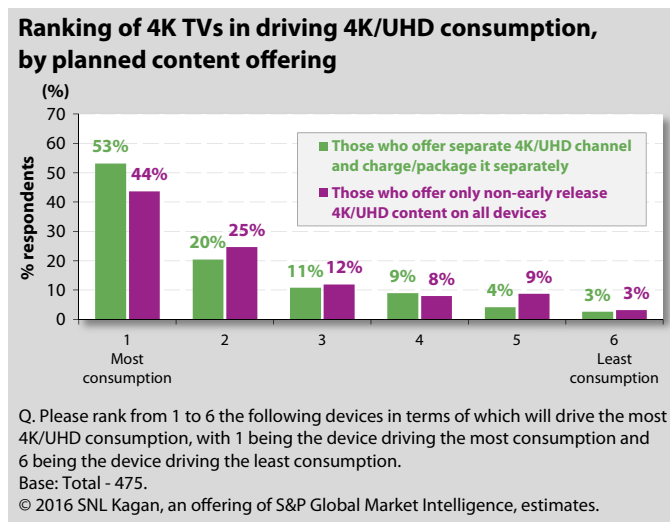


**Launching 4K services and consumers' willingness to pay extra for them**

In terms of how 4K UHD content will be distributed on pay TV provider systems, 57% say they will provide a separate channel and package. This is similar to how early HD content and channels were delivered, with early adopters paying a premium for access to higher-resolution programming.



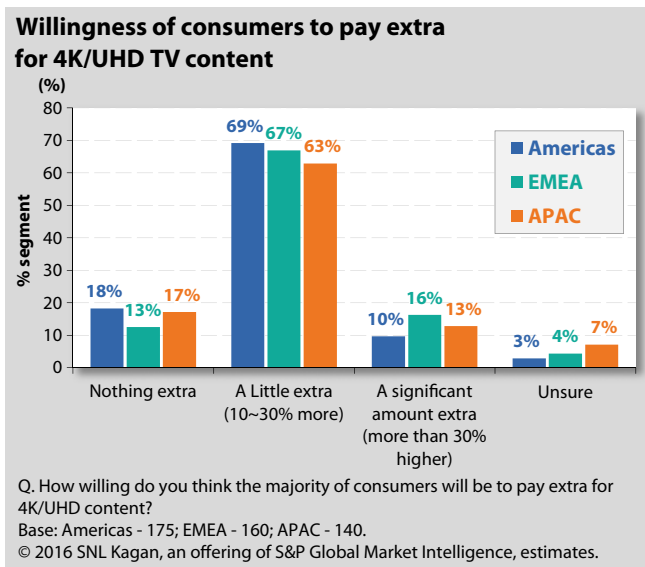
One of the more interesting differences between video service providers and content producers is 54% of video service providers say they will offer different resolutions to fit multiple devices, while only 40% of content producers plan to provide content at different resolutions. There are a number of possible reasons for this discrepancy, including content producers' belief that 4K UHD content will be limited to display on 4K-capable TV sets, thus requiring a single resolution stream. Also, content producers have become more reliant on video service providers using transcoders to optimize streams to suit bandwidth constraints and end-device capabilities.



When cross-referencing responses on how organizations plan to make 4K UHD content available with the devices expected to drive the most consumption, we see a clear correlation between those respondents planning to offer a separate 4K UHD channel and their expectation that 4K/Connected TVs will drive the most consumption. This is certainly the expectation of most video service providers, who wish to extract the most value out of traditional, in-home viewing.

However, if we look at respondents who said they plan on offering only non-early release 4K UHD content on all devices, their expectation is that tablets will likely drive the most consumption. We have to assume from these results that these respondents are either OTT providers or are possibly video service providers with strong multiscreen offerings, including access to Netflix-style OTT content and services.

Of course, the major question for both video service providers and content producers is whether consumers are willing to pay extra for 4K UHD content. Both believe they will. 64% of video service providers and 73% of content producers say the majority of consumers are willing to pay an additional amount, measured in the range of 10-30% beyond their current subscription for access to 4K UHD content.



These results are interesting, especially when compared with how quickly the ability of video service providers to upsell HD packages disappeared. In the early years of HD rollouts, pay TV providers successfully charged more for access to an HD bundle of channels. But as more channels offered 24x7 HD programming and as competitors began offering HD access for free as part of their subscription offerings, the ability to upsell went away.

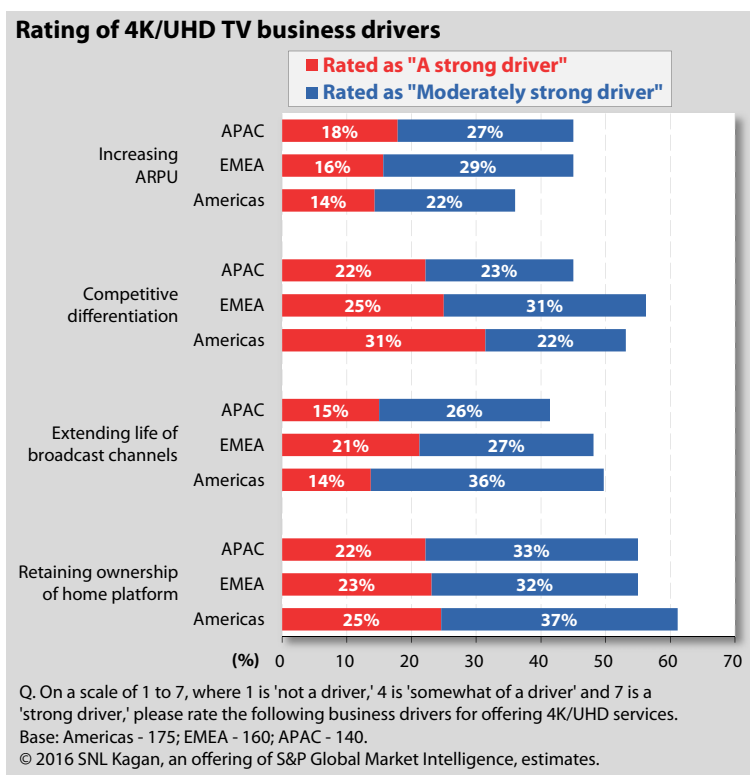
It will be interesting to see just how long video service providers and content producers believe they will be able to charge their customers more for access to 4K UHD content. It will also be interesting to revisit

this question by asking separately about pay TV subscriptions and VOD content, which continues to see different pricing based on resolution.

**Business drivers for 4K UHD and consumption by device: Retaining the home platform**

With an expanding universe of pay TV and content providers, ensuring the organization is viewed as a technology innovator is critical to differentiating the service and content offerings. For video service providers facing the threat of cord cutting, making 4K UHD channels and content available is important to ensuring customer loyalty and maintaining a valued presence in customers' homes.

62% of video service providers said that retaining ownership of the home platform is a strong business driver for delivering 4K UHD content. 51% of video service providers ranked competitive differentiation as a strong business driver, as well.



There are some regional variations, though the differences are relatively slight. The net result is that there is general uniformity among global video service providers regarding the key drivers for deploying 4K UHD content and services.

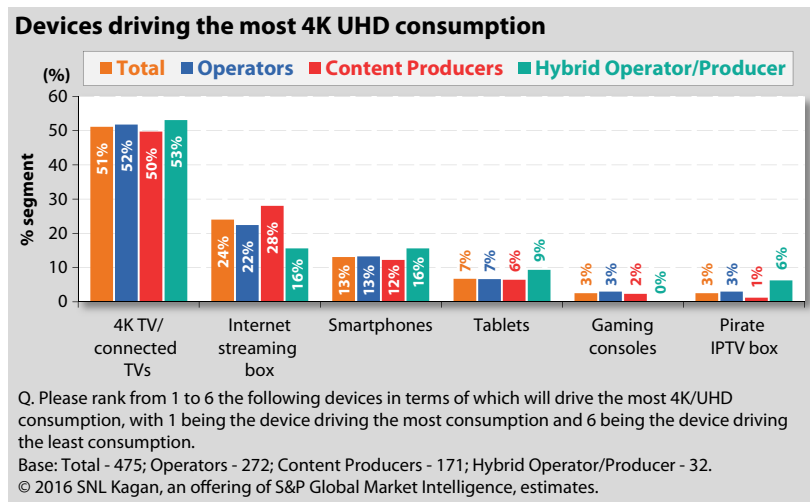
When it comes to which devices will drive the most consumption of 4K content, 51% of video service providers and content producers say that 4K TVs/Connected TVs will be the primary devices. Although not asked, we assume the responses include both delivery directly to a TV set or to an provider's set-top box capable of 4K UHD decoding and resolution.

AMERICAS	EMEA	APAC
Retaining home ownership	Competitive differentiation	Retaining home ownership
Competitive differentiation	Retaining home ownership	Increasing ARPU
Extend broadcast channels	Extend broadcast channels	Competitive differentiation
Increasing ARPU	Increasing ARPU	Extend broadcast channels

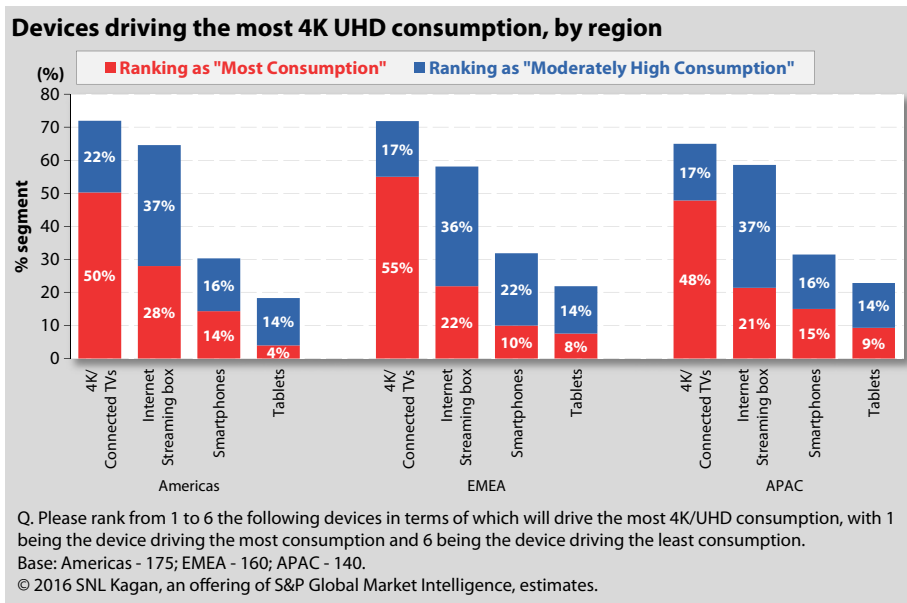
© 2016 SNL Kagan, an offering of S&P Global Market Intelligence.

In addition, 24% say that Internet streaming boxes will be the device of choice to drive 4K UHD consumption. With Netflix, Amazon and other OTT providers already offering 4K UHD titles, streaming players offer early access to the higher-resolution content.

Despite the phenomenal growth of OTT platforms and services, and with some cable and telco operators moving to an IP-based distribution model for video, it is interesting to see that respondents still believe that 4K/Connected TVs with a STB are still viewed as driving the most consumption.

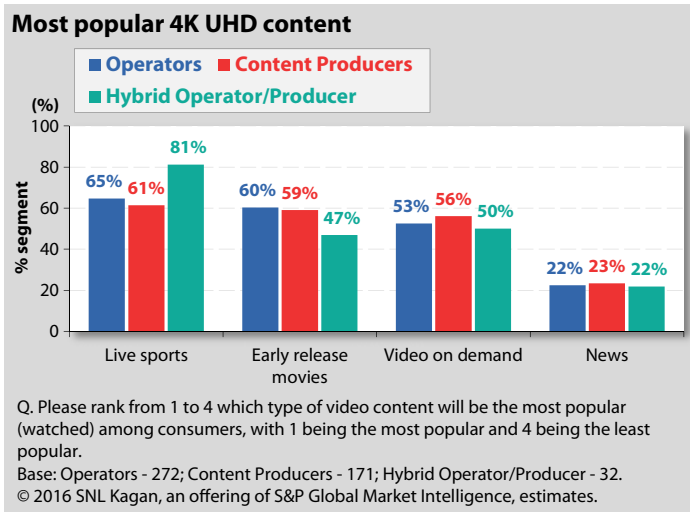


There is also tremendous regional symmetry in the responses, with respondents in all regions agreeing on 4K/Connected TVs and Internet streaming boxes as being the #1- and #2-ranked devices for 4K UHD consumption.



**Live sports expected to be the most popular 4K UHD content, though content availability remains a concern**

Given announced content provider plans to broadcast the upcoming Summer Olympic Games in 4K UHD, it’s not surprising that 65% of video service providers and 61% of content producers expect that live sports will be the most popular 4K UHD content among consumers. Live sporting events benefit the most from the higher resolution offer by 4K UHD and are a major reason consumers continue to opt for traditional pay TV packages.



Live sporting events benefit the most from the higher resolution offer by 4K UHD and are a major reason consumers continue to opt for traditional pay TV packages.

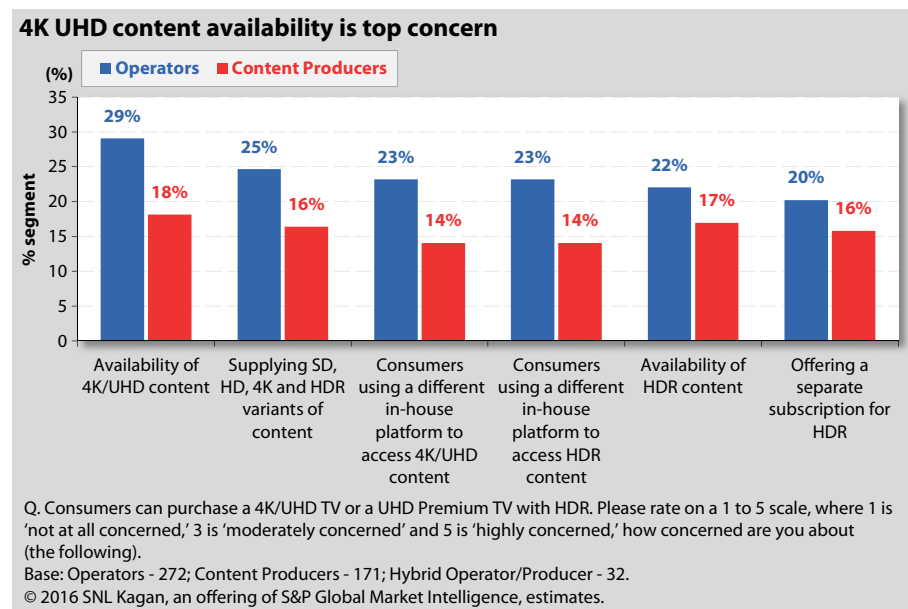
In order to drive revenue and differentiate their services from OTT providers, pay TV providers are offering more access to early-release movies. The next logical step to remain ahead of their competition is to offer these movies in 4K UHD. 60% of video service providers and 59% of content producers say early release movies will be the most popular 4K UHD content among consumers. These results show an interesting shift away from VOD as the current popular form of content, given the availability of first-run VOD UHD programming

from the likes of Netflix and Amazon.

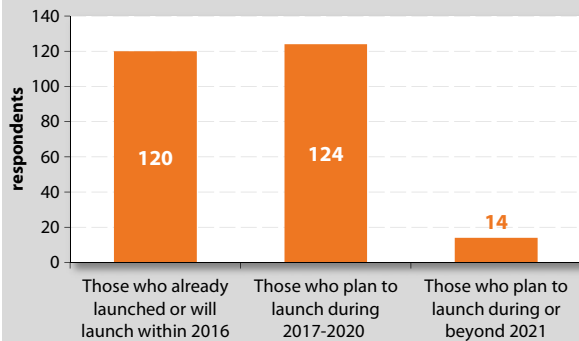
Though much of the marketing hype around TV sets and content over the last few years has centered around 4K UHD, HDR (High Dynamic Range) promises to be just as important to both content producers and pay TV providers. While 4K UHD increases the number of pixels, HDR focuses on improving the quality of each pixel. 4K UHD and HDR can coexist. However, 4K UHD generally requires a larger screen for viewers to see its true benefit, whereas the image improvements provided by HDR can be seen on displays of all sizes.

For the industry, there is now a question of which technology to prioritize or, more precisely, how to correctly market and communicate these two technologies, which have distinct benefits and features. HDR standards development is still a work in progress with the combination of 4K and HDR having been launched at the 2016 CES as “Premium 4K UHD.” There are also disagreements between broadcasters and content producers on the ideal content format. It is possible that both will use different solutions because live and non-live production processes are radically different, with live content more difficult to produce because there is less time to color grade.

We asked respondents to rate their concerns about rolling out 4K UHD content and services in a scenario where consumers have the option to purchase a 4K UHD TV set or a 4K UHD set with HDR. Responses from both video service providers and content producers were fairly evenly split across all options, availability of content ranked highest among video service providers, with 29% ranking it as a major concern. In addition, 5% of operators also said that supplying SD, HD, 4K and HDR variants of content was a major concern.



**Delivering SD/HD/4K/HDR variants a top concern among those with earlier service launches**



Q. Consumers can purchase a 4K/UHD TV or a UHD Premium TV with HDR. Please rate on a 1 to 5 scale, where 1 is 'not at all concerned,' 3 is 'moderately concerned' and 5 is 'highly concerned,' how concerned are you about (the following).  
 Base: Total - 475.  
 © 2016 SNL Kagan, an offering of S&P Global Market Intelligence, estimates.

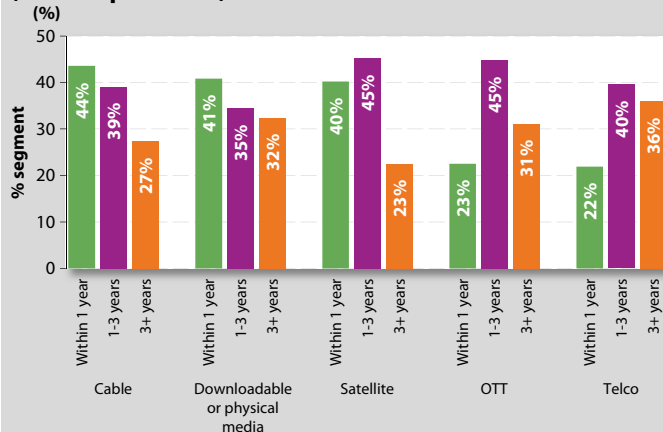
In general, the lack of a dominant response shows the lack of clarity among respondents on the interaction and impact these two technologies will have.

Cross-referencing the 4K UHD concerns with expected timing of 4K UHD service launches, we see that those respondents who have already launched services, or will do so by 2017-2018 are far more concerned about having to supply SD, HD, 4K and HDR variants of content than those launching in later years. Again, these results show quite clearly that those involved in the 4K UHD value chain need to have clarity on the interplay among these technologies and their potential obligation to support multiple files, streams and channels depending on resolution and picture quality.

**Dominant distribution channels for 4K UHD content split evenly; OTT expected to rise quickly**

When asked which distribution channel would dominate delivery of 4K UHD content within 1 year, between 3 years and beyond 3 years, our respondents

**Anticipated domination of 4K/UHD content delivery (% of respondents)**



Q. Which distribution channel do you expect to dominate for delivering 4K/UHD content within 1 year, 1-3 years, or 3+ years?  
 Base: Total - 475.  
 © 2016 SNL Kagan, an offering of S&P Global Market Intelligence, estimates.

were evenly split. Obviously, among video service providers, there is a natural bias to favoring their current distribution method. But the added insight from content producers helps to define which types of distribution channels will dominate in both the short- and long-term.

Within 1 year, cable and satellite operators seem to have the early lead, with 40% and 44%, respectively, saying these distribution channels will dominate. At the same time, 41% say that downloadable or physical media will dominate. UHD Blu-ray players and titles hit US stores back in February 2016 and both Samsung and Panasonic began selling UHD players in Europe in April 2016. But like HD DVDs before them, our respondents believe that downloadable or physical media will

decline in dominance over time, dropping to 32% in 3+ years.

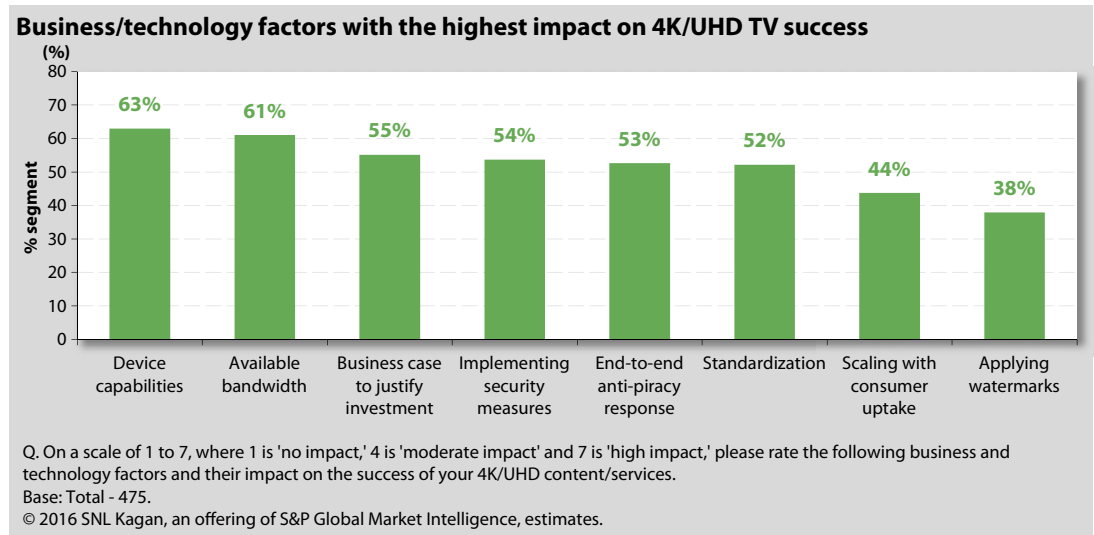
OTT shows the most dynamic growth, increasing from 23% within 1 year to 45% in 1-3 years. OTT then declines to 31% in 3+ years. There are many dynamics at play in these results, including the potential for the integration of third-party OTT services into traditional pay TV offerings, as well as MVPDs offering their own OTT and multiscreen services to counter the impact of OTT providers, such as Netflix.

**Device capabilities and bandwidth top technology and business concerns**

Embarking on a major new technology rollout requires careful planning and significant upfront investment, all with the risk of the service not being well-received and failing to deliver on expected results. Though 4K UHD is a technology shift that both video service providers and content producers are clearly committed to, there are still inherent risks to the success of the rollout.

In aggregate, 63% of respondents rated device capabilities as having a high impact on the success of their 4K UHD rollouts. Along those lines, 61% of respondents rated available bandwidth as potentially having a high impact.

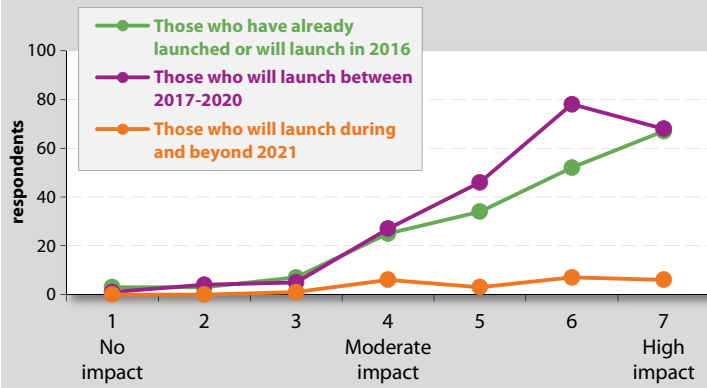
In both responses, we see video service providers and content producers showing concern about elements that, in some cases, may be out of their control. In terms of end devices, there remains much confusion about which ones can decode and display true 4K UHD content. Though products may be advertised as 4K-capable, their actual capabilities may be less than what is required to display 4K UHD video at 60fps. Adding more confusion to the mix is the role of HDR (High Dynamic Range,) which is only now becoming available on higher-end sets. HDR, in conjunction with 4K UHD, enhances the quality of the individual pixels in order to provide superior picture quality. Video service providers and content producers both see the value of combined 4K UHD and HDR technologies. The lingering question is how and when they will be able to take advantage of both.





Available bandwidth is a major concern as 4K UHD streams require a minimum of 15-20Mbps of sustained throughput to each device. Though broadband providers have been increasing their downstream speeds, available sustained rates are still below what is required to stream a single 4K UHD stream, let alone multiple streams simultaneously.

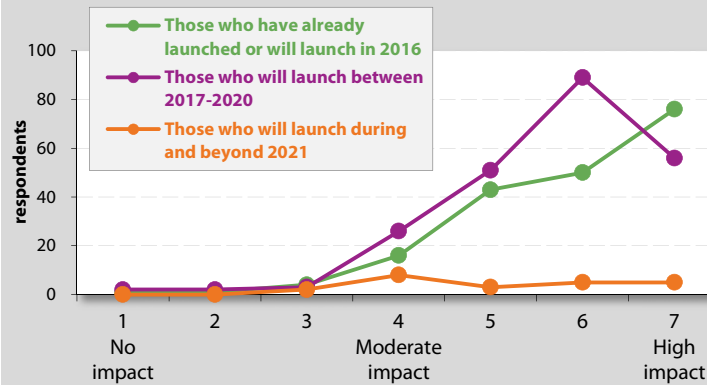
**Business and technology factors with the highest impact on 4K/UHD success: Available bandwidth has a high impact on those launching near-term**



Q. On a scale of 1 to 7, where 1 is 'no impact,' 4 is 'moderate impact' and 7 is 'high impact,' please rate the following business and technology factors and their impact on the success of your 4K/UHD content/services.  
 Base: Total - 475.  
 © 2016 SNL Kagan, an offering of S&P Global Market Intelligence, estimates.

When we cross-reference the business and technology factors with the expected launch timing of 4K UHD services, we see that available bandwidth is by far the factor with the highest perceived impact among those respondents launching in 2017-2018. This raises an interesting question as to whether these respondents would have launched their 4K UHD services sooner had they seen more broadband providers increasing their sustained downstream throughput to rates capable of comfortably supporting 4K UHD video streams.

**Business and technology factors with the highest impact on 4K/UHD success: Device capabilities also have a high impact**



Q. On a scale of 1 to 7, where 1 is 'no impact,' 4 is 'moderate impact' and 7 is 'high impact,' please rate the following business and technology factors and their impact on the success of your 4K/UHD content/services.  
 Base: Total - 475.  
 © 2016 SNL Kagan, an offering of S&P Global Market Intelligence, estimates.

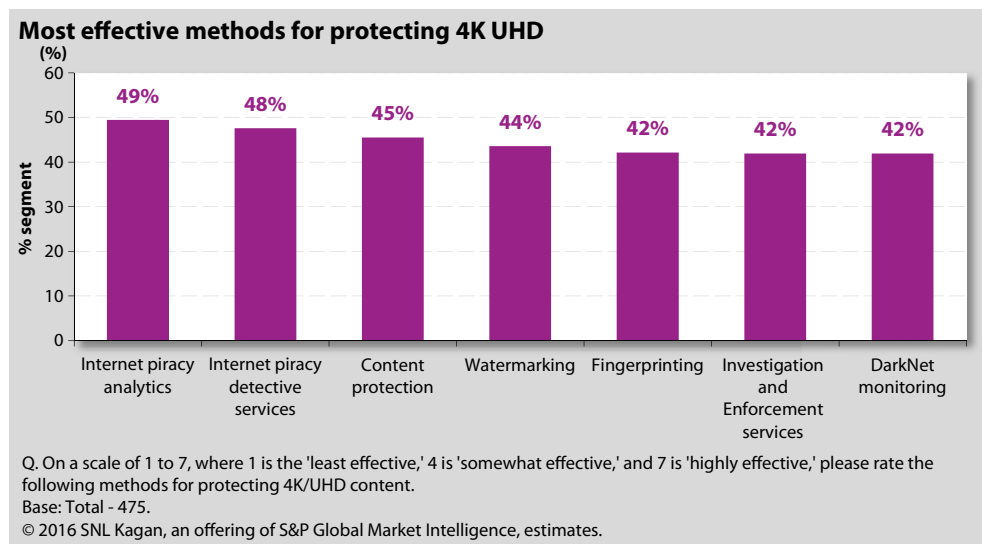
Having nearly the same impact as bandwidth for those respondents launching in 2017-2018 as well as those launching in 2016 are device capabilities. For these respondents, the results show that there is genuine concern—both positively and negatively, we assume—that the capabilities of end devices will have a significant impact both on the success of a 4K UHD service and when respondents expect to launch their services. Even those respondents who have already launched their services note that the end-device capabilities are having a relatively high impact on the success of their services.

**Many options for protecting 4K UHD content; no single method is foolproof**

With both video service providers and content producers anticipating that consumers will be willing to pay extra for access to 4K UHD content, protecting that content from piracy is critical.

We asked respondents to rate a list of methods for protecting 4K UHD content. For video service providers, Internet piracy detection services, content protection and Internet piracy analytics were rated the most effective, with 53%, 51% and 50%, respectively, rating those as highly effective. For content producers, Internet piracy analytics and fingerprinting turned out to be rated the most effective, with 45% and 41%, respectively, rating these methods as highly effective.

The table below shows the results across all respondents.



The results show that no single method is foolproof and that both video service providers and content producers are likely to use multiple methods for securing their valuable 4K UHD content. In this day of multiscreen video transported on multiple networks, including off-net CDNs, multiple protection methods will be employed to ensure the integrity of premium content.

For operators globally, piracy intelligence analytics are necessary to understand the threat landscape and determine just how serious the threat of piracy is to their business. Once they have that understanding, they can then determine the best next steps to mitigating or eliminating the piracy threat.

If we look at the results on a regional basis, one thing that stands out is the perceived higher rates of effectiveness for Internet piracy detection services and piracy analytics among APAC-based respondents. While respondents in other regions show a gradual decline in the perceived effectiveness of these two content protection methods, respondents in APAC show either no decline or a very slight decline in perceived effectiveness.

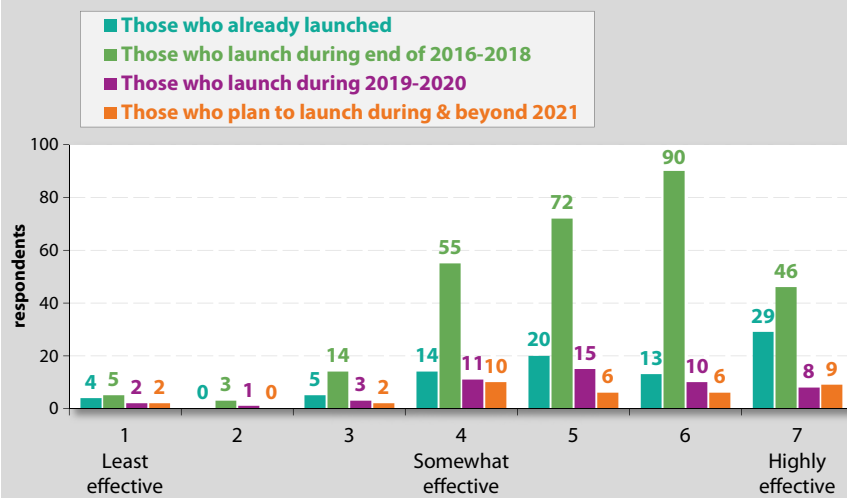
AMERICAS	EMEA	APAC
1. Piracy Intelligence Analytics	1. Piracy Intelligence Analytics	1. Internet piracy detection services
2. Internet Piracy Detection Services	2. Fingerprinting	1. Piracy Intelligence Analytics
3. Content Protection (DRM/CA)	3. Internet Piracy detection services	1. Content Protection (DRM/CA)

© 2016 SNL Kagan, an offering of S&P Global Market Intelligence.

A number of countries in the APAC region, including China, Singapore and Malaysia, have been cited as some of the worst offenders in terms of regulating and punishing digital piracy.

Content producers have lost hundreds of millions of dollars to piracy. So it stands to reason that, when it comes to premium 4K UHD video content, pay TV providers and content producers want to employ every method available to protect their valuable intellectual property from digital pirates, rather than the more traditional forms of content protection.

**Content protection viewed as most effective security method for near-term launches**



Q. On a scale of 1 to 7, where 1 is the 'least effective,' 4 is 'somewhat effective,' and 7 is 'highly effective,' please rate the following methods for protecting 4K/UHD content.  
 Base: Total - 475.  
 © 2016 SNL Kagan, an offering of S&P Global Market Intelligence, estimates.

When we look at which security method respondents believe to be the most effective against their planned launch of 4K UHD services, we see that those respondents that have already launched 4K UHD services or will do so between 2016-2018 rate content protection as highly effective at levels significantly higher than those planning to launch in later years. These results suggest a reliance on more traditional content protection schemes that involve a combination of both hardware- and software-level content protection on all end-devices.

## Conclusion

Global adoption of 4K UHD content and services is expected to ramp up quickly within the next few years, with 2017-2018 expected to be the ideal timeframe for launching, according to our respondents. In an age of increasing competition for video subscribers and revenue, including a growing universe of video service providers and OTT specialists, being first out of the gate with 4K UHD content can provide a tremendous competitive advantage. More importantly for our pay TV operator respondents, 4K UHD content is viewed as a way to maintain their position as the video service provider of choice in subscribers' homes.

Our respondents believe their subscribers will be willing to pay 10-30% extra for access to 4K UHD content. But looking at HD rollouts from a few years ago, this type of premium gives way to competition and more widespread content availability. Not surprisingly, premium content such as live sports and early release movies are believed to be what will drive the most consumption, despite the fact that most UHD content available today is in the form of documentaries.

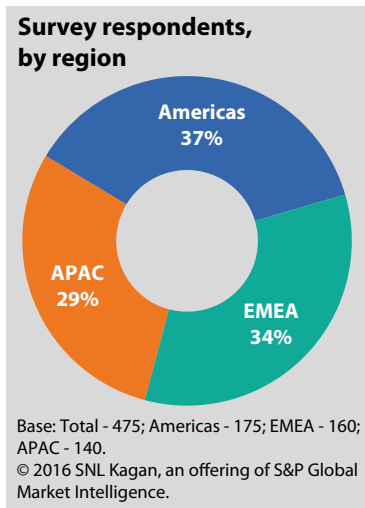
Despite the overwhelming importance of 4K UHD to both content producers and video service providers, there remain lingering questions about technology standards, particularly the interplay with HDR, content protection and the availability of native 4K UHD content, which has thus far limited channel rollouts. Additionally, concern over the end device capabilities and available bandwidth to deliver 4K UHD content remain top concerns for pay TV providers and content producers alike.

Finally, concerns over how best to protect premium 4K UHD content remain, with pay TV providers looking to employ a number of security mechanisms to protect their valuable assets.

However, we have seen these issues resolved before and expect them to be resolved quickly again, so that 4K UHD mass adoption can be achieved within the 2017-2020 timeframe our respondents have suggested.

**Methodology**

In June 2016, Irdeto commissioned SNL Kagan to conduct an online survey of 475 video service providers, video content producers and organizations with hybrid pay TV and content production operations. Video service providers are defined as cable, satellite, terrestrial, telco and OTT providers. Content producers are defined as film or TV studios, sports leagues and broadcasters.



Of the 475 total respondents, 272 are video service providers and 171 are content producers. 32 respondents identify themselves as hybrid organizations with both pay TV and content production operations.

The regional distribution of respondents is fairly evenly split, with 37% from the Americas, 34% from EMEA and 29% from APAC. When surveying about specific plans for technology integration, wide regional distribution is critical in understanding competitive, regulatory and existing technology standards that may facilitate or hinder the adoption of new technologies.

Equally important to the regional distribution of respondents is the influence of the individual respondents in their companies' business and technology strategies, as well as their management levels. 100% of respondents are either the final decision-maker or have influence over the final decision. 100% are at the director-level or above, with 12% serving as a C-level executive. These are critical metrics to ensure we are interviewing the appropriate individuals who have the ability to directly impact their companies' 4K strategies and technology choices.

