

Mobile Video Opportunities for Operators

Success factors for mobile operator video strategies

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Part 1: Executive summary

Video is critical to mobile operator strategies. Mobile video consumption is fuelling the explosion in data traffic, driving operator M&A activity, and a core factor in determining consumer satisfaction with operator performance. Globally, over-the-top subscription, ad-funded, and social video services have achieved huge scale and pioneered innovative business models, putting pressure on how operators can exploit the mobile video boom for their own success. Mobile video is still a vital tool for mobile operators – all leading operators have a clear mobile video strategy.

Mobile video can be used by operators to: drive higher revenues through operator run services, increase ARPU by adding value to higher tier packages through bundled access to premium content, attract and retain customers through zero-rated plans, target specific audience segments through new forms of content, and expand beyond their traditional footprint.

The compound annual growth (CAGR) for global online and mobile video revenues between 2012-2017 reached 37% while at the same time CAGR for leading operators tracked in this report was just 0.2%.

In mature markets, video makes up over 60% of mobile data traffic: Vodafone reported that video and web browsing makes up more than two thirds of 4G traffic; Turkcell reported in 2016 that video was already more than 60% of traffic following its 4.5G network launch. Video quality was identified by IHS Markit's consumer survey as a key factor driving customer satisfaction with their mobile operator.

Project overview

To explore mobile operator video strategies, IHS Markit analysed the activities of the leading 25 operators by revenue, and five other leading and innovative regional operators, to examine the role the mobile video plays. IHS Markit has also considered the strategies, impacts from, and potential partnerships with, leading over-the-top subscription, ad-funded, and social video providers. IHS Markit also conducted a survey of over 3,000 smartphone owners across six countries (Indonesia, Turkey, India, Mexico, UK, UAE) to understand mobile video consumption trends, customer expectations, and satisfaction.

Operators analysed

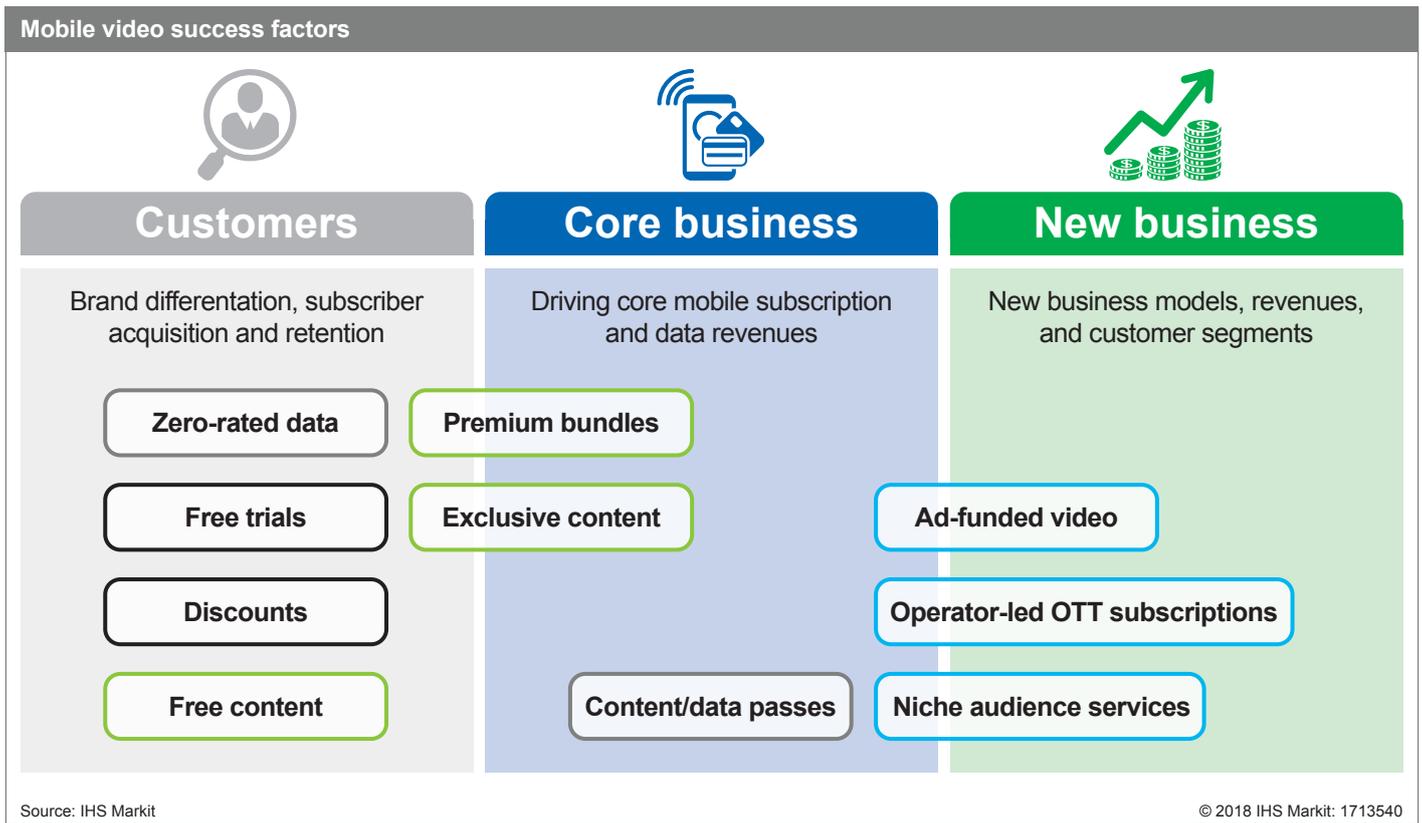
China Mobile	SK Telecom	Telstra Mobile
Verizon	Orange France	O2 Germany
AT&T	Bharti Airtel	O2 UK
NTT Docomo	T-Mobile Germany	Saudi Telecom
Sprint	EE	Rogers
T-Mobile USA	Vivo	Telkomsel
China Unicom	KTF	Singtel
Softbank	Vodafone Germany	Du
KDDI	Telcel	Turkcell
China Telecom	Vodafone India	Vodacom South Africa

Source: IHS Markit

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Mobile video success factors

There is no single measure of operator mobile video success. IHS Markit analysis of the leading operators highlights three core mobile video strategies:



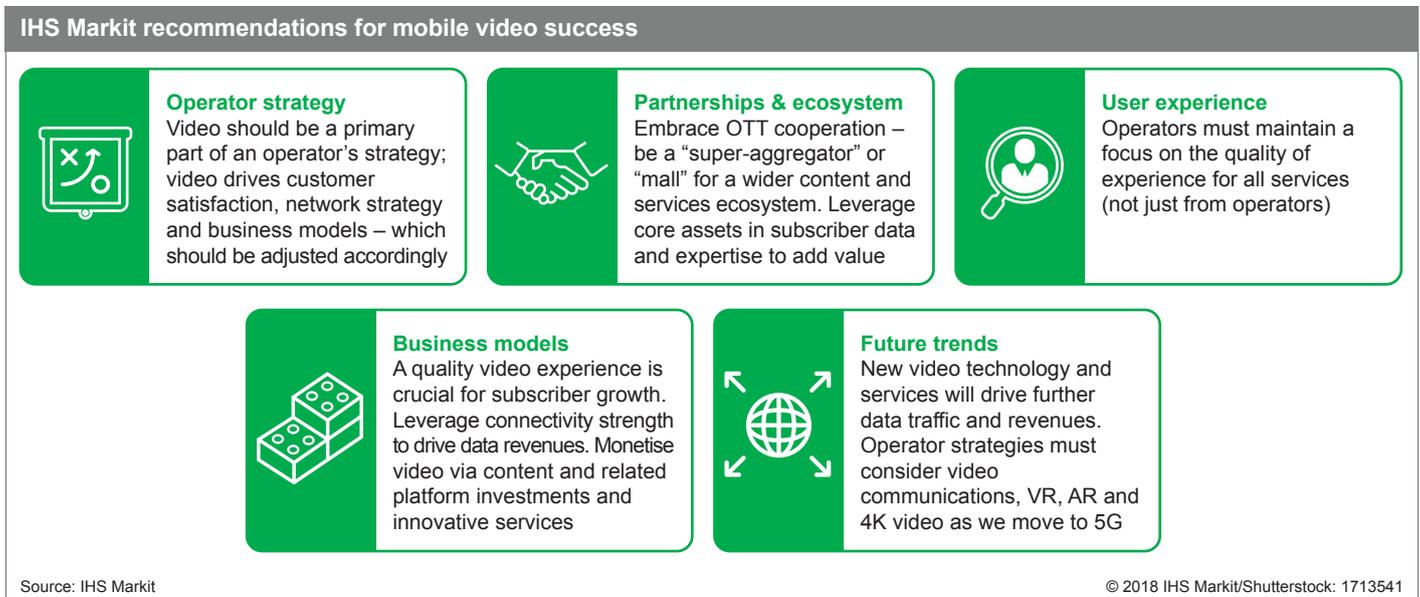
Notable operator mobile video activities include:

Strategy	Operator examples
Zero-rated data	T-Mobile USA – Binge On; Deutsche Telekom - Europe
Basic Partnerships	Softbank Japan - Netflix
Free content	Rogers Canada – Vice video content
Premium bundles	Vodafone – Now TV, Netflix; EE – BT Sport
Exclusive content	Docomo dTV
Content/ data passes	Vodafone Passes
Ad-funded video	Verizon go90
Operator-led OTT	Turkcell TV+, China Mobile Migu
Niche audience services	Telkomsel kids' content

Source: IHS Markit © 2018 IHS Markit

Alongside these core strategies, IHS Markit also suggests five key recommendations for mobile video success.

Recommendations for mobile video success



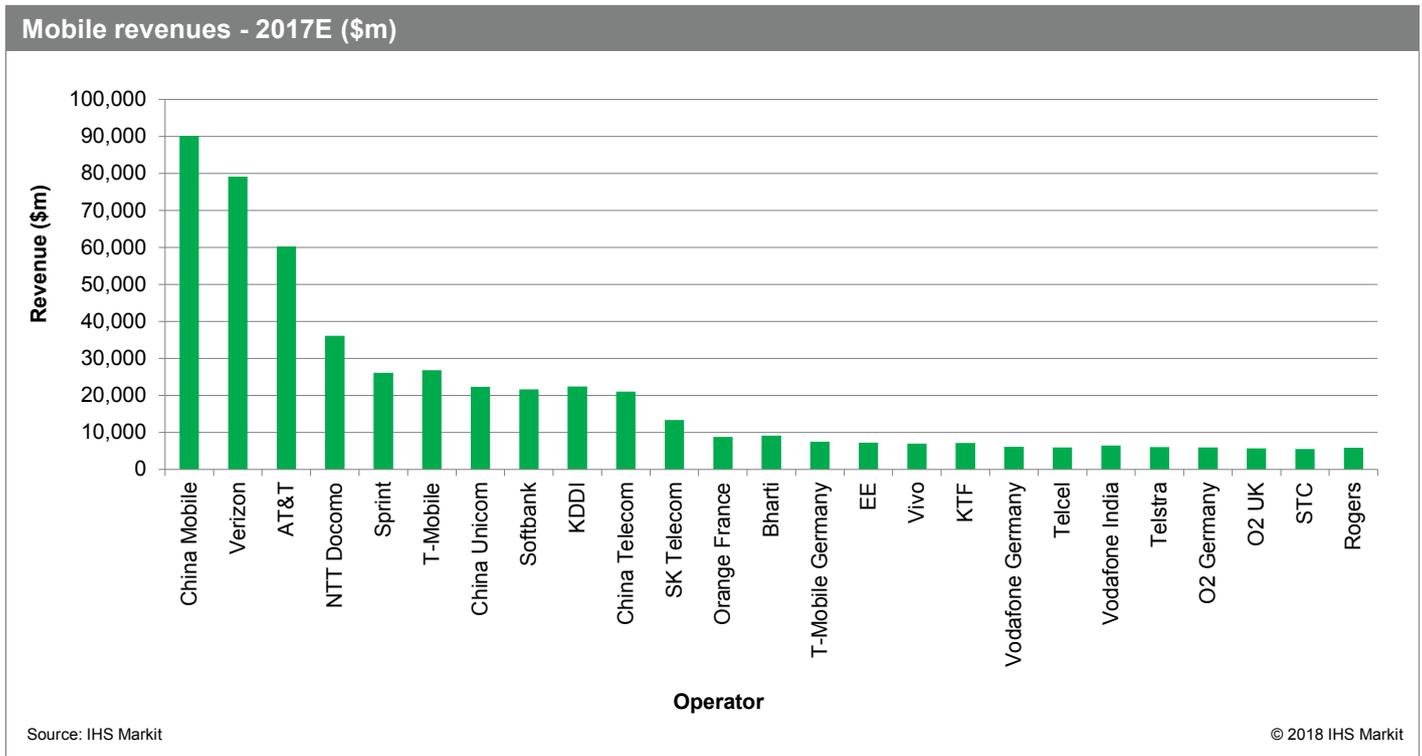
Part 2: Analysing operator mobile video strategies

Mobile operators have aimed to fulfil the promise of mobile video since the launch of the first 3G mobile data networks in the early 2000s. The rise of smartphones and 4G networks enabled mobile video services to build mainstream consumer appeal. With a few notable exceptions - often in Asian markets such as Japan, South Korea, and China – most early mobile operator-led video services failed. The rise of smartphones and advanced 4G networks means most technical challenges have been overcome. The launch of cross-platform video services, application stores, operator billing, and advances in mobile advertising have also solved the monetisation challenge.

All the leading operators identified by IHS Markit have a dedicated mobile video strategy and mobile video is central to their consumer positioning and success. To take advantage of the rise of mobile video, operators must be flexible, partner or compete with other players depending on local market conditions, learn from the best practices of the other operators as well as OTT providers, ensure that they provide a clear data proposition, and maintain a focus on the quality of experience for their own and partner services. Operators are looking to be more than simply “dumb pipes” for over-the-top mobile content and services. By leveraging their core expertise in network management, subscriber data and analytics, and customer relationships, they can partner with OTT providers (and in certain cases launch their own services) to provide a superior experience and add value to video services.

How leading global mobile operators position their video services

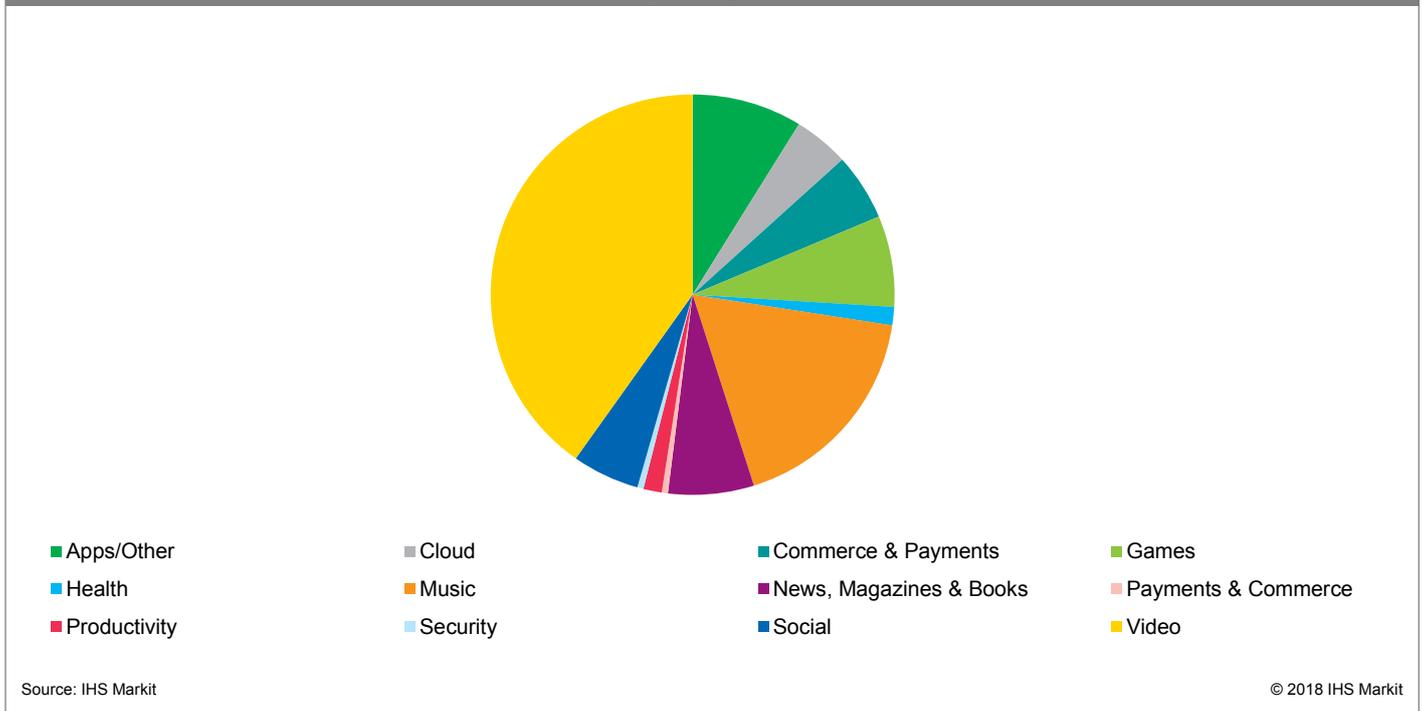
IHS Markit has analysed the content and services provided by the 25 leading global mobile operators by revenue alongside a further five strategically important operators. The core 25 operators claimed a combined user base of 2.95bn subscriptions in 2017 and total revenues of \$513bn according to IHS Markit estimates.



Operators must actively develop and invest in video services

IHS Markit has tracked more than 200 different consumer content and services (excluding voice, data and traditional messaging) offered by the thirty operators. This includes both first-party own brand operator services and those offered in partnership with third-party and OTT players. The Video category made up the largest segment of these, accounting for 40% of (82) services. This was more than double the next largest category, Music, which accounted for 18% of (31) services. Other content and services included in this analysis include: consumer cloud, mobile wallets, security, news and publishing, health, productivity, retail and others.

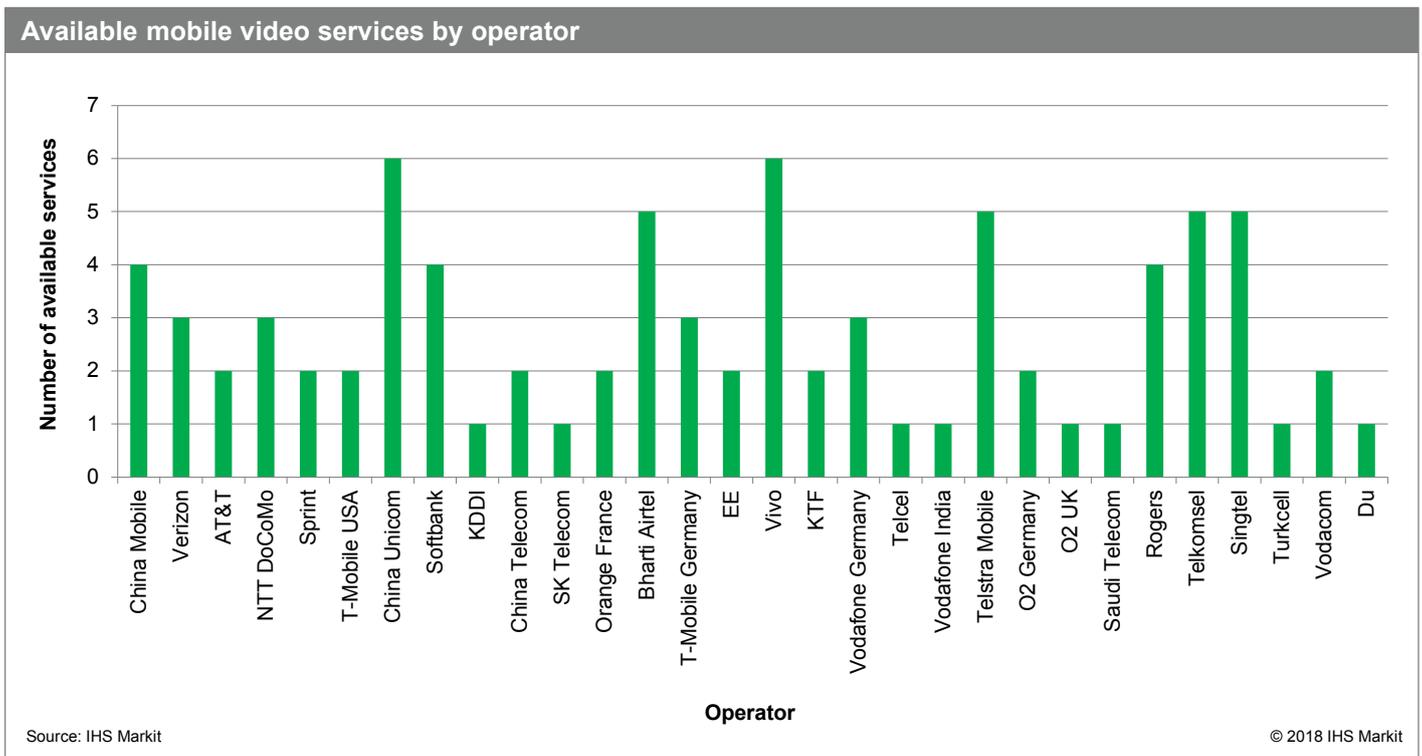
Available mobile operator content and services by category



Number and type of services varies by region

The number of available services varied greatly by region. Operators in Asia (NTT Docomo, China Unicom, Singtel) and South & Central America (Vivo) provided the most services (often a mix of their own brand and third-party deals), whereas the European and North American operators provided a more limited selection focused on their own multiplay video services or premium third-party partnerships.

Japan and South Korea have traditionally been the most advanced mobile content markets with strong operator services launched ahead of the rise of smartphones, app stores and 4G networks. Chinese mobile operators have also played a strong role. The Chinese mobile apps ecosystem – with the absence of Google services on Android – creates more opportunities for operators. Countries like Brazil – in which Vivo has strong portfolio of content and services – also demonstrate how mobile operators can capture opportunities that may not be available elsewhere. Vivo’s portfolio of services includes premium content bundles for video and music that are similar to those found in North America and Europe, but it also has its own content and mobile focused partnerships.

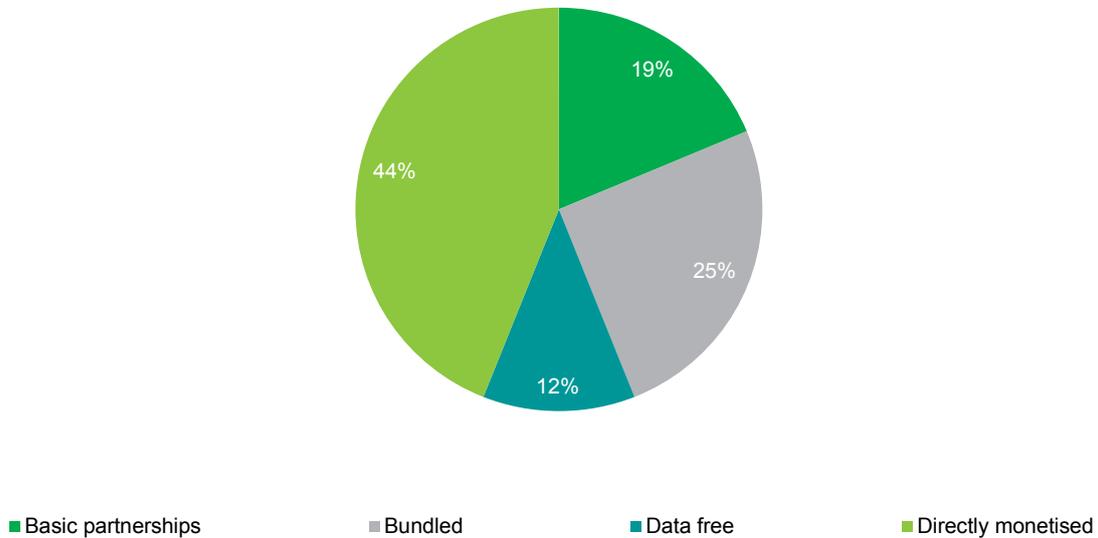


Operators must consider a range of approaches for mobile video success

Mobile operators can deploy a range of strategies for both video services and the wider range of services that they offer. These include:

- **Directly monetised content:** which can include ad-funded services, OTT subscriptions and services targeting niche audiences
- **Basic partnerships:** which include extended free trials typically 1-6 months' duration, after which access to the service ceases or users must pay and also discounted access to premium video services, usually for a limited time period.
- **Bundled services:** including first-party services and third-party premium subscriptions, these can include free content, premium and exclusive content.
- **Data free services:** bundled zero-rated data for one or more services; or passes which include unlimited data for a single service or group of services.

Available mobile video services by strategy



Source: IHS Markit

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Analysis of the leading mobile operator video services shows that directly monetised services are most common, accounting for 44% of the total, ahead of bundled services (25%) – driven by operator interest in partnerships with over the top players. Operator strategies to directly monetise their video content are led by those in South Korea, China, Japan and India.

Paid services can add brand value as well as direct monetisation

Notable directly monetised video services include: NTT Docomo's various TV, anime and video services; services from China's three mobile operators including the successful Migu Hot video app; a range of premium services offered by leading Indonesian operator Telkomsel; various apps offering premium mobile sports content.

Verizon's ad-supported go90 is an example of an operator focussing on advertising to drive incremental revenues. In most cases direct mobile video revenues will only account for a relatively small proportion of their overall business. IHS Markit analysis of the global online subscription video market indicates total revenues of \$29.8bn in 2017 compared with total mobile service revenues of \$513bn for just the 25 leading operators that make up the core of this report. Overall mobile content and data revenues make up an increasing share of mobile operator ARPU and total revenues, but this is driven by data access rather than value added services.

Additional benefits for own-brand operator video

Add brand value through association with exclusive premium content or sports rights e.g.:

- Vivo's NBA app in Brazil
- Rogers NHL in Canada
- Verizon NFL in the US
- Telkomsel's football rights in Indonesia

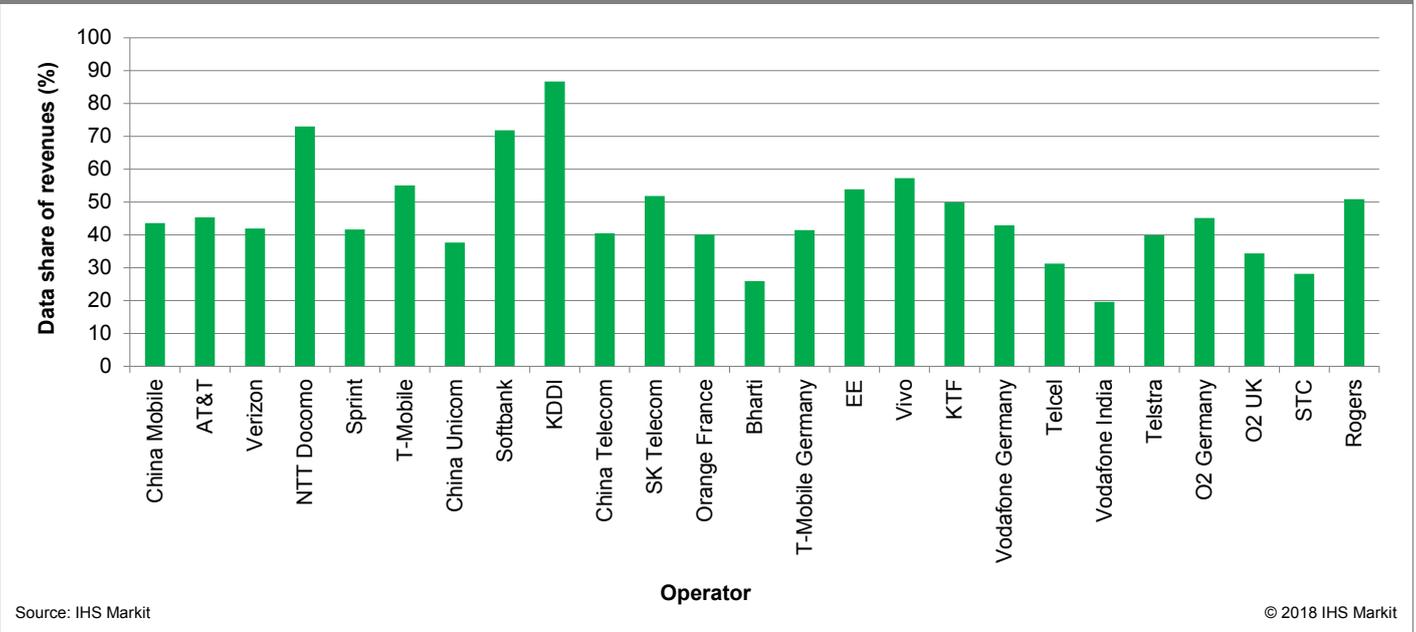
Target particular audience segments through segmented content e.g.:

- Verizon's youth centric go90
- Rogers Canada's millennial focused partnership with Vice
- Telkomsel's kids' oriented Nickelodeon partnership

Source: IHS Markit

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Data share (%) of mobile revenues - 2017



Source: IHS Markit

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Bundled content can drive higher ARPUs as well as differentiation

Bundled video is the second largest segment of operator video services. Operators bundling premium services to drive customer retention and acquisition, promote higher tier plans, and differentiate from the competition has a well-established track record. Premium music services were the first to take advantage of such deals including Telia's partnership with Spotify, Orange's longstanding relationship with Deezer, and many others. Partnerships with subscription video services began to take off with the launch of 4G LTE mobile networks and continue to be a key element of mobile operator video strategies. Relevant current examples include:

- AT&T's HBO partnership, used to drive customers onto the highest tier unlimited plans as well as providing a strong relationship with a premium content brand.
- T-Mobile USA's Netflix deal, also bundled with its unlimited plans to drive higher ARPU and customer acquisition
- EE's bundling of premium sports content from parent BT.
- Du's bundling of Wavo in UAE.
- Sprint USA's deal with Hulu – which features access to the online video provider's entire content catalogue alongside advertising.

Extended trials and discounts are more limited

Video services that offer extended free trials and discounted access to services make up 29% of the available services tracked in this report, but are two of the less popular categories. Operators can find it more difficult to clearly communicate the value of these types of offer. Trial access to services can be a useful acquisition tool for operators and their online/ OTT partners if after the trial customers continue to pay. Such deals can potentially have continued financial benefit to mobile operators if they provide billing support (and take a revenue share).

Only four operators offered discounted video services: Bharti Airtel, which discounted access to third-party services as part of its Airtel TV app; Verizon's discounts for certain NFL mobile content; Telcel's discounts for its Claro mobile video service; and Vivo's discounted access to Vivendi's Studio+ app –for which it was an exclusive launch partner. These discounts are generally focused on a particular audience segment (e.g. sports fans) or in less mature mobile and mobile video markets.

Data free services are growing and can take different forms

T-Mobile USA an early proponent of zero-rated or bundled data services through the Bing On video initiative. Deutsche Telekom has since brought similar plans to Europe in the Netherlands and Germany. The T-Mobile zero rated model generally applies to all or the majority of its service plans making customer acquisition and retention the primary aim. There are few incremental revenues directly associated with the video plans. Operators can use mobile video innovations to more directly drive revenue / ARPU growth alongside customer acquisition. Operators may choose to zero-rate data primarily for their own services e.g. Verizon's go90, South Africa's Vodacom Video, and AT&T's DirectTV now. The video services may be monetised elsewhere, but operators can use data incentives to make them more attractive, drive engagement, and differentiate from the competition.

Operators can also directly monetise data free or bundled video data services by charging an additional fee for add-ons for unlimited data access to specific apps. Vodafone has reported positive performance since launching these plans in Europe in 2017.

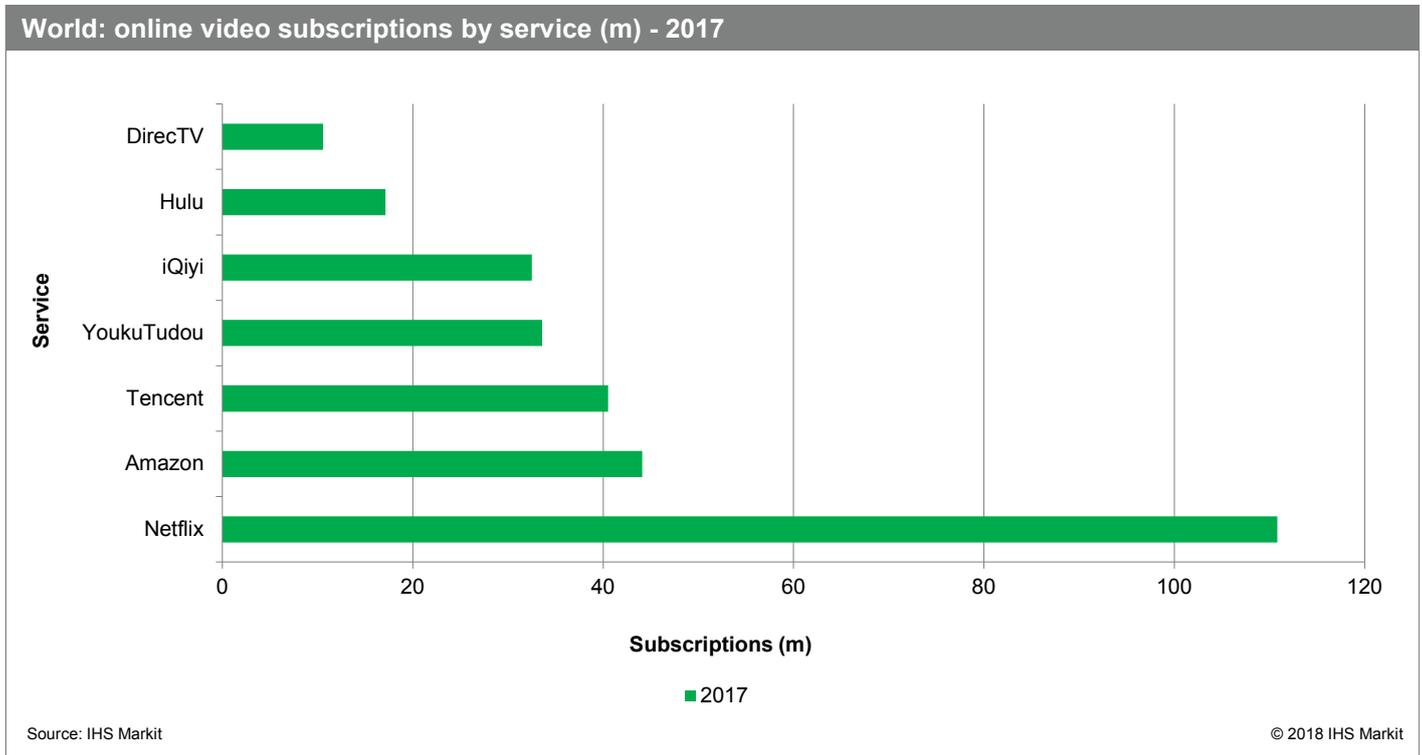
Mobile operators can partner with OTT services to drive data and subscription growth, despite competitive challenge

Online and mobile video subscriptions services boasted a combined global audience of 333m subscriptions in 2016 and 443m in 2017. Netflix, the leading global OTT video provider's 110m-plus subscriptions in 2017 is greater than all but seven of the core operators covered in this report YouTube leading free service – claiming an audience of more than 90% of smartphone owners according to IHS Markit's consumer survey.

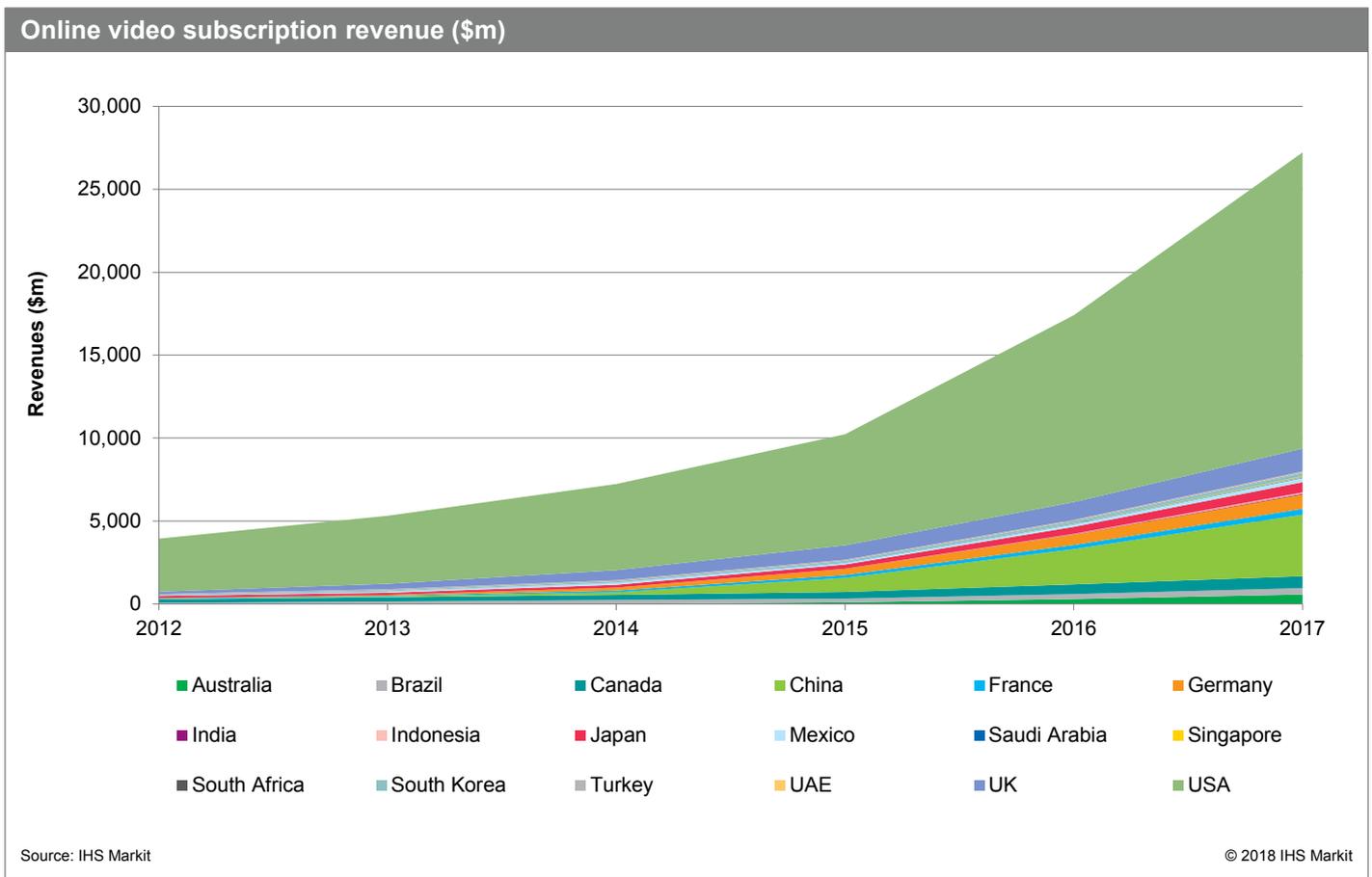
A key factor mobile operators must consider for OTT partnerships and competition is the level of investment in content. Netflix and Amazon are set to spend a combined \$11.5bn on video programming in 2018 and Apple and Facebook also reported to be planning \$1bn video investments of their own. These technology platforms can justify such spending because of their international customer reach and in the case of companies like Apple and Amazon, the use of video to supplement and support wider consumer platforms. Amazon Video is part of its wider Prime retail operations. At the end of 2017, Netflix and Amazon Video were both active in c.200 countries.

Mobile operators, often only active in a few markets, must adopt different strategies and not necessarily compete head on with the global content expansion of leading OTT players. Instead, they can partner with local content producers or form partnerships with local/region centric OTT subscription apps – as many have done with Middle East and Asia-Pacific centric video service iflix. Operators can aggregate different services, provided bundles and

billing support in order to avoid simply becoming “dumb pipes” for third-party content. Operators can also exploit their expertise in network management and subscriber data to add value to their partners and provide a superior customer experience by targeting services and content based on user interest and behaviour.

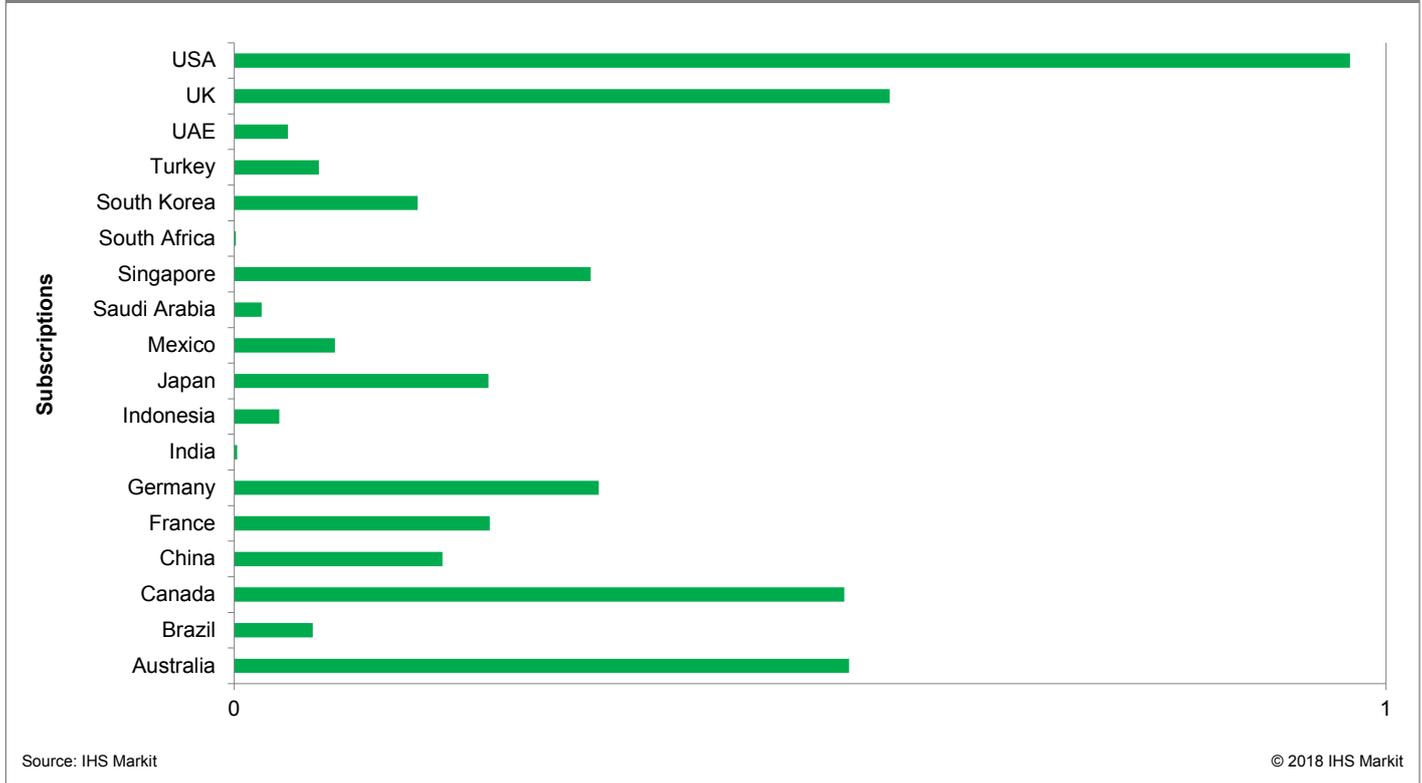


OTT providers have set the benchmark for subscription mobile video success, but operators can learn from them when launching their own services. Operators are also valuable partners for OTT providers. Operators offer valuable marketing funnels for their own user acquisition, the potential to promote or even preinstall video apps, and also boost monetisation through carrier billing partnerships. Carrier billing support is particularly important in less mature markets in which payment card penetration is lower.

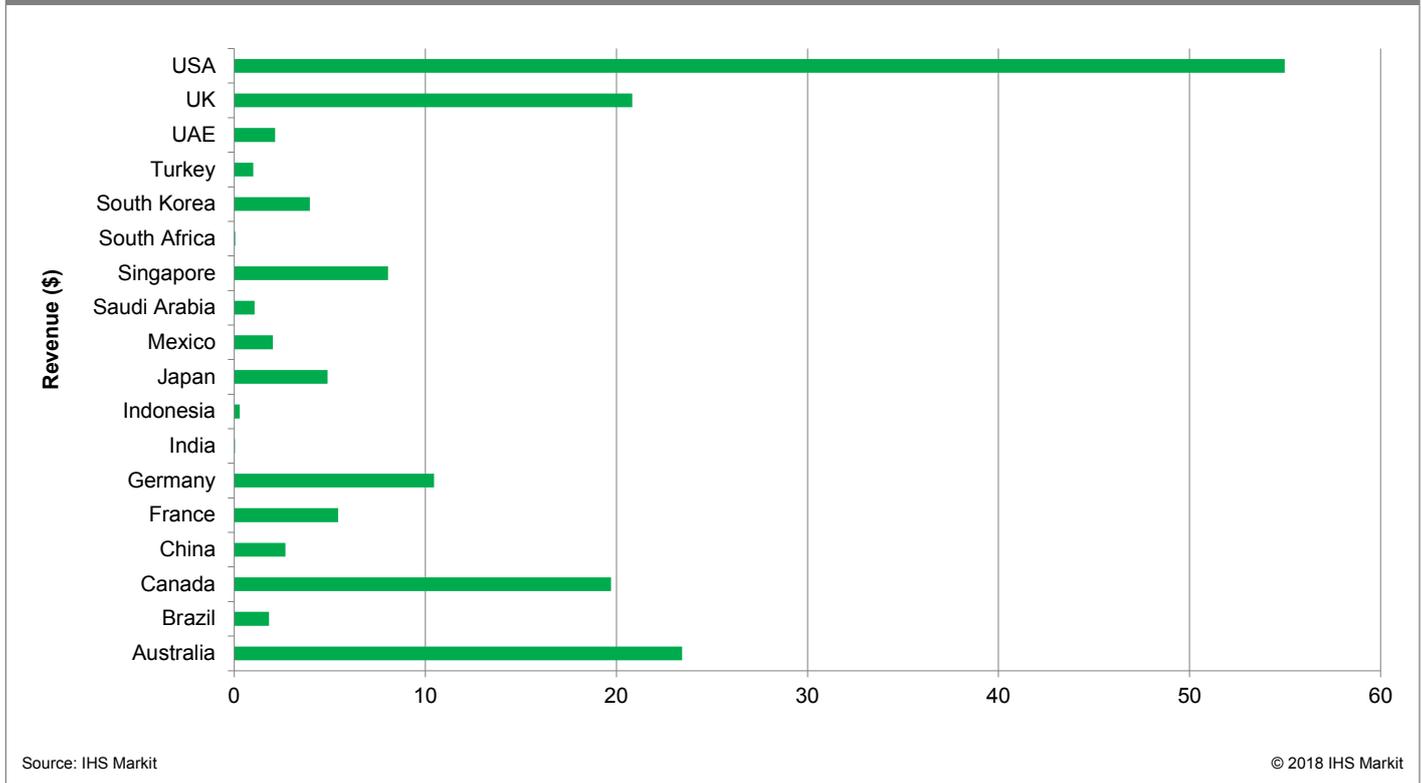


The most mature markets such as the US see almost one mobile video subscription per person; in other leading markets such as the UK and Australia this is closer to one subscription for every two people. But in most markets this is much lower. These relatively underpenetrated markets also provide greater opportunities for operators to launch and monetise their own services. In markets like Japan, South Korea, and China, operators have already played a significant role in driving mobile and online subscription video. Notable examples include China Mobile Zhejiang’s Migu Hot, Au Pass and dTV from KDDI and NTT Docomo in Japan, and LG Uplus’s LTE Video Portal and KT’s Olleh TV in South Korea.

Online video subscriptions per capita - 2017E



Online video revenue per capita (\$) - 2017E



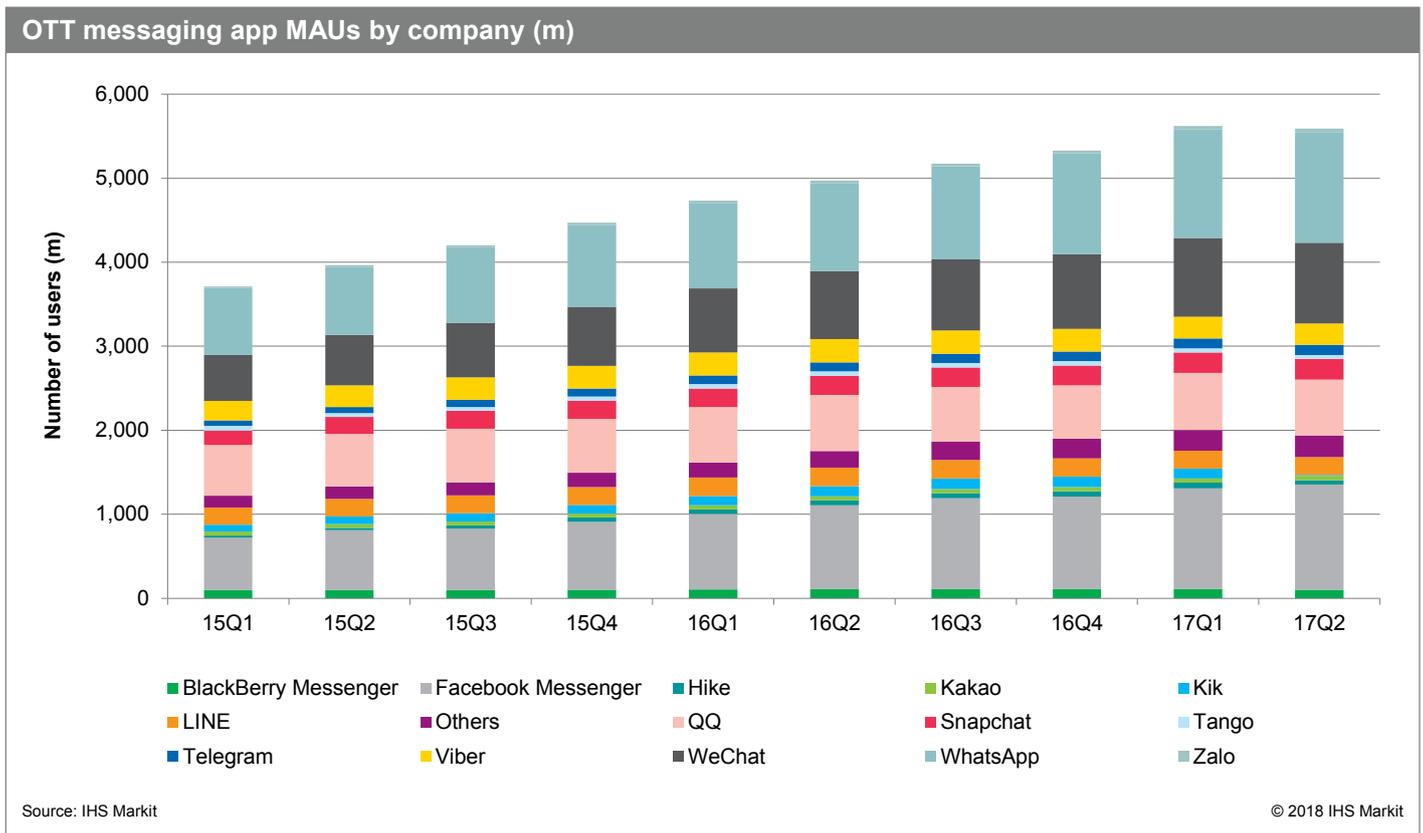
The operator opportunities for subscription video services are clear:

- Partnerships provide a way to add value and customer appeal, push customers onto higher tier data plans, or drive incremental revenues through higher data usage.
- Where there is less OTT video competition, or where mobile operators traditionally play a stronger role in the mobile content, operators can promote their own mobile or multiscreen video services. This is particularly true where operators have used their network ownership expertise to their advantage such as in South Korea. These can be monetised directly by driving subscription revenues, be bundled to differentiate higher tier data plans, or provide exclusive content to differentiate from other operators.
- Operators can enable smarter services through their ability to use subscriber data to drive OTT services and content recommendations, and provide smart data incentives to attract customers and increase traffic and ARPU.

There are also challenges. Operators that build services without considering the nature of OTT competition risk investing heavily for little chance of return. Operators that fail to embrace necessary OTT partnerships risk missing out on relatively straightforward ways to differentiate services and attract customers.

The growth of ad-supported video is also significant. It is more difficult for operators to secure partnerships with free services that demonstrate value to consumers. When launching their own ad-supported services, operators again face the challenge of dominant global players – in this case Google and Facebook rather than Netflix and Amazon. Mobile operators aiming to use ad-funded, social and messaging app based partnerships often opt to pursue more innovative and data centric services.

Netflix's 100m-plus subscription base would place it among the top 10 providers covered in this report by subscriptions, but the scale of the messaging and social app scale is even greater. The leading messaging platforms claimed a combined user-base of more than 5.6bn active accounts in 2017 and video is central to their strategies. Japanese messaging app Line has a number of video services, localised to its key target markets Japan, Taiwan and Thailand, and it made video one of its three strategic pillars alongside AI and connectivity. South Korea's Kakao has a similar video focused strategy in its domestic market. Leading Western apps including Facebook, Instagram, Twitter, and Snap have all made significant investments in video content, features, apps and infrastructure as they look to video to drive higher ad revenues and increased engagement.

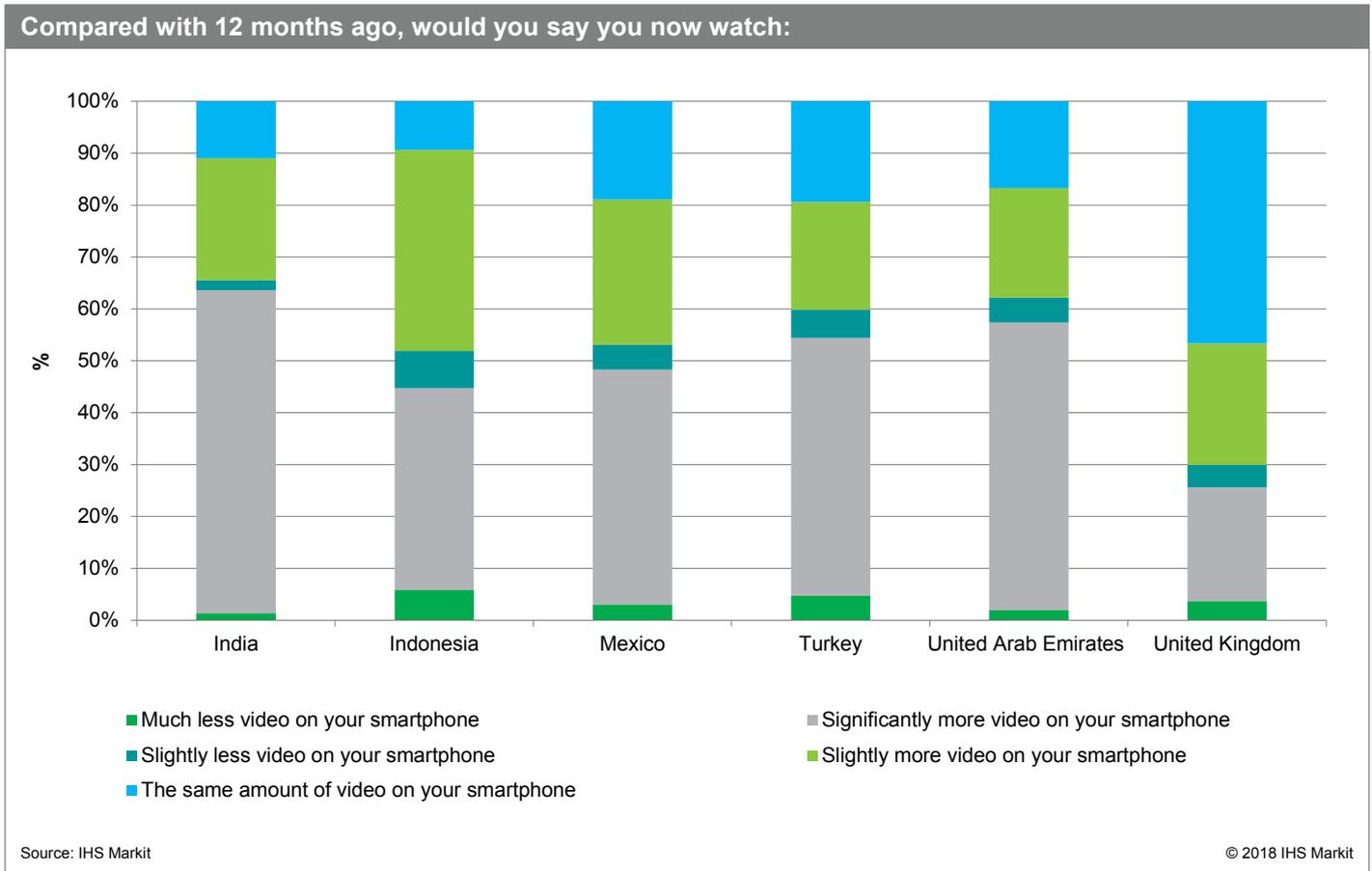


Messaging app video strategies go beyond content. Almost all major app platforms provide video calling/messaging as standard and are looking towards group video, live video broadcast/sharing, and 360 video. This will further drive video data traffic, placing pressure on operator networks, and providing increased monetisation opportunities for operators that are flexible enough to take advantage.

IHS Markit’s survey shows that video calling and communications will be among the most popular new use cases and that video quality is a major factor determining customer satisfaction and retention. Operators must invest in network infrastructure to ensure a high quality service for all video use cases. Operators with their own strong video calling and communications services can exploit their network expertise to demonstrate a superior quality of service and experience compared with social competitors. Other ways operators can take advantage of ad-funded and social video include zero rating social and messaging apps to add value to subscribers and enabling some form of monetisation by selling content/data passes to provide dedicated data for key apps. Vodafone Europe launched such passes in Europe in 2017 which have increased data traffic and revenues. As video communications will drive future video traffic growth, operators should focus on how to monetise the increased data consumption.

Part 3: What do customers want?

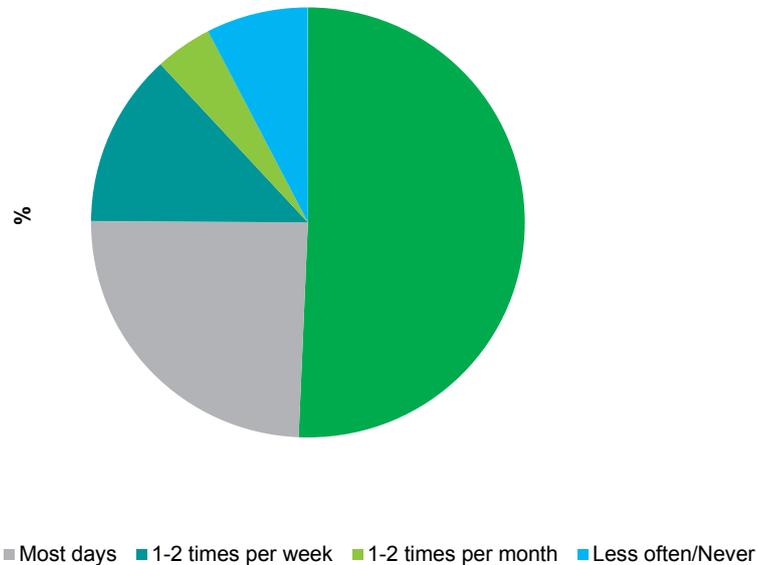
Mobile video viewing continues to rise rapidly



Mobile video consumption continues to grow, with almost half (46%) of all respondents reporting that they watch significantly more mobile video than one year ago. Mobile video growth in the UK appears more limited, but this is the most mature market in the survey and so consumers here reported a more static level of consumption. India (62%) had the highest proportion of users reporting significant growth, a result of growing 4G networks and the launch of new operators and services.

More than half (51%) of smartphone owners report that they watch mobile video every day and more than three-quarters watch mobile video most days. Mobile operators can take advantage of this growth to drive user retention, higher ARPU and data revenues.

How often do you watch video on your smartphone?



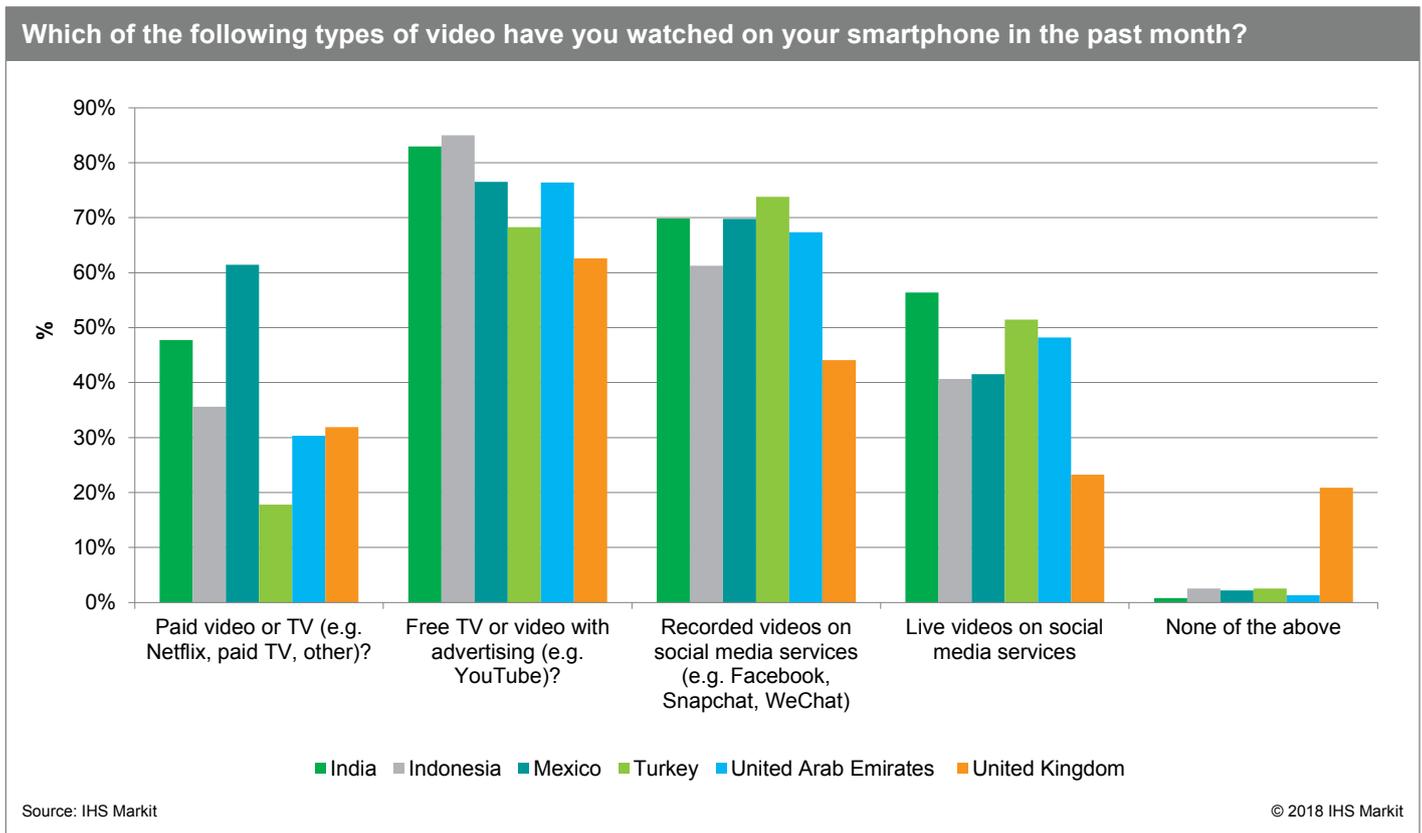
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Free ad-funded and social video services lead

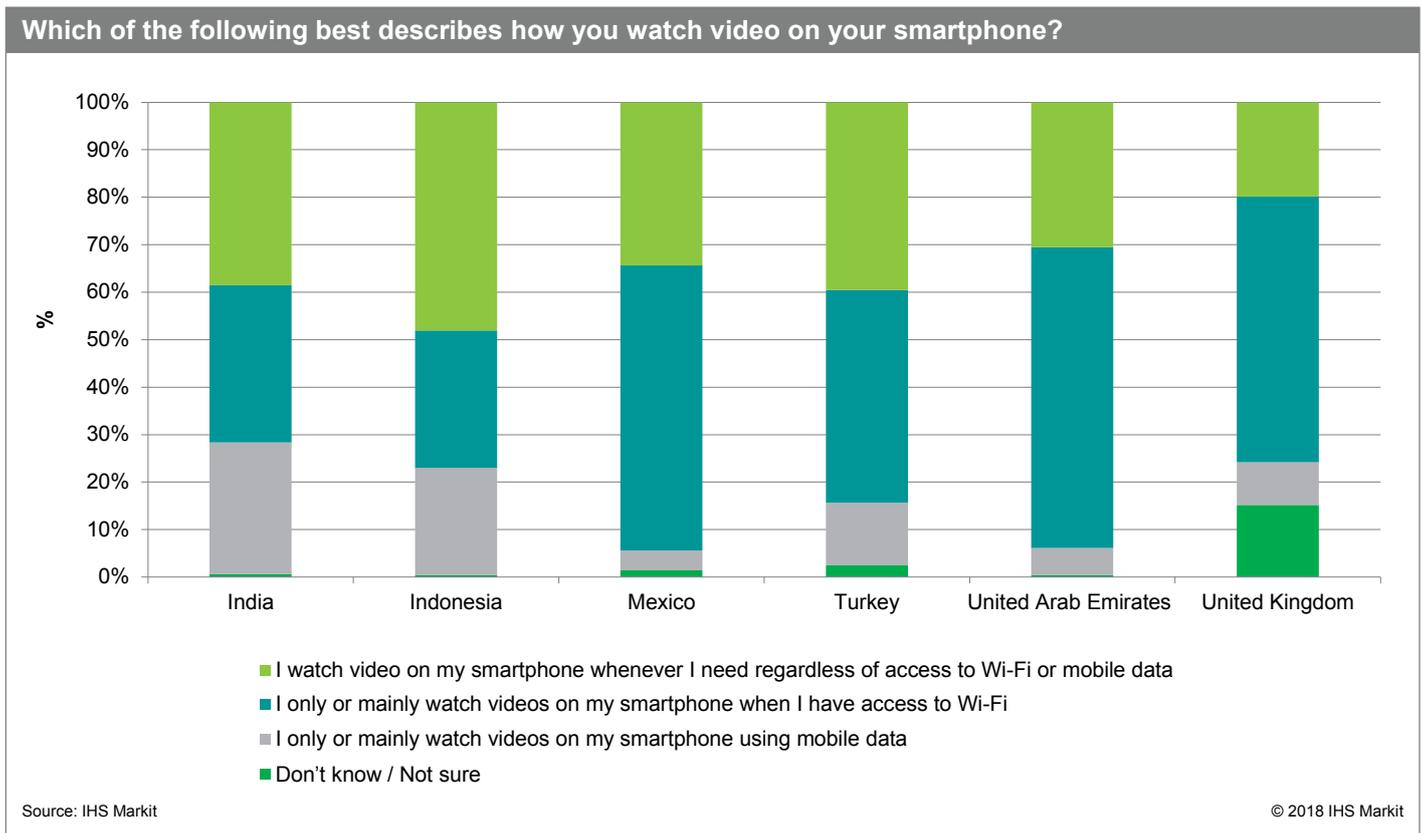
YouTube is the most popular video service across all markets with an average of almost 90% of respondents viewing content each month and over 90% in most markets. Social video services are also very important with around two-thirds of customers viewing video on social platforms and over 40% reporting that they watch live or broadcast content via social apps. Unsurprisingly, Facebook dominates among social apps, as YouTube does across video more generally. There are notable local trends; Line claimed an audience of more than one quarter of smartphone owners in Indonesia.

For operators, the popularity of free content presents challenges as well as opportunities. Operators cannot simply discount or bundle premium content or agree a simple revenue share. Instead operators must be more innovative. Survey results indicate that many customers are interested in operators aggregating content and services. There is a clear demand for zero-rated and dedicated mobile video data, which operators could apply to social media services to attract users, to potentially push higher ARPU plans with dedicated data, and differentiate from the competition. Operators aiming to launch their own free ad-funded services will face other challenges – including the dominance of Facebook and Google.



While 48% of users mainly watch video on WiFi, 49% don't care or use mobile data

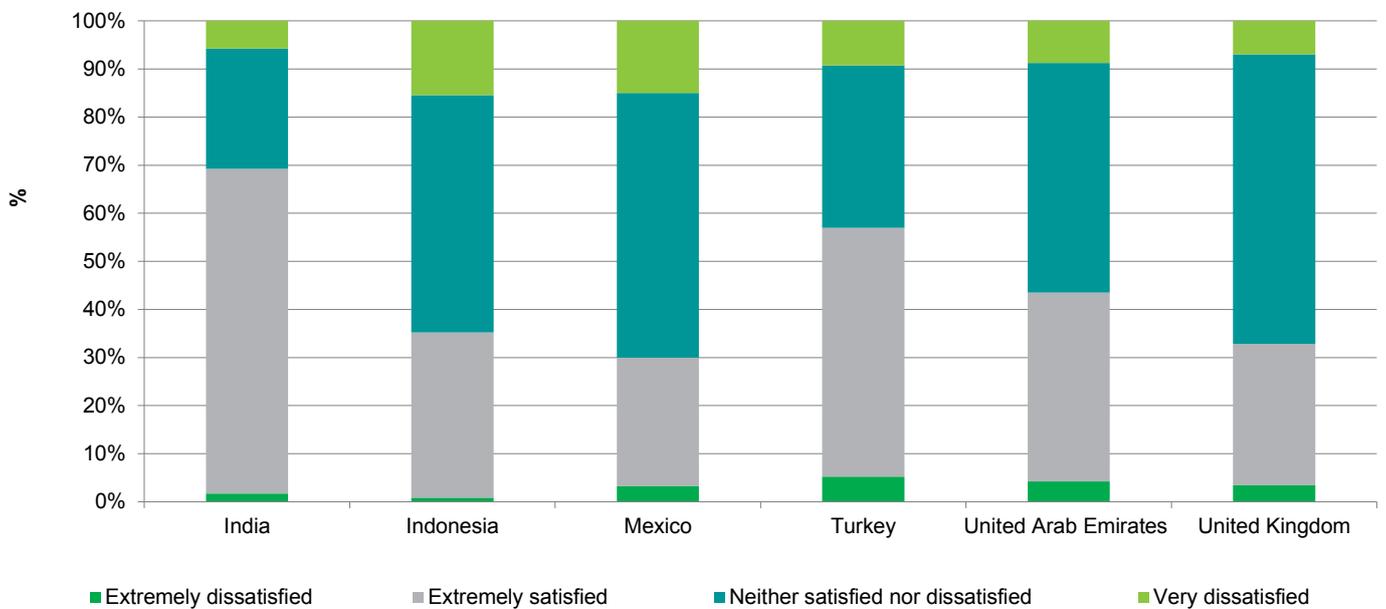
48% of respondents reported that they generally watch video using WiFi over mobile data – this was in part driven by more mature markets with higher fixed broadband penetration including the UK (56%), UAE (63%) and Mexico (60%) leading the WiFi trend. In other markets, where fixed broadband penetration is more limited and public WiFi access less common, the trend towards mobile data was much greater – most notably in Indonesia and India. This underscores the types of market where operators can play the greatest role in delivering and monetising new mobile video services.



Satisfaction: Most users are satisfied with quality of service, but when there are problems they blame the operator

Almost 65% of consumers reported that they were either very or extremely satisfied with the quality of mobile video service when using mobile data, with very few reporting significant levels of dissatisfaction. This is positive for operators, given the importance of mobile video to users’ overall experience, but operators are also most likely to be blamed if the quality suffers. 61% of respondents across the six markets surveyed reported that they would blame their operator for a poor quality experience, well ahead of any other option.

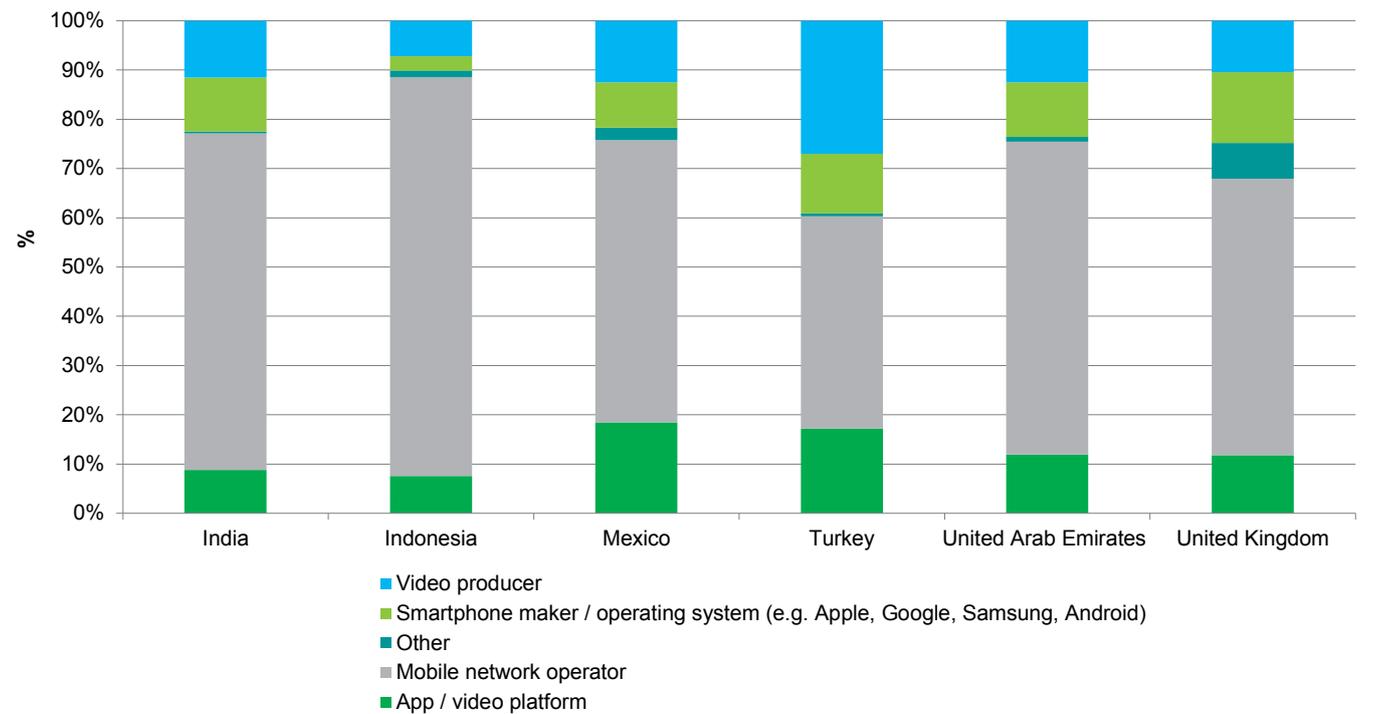
How satisfied are you with the experience of watching video on your smartphone using mobile data?



Source: IHS Markit

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When you experience poor quality mobile video, who are you most likely to blame?



Source: IHS Markit

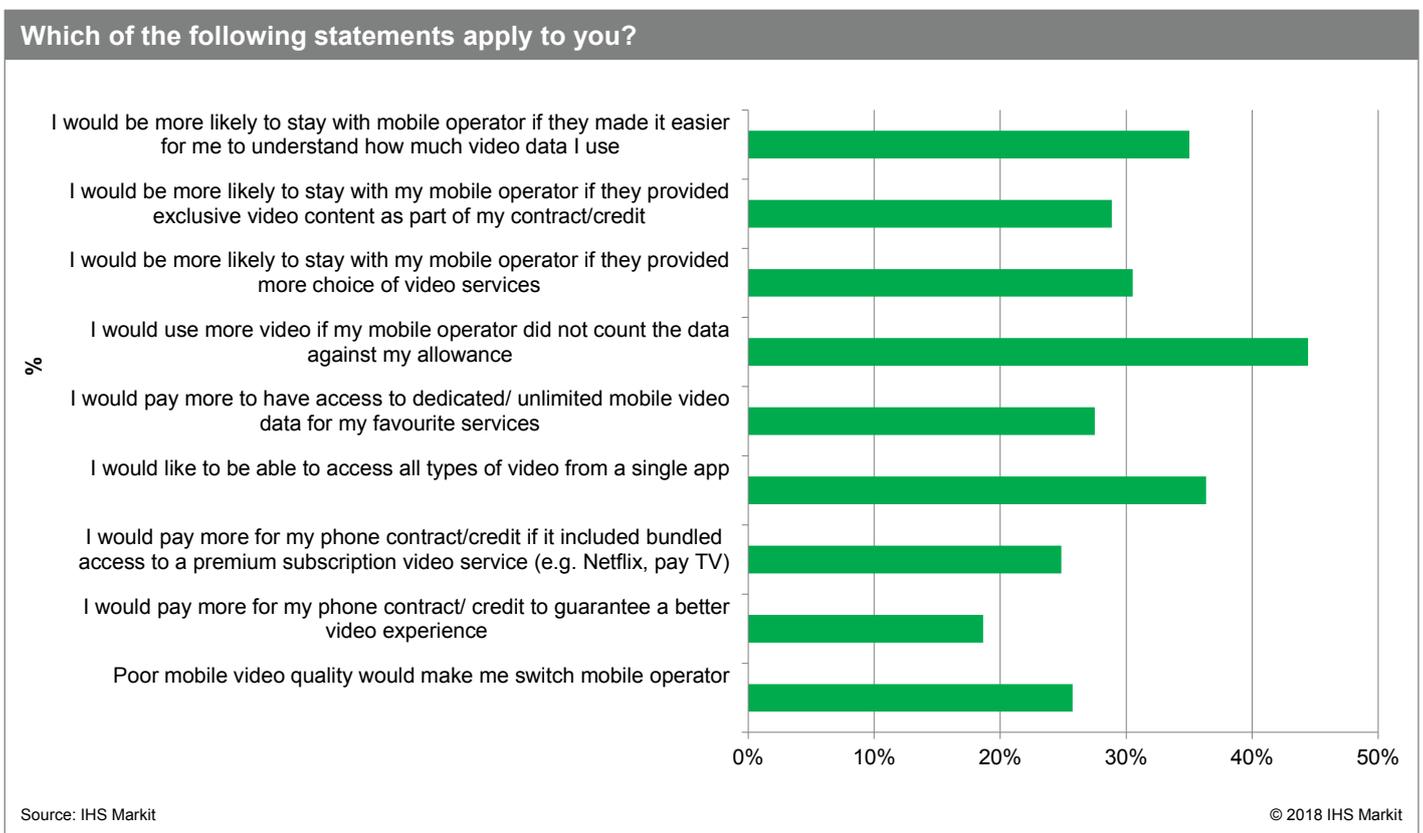
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When considering what would encourage customers to pay more for mobile video services, stay with or leave their mobile operator, and drivers of more video consumption – consumers reported a broad range of factors. The most popular options indicated that users would watch more video using mobile data if:

- The data didn't count against their allowance.
- Customers had a choice of services from within a single app.
- It were more simple to understand the amount of video data consumed.

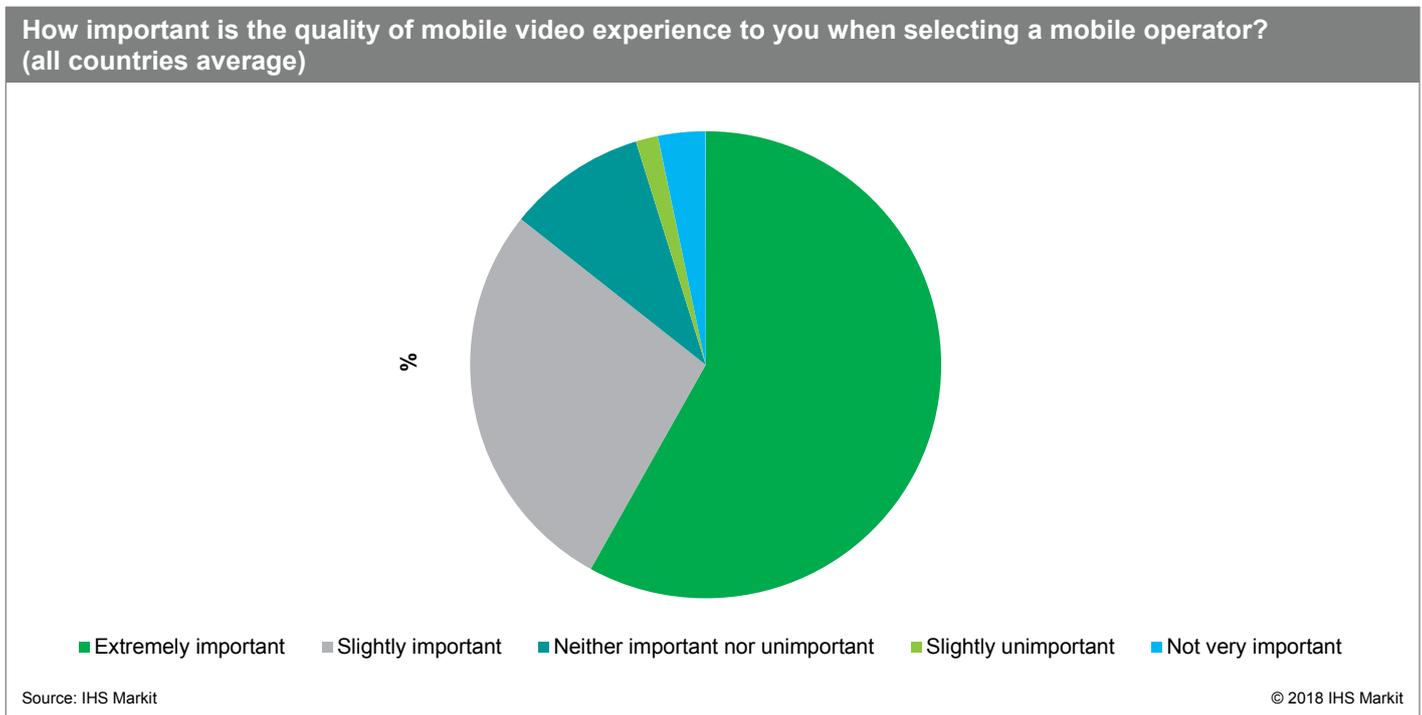
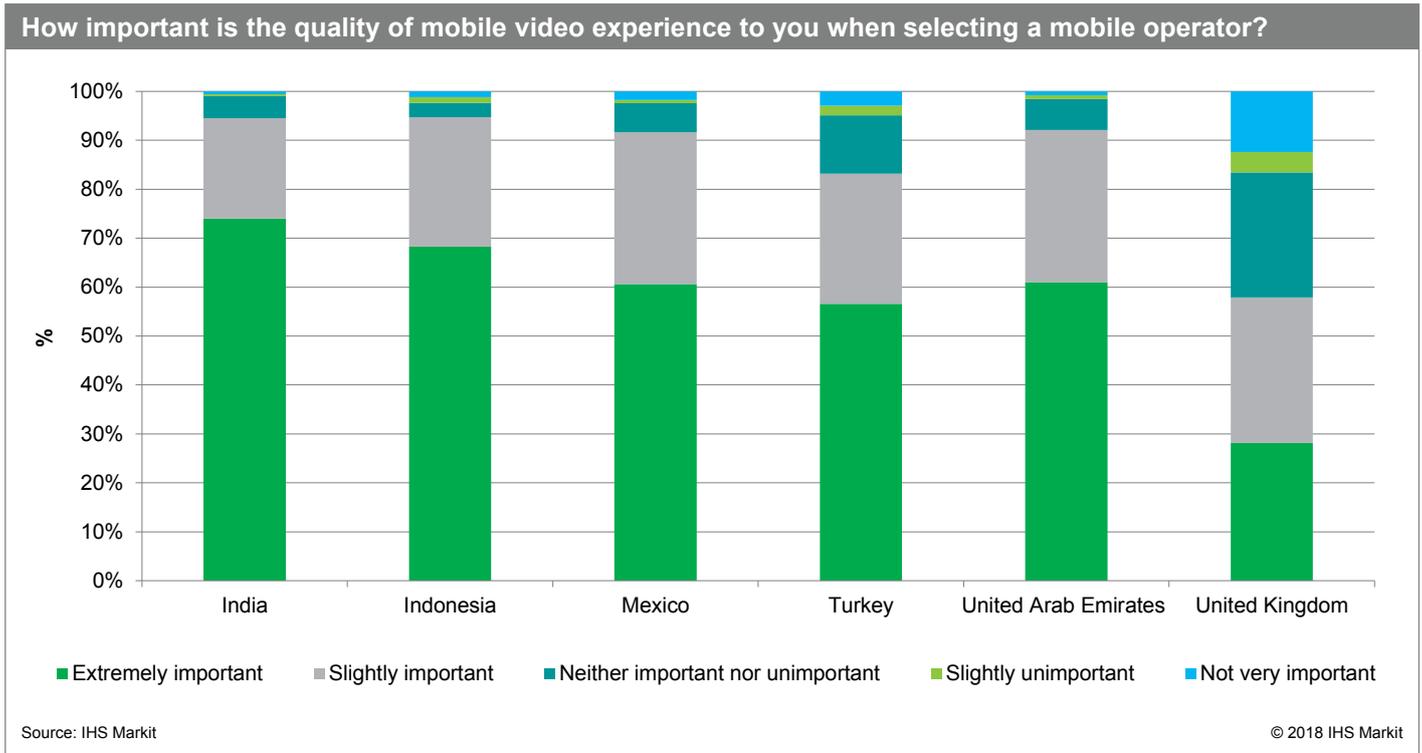
Quality of experience is also important; over one quarter of respondents reported that poor quality video would make them switch operator. Video services can also drive customer retention, with over one quarter reporting that they would be more likely to stay with their operator if they were provided with more choice of video services and/or exclusive content.

Video data is a primary concern that operators must consider when promoting a video service, by ensuring sufficient and easy to understand data consumption or zero-rated services. Service quality and content availability should not be ignored as drivers of customer retention and acquisition. To do this case studies show that a strong marketing campaign is essential.



Quality of video experience is crucial for customer acquisition

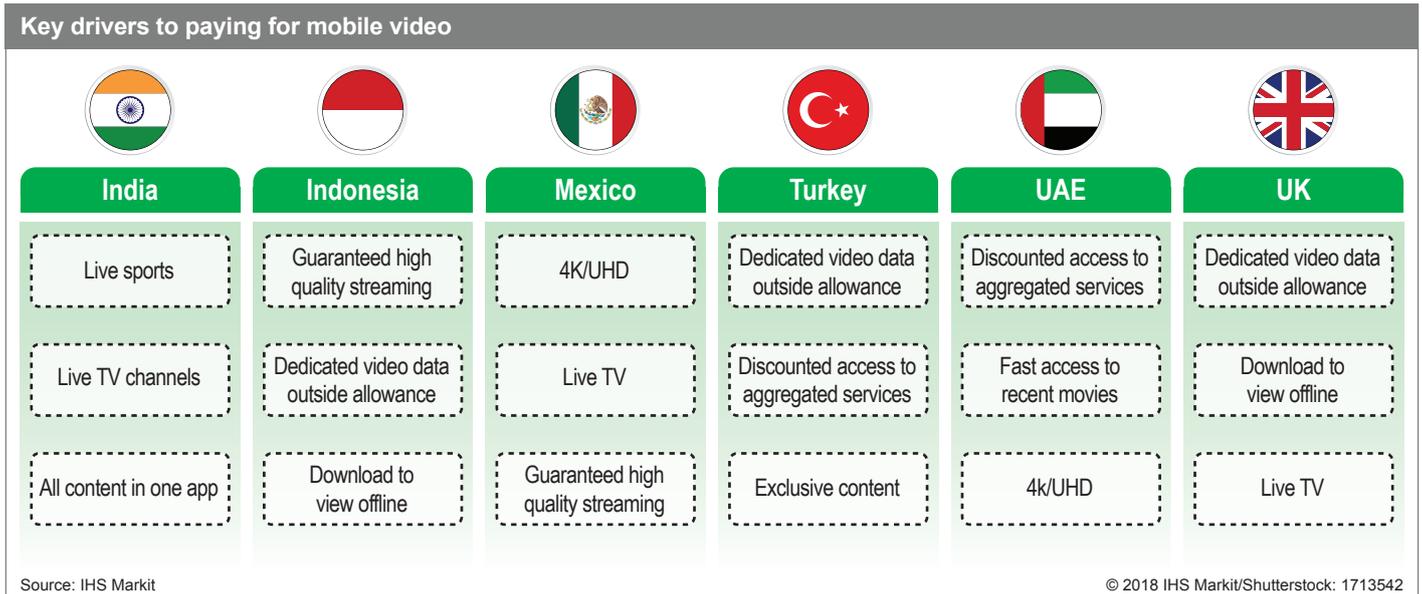
Operators that demonstrate a high quality video experience (across all services) will have an advantage in attracting users. 58% of respondents reported that the quality of mobile video experience was extremely important when choosing a mobile operator, with a further 27% reporting that it is slightly important.



A range of factors can drive consumers to pay for mobile video

When asked what factors would lead them to paying for a mobile video service provided by their mobile operator, smartphone owners' answers varied greatly by country across a range of factors:

Key drivers to paying for mobile video:

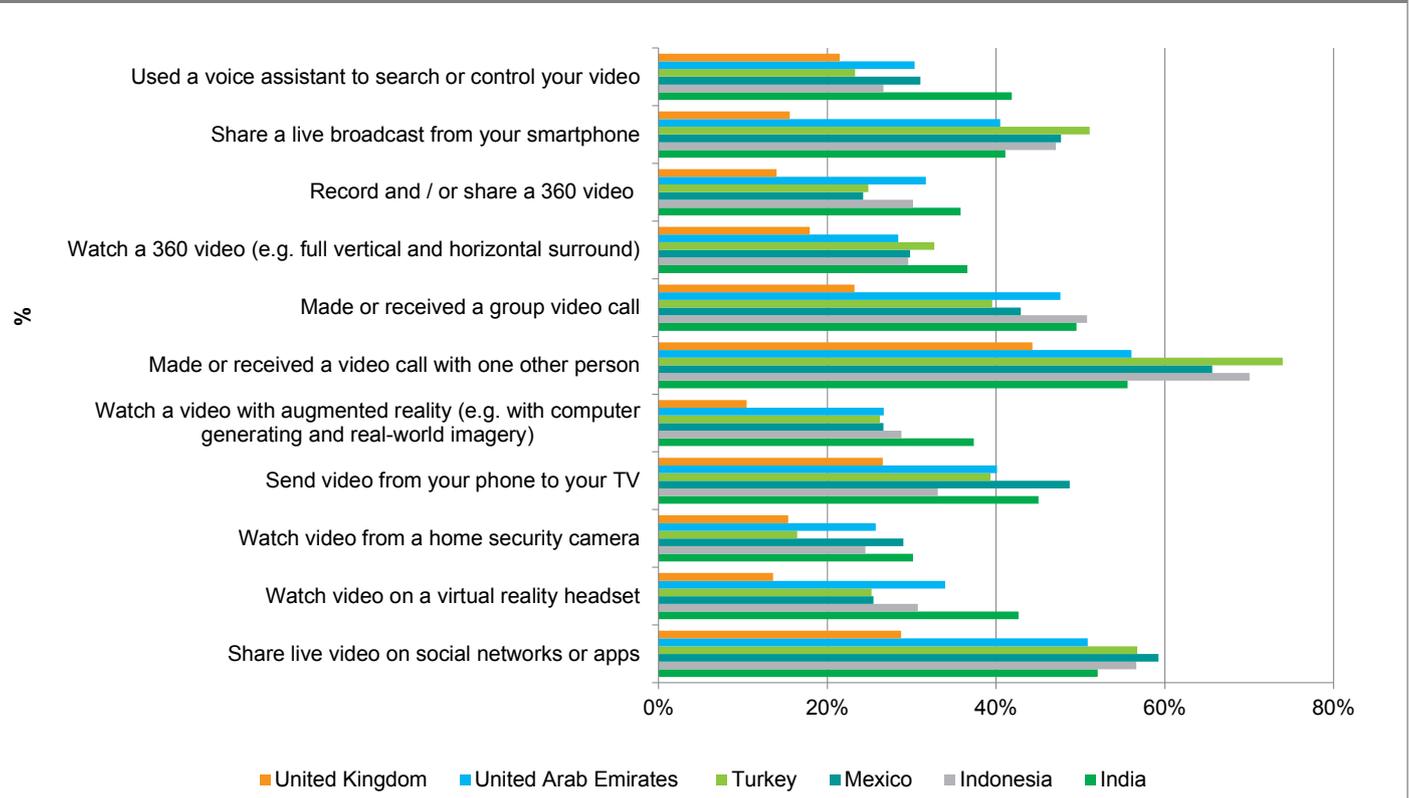


Operators must pay attention to local market conditions and consider a diverse range of video services if they are to encourage users to pay for their own services.

Future use cases: Live broadcasts, social video and video calling prove popular

Looking ahead to what types of video consumers will use in future, social and live video as well as calling and communications services will prove most popular. 50% intend to share live video via social networks over the next 18 months or broadcast video from their smartphones (40%), at least 60% will make video calls or group video calls (40%). Network intensive video use cases such as virtual reality (VR) and augmented reality (AR) are more niche, but still saw an average of 29% and 26% of respondents likely to use them over the next 18 months. This is likely to grow as networks advance and these technologies become more established. For operators this means that mobile video strategies should not simply be focused on professional and entertainment content and they should expand service features and innovate to increase adoption.

Which of these would you be likely to use or do using your smartphone in the next 18 months?

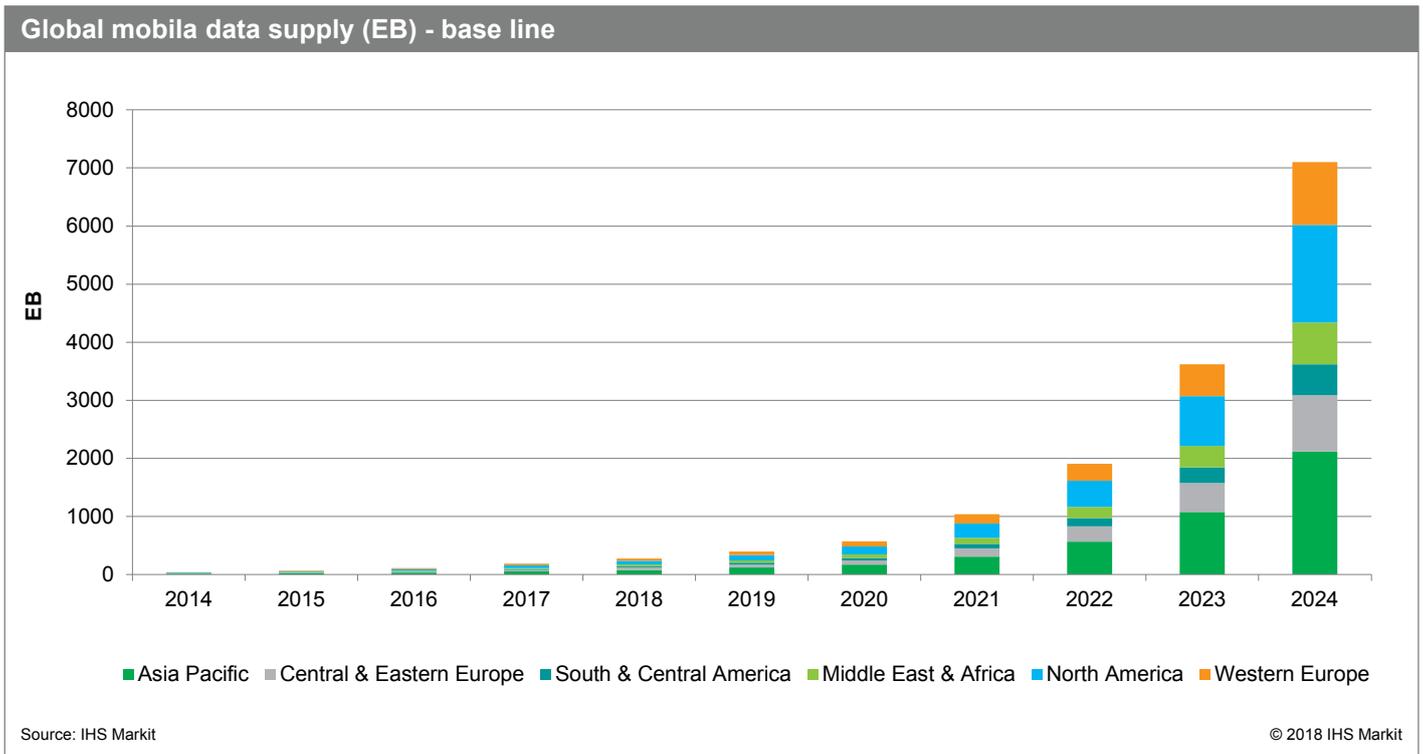


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Part 4: New technology strategies

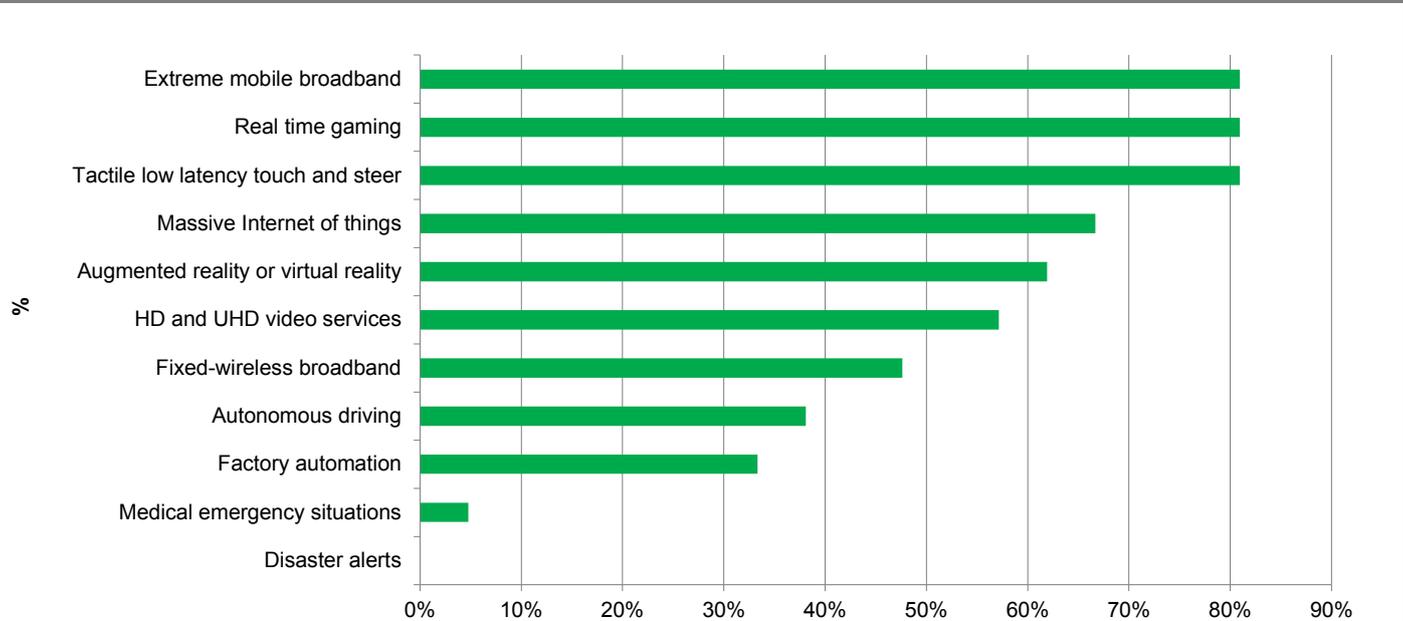
Many leading operators routinely report that video and related apps account for more than 60% of mobile data traffic, a share which will grow to more than 70% in the next 3-5 years. Mobile video data growth presents a challenge to operators in how they manage traffic and capacity on their networks, but more importantly there is the opportunity to monetise this increased video consumption through the strategies discussed earlier in this report.



The launch of 4G networks was a major driver of recent mobile video success. New mobile video, network, and device technologies will play an equally important role in future.

As the 4G era reaches maturity, operators and the industry are looking towards – with the first fixed wireless access services set to launch in the US in 2018, followed by more mobile services in 2019/2020. IHS Markit’s annual operator survey of more than 20 leading mobile operator groups, found that mobile video and related consumer mobile services would be a key driver of early 5G launches and adoption.

Service provider 5G Upgrade drivers: Use cases (2017, n=21)



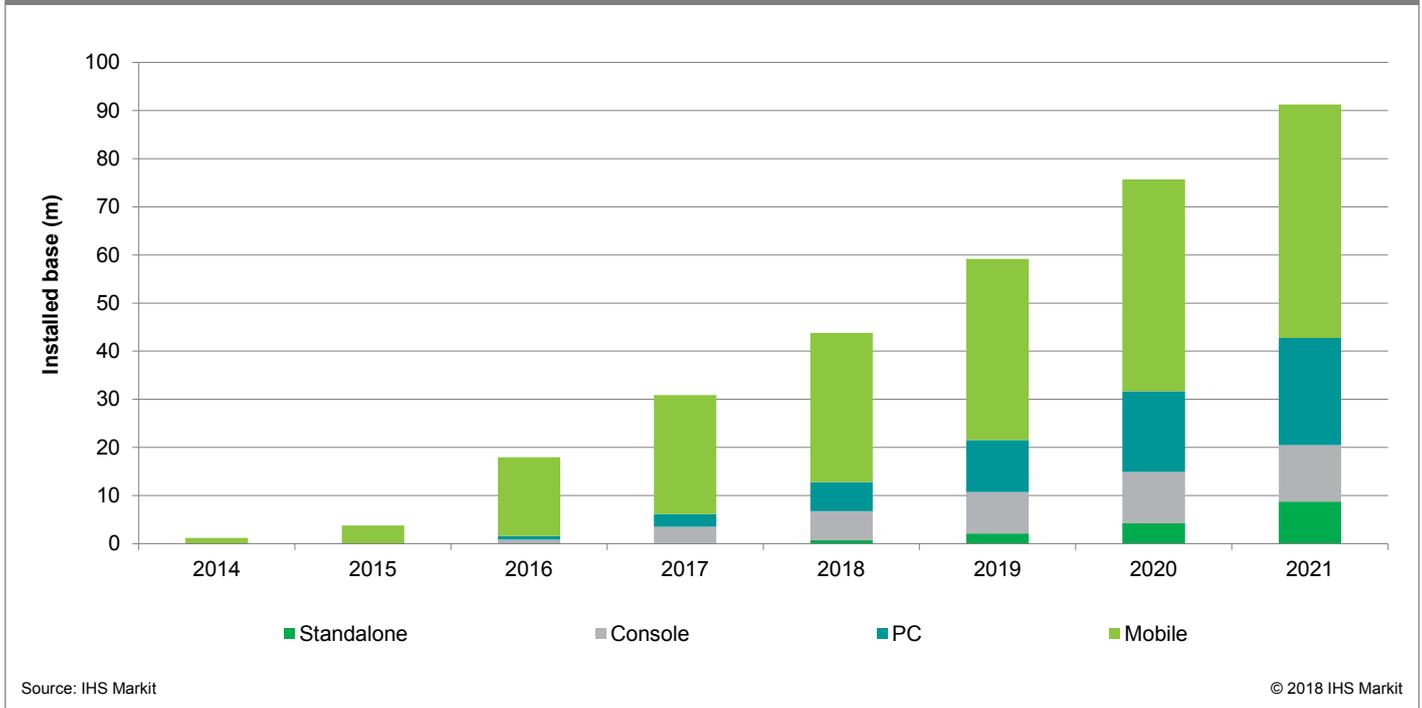
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Advances in video formats and devices will create new opportunities and network challenges. For home video, UHD / 4K content is becoming more mainstream a trend which could spread more to mobile if device support increases. The bandwidth demands for 4K can be as much as 2x-4x greater than HD, and with a lot of mobile video content still delivered in non-HD resolutions, the potential impact on networks is great. The increased bandwidth demands of higher resolution video present an opportunity for operators as they can aim to leverage their network expertise to provide a superior quality of service, particularly as operators move towards more advanced 5G networks.

Other future video trends include VR and AR video. These are currently relatively niche, IHS Markit's forecast for total VR headsets by 2020 is fewer than 100m installed devices, but if mobile VR video attracts widespread adoption, the 360 nature of this video and audio, and demands for lower latency will place increased pressure on mobile operator networks and consumer demand for a high quality experience. Consumer survey results show that these will likely be long-term rather than short term drivers. Availability of compelling content will be crucial for the development of VR services, operators can succeed here by utilising their networks to guarantee quality content delivery given the higher demands and low latency requirements of 360 and live VR video.

World: VR Headset Installed Base by Platform (m)

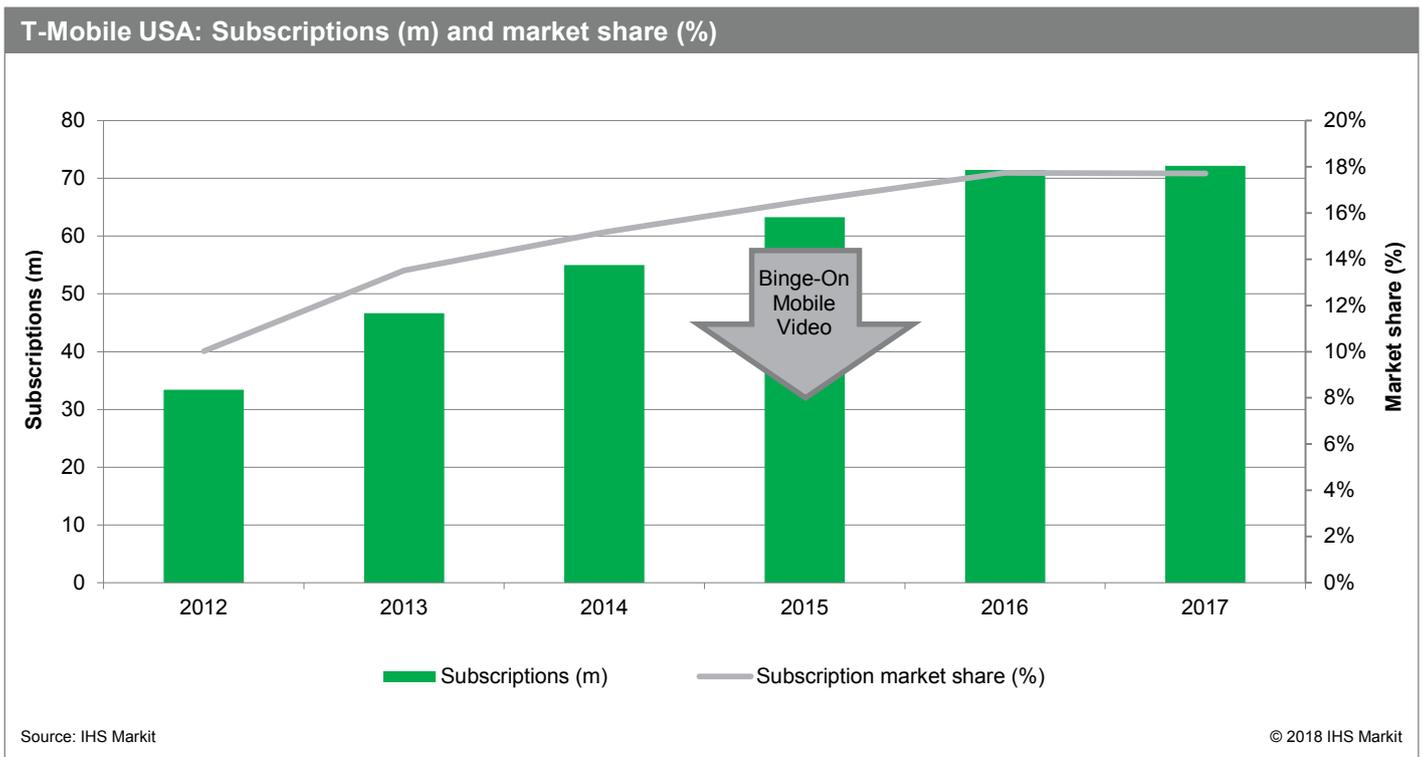
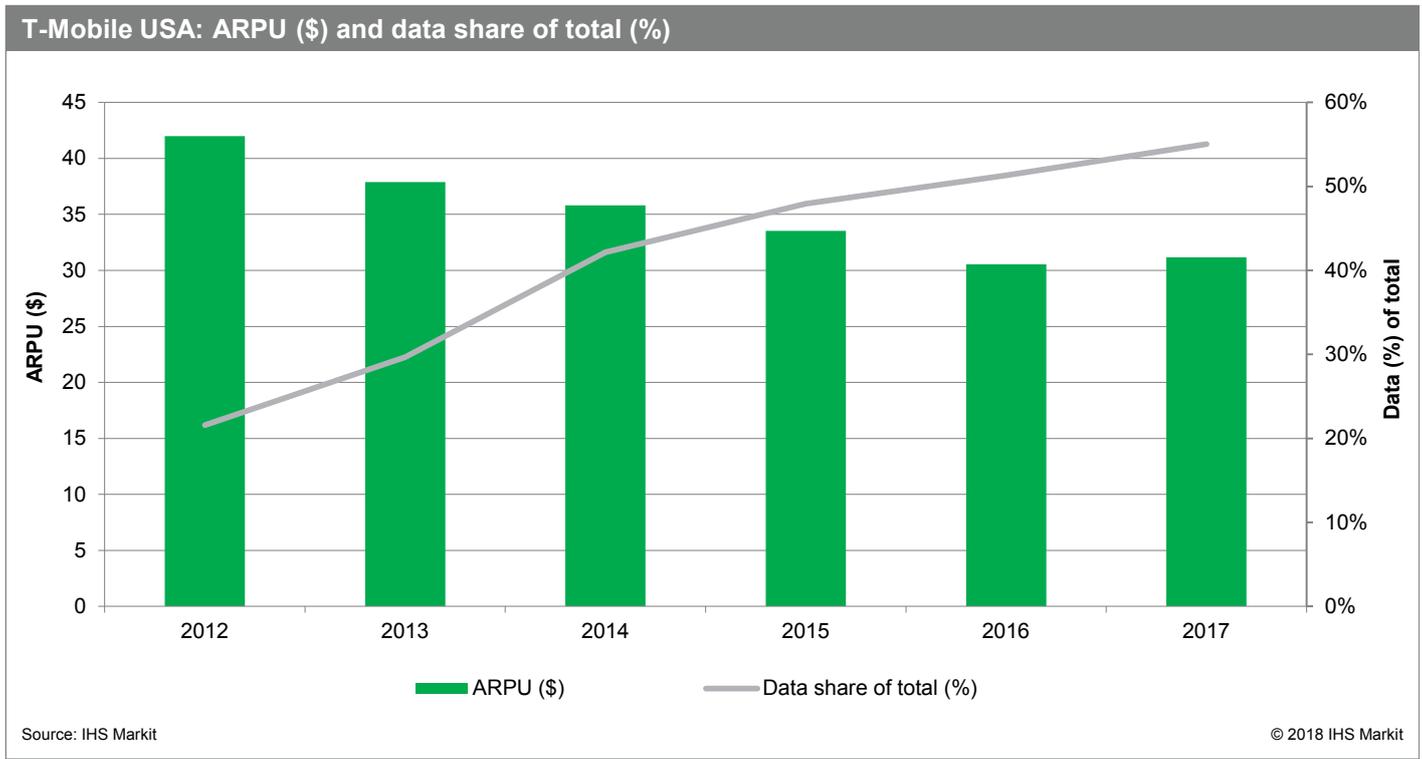


Many of the operators included here are already developing their 5G plans through trials and planned launches with video a key driver. The first 5G launches, expected in the US in 2018, will be more focused on the home environment through fixed wireless access (FWA) services, but video and VR will be critical to early trials and deployments in South Korea, China and Japan in 2019 and 2020.

Part 5: Case studies and recommendations

T-Mobile USA: zero-rated data to drive customer growth

Number four ranked US mobile operator T-Mobile is a notable example of an operator using a zero-rated data plan to help grow its overall subscriber market share. Launched as part of its wider “Un-Carrier” marketing campaign, T-Mobile’s zero-rated Binge On service provided zero-rated video data (limited to 480p quality) for a range of online and mobile video services including 24 at launch, enabling it to leverage some of the brand strength of its partners. Since launching Binge On T-Mobile grew its subscription share from 15% to 17% and its total subscriber base from 61m to over 70m. T-Mobile’s zero-rating policy, supported via optimising video, was a success in driving its initial market share growth, but it has expanded its operations to push higher ARPU with new video strategies. T-Mobile has since evolved its plans to include unlimited data, with a premium to access HD video content and drive further monetisation, as well a high profile partnership to bundle Netflix with highest tier unlimited plans.



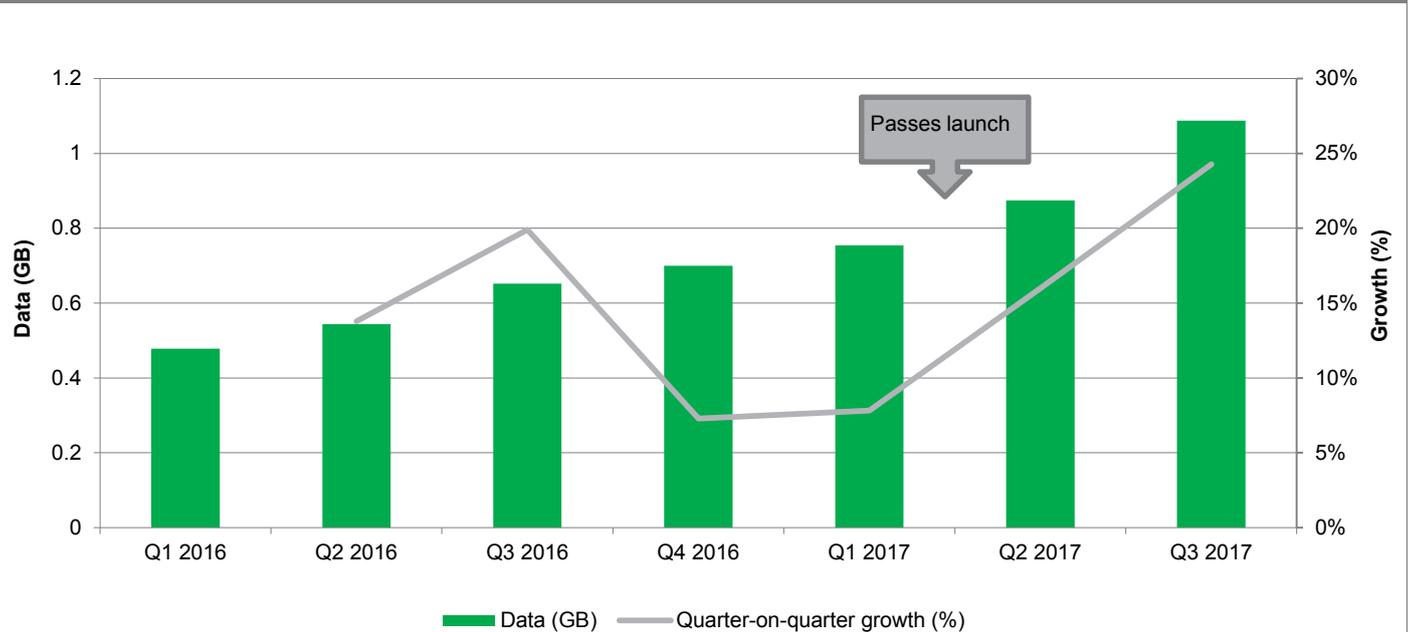
T-Mobile: lessons and best practices

- Zero rating can drive customer acquisition provided there is a clear focus: T-Mobile’s initial focus was on increasing its market share and capturing customers from its rivals. The ability to focus on a single aim fits well with a zero-rating strategy for which driving ARPU is not a consideration.
- Optimising video is important: when zero rating, operators must be sure their networks can cope with the increased traffic and optimise the quality if necessary. The decision to limit video quality did meet resistance from some customers, but it also provided the opportunity to drive incremental revenues from the subset of customers willing to pay an additional fee to access HD video.

Vodafone Europe: data monetization through premium content passes

Zero-rated services provide little opportunity for direct revenue. As an alternative, operators can limit zero rating for a selection of dedicated apps via paid passes that provide unlimited app-specific data. Vodafone launched its passes in Europe in mid-2017 for video, social and music apps. Ranging from €3 to €10 per month in price, these passes are designed to drive ARPU as well as data consumption and customer retention. While still early days, Vodafone has reported positive results: In Italy data increased inside the pass apps by 3GB-5GB per month and outside by a further 1GB to 2GB. There was a positive retention rate of over 25% from 1.1 initial users and 7.8m total Pass users across its European markets. Average data traffic per customer increased by 24% in the quarter following the launch, compared with average growth of 13% for the preceding year.

Vodafone Europe: monthly data consumption per mobile customer (GB)



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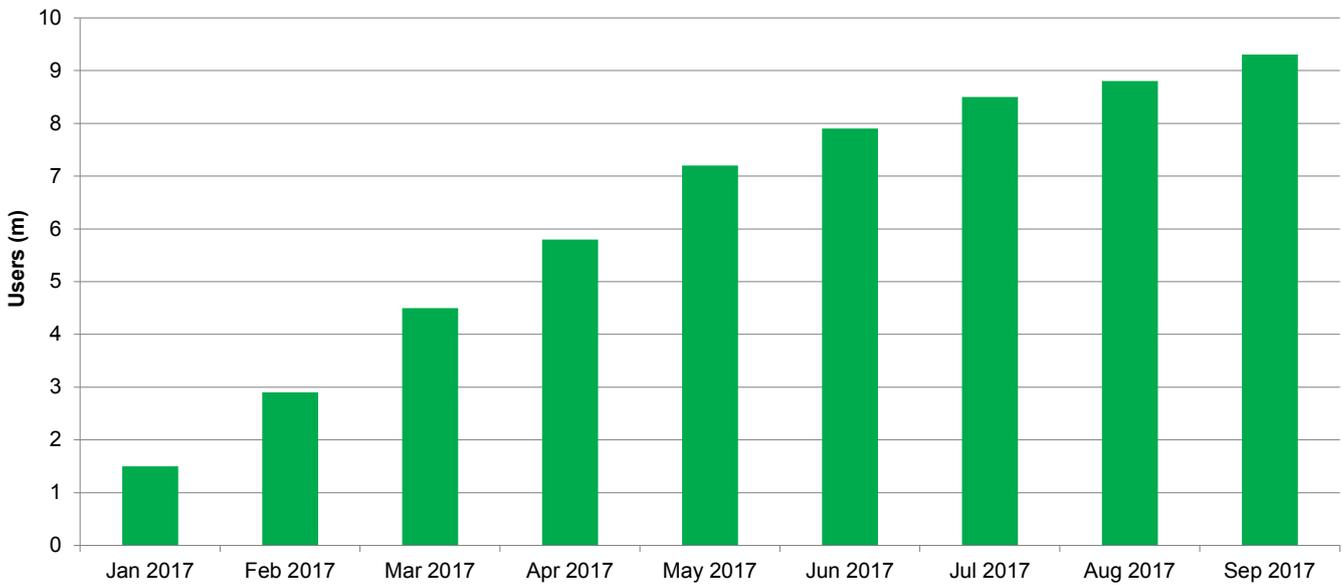
Vodafone: Lessons and best practices

- Limited zero-rating drives direct revenue – paid passes provide operators an opportunity to add direct revenues rather than simply focus on growing market share or retaining subscribers.
- Overall traffic increases leads to further revenue opportunity – Vodafone shows how passes can change customer behaviour, leading to an overall increase in data consumption and therefore increased total data revenues.

China Mobile Zhejiang: operator-branded service drives monetisation and data traffic

China Mobile’s Migu Hot mobile video app in Zhejiang province shows how operators can launch their own service, leveraging their own and partner assets, to add their own subscriptions and drive monetisation through increased data consumption. Launched in late 2016 and available only to China Mobile customers, Migu Hot achieved 23m registered users and 9.5m monthly active users 12 months after launch. Over the same time mobile data usage increased from around 1.5GB per user to 3GB per user in 2017, network ARPU increased by 66.67% and services upsell by 20.9%. Migu Hot data traffic made up 8% of total data as of December 2017.

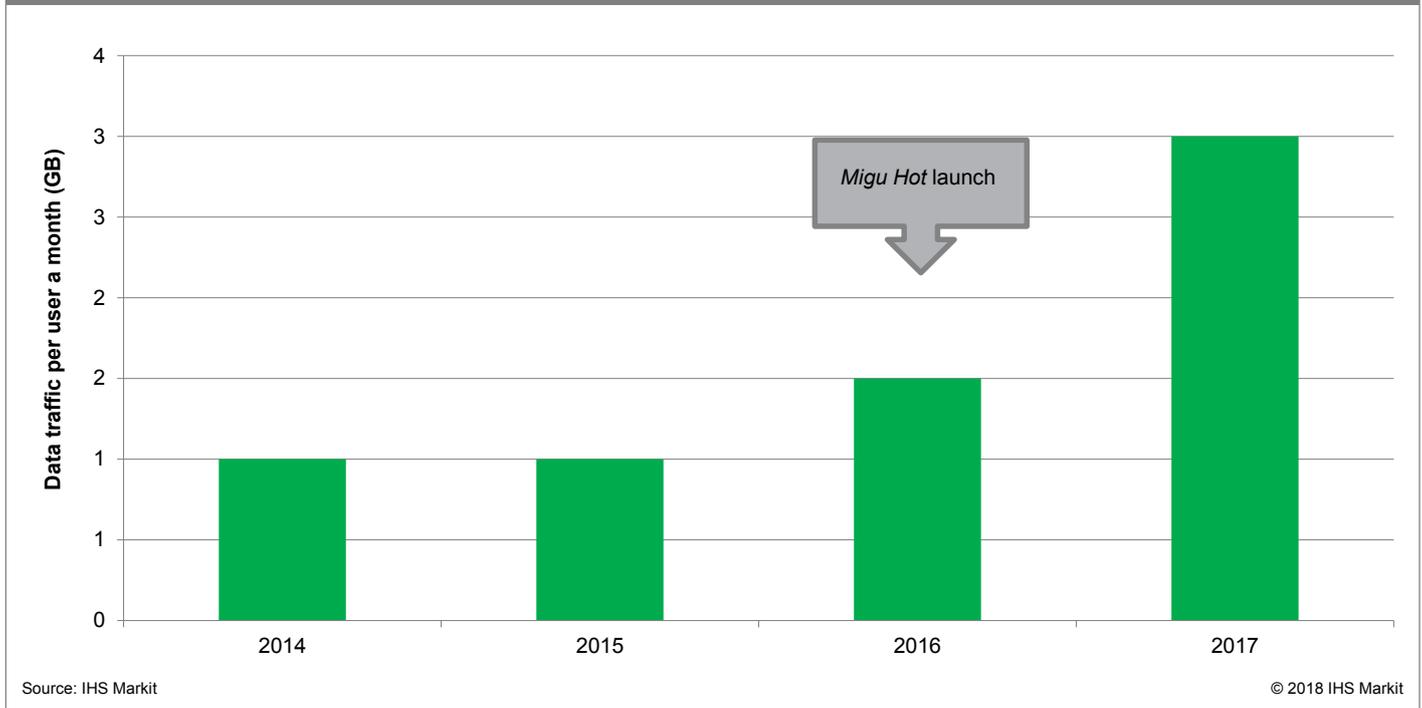
China Mobile Zhejiang Migu Hot: MAUs (m)



Source: IHS Markit

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China Mobile: Data traffic per user per month (GB)



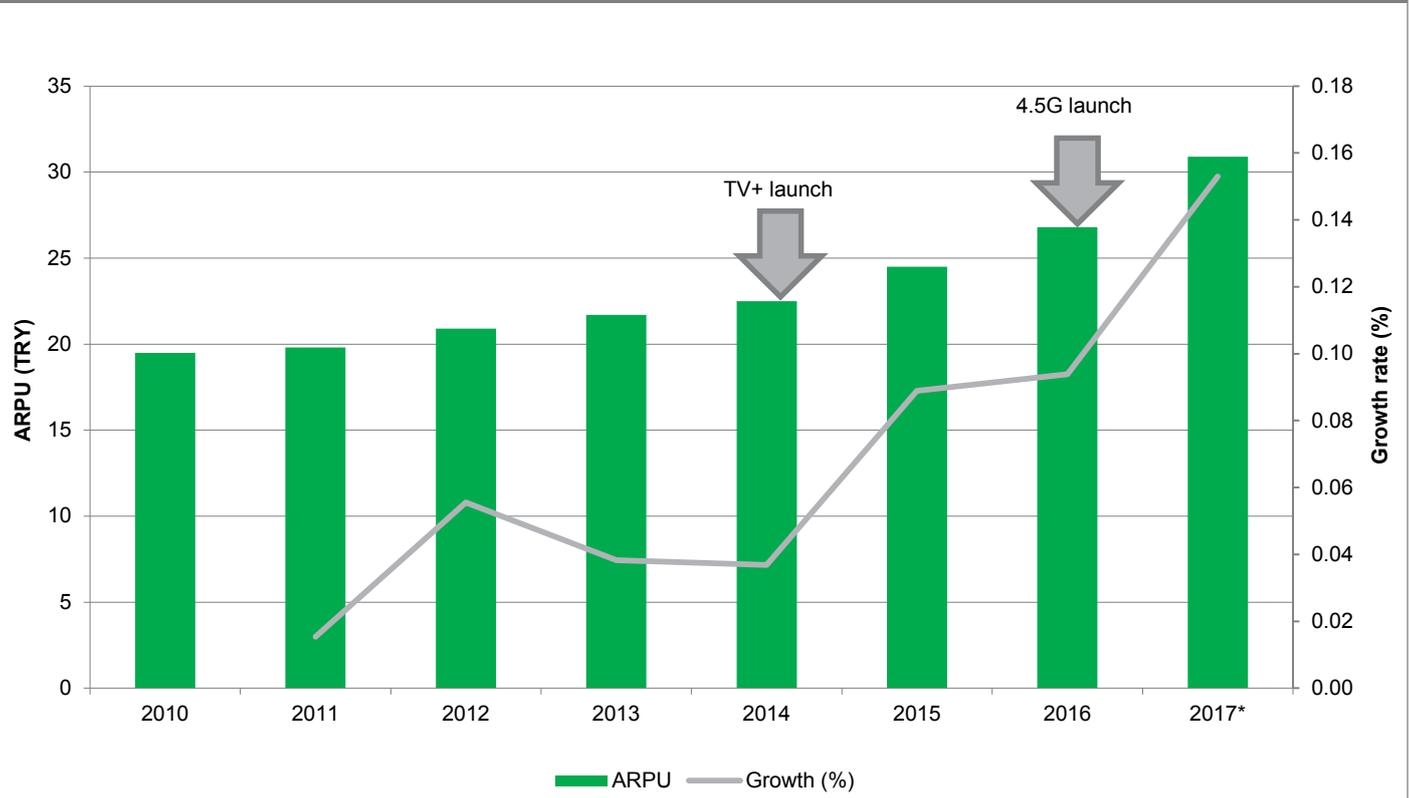
China Mobile: Lessons and best practices

- **Content and user experience:** Migu Hot offers a broad content portfolio with additional content available via in-app purchases to drive additional monetisation. It aims to provide a superior user experience via a single integrated app which includes additional features such as data checking and purchasing.
- **Leveraging operator strengths in marketing, monetisation and infrastructure:** China Mobile drives usage by preinstalling the app where possible and driving downloads through promoting it across its customer channels. Driving additional video data consumption is the key to its monetisation and its quality of service is enabled through its network ownership.

Turkcell: Own brand video to drive data and market repositioning

Turkcell's own-brand mobile, OTT and IPTV video service T+ launched in 2014 as part of the operator's strategic repositioning of itself as a customer experience provider. Turkcell's video service supports its fixed, pay-TV and mobile services and on mobile is mainly used to drive engagement and higher ARPU by promoting higher tier data plans and extra data charges. Turkcell's video strategy was supported by a strong investment in premium and exclusive content (it offers over 150 channels and thousands of movies) and a revamp of its operating structure to move beyond the role of a traditional telco. The launch of TV+, with its focus on quality content and user experience, coupled with the launch of 4.5G mobile services has seen a rapid increase in mobile ARPU and data consumption. Data ARPU increase from TRY 22.40 in 2014 to TRY 30.90 in Q3 2017, mobile data consumption per data user increased from 2.6GB in Q3 2016 to 4.2GB in Q3 2017, up 62% year-on-year.

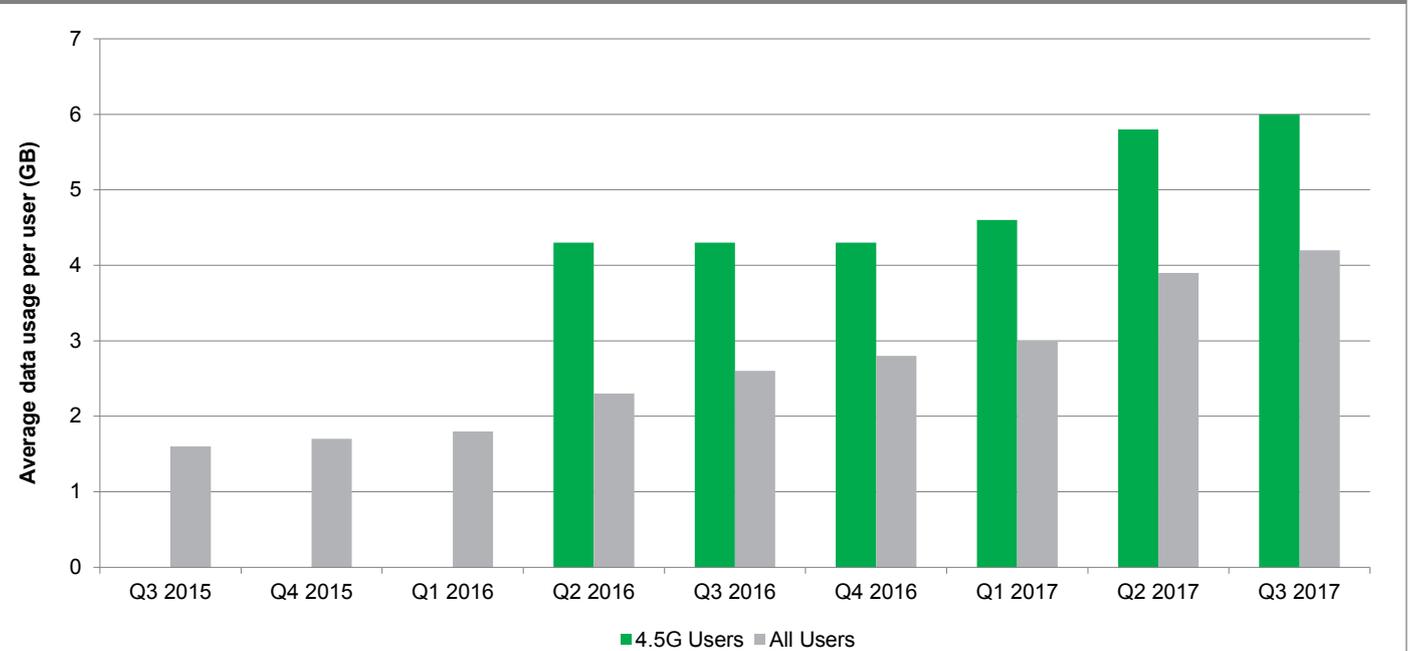
Turkcell: average monthly revenue per user (TRY)



Notes: * value from Q3 2017
Source: IHS Markit

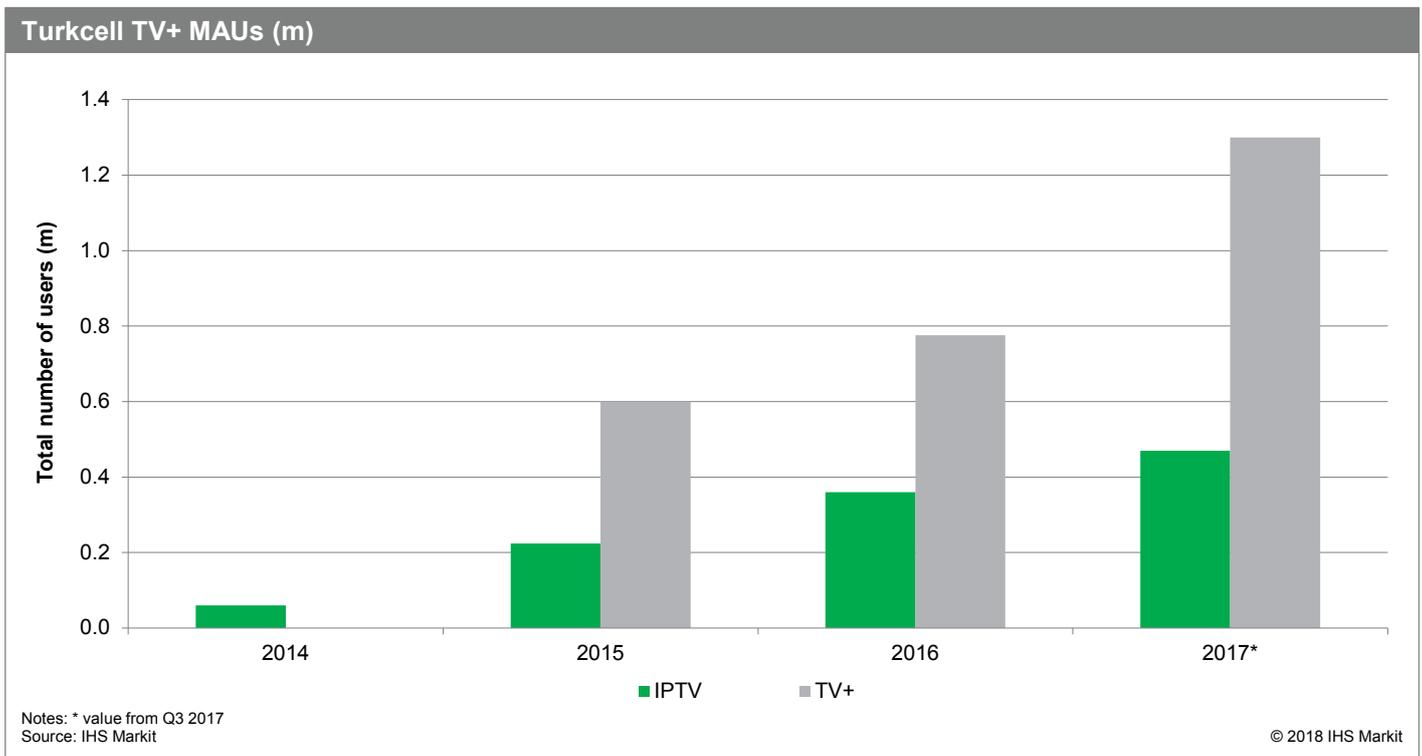
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Turkcell: mobile data usage per user



Notes: * value from Q3 2017
Source: IHS Markit

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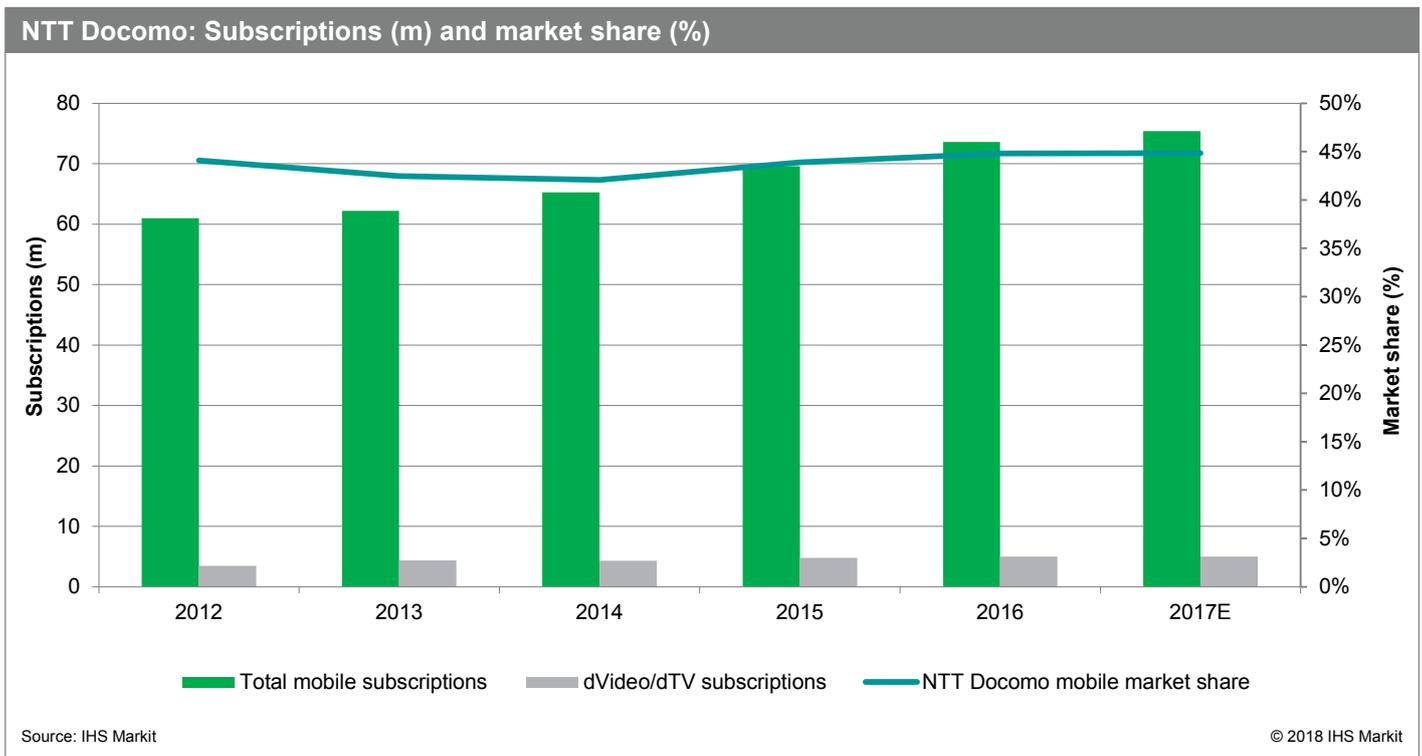


Turkcell TV+: Lessons and best practices

- Content – Turkcell TV+ offers more than 150 channels, thousands of free movies and TV shows, documentaries, sports, kids and news channels. It also offers 4K content, live streaming and VoD content.
- Packaging and user experience – Turkcell offers an integrated experience with: pay TV; switching between four screens; smooth streaming to enhance the user experience; and delivering quality video, 4K Ultra HD technology. It aims to provide a superior mobile experience via its network strength: Turkcell launched 4.5G in 2016 having acquired 47% of total spectrum available in the country.

NTT Docomo: operator-branded video direct monetization

Leading Japanese mobile operator NTT Docomo has a long track record of delivering own-brand premium mobile content to its customers dating back to the early 2000s. It launched its dVideo (now dTV) service in 2011 following the launch of LTE networks in 2010. Already an advanced data market, dTV is designed to drive additional value added service revenues. Priced at around JPY 500 per month, or roughly 10% of overall mobile services ARPU, Docomo's video service attracted a large audience for its broad content portfolio ahead of the launch of international OTT video services in Japan. IHS Markit understands that it still counts around 5m video subscriptions.



NTT Docomo dTV: Lessons and best practices

- Video is a competitive necessity in markets where operators are strong content players and operators had an early mover advantage ahead of the launch of OTT services, so can drive direct revenues.
- Video should come as part of a wider content and services portfolio and strategy – Docomo’s video success has not come in isolation. It forms a central pillar of the operator’s dmarket content and wider Smart Life services strategy, its aim to secure a position as a wider content and services provider beyond core telecoms revenues – which have been relatively stagnant.

Conclusion

Mobile video’s importance to the future of mobile networks and mobile operator strategies is clear. Mobile customers are viewing more video than ever before, fuelling the explosion in data traffic. Over-the-top video providers and ad-funded services have used huge content investments and international scale to secure a strong global position, but mobile operators can and must still play a role. Operators can use mobile video as part of their strategies to provide a “smart-pipe”. Depending on market conditions, operators can deploy range of video strategies.

The examples, case studies, and consumer views analysed in this report show that:

- Mobile video service quality can be a critical factor determining customer satisfaction with operators, and a key driver of subscriber acquisition, churn, and retention.
- There are multiple ways operators can monetise mobile video including premium subscriptions, ad-supported services and most successfully by using video to drive overall data consumption and higher tier packages.

- Over-the-top players are valuable partners as well as competitors. Partnerships can take the form of basic cross promotions, limited bundles, or content exclusives and more in-depth strategies to leverage an operator's strength in network management and subscriber data to add value to an OTT service. OTT competition can still occur when operators are looking to launch their own services and from ad-funded services that can be more challenging for partnerships.
- Own brand operator services can succeed given the right market conditions and focus on content and quality of user experience.
- Operators must have a clear – and realistic – strategic goal when launching a mobile video service .
- For many, the real value of mobile video is driving data – but in these cases quality will be equally important to ensure customer satisfaction.

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