Regional Trends Asia Pacific (APAC)









Business Environment

The Broadcast & Media Industry

Media Technology Demand Drivers



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Business Environment







Business Environment Asia Pacific

Many countries in the APAC region continue to struggle with spikes in COVID-19 cases, while vaccine supply remains constrained. The World Bank expects the region to grow by 7.7% in 2021, largely driven by China (8.5%). The GDP growth in two-thirds of the countries in the Asia-Pacific is forecast to remain below pre-pandemic levels until 2022, as manufacturing, trade and tourism sectors are recovering slowly hampered by new COVID-19 outbreaks.

By August 2021, South East Asia had become a global epicentre for the Delta variant of the coronavirus resulting in new lockdown measures, increasing economic uncertainty in the region.

NOTE: In this report, Asia-Pacific (APAC) refers to the countries in East, South and Southeast Asia and Oceania, excluding Central Asia.





GDP Growth Forecast - APAC

10%

8%

6%

4%

2%

-2%

-4%

-6%

-8%

-10%

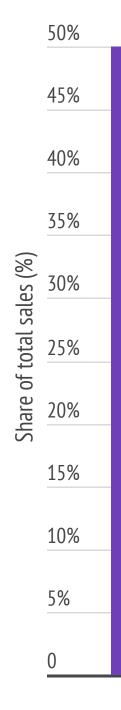
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Sources: World Bank

Business Environment Asia Pacific

According to Citibank, despite several supply chain shocks caused by the COVID-19 pandemic, supply chains in Asia-Pacific have been more resilient than expected: the pandemic has accelerated the diversification, localization and digitalization of companies' supply chain strategies. During the pandemic, Asian businesses have increased their tech investment in digital inventory management, trade facilitation and forecasting. Data from Citibank showed that supply chain managers in the APAC region are more optimistic about the resilience of their supply chains than in other continents, which may stem from the fact that they are geographically closer to the major manufacturing hubs (e.g., chips).

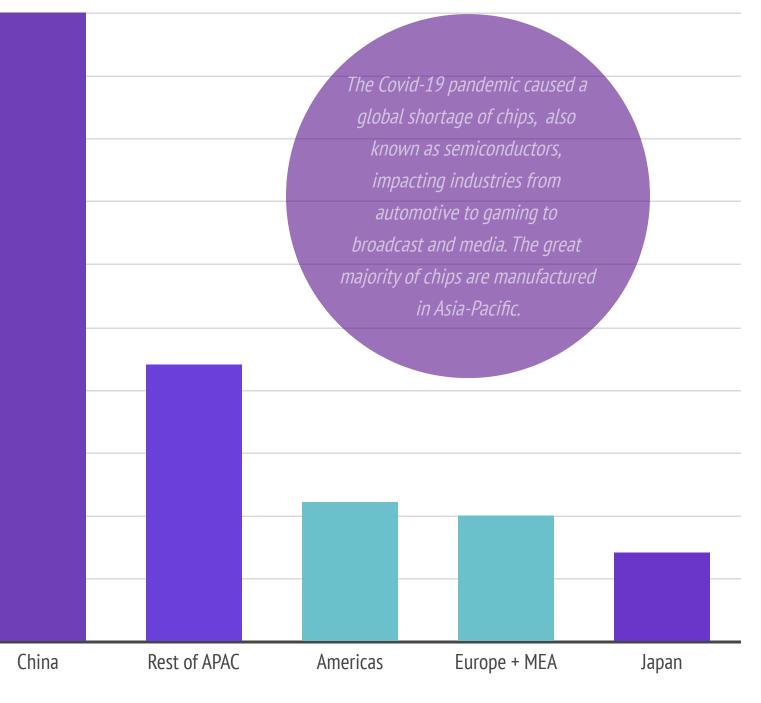


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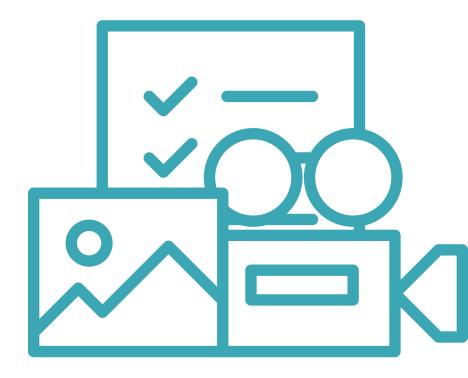


Global Distribution of Semiconductor Sales (2019)



Sources: World Bank, Citibank

The Broadcast & Media Industry







The Broadcast & Media Industry

Asia Pacific - Market characteristics

Emerging Broadcast & Media Market (Excl. Japan, South Korea, Australia, New Zealand)

Censorship & Restrictions on Selling and Distributing Content (e.g., China, Malaysia)

Piracy & Anti-Piracy Coalitions

Asymmetry: Market maturity varies from country to country; some countries are still relying on analogue broadcasting, while some are already rolling out 5G networks for content distribution (see p.30).

Content Control: The burden of regulation in linear TV remains significant. The COVID-19 pandemic has increased control and restrictions on content in several Asian countries.

Content Theft: Piracy remains a massive challenge in the region. Several governments are in the process of introducing site blocking protocols and forming regional coalitions to enforce anti-piracy measures. Streamed inapp content piracy remains a major problem enabling pirates to monetize stolen content with legitimate brand advertising.

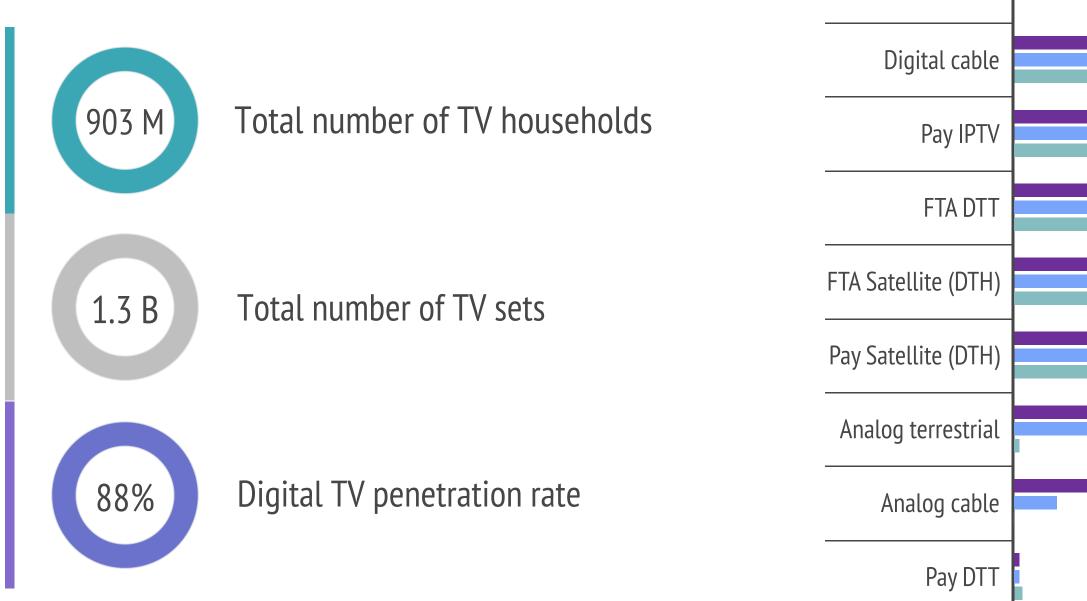




Sources: IABM, Asia Video Industry Association (AVIA)

The Broadcast & Media Industry Asia Pacific - TV Distribution Platforms

APAC - 2020e

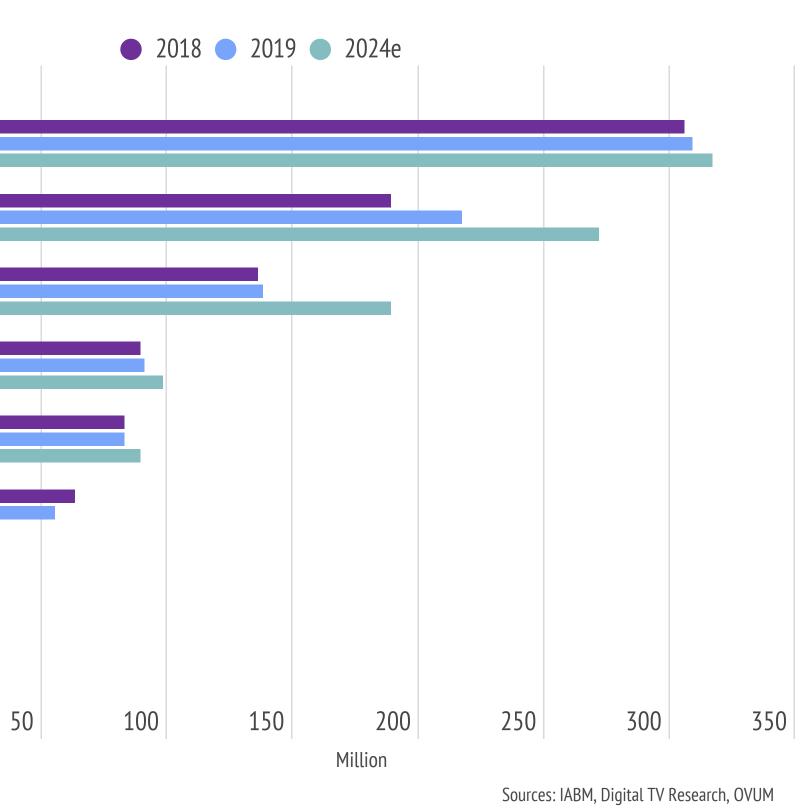


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APAC TV households by distribution platform



The Broadcast & Media Industry Asia Pacific - TV Distribution Platforms

Even though the cable TV market has been losing subscribers since 2016, cable still represents nearly half of all TV households in the region, and it is expected to remain the dominant platform for the next 10 years in revenue terms. OTT, DTH and IPTV continue to erode cable TV, mainly due to the significant IPTV growth in China, where three stateowned telcos - China Mobile, China Telecom and China Unicom - are increasing their IPTV value propositions with low-cost video add-ons.

While China and India are the region's biggest Pay-TV markets, their subscription ARPUs (average revenue per user) remain among the lowest.

ARPU (\$/month)

100

90

80

70

60

50

40

30

20

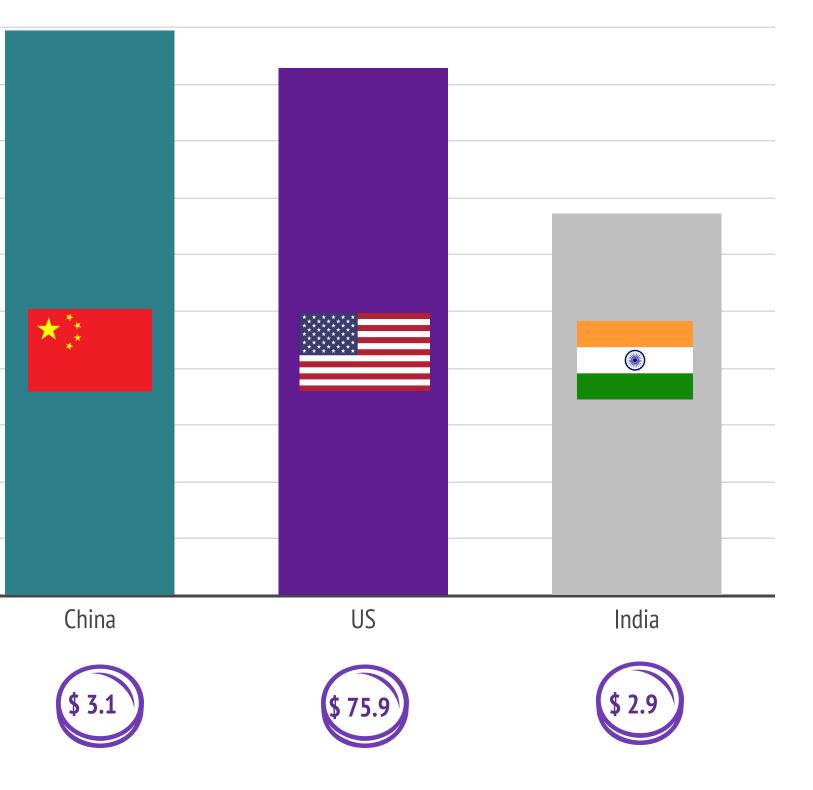
10

%





% Households with TV cable connection (2020)



Sources: IABM, Boston Consulting Group, Asia Video Industry Association (AVIA)

The Broadcast & Media Industry Asia Pacific - Pay-TV

The Pay-TV sector in the APAC region remains vibrant: there were over 650 million Pay-TV subscribers in 2020, according to Media Partners Asia. China and India accounting for 80% of all Pay-TV subscribers - drive growth with exclusive sports as the key driver for Pay-TV revenues. Pay-TV penetration in the region reached 63% in 2020.

1	IPTV	Strong growth is driven by China, accounting for over 80% of the region's 195 million IPTV subscribers alone. By 2030, APAC is expected to reach 337 million subscribers equating to US\$13.7 billion in revenue.	Joillim 150
2	DTH	Stable growth driven by India, accounting for over 70% of the region's subscribers with over 70 million DTH connections. DTH satellite Pay-TV not authorized in China.	100 50
3	DTT	Stable growth in FTA digital terrestrial TV sector with over 240 million households, while a subscription-based DTT not viable in APAC due to inadequate customer adoption.	0





Pay-TV subscribers by country - APAC

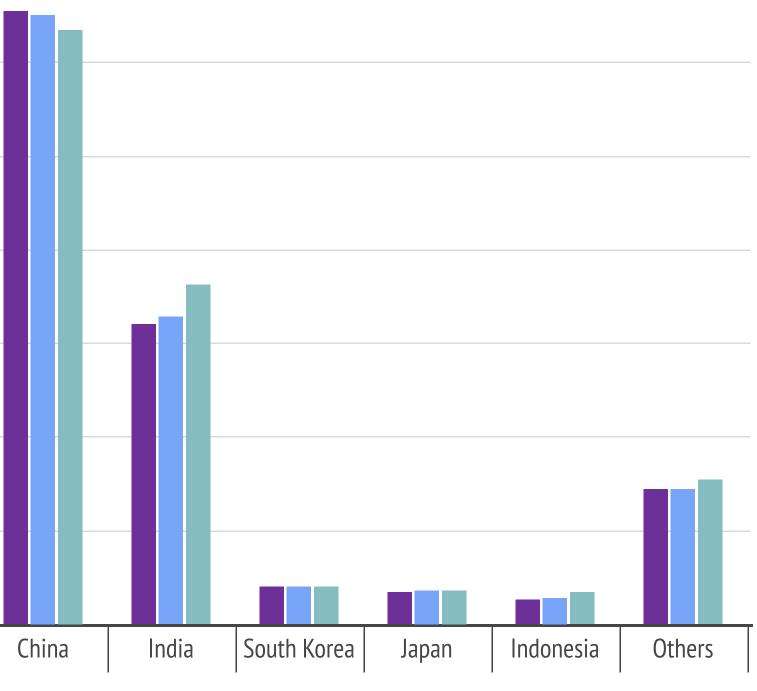
2020 2021e 2026e

350

300

250

200



Sources: IABM, Digital TV Research, Media Partners Asia, AVIA

The Broadcast & Media Industry Asia Pacific - Sports

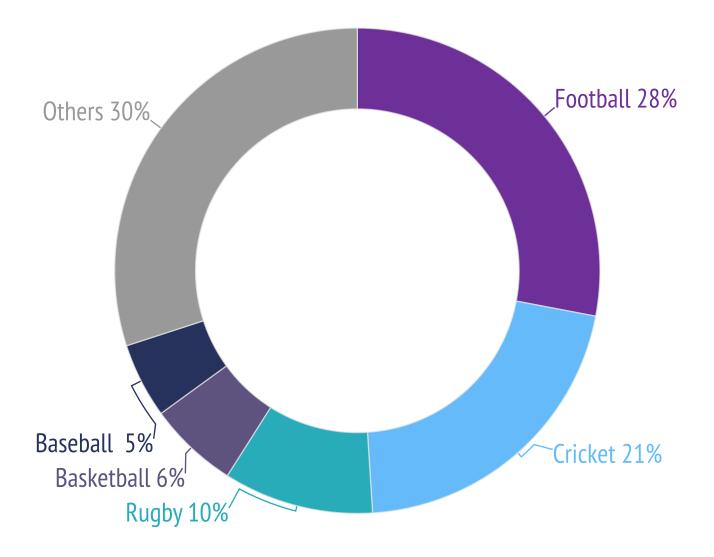
Prior to the Tokyo 2021 Olympic Games, sports rights costs in Asia-Pacific increased to US\$5.5 billion and sports revenues (from TV and online channels) to US\$5.2 billion in 2019, according to MPA data. Out of the total sports revenue generation, over 20% came from OTT platforms. Large internet players like Tencent in China and Hotstar in India continue to invest in premium sports content monetized through AVOD and SVOD models, preparing for the next two major sporting events in the region: Beijing 2022 Olympic Games and Cricket World Cup 2023 in India.

Transition to IP-based media workflows, the rollout of 5G and remote production of live sports help broadcasters in the competition over sports rights with internet players and telcos.





Share of Rights Value by Sport - APAC



Sources: IABM, Digital TV Research, MPA

Media Technology Demand Drivers Asia Pacific - Sports



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"At belN we pride ourselves on bringing the best of Europe's top flight action to new markets around the world. Serie A perfectly complements our portfolio which includes FIFA World Cup 2022, UEFA Champions League, LaLiga, the NBA, NFL, Wimbledon and much more."

Richard Verow, Chief Sports Officer at belN

CASE - belN Sports Secures Sports Rights for Serie A in Asia-Pacific

In August 2021, belN Media Group renewed its sports rights deal with Infront, Serie A's exclusive media rights partner until 2024. The deal extends belN Sports' exclusive partnership with the Italian league in Indonesia, the Philippines, Thailand, Laos, Cambodia and Hong Kong, and allows expansion to three new territories: Singapore, Malaysia and New Zealand. At the same time, belN Sports renewed its sports rights deal with UEFA in seven countries in the APAC region.

Today, belN Sports Asia Pacific is present in 11 countries in the region providing 14 unique channel feeds with live sports covered in English, Thai, Cantonese and Bahasa.

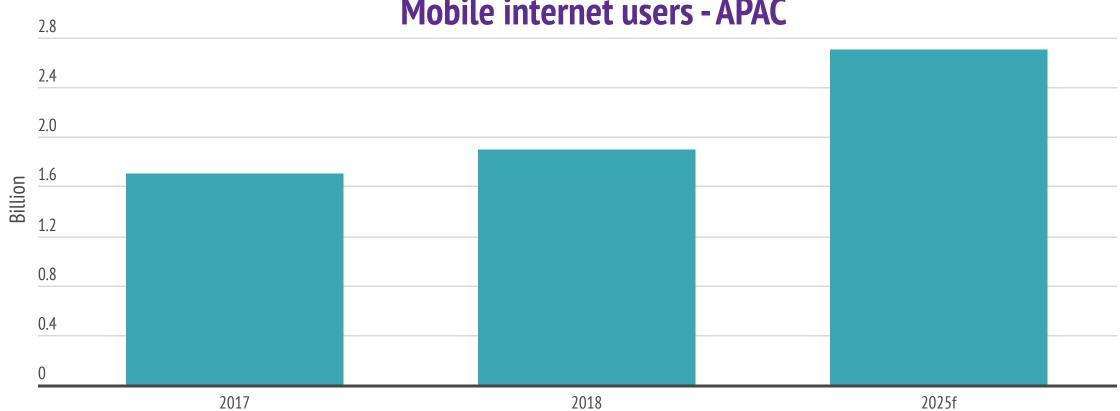




Source: IABM, sportsmintmedia.com, belN Sports

The Broadcast & Media Industry Asia-Pacific - Mobile First

Asia-Pacific accounts for nearly half of the world's internet users. The COVID-19 pandemic accelerated digital and mobile video consumption in the region. According to BidSwitch, mobile represented over 75% of the video inventory available in the region, while mobile apps had seen an increase of 75% in video inventory by the second quarter of 2020.



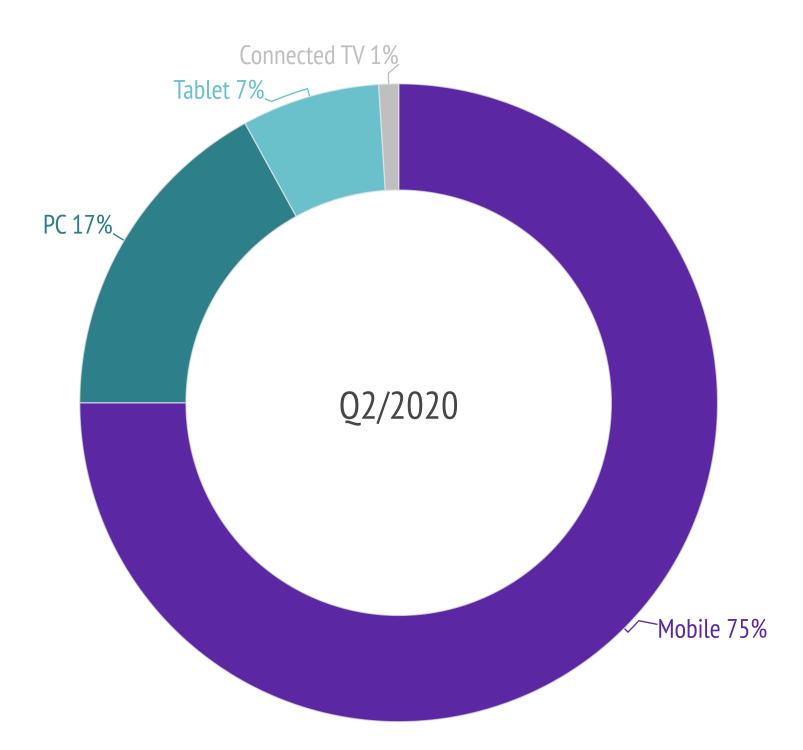


Mobile internet users - APAC





APAC Video Bid Requests by Device



Sources: IABM, Digital TV Research, AVIA

The Broadcast & Media Industry Asia Pacific - Local Content

Local programming is increasingly competing with foreign feature films in Asian Pay-TV offerings, as local TV channels now rely more on their own productions thanks to the declining costs of local productions. According to Ampere Analysis, over half of content catalogues in India, China and Japan already consist of local content.

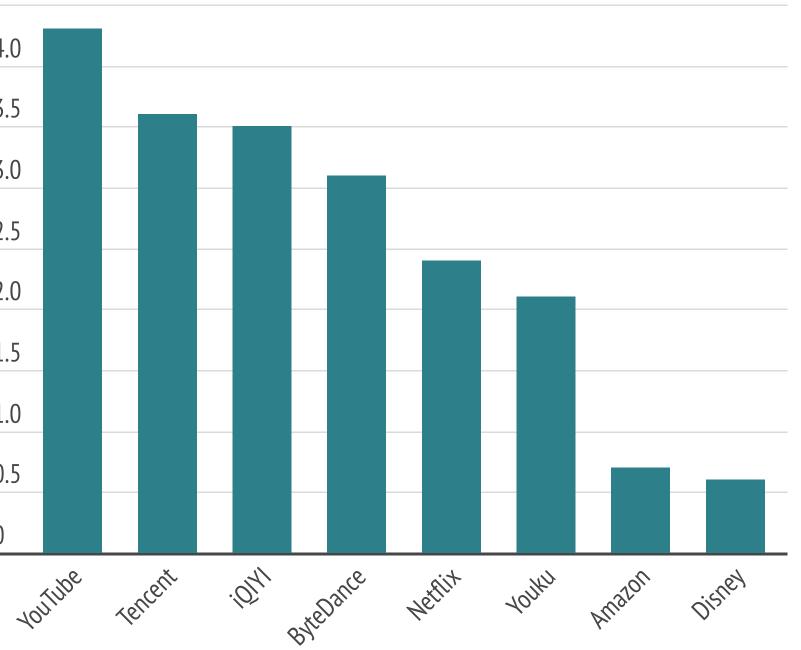
Big streamers like Netflix and Amazon Prime Video have shifted their focus in Asia-Pacific by investing in local productions. For example, in 2019, 68% of Netflix's top titles in Japan were locally produced.







Leading Online Video Platforms by Revenue in APAC (2020)



Sources: IABM, Digital TV Research, MPA, Ampere Analysis

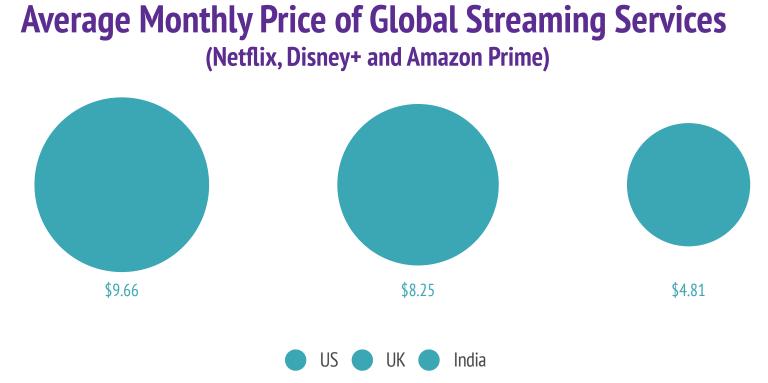
The Broadcast & Media Industry

India - Western Market Entrants Teaming Up with Telcos

The COVID-19 pandemic accelerated the growth of India's online video market, generating an estimated US\$1.4 billion in revenue in 2020, according to MPA data. Between 2020 and 2025, the market is projected to expand by 26% YoY, reaching US\$4.5 billion in revenue. Netflix has invested more in India than any other country outside the US since 2016. Likewise, Amazon Prime has invested US\$6.5 billion in premium local Indian content (and sports rights) over the past few years. Both players offer India-specific price points to drive adoption.

Both OTT giants have formed partnerships with mobile and fixed broadband operators in India, where mobile broadband penetration should reach 66% by 2025 thanks to commercial 5G roll-out expected to start in 2021.

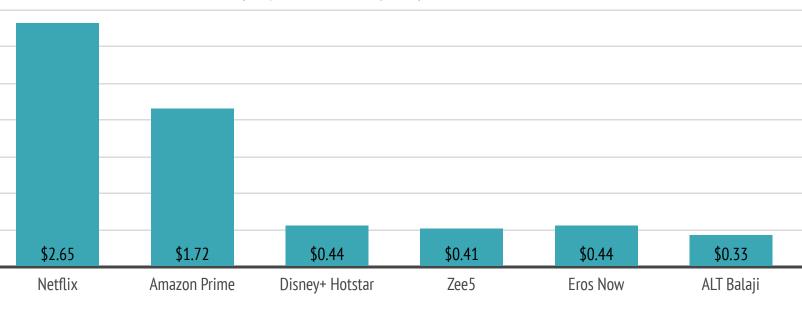




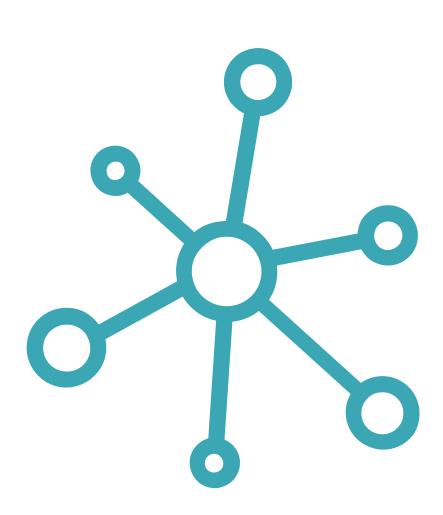




Monthly Price for Lowest Available Plan in India (Top 6 OTT Players)



Sources: IABM, AVIA, MPA, Boston Consulting Group







Media Technology Demand Drivers Transition to Digital Broadcasting

In Asia-Pacific, the transition to digital terrestrial broadcasting is alarmingly low with only six countries having completed the transition. Many countries in the region had set the year 2020 as their target for switch-off, but the COVID-19 pandemic has shifted the financial focus of many Asian governments to the health crisis, delaying switch off plans. China is still in the midst of its "2020 Analogue Switch Off Plan" (ASO), which aimed at switching off the analogue signal in big cities by the end of 2018 and in the whole country by 2020. Indonesia has also postponed its transition deadline to 2022. Transition to digital broadcasting still drives demand for legacy media technology.







éar of aunch	Target ASO Date	TV Standard	Status
.003	2011	ISDB-T	Completed
001	2012	ATSC	Completed
001	2013	DVB-T	Completed
8008	2013	DVB-T/DVB-T2	Completed
014	2015	DVB-T2	Completed
	2019	DVB-T/DVB-T2	Completed
	2020	DTMB	On-going
012	2020	DVB-T2	On-going
014	2020	DVB-T2	On-going
010	2020	DVB-T/DVB-T2	On-going
	2020	DVB-T / DVB-T2 / DTMB	On-going
013	2020	DVR-T7	On-aoina

Source: IABM, ITU

Simultaneous Transition to HD and UHD

Doveloping markets	()	
Developing markets		

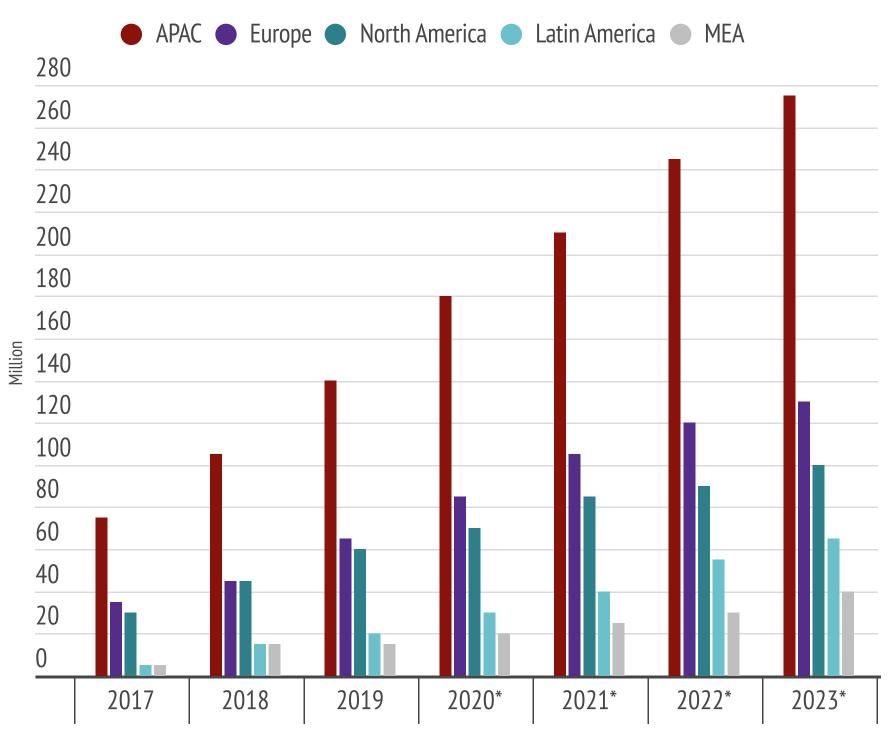
- Satellite broadcasting is an important driver for HD transition (UHD as a niche offering)
- Transition to HD is an important spending driver for media tech
- Transition to HD is boosting the offering of HD channels



- HD as the mainstream broadcasting format, daily UHD offerings (e.g. news)
- OTT is driving investment in UHD/4K and even 8K

Developed markets

Early adopters of FTTH (fiber-to-the-home) networks unburdened by the legacy cable TV networks (excl. China) well positioned to stream 4K video via FTTH









Source: IABM, Statista

Transition to New Viewing Experiences - 4K UHD



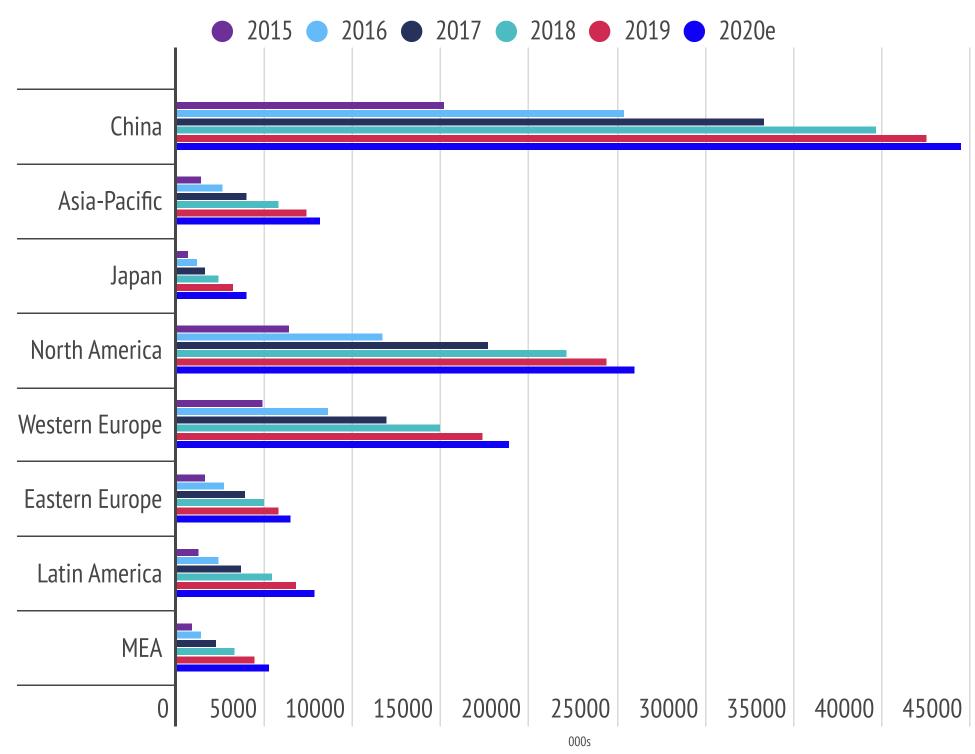
Over 300 million 4K/UHD TV households globally in 2020 with APAC as the largest market



4K/UHD market dominated by China thanks to the government's support for 4K/UHD TV manufacturers



Supply shortage caused by the COVID-19 pandemic led to significant price increases (60-100%) of LCD panels, decreasing demand for 4K/UHD TV sets in most pricesensitive regions (e.g., China)







4K/UHD TV Shipments by Region

Source: IABM, Omdia, IHS Markit

Media Technology Demand Drivers 4K UHD Content Production

Like Netflix and Amazon Prime in the West, China's gigantic streaming platforms are driving 4K content production in China, where viewers are relatively well equipped with 4Kcapable devices. Chinese streaming platforms are also forming partnerships with international surround-sound format providers. For example, iQIYI has formed an **OTT partnership with Dolby.**





nteroperable

CASE - iQIYI Adopts Interoperable Master Format for 4K Production

In February 2021, China's second biggest online video platform, iQIYI announced that it had delivered its new 4K drama series "To Be With You" using the Interoperable Master Format (IMF), a component-based media format developed by SMPTE as an evolution of the Digital Cinema Package (DCP) architecture. IMF standardizes the master format and production process for the distribution improving manageability and control of 4K content production process. This helps content producers to reuse content easily and exchange, distribute and archive multi-domain and cross-platform content. According to iQIYI, IMF retains the picture quality of 4K shooting and production and delivers clearer visual experience to their 455 million monthly active users (MAUs), of which nearly all are mobile viewers.





Source: IABM, expandedramblings.com, mesaonline.org, iQIYI

Media Technology Demand Drivers Transition to New Viewing Experiences - 8K

APAC's transition to 8K:

2015

2018

2019

2020

2021

Japanese broadcasters experimenting with 8K content since 2015.

The 2018 Winter Olympic Games in South Korea the largest ever live 8K UHD production event, with Olympic Broadcast Service (OBS) testing 5G to transmit video live to air. NHK transmits around 90 hours of sports in 8K during the Olympic Games.

Japan's national broadcaster NHK starts to broadcast 8K TV content 12 hours per day.

Chinese TV manufacturers subsidized to produce 4K and 8K TV sets pushing consumer prices down. Chinese broadcasters experimenting with 8K content.

China Media Group - a new broadcasting platform made up of China Central Television (CCTV), China Radio International (CRI) and China National Radio (CNR) - accomplishes the first successful 8K UHD content transmission through 5G networks from Beijing to Shanghai.

Chinese TV manufacturers introduce 8K UHD TVs with built-in 5G connectivity.

NHK broadcasts 200 hours of 8K UHD coverage at the 2021 Olympic Games in Tokyo.

China Central TV (CCTV) broadcasts its first live 8K UHD TV channel test signals over 5G preparing for the 2022 Beijing Olympic Games, where 8K will be made the standard production format.









Sources: IABM, NHK, CCTV, IBC365, E&T Magazine, Asia-Pacific Broadcasting

Media Technology Demand Drivers Transition to New Viewing Experiences - 8K

Tokyo 2020 Olympic Games UHD Tracker - 4K & 8K Broadcasters

	Country	Channel	Operator	Network	Dynamic Range	Audio
	Japan	NHK	BS8K, BS4K	DTH	HLG	22.2- channel (8K)
	US	NBC	Comcast Xfinity	OTT	Dolby Vision	Dolby Atmos
	UK	Eurosport 4K	Sky	DTH	HLG	AAC stereo
	UK	Eurosport 4K	Virgin Media	Cable	HLG	Stereo
	Denmark	Eurosport 4K	Allente (Canal Digital / Viasat merger)	DTH	HLG	Stereo
	Germany	Eurosport 4K	HD+	DTH	HLG	Stereo
=	Netherlands	Eurosport 4K	Vodafone Ziggo	Cable	HLG	Stereo
	France	Eurosport	Canal+	DTH	HLG	Stereo





Sources: IABM, flatpanelshd.com, The Japan Times

Media Technology Demand Drivers OTT and Multi-Platform Delivery







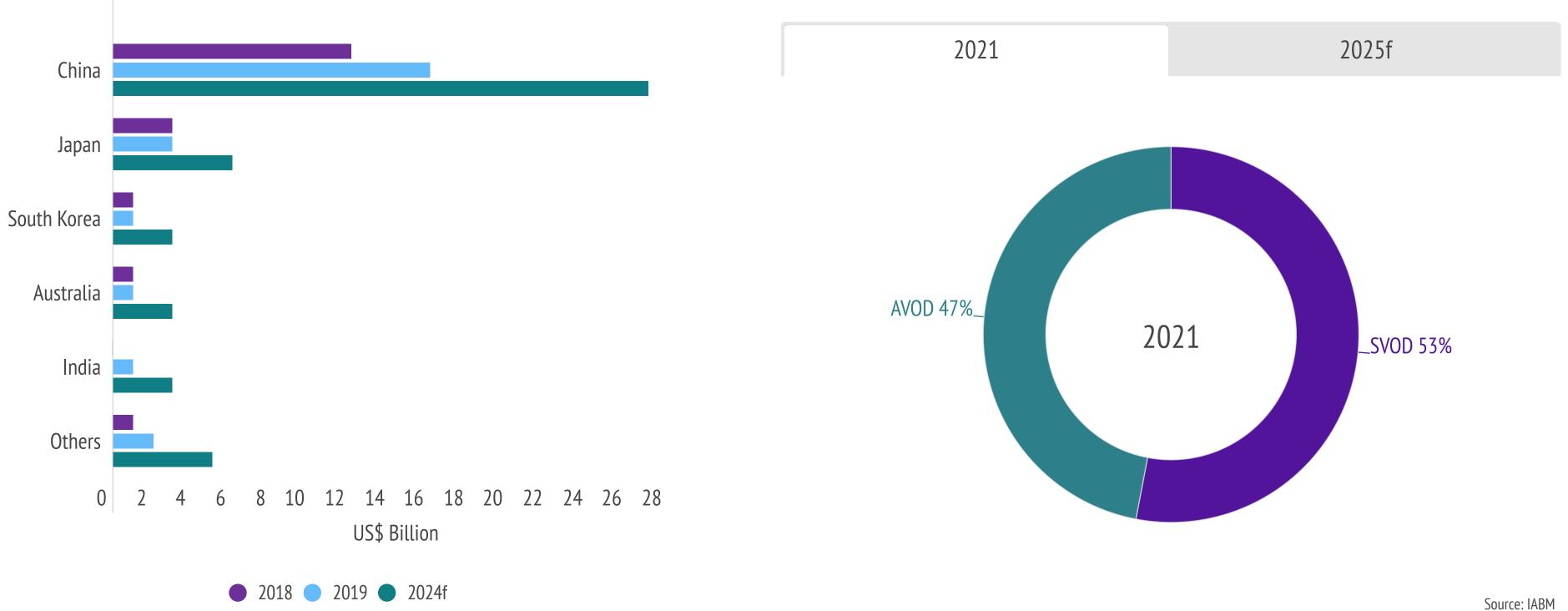
Digital Video Viewers in APAC (2019-2023f)

.85					
.80					.•
				/	
.75					
.70					
.65					
.60			, • ·		
.55					
.50		•			
.45					
.40	•				
	2019	2020*	2021*	2022*	2023*

Source: IABM, eMarketer, Media Partners Asia, Digital TV Research

Media Technology Demand Drivers OTT and Multi-Platform Delivery

OTT Video Revenue by Country - APAC







OTT Revenue by Business Model - APAC

Media Technology Demand Drivers **OTT and Multi-Platform Delivery - SVOD**

APAC 2020:

SVOD sector grew by 34% to US\$16.3 billion in revenues, with China accounting for nearly 60% of the total.

Driven by ARPU expansion, China's SVOD revenues are expected to grow by 11% YoY until 2025, owing to nearly 80 million new, unique SVOD subscribers.

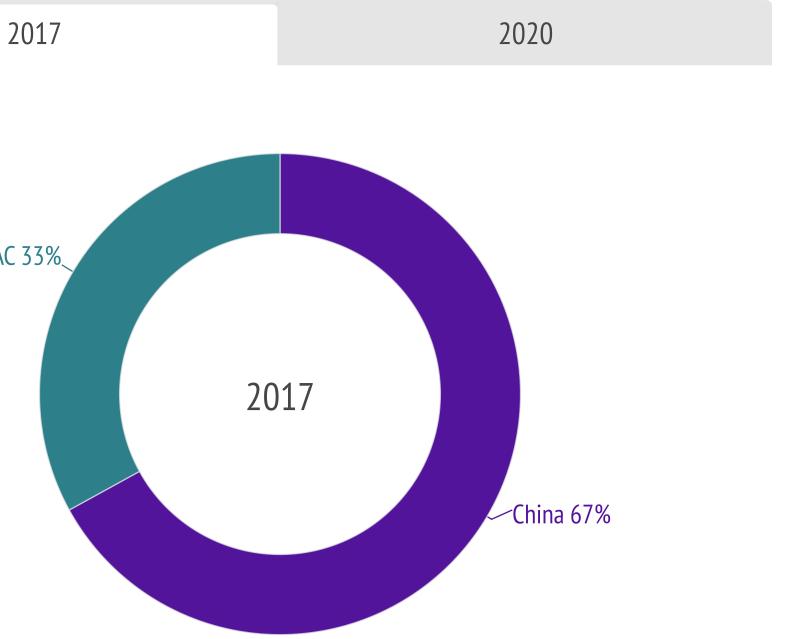
The COVID-19 pandemic accelerated the adoption of SVOD services particularly in Japan, Australia and New Zealand accounting for 70% of SVOD revenues excluding China.

Rest of APAC 33%





SVOD Sector Revenue by Source Market - APAC



Source: IABM, MPA

OTT and Multi-Platform Delivery



Big screen smart TV adoption

Mobile-first mindset

Sports and local content investment by key players (i.e. Netflix, Amazon Prime)

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89 M

Aggressive consumer pricing

COVID-19 pandemic









Cord-cutting

Change of consumer behavior

COVID-19 pandemic

. MPA

OTT and Multi-Platform Delivery

= 24 M



SVOD Subscribers:

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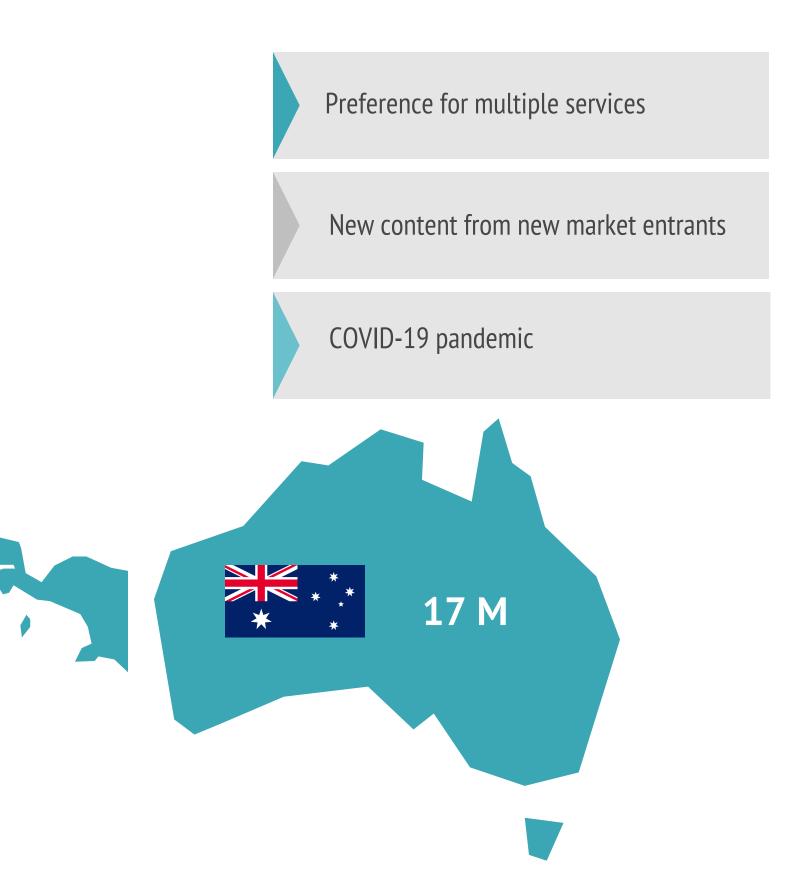
Investments by global and local platforms in Indonesia, Philippines and Thailand

Mobile mass market

New breakout titles (local, Asian, global)







Source: IABM, MPA, Omdia, Roy Morgan

Media Technology Demand Drivers OTT and Multi-Platform Delivery

SVOD Market Shares (2021):



Local vs. Global

Regulation

China only allowing local players with iQIYI and Tencent Video dominating the market with local content. Indian market dominated by global players with global and local content.

New entrants



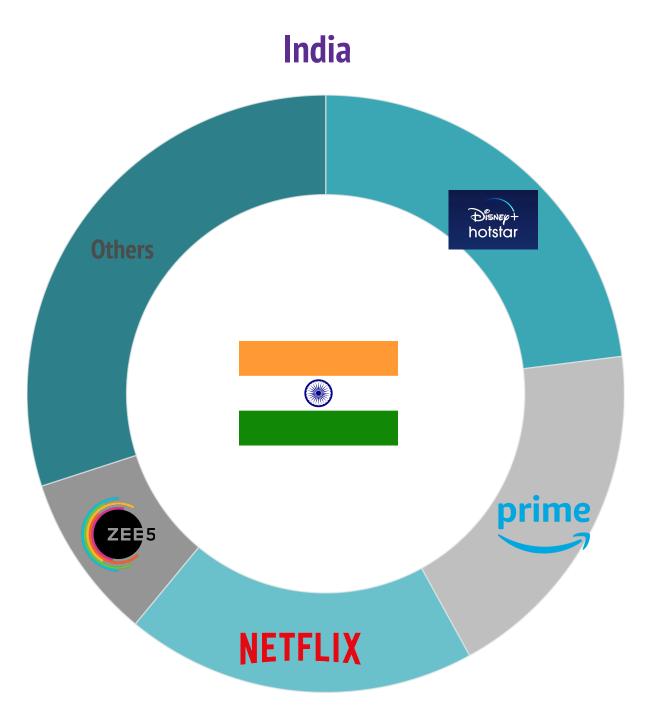
Disney+ / Hotstar growing rapidly in India competing with Amazon and Netflix in terms of new originals.



Declined investment in original content by iQIYI, Tencent Video and Youku making room for niche services like MangoTV (females/mothers as the target audience)







Source: IABM, MPA, Ampere Analysis, Omdia, GEM Partners

Media Technology Demand Drivers OTT and Multi-Platform Delivery - SVOD

Disney+ in India:

March

2020

May

2021

August

2021

Disney+ launches its streaming service through a freemium model offering content across sports, local, global content and premium library. The Premium plan priced \$19.5 per year, the cheapest rate in any of its markets.

The COVID-19 pandemic accelerates the adoption of the new service.

The service rebranded as Disney+ Hotstar.

Disney+ Hotstar has 34 million paid subscribers, constituting nearly a third of global Disney+ subscribers.

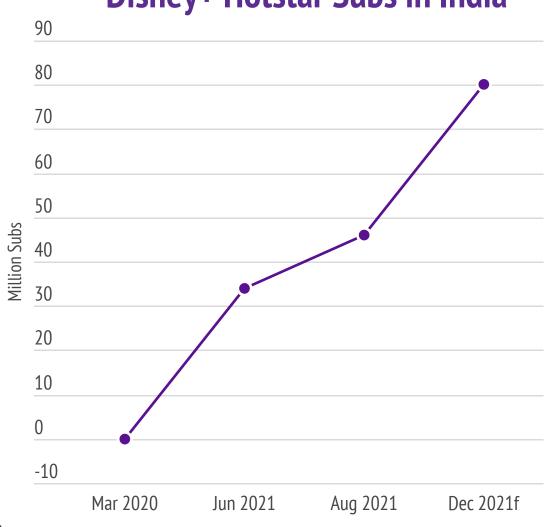
Disney+ Hotstar hikes the price of its base plan by 25% justifying it by adding premium sports and local original content.

Disney+ Hotstar reaches 46 million paid subscribers, nearly doubling its subscriber base in few months.

Disney+ Hotstar announces a low-cost mobile-only streaming plan priced \$6.7 per year. In total, the service available in three tiers: mobile-only (HD quality, \$6.7/year), Super (mobile & web in HD quality, \$12.08/year) and Premium (four devices in 4K quality, \$20.14/year).







Disney+ Hotstar Subs in India



Sources: IABM, Disney, MPA engadget.com

Media Technology Demand Drivers OTT and Multi-Platform Delivery - AVOD

In SEA, the expansion of broadcaster-backed OTTs and short form video platforms is eating up

China remains the largest AVOD market in the region accounting for about 60% of total AVOD revenue.

Excluding China, YouTube dominates the AVOD market with about 60% share out of total AVOD revenue in the region. YouTube is also used by media professionals in Korea, Japan and SEA, where content creators use it for sourcing, trials and marketing concepts.





ByteDance, the biggest AVOD operator in China, suffered from the COVID-19 pandemic, which led to steep ad budget cuts

AVOD Expenditure - Forecast



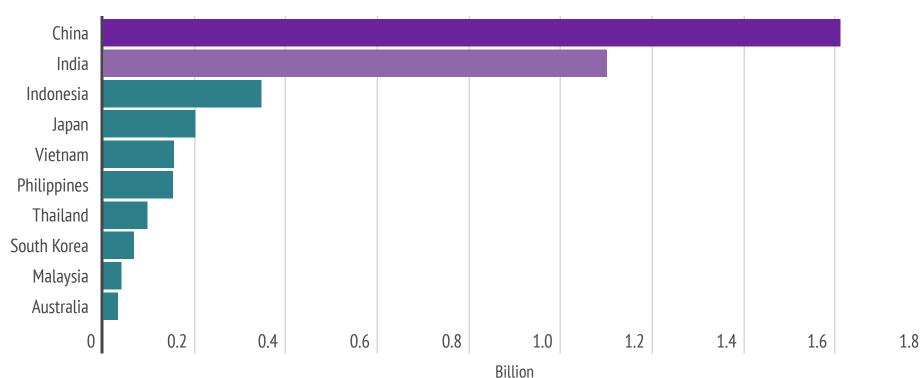
Source: IABM, MPA, WSJ

OTT and Telecoms

Expansion of 4G, LTE and 5G networks driving the adoption of mobile-only streaming services

Telcos forming partnerships with OTT service providers to differentiate themselves

Some telcos launching their own OTT services by leveraging their existing infrastructure

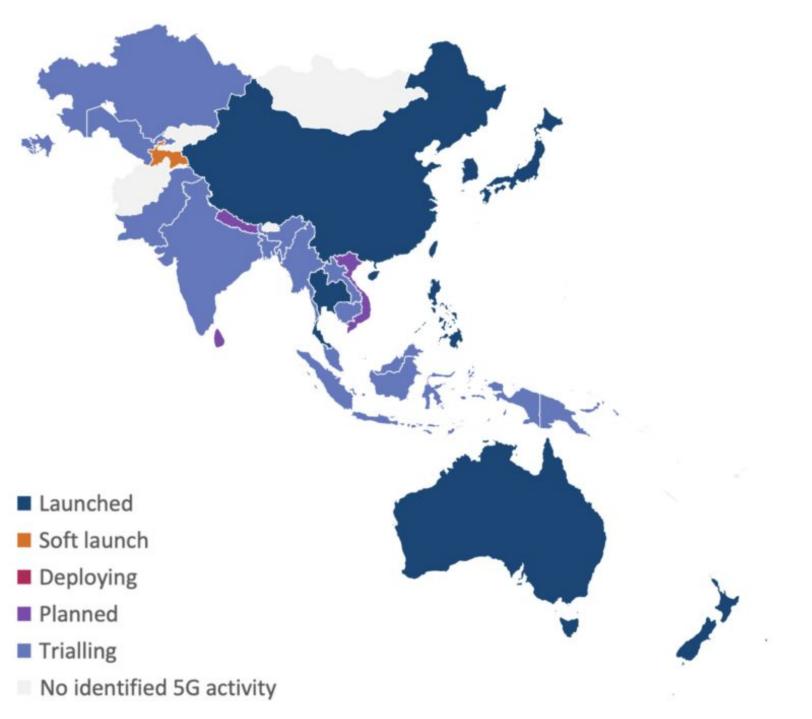


Mobile Connections by Country (as of Jan 2021)





5G-LTE Networks by Country - APAC



Source: IABM, Statista, GSA (Global Mobile Suppliers Association)

OTT and Telecoms

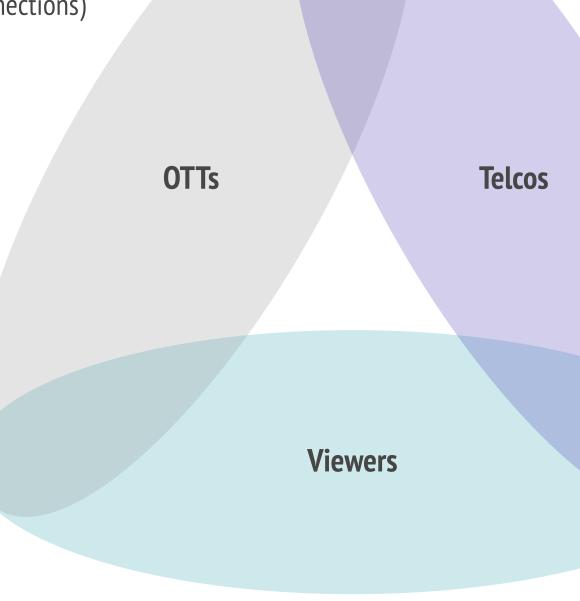
OTTs getting access to telcos' existing **mass customer bases** via:

- Built-in mobile apps
- Integrated billing mechanisms (fixed or mobile connections)
- Promotional access to OTT content, exclusive deals

Direct carrier billing allowing users to pay their subscriptions as part of their monthly phone/data bill (e.g. those without credit cards)

Access to **Asian mobile markets** for global streaming players

Bandwidth pricing enabling OTTs to make their offerings more affordable to attract new customers



Affordable access to high-quality streaming services via mobile





OTTs enabling telcos to pursue **new digital strategies** by leveraging their customer base and **infrastructure advantage** with OTTs premium on-demand content libraries

> Improving their offerings to customers by providing add-on OTT subscriptions and integration, making their **offerings more appealing**

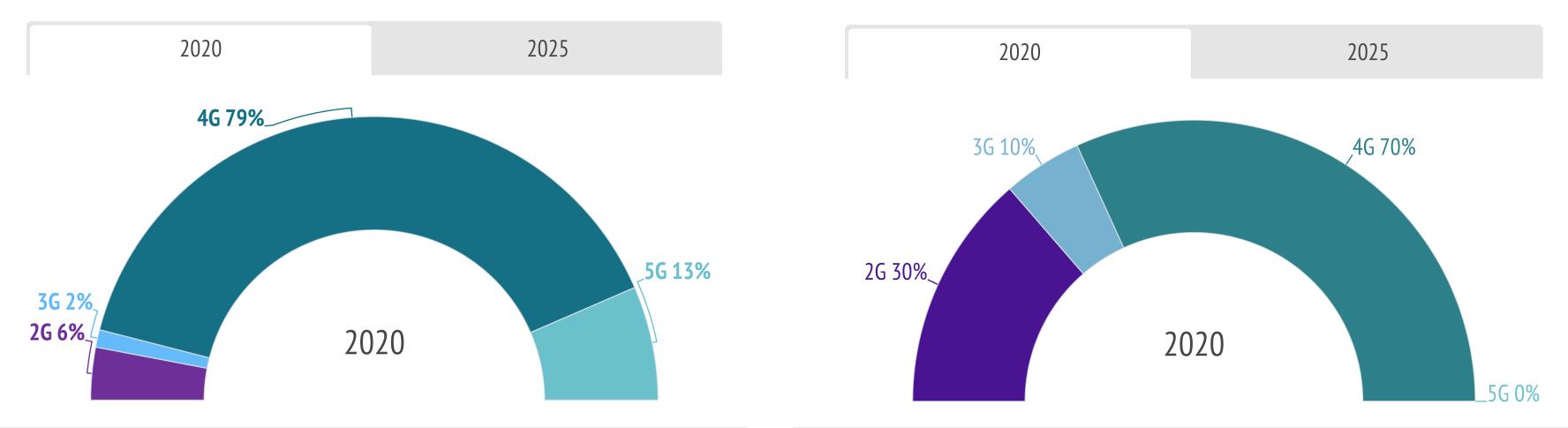
> > **Content co-production and distribution deals** with OTTs giving telcos an access to media business (e.g. Netflix + Chunghwa Telecom)

Better **brand positioning** in an increasingly intense competition

Source: IABM

Media Technology Demand Drivers OTT and Telecoms

Technology Mix - China



The COVID-19 pandemic had a negative impact on the shipments of new smartphones in China, which declined by 20% in 2020 due to manufacturing disruptions and delays to the release of new models.

Chinese phone manufacturers continued to launch 5G-capable smartphones in 2020: Realme, Huawei and OnePlus have introduced 5G products targeted for lower-price segments.

India is experiencing rapid migration to 4G mobile broadband catalysed by rapid adoption of smartphones, market entrants with an LTE-only network technology and the building-up of 4G capacity and coverage.Indian phone manufacturers (e.g. Micromax, Intex) are competing with Chinese and Korean brands by offering 4G and LTE-capable smartphones.





Technology Mix - India

Source: IABM, GSA