

## **Annex A**

## PROSPECTUS SUMMARY

*The following summary is qualified in its entirety by, and should be read in conjunction with, the more detailed information and financial statements and notes appearing elsewhere in this prospectus. In addition to this summary, we urge you to read the entire prospectus carefully, especially the risks of investing in the ADSs discussed under "Risk Factors," before deciding whether to buy the ADSs. This prospectus contains certain estimates and information from the industry reports commissioned by us and prepared respectively by Frost & Sullivan (S) Pte Ltd, or Frost & Sullivan, an independent market research firm, regarding our industries and our market positions.*

### Our Business

Our mission is to entertain the world.

We operate the largest live streaming platform by revenue in Developed Asia, with a market share of 15.5% in the fourth quarter of 2017, according to Frost & Sullivan. In our home market of Taiwan, which, according to Frost & Sullivan, represented 36.1% of the live streaming market in Developed Asia in 2017, we were ranked number one among all live streaming platforms in terms of revenue with a market share of 32.4% in the fourth quarter of 2017, approximately double that of our closest competitor. Artists located in Taiwan were responsible for all of our live streaming revenue in 2016 and 87.8% of live streaming revenue in 2017. We have successfully extended our market leadership in Taiwan to other markets in Developed Asia with close cultural proximity to Chinese-speaking countries. According to Frost & Sullivan, in the fourth quarter of 2017, we were number one among all live streaming platforms in Hong Kong by revenue with a market share of 20.1%, we ranked second among all live streaming platforms in Japan by revenue with a market share of 7.6%, and our live streaming platform was the second largest in terms of monthly active users across Developed Asia.

Our live streaming platform, 17 Media, was launched in Taiwan in July 2015. The number of registered users on 17 Media increased from 29.3 million as of December 31, 2016 to 32.4 million as of December 31, 2017, and our active users grew from 0.9 million during December 2016 to 1.0 million in December 2017. We also operate our main dating applications, Paktor, which was launched in Singapore in 2013, as well as Goodnight and Down. The total number of registered users on our dating applications grew from 11.0 million registered users as of December 31, 2016, to 13.9 million as of December 31, 2017, and active users increased from 0.5 million during December 2016 to 0.7 million during December 2017. We are in the process of integrating our live streaming platform into our online dating applications, and our integrated platform had 46.3 million registered users as of December 31, 2017 and 1.7 million active users during December 2017.

We are a tech-enabled entertainment company led by veteran media and entertainment executives. Our co-founders and core management team have over 20 years of combined experience managing top artists and producing high quality PUGC and PGC in Asia, as well as operating social and interactive entertainment platforms in Asia and globally. Because of our media and entertainment expertise, we understand the challenges facing the entertainment industry, including the gap between fans and artists. We seek to bring our users closer to their favorite artists by enabling users to interact and socialize with artists directly from their mobile devices. This model has made it possible for us to disrupt the traditional artist-agency model by creating a robust and systematic process of discovering, training, developing and promoting artists. We are able to identify and nurture high-quality artists early while avoiding substantial upfront investments.

We have a proven track record of using highly engaging interactive entertainment experiences across multiple media formats to drive monetization. Our high quality live streaming content, evidenced by the fact that 77.6% of the content streamed on our live streaming platform during December 2017 was PUGC from contracted artists, as well as our innovative online-to-offline events and competitions have been highly effective in attracting, engaging and growing a vibrant base of paying users. Our

online competitions give fans an opportunity to show their support to their favorite artists with gifts and provide our popular artists an opportunity to increase their earnings. Average daily time spent on our live streaming platform by all users has increased from 19.0 minutes for Machipopo in December 2016 to 35.5 minutes in December 2017, while paying users have increased from 10,748 to 26,964 representing a paying user ratio of 1.2% to 2.6% in the same respective periods. Average revenue per paying user per month on our live streaming platform has also increased to US\$347.3 in 2017 from US\$102.3 for Machipopo in 2016. In addition, our ability to understand, predict and influence viewers' tastes has enabled us to create a variety of successful products, including pop music albums, music videos, TV programs and variety shows. Our live streaming revenues accounted for 90.3% of our total net revenues in 2017 and 91.4% of our total net revenues in 2017 on a pro forma consolidated basis. We expect to continue to derive the large majority of our revenues from live streaming in the foreseeable future.

Our current structure is the result of a series of transactions that were completed in March 2017 between Machipopo, Inc., the entity that operates our live streaming business, and us, the successor of Paktor Pte. Ltd., the entity that operates our dating business. We have enjoyed significant growth since our current structure came into being. Machipopo received live streaming revenues of US\$4.0 million in 2016, and our live streaming revenues were US\$71.8 million in 2017 or US\$82.4 million in 2017 on a pro forma consolidated basis. Our live streaming revenue in 2017 on a pro forma consolidated basis represented a significant increase of over 20 times from that of Machipopo in 2016. M17 had a loss for the year of US\$16.4 million in 2016 while Machipopo had a loss for the year of US\$11.6 million for the same year, and we had a loss for the year of US\$22.0 million in 2017. M17 recorded negative EBITDA of US\$16.2 million in 2016 while Machipopo recorded negative EBITDA of US\$10.8 million in the same year, and we recorded negative EBITDA of US\$16.6 million in 2017. M17 recorded negative adjusted EBITDA of US\$15.8 million in 2016 while Machipopo recorded negative adjusted EBITDA of US\$10.0 million in the same year, and we recorded negative adjusted EBITDA of US\$14.8 million in 2017. To see how we define and calculate EBITDA and adjusted EBITDA, a reconciliation between EBITDA and adjusted EBITDA and loss for the year (the most directly comparable IFRS financial measure) and a discussion about the limitations of non-IFRS financial measures, please refer to "Management's Discussion and Analysis of Financial Condition and Results of Operations—Non-IFRS Financial Measures."

#### Our Market Opportunities

We define our market of Developed Asia as the combined regions of Taiwan, Japan, South Korea, Singapore and Hong Kong. Developed Asia had over 215 million people, over US\$35,000 of GDP per capita, US\$7.6 trillion of GDP and an annualized GDP growth rate of 1.56% in 2017, according to Frost & Sullivan.

We operate within the pure-play live streaming industry, a market segment of the global media and entertainment industry, with a substantially faster projected growth rate than the overall industry in Developed Asia, according to Frost & Sullivan.

Advances in technology and changing consumer consumption preferences are the primary drivers of our growth.

- *Rise of the digital platform.* Developed Asia's mature and developed internet infrastructure supports the high levels of internet and smartphone penetration necessary for widespread access to digital technologies, such as live streaming platforms.
- *Focus on increasingly diversified entertainment-oriented programs.* According to Frost & Sullivan, new forms of entertainment programs have emerged in recent years, such as reality shows and short-form videos, and the continued growth of entertainment programs will drive usage of live streaming platforms, which typically concentrate on entertainment.

believe that one of our competitive advantages is the quality, quantity and open nature of the content on 17 Media, and that access to rich content is one of the main reasons users visit 17 Media. We seek to foster a broader and more engaged user community, and we encourage influencers, such as celebrities and other public figures, media outlets and organizations with media rights to use our platform to express their views and share interesting, high quality content. If artists and other content providers do not continue to contribute content to 17 Media due to policy changes, their use of alternative communication channels or any other reasons, and we are unable to provide users with interesting, useful and timely content, our user base and user engagement may decline. If we experience a decline in the number of users or the level of user engagement, users may spend less on our platform and customers may not view our products and services as attractive for their advertising and marketing expenditures and may reduce their spending with us, which would materially harm our business and operating results.

*We have a limited operating history in markets outside Taiwan. We may fail to meet the challenges presented by our increasing international operations.*

Our business has continued to expand outside Taiwan, our home market. For example, since we expanded into the Japanese market in August 2017, we have grown rapidly to become the second largest live streaming platform in Japan in terms of revenue in the fourth quarter of 2017, according to Frost & Sullivan. In December 2017, 55.4% of MAUs on our live streaming application were from overseas markets, including Japan, Hong Kong, Singapore and certain other developed Asian markets, while the remainder were from Taiwan. We expect to continue our global expansion as a key growth strategy, which exposes us to a number of risks, including:

- challenges in formulating effective local sales and marketing strategies targeting mobile internet users from various jurisdictions and cultures, who have a diverse range of preferences and demands;
- challenges in identifying appropriate local business partners and establishing and maintaining good working relationships with them;
- local competition;
- challenges in meeting local advertiser demands as well as online marketing practices and conventions;
- differences in user and advertiser reception and perception of our applications internationally;
- challenges in building direct sales operations, especially in developed markets;
- fluctuations in currency exchange rates;
- compliance with applicable foreign laws and regulations, including but not limited to internet content requirements, foreign exchange controls, cash repatriation restrictions, intellectual property protection rules and data privacy requirements;
- exposure to different tax jurisdictions that may subject us to greater fluctuations in our effective tax rate and assessments in multiple jurisdictions on various tax-related assertions, including transfer pricing adjustments and permanent establishment; and
- increased costs associated with doing business in foreign jurisdictions.

Our business, financial condition and results of operations may be materially and adversely affected by these and other risks associated with our increasingly globalized operations.

## MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

You should read the following discussion and analysis of our financial condition and results of operations in conjunction with the section entitled "Selected Consolidated Financial Data" and our consolidated financial statements and the related notes included elsewhere in this prospectus. This discussion contains forward-looking statements that involve risks and uncertainties. Our actual results and the timing of selected events could differ materially from those anticipated in these forward-looking statements as a result of various factors, including those set forth under "Risk Factors" and elsewhere in this prospectus.

The unaudited pro forma consolidated financial data for the year ended December 31, 2017 presented in this section is provided supplementally and includes adjustments to give effect to the acquisition of Machipopo, Inc., which was completed in March 2017, as if such transaction had occurred on January 1, 2017. See "—Unaudited Pro Forma Consolidated Financial Information" for a discussion of the adjustments made for the presentation of the pro forma consolidated financial information.

### Overview

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## OUR MARKET OPPORTUNITY

### Market Definition

We define our market of Developed Asia as the combined regions of Taiwan, Japan, South Korea, Hong Kong and Singapore, which are select countries in Asia characterized by high gross domestic product, or GDP, per capita and well-established digital technology adoption. Our market had over 215 million people, 187 million mobile internet users, over US\$35,000 of GDP per capita, US\$7.6 trillion of GDP and an annualized GDP growth rate of 1.56% in 2017, according to Frost & Sullivan.



	Taiwan	Hong Kong	Japan	Singapore	South Korea
Population	23.6mm	7.4mm	127.5mm	5.7mm	51.0mm
GDP	US\$572bn	US\$334bn	US\$4,884bn	US\$306bn	US\$1,530bn
GDP / Capita	US\$24,244	US\$45,364	US\$38,311	US\$53,558	US\$30,003
Internet Users	20.6mm	6.5mm	118.5mm	4.8mm	47.0mm
Internet Penetration	87.4%	87.7%	92.9%	84.0%	92.2%

### Total Addressable Market and Growth Opportunities

We operate within the global media and entertainment industry. Total revenue for the global media and entertainment industry increased from US\$1,136.0 billion in 2014 to US\$1,256.8 billion in 2017 and is forecasted to reach US\$1,409.1 billion by 2022 at a compound annual growth rate, or CAGR, of 2.3%. The chart below illustrates certain historical data of the global media and entertainment industry by market segment from 2014 to 2017 and growth estimates for each market segment from 2018 to 2022.

### Market Size and Trends of the Global and Developed Asia Media and Entertainment Industry

US\$bn	2016	2017F	2018F	2019F	2020F	2021F	2022F	CAGR 2017F - 2022F
<b>Global</b>								
Media and Entertainment Industry	1,220.1	1,256.8	1,287.0	1,318.0	1,350.0	1,380.0	1,409.1	2.3%
OTT Video	30.2	36.7	43.9	51.7	60.0	68.3	77.0	16.0%
Pure-play Live Video Streaming	2.9	5.0	7.5	10.9	14.7	18.4	22.3	34.9%
<b>Developed Asia</b>								
Media and Entertainment Industry	130.8	133.8	136.7	138.7	141.3	143.2	145.2	1.6%
OTT Video	1.9	2.4	3.2	4.2	5.3	6.6	7.8	26.1%
Pure-play Live Video Streaming	0.3	0.5	0.8	1.3	1.9	2.6	3.3	47.1%

Source: Frost & Sullivan report

$$13(=13.1+13.2+13.3+13.4+13.5)$$

$$14(=14.1+14.2+14.3+14.4+14.5)$$

$$15(=15.1+15.2+15.3+15.4+15.5)$$

### Market Size and Trends of Developed Asia Media and Entertainment Industry by Region, 2014-2022F

US\$bn	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F	CAGR 2017F - 2022F
Taiwan	6.6	6.7	6.9	7.2	7.5	7.7	8.0	8.3	8.5	3.5%
Japan	85.7	87.8	90.3	92.3	94.0	94.9	96.1	96.8	97.5	1.1%
Hong Kong	4.7	4.7	4.7	4.7	4.8	4.9	5.0	5.1	5.3	2.2%
Singapore	3.0	3.1	3.1	3.2	3.2	3.3	3.4	3.5	3.6	2.8%
South Korea	23.8	24.7	25.8	26.5	27.2	27.9	28.7	29.5	30.3	2.8%
Total Developed Asia	123.8	127.0	130.8	133.8	136.7	138.7	141.3	143.2	145.2	1.6%

Source: Frost & Sullivan report

$$16 + 17 + 18 + 19 + 20$$

### Market Size and Trends of Developed Asia Pure-play Live Video Streaming Industry by Region, 2014-2022F

US\$m	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F	CAGR 2017F - 2022F
Taiwan	23	34	52	174	267	359	461	573	674	31.1%
Japan	32	40	58	85	182	354	562	798	1,091	66.6%
Hong Kong	18	27	40	59	89	139	201	288	356	43.2%
Singapore	11	15	22	33	54	92	143	190	243	49.0%
South Korea	74	85	103	130	205	340	524	707	945	48.7%
Total Developed Asia	158	201	274	481	798	1,284	1,892	2,556	3,309	47.1%

Source: Frost & Sullivan report

$$21 + 22 + 23 + 24 + 25$$

The over-the-top, or OTT video segment, is comprised of two sub-segments, video-on-demand, or VOD, and live streaming. The VOD market is thriving, driven by investments from service providers and consumer interest. Consumer preferences regarding TV is shifting away from linear programming to individualized on-demand viewing. This shift is incentivizing service providers to invest in widely accessible online video as a way to retain subscribers and improve viewer engagement. Live streaming services are a more recent phenomenon relative to VOD and began more than 10 years ago as live event broadcasting channels. Although the live streaming services market is smaller than the VOD market, it is growing at a much faster pace. Initially offered primarily on desktop platforms, live streaming services in Developed Asia have been transitioning from desktop to mobile since 2014.

Live video streaming is often organized into different categories, such as sports, gaming, talent shows, news, business, finance and others. Three types of live streaming platforms dominate the market: social networking-oriented (e.g., Facebook Live and Instagram Live); VOD-oriented (e.g., YouTube Live and Niconico Live); and pure-play (e.g., 17 Media, Lang Live, Bigo Live and Afreeca TV). Since social networking-oriented and VOD-oriented live streaming platforms are not completely monetized, revenues from pure-play live streaming platforms represent the overall live streaming market.

Digital media is becoming increasingly disruptive and a popular alternative to traditional media. In Developed Asia, the OTT video segment is anticipated to have a CAGR of 26.1% from 2017-2022, and the pure-play live streaming segment is expected to grow at a CAGR of 47.1% for the same period, according to Frost & Sullivan.

$$14 (= 14.1 + 14.2 + 14.3 + 14.4 + 14.5)$$

$$15 (= 15.1 + 15.2 + 15.3 + 15.4 + 15.5)$$

## Drivers of Our Live Streaming Business

### Digital Transformation of Industries

#### Rise of the Digital Platform

Digital platforms have profoundly changed the media and entertainment industry and the production, processing, distribution and consumption of online content and services. Proactive engagement is the new online paradigm and industry players increasingly rely on personalized services offerings, more convenient and faster payment options and other features to reach users.

Demand for OTT video services continues to increase in conjunction with increases in internet penetration. OTT video services have begun to converge with traditional media formats, including television, music and film, to capture market opportunities. These services are highly popular among the younger demographic since they are more tech-savvy and can quickly adapt to new technologies. Live Video streaming services fueled by the convergence of live broadcasting and mobile broadband is also gaining traction among young viewers.

#### Availability of Internet Access and Online Payment Mechanism

Our key markets, including Taiwan, Japan and Hong Kong, have a very developed telecommunications infrastructure with smartphone penetration of 76.0%, 90.8% and 80.0%, respectively, and high degree of internet penetration of 87.4%, 87.7%, 92.9% respectively in December 2017, according to Frost & Sullivan.

According to the Frost & Sullivan report, Japan, South Korea and Taiwan were globally ranked third, fourth and sixth, respectively, as of the end of 2017 by gross revenue generated from mobile apps (including both Android and iOS operating systems).

#### Focus on Increasingly Diversified Entertainment Programs

##### Entertainment Programs Expected to Dominate Content Genres

According to Frost & Sullivan, in Developed Asia, the production of entertainment programs is expected to grow from 33.7% of all TV program production by the end of 2017 to 40.6% by the end of 2022 and to continue to lead production across all content genres by the end of 2022.

The shift in production focus from other content genres to entertainment is particularly evident in Developed Asia. New forms of entertainment programs have emerged in recent years, such as reality shows and short-form videos, and entertainment-oriented programs are expected to dominate the content genres from 2018 to 2022.

TV Program Production Forecast by Content Genre, Developed Asia, 2014-2022F

Number of products (%)	2014	2015	2016	2017E	2018E	2019F	2020F	2021F	2022F
Scripted-Drama	14.2%	14.6%	15.0%	15.6%	15.8%	16.1%	16.2%	16.0%	15.7%
Entertainment	27.9%	30.2%	32.3%	33.7%	34.9%	36.3%	37.2%	38.6%	40.6%
News	11.4%	11.0%	10.7%	10.3%	10.1%	9.8%	9.5%	9.2%	8.7%
Sports	8.6%	8.7%	8.9%	9.0%	9.2%	9.3%	9.5%	9.6%	9.5%
Documentary	15.1%	14.8%	14.5%	14.2%	14.0%	13.6%	13.3%	12.9%	12.1%
Kids TV	7.8%	8.0%	8.3%	8.8%	8.1%	7.5%	6.9%	6.6%	6.3%
Others*	15.0%	12.7%	10.3%	8.4%	7.9%	7.5%	7.4%	7.1%	7.1%

Source: Frost & Sullivan report

\* Includes lifestyle, talk shows, shopping, animal/wild life, etc.

The continued growth of entertainment programs will drive usage of live streaming platforms, which typically concentrate on entertainment.

#### *Increasingly Diversified Live Streaming Platform Content*

Increasingly diversified and popular content offerings, including broad coverage of lifestyle activities, will continue to drive growth in the user base and transaction volumes of live streaming platforms. Content related to gaming, e-sports, travel, leisure, arts, e-events, e-contests and outdoor activities are increasingly available on live streaming platforms and are expected to be in high demand from 2018 to 2022. For example, the inclusion of content related to East Asian pop culture, which is very popular in Developed Asia and international markets, is widely disseminated on live streaming platforms, increasing their popularity and stickiness with users.

#### *Emergence of UGC and PUGC*

The popularity of blogs, forums, VOD websites and social networking platforms is an indication that UGC and PUGC generated by non-professional content creators can be as in-demand and influential as PGC created by professional media studios. Relative to traditional media channels, live streaming platforms more effectively aggregate, distribute and monetize UGC and PUGC. Live streaming platforms allow local artists at the grassroots level and other aspiring content creators to create and distribute content to large audiences in real-time while monetizing such content through virtual gifts, subscriptions, advertising, etc.

The increasing number of OTT video-related platforms, including both VOD and live streaming, since 2005 is an indication that both the amount of UGC and PUGC created by grassroots content creators as well as consumption of such content increased. According to Frost & Sullivan, the number of OTT video-related platforms worldwide reached more than 1,000 by the end of 2017, compared to 800 by the end of 2016.

In the future, we see huge potential in UGC and PUGC video content generation as online social networking activities (content creation and sharing) have shifted from text and pictures to video. According to Frost & Sullivan, 58% of internet users worldwide have uploaded or shared a video online as of the third quarter of 2017. Within the same demographic, the percentages were even higher for internet users aged from 16 to 24 and from 25 to 34 at 64% and 66%, respectively. The absence of notable entry barriers for UGC and PUGC creation and the low cost of equipment (i.e., smart phones and mobile broadband access) has boosted the ease of content creation for all users with little to no dependence on traditional mass media. All content viewers and consumers can also potentially become content creators, which is one of the key characteristics for VOD and live streaming platforms, which significantly shortens the amount of time and resources needed to become a public figure.

#### *New Technology Enables Content Innovation and Creation*

##### *Data Analytics Provide Insights into Online Consumer Behavior*

Data analytics analyze user behaviors such as the type of content viewed, length of time spent by users to view content, purchasing patterns, etc. More and more companies are using data analytics to provide a more customized online experience for users.

##### *VR/AR Technologies Will Enhance User Experience*

Advances in technology should facilitate customer acquisition in both domestic and international markets. Key anticipated technology developments from 2018 onwards include the deployment of analytics applications, development of virtual and augmented reality and artificial intelligence. Virtual and augmented reality will create a more engaging viewer experience for live streaming platforms.

## Competitive Landscape of Live Streaming Business

### Overview of Pure-play Live Streaming Platforms

The key pure-play live streaming platforms in Developed Asia include 17 Media, Showroom, AfreecaTV, Bigo Live, Lang Live, UpLive, MeMe Live, Live.me and Twitch. Some are leading local and regional players that operate under large group companies (e.g., 17 Media, Showroom and AfreecaTV). Others are regional players supported by Chinese companies (e.g., Bigo Live, Lang Live, UpLive, MeMe Live and Live.me). The rest are global players focusing on a specific form of live video streaming content (e.g., Twitch), with a relatively smaller market presence in entertainment in Developed Asia compared to other local and regional players.

Many pure-play live video streaming players are expanding their presence across the region, providing local support to maintain the quality of user experience at the local levels. The sector has experienced a surge in new market entrants recently. There were fewer than five pure-play live streaming platforms before 2015 and more than 15 platforms by the end of 2017. As a result, Frost & Sullivan anticipates competition to intensify at both the country and regional levels by the end of the forecast period.

In Developed Asia, 17 Media, AfreecaTV, Showroom, Bigo Live and MeMe Live are the top five pure-play live streaming platforms, accounting for 58.4% of the total market share by revenue in the fourth quarter of 2017. The remainder of the market is fragmented and shared by a large number of local and global players.

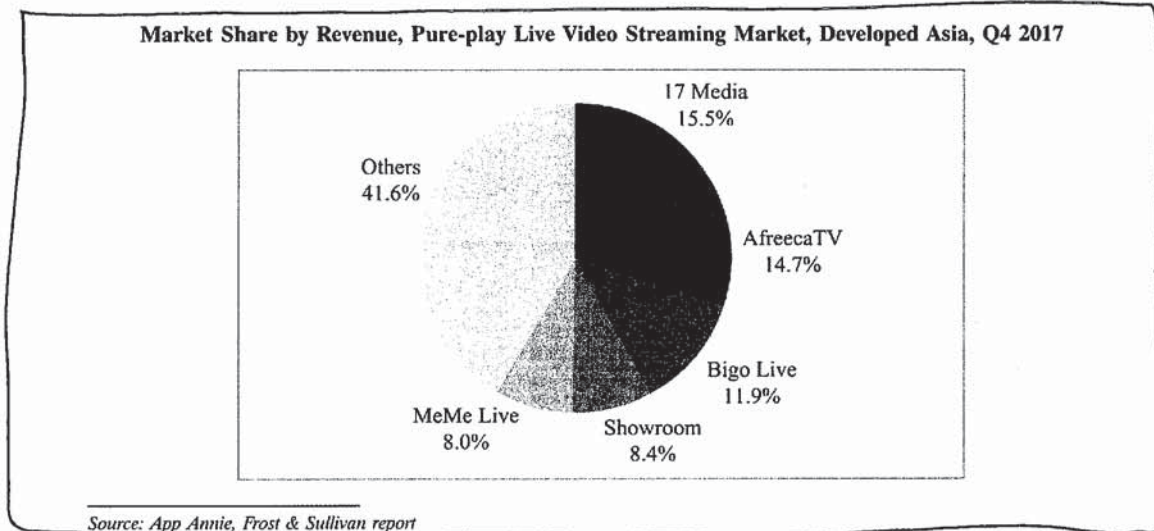
Top Pure-play Live Streaming Platforms, Developed Asia, 2017E

Platforms	Origin	Year of Establishment	Number of Downloads in Developed Asia, 2017 (Million)
17Live	Taiwan	2015	3.8
Bigo Live	Singapore	2016	1.5
Lang Live	Taiwan	2016	1.5
UpLive	China	2016	4.4
AfreecaTV	South Korea	2006	2.3
Showroom	Japan	2014	1.1
MeMe Live	Taiwan	2016	1.8
Live.me	United States	2016	1.9
V Live	South Korea	2015	3.2

Source: Frost & Sullivan report

With internet usage and the viewing of videos online increasing in Developed Asia, the pure-play live streaming platform market is expected to grow at a CAGR of 47.1% from 2017 to 2022 in the region, indicating the significant growth potential of existing platforms and new entrants. The barriers of entry are high for new live streaming platforms owing to the high levels of localization required to source, create and provide content. Nevertheless, new market entrants are expected to continue their foray into the market with enhanced interactive features and a variety of content.

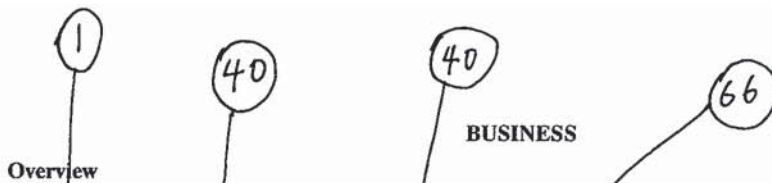
*Market Share of Pure-play Live Streaming Platforms by Revenue in Developed Asia, Taiwan and Japan*



17 Media is one of the largest regional live streaming platforms alongside competitors such as AfreecaTV, Showroom, and Bigo Live. In 17 Media's home market Taiwan, it holds the highest market share. In Developed Asia, 17 Media ranked No.1 with 15.5% of market share by revenue in the fourth quarter of 2017, while it came in second place in terms of MAUs during the same period. This reflects successful implementation of go-to-market strategies across the region and robust monetization capability in the second half of 2017. AfreecaTV led in the South Korea market while Showroom dominated the Japanese market in 2017, but both have limited presence outside their home countries. Bigo Live from Singapore and UpLive from China have grown their user bases rapidly across the region. However, their monetization capabilities are not as fully developed. Other participants include local companies such as Lang Live, MeMe Live, V Live, and Live.me, and global companies such as Twitch.

17 Media reinforced its market leadership position in Taiwan with 32.4% of the market by revenue in the fourth quarter of 2017. High quality PUGC and interactive engagement are critical market share growth drivers. 17 Media is beginning to play a prominent role in driving market awareness in the Taiwan market. Lang Live and MeMe Live reported market shares by revenue of 17.7% and 14.6%, respectively, in the fourth quarter of 2017.

Showroom has a strong market leadership position in Japan with a market share of 42.8% as of the fourth quarter of 2017. However, according to its parent company, DeNA, Showroom's business has reported a negative gross profit margin for the past three years. Live.me is one of the first-movers among global players that entered the Japan market in early 2017. 17 Media officially launched its service in Japan in August 2017, managing to grow its market share to 9.6% within four months of entry.



## Overview

We operate the largest live streaming platform by revenue in Developed Asia, with a market share of 15.5% in the fourth quarter of 2017, according to Frost & Sullivan. In our home market of Taiwan, which, according to Frost & Sullivan, represented 66.1% of the live streaming market in Developed Asia in 2017, we were ranked number one among all live streaming platforms in terms of revenue with a market share of 32.4% in the fourth quarter of 2017, approximately double that of our closest competitor. Artists located in Taiwan were responsible for all of our live streaming revenue in 2016 and 87.8% of live streaming revenue in 2017. We have successfully extended our market leadership in Taiwan to other markets in Developed Asia with close cultural proximity to Chinese-speaking countries. According to Frost & Sullivan, in the fourth quarter of 2017, we were number one among all live streaming platforms in Hong Kong by revenue with a market share of 20.1%, we ranked second among all live streaming platforms in Japan by revenue with a market share of 9.6%, and our live streaming platform was the second largest in terms of monthly active users across Developed Asia.

Our live streaming platform, 17 Media, was launched in Taiwan in July 2015. The number of registered users on 17 Media increased from 29.3 million as of December 31, 2016 to 32.4 million as of December 31, 2017, and our active users grew from 0.9 million during December 2016 to 1.0 million in December 2017. We also operate our main dating applications, Paktor, which was launched in Singapore in 2013, as well as Goodnight and Down. The total number of registered users on our dating applications grew from 11.0 million registered users as of December 31, 2016, to 13.9 million as of December 31, 2017, and active users increased from 0.5 million during December 2016 to 0.7 million during December 2017. We are in the process of integrating our live streaming platform into our online dating applications, and our integrated platform had 46.3 million registered users as of December 31, 2017 and 1.7 million active users during December 2017.

We are a tech-enabled entertainment company led by veteran media and entertainment executives. Our co-founders and core management team have over 20 years of combined experience managing top artists and producing high quality PUGC and PGC in Asia, as well as operating social and interactive entertainment platforms in Asia and globally. Because of our media and entertainment expertise, we understand the challenges facing the entertainment industry, including the gap between fans and artists. We seek to bring our users closer to their favorite artists by enabling users to interact and socialize with artists directly from their mobile devices. This model has made it possible for us to disrupt the traditional artist-agency model by creating a robust and systematic process of discovering, training, developing and promoting artists. We are able to identify and nurture high-quality artists early while avoiding substantial upfront investments.

We have a proven track record of using highly engaging interactive entertainment experiences across multiple media formats to drive monetization. Our high quality live streaming content, evidenced by the fact that 77.6% of the content streamed on our live streaming platform during December 2017 was PUGC from contracted artists, as well as our innovative online-to-offline events and competitions have been highly effective in attracting, engaging and growing a vibrant base of paying users. Our online competitions give fans an opportunity to show their support to their favorite artists with gifts and provide our popular artists an opportunity to increase their earnings. Average daily time spent on our live streaming platform by all users has increased from 19.0 minutes for Machipopo in December 2016 to 35.5 minutes in December 2017, while paying users have increased from 10,748 to 26,964 representing a paying user ratio of 1.2% to 2.6% in the same respective periods. Average revenue per paying user per month on our live streaming platform has also increased to US\$347.3 in 2017 from US\$102.3 for Machipopo in 2016. In addition, our ability to understand, predict and influence viewers' tastes has enabled us to create a variety of successful products, including pop music albums, music videos, TV programs and variety shows.

Our current structure is the result of a series of transactions that were completed in March 2017 between Machipopo, Inc., the entity that operates our live streaming business, and us, the successor of Paktor Pte. Ltd., the entity that operates our dating business. We have enjoyed significant growth since our current structure came into being. Machipopo received live streaming revenues of US\$4.0 million in 2016, and our live streaming revenues were US\$71.8 million in 2017 or US\$82.4 million in 2017 on a pro forma consolidated basis. Our live streaming revenue in 2017 on a pro forma consolidated basis represented a significant increase of over 20 times from that of Machipopo in 2016. M17 had a loss for the year of US\$16.4 million in 2016 while Machipopo had a loss for the year of US\$11.6 million for the same year, and we had a loss for the year of US\$22.0 million in 2017. M17 recorded negative EBITDA of US\$16.2 million in 2016 while Machipopo recorded negative EBITDA of US\$10.8 million in the same year, and we recorded negative EBITDA of US\$16.6 million in 2017. M17 recorded negative adjusted EBITDA of US\$15.8 million in 2016 while Machipopo recorded negative adjusted EBITDA of US\$10.0 million in the same year, and we recorded negative adjusted EBITDA of US\$14.8 million in 2017. To see how we define and calculate EBITDA and adjusted EBITDA, a reconciliation between EBITDA and adjusted EBITDA and loss for the year (the most directly comparable IFRS financial measure) and a discussion about the limitations of non-IFRS financial measures, please refer to "Management's Discussion and Analysis of Financial Condition and Results of Operations—Non-IFRS Financial Measures."

## Our Strengths

### Leading Live Streaming Platform in Developed Asia

We are the largest live streaming platform by revenue in Developed Asia with a market share of 15.5% in the fourth quarter of 2017, according to Frost & Sullivan. In our home market of Taiwan, we were ranked number one among all live streaming platforms in terms of revenue with a market share of 32.4% in the fourth quarter of 2017, approximately double that of our closest competitor. Taiwan is the sixth largest mobile app market globally by revenue, and our application 17 Media, is ranked second among non-gaming applications by revenue in Taiwan, according to Frost & Sullivan.

We have successfully extended our market leadership in Taiwan to other Developed Asia markets. According to Frost & Sullivan, we are ranked No. 1 in Hong Kong in terms of revenue among live streaming platforms with a market share of 20.1% in the fourth quarter of 2017. In Japan, a market with high digital spending where live interactive entertainment penetration is still relatively low and expected to grow rapidly, according to Frost & Sullivan, we replicated our success in Taiwan by producing and distributing premium content capable of attracting high value customers. Since launching in Japan in August 2017, we have grown rapidly to become the second largest live streaming platform by revenue in the fourth quarter of 2017, according to Frost & Sullivan.

According to Frost & Sullivan, live interactive entertainment content has begun to converge with other traditional media formats including TV, film and print, unlocking a massive and rapidly growing addressable market for us. We are driving this disruptive trend, and we believe our market leadership across Developed Asia positions us well to capture this opportunity.

### In-depth Media and Entertainment Experience and Knowledge

We are a tech-enabled entertainment company led by veteran media and entertainment executives. Our co-founders and core management team have over 20 years of combined experience managing top artists and producing high quality content in Asia, operating social and interactive entertainment platforms in Asia and globally. Our co-founder, Jeffrey Li-Tchen Huang, is a seasoned veteran in the entertainment business with an established fan base and deep relationships across Asia's entertainment industry. Mr. Huang began his career in the early 1990s as a successful artist who was a pioneer in bringing hip hop to Taiwan's music culture. He also founded the music label Machi Entertainment in 2003.

Our unique knowledge of the media and entertainment business enables us to understand the industry's challenges. We have disrupted the traditional artist-agency model by creating a robust and systematic process of discovering, vetting, training, developing and promoting artists. We are able to identify and nurture high quality artists early while avoiding substantial upfront investments. We believe our "artist-first" approach offers a superior value proposition to artists compared to traditional agencies, which helps us attract and retain the best artists, enhancing their loyalty and stickiness to our platform.

In addition, our ability to understand, predict and influence viewers' tastes has enabled us to create a variety of successful products, including pop music albums, music videos, TV programs and variety shows. We are one of the largest artist agencies in Developed Asia according to Frost & Sullivan. We grew our contracted artists from 999 in December 2016 to 5,414 in December 2017 in Developed Asia. We own substantially all of the content generated by our contracted artists, which provides us with a pipeline of valuable intellectual property. We believe our control over a large, high quality and diverse artist pool provides us with a competitive advantage that cannot be easily replicated by our competitors.

#### ***High Quality Content across Multiple Media Formats***

Our platform offers among the highest quality content in the live interactive entertainment industry in Developed Asia, as evidenced by the large amount of PUGC available on our platform that is generated by our contracted artists. We provide continuous training and development opportunities to our contracted artists to help them produce quality content and ensure the longevity and commercial success of their careers while building personal brand appeal. We educate them on the use of professional microphones, sound effects, engaging gestures, visual aids and other tools and techniques to enhance their performance abilities and help them to better engage with users. Most content on our platform is PUGC, including 77.6% of the content streamed on our live streaming platform during December 2017, which differentiates us from other live streaming applications.

By leveraging our own PUGC and PGC production capabilities and strategic media partnerships, we offer high quality content across multiple media formats, including mobile and online, TV and film. For example, we discovered, assembled and developed a successful all-girl entertainment group, IVI Girls, from among our top artists. IVI Girls has gained strong traction on our mobile and online platform, produced popular music singles and videos, as well as appeared in TV commercials and drama productions. One of our strategic partners is Gala Television Corporation, or GTV, which develops and produces interactive content catered for mainstream TV audiences, further widening our addressable market. Our recent production, 17 Smart, was aired on GTV on Saturday prime time and achieved one of the highest audience viewership shares among new variety show pilots aired on cable TV in February 2018. The viewership rating was more than twice as high as the show it replaced. Viewership reached 304,000, averaging 19 minutes per view on the live broadcast and 272,000, averaging 16 minutes per view on the rebroadcast. In addition, the streamer contracts and agency agreements entered into with our artists provide us a steady pipeline of high quality PUGC and PGC.

#### ***Innovative and Effective Content Monetization***

We have a proven track record of using highly engaging interactive entertainment experiences across multiple media formats to drive monetization. Our high quality live streaming content and innovative online-to-offline events and competitions have been highly effective in attracting, engaging and growing a vibrant base of paying users. The high quality of our live streaming content is evidenced by the fact that during December 2017, 77.6% of the content streamed on our live streaming platform was PUGC from contracted artists, up from 27.2% during December 2016. Average daily time spent on our live streaming platform by all users has increased from 19.0 minutes for Machipopo in December 2016 to 35.5 minutes in December 2017, while the paying user ratio has increased from 1.2% for Machipopo to 2.6% in the same respective periods. Average revenue per paying user on our live

streaming platform per month has also increased from US\$102.3 to US\$347.3 in the same respective periods.

We have organized a variety of innovative online competitions and offline events with different themes to incentivize users to increase their spending on our platform. These events and competitions encourage our users to spend money to buy and give gifts to their favorite artists in order to help them win the competitions. We provide recognition to the top spending users and winning artists on our platform. This allows top spending users and winning artists to gain greater media exposure, providing both with a sense of satisfaction and accomplishment. We further segment our competitions and events according to spending level and artistic categories, creating opportunities for a broad range of our users to win, thus increasing user participation and motivation to spend. Through gamifying the virtual gifting process and tapping into the competitive reward psyche of users and fans, we have successfully organized multiple events and competitions that have generated high user participation and substantial revenues.

The popularity of these events and competitions has also attracted blue-chip corporate sponsors and advertisers to our platform. These sponsorships and advertising opportunities allow us to further monetize content across our platform and generate additional new revenue streams.

#### *Vertically Integrated Entertainment Ecosystem Powered by Data Insights*

We have a strong presence across the entertainment value chain, positioning us at the forefront of a realignment of the entertainment industry across Developed Asia, starting with Taiwan. We operate a vertically integrated entertainment platform spanning the value chain, from artist discovery and management to content production, distribution and monetization. This allows us to better manage and control the end-to-end process and enables us to effectively capture valuable insights.

Leveraging our technology capabilities, we collect and analyze data on users and artists across our platform, enabling differentiated data-driven decision making and operations. For instance, we have created a shorter, faster and more reliable feedback loop compared to traditional entertainment agencies. This drives more accurate insights into individual artist potential and development, enabling us to more predictably and effectively identify and groom top artists. Through improved user segmentation and targeting, we are also driving more precise marketing and monetization initiatives. In addition, data from our highly engaged user base enables us to refine our product offering and introduce new features to better anticipate and meet the diverse entertainment needs of our user community. This further strengthens the quality of our content and products and increases user engagement and spending, creating a self-reinforcing and virtuous cycle.

#### *Proven Track Record of Extending Our Business Model across Developed Asia*

We have established a robust business model with proven economic sustainability. We have successfully replicated our business model across high value markets in Developed Asia, noticeably in Hong Kong and Japan, leveraging our proven talent management expertise, operational know-how and robust technology platform. In each of our markets, we have also successfully localized our approach, assembling and maintaining on-the-ground teams, researching local preferences and collaborating with strategic partners to complement our service offering. In Japan, we commenced operations in August 2017 and we achieved a leading market position in terms of revenue in the fourth quarter of 2017, according to Frost & Sullivan. Our number of active users in Japan reached 301,371 in December 2017, compared to 26,648 in August 2017. In addition, we had 1,907 contracted artists in Japan in December 2017, compared to 253 contracted artists in August 2017. The scalability of our platform and our proven ability to extend our business model across markets help us achieve a strong growth trajectory.

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## **Our Strategies**

### ***Grow in Japan and Expand into New Markets***

We were the second largest live streaming platform in Japan by revenue in the fourth quarter of 2017, according to Frost & Sullivan, and Japan is therefore a market we focus on in Developed Asia. Japan is the largest media and entertainment market by advertising revenue in Asia and exerts strong cultural influence in Asia. We believe that we have a strong understanding of the Japanese market and culture, which has allowed us to achieve a strong position in the market in only a few months since we commenced operation in Japan in August 2017. Our continued success in Japan is critical to achieving our operating and financial forecasts. Our business partner for our Japan business, Hirofumi Ono, has a deep knowledge of the market, helping us to fundamentally disrupt the talent management and entertainment industry in Japan and rebalance the power between artists and agencies. This has resulted in a large number of high quality artists joining our platform in a short period of time. We had 1,907 contracted artists in Japan in December 2017. Our high quality artists have enabled us to acquire 4,674 paying users in Japan in December 31, 2017. We will continue to roll out our business and stage marketing campaigns to raise brand awareness, recruit more artists, form collaborations with local TV and music partners, enrich content offerings and enhance user monetization in Japan.

Apart from Japan, we also plan to expand our business into South Korea in 2018. Similar to Japan, South Korea has a highly developed media and entertainment industry with expanding cultural influence across Asia and internationally. Furthermore, Japanese and Korean content is extremely popular across Asia and is highly marketable in other markets. As a result, we believe that our growth in South Korea and Japan will not only increase the number of our users from those markets but will also provide marketable content to our users in other markets.

### ***Expand Content Offerings to Increase User Engagement and Loyalty***

Content is king for our business. Our ability to attract and monetize users depends on our ability to consistently provide high quality content on our platform. We intend to leverage our unique knowledge of the media and entertainment industry to broaden our spectrum of content offerings.

We intend to continue our expansion into new content and PGC verticals, such as movies and TV content, to make entertainment more interactive across multiple media formats. We intend to produce this suite of content through both in-house production and collaborations with external production studios. We also plan to increasingly leverage the vast amount of user data collected on our platform to create targeted content catering to user tastes, refine and improve content and develop localized and relevant new content and services that meet the needs of our users.

### ***Reinvent Traditional Media in Our Markets***

Traditional media, such as television and films, have dominated entertainment for decades. Advances in internet speeds and the deepening penetration of personal tablet and smartphone devices have led to the proliferation of OTT, VOD and live streaming businesses. These technologies make it possible for consumers to watch video content in a variety of ways other than on television sets and in movie theaters, including anytime and anywhere on their personal devices and interact with the content in various ways.

We believe that by making video content truly interactive and available on a mobile platform, we can redefine traditional entertainment media and bring about a new age of entertainment. We aim to create a diverse and rich content ecosystem that is dynamic, interactive and available through multiple formats. Television is dominated by entertainment content and we believe our live streaming business model lends itself well to such entertainment content.

We plan to selectively pursue opportunities to collaborate with, invest in or acquire traditional media content providers to expand our user base, enhance our content production capabilities and

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## 1. EXECUTIVE SUMMARY

From the overall media and entertainment industry perspective, digitalization is changing the way contents have been created, processed, distributed, and consumed. The digital revolution of publishing, TV, film, and radio production is in the midst of the transformation of business models, which are seeking the best strategy to capture viewership, increase content varieties, and grow the revenue. The increasing internet and mobile device penetration are providing consumers the flexibility to control and decide their schedule and venue to consume the media content, which is vital for tech-savvy millennials.

Millennials, whom we define as those ages below 30 in 2017, are leading the shift towards mobile-oriented and image and video-based social networks, such as Instagram and Snapchat. They are observable in distinct behaviours in media consumption, such as increased willingness to pay for digital contents and higher adoption of social networking and on-demand services, especially of over-the-top (OTT) video.

According to the Video Index from Ooyala, smartphones outperform other devices for video views across key regions across the world while millennials are the largest consumer group of mobile video with a reach of more than 60% on smartphones. According to Zenith's Online Video Forecasts 2017, global consumers will spend an average of 29 minutes a day viewing videos online on mobile devices in 2017, while viewing on fixed devices will only reach 19 minutes a day. The rise in mobile use has also driven demand for short-form (between 1 to 10 minutes in length), high quality video content among millennials.

OTT encompasses the distribution of video content "over the top" of traditional distribution channels. It is now standing at crossroads of breaking away from traditional TV business. While OTT is shaping the future of TV, the emergence of live interactive video streaming is transforming people's viewing experience into a social activity with enhanced engagement and interaction experience between content creators and viewers.

Developed Asia (Taiwan, Japan, Hong Kong, South Korean, and Singapore) are the countries with higher GDP per capita and mobile broadband penetration, as well as stronger cultural influence on pop culture, as compared to Developing Asia (Malaysia, Indonesia, Thailand, Vietnam, Philippines, and India). Their economic and network infrastructure development are sweet spots for the entrant of live interactive video streaming platforms.

Pure-play live interactive video streaming market registered revenue at US\$481.0 million and monthly active users at 11.7 million by end of 2017 in Developed Asia. Taiwan, South Korea, and Japan were the top 3 countries in terms of revenue, while Hong Kong and Singapore are catching up fast. We expect the Developed Asian market to grow at a CAGR of 47.1% from 2017 to 2022, outpacing the global market CAGR of 35.1%.

51 In terms of competitive landscape in Developed Asia, pure-play live interactive video streaming market is dominated by local and regional platforms, such as 17 Media (Taiwan), AfreecaTV (South Korea), Bigo Live (Singapore), Showroom (Japan), and MeMe Live (Taiwan). These platforms offer the most comprehensive features via their mobile applications, while their PC/desktop-based platforms offer supporting features such as account balance recharge via third-party online payment channels. Global platforms have limited market presence in Developed Asia focusing on specific content genres, for example Twitch (US) is a live game streaming platform.

The key success factor of live interactive video streaming platforms in Developed Asia includes technology development, content and talent management and engagement with users. The advancement of mobile network infrastructure, growth of e-commerce and in-app purchase, growing varieties of entertainment programs and established East Asian pop culture are recognized as the growth opportunities of live streaming market. However, nascent stage of market awareness and acceptance of the business model, risk of user information breaches, and potential threats from social networking platforms are the challenges of the sustainable growth.

Frost & Sullivan believes that the pure-play live interactive video streaming market in Developed Asia still remains untapped. Japan has the biggest addressable market and is estimated to grow at a CAGR of 66.6% from 2017 to 2022, followed by Singapore (49.0%), South Korea (48.7%), Hong Kong (43.2%), and Taiwan (31.1%).

## **2.3 Key Trends in the Global Media and Entertainment Industry**

### ***Shift in Demographics***

Millennials with age less than 30 years old by 2017 accounted for about 30% of the global population or approximately 2 billion people. Having grown up amid major technological advances (especially the Internet and smartphones), the nature of how they consume and share information continues to evolve from previous generations. Millennials are also known as “the first digital natives”. According to the World Bank data and Frost & Sullivan, about 98% of millennials aged 18-30 own smartphones. On average, they spend close to 10 hours on media and entertainment contents daily, and about 80% of their time on the Internet. Social networking related platforms are a priority in a millennial’s life style. More than 87% of millennials use Facebook, and they have the highest average number of Facebook friends among all the generation. According to Zenith, 63% of millennials have watched live media contents online, while the percentage of total millennials who have created such contents reached 42% in 2017. Millennials believe that user-generated content (UGC) is more trustworthy and memorable than branded imagery. Increasing Internet usage continues to transform the distribution of content in the new media landscape with a focus on video sharing. In 2017, millennials’ online traffic generated by video sharing was 12 times of that generated by photo and text combined, according to Zenith.

### ***Rise of the Digital Platform***

Rapid changes in user behavior are serving as catalysts to technological development and opening up opportunities in the media and entertainment industry. The advent of digital technology is bringing flexibility to the industry and creating a direct-to-customer environment. Growing affinity with the digital platforms is creating different levels of user expectations, entertainment consumption, and revenue generation.

Proactive engagement is a new paradigm in today’s media and entertainment industry. Key capabilities such as personalization and payment options are becoming the factors to reach the targeted customers. Digitalization refines and engages the audience in an efficient way for value creation. The involvement of digital platforms is changing how content and services are produced, processed, distributed, and consumed.

### ***Growing Smartphone and Mobile Broadband Penetration***

According to data from Statista, more than 2.3 billion people are using smartphones as at 2017, an increase of 10.5% from 2016. The penetration rate of tablet usage is expected to rise from 16.6% in 2017 to 19.2% by 2020. According to the Internet World Usage Statistics, as at June 2017, worldwide Internet penetration is approximately 51.7% or more than half of the world’s population. In other words, the number of Internet users has increased from 738 million in 2000 to 3.9 billion in 2017. Much of the growth in web connectivity originates from mobile networks. The International Telecommunication Union (ITU) has revealed that over 90% of the global population resides in an area covered by mobile cellular signal, with more than 70% covered by 3G broadband.

According to the World Bank’s statistics, global GDP per capita grew from US\$9,516 to US\$10,191 from 2010 to 2016. Increasing income levels and Internet penetration have contributed to the rapid proliferation of digital devices. The rising penetration of high-speed broadband Internet and digitally-oriented consumer behavior patterns are spurring the emergence of OTT services worldwide. The trend is more pronounced in North America and Western Europe; however, countries in the Asia-Pacific such as China, Japan, and South Korea are catching up fast.

### ***Emergence of the Consumption of Media and Entertainment Contents***

Different consumption channels of media and entertainment contents have seen continuous consolidation and emergence for the past 15 years (since 2003). Internet-based/online channels, namely PC and mobile devices, are digitally disrupting the traditional channels including print, radio and TV. People are not consuming certain segment of media content only on one channel; instead they are free to choose from a boarder range of channels. People (especially Millennials) spend less viewership and time on print, radio and TV (traditional channels) and more on PC and mobile devices (online channels). The distribution of media and entertainment contents has been preliminary focusing on online channels in order to cater the shifting trend of media consumption and effectively approach the consumers.

### *Convergence of OTT Video Services*

The increasing number of VOD platforms and content providers is intensifying the competitive landscape for the OTT video market as video providers strive to compete against production studios, telecom operators, broadcasters, and other participants that vertically expand their operations toward OTT content distribution. Convergence across industries is gaining momentum as global pay TV providers offer OTT or VOD services to deliver higher value at lower cost to subscribers.

42 OTT video services continue to increase in demand based on growing Internet penetration. It has begun to converge with traditional media formats, including TV, music, and film, to capture market opportunities. These services are highly popular among the younger demographic as they are more tech-savvy and can quickly adapt to new technologies. Live interactive video streaming services fueled by the convergence of live broadcasting and mobile broadband are also gaining traction among the post-90s generation.

### *Emergence of Grassroots Artists from UGC and Professionally Curated User-generated Content (PUGC) Platforms*

The term of "grassroots", first introduced in the US in the 19th century as part of the sociological viewpoint, refers to people at the basic, fundamental level. The rise of blogs, forums, VOD websites and social networking platforms has proved that UGC and PUGC generated by grassroots are as demanded and influential as PGC provided by professional media studios. Grassroots culture describes a type of civilian or pop culture originating from the people.

34 The increasing number of OTT video related platforms (including both VOD and live interactive video streaming) from 2005 till now has indicated both the increasing amount of UGC and PUGC created by grassroots as well as growing viewership by users. According to Statista, the number of OTT video related platforms worldwide by reached more than 1,000 by the end of 2017, compared to total number of 800 by the end of 2016.

35 More importantly, people's online social networking activities (content creation and sharing) have shifted from text and picture-oriented to video-oriented contents, which has further driven the number of grassroots creating UGC and PUGC. According to Statista, 58% of internet users worldwide have uploaded or shared a video online as of third quarter of 2017, the same percentage reached 64% and 66% for internet users aged between 16-24 and 25-34 respectively. The absence of notable entry barriers for UGC and PUGC creation and low cost of equipment and medium (smart phone and mobile broadband) has boosted the ease of content creation for all the users with little or no dependence on traditional mass media. All the content viewers/consumers can potentially be content creators, which is one of the key characteristics for VOD and live interactive video streaming platforms, offering grassroots the opportunity to become public figures.

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## **2.3 Key Trends in the Global Media and Entertainment Industry**

### ***Shift in Demographics***

Millennials with age less than 30 years old by 2017 accounted for about 30% of the global population or approximately 2 billion people. Having grown up amid major technological advances (especially the Internet and smartphones), the nature of how they consume and share information continues to evolve from previous generations. Millennials are also known as “the first digital natives”. According to the World Bank data and Frost & Sullivan, about 98% of millennials aged 18-30 own smartphones. On average, they spend close to 10 hours on media and entertainment contents daily, and about 80% of their time on the Internet. Social networking related platforms are a priority in a millennial’s life style. More than 87% of millennials use Facebook, and they have the highest average number of Facebook friends among all the generation. According to Zenith, 63% of millennials have watched live media contents online, while the percentage of total millennials who have created such contents reached 42% in 2017. Millennials believe that user-generated content (UGC) is more trustworthy and memorable than branded imagery. Increasing Internet usage continues to transform the distribution of content in the new media landscape with a focus on video sharing. In 2017, millennials’ online traffic generated by video sharing was 12 times of that generated by photo and text combined, according to Zenith.

### ***Rise of the Digital Platform***

Rapid changes in user behavior are serving as catalysts to technological development and opening up opportunities in the media and entertainment industry. The advent of digital technology is bringing flexibility to the industry and creating a direct-to-customer environment. Growing affinity with the digital platforms is creating different levels of user expectations, entertainment consumption, and revenue generation.

Proactive engagement is a new paradigm in today’s media and entertainment industry. Key capabilities such as personalization and payment options are becoming the factors to reach the targeted customers. Digitalization refines and engages the audience in an efficient way for value creation. The involvement of digital platforms is changing how content and services are produced, processed, distributed, and consumed.

### ***Growing Smartphone and Mobile Broadband Penetration***

According to data from Statista, more than 2.3 billion people are using smartphones as at 2017, an increase of 10.5% from 2016. The penetration rate of tablet usage is expected to rise from 16.6% in 2017 to 19.2% by 2020. According to the Internet World Usage Statistics, as at June 2017, worldwide Internet penetration is approximately 51.7% or more than half of the world’s population. In other words, the number of Internet users has increased from 738 million in 2000 to 3.9 billion in 2017. Much of the growth in web connectivity originates from mobile networks. The International Telecommunication Union (ITU) has revealed that over 90% of the global population resides in an area covered by mobile cellular signal, with more than 70% covered by 3G broadband.

According to the World Bank’s statistics, global GDP per capita grew from US\$9,516 to US\$10,191 from 2010 to 2016. Increasing income levels and Internet penetration have contributed to the rapid proliferation of digital devices. The rising penetration of high-speed broadband Internet and digitally-oriented consumer behavior patterns are spurring the emergence of OTT services worldwide. The trend is more pronounced in North America and Western Europe; however, countries in the Asia-Pacific such as China, Japan, and South Korea are catching up fast.

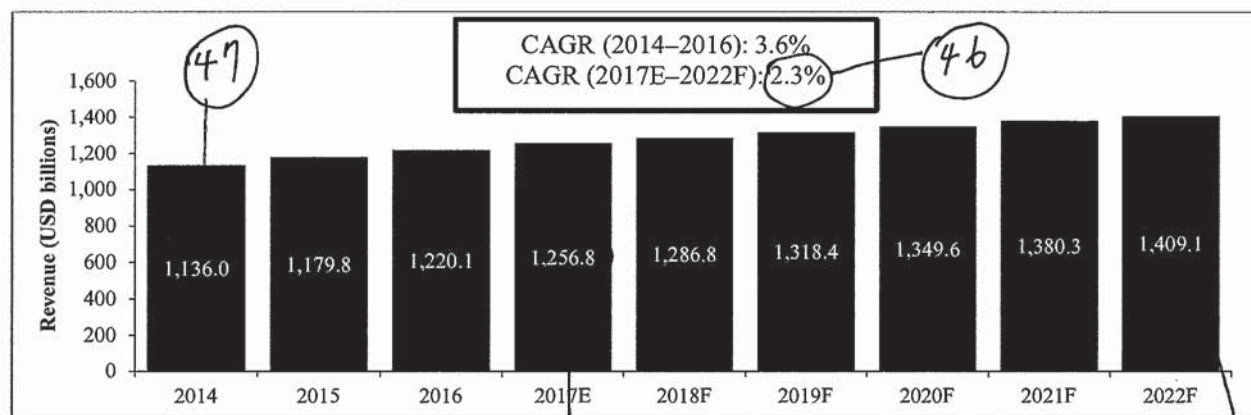
### ***Emergence of the Consumption of Media and Entertainment Contents***

Different consumption channels of media and entertainment contents have seen continuous consolidation and emergence for the past 15 years (since 2003). Internet-based/online channels, namely PC and mobile devices, are digitally disrupting the traditional channels including print, radio and TV. People are not consuming certain segment of media content only on one channel; instead they are free to choose from a boarder range of channels. People (especially Millennials) spend less viewership and time on print, radio and TV (traditional channels) and more on PC and mobile devices (online channels). The distribution of media and entertainment contents has been preliminary focusing on online channels in order to cater the shifting trend of media consumption and effectively approach the consumers.

## 2.4 Market Sizing, Market Forecast, and Market Share Estimates by Segments of the Global Media and Entertainment Industry

Total revenue for the global media and entertainment industry increased from US\$1,136.0 billion in 2014 to US\$1,258.0 billion in 2017 and is forecast to reach US\$1,411.6 billion by 2022 at a CAGR of 2.3%. The chart below illustrates the historical data of the global media and entertainment industry from 2014 to 2017 and estimation from 2018 to 2022.

Market Size and Forecast of the Media and Entertainment Industry, Global, 2014–2022F



Source: Frost & Sullivan

Revenue Forecast by Segments of the Media and Entertainment Industry (US\$ billion), Global, 2014–2022F

Segments/Years	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F	CAGR (2017–2022)
Publishing	334.0	332.0	329.5	328.1	325.5	322.2	319.3	316.1	312.2	(1.0)%
Games	84.7	91.9	101.1	108.9	114.9	122.4	129.9	137.7	145.0	5.9%
Radio	36.6	36.8	36.9	37.0	36.6	36.3	36.1	36.0	35.7	(0.7)%
Film	35.5	38.1	40.0	41.4	43.0	45.2	47.7	50.4	52.4	4.8%
Music	45.6	47.2	48.5	49.2	50.7	52.4	54.5	56.3	59.3	5.8%
FTA TV	128.0	129.5	130.4	129.2	127.1	124.5	123.0	121.9	119.7	(1.5)%
Pay-TV	243.0	249.3	253.0	256.3	260.1	263.5	266.7	271.5	275.2	1.4%
OTT Video	17.9	23.6	30.2	36.7	43.9	51.7	60.0	68.3	77.0	16.0%
Others	210.7	231.4	250.3	270.1	285.0	299.2	311.2	320.5	330.3	4.1%
<b>Total</b>	<b>1,136.0</b>	<b>1,179.8</b>	<b>1,220.1</b>	<b>1,256.8</b>	<b>1,287</b>	<b>1,318</b>	<b>1,350</b>	<b>1,380</b>	<b>1,409.1</b>	<b>2.3%</b>

Source: Frost & Sullivan, primary interviews, desktop research and analysis

Note: Sources include a combination of (i) Interviews with industry and in-house experts; (ii) company reports and other presentation materials including but not limited to news articles, press releases, paid subscriptions to industry data, such as Statista and Bloomberg; (iii) Frost & Sullivan desktop research on sources including but not limited to databases of industry associations, trade bodies, government agencies, such as International Federation of Periodical Publishers (FIPP), The International Federation of the Phonographic Industry (IFPI), The Recording Industry Association of America (RIAA), Interactive Advertising Bureau (IAB), International Television Expert Group (ITVE)

### Market Share Forecast by Segments of the Media and Entertainment Industry (%), Global, 2014–2022F

Segments/Years	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F
Publishing	29.4%	28.1%	27.0%	26.1%	25.3%	24.5%	23.7%	22.9%	22.0%
Games	7.5%	7.8%	8.3%	8.7%	8.9%	9.3%	9.6%	10.0%	10.3%
Radio	3.2%	3.1%	3.0%	2.9%	2.8%	2.8%	2.7%	2.6%	2.5%
Film	3.1%	3.2%	3.3%	3.3%	3.3%	3.4%	3.5%	3.7%	3.7%
Music	4.0%	4.0%	4.0%	3.9%	3.9%	4.0%	4.0%	4.1%	4.2%
FTA TV	11.3%	11.0%	10.7%	10.3%	9.9%	9.5%	9.1%	8.8%	8.5%
Pay-TV	21.4%	21.1%	20.7%	20.4%	20.2%	20.0%	19.8%	19.7%	19.6%
OTT Video	1.6%	2.0%	2.5%	2.9%	3.4%	3.9%	4.5%	5.0%	5.5%
Others	13.5%	12.6%	12.6%	12.5%	12.3%	12.7%	13.1%	13.2%	13.5%

Source: Frost & Sullivan

In most developed countries, traditional media including publishing, radio, film, and music, is either declining or showing stunted gains due to the impact of digital media. The newspaper segment is the first legacy medium to be significantly affected by the advent of digital alternatives.

#### **Publishing**

Although publishing contributed to approximately 26.1% of total industry revenue, the segment is in long-term marginal decline due to the changes in consumer content consumption. Its revenue contribution is projected to continue to decrease and reflect a compounded annual decline of approximately 1.0% by 2022.

#### **Games**

Games accounted for approximately 8.7% of total industry revenue accounting for US\$108.9 billion in 2017. According to Frost & Sullivan, social and casual gaming revenue is expected to be the next growth engine. Mobile gaming is likely to replace home video systems and consoles as the most preferred gaming platform.

#### **Radio**

Music streaming services such as Spotify and Apple Radio continue to invade the traditional radio broadcast space. In 2017, the radio segment recorded year-over-year decline of approximately 0.7%.

#### **Film**

The segment contributed to approximately 3.3% of total industry revenue valued at about US\$41.4 billion in 2017. Asia-Pacific is leading the growth of the movie industry due to modernization and urbanization, with the emergence of new cities and presence of cinemas in most cities.

#### **Music**

The music industry accounted for 3.9% of total industry revenue, registering steady performance in global markets. However, consumers are shifting away from purchasing recorded music; and instead embracing paid-for platforms such as Spotify, Deezer, and Pandora. The preference for subscription-based services is a prominent trend.

#### **FTA TV**

To monetize content, international channels are transitioning from the FTA model to pay TV category. Encrypting some FTA channels and moving them to a paid model is a strategy actively deployed by industry participants. The segment is expected to decline at a CAGR of 1.5% by 2022 due to the emergence of OTT video.

#### **Pay TV**

Pay TV was the 2<sup>nd</sup> largest segment in the media and entertainment industry in 2017, registering revenue of US\$256.3 billion and revenue share of 20.4%. Asia-Pacific is the largest pay TV subscriber region in the world, contributing more than 60% to the global market.

## OTT Video

OTT video is anticipated to generate the highest revenue growth in the forecast period, with a CAGR of 16.0% from 2017 to 2022. A number of telecom operators, media and broadcasting companies and Internet service providers have launched online video services in the various regions worldwide. OTT service providers are experimenting with innovative features and service offerings to differentiate their value proposition to customers, such as real-time analytics, 4K video, subtitling for VOD services, virtual currency, e-commerce, and embedded games for live interactive video streaming services.

Moreover, the proliferation of mobile devices such as smartphones and tablets is accelerating the growth of OTT video, which emerged to be a replacement for traditional TV segment.

The OTT video segment comprises 2 sub-segments: VOD and live interactive video streaming.

The VOD market is thriving, driven by service provider investment and consumer interest. TV is shifting away from regimented, schedule-driven programming to individualized on-demand viewing. The move is pushing service providers to invest in widely accessible online video in a bid to retain subscribers and improve viewer engagement. The United States (US) remains the largest market for Internet VOD services.

Live interactive video streaming services began more than 10 years ago as event broadcasting channels. Initially limited to PC/desktop-based platforms, these services have been evolving toward the mobile platform since 2014. Live interactive video streaming can be divided into different categories based on the content, including sports, gaming, talent show, news, business, finance, and others. Three types of platforms dominate the market, including social networking-oriented (e.g., Facebook Live, Instagram Live), VOD-oriented (e.g., Youtube Live, Niconico Live), and pure-play (e.g., 17 Media, Lang Live, Bigo Live, Afreeca TV).

Revenue of social networking and VOD oriented live interactive video streaming platforms is parked under the VOD segment because of their current business models. Only the revenue of pure-play live interactive video streaming is covered in this report. The differences among different live interactive video streaming platforms are elaborated in Chapter 3.

**Revenue Forecast by Segments of the OTT Video Industry (US\$ billion), Global, 2014–2022F**

Segments/Years	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F	CAGR (2017–2022F)
VOD	17.2	22.0	27.3	31.7	36.5	40.8	45.3	49.9	54.6	11.5%
Pure-play Live Interactive Video Streaming	0.7	1.6	2.9	5.0	7.5	10.9	14.7	18.4	22.3	35.1%

Source: Frost & Sullivan, primary interviews, desktop research, and analysis

Note: Sources include a combination of (i) Interviews with industry and in-house experts; (ii) company reports and other presentation materials including but not limited to news articles, press releases, paid subscriptions to industry data, such as Statista and Bloomberg; (iii) Frost & Sullivan desktop research on sources including but not limited to databases of industry associations, trade bodies, government agencies, such as Interactive Advertising Bureau (IAB)

**Number of Minutes/Day, Media & Entertainment Consumption by Segment, Global, 2014–2022F**

Segments/Years	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F	CAGR (2017–2022)
Prints	24.6	23.1	22.1	21.4	20.7	20.0	19.3	18.7	18.2	(3.1)%
Television	183.9	179.5	176.7	175.4	172.0	165.0	158.0	152.0	143.0	(4.0)%
Radio	58.4	56.8	56.1	55.0	53.7	52.1	49.7	47.2	43.9	(4.4)%
Cinema	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8	0.6%
Internet	109.5	122.4	134.6	144.8	156.4	170.3	183.3	192.3	209.5	7.7%

Source: Frost & Sullivan, primary interviews, desktop research, and analysis

*Note: Sources include a combination of: (i) Interviews with industry and in-house experts; (ii) company reports and other presentation materials including but not limited to news articles, press releases, paid subscriptions to industry data, such as Statista and Bloomberg; (iii) Frost & Sullivan's desktop research on sources including but not limited to databases of industry associations, trade bodies, government agencies, such as We Are Social and Zenith Media*

Globally, people spent an average of 398 minutes a day consuming media content every day in 2017, an increase of 1.8% from 391 minutes in 2016. The increasing time spent on the Internet is projected to generate the highest growth throughout the forecast period, at a CAGR of 7.7% from 2017 to 2022. The growth of Internet consumption is also likely to expand overall media consumption worldwide.

Competition from Internet penetration continues to erode consumption of traditional media such as newspapers, magazines, and radio. The proliferation of mobile devices, advancements in technology, and availability of mobile-adapted content are enabling mobile to outperform desktop as the world's primary point of Internet access. According to Zenith Media, the regions embracing mobile broadband usage the fastest are North America (76%) and Asia-Pacific (75%).

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## 2.5 Market Share Estimates by Segments, Market Sizing, and Market Forecast of the Media and Entertainment Industry in Developed Asia

Growth factors of the media and entertainment industry in Asia include population, GDP per capita, Internet and mobile broadband penetration.

Frost & Sullivan defines Taiwan, Japan, Hong Kong, South Korea, and Singapore as “Developed Asia”, whose GDP(PPP) per capita is above USD\$ 35,000.

**Economic Indicator by Country, 2017E**

Segments/Years	Population	Nominal GDP (US\$ Billion)	Nominal GDP Growth Rate (%)	GDP per Capita (US\$)
Taiwan	23,571,227	571.5	5.9%	48,100
Japan	127,484,450	4,884.0	(1.1)%	41,200
Hong Kong	7,364,883	334.1	4.1%	58,400
South Korea	50,982,212	1,529.6	8.4%	37,700
Singapore	5,708,844	305.8	3.0%	87,800
Malaysia	31,624,264	326.9	6.2%	27,300
Indonesia	263,991,379	1,010.9	5.2%	15,700

Source: Frost & Sullivan, primary interviews, desktop research and analysis

Note: Sources include a combination of (i) Interviews with industry and in-house experts; (ii) company reports and other presentation materials including but not limited to news articles, press releases, paid subscriptions to industry data such as Statista and Bloomberg; (iii) Frost & Sullivan desktop research on sources including but not limited to databases of industry associations, trade bodies, government agencies, such as The World Fact Book, United Nations Population Division, International Monetary Fund World Economic Outlook.

**Population Growth, Developed Asia & US, 2016-2017E**

Population	2016	2017E	Growth
Developed Asia	215,022,436	215,111,616	0.04%
US	322,179,605	324,459,463	0.71%

Source: Frost & Sullivan, primary interviews, desktop research and analysis.

Note: Sources include a combination of: (i) Interviews with industry and in-house experts; (ii) company reports and other presentation materials including but not limited to news articles, press releases, paid subscriptions to industry data, such as Statista and Bloomberg; (iii) Frost & Sullivan's desktop research on sources including but not limited to databases of industry associations, trade bodies, government agencies, such as United Nation World Population Prospects.

**Nominal GDP Growth, Developed Asia & US, 2016-2017E**

Nominal GDP (US\$ Billion)	2016	2017E	Growth
Developed Asia	7,508	7,625	1.56%
US	18,624	19,362	3.96%

Source: Frost & Sullivan, primary interviews, desktop research and analysis.

Note: Sources include a combination of: (i) Interviews with industry and in-house experts; (ii) company reports and other presentation materials including but not limited to news articles, press releases, paid subscriptions to industry data, such as Statista and Bloomberg; (iii) Frost & Sullivan's desktop research on sources including but not limited to databases of industry associations, trade bodies, government agencies, such as The World Fact Book, Internet World Statistics, International Monetary Fund World Economic Outlook.

### Revenue Segments Media and Entertainment Industry (US\$ million), Developed Asia, 2017E

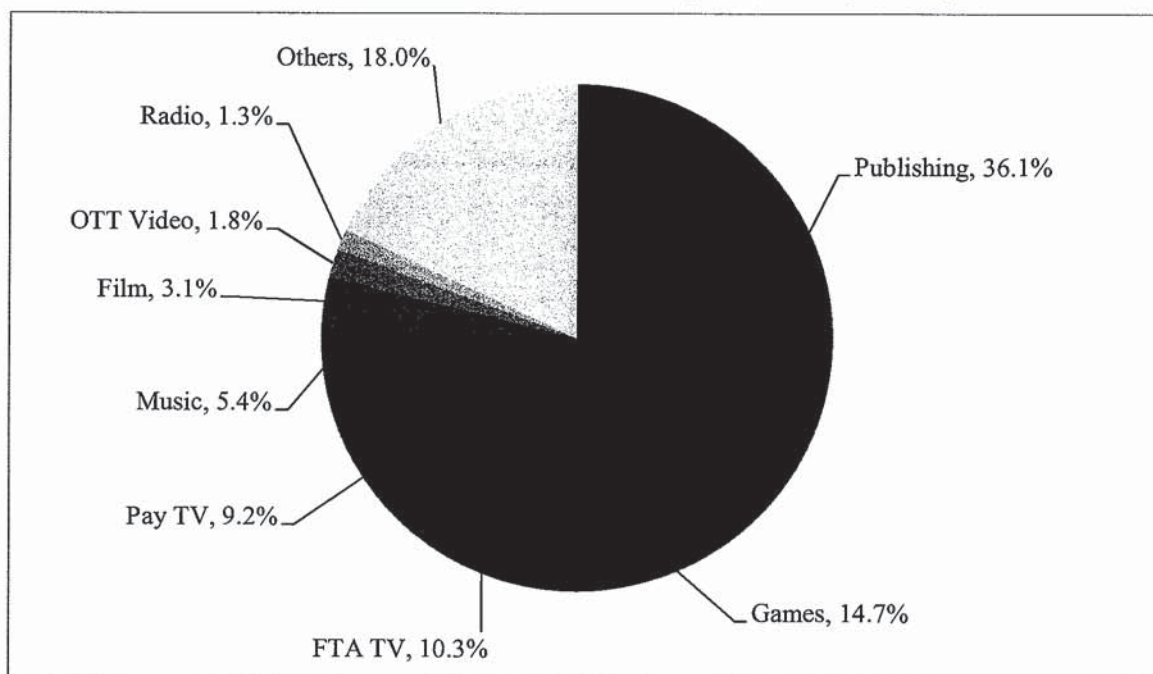
Segments/Years	Taiwan	Japan	Hong Kong	South Korea	Singapore	Total
Publishing	1,815	34,740	2,140	8,435	1,254	48,384
Games	1,100	13,890	295	4,100	320	19,705
Radio	78	1,185	145	255	121	1,784
Film	260	2,170	240	1,320	208	4,198
Music	170	5,840	176	4,900	77	7,162
FTA TV	352	11,008	556	1,512	310	13,738
Pay TV	2,110	4,690	460	4,710	390	12,360
OTT Video	256	1,588	127	355	120	2,446
Others	1,035	17,200	585	4,885	364	24,069
<b>Total</b>	<b>7,176</b>	<b>92,311</b>	<b>4,723</b>	<b>26,472</b>	<b>3,164</b>	<b>133,846</b>

Source: Frost & Sullivan, primary interviews, desktop research and analysis.

Note: Sources include a combination of: (i) Interviews with industry and in-house experts; (ii) company reports and other presentation materials including but not limited to news articles, press releases, paid subscriptions to industry data, such as Statista and Bloomberg; (iii) Frost & Sullivan's desktop research on sources including but not limited to databases of industry associations, trade bodies, government agencies, such as National Development Council (Taiwan), The Hong Kong Trade Development Council (HKTDC), Statistics Bureau of Japan, Singapore's National Statistical Office (SingStat), Statistics Korea, etc.

In Developed Asia, publishing, games, FTA TV and Pay TV segments were estimated to contribute 36.1%, 14.7%, 10.3% and 9.2% respectively by the end of 2017. OTT video's revenue share was relatively small, registering 1.8% by the end of 2017.

### Market Share by Media and Entertainment Segment, Developed Asia, 2017E



Source: Frost & Sullivan, primary interviews, desktop research and analysis.

## Taiwan

### Revenue Forecast by Segments of the Media and Entertainment Industry (US\$ million), Taiwan, 2014–2022F

Segments/Years	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F	CAGR (2017–2022)
Publishing	1,350	1,345	1,330	1,315	1,300	1,295	1,290	1,255	1,235	(0.9)%
Games	955	990	1,095	1,100	1,195	1,250	1,365	1,475	1,550	7.1%
Radio	90	85	80	73	76	75	72	72	70	(2.1)%
Film	250	280	265	260	270	276	280	285	290	2.2%
Music	145	150	160	170	185	200	217	230	240	7.1%
FTA TV	365	360	355	352	349	345	340	332	327	(1.5)%
Pay TV	2,160	2,150	2,130	2,110	2,100	2,085	2,056	2,040	2,008	(1.0)%
OTT Video	49	68	102	256	371	485	623	785	936	29.6%
Others	729	815	925	1,035	1,118	1,196	1,262	1,306	1,379	5.8%
<b>Total</b>	<b>6,593</b>	<b>6,743</b>	<b>6,942</b>	<b>7,176</b>	<b>7,464</b>	<b>7,707</b>	<b>8,005</b>	<b>8,280</b>	<b>8,526</b>	<b>3.5%</b>

### Market Share by Segments of the Media and Entertainment Industry (%), Taiwan, 2014–2022F

Segments/Years	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F
Publishing	28.1%	27.4%	26.4%	25.3%	24.1%	23.3%	22.4%	21.2%	20.4%
Games	14.5%	14.7%	15.8%	15.3%	16.0%	16.2%	17.1%	17.8%	18.2%
Radio	1.4%	1.3%	1.2%	1.1%	1.0%	1.0%	0.9%	0.9%	0.8%
Film	3.8%	4.2%	3.8%	3.6%	3.6%	3.6%	3.5%	3.4%	3.4%
Music	2.2%	2.2%	2.3%	2.4%	2.5%	2.6%	2.7%	2.8%	2.8%
FTA TV	5.5%	5.3%	5.1%	4.9%	4.7%	4.5%	4.2%	4.0%	3.8%
Pay TV	32.8%	31.9%	30.7%	29.4%	28.1%	27.1%	25.7%	24.6%	23.6%
OTT Video	0.7%	1.0%	1.5%	3.6%	5.0%	6.3%	7.8%	9.5%	11.0%
Others	11.1%	12.1%	13.3%	14.4%	15.0%	15.5%	15.8%	15.8%	16.1%

Source: Frost & Sullivan, primary interviews, desktop research and analysis

Note: Sources include a combination of (i) Interviews with industry and in-house experts; (ii) company reports and other presentation materials including but not limited to news articles, press releases, paid subscriptions to industry data such as Statista and Bloomberg; (iii) Frost & Sullivan desktop research on sources including but not limited to databases of industry associations, trade bodies, government agencies, such as National Development Council (Taiwan), Taiwan Statistical Data Book.

Pay TV is the largest segment of Taiwan's media and entertainment industry, accounting for approximately 29.4% in 2017. The availability of HD-quality channels since the mid-2000s has supported the user base in the pay TV market. Cable TV is being pushed toward full digitalization, in line with the Taiwan government's promotion of its digital convergence policy. Market leader, Chunghwa Telecom had approximately 1.6 million subscribers by the end of 2017. However, pay TV is likely to be challenged by the growing penetration of OTT video services. Chunghwa Telecom has led the rollouts of VOD platforms. Taiwanese multimedia company Catchplay and US platform Netflix have also launched VOD streaming services in Taiwan. Meanwhile, 17 Media, UpLive, and Lang Live dominate the pure-play live interactive video streaming market. OTT video is expected to record the highest CAGR of 29.6% among all the segments within the forecast period. Publishing remained the second-largest segment in Taiwan's media and entertainment industry, accounting for approximately 25.3% of total revenue in 2017. However, decreasing readership is slowing print circulation revenue growth in the book, magazine, and newspaper segments.

Although the upward trend in digital revenue is expected to offset the decline in print circulation revenue, the segment is expected to record a negative CAGR within the forecast period.

## Japan

**Revenue Forecast by Segments of the Media and Entertainment Industry (US\$ million), Japan, 2014–2022F**

Segments/Years	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F	CAGR (2017–2022)
Publishing	35,550	35,155	34,830	34,740	34,595	34,317	34,180	33,695	33,290	(0.8)%
Games	10,160	11,520	12,675	13,890	14,890	15,655	16,302	16,857	17,400	4.6%
Radio	1,175	1,185	1,195	1,185	1,175	1,165	1,148	1,134	1,125	(0.0)%
Film	1,900	1,995	2,160	2,170	2,195	2,245	2,295	2,336	2,375	1.8%
Music	5,915	6,170	6,000	5,840	5,730	5,650	5,555	5,400	5,245	(2.1)%
FTA TV	12,025	11,095	11,055	11,008	10,970	10,550	10,500	10,468	10,420	(1.1)%
Pay TV	4,295	4,430	4,630	4,690	4,720	4,765	4,780	4,800	4,820	0.5%
OTT Video	548	883	1,300	1,588	2,027	2,532	3,124	3,799	4,365	22.4%
Others	14,350	15,400	16,465	17,200	17,718	18,032	18,222	18,316	18,460	1.4%
<b>Total</b>	<b>85,718</b>	<b>87,833</b>	<b>90,310</b>	<b>92,311</b>	<b>94,020</b>	<b>94,909</b>	<b>96,106</b>	<b>96,805</b>	<b>97,500</b>	<b>1.1%</b>

14.2

13.2

**Market Share by Segments of the Media and Entertainment Industry (%), Japan, 2014–2022F**

Segments/Years	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F
Publishing	41.2%	40.0%	38.6%	37.6%	36.8%	36.2%	35.6%	34.8%	34.1%
Games	11.9%	13.1%	14.0%	15.0%	15.8%	16.5%	17.0%	17.4%	17.8%
Radio	1.4%	1.3%	1.3%	1.3%	1.2%	1.2%	1.2%	1.2%	1.2%
Film	2.2%	2.3%	2.4%	2.4%	2.3%	2.4%	2.4%	2.4%	2.4%
Music	6.9%	7.0%	6.6%	6.3%	6.1%	6.0%	5.8%	5.6%	5.4%
FTA TV	14.0%	12.6%	12.2%	11.9%	11.7%	11.1%	10.9%	10.8%	10.7%
Pay TV	5.0%	5.0%	5.1%	5.1%	5.0%	5.0%	5.0%	5.0%	4.9%
OTT Video	0.6%	1.0%	1.4%	1.7%	2.2%	2.7%	3.3%	3.9%	4.5%
Others	16.7%	17.5%	18.2%	18.6%	18.8%	19.0%	19.0%	18.9%	18.9%

17

Source: Frost & Sullivan, primary interviews, desktop research and analysis

Note: Sources include a combination of (i) Interviews with industry and in-house experts; (ii) company reports and other presentation materials including but not limited to news articles, press releases, paid subscriptions to industry data, such as Statista and Bloomberg; (iii) Frost & Sullivan desktop research on sources including but not limited to databases of industry associations, trade bodies, government agencies, such as Statistics Bureau of Japan, Japan Cable and Telecommunications Association, Japan Book Publishers Association.

Japan is the world's third-largest media and entertainment market after US and China. According to the World Press Trends report, Japan's newspaper industry is ranked the third-largest globally by print circulation. However, the rapidly expanding digital environment is hampering the growth of print advertising investment as the Internet overtakes print as the key source of news for Japanese people. The publishing industry is likely to register a revenue decline throughout the forecast period.

According to Nielsen, Japanese people between the ages of 18 and 34 spend an average 14 hours and 36 minutes on smartphone usage per week. Japan has the world's 3<sup>rd</sup> largest mobile app industry by gross revenue. As Japan has

the highest mobile penetration rate in Asia, registering at 90.0% in 2017, Internet users are migrating to a variety of activities on mobile devices driven by the high adoption of smartphones and tablets. The Japanese social messaging LINE has more than 70 million active users as at 2017, boosting the growth of mobile advertising. The penetration of mobile broadband is considered the primary driver for the OTT video market. Global market participants such as Netflix, Hulu, and Amazon's Prime Video are expanding their market presence in Japan, while local telecom companies NTT Docomo, KDDI, and Softbank also have their own content distribution platforms. OTT video is expected to generate the highest CAGR in Japan's media and entertainment market over the forecast period.

## Hong Kong

### Revenue Forecast by Segments of the Media and Entertainment Industry (US\$ million), Hong Kong, 2014–2022F

Segments/Years	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F	CAGR (2017–2022)
Publishing	2,215	2,150	2,160	2,140	2,111	2,085	2,058	2,032	2,000	(1.3)%
Games	220	255	270	295	310	340	375	390	420	7.3%
Radio	163	165	140	145	146	147	147	148	148	0.4%
Film	210	260	255	240	260	265	270	275	270	2.4%
Music	155	164	170	175	185	190	197	202	207	3.4%
FTA TV	684	633	605	556	555	538	524	509	502	(2.0)%
Pay TV	485	475	468	460	463	460	465	458	471	0.3%
OTT Video	52	72	97	127	168	228	309	430	539	33.5%
Others	505	533	560	585	615	641	663	681	700	3.7%
<b>Total</b>	<b>4,659</b>	<b>4,677</b>	<b>4,725</b>	<b>4,723</b>	<b>4,813</b>	<b>4,894</b>	<b>5,008</b>	<b>5,135</b>	<b>5,257</b>	<b>2.2%</b>

14.3

13.3

### Market Share by Segments of the Media and Entertainment Industry (%), Hong Kong, 2014–2022F

Segments/Years	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F
Publishing	47.5%	46.0%	45.7%	45.3%	43.9%	42.6%	41.1%	39.6%	38.0%
Games	4.7%	5.5%	5.7%	6.2%	6.4%	6.9%	7.5%	7.6%	8.0%
Radio	2.9%	2.9%	3.0%	3.1%	3.0%	3.0%	2.9%	2.9%	2.8%
Film	4.5%	5.6%	5.4%	5.1%	5.4%	5.4%	5.4%	5.4%	5.1%
Music	3.3%	3.5%	3.6%	3.7%	3.8%	3.9%	3.9%	3.9%	3.9%
FTA TV	14.7%	13.5%	12.8%	11.8%	11.5%	11.0%	10.5%	9.9%	9.5%
Pay TV	10.4%	10.2%	9.9%	9.7%	9.6%	9.4%	9.3%	9.1%	9.0%
OTT Video	1.1%	1.5%	2.1%	2.7%	3.5%	4.7%	6.2%	8.4%	10.2%
Others	10.8%	11.4%	11.9%	12.4%	12.8%	13.1%	13.2%	13.3%	13.3%

Source: Frost & Sullivan, primary interviews, desktop research, and analysis

Note: Sources include a combination of (i) Interviews with industry and in-house experts; (ii) company reports and other presentation materials including but not limited to news articles, press releases, paid subscriptions to industry data, such as Statista and Bloomberg; (iii) Frost & Sullivan desktop research on sources including but not limited to databases of industry associations, trade bodies, government agencies such as The Hong Kong Trade Development Council (HKTDC), Hong Kong Publishers Federation, Digital Marketing Association of Hong Kong

Publishing accounted for the biggest share in Hong Kong's media and entertainment industry. The reduction in newspaper advertising revenue and closure of several magazines are the result of the shrinking publishing market.

Hong Kong's traditional TV industry is also facing an existential crisis due to the high level of mobile broadband usage. Market participants are looking for new strategies to adapt to changing user expectations. For example, Television Broadcasts Limited (TVB) gave up its pay TV license and launched myTV SUPER, a subscription-based OTT service, to offer live streaming content. Moreover, with the involvement of telecom operators, OTT platforms, such as Viu by PCCW, are emerging to be an important content distribution channel in Hong Kong.

## South Korea

Revenue Forecast by Segments of the Media and Entertainment Industry (US\$ million), South Korea, 2014–2022F

Segments/Years	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F	CAGR (2017–2022)
Publishing	3,526	3,487	3,460	3,435	3,363	3,283	3,200	3,103	3,000	(1.1)%
Games	3,380	3,600	3,960	4,100	4,270	4,500	4,980	5,375	5,800	7.2%
Radio	230	240	250	255	260	260	262	265	265	0.3%
Film	1,225	1,278	1,290	1,320	1,360	1,400	1,442	1,483	1,530	3.0%
Music	775	815	860	900	945	986	1,025	1,042	1,060	3.3%
FTA TV	1,550	1,535	1,523	1,512	1,501	1,488	1,459	1,472	1,453	(0.8)%
Pay TV	4,480	4,545	4,650	4,710	4,777	4,813	4,865	4,907	4,925	0.9%
OTT Video	137	190	264	355	500	708	953	1,198	1,525	33.8%
Others	3,501	4,000	4,500	4,885	5,201	5,422	5,559	5,631	5,760	3.4%
<b>Total</b>	<b>23,804</b>	<b>24,690</b>	<b>25,757</b>	<b>26,472</b>	<b>27,182</b>	<b>27,865</b>	<b>28,745</b>	<b>29,481</b>	<b>30,318</b>	<b>2.8%</b>

Market Share by Segments of the Media and Entertainment Industry (%), South Korea, 2014–2022F

Segments/Years	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F
Publishing	35.8%	34.4%	32.8%	31.9%	30.8%	29.7%	28.5%	27.5%	26.4%
Games	14.2%	14.6%	15.4%	15.5%	15.7%	16.1%	17.3%	18.2%	19.1%
Radio	1.0%	1.0%	1.0%	1.0%	1.0%	0.9%	0.9%	0.9%	0.9%
Film	5.1%	5.2%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Music	3.3%	3.3%	3.3%	3.4%	3.5%	3.5%	3.6%	3.5%	3.5%
FTA TV	6.5%	6.2%	5.9%	5.7%	5.5%	5.3%	5.1%	5.0%	4.8%
Pay TV	18.8%	18.4%	18.1%	17.8%	17.6%	17.3%	16.9%	16.6%	16.2%
OTT Video	0.6%	0.8%	1.0%	1.3%	1.8%	2.5%	3.3%	4.1%	5.0%
Others	14.7%	16.2%	17.5%	18.5%	19.1%	19.5%	19.3%	19.1%	19.0%

Source: Frost & Sullivan, primary interviews, desktop research, and analysis

Note: Sources include a combination of: (i) Interviews with industry and in-house experts; (ii) company reports and other presentation materials including but not limited to news articles, press releases, paid subscriptions to industry data, such as Statista and Bloomberg; (iii) Frost & Sullivan desktop research on sources including but not limited to databases of industry associations, trade bodies, government agencies, such as Statistics Korea, Korean Cable TV Association, Korean Film Council

South Korea is the 7th biggest media and entertainment market globally. According to Akamai's State of the Internet report, South Korea has the fastest Internet in the world, with average Internet speeds of 28.6 Mbps in Q1 2017. Traditional media such as publishing, radio, and music have integrated Internet-based services and support the revenue generation. Although the revenue from publishing is projected to decrease throughout the forecast period, the growth in digital circulation will help sustain its performance in the long run.

South Korea's Pay TV segment accounted for 17.8% of total revenue. The presence of local device vendors, LG and Samsung, is driving TV subscription. CJ HelloVision is leading the pay TV market with more than 4 million subscribers. As the market becomes saturated, market participants are improving content to capture revenue streams, providing an opportunity for OTT platforms. South Korea has the world's 4th largest mobile app industry by gross revenue in 2017.

## Singapore

**Revenue Forecast by Segments of the Media and Entertainment Industry (US\$ million), Singapore, 2014–2022F**

Segments/Years	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F	CAGR (2017–2022)
Publishing	1,300	1,290	1,275	1,254	1,230	1,206	1,180	1,155	1,130	(2.1)%
Games	280	295	315	320	339	362	381	397	420	5.6%
Radio	130	125	123	121	121	122	123	125	125	0.7%
Film	185	202	198	208	219	228	238	247	255	4.2%
Music	70	71	73	77	81	84	87	89	90	3.2%
FTA TV	312	315	314	310	307	302	296	290	280	(2.0)%
Pay TV	420	388	389	390	390	392	393	395	400	0.5%
OTT Video	71	83	98	120	154	209	281	352	434	29.4%
Others	249	297	324	364	400	429	454	471	495	6.3%
<b>Total</b>	<b>3,017</b>	<b>3,066</b>	<b>3,109</b>	<b>3,164</b>	<b>3,242</b>	<b>3,334</b>	<b>3,433</b>	<b>3,521</b>	<b>3,629</b>	<b>2.8%</b>

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**Market Share by Segments of the Media and Entertainment Industry (%), Singapore, 2014–2022F**

Segments/Years	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F
Publishing	43.1%	42.1%	41.0%	39.6%	37.9%	36.2%	34.4%	32.8%	31.1%
Games	9.3%	9.6%	10.1%	10.1%	10.5%	10.9%	11.1%	11.3%	11.6%
Radio	4.3%	4.1%	4.0%	3.8%	3.7%	3.7%	3.6%	3.6%	3.4%
Film	6.1%	6.6%	6.4%	6.6%	6.8%	6.8%	6.9%	7.0%	7.0%
Music	2.3%	2.3%	2.3%	2.4%	2.5%	2.5%	2.5%	2.5%	2.5%
FTA TV	10.3%	10.3%	10.1%	9.8%	9.5%	9.1%	8.6%	8.2%	7.7%
Pay TV	13.9%	12.7%	12.5%	12.3%	12.0%	11.8%	11.4%	11.2%	11.0%
OTT Video	2.3%	2.7%	3.1%	3.8%	4.8%	6.3%	8.2%	10.0%	12.0%
Others	8.2%	9.7%	10.4%	11.5%	12.3%	12.9%	13.2%	13.4%	13.6%

Source: Frost & Sullivan, primary interviews, desktop research and analysis

Note: Sources include a combination of (i) Interviews with industry and in-house experts; (ii) company reports and other presentation materials including but not limited to news articles, press releases, paid subscriptions to industry data, such as

*Statista and Bloomberg; (iii) Frost & Sullivan desktop research on sources including but not limited to databases of industry associations, trade bodies, government agencies, such as Singapore's National Statistical Office (SingStat), Singapore Book Publishers Association*

Singapore has launched the Smart Nation initiative to harness ICT to create tech-enabled solutions. Publishing remains the largest segment of the media and entertainment market, accounting for approximately 39.6% in 2017. Digital magazines and newspapers are anticipated to increase, but are unlikely to offset the growth decline in print circulation over the forecast period.

Competition from pay TV and OTT video services are hindering the expansion of FTA TV in Singapore. FTA broadcaster, Mediacorp announced collaboration with Netflix in early 2017 to bring Singapore-produced TV series to Netflix subscribers. According to the OTT Video Consumer Study conducted by the Media Development Authority of Singapore (IMDA), online videos were mostly consumed on mobile phones. The top genres of online videos are drama, movies, sports, and entertainment while YouTube, Facebook, and Instagram are the most used online video service applications in Singapore.

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## Users

Millennials are the dominant group of registered users and MAUs in Developed Asia. Compared to other generations, Millennials are more willing to share their thoughts, express their feelings and show their talents/capabilities in front of public (both online and offline). They seek “social satisfaction” via interaction with the others (both known and unknown). Grown up amid major technological advances and being tech-savvy (especially on the internet and smartphones), they have quickly become familiar with the interactive features and accepted the business model of live interactive video streaming services.

Millennials have also shown a shift in terms of consumer behavior. The familiarities of digital products, contents and services make them become highly frequent user of online payments. They also have relatively stronger purchasing power than other generations to become the major group of paying users for live interactive video streaming platforms. According to Frost & Sullivan’s primary research with leading live interactive video streaming platforms and in-house analysis, less than 10% of the total number of paying users in Developed Asia contributed more than 80% of total revenue for the pure-play live interactive video streaming market by the end of 2017.

In terms of online/internet-based activities, Millennials are more mobile-centric than other generations because of their fast pace of life style. Among the mobile-based users of live interactive video streaming services in Developed Asia, approximately 70% of them access the contents via Android devices, while the remaining 30% are using iOS devices.

**Millennial Population, Developed Asia, 2017E**

Million	Taiwan	Japan	Hong Kong	South Korea	Singapore	Total
Millennial Population	18.4	37.2	7.4	18.9	2.3	69.2
Total Population	23.6	127.5	7.4	51.0	5.7	215.2
Millennial Percentage	78.0%	29.2%	100.0%	37.1%	40.4%	32.2%

Source: Frost & Sullivan, World Bank

## Streamers

Live interactive video streaming platforms such as 17Live, AfreecaTV, Showroom, and V Live have been recruiting popular and talented streamers as contracted artists with basic income and sending them for a variety of activities such as marketing events, eSports broadcasting events, and TV programs to boost their popularity and future development.

According to Frost & Sullivan’s primary research and in-house analysis, by the end of 2017, female streamers accounted for 78.0% of the overall streamer population; while male streamers made up the remaining 22.0%.

Streamers between the ages of 17 and 28 years old accounted for 78.0% of the overall streamer population. Streamers below the age of 17 and above 29 years old represented 10.0% and 12.0% of the total streamer population respectively.

**Streamers’ Age Group, Pure-play Live Interactive Video Streaming Market, Developed Asia, 2017E**

Age Group	Percentage of Total Number of Streamers
Below 17	10.0%
17-22	45.0%
23-28	33.0%
Above 29	12.0%

Source: Frost & Sullivan, primary interviews, desktop research and analysis

### *Live Interactive Video Streaming Content*

In Developed Asia, live shows including chatting, singing, and dancing were the major content segments by the end of 2017. Other types of content such as contests, quiz show, reality show, gaming and eSports are emerging in the region. Most live interactive video streaming platforms have yet to develop detailed segmentation of live interactive video streaming content.

On the other hand, the nature of live interactive video streaming content such as live shows offer the possibility for ordinary people (usually referred as “grassroots”) to become popular streamers and contracted artists of the live interactive video streaming platforms. Streamers are self-motivated to improve the quality of their content from UGC to PUGC, gradually building up their fan base on the platforms.

## **3.2 Regulatory Trends in Developed Asia**

### **3.2.1 Key Regulatory Agencies**

Media regulation is the control and guidance of mass media by relevant authorities. The role of these regulatory agencies is to oversee and regulate the operations of telecommunications, Internet, and broadcast sectors in respective countries.

The National Communications Commission Republic of China (Taiwan), Ministry of Internal Affairs and Communications (MIC) of Japan, Communications Authority of Hong Kong, Korea Communications Commission (KCC), and Info-communications Media Development Authority (IMDA) of Singapore, have enacted different bills and acts in the media and entertainment industry.

Developed Asian countries have also posed regulations on the usage of personal data. Personal Information Protection Act (PIPA) compliances in Taiwan and South Korea, Japan’s Personal Information Protection Commission (PPC), Hong Kong’s Privacy Commissioner for Personal Data, and Personal Data Protection Act (PDPA) in Singapore, have established data or information protection laws that comprise rules governing the collection, use, and disclosure of personal information.

### **3.2.2 Key Laws and Regulations**

#### **Taiwan**

According to Reporters Without Borders, Taiwan is ranked 45<sup>th</sup> out of 180 nations in the 2017 World Press Freedom Index, going up 6 places compared to its 51<sup>st</sup> ranking in 2016. It is the freest country in Asia as the courts and media regulators are independent to uphold press freedom in their decisions. They have scrutinized mergers and acquisitions in the media industry that raised concerns about ownership concentration, political polarization, self-censorship, limitations of the diversity of opinions represented in mainstream media.

The enactment of the Fundamental Communications Basic Act in 2004 and the National Communications Commission Organization Act in 2005 enabled the establishment of the National Communications Commission (NCC) in 2006, creating a governmental body for the regulation of the telecommunications and broadcasting sectors.

Taiwan also enforced the Personal Information Protection Act (PIPA) since 2012. The PIPA implements principles on data protection, including identification card number, physical characteristics; family, social activities and sensitive information such as medical, criminal records are regulated under the PIPA.

#### **Japan**

Japan’s media freedom is ranked 72<sup>nd</sup> based on the World Press Freedom Index by Reporters Without Borders in 2017. Voluntary self-regulation characterizes Japan’s Internet industry. The media environment provides freedom of speech and the press, and these privileges extend to speech and expression on the Internet. Although there is no independent regulatory commission in Japan, non-governmental associations such as the Content Evaluation and Monitoring Association for mobile platforms and the Internet Content Safety Association, manage blocking of child pornography online. Legislation criminalizing online sexual solicitation from minor and child pornography was passed in 2003.

Japan imposes a strict stance on piracy. The government introduced a revision to the Copyright Act in 2012. Internet users

who download illegal files could face up to 2 years in prison, and/or be fined up to US\$25,000. Illegal uploads face harsher punishments of up to 10 years in prison and a fine exceeding US\$125,000.

### **South Korea**

According to Reporters Without Borders, South Korea is ranked 63<sup>rd</sup> in the 2017 World Press Freedom Index. The ranking improved 7 places compared to its 70<sup>th</sup> slot in 2016. However, relations between the media and authorities were tense, especially during the presidential term of Park Geun-Hye. The government maintains its approach toward regulating specific online content and imposes censorship on content that the South Korean authorities deem subversive, for example, an article or broadcast which is favorable to North Korea is punishable by imprisonment.

Websites that offer pornography and gambling are blocked in South Korea. Search engines are required to verify the user's age for keywords considered inappropriate for teenagers. In July 2009, South Korea was one of the first countries in the world to introduce a "graduated response" system to deal with digital piracy. The Korean Copyright Commission (KCC) has a right to recommend the Internet service provider suspend the accounts of repeat file-sharing offenders for up to 6 months.

### **Hong Kong**

Hong Kong fell 4 places in 2017 in the Reporters Without Borders' Press Freedom Index, ranking 73<sup>rd</sup> out of 180 nations. Hong Kong's media freedom is protected under the Hong Kong Basic Law and Hong Kong Bills of Rights. Regardless of the political views, no websites are blocked, and no licenses are required to operate a website. However, the distribution of unlicensed copyrighted material, computer crime ordinances, and obscene images, particularly child pornography, are criminalized in Hong Kong.

Since the handover in 1997, Hong Kong's media are finding it increasingly difficult to cover stories with high political sensitivity between Hong Kong and the Mainland China government. Hong Kong newspapers have increased the use of self-declared editorial independence as a marketing tool to reach international audiences.

### **Singapore**

Singapore has the lowest ranking of world press freedom among Developed Asian countries, ranked 151<sup>st</sup> out of 180 nations. Singapore's media environment is highly controlled by the government and Info-communications Media Development Authority (IMDA). The state-owned MediaCorp operates most of the TV and radio channels in Singapore, while Singapore Press Holdings (SPH) largely controls the print media.

Political, LGBT, and racially-sensitive content are mostly censored in Singapore. The government has also enacted the Registered Importers Scheme on foreign publications and audio material importers that require importers to ensure the materials for distribution do not feature content which could be considered objectionable on moral, racial or religious grounds, or harmful to the citizens of Singapore.

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### 3.3 Competitive Landscape Analysis in Developed Asia

#### 3.3.1 Overview of Competitive Landscape

Key pure-play live interactive video streaming platforms in Developed Asia include 17 Media, Showroom, AfreecaTV, Bigo Live, Lang Live, UpLive, MeMe Live, Live.me and Twitch. Some are leading local and regional players which are under large group companies (17 Media, Showroom, AfreecaTV). Others are regional players supported by Chinese companies from financial, operational and technological perspectives (Bigo Live, Lang Live, UpLive, MeMe Live, and Live.me). The rest are global players focusing on specific form of live video streaming content (Twitch), with relatively smaller market presence in Developed Asia compared to other local and regional players.

Additionally, to provide local support with the assured quality of experience, many pure-play live interactive video streaming players are expanding their presence across the region. With a surge in market entrants from fewer than 5 before 2015 to more than 15 by the end of 2017, Frost & Sullivan anticipates competition to intensify at both country and regional levels by the end of forecast period.

In Developed Asia, 17 Media, AfreecaTV, Showroom, Bigo Live, and MeMe Live are ranked the top 5 participants in the region, accounting for 58.4% of the total market share by revenue in Q4<sup>1</sup> 2017. Whereas in the rest of Developed Asia, the pure-play live interactive video streaming market is fragmented and shared by a number of local and global players.

With increasing use of Internet and Internet-based videos, the market is expected to register a CAGR of 47.1% from 2017 to 2022, indicating the significant potential of existing platforms and new entrants. New market entrants are expected to continue their foray into the market with enhanced interactive features and expansive content varieties. The barriers to entry are high owing to the required investment and localization.

**User Experience Assessment for Top 5 Platforms, Developed Asia, 2017**

	AfreecaTV	BIGO LIVE	Showroom	Up Live	17 Media	Scale	Description
Usability							Zero capabilities
Interaction / Engagement							Limited capabilities
Variety and Quality of the Content							Average capabilities
Customer Support							Strong capabilities
							Matured capabilities

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<sup>1</sup> Q4 refers to three months from October to December.

Measurements	Description
Usability	<ul style="list-style-type: none"> <li>Seamless experience across various devices including mobile devices, PC, and others (if any)</li> <li>Login options with local/regional social networking</li> <li>Payment options on both mobile devices and PC</li> <li>Service automation</li> </ul>
Interaction/Engagement	<ul style="list-style-type: none"> <li>Customized content-driven interaction channels</li> <li>Screen display and chat</li> <li>Variety of gift/reward options</li> <li>Offline engagement across social networking</li> </ul>
Variety and quality of content	<ul style="list-style-type: none"> <li>Varied choice of content</li> <li>Audio and visual quality and bandwidth requirement</li> <li>Content monitoring and control</li> </ul>
Customer Support	<ul style="list-style-type: none"> <li>Personalization push notifications</li> <li>Online chat-box support</li> <li>Language support</li> <li>VIP customer support</li> </ul>

Source: Frost & Sullivan

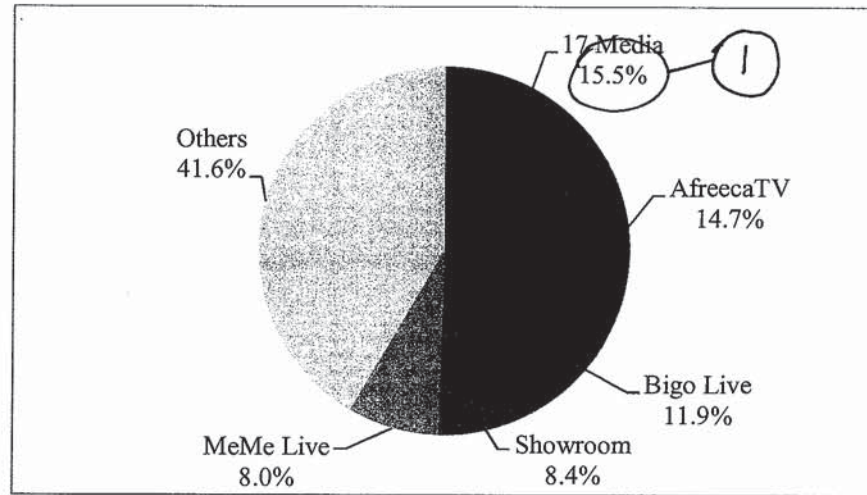
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Platform Introduction, Mobile App Downloads, Developed Asia, 2017E			
Platforms	Country of Origin	Year of Establishment	Number of Downloads in Developed Asia, 2017 (Million)
17Live	Taiwan	2015	3.8
Bigo Live	Singapore	2016	1.5
LangLive	Taiwan	2016	1.5
UpLive	China	2016	4.4
AfreecaTV	South Korea	2006	2.3
Showroom	Japan	2014	1.1
MeMe Live	Taiwan	2016	1.8
Live.me	United States	2016	1.9
VLive	South Korea	2015	3.2

Source: App Annie, Priori Data, Frost & Sullivan

### 3.3.2 Market Share by Revenue

**Market Share by Revenue, Pure-play Live Interactive Video Streaming Market, Developed Asia, Q4 2017**



Source: App Annie, Frost & Sullivan, primary interviews, desktop research and analysis

Note: Frost & Sullivan estimated market players' revenue based on their mobile applications' gross revenue provided by App Annie and overall industry observation of pure-play live interactive video streaming market

17 Media is one of the largest regional live interactive video streaming platforms alongside competitors such as Niconico Live, Showroom, and Bigo Live. In 17 Media's home country Taiwan, it holds the highest market share. In Developed Asia, 17 Media ranked No.1 with 15.5% of market share by revenue in Q4 2017, while it came in 2<sup>nd</sup> place in terms of MAUs in the same period. This reflects successful implementation of go-to-market strategies across the region and robust monetization capability in the 2<sup>nd</sup> half of 2017. AfreecaTV led in the Korean market while Showroom dominated the Japanese market in 2017. Both have limited presence outside their home country. Bigo Live from Singapore and UpLive from China have grown their user base rapidly across the region, however, their monetization capability still requires enhancement. Other participants include local companies such as Lang Live, MeMe Live, V Live, and Live.me, and global companies such as Twitch.

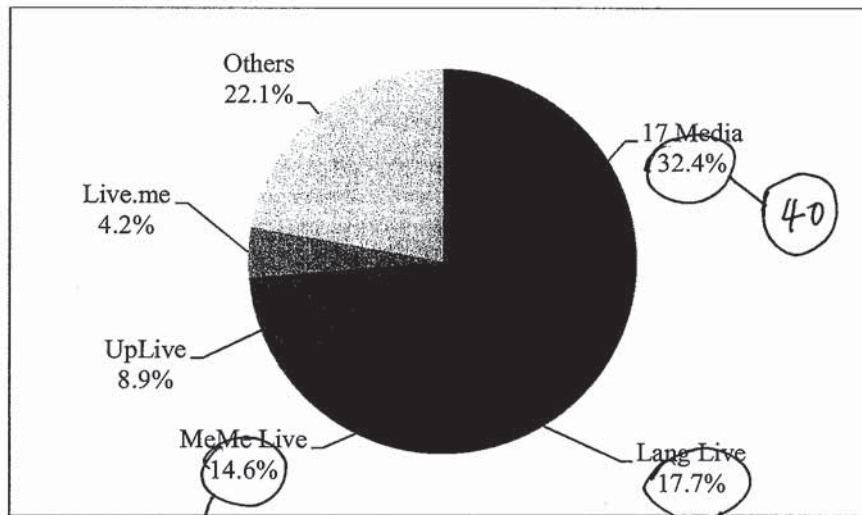
**Top Three Platforms by Revenue, Pure-play Live Interactive Video Streaming Market, Developed Asia, Q4 2017**

	Ranking #1	Ranking #2	Ranking #3
Taiwan	17 Media	Lang Live	MeMe Live
Japan	Showroom	17 Media	Live.me
Hong Kong	17 Media	MeMe Live	UpLive
South Korea	AfreecaTV	Bigo Live	V Live
Singapore	Bigo Live	MeMe Live	17 Media

Source: App Annie, Frost & Sullivan, primary interviews, desktop research and analysis

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### Market Share by Revenue, Pure-play Live Interactive Video Streaming Market, Taiwan, Q4 2017

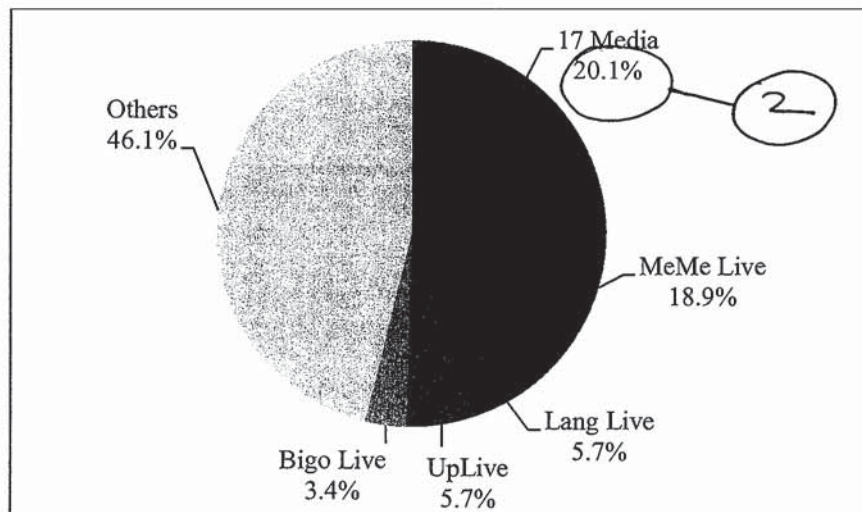


Source: App Annie, Frost & Sullivan, primary interviews, desktop research and analysis

Note: Frost & Sullivan estimated market players' revenue based on their mobile applications' gross revenue provided by App Annie and overall industry observation of pure-play live interactive video streaming market.

17 Media reinforced its market leadership position in Taiwan with 32.4% of market share by revenue in Q4 2017. The high quality of PUGC and interactive engagement are critical market share growth drivers. 17 Media is beginning to play a prominent role in driving market awareness and user base in the Taiwan market. Lang Live and MeMe Live reported a market share by revenue of 17.7% and 14.6% respectively in Q4 2017.

### Market Share by Revenue, Pure-play Live Interactive Video Streaming Market, Hong Kong, Q4 2017

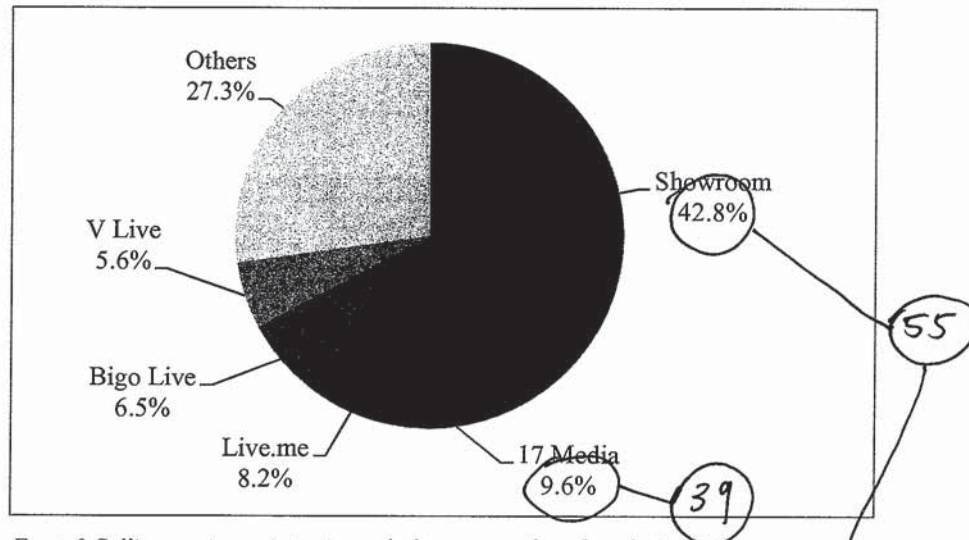


Source: App Annie, Frost & Sullivan, primary interviews, desktop research and analysis

Note: Frost & Sullivan estimated market players' revenue based on their mobile applications' gross revenue provided by App Annie and overall industry observation of pure-play live interactive video streaming market.

The pure-play live interactive video streaming market is fragmented in Hong Kong, consisting of both Chinese and regional players as at 2017. Regional players such as 17 Media, MeMe Live, and UpLive led the market in Q4 2017. Chinese players such as YY Live, Inke, Douyu, and V Live from South Korea are also trying to expand their local market presence.

**Market Share by Revenue, Pure-play Live Interactive Video Streaming Market, Japan, Q4 2017**



Source: App Annie, Frost & Sullivan, primary interviews, desktop research and analysis

Note: Frost & Sullivan estimated market players' revenue based on their mobile applications' gross revenue provided by App Annie and overall industry observation of pure-play live interactive video streaming market.

Showroom has a strong market leadership position in Japan with a market share of 42.8% as Q4 2017. However, according to its parent company DeNA, Showroom's business has reported a negative gross profit margin for the past 3 years. Live.me is one of the first-movers among global players that entered Japan market in early 2017. 17 Media officially launched its service in Japan in August 2017, managing to grow its market share to 9.6% within 4 months and achieve a leading market position locally.

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### 3.3.3 Profiles of Key Players

#### 17 Media

17 Media is one of the first-movers in the pure-play live interactive video streaming market in Developed Asia. According to the company's website, its mobile application, 17Live developed by MachiPOPO Inc launched in July 2015. 17 Media has offices in Taiwan, Hong Kong, Japan, Singapore, Malaysia, South Korea, and Indonesia. In December 2016, Singapore-based dating application Paktor announced its acquisition of a controlling stake in 17 Media. This has enabled 17 Media to expand its user coverage in Asia. According to App Annie and Prior Data, 17Live ranked the second among non-gaming mobile applications by gross revenue in Taiwan by the end of 2017.

The company's website supports Traditional Chinese, English, Indonesian, and Japanese languages, while 17Live supports 6 languages including English, Indonesian, Japanese, Korean, Simplified Chinese and Traditional Chinese. The website only offers recharge of user account balances via myCard and Gash; it also offers payment channel via UniPin, bank transfer and UPoint for Indonesian users.

17 Media focuses on recruiting talented people and streamers to become contracted artists, to generate PUGC on the live interactive video streaming platform. 17 Media has more than 5,000 contracted artists in Developed Asia, making it one of the largest artist agencies in the region. It also provides PGC through 17 TV (online TV programs) and 17 Music channels on 17Live. It works with several content providers to produce TV programs and films. 17Live also has an e-commerce channel, 17 Store, which is embedded in the application and hosted by contracted artists to generate advertising revenue.

#### UpLive

UpLive was launched in May 2016 by Asia Innovations Group Limited (AIG) headquartered in Beijing, China. According to the company's website, AIG has 3 subsidiaries: BigCat (a video content production, marketing, and talent management company based in Vietnam), Beijing Diankai Technology (a China-based mobile marketing company), and Chunghwa International Communication Network (an Internet service and payment provider based in Taiwan). AIG has a global presence with offices in China, Taiwan, Hong Kong, Egypt, Japan, Vietnam, South Korea, Malaysia, and Morocco.

AIG's product portfolio includes UpLive, Super Fans (entertainment information application), Peng Peng (gamified social application) and 4 HTML 5 web-based social gaming portals. UpLive is AIG's primary focus.

UpLive is available on both PC/desktop-based platform and mobile app; however, some features such as private messaging are only available on the mobile app. The mobile app also offers instant translation of users' messages in foreign languages into the streamer's native language (subscription-based premium feature).

According to iTunes App Store information, UpLive supports 31 local languages. Besides in-app purchase, users can recharge their account balance via bank transfer (Taiwan only), MyCard, Paypal, and OneCard.

#### Showroom

Showroom is a subsidiary of DeNA group, a large Japanese entertainment company with a wide range of mobile and online services. Officially launched in August 2014, Showroom grew its group of talented streamers mainly consisting of supermodels, actors, and artists. The online portal remains the primary interaction channel, which supports 4 languages including Japanese, English, Chinese, and Thai. The company aims to provide a seamless user experience on both mobile and PC, therefore, the development of the mobile app has been a focus area in recent years.

The company works with professional talent agents and provides service automation tools to help grassroots build their profile and reputation. For example, streamers are requested to beautify the virtual room with a room name, profile photo, and introduction. Followed by the profile, there is further guidance on making good streaming, such as e-training and online customer support.

In the Japan market, revenue is predominately derived from virtual gifts. However, the company has reported revenue loss in the past 3 consecutive years.

### **MeMe Live**

Launched in October 2016, MeMe Live was developed by Next Entertainment Limited headquartered in Taiwan. According to the company's website, Next Entertainment has employees based in China, Hong Kong, Taiwan, and the US. Next Entertainment was founded by Inke (a leading live interactive video streaming platform in China) and FunPlus (a Chinese video and mobile game development company). Currently, MeMe Live is the only product of the company.

According to PR Newswire, in December 2016, Next Entertainment completed US\$25 million in Series A financing for MeMe Live, investors included GSR Ventures, Mayfield, and Signia Venture Partners. Next Entertainment aims to leverage Inke's operational experience and technological support to tap into the global live interactive video streaming market outside China. The launch of MeMe Live is also considered Inke's strategic expansion to overseas markets.

The full functionalities of MeMe Live can only be accessed via the mobile app. The PC/desktop-based platform only allows users to recharge their account balance through payments, including credit card, bank ATM transfer (Taiwan only), in-store kiosk (Taiwan only), WeChat, and MyCard. In-app purchase is available on the mobile app.

The mobile app allows users to log-in via Facebook, Line, WeChat, Twitter, Instagram, and mobile phone numbers. The app supports English, Simplified Chinese, and Traditional Chinese. Users can look for nearby MeMe Live's streamers based on location sharing.

### **Bigo Live**

Singapore-based BIGO Technology Pte Ltd (BIGO Technology) launched Bigo Live in March 2016. According to the company's website, BIGO Technology owns over 40 patents in VoIP/Video technology. The company has 3 products, namely Bigo Live (live interactive video streaming platform), Weihui (also referred as Bigo, a free VoIP services application similar to Skype and Viber) and LIKE (a music video editing application).

BIGO Technology was founded by Xueling LI, who previously founded YY Inc, the top live interactive video streaming platform in China. Hence, YY Inc has been supporting Bigo Live's operation since 2016. In March 2017, Bigo Live completed Series C funding, with investments from China Pingan Insurance Overseas Holding.

According to PR Newswire, Bigo Live's registered user base is mainly from Indonesia, Malaysia, Thailand, Vietnam, India, the Philippines, Australia, Russia, Middle East, and South America. Bigo Live focuses on the Southeast Asia market with both market localization and global vision.

Bigo Live is available on both PC/desktop-based platform and mobile application. The company has also developed Bigo Live Connector, a dedicated software client for live streaming of both PC and mobile games. Besides in-app purchase, Bigo Live offers more than 20 third-party payment channels on its web-based platform, segmented by different countries. The major payment channel is zGold-MOLPoints developed by Razer. Bigo Live also partners with local telecommunications companies in Southeast Asia for users to recharge their account balances by directly billing the recharge amount via users' mobile phone bills.

The mobile app allows user log-ins via Facebook, Google+, Instagram, Twitter VK (Russian-based social networking platform) and mobile phone numbers. The app supports English, Simplified Chinese, and Traditional Chinese.

### **Lang Live**

Launched in October 2016, Lang Live was developed by Brilliant Mark Holdings Limited based in Hong Kong, which is under Shanghai Lang Ge Media (Lang Ge founded in June 2016). Lang Ge's major business includes media, marketing communication, and advertising. According to Lang Live's web-based platform, its registered users are mainly from Taiwan, Hong Kong, Singapore, and China as at the end of 2017.

The full functionalities of Lang Live can only be accessed via the mobile app. Two websites are available for users to recharge their account balances: one for Chinese users (<http://www.langlive.com/pc/>) to recharge via Internet banking, bank transfer, credit card (all Chinese banks only), WeChat, Alipay, and Shengpay; another for users

## 4 GROWTH OPPORTUNITIES AND CHALLENGES AND MARKET OUTLOOK IN DEVELOPED ASIA

### 4.1 Growth Opportunities

*The advancement of network infrastructure, especially mobile broadband growth and penetration*

Developed Asia has matured network infrastructure; the Internet penetration rate in Taiwan, Japan, Hong Kong, South Korea and Singapore has reached 87.4%, 92.9%, 87.7%, 92.2% and 84.0% respectively by the end of 2017.

Mobile broadband penetration is proportionate to several factors, including 4G LTE network accessibility and smartphone user penetration. The increase in mobile broadband accessibility and smartphone adoption is leading to a surge in mobile data usage. According to Ericsson's Mobility Report, the monthly mobile data in Asia is expected to increase from 1.7GB in 2016 to 9.5GB by 2022. However, the Global Internet Report by the Internet Society states that in Developing Asia, more than 2 billion people are covered by mobile broadband services, but do not use them. Close to 50% of the population in Developing Asia are projected to remain unconnected from mobile broadband by 2020.

Affordability is critical to mobile broadband uptake. While usage and penetration rise in Developed Asia, broadband prices continue to fall. Broadband affordability is a strategy deployed by telecom operators to secure market share. According to the International Telecommunication Union (ITU), mobile broadband costs 0.5% to 1.5% of the gross national income in developed countries, compared with 6% to 25% of the gross national income in developing countries which puts subscription out of reach for many. Hence, there are twice as many mobile broadband subscriptions per 100 inhabitants in developed countries as in developing countries.

Increasing penetration and stability are boosting the integration of mobile broadband in daily activities. The growing user base, particularly among the tech-savvy millennial segment, utilizes mobile devices by engaging in different activities, such as communicating, watching TV/videos, working, shopping, among others. Given the infrastructure advancement in Developed Asia, the live interactive video streaming market is expected to generate decent growth opportunity within the forecast period.

**Internet Users and Penetration by Country, Developed Asia, 2017**

Countries	Internet Users (Million)	Internet Penetration (%)
Taiwan	120.6	87.4%
Japan	118.5	92.9%
Hong Kong	6.5	87.7%
South Korea	47.0	92.2%
Singapore	4.8	84.0%

Source: Frost & Sullivan, primary interviews, desktop research and analysis

**Smartphone Users by Country, Developed Asia, 2014–2022F**

Million	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F	CAGR (2017–2022)
Taiwan	11.6	14.1	16.3	17.9	19.8	20.3	21.2	21.7	22.1	4.3%
Japan	67.0	81.9	93.3	102.0	108.5	112.9	115.1	115.4	115.6	2.5%
Hong Kong	5.9	6.3	6.5	6.7	6.8	6.9	7.0	7.1	7.2	1.4%
South Korea	36.3	39.5	42.2	45.0	46.3	47.1	47.9	48.3	49.0	1.7%
Singapore	3.7	4.1	4.4	4.8	5.2	5.5	5.7	5.8	5.9	4.2%

Source: Frost & Sullivan, primary interviews, desktop research and analysis

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**Smartphone Users Penetration Rate by Country, Developed Asia, 2014–2022F**

Percentage	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F
Taiwan	49.7%	60.0%	69.0%	76.0%	81.3%	85.5%	89.0%	91.0%	92.5%
Japan	52.3%	64.0%	73.0%	80.0%	85.3%	89.0%	91.0%	91.5%	92.0%
Hong Kong	82.4%	87.5%	89.2%	90.8%	91.9%	92.5%	93.0%	93.5%	94.0%
South Korea	72.0%	78.1%	83.0%	88.3%	90.4%	91.8%	93.0%	93.4%	94.5%
Singapore	67.8%	73.5%	79.0%	84.0%	89.0%	93.0%	96.0%	96.7%	97.5%

Source: Frost & Sullivan, primary interviews, desktop research and analysis.

Note: Sources include a combination of: (i) Interviews with industry and in-house experts; (ii) company reports and other presentation materials including but not limited to news articles, press releases, paid subscriptions to industry data, such as Statista and Bloomberg;

(iii) Frost & Sullivan's desktop research on sources including but not limited to databases of industry associations, trade bodies, government agencies, such as The World Fact Book, Internet World Statistics.

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**Tablet Users by Country, Developed Asia, 2014–2022F**

Million	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F	CAGR (2017–2022)
Taiwan	4.3	5.4	6.5	7.4	8.2	9.1	9.7	10.1	10.5	7.1%
Japan	25.6	32.7	38.1	41.7	43.7	45.5	47.0	48.4	49.9	3.7%
Hong Kong	2.3	3.2	3.7	4.2	4.6	5.0	5.2	5.5	5.6	5.9%
South Korea	13.0	14.3	15.3	16.0	16.6	17.1	17.6	18.0	18.2	2.7%
Singapore	2.5	3.0	3.4	3.8	4.1	4.3	4.4	4.6	4.8	4.8%

Source: Frost & Sullivan, primary interviews, desktop research and analysis

**Tablet Users Penetration Rate by Country, Developed Asia, 2014–2022F**

Percentage	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F
Taiwan	18.4%	23.2%	27.6%	31.8%	35.6%	38.7%	41.3%	43.2%	44.8%
Japan	20.0%	25.5%	29.7%	32.5%	34.1%	35.5%	36.7%	37.8%	38.9%
Hong Kong	32.6%	43.3%	51.6%	58.5%	64.5%	69.3%	72.7%	76.0%	78.0%
South Korea	25.8%	28.3%	30.3%	31.7%	32.9%	33.9%	34.9%	35.7%	36.2%
Singapore	45.5%	54.4%	62.4%	69.5%	75.0%	78.8%	81.4%	84.3%	87.8%

Source: Frost & Sullivan, primary interviews, desktop research and analysis.

Note: Sources include a combination of: (i) Interviews with industry and in-house experts; (ii) company reports and other presentation materials including but not limited to news articles, press releases, paid subscriptions to industry data, such as Statista and Bloomberg;

**Mobile Broadband Penetration Rate, Developed Asia & Developing Asia<sup>2</sup>, 2014–2022F**

Percentage (%)	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F
Developed Asia	90.6%	91.2%	91.8%	92.4%	93.0%	93.5%	93.9%	94.5%	95.2%
Developing Asia	22.6%	25.1%	28.8%	31.6%	34.8%	37.5%	41.1%	46.2%	50.9%

<sup>2</sup> Developing Asia includes Malaysia, Indonesia, Thailand, Vietnam, Philippines, and India

Source: Frost & Sullivan, primary interviews, desktop research and analysis

#### 4G LTE Network Accessibility, Developed & Developing Asia, 2014–2022F

Percentage (%)	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F
Developed Asia	83.5%	86.0%	88.1%	89.0%	91.5%	93.2%	93.9%	94.8%	96.0%
Developing Asia	31.3%	32.8%	34.0%	36.4%	39.0%	42.4%	46.5%	49.0%	52.0%

Source: Frost & Sullivan, primary interviews, desktop research and analysis

Note: Sources include a combination of (i) Interviews with industry and in-house experts; (ii) company reports and other presentation materials including but not limited to news articles, press releases, paid subscriptions to industry data, such as Statista; (iii) Frost & Sullivan desktop research on sources including but not limited to databases of industry associations, trade bodies, government agencies, such as OpenSignal, The World Fact Book

#### Rapid Growth of e-commerce and in-app purchase

The growth of virtual gifting and other forms of user spending on live interactive video streaming platforms (e.g., subscription to VIP/membership, pay-per-view content) is closely related to the maturity of e-commerce volume and user spending on mobile apps. The emerging e-commerce volume in Developed Asia is a useful indicator of users' spending patterns via online payments; while gross revenue for mobile apps in different countries within Developed Asia justifies users' willingness to spend via mobile apps.

E-commerce volume as a percentage of retail volume recorded continuous growth in Developed Asia from 2014 to 2017. Taiwan, Singapore, and South Korea are more mature e-commerce markets, estimating to generate 11.0%, 12.0% and 13.0% of e-commerce volume by the end of 2017 respectively. Japan and Hong Kong are expected to sustain growth with e-commerce volume anticipated to reach 15.6% and 17.0% by the end of 2022 respectively. E-commerce market conditions in Developed Asia signal future growth momentum for online payment volume, supporting users' online spending on live interactive video streaming platforms as well.

#### Contribution of E-commerce in Retail Market, Developed Asia, 2014–2022F

Volume Contribution (%)	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F
Taiwan	7.2%	8.4%	9.7%	11.0%	12.9%	14.5%	16.5%	19.0%	22.2%
Japan	5.9%	6.7%	7.5%	8.2%	9.0%	9.9%	12.0%	14%	15.6%
Hong Kong	3.5%	4.5%	5.9%	7.9%	9.2%	12.0%	14.1%	16.8%	17.0%
Singapore	7.4%	8.5%	10.9%	12.0%	14.4%	17.1%	19.7%	22.5%	24.1%
South Korea	10.3%	11.2%	12.1%	13.0%	14.9%	17.0%	20.3%	23.4%	25.6%

Source: Frost & Sullivan, desktop research, and analysis.

Note: Sources include a combination of (i) Interviews with industry and in-house experts; (ii) company reports and other presentation materials including but not limited to news articles, press releases, paid subscriptions to industry data, such as Statista and Bloomberg; (iii) Frost & Sullivan desktop research on sources including but not limited to databases of industry associations, trade bodies, government agencies

According to App Annie and Prior Data, Japan, with regard to gross revenue for mobile apps (including both Android and iOS operating system), South Korea, and Taiwan ranked No.3, 4, and 6 respectively worldwide by the end of 2017. The readiness and willingness to spend on in-app purchases in Developed Asia builds the foundation for the growth of in-app purchase for pure-play live interactive video streaming platforms over the forecast period.

#### Growing Varieties of Entertainment programs, better live interactive video streaming platforms, and new technologies

According to Frost & Sullivan's in-house research and analysis, in Developed Asia, besides scripted-drama and entertainment, the rest content genres such as news, documentary, and sports have seen declines in both production and viewership from 2014 to 2017. The production of entertainment programs is expected to grow from 33.7% by

the end of 2017 to 40.6% by the end of 2022 and it is expected to continue leading the production across all the content genres by end of 2022.

The entertainment-oriented program is expected to dominate content genres from 2018 to 2022. The shift in production focus from other content genres to entertainment is evident in Developed Asia. There are new forms of entertainment programs emerging in recent years, such as reality show, short-formed video and so on. The continued growth of entertainment programs potentially will drive the usage of the live interactive video streaming platforms that typically concentrates on entertainment.

**TV Program Production Forecast by Content Genre, Developed Asia, 2014–2022F**

	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F
Scripted Drama	14.2%	14.6%	15.0%	15.6%	15.8%	16.1%	16.2%	16.0%	15.7%
Entertainment	27.9%	30.2%	32.3%	33.7%	34.9%	36.3%	37.2%	38.6%	40.6%
News	11.4%	11.0%	10.7%	10.3%	10.1%	9.8%	9.5%	9.2%	8.7%
Sports	8.6%	8.7%	8.9%	9.0%	9.2%	9.3%	9.5%	9.6%	9.5%
Documentary	15.1%	14.8%	14.5%	14.2%	14.0%	13.6%	13.3%	12.9%	12.1%
Kids TV	7.8%	8.0%	8.3%	8.8%	8.1%	7.5%	6.9%	6.6%	6.3%
Others	15.0%	12.7%	10.3%	8.4%	7.9%	7.5%	7.4%	7.1%	7.1%

Source: Frost & Sullivan, desktop research, and analysis

Note: Sources include a combination of (i) Interviews with industry and in-house experts; (ii) company reports and other presentation materials including but not limited to news articles, press releases, paid subscriptions to industry data, such as Statista and Bloomberg; (iii) Frost & Sullivan desktop research on sources including but not limited to databases of industry associations, trade bodies, government agencies

In addition, the content of live interactive video platforms is also expected to be more diversified during the forecast period. Amateur performances such as singing, dancing, and chatting dominated content created by streamers and contracted artists from 2015 to 2017. Moving forward, more variety of content is likely to emerge on live interactive video streaming platforms. Gaming, e-sports, travel, leisure, arts, e-events/contests and outdoor activities are expected to have high demand from 2018 to 2022. The increasing variety of content with broad coverage of lifestyle activities is anticipated to expand the user base and transaction volume from 2018 to 2022.

The new programs and content are likely to require respective technical support, which indicates a need for platforms to invest in R&D consistently. For example, leading Chinese live interactive video streaming platform, YY Live, introduced “Happy Contest” in 2016, enabling 2 or more streamers/artists to connect and compete with each other within the same virtual room. This required technical functionalities across performing, viewing, and gifting. More recently in December 2017, quiz shows have been gaining popularity on YY Live, intensifying engagement with users and expanding the user base, especially among Chinese immigrants.

Technology enhancement should further facilitate customer reach for both domestic and international markets. Key technology developments from 2018 onwards include the deployment of analytics applications, development of virtual reality/mixed reality, and artificial intelligence. Analytics applications will analyze user behaviors such as the types of content viewed, viewership length, and purchasing patterns to provide more customized and personalized experience. Virtual reality and mixed reality technologies will create a more engaging viewer experience for live interactive video streaming platforms.

<sup>3</sup> Others include lifestyle, talk show, shopping, animal/wildlife etc.

### *Potential threat from social networking and VOD-oriented live video streaming platforms*

The pure-play live interactive video streaming market is being challenged by both social networking and VOD platforms. According to Facebook, Tencent (WeChat and QQ), Kakao, Line, and Naver, South Korea, Taiwan, Singapore, and Hong Kong were the top 4 countries with regards to social networking user penetration in Asia in 2017. Facebook launched Facebook Live in April 2016, while Instagram launched Instagram Stories a few months later in November 2016. In the past two years, major social networks have been rolling out live video streaming functionalities to strengthen their hold on social networking users and generate more revenue. Their massive user base is the strongest advantage of social networking-oriented live video streaming platforms.

VOD-oriented platforms such as YouTube Live and Niconico Live may implement same business model as what pure-play platforms are doing. YouTube has launched the Super Chat on YouTube Live in 2017, which allows viewers to pay real money to have their messages stand out in the chat stream. YouTubers creating video content can generate revenue from their videos by cashing out the money. It is likely that VOD-oriented platforms will tap into virtual gift model in the next 2-3 years.

The live streaming feature has been built into social networking and VOD applications. Viewers no longer need to download a separate app just for live streaming. Although these platforms are not pioneers of live video streaming, their high accessibility and sizeable use base provide an impetus for future growth.

**Social Networking Penetration Rate by Country, Developed Asia, 2014–2022F**

Percentage (%)	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F
Taiwan	67.2%	69.0%	73.0%	76.9%	78.0%	78.9%	79.6%	80.7%	81.2%
Japan	35.8%	37.4%	39.5%	41.5%	43.6%	45.7%	47.4%	49.4%	51.1%
Hong Kong	66.1%	66.6%	67.3%	67.8%	68.2%	68.6%	69.2%	69.6%	70.0%
South Korea	77.5%	79.3%	81.0%	83.0%	84.3%	87.0%	87.6%	88.1%	88.8%
Singapore	61.0%	61.5%	61.8%	62.0%	62.5%	63.1%	63.9%	64.4%	64.9%

Source: Frost & Sullivan, primary interviews, desktop research, and analysis

Note: Sources include a combination of (i) Interviews with industry and in-house experts; (ii) company reports and other presentation materials including but not limited to news articles, press releases, paid subscriptions to industry data, such as Statista and Bloomberg; (iii) Frost & Sullivan desktop research on sources including but not limited to databases of industry associations, trade bodies, government agencies, such as Facebook, Tencent, Kakao, Naver

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### 4.3 Industry Outlook

Revenue Forecast by Segments of the OTT Video Industry (US\$ billion), Taiwan, 2014–2022F

Segments/Years	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F	CAGR (2017–2022F)
VOD	26.0	34.0	50.0	82.0	104.0	126.0	162.0	212.0	262.0	26.2%
Pure-play Live Interactive Video Streaming	23.0	34.0	52.1	173.8	267.4	358.6	461.1	573.2	673.7	31.1%

Source: Frost & Sullivan, primary interviews, desktop research and analysts

Note: Sources include a combination of (i) Interviews with industry and in-house experts; (ii) company reports and other presentation materials including but not limited to news articles, press releases, paid subscriptions to industry data such as Statista and Bloomberg; (iii) Frost & Sullivan desktop research on sources including but not limited to databases of industry associations, trade bodies, government agencies, such as National Development Council (Taiwan), Taiwan Statistical Data Book.

OTT video is expected to record the highest CAGR of 29.6% among all the segments within the forecast period. Chunghwa Telecom has led the rollouts of VOD platforms. Taiwanese multimedia company Catchplay and US platform Netflix have also launched VOD streaming services in Taiwan. Meanwhile, 17 Media, UpLive, and Lang Live dominate the pure-play live interactive video streaming market. Due to the fast growth, live interactive video streaming had taken over VOD become the key component of OTT video in 2016.

Revenue Forecast by Segments of the OTT Video Industry (US\$ billion), Japan, 2014–2022F

Segments/Years	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F	CAGR (2017–2022F)
VOD	516.2	845.4	1,242.1	1,503.1	1,844.2	2,177.1	2,561.7	3,001.0	3,274.1	16.8%
Pure-play Live Interactive Video Streaming	32.0	40.0	57.5	85.1	182.4	354.4	562.3	797.7	1,091.4	66.6%

Source: Frost & Sullivan, primary interviews, desktop research and analysts

Note: Sources include a combination of (i) Interviews with industry and in-house experts; (ii) company reports and other presentation materials including but not limited to news articles, press releases, paid subscriptions to industry data such as Statista and Bloomberg; (iii) Frost & Sullivan desktop research on sources including but not limited to databases of industry associations, trade bodies, government agencies, such as Statistics Bureau of Japan, Digital Content Association of Japan.

The penetration of mobile broadband is considered the primary driver for the OTT video market. It is expected to generate the highest CAGR in Japan's media and entertainment market over the forecast period. Global market participants such as Netflix, Hulu, and Amazon's Prime Video are expanding their market presence in Japan, while local telecom companies NTT Docomo, KDDI, and Softbank also have their own content distribution platforms. Live interactive video streaming platforms such as Showroom, 17 Media, Live.me, Bigo Live, and V Live are dominating the Japanese market and expected to generate a CAGR of 66.6% which is the highest in Developed Asia, from 2017 to 2022.

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### Revenue Forecast by Segments of the OTT Video Industry (US\$ billion), Hong Kong, 2014–2022F

Segments/Years	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F	CAGR (2017–2022F)
VOD	34.0	45.0	57.0	68.0	79.0	89.0	108.0	142.0	183.2	21.9%
Pure-play Live Interactive Video Streaming	18.0	27.0	39.9	59.0	89.1	139.2	200.6	288.3	355.6	43.2%

Source: Frost & Sullivan, primary interviews, desktop research and analysis

Note: Sources include a combination of (i) Interviews with industry and in-house experts; (ii) company reports and other presentation materials including but not limited to news articles, press releases, paid subscriptions to industry data such as Statista and Bloomberg; (iii) Frost & Sullivan desktop research on sources including but not limited to databases of industry associations, trade bodies, government agencies, such as The Hong Kong Trade Development Council (HKTDC), Digital Marketing Association of Hong Kong.

Given impetus by the rise of Viu, LeTV, my TV SUPER and Netflix, the VOD sub-segment is growing due to the increasing popularity. Live interactive video streaming platforms such as 17 Media, MeMe Live, Lang Live, UpLive, Bigo Live are dominating the segment. The segment is expected to overtake VOD to become the key component of OTT video in 2018.

### Revenue Forecast by Segments of the OTT Video Industry (US\$ billion), South Korea, 2014–2022F

Segments/Years	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F	CAGR (2017–2022F)
VOD	63.0	105.0	161.0	225.0	295.0	368.0	429.0	491.0	579.4	20.3%
Pure-play Live Interactive Video Streaming	74.0	85.0	102.7	129.9	205.0	339.7	524.3	706.6	945.3	48.7%

Source: Frost & Sullivan, primary interviews, desktop research and analysis

Note: Sources include a combination of (i) Interviews with industry and in-house experts; (ii) company reports and other presentation materials including but not limited to news articles, press releases, paid subscriptions to industry data such as Statista and Bloomberg; (iii) Frost & Sullivan desktop research on sources including but not limited to databases of industry associations, trade bodies, government agencies, such as Statistics Korea.

Netflix launched its SVOD service in South Korea in January 2016 as part of its global expansion strategies. Other competitors include LG's Uflix SVOD service, Warner Bros VOD, Amazon's Prime Video, and KT's Olleh Media Player platform. Koreans are known as early adopters of live video broadcasting service. Platforms such as AfreecaTV and V Live had been launched before 2000 and integrated interactive function into the platforms. The segment revenue is expected to grow more than four-fold from 2017 to 2022.

### Revenue Forecast by Segments of the OTT Video Industry (US\$ billion), Singapore, 2014–2022F

Segments/Years	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F	CAGR (2017–2022F)
VOD	59.6	67.9	76.0	86.7	100.2	117.0	137.7	161.9	191.1	17.1%
Pure-play Live Interactive Video Streaming	11.0	15.0	21.5	33.1	54.0	91.9	143.4	190.1	243.2	49.0%

Source: Frost & Sullivan, primary interviews, desktop research and analysis

*Note: Sources include a combination of (i) Interviews with industry and in-house experts; (ii) company reports and other presentation materials including but not limited to news articles, press releases, paid subscriptions to industry data such as Statista and Bloomberg; (iii) Frost & Sullivan desktop research on sources including but not limited to databases of industry associations, trade bodies, government agencies, such as Singapore's National Statistical Office (SingStat).*

PCCW's Viu and US-based streaming service Netflix are two key platforms in Singapore's VOD market. Partnering with Singtel, Viu offers both streaming and downloads, allowing users to watch video via mobile or connected devices. Netflix was launched in Singapore in January 2016 and partnered with Mediacorp to bring locally produced series to subscribers in 2017. Although the pure-play live interactive video streaming market was small, the segment revenue expected to grow about eight-fold from 2017 to 2022.

**Revenue Forecast of Pure-play Live Interactive Video Streaming Market, Developed Asia, 2014–2022F**

Revenue (US\$ million)	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F	CAGR (2017-2022)
Taiwan	23.0	34.0	52.1	173.8	267.4	358.6	461.1	573.2	673.7	31.1%
Japan	32.0	40.0	57.5	85.1	182.4	354.4	562.3	797.7	1091.4	66.6%
Hong Kong	13.0	27.0	39.9	59.0	89.1	139.2	200.6	288.3	355.6	43.2%
South Korea	74.0	85.0	102.7	129.9	205.0	339.7	524.3	706.6	945.3	48.7%
Singapore	11.0	15.0	21.5	33.1	54.0	91.9	148.4	190.1	243.2	49.0%
<b>Total</b>	<b>158.0</b>	<b>201.0</b>	<b>273.8</b>	<b>481.0</b>	<b>797.9</b>	<b>1,283.9</b>	<b>1,891.7</b>	<b>2,555.9</b>	<b>3,309.2</b>	<b>47.1%</b>

*Source: Frost & Sullivan, primary interviews, desktop research, and analysis*

Frost & Sullivan believes that the Developed Asia is expected to be a promising region for pure-play live interactive video platforms during the forecast period. Taiwan and South Korea were the top 2 countries in terms of revenue contribution by the end of 2017, registering revenue share of 36.1% and 27.0% respectively. Japan and South Korea are projected to become the top 2 countries in terms of market size by end of 2022, followed by Taiwan, Hong Kong and Singapore. It will be a high-growth period over the next five years for all countries. The booming of live interactive video market will further strengthen the position of OTT video in media and entertainment industry. Frost & Sullivan believes live interactive video market will become one of the key components in media and entertainment industry in the future.

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## 5 OVERVIEW OF PROSPECTS FOR THE COMPANY IN THE INDUSTRY

### *5.1 Prospects and future growth of LISTCO in light of the industry trends and outlook*

Driven by the growth of smartphones and broadband connections in Developed Asia, pure-play live interactive video streaming services recorded a year-over-year growth of 75.7% in 2017 and is likely to continue on its' growth trajectory with a more stabilized CAGR of approximately 47.1% over the forecast period. Virtual-currency based business model coupled with live interactive video streaming contents are crucial differentiators in this industry. Taiwan, Japan and South Korea were the top three countries in Developed Asia in terms of live interactive video streaming revenue by the end of 2017.

The Company's home market of Taiwan had the second highest proportion of millennial population in 2017. This group of users was the dominant group of registered users and MAUs in developed Asia by way of quick adaptability to interactive features and various business models of live interactive video streaming services. Considering that less than 10% of the total number of paying users contributed to over 80% of total revenue for the pure-play live interactive video streaming market by the end of 2017, the Company is expected to further tap into this pool of audience which has significant purchasing power and are also likely to be considered as harbingers of change in the forecast period. The Company has market presence across the entire entertainment value chain, positioning it at the forefront of a realignment of the entertainment industry across Developed Asia.

Technology development, talent management and content management are critical success factors in this industry. The involvement of digital platforms is changing the way contents and services are produced, processed, distributed, and consumed. Most pure-play live interactive video streaming market players provide services through public cloud platforms such as AWS, Microsoft Azure and Google Cloud. With a greater emphasis on improving user interaction experience and content monetization, virtual gifting and platform membership subscription are gaining popularity. Additionally, diversified content segments necessitate the presence of round the clock technical support to feature more interactive channels.

The Company's research and development activities focus on improving the multi-media functionalities of its' different program channels, improving user experience, and increasing monetization. The Company also utilizes a third party Software-as-a-Service to monitor its' system metrics, including the loading of virtual gifts, response time or latency between data sending and receiving, CPU loading etc. It collects and analyses data on artists on its platform, enabling differentiated data-driven decision making and operations. A case in point is the creation of shorter, faster and more reliable feedback loop compared to traditional entertainment agencies resulting in accurate insights into individual artist potential ultimately resulting in effective grooming of the identified artist(s). On the users side, The Company collects and analyzes data from its' significantly engaged user base that help in refining its' product offerings and introduce new features to better anticipate and meet the diverse entertainment needs of user community.\*

The Company's artists are the content producers on its' platform, their talent is one of the key features that differentiate from its' competitors. The Company has disrupted the traditional artist-agency model by creating a robust and systematic process of discovering, vetting, training, ranking, developing and promoting artists. The Company had a total of 3,500 contracted artists on its platform by the end of 2017. The Company believes that its "artist-first" approach offers a superior value proposition to contracted artists compared to traditional agencies, which helps the Company attract and retain the best artists, enhancing their loyalty to its' platform. The Company provides on-going training and development opportunities to its' contracted artists to help them produce quality content and ensure the longevity and commercial success of their careers while building personal brand appeal.\*

Talent acquisition and management is the core competency and differentiator in live interactive video streaming market. Future growth of the Company is primarily driven by the superior quality of content created by its' streamers and contracted artists.

The Company leverages on its' own PUGC and PGC production capabilities and strategic media partnerships and offers high quality content across multiple media formats, including mobile and online, TV and film. The Company's PGC application - 17TV is interactive in nature and viewers participate by real time communication with hosts and guests via instant messages, providing the shows with more dynamic and rich content. Another platform is 17Music where the Company's contracted artists interact with users by responding to their song requests and receiving virtual gifts from users as rewards.

On the content management side, the key to success lies in maintaining adequate content quality and diversification that will result in an increase in site traffic and ultimately in customer retention. Content monitoring has assumed significant importance in recent years with all the leading platforms investing in real-time monitoring and control solutions to censor inappropriate contents.

The Company stringently monitors content aided by proprietary software and technology, called Sky Eye, to monitor and screen UGC against a spam list, a list of keywords and behaviors that The Company has determined are likely to be indicative of inappropriate content or activities.\*

Additionally, growing varieties of entertainment programs and live interactive video streaming platforms are expected to drive the market in the forecast period. While singing, dancing, chatting were popular amongst streamers and contracted artists historically, gaming, e-sports, travel, leisure, arts, e-events/contests and outdoor activities are expected to have high demand from 2018 to 2022. Increased variety of content is expected to drive the user retention in the forecast period.

The Company has come up with periodic online competitions and offline events to maintain the momentum on its' live interactive video streaming platform. In December 2017 alone, The Company organized a number of competitions, including the New Year's Countdown, "Shine in Shibuya", Interior Design Award, "MTR Star" and "KTV Queen". The winners of these competitions won free trips to popular destinations, were photographed by professionals and were also given virtual tokens in some instances.\*

## *5.2 Industry positioning of LISTCO against its peers and competitors (based on quantitative and qualitative data / opinions and insights related to pure-play live interactive video streaming market)*

36 In order to provide local support with assured quality of experience, many pure-play live interactive video streaming players are expanding their presence across the region. With an increase in the number of market participants from less than 5 in 2005 to over 15 in 2017, Frost & Sullivan is of the opinion that the competition will get intensified both at country and regional levels over the forecast period.

The Company was a market leader in the Taiwanese live interactive video streaming industry with approximately 32.4 % market share in Q4 2017. During the same period, The Company also held the largest market share at approximately 15.5% in live interactive video streaming industry in Developed Asia. In Q4 2017, The Company held the market leadership in terms of revenue in Taiwan and Hong Kong which are the company's two key markets of operation; it also ranked second position in terms of revenue in Japan, only next to Showroom, a local company with limited regional presence. The high quality of PUGC and on-going high levels of engagement are key drivers of the growth in market share. With 3.8 million downloads in 2017, The Company's platform, 17Live had the highest downloads not only in Taiwan but also in Developed Asia. In terms of MAU, the Company, at 1.5 million MAU, was close in heels with AfreecaTV which recorded 1.6 million MAU in 2017. Key competitors in Developed Asia include AfreecaTV, Showroom, Niconico Live, UpLive, and Bigo Live among others.

Market leadership in its' home country as well as in Developed Asia is indicative of successful implementation of go-to-market strategies across the region and robust monetization capability in the 2nd half of 2017.

Additionally, the Company's co-founder, Mr. Jeff Huang, is a seasoned veteran in the entertainment business with an established fan base and has deep relationships across Asia's entertainment industry. Huang began his career in the early 1990s who introduced hip hop to Taiwanese music culture. He also founded the music label Machi Entertainment in 2003. When the Company's live interactive video streaming platform was launched in 2015, Huang invited his friends in certain entertainment circles to do live video streaming sessions on the Company's platform, which attracted large number of viewers and users.\*

One of the key factors that helped the Company stay ahead of the competitors is that it owns the contents generated by its' contracted artists, which provides the Company with a pipeline of valuable intellectual property. The Company has control over a large, high quality and diverse artist pool of 3,500 contracted artists that provides the Company with a competitive advantage that cannot be easily replicated by their competitors. Most content on its platform is PUGC, which differentiates the Company from other pure-play live interactive video streaming platforms. Additionally, the Company made significant in-roads into newer markets such as Japan and South Korea, owing to a reasonably well developed media and entertainment industry, with expanding cultural influence across