

# Taiwan Internet Report 2018



Organizer : Taiwan Network Information Center  
Implementer : InsightXplorer Ltd.

# Table of Contents

<b>I. RESEARCH SUMMARY AND MAIN FINDINGS.....</b>	<b>1</b>
<b>II. KEY OPPORTUNITIES FOR THE DIGITAL ECONOMY .....</b>	<b>4</b>
A. GOVERNMENT .....	4
B. INDUSTRY.....	4
C. INTERNET USERS.....	4
<b>III. FOUR MAJOR FUTURE STRATEGIES .....</b>	<b>6</b>
A. STRATEGY 1: STRENGTHEN ADVANTAGES IN ONLINE MEDIA.....	6
B. STRATEGY 2: IMPROVE THE QUALITY OF E-COMMERCE.....	10
C. STRATEGY 3: ESTABLISH AND DEVELOP SMART HOME APPLICATIONS .....	14
D. STRATEGY 4: EXPAND AND INVIGORATE ONLINE EDUCATION.....	17
<b>IV. COMPARISON OF INTERNATIONAL TRENDS .....</b>	<b>22</b>
E. OVERALL NETWORK USAGE STATUS.....	22
F. NETWORK INFRASTRUCTURE LOGIC .....	26
G. OVERVIEW OF NETWORK SERVICE APPLICATIONS .....	31
<b>V. CHALLENGES FOR ONLINE APPLICATIONS IN TAIWAN.....</b>	<b>40</b>
A. SOCIAL DRIVEN.....	41
B. ECONOMY DRIVEN .....	53
C. INNOVATIVE TECHNOLOGIES .....	62
<b>VI. SURVEY METHODOLOGY .....</b>	<b>68</b>



# I. Research Summary and Main Findings



Taiwan has progressed among the ranks of advanced countries in terms of its Internet environment and its competitiveness, as exemplified in the performance of its Internet "soft power" such as infrastructure, equipment applications, and usage rates. Many opportunities are still present in applications and innovation for Internet "soft power." What are the Internet-related events that have yet to happen, those currently happening, and those that have already happened in Taiwan? Where do Taiwan's opportunities lie?

## I. Research Summary and Main Findings

The Taiwan Internet Report aims to portray the development, application management, and observation of Internet access in Taiwan. It describes the overall Internet usage diagrams and user profiles in Taiwan and seeks to understand online trends and future development. The survey methodology combines both qualitative and quantitative methods including computer assisted telephone interviewing (CATI) and document analysis; this aims to improve the perspective of the survey, increase the range of references and expand the applications for the survey. The Report seeks to describe the overall situation of the Internet in Taiwan; it does so by expanding Taiwan's Internet infrastructure to application levels, referencing logical domain names and IP/ASN registration status and other objective environmental analyses, and collecting and comparing contents of secondary documents from other countries.

The estimated number of Internet users aged 12 and above reached 17.38 million people in 2018, and the estimated number of Internet users in the country has reached 18.66 million. The overall Internet access rate has reached 79.2%. The mobile Internet access rate has increased each year and exceeded 70% for the first time in 2018, while the wireless Internet access rate dropped by 15%. In terms of online services and applications, the usage rate of content media

and social media are the highest for Internet users and both have exceeded 80% while the use of e-commerce has reached 60%. These are markets with more active online applications and growth. Although there are fewer applications and services in Taiwan, Internet users are familiar with the concepts of artificial intelligence and self-driving cars. This demonstrates a high level of market acceptability despite a lack of services provided.



## II. Key opportunities for the digital economy



## II. Key opportunities for the digital economy

In terms of the three dimensions including government, industry, and Internet users, Taiwan has actively advanced the construction of a digital innovation environment, promoted digital economic development, and established a solid foundation for industries. It also has abundant supply chain experience for smart products and active participation of Internet users in online activities. These are advantages for the development of the digital economy and smart applications.

### A. Government

- The government actively promotes the national vision of digital country and smart island.
- Reduce the digital divide with public policy on e-care, e-inclusion and e-opportunity.
- The 5+2 Industrial Transformation Plan and New Southbound Policy both are driven by the digital economy.

### B. Industry

- The ICT industry's developed and hardware design capabilities help to combine the advantages of software/service and hardware.
- Industry alliances create new business opportunities.

### C. Internet users

- The Chinese language market is vast to develop the voice control.
- The thriving advantages of the social networking drive smart devices, education, online contents like videos and music.

### III. Four Major Future Strategies





### III. Four Major Future Strategies

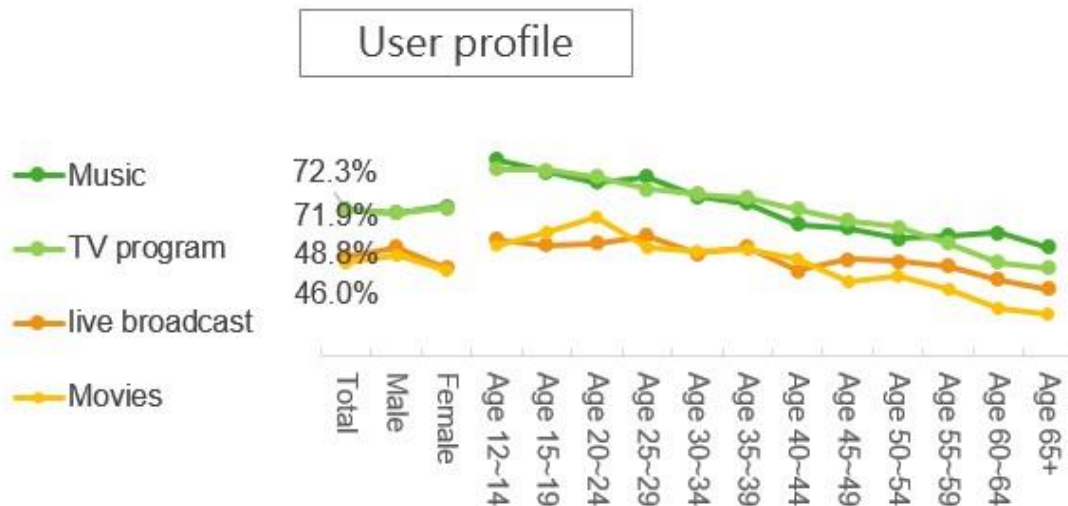
As advanced countries across the world gradually adopt the digital economy as the basis for advancing their nations and societies, the improvement of Taiwan's online soft power will be based on localized plans and development. Four crucial strategies shall be adopted to strengthen its advantages and transform its weaknesses.

#### A. Strategy 1: Strengthen advantages in online media

Content media include videos and music. They are further divided into drama programs, live broadcasts, and films based on the content format and service operations. Please click "Learn More" to view an analysis of the usage status.

##### 1. Content media user profile

People aged 12-29 had a higher percentage of use. Seventy percent of the people would "view films, TV programs, and drama" and people aged 12-39 had a higher percentage of use. Meanwhile, 48.8% view "live broadcasts" (excluding reruns after the broadcast) and men aged 12-29 exhibit a higher percentage of use. Nearly 50% "view films" and people aged 12-39 had a higher percentage of use. Approximately 10% "do not view videos/films/live broadcasts or listen to music online." People aged 50 or above account for a higher percentage of such users.

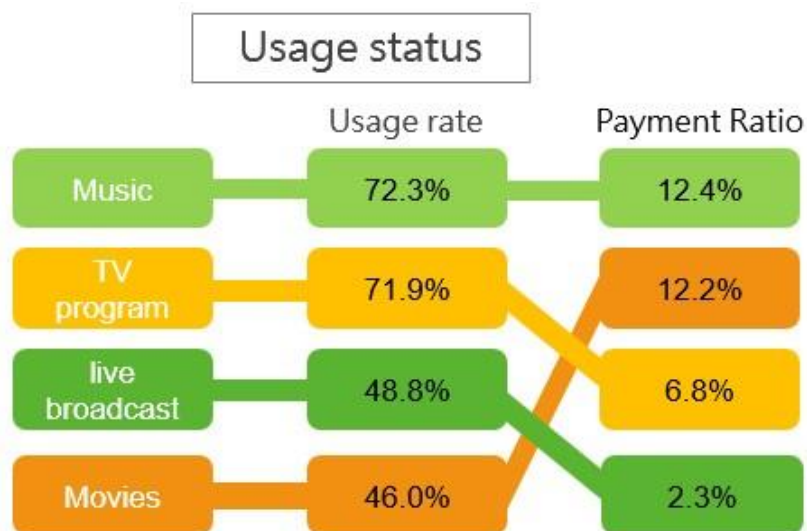


n=2535 multiple selection question

Source: Telephone interviews conducted in this research (2018)

## 2. Content media payment status

When asked about the payment status for various online entertainment activities, the overall payment rate was only 14.1%. Over 10% pay to "listen to music" and "viewing movies" online. The payment rate for "viewing drama and variety shows" was 6.8%. The payment rate for "viewing live broadcasts" was 2.3%.

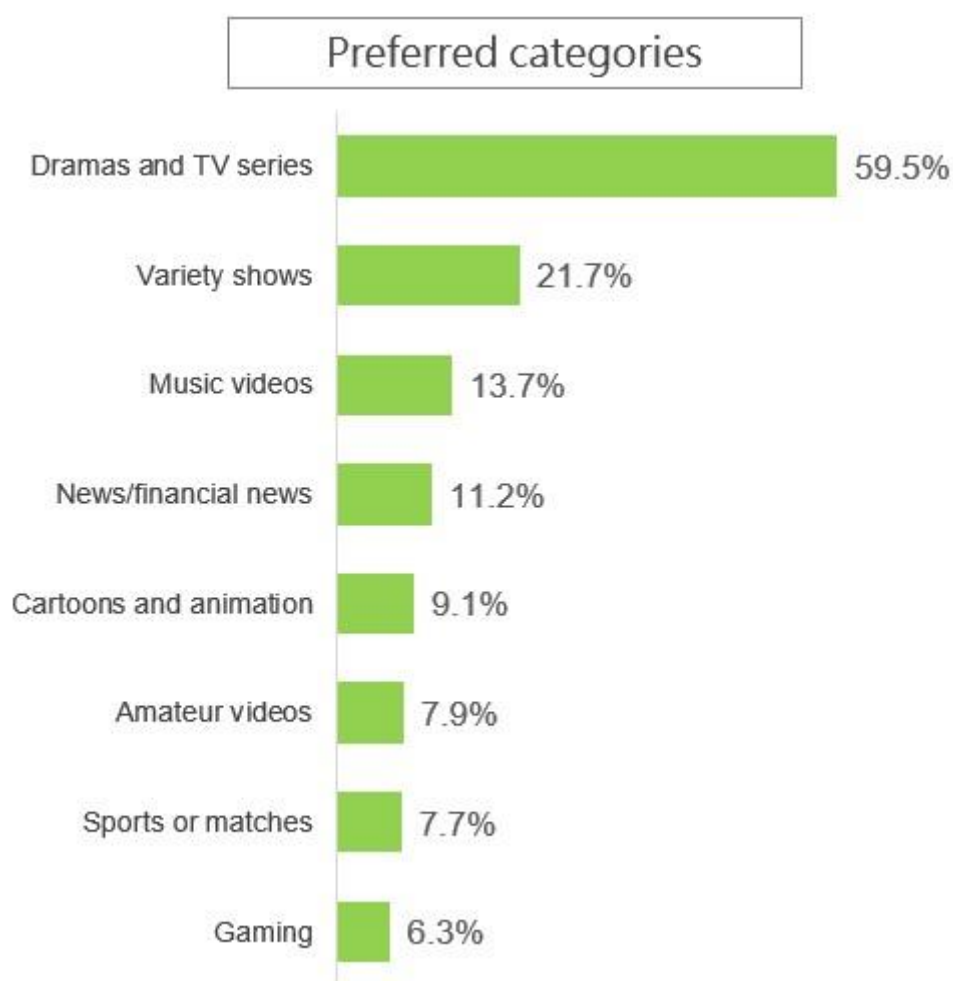


n=2535 single selection question

Source: Telephone interviews conducted in this research (2018)

### 3. The popularity of dramas provides opportunities for developing independent dramas or IP dramas

When asked about the categories of videos, TV programs, and dramas viewed online, 60% indicated that they view "dramas and TV series." Women aged 30-59 had a higher percentage of use. Approximately 20% view "variety shows" and people aged 12-29 had a higher percentage of use. "Music videos," "news/financial news," and "cartoons and animation" account for approximately 10% each.

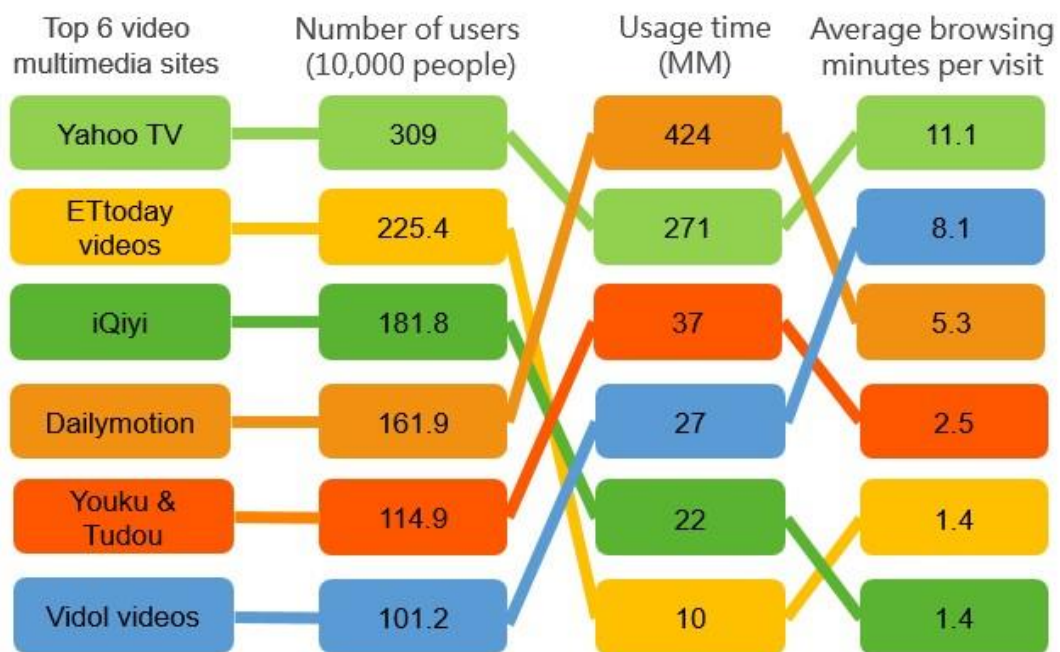


n=1824 multiple selection question

Source: Telephone interviews conducted in this research (2018), InsightXplorer (July 2018) and [NCC\(2017\)](#)

4. Pirate platforms have high usage rates and they impede the profitability of official releases.

Based on observation, the top video platform used by Taiwanese Internet users other than YouTube was Yahoo TV while videos on ETtoday ranked second and iQiyi ranked third. Dailymotion, an unofficial platform, was ranked fourth and it had the longest usage time. According to the Digital Service Innovation Institute of the Institute for Information Industry, and calculations based on 26.42 million 4G users across Taiwan and 79.9% in video content viewed on pirate websites and apps, the industry loses an estimated NT\$28.3 billion each year. The influence cannot be underestimated ([DigiTimes](#)).



\*Total Audience aged 18 and above

Source: [InsightXplorer](#) (July 2018)

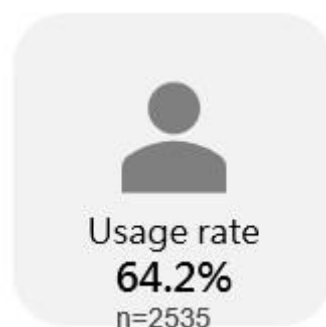


## B. Strategy 2: Improve the quality of e-Commerce

According to statistics ([source](#)), revenue from retail e-commerce in Taiwan reached NT\$221.2 billion in 2016 and the annual growth rate was 12.3%. Although the usage rate is not considered low, there remains room for growth in the overall consumption for the retail industry.

### 1. Active e-commerce and digital economy with room for qualitative and quantitative improvement

In Taiwan, 64.2% of Internet users shop online. It is a relatively active economic application compared to other online services and applications. Although the usage rate is not considered low, there remains room for growth in the overall consumption for the retail industry. According to statistics, revenue from retail e-commerce in Taiwan reached NT\$221.2 billion in 2016 and the annual growth rate was 12.3%. However, it only accounted for 5.4% of the retail industry (Department of Statistics of the Ministry of Economic Affairs) and it remains lower than China (15%), the United States (8%), and Japan (5.8%).



Source: Telephone interviews conducted in this research (2018) and InsightXplorer (Mar. 2018)

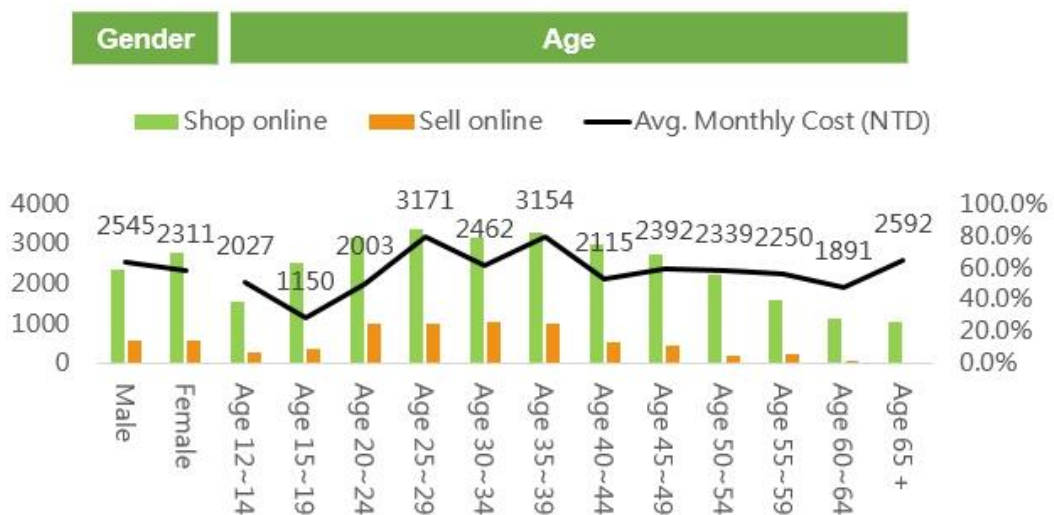
### 2. E-commerce user profile

Among interviewees who buy or sell products online, 64.2% conducted online transactions. Separately, 49.8% "buy products

online" and 14.2% "sell products online." Average monthly expenses amounted to NT\$2,418.



Source: Telephone interviews conducted in this research (2018) and InsightXplorer (Mar. 2018)



\* Age 12-14 and age 65 above are small sample size. Thus the figures are subject to bias and are for reference only.

n=2535

Source: Telephone interviews conducted in this research (2018) and InsightXplorer (Mar. 2018)

3. E-commerce is one of the few industries with strong domestic firms that also require the government's continuous support

Taiwan has diverse e-commerce brands and categories as well as operators in different sectors, and Taiwan's online environment is filled with foreign capital and foreign companies. Services with more active applications such as social media and communication consist mostly of international brands. E-commerce is one of the few industries with strong domestic firms.

Operating model	Definitions	Representative businesses
B2B	Transactions between businesses	Taiwantrade
C2C	Transactions between consumers	Yahoo! Auction, Ruten, Shopee, PChome personal stores
B2C	Businesses offer goods or services to consumers	Yahoo! Shopping, Momo Shopping, PChome Shopping/24H
B2B2C	Businesses offer goods or services to consumers on online platforms	Yahoo! Mall, Momo Mall, PChome Mall, Shopee Mall, pcone
O2O	Use of online marketing to guide customers to offline consumption	17 Life, Gomaji

Only representative operators are listed due to lack of space

Source: MIC, III (2017), [online source](#), and information compiled by InsightXplorer

Operator type	Representative businesses
Taiwanese e-commerce operators	Listed: PChome, PChome Mall, ETMall, Gomaji, MOMO.com Inc. Not listed: Books.com Co., Ltd., Lativ, Pinkoi
Online shopping platforms of foreign companies	Yahoo! Auction, Yahoo! Shopping, Yahoo! Mall Ruten, Ruten (Taiwanese and Japanese joint venture), Carousell (Singapore), Shopee (Singapore)
Platforms with investment from finance and media operators	Momo Shopping, udn Shopping, Treemall, Orenda
Platforms operated by retailers with physical stores	ibon mart, Tsann Kuen Quick 3, EcLife Shopping, Carrefour Online Shopping
Platforms with investment from telecom operator	Myfone Shopping, friDay Shopping

Only representative operators are listed due to lack of space

Source: MIC, III (2017), [online source](#), and information compiled by InsightXplorer

#### 4. New high-tech applications integrate social networks and the media to achieve swifter communication

Even as e-commerce generates impressive revenue, the actual profits have gradually shrunk ([DigiTimes](#)). Integration of new technologies and cross-sector collaboration have become necessary for consolidating the benefits of the digital economy. New technologies such as AR and VR have been integrated to improve the shopping experience. Operators also leverage the rapid development of social media and content media to promote products in social groups or content. Examples include online word-of-mouth in the past and the current fan economy.



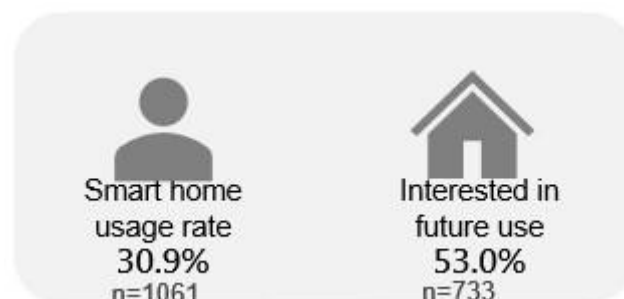
For the industry, it needs to employ new technologies and algorithms to produce more instantaneous feedback such as monitoring the products browsed or selling big data in order to market or remove popular or unpopular products and to adjust the sales strategy or marketing activities

### C. Strategy 3: Establish and develop smart home applications

Taiwanese companies play key roles in the global smart speaker supply chain, but there are no leading products in the domestic market and very few users. The development is less rapid than development in the United States or China. In terms of demand, smart home products not only increase convenience but also supplement areas in an elderly-friendly home living environment in an aged society. In terms of the supply side of services, Taiwan has a solid foundation in hardware capabilities and background in the Chinese language. It has advantages for developing smart speakers.

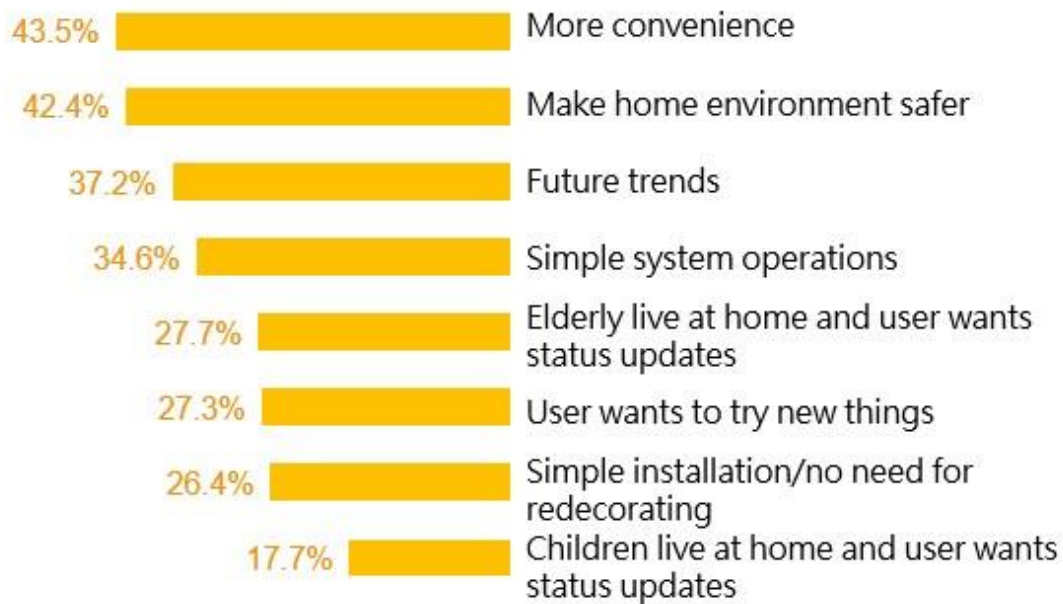
#### 1. Smart home usage status

A survey of Internet users reveals that the current smart home usage rate is approximately 30% while 50% are interested in applications. The main reason for usage is to make the home environment safer; the second reason is to make life more convenient; the third reason is simple installation.



Source: InsightXplorer (October 2018), and [InsightXplorer](#) (November 2018)

## Reason for using



n=695 multiple selection question

Source: [InsightXplorer](#) (November 2018)

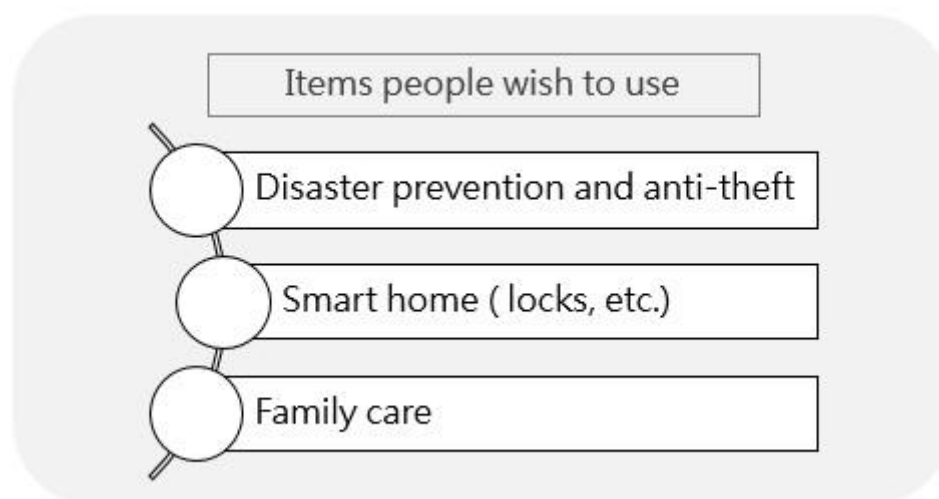
## 2. Creating an elderly-friendly digital environment for an aged society

According to the statistics published by the Ministry of the Interior in 2018 (source), Taiwan's elderly population aged 65 and above has exceeded 14% and it is now officially an aged society. According to the National Development Council's estimates on population changes, it would only take Taiwan eight years to transform from an aged society into a super-aged society. However, the Internet access rate of the population more than 65 years old has dropped drastically (more than 60% for people aged 64 and below but only 31.1% for people aged 65 and above) and formed a digital gap in the age of the population. Therefore, under the premise of creating an elderly-friendly environment, audio control will become an important shortcut for the elderly to access the Internet. Smart

speakers can assist in obtaining information online as well as in online shopping. The key factors involve the integration of smart monitoring and wearable devices to focus on healthcare and safety monitoring.

### 3. The development of smart speakers has been slow.

"Disaster prevention and anti-theft," "smart home," and "family care" are smart home applications Taiwanese Internet users are most likely to adopt. We base our observation on the product that serves as the control center in smart home applications — smart speakers. Compared to the 20% penetration rate of smart speakers for digital online families in the United States, the development of the products has been slow in Taiwan and it is not a product people want to use.



n=1023

Source: [InsightXplorer](#) (November 2018)

### 4. Smart home items people wish to use

People primarily focus on disaster prevention and anti-theft functions, mainly for convenience. Price and lack of demand are the obstacles

Close to 60% of people surveyed indicate that they do not use smart home products because "the price is too high." Approximately 50% believed that they are "not needed/considered unnecessary" and approximately 20% expressed "concerns of leakage of personal information/privacy," "immature systems," and that they "do not understand related services."

## 5. Taiwan's advantages in developing Chinese language smart speakers

In addition to advantages in hardware design, Taiwanese companies' competitors in the Chinese language audio assistant market are Chinese brands that use simplified Chinese writing. Therefore, there are still opportunities for developing audio and AI for the Taiwanese traditional Chinese market. In addition, operators may also make full use of social media as well as audio and AI technologies to create technologies that integrate and improve lives in order to implement a strategy for achieving low costs and convenience.

Taiwan has a mature e-commerce market. It has learned from the development strategy of Amazon Echo, and the process from voice-controlled order to logistics and delivery has become the last mile for e-commerce brands' entry into homes.

### D. Strategy 4: Expand and invigorate online education

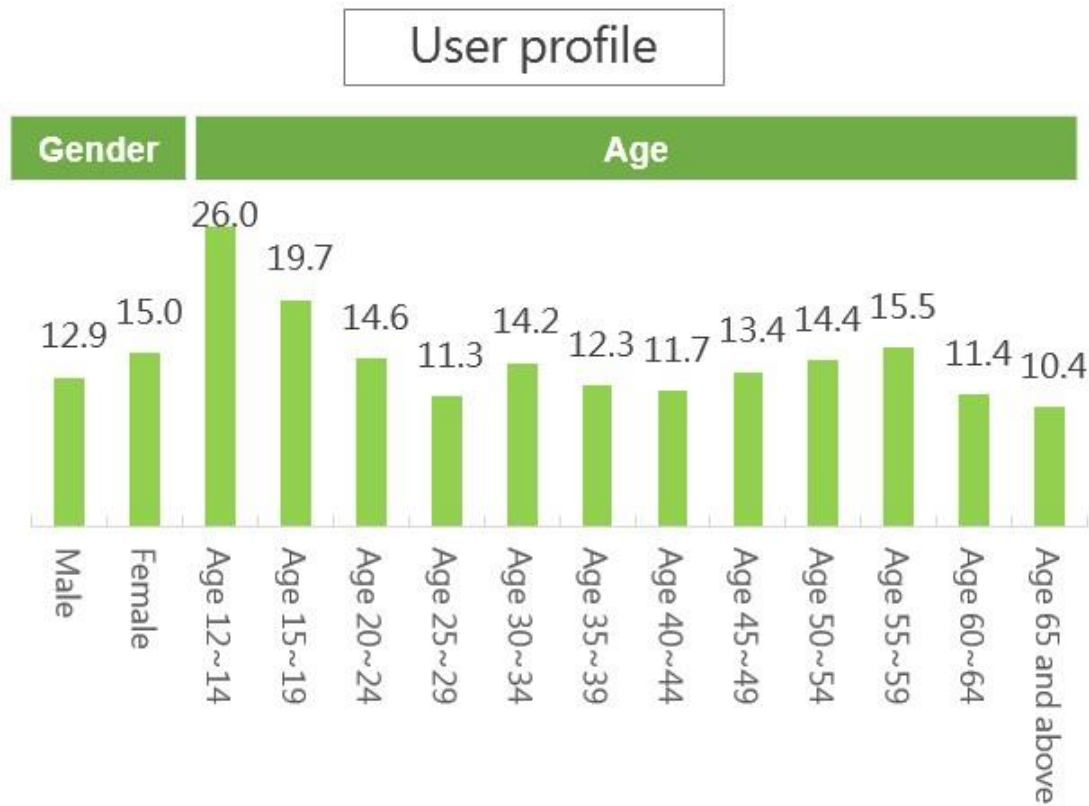
The demand for education is high but the usage rate is low. Operators must break free of education based on official curriculums and academic purposes while increasing content for the education of skills and increasing usage rates.

#### 1. Education and application usage status

Online learning services account for only 14% and most users have



language learning demands. Users are mostly between 12 to 19 years old.




n=354

Source: Telephone interviews conducted in this research (2018)

## 2. Education mainly consists of language courses

As indicated by interviewees that use online learning platforms, the highest percentages of content learned through platforms consist of learning "languages" which accounted for 44.8%, followed by "materials for examinations" (public office examinations and individual subjects) with approximately 20%, and "cooking" with 14.9%.



n=354

Language	44.8%
Education materials for examinations	18.1%
Cooking	14.9%
Science and technology/programming	9.4%
Business/business management	9.3%
Daily life applications	6.4%
Medicine/healthcare	5.5%
Design	4.6%

Source: Telephone interviews conducted in this research (2018)

### 3. Invigorate education methods and expand the scope of education

According to the bilingual national policy of the National Development Council, Taiwan will soon become a bilingual nation and the use of digital technologies to build a bilingual nation will become a necessity. In addition to language education, the content and methodology can also be used to improve the usage rate of online learning.

With regard to content: The policy encourages different groups to develop education for necessary skills or interests such as nanny courses, professional training, and business courses such as video marketing and recreation of brands to promote past onsite courses to online channels. The policy also advances the development of local content such as the education and passing down of conventional industries or primary industries while achieving promotion and tourism solicitation functions.

With regard to the methodology, operators can form alliances with social groups and content media and use the high usage rate to increase the exposure and attractiveness of education applications such as knowledge-based YouTubers or Internet celebrities. Operators may also employ new technologies such as AR, AI, and live broadcasts to create more learning experiences.



## IV. Comparison of International Trends



## IV. Comparison of International Trends

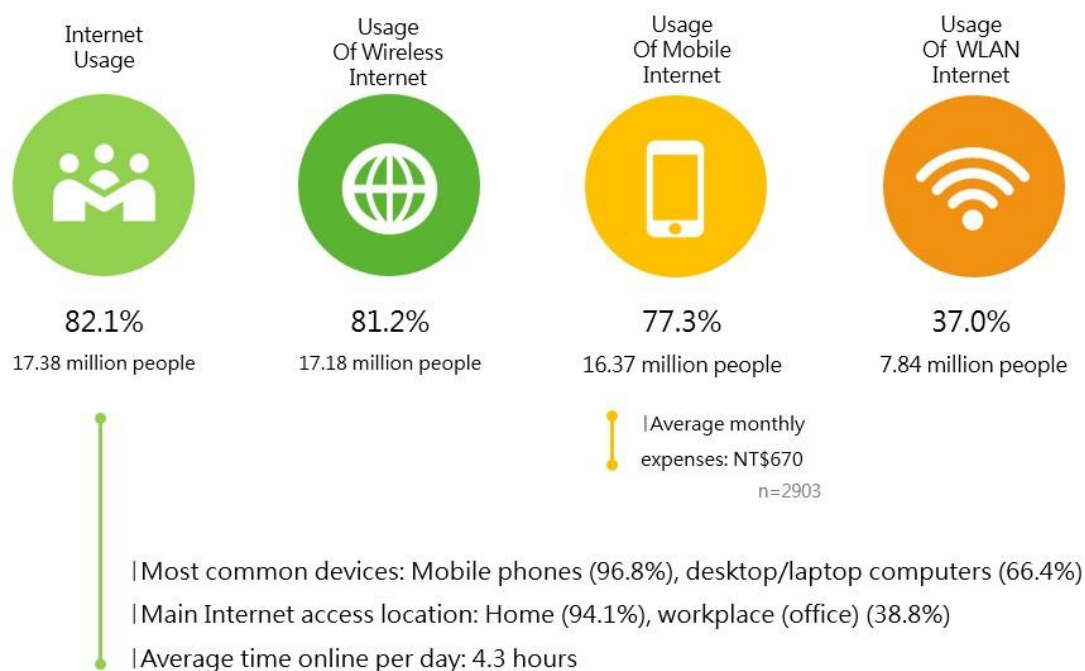
Taiwan's Internet competitiveness is among the highest in the world. In addition to the high Internet access rate of its Internet users, comprehensive infrastructure, and high global competitiveness rankings, its e-commerce economy also continues to grow.

### E. Overall Network Usage Status

High personal and household Internet access rates rank among the highest in Asia.

#### 1. Current domestic developments

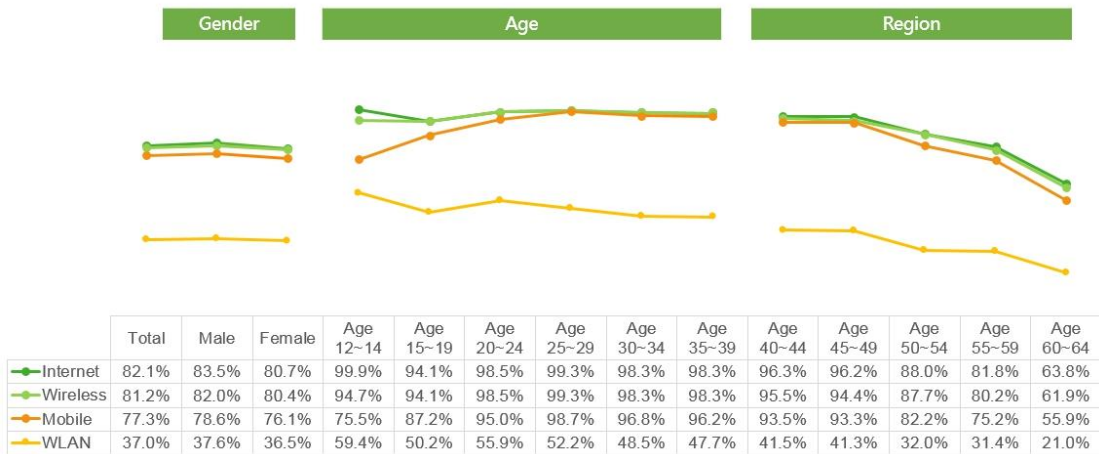
The percentage of individuals aged 12 and above who have used the Internet has reached 82%, totaling approximately 17.38 million people.



\*Statistics on this page are from people aged 12 and above  
n=3088

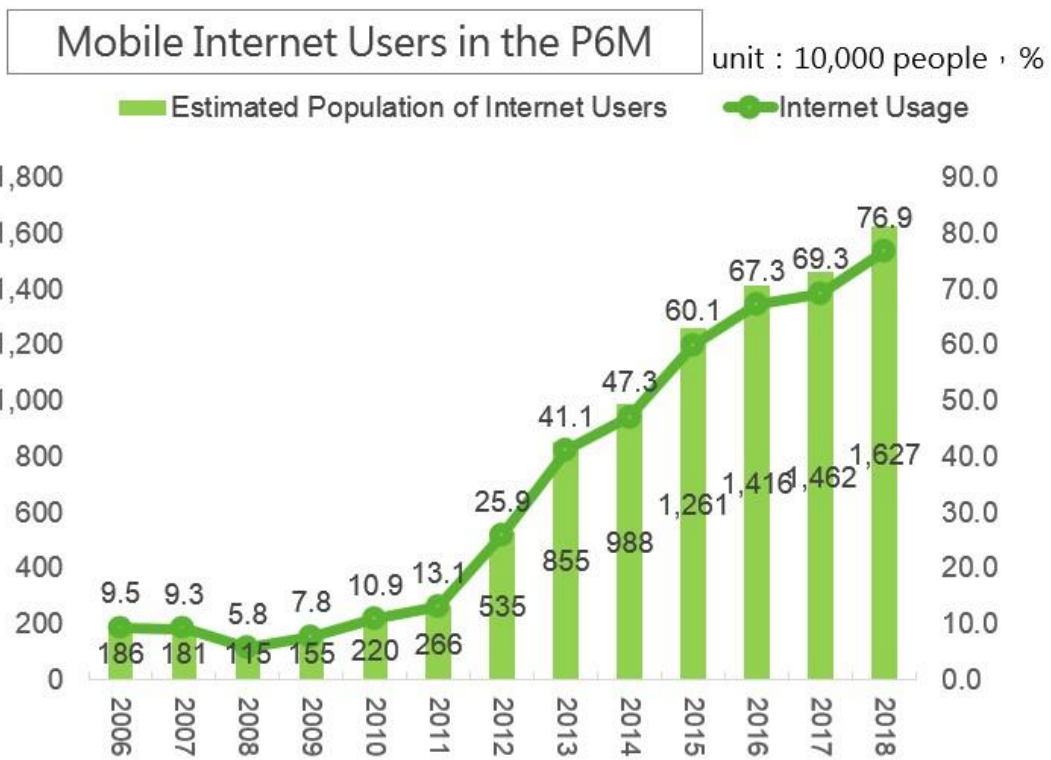
Source: Telephone interviews conducted in this research (2018)





n=3088

Source: Telephone interviews conducted in this research (2018)



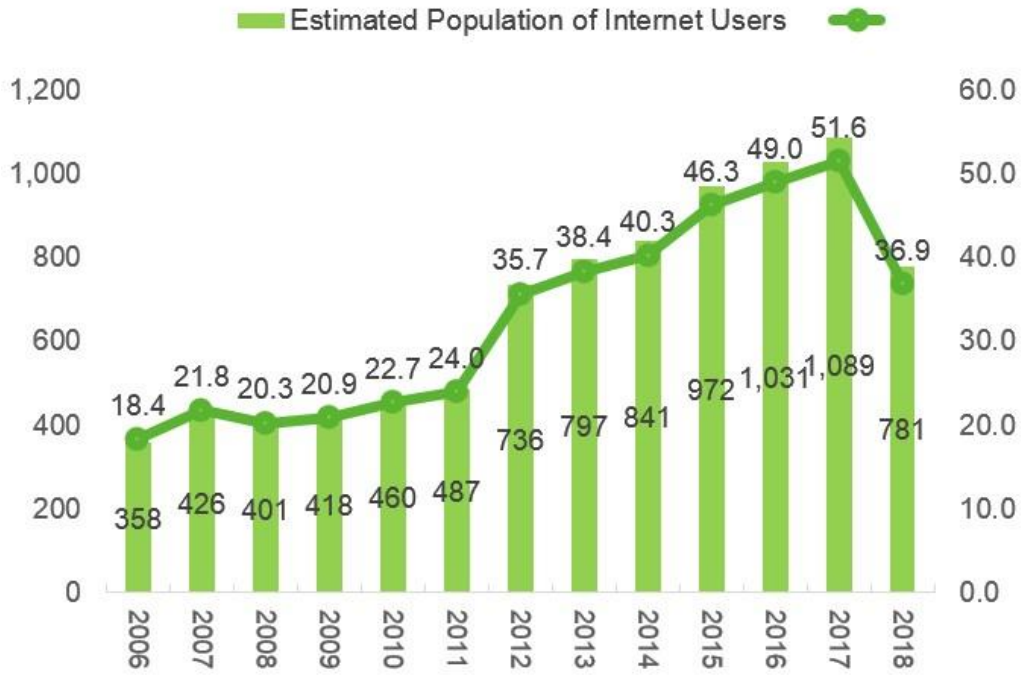
\*P6M = past 6 months

n=3088

Source: Telephone interviews conducted in this research (2018)

# WLAN Internet Users in the P6M

unit : 10,000 people , %



\*P6M = past 6 months  
n=3088

Source: Telephone interviews conducted in this research (2018)



80.9%  
705 Household



99.9%  
use ADSL/VDSL  
to access internet

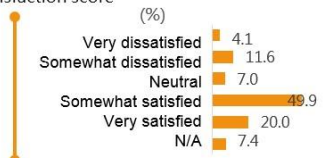


NT\$855\*  
Avg. monthly cost



3.5 points  
Avg. satisfaction score

Connection Type	
ADSL/VDSL	58.7%
Cable Modem	19.1%
Mobile Internet	10.8%
4G Router	3.6%
Community Network	0.4%
Dial-up Connection	0.1%
Don't Know	12.3%



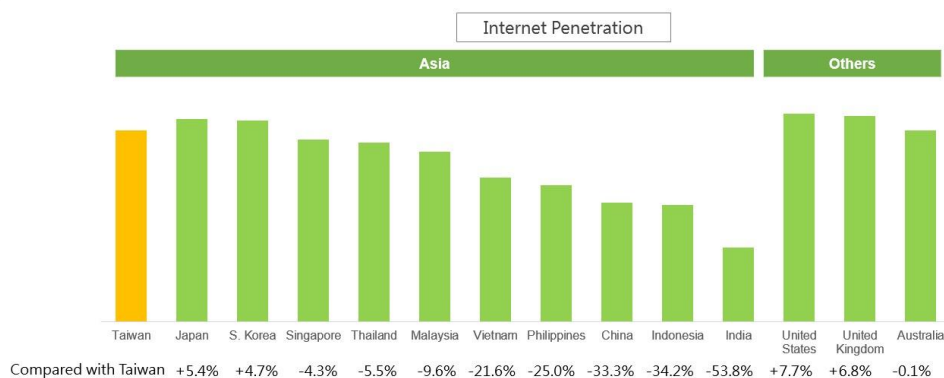
n=3088

Source: Telephone interviews conducted in this research (2018)

## 2. Comparison of current developments in other countries

### a. Internet Penetration

In Asia, Japan and S. Korea are the countries with highest internet usage rate.



Source: [Internet World Stats](#)(2017)

### b. Global internet usage status

According to Comscore MMX, although by Oct. the internet users in Taiwan are less than most countries, but the average views per visitor are top 1 in Asia.

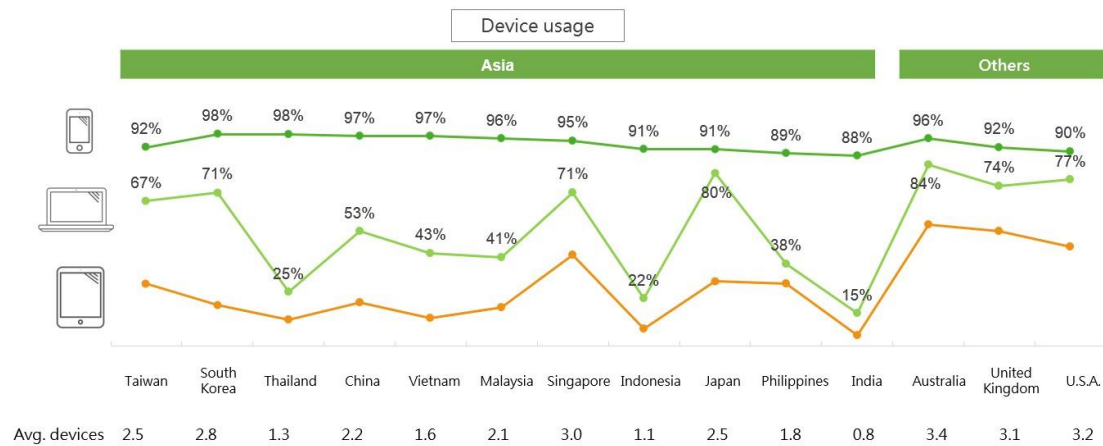
	Total Unique Visitors/Viewers (000)	Average Views per Visit	Average Views per Visitor	Total Minutes (MM)	
Asia	Taiwan	16,532	16.2	2,123	36,369
	China	871,522	33.0	1,054	3,208,950
	India	273,288	8.3	820	889,666
	Indonesia	89,085	16.4	533	344,471
	Japan	81,714	35.4	1,586	115,862
	Vietnam	45,680	17.2	858	47,551
	Malaysia	19,940	18.3	1,163	90,630
	Singapore	4,926	14.0	1,195	8,213
Other	United States	256,264	14.6	2,797	1,751,664
	United Kingdom	48,988	17.8	2,671	266,450
	Australia	20,614	15.7	1,204	39,268

Source: Comscore MMX Multi-Platform, Multi-Country Key Measures, Total Audience, October 2018

### c. Devices Used to Access Internet

The main device used to access internet is mobile in all countries. People in developing countries mostly use mobile phones, while people in developed countries simultaneously use multiple screens across desktop computers/laptop computers and mobile phones. The average number of devices owned per person in Taiwan ranks only behind South Korea and Singapore among Asian countries.

The percentage of devices used in Taiwan differs little from the results in the survey. Due to the differences in the time of the survey, please reference the device usage rates announced in this survey.



\* The percentage of devices used in Taiwan differs little from the results in the survey. Due to the differences in the time of the survey, please reference the device usage rates announced in this survey.

multiple selection question

Source: [Consumer Barometer with Google](#)(2017)

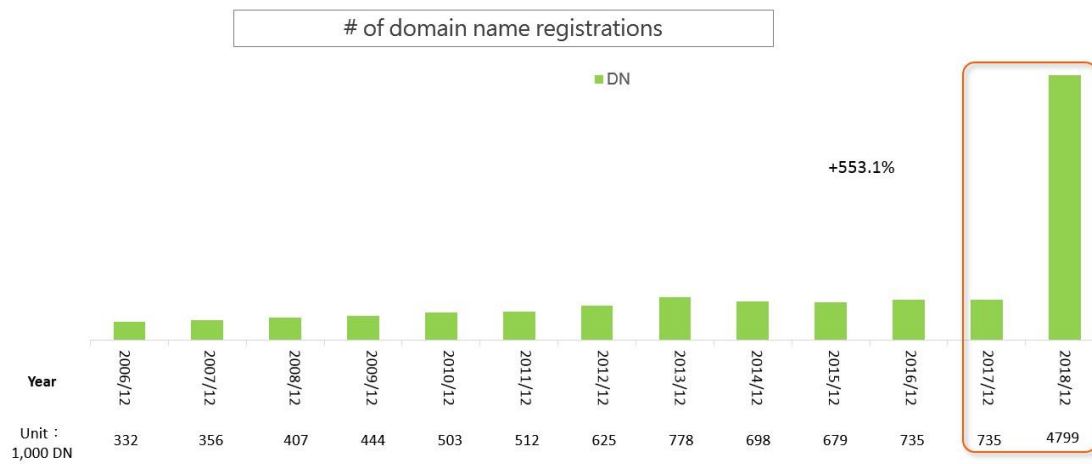
### F. Network Infrastructure Logic

Taiwan achieved the fastest growth in IPv6 in the world. Every computer on the Internet has a unique Internet Protocol (IP) address, and the Domain Name System makes using the Internet

easier by allowing a familiar string of letters to be used instead of the IP address. Internet Protocol Address is a numerical label assigned to each device participating in a computer network that uses the Internet Protocol for communication. Autonomous System Numbers (ASN) are unique identifiers for a collection of networks, or routers that share a common set of routing policies.

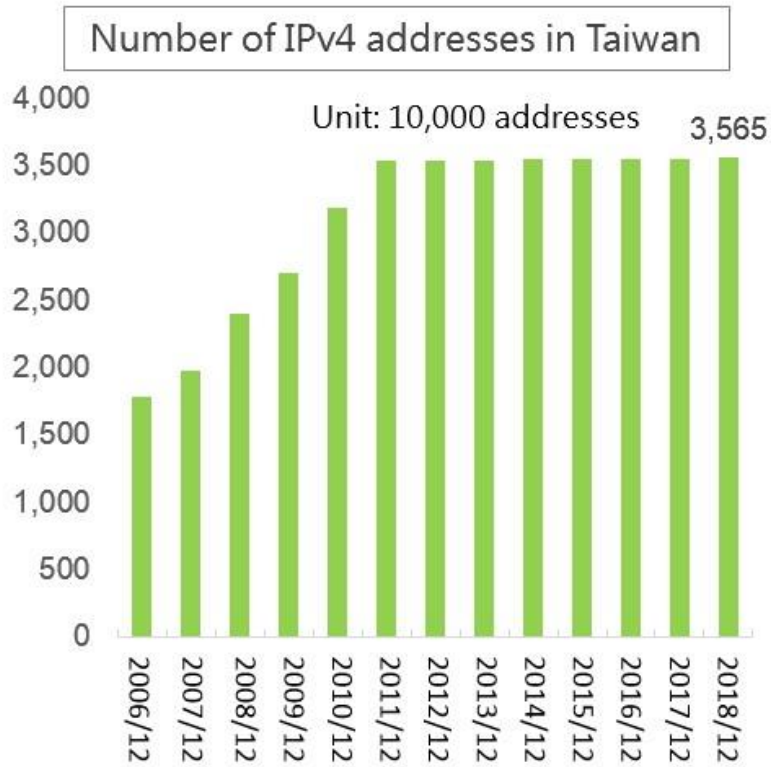
## 1. Current domestic developments

Domestic statistics have shown growth each year in terms of domain name, IP, and ASN registration or distribution number.

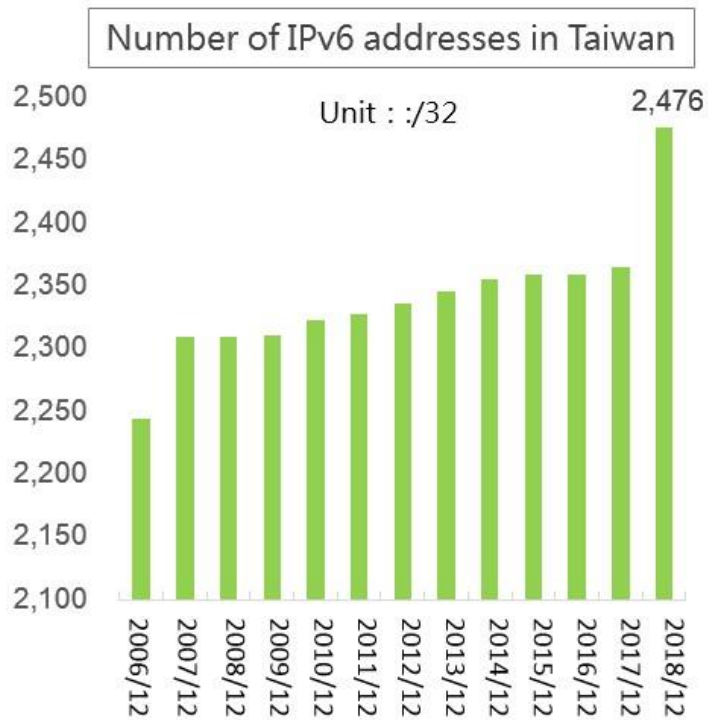


Source: internal data from TWNIC (Dec. 2018)

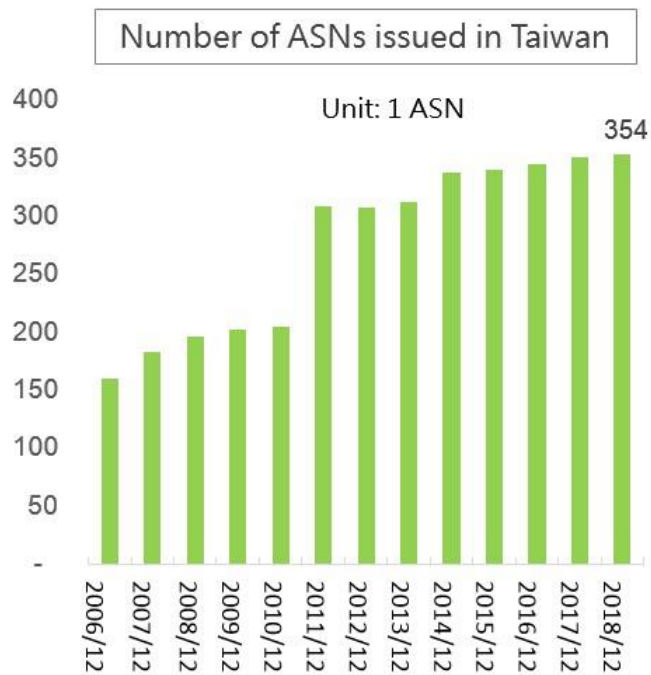




Source: [TWNIC](#) (Dec. 2018)



Source: [TWNIC](#) (Dec. 2018)



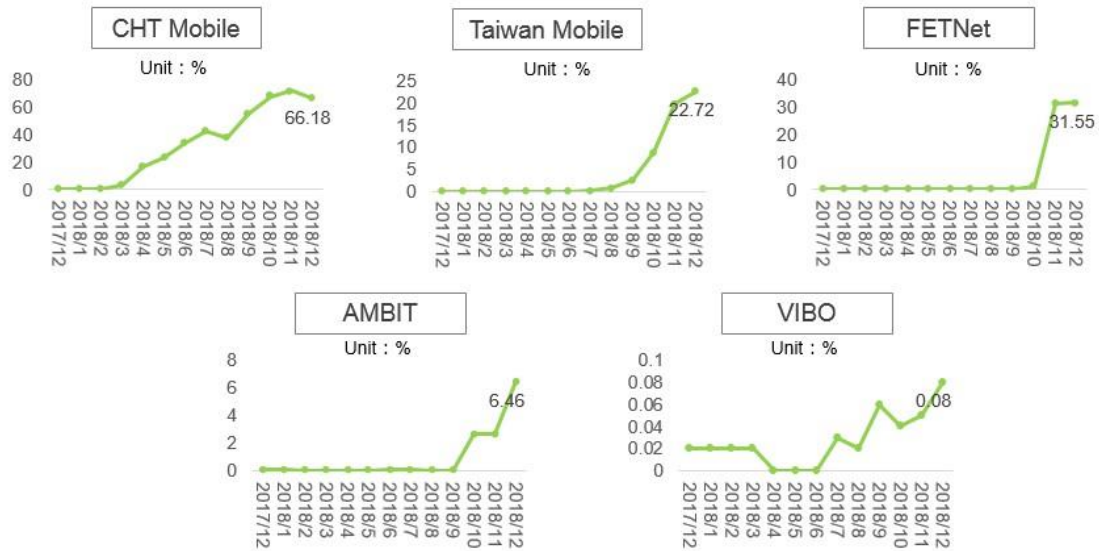
Source: [TWNIC](#) (Dec. 2018)

In the global ranking of IPv6 allocations, Taiwan ranks the 6th respectively. It accounts for 29.63%. ( Dec. 31, 2018 )

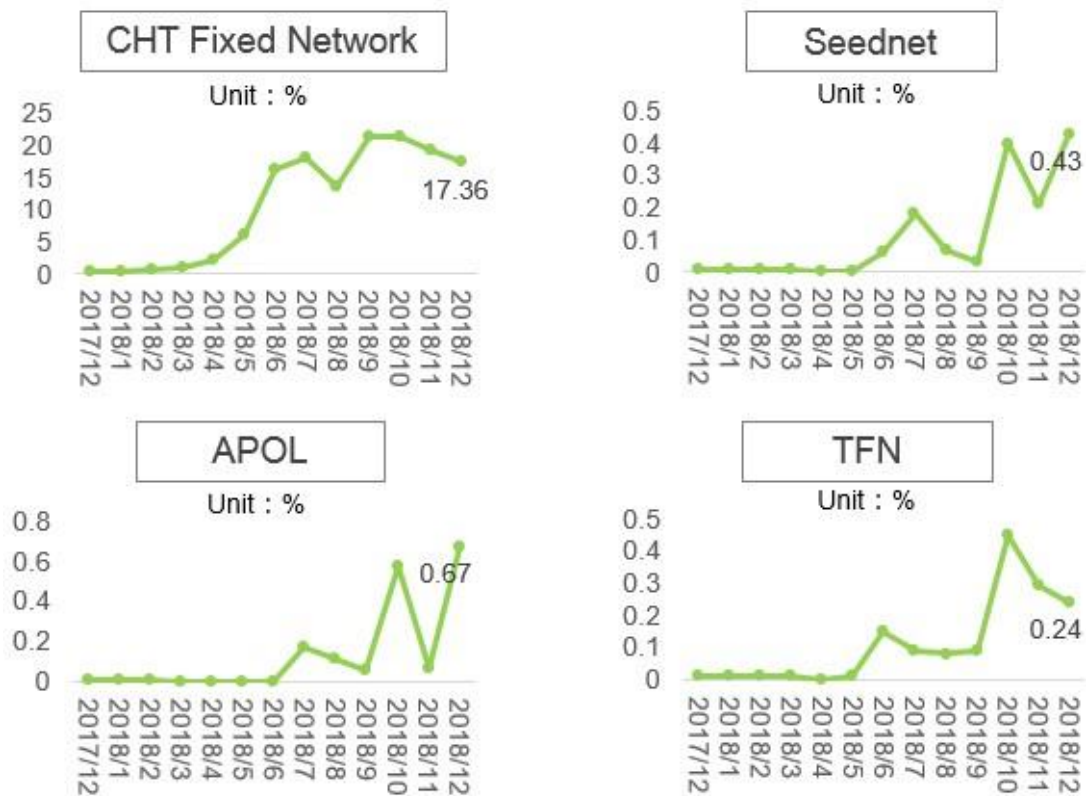


Source: [TWNIC](#)( (Dec. 2018)

## Percentage of ISP IPv6 users in Taiwan - Mobile network

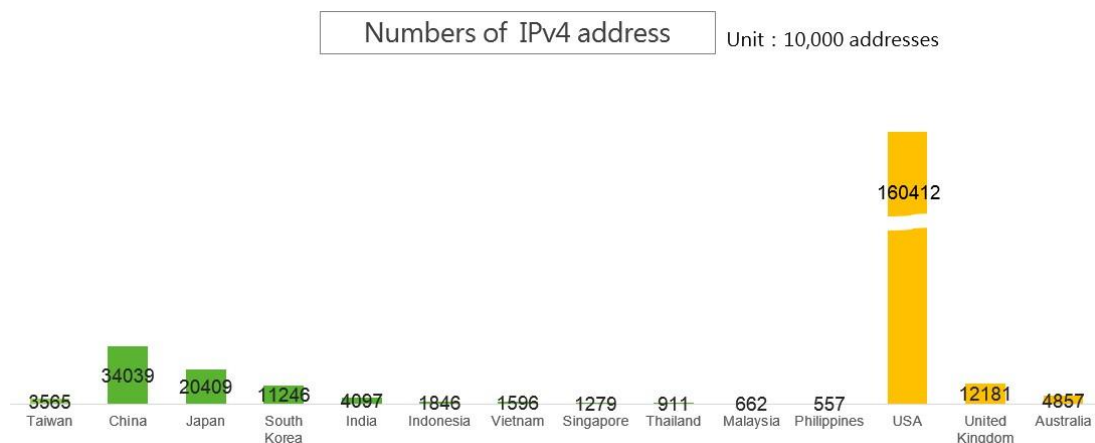


## Percentage of ISP IPv6 users in Taiwan - Fixed Network

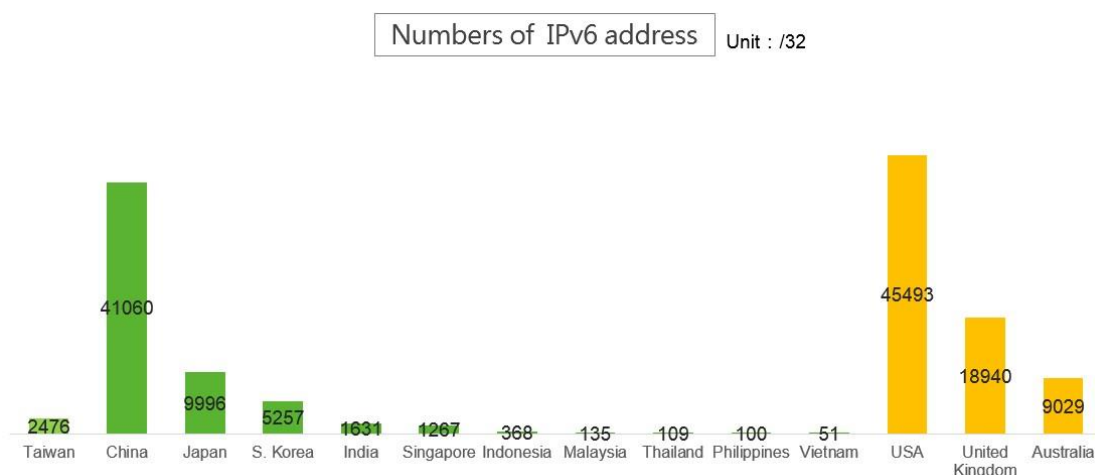


Source: [TWNIC](#) (Dec. 2018)

## 2. Comparison of current developments in other countries



Source: [TWNIC](#) (Dec. 2018)



Source: internal data from TWNIC (Dec. 2018)

## G. Overview of Network Service Applications

Network service applications include social driven, economy driven service and innovative technologies, covering a total of 11 service applications. When it comes to Network service applications, there are some related service and brands in Taiwan, but only few ones for

innovative technologies.

## 1. Current domestic developments

Taiwan's IT technology comprehensiveness ranked among the top 25. Taiwan's competitiveness performance ranked 15th in global rankings. Taiwan ranked 25th in terms of technology comprehensiveness in global competitiveness. Among the range of indicators in this sector, its best performance was the average allocated bandwidth to each Internet user, which ranked 6th in the world.

Key indicators	
Population ( millions )	23.5
GDP ( US\$ billions )	528.6
GDP per capita ( US\$ )	22,453.4
GDP (PPP) % world GDP	0.94

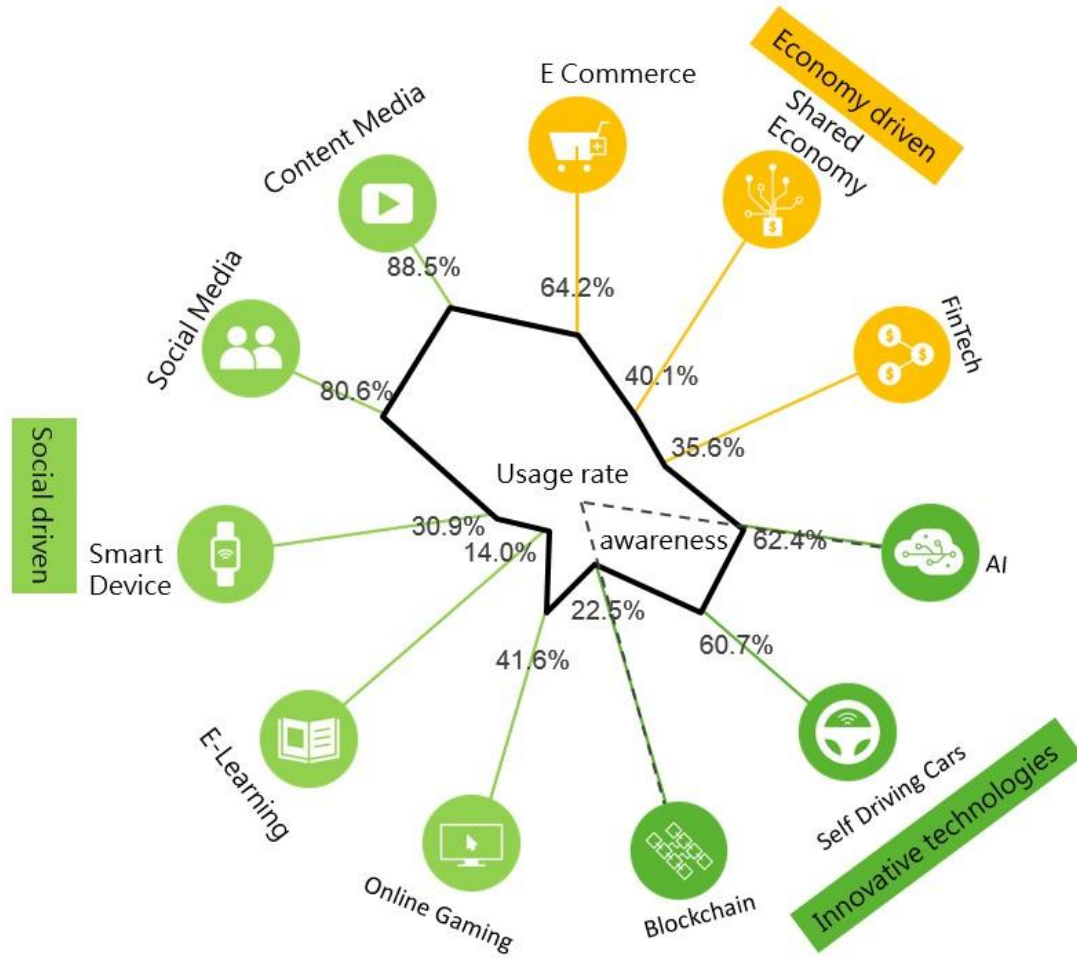
Source : [National Development Council](#) · [World Economic Forum\(2018\)](#)



Index Component	Rank/137	Score (1-7)
Global Competitiveness Index	15	5.3
Technological readiness	25	5.7
1.Availability of latest technologies	30	5.6
2.Firm-level technology absorption	29	5.2
3.FDI and technology transfer	35	4.9
4.Internet users % pop.	30	79.7
5.Fixed-broadband Internet subscriptions /100	40	24.2
6.Internet bandwidth kb/s/user	6	717.6
7.Mobile-broadband subscriptions /100 pop.	29	90.8

Source : [National Development Council](#) · [World Economic Forum](#)(2018)

Related applications and brands have been developed for domestic Internet services and applications. The usage rates for content and social media are the highest, and they are followed by e-commerce. There are fewer applications of innovative Internet concepts, and the market has yet to mature. In terms of familiarity with terms, performance in artificial intelligence has been higher.



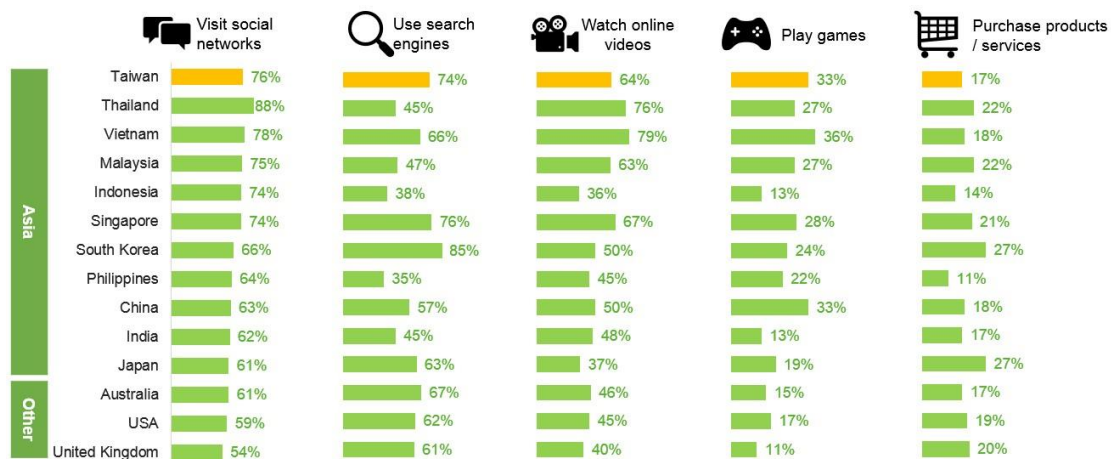
## Top Players for Key Verticals



\*Sites and brands rank by total unique visitor from Comscore MMX, Top 100 Properties, Total Audience, Oct 2018, Taiwan with re-editing.

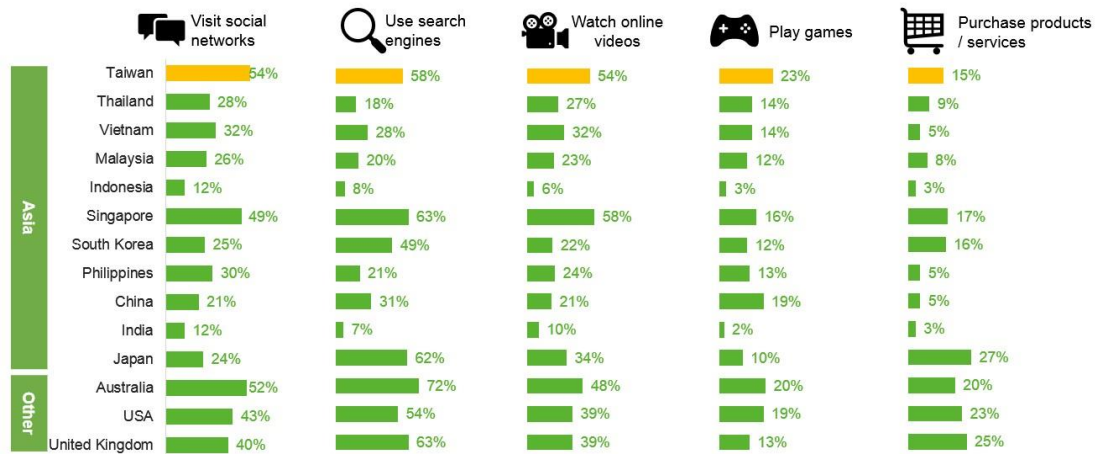
## 2. Comparison of current developments in other countries

The social media usage rate tops the rankings in most countries and usage on desktop computers/laptop computers remains lower than usage on mobile phones. Based on the online access behavior of mobile phones in different countries, Taiwan ranks third in terms of social media usage and the search usage rate is relatively high, trailing only South Korea and Singapore. It ranked fourth in video browsing rate, slightly behind Vietnam, Thailand, and Singapore. It ranked second with China in terms of game usage rate. Online shopping usage rate in other countries is approximately 20%.



\*Because the survey method, classification and the fieldwork period of the data source are different from this survey, please reference the usage rates announced in this survey. Please reference the country rankings in this chart.

Source: [Consumer Barometer with Google\(2017\)](#)



\*Because the survey method, classification and the fieldwork period of the data source are different from this survey, please reference the usage rates announced in this survey. Please reference the country rankings in this chart.

Source: [Consumer Barometer with Google](#)(2017)

The main devices used for online shopping are desktop or laptop computers. Taiwan's online shopping usage rate for desktop/laptop computers ranked second, slightly lower than that of Japan.

Devices of shopping online

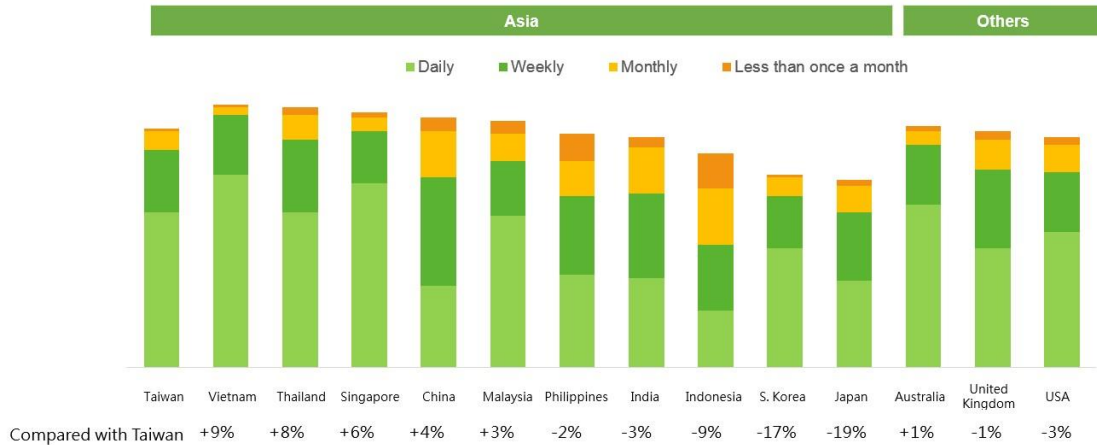
	Taiwan	Japan	Singapore	Malaysia	Vietnam	S. Korea	China	Philippines	India	Thailand	Indonesia	Australia	Australia	Australia
	85%	92%	74%	72%	71%	70%	70%	66%	60%	57%	29%	81%	81%	80%
	10%	6%	18%	20%	18%	25%	21%	23%	34%	31%	67%	7%	10%	10%
	3%	1%	5%	6%	4%	2%	4%	4%	1%	4%	1%	9%	6%	7%

\*This dataset is from single select question, since there are other devices and reject to answer, the total percentage may not equal to 100%

\*Because the survey method, classification and the fieldwork period of the data source are different from this survey, please reference the usage rates announced in this survey. Please reference the country rankings in this chart.

Source: [Consumer Barometer with Google](#)(2017)





\*Because the survey method, classification and the fieldwork period of the data source are different from this survey, please reference the usage rates announced in this survey. Please reference the country rankings in this chart.

Source: [Consumer Barometer with Google](#)(2017)

Malaysia is the country with the highest ownership rate of wearable devices in Asia, while the United States has the highest ownership rate overall.

Wearables Ownership Ranks		
Asia	Taiwan	6
	Malaysia	2
	China	4
	Singapore	5
	S. Korea	6
	Philippines	7
	India	8
	Japan	9
	Indonesia	10
	Vietnam	10
	Thailand	11
Others	USA	1
	Australia	2
	United Kingdom	3

\*Because the survey method, classification and the fieldwork period of the data source are different from this survey, please reference the usage rates announced in this survey. Please reference the country rankings in this chart.

Source: [Consumer Barometer with Google](#)(2017), [Rakuten Insight](#)(2018)

## V. Challenges for Online Applications in Taiwan



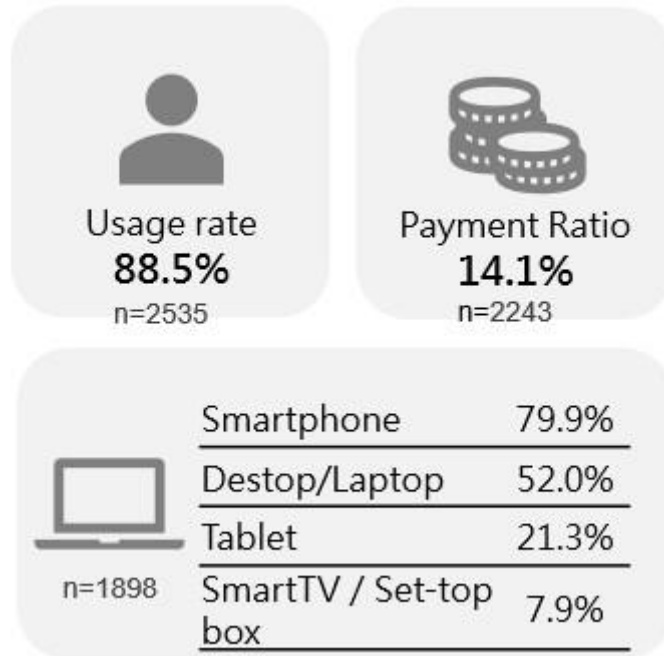
## V. Challenges for Online Applications in Taiwan

As Internet technologies advance, people's lives have become inseparable from the Internet and related technologies and applications. The advancements have also gradually changed people's lives and consumption habits. Online services and applications can be divided into 11 types, including online service community applications, economic applications, and innovative Internet concepts.

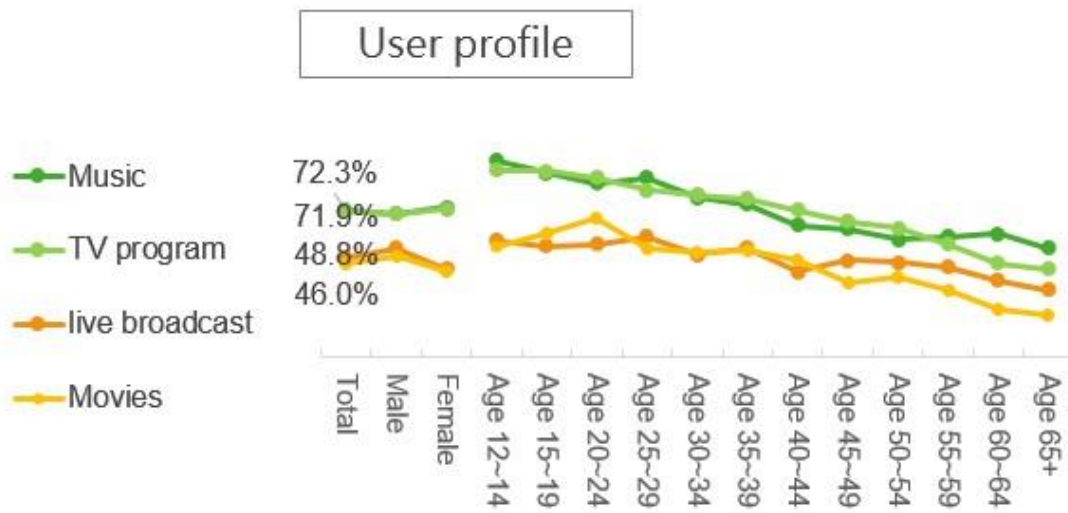
The online service community applications include content media, smart device education applications, and online games. Online service economic applications include e-commerce, sharing economy, and fintech. Innovative Internet concepts include artificial intelligence, self-driving cars, and blockchains. Related applications and brands have been developed for domestic Internet services and applications, but there are fewer applications of innovative Internet concepts.

A. Social driven

1. Content Media



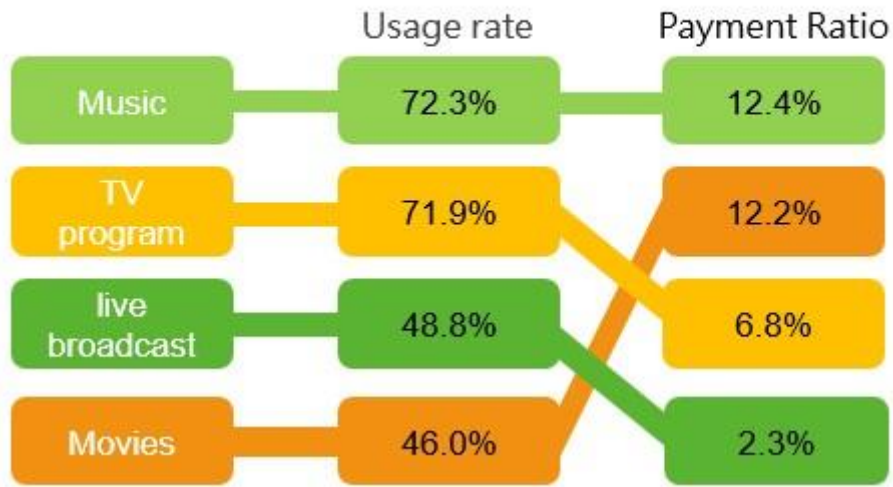
Source: Telephone interviews conducted in this research (2018)



n=2535 multiple selection question

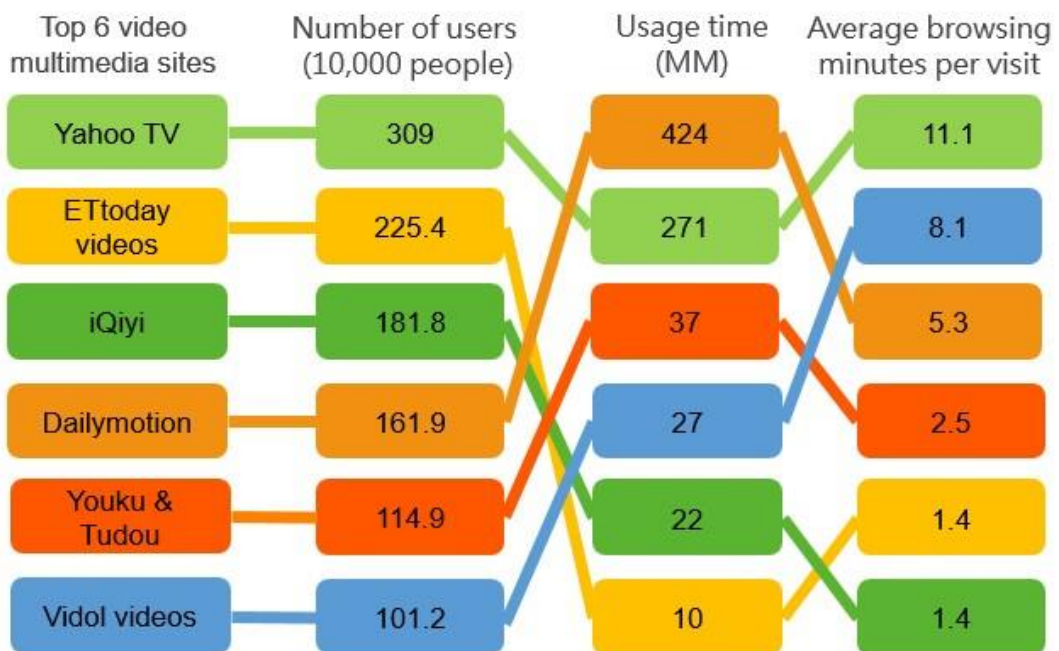
Source: Telephone interviews conducted in this research (2018)

## Usage status







n=2535 single selection question

Source: Telephone interviews conducted in this research (2018)

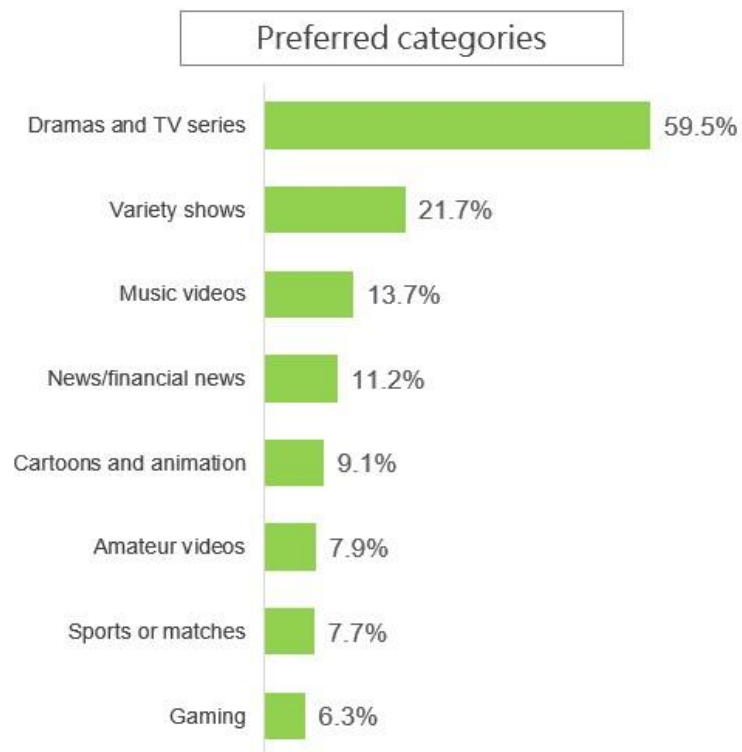


\*Total Audience aged 18 and above

Source: [InsightXplorer](#) (July 2018)

Average time per view (minutes)		Frequently viewed categories/countries of production	
1 n=238	 111.2	1 Drama n=653	1. South Korea 2. Taiwan 3. Japan
2 n=1152	 86.1	2 Films n=631	1. Europe and Americas 2. Taiwan 3. Japan
3 n=346	 84.9	3 Variety shows n=475	1. Taiwan 2. South Korea 3. Japan
4 n=1056	 114.4	4 TV series n=427	1. Europe and Americas 2. Japan 3. Taiwan

Source: Telephone interviews conducted in this research (2018), InsightXplorer (July 2018) and [NCC\(2017\)](#)

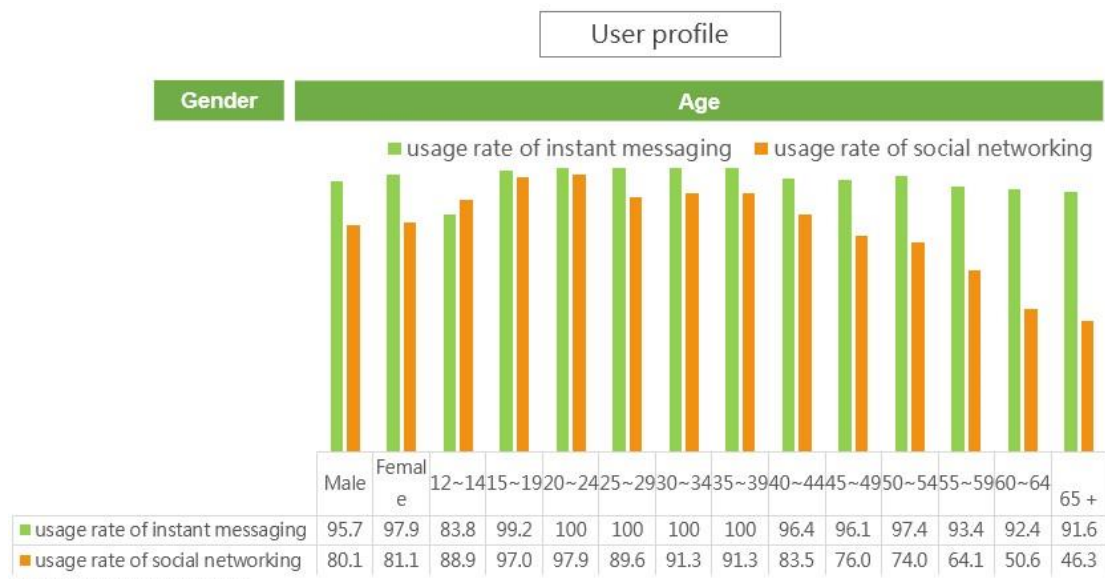


n=1824 multiple selection question

Source: Telephone interviews conducted in this research (2018), InsightXplorer (July 2018) and [NCC\(2017\)](#)



## 2. Social Media



Unit: % n=2535 single selection question

Source: Telephone interviews conducted in this research (2018)



n=2535 single selection question

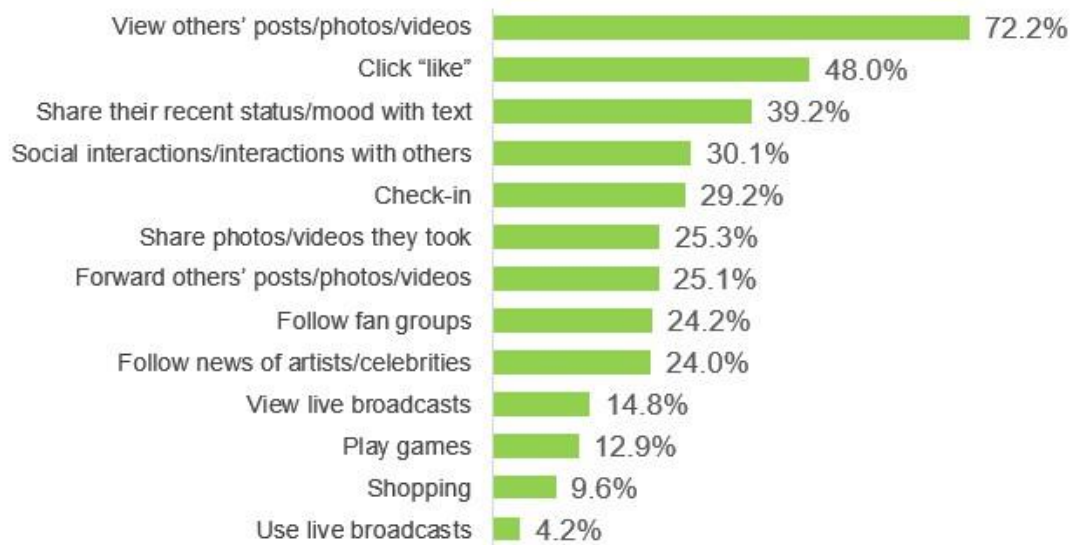
Source: Telephone interviews conducted in this research (2018)

Usage rate of SNS brands (%)n=2044	Total	Gender		Age											
		Male	Female	12~14	15~19	20~24	25~29	30~34	35~39	40~44	45~49	50~54	55~59	60~64	65+
		Facebook	98.5	97.8	99.2	96.1	95.4	94.7	99.3	100	100	99.1	99.5	99.0	100
Instagram(IG)	38.8	35.2	42.3	53.8	68.6	71.0	65.6	43.0	32.5	26.3	23.7	16.1	10.4	7.2	4.0
Twitter	5.1	6.9	3.3	3.7	8.2	8.5	11.7	3.4	7.7	3.3	2.7	1.0	0.6	0	1.0
Weibo	4.0	3.3	4.8	3.2	12.7	6.3	3.4	3.2	3.0	1.7	2.2	2.3	3.2	2.3	4.9
Google+	2.8	3.0	2.6	1.9	2.9	2.1	5.4	3.1	0.6	4.6	2.2	2.3	1.9	3.0	4.2
LinkedIn	.9	1.0	.8	0	0.7	0	2.2	0.8	1.2	1.4	1.5	0	1.3	0	0

n=2044 single selection question

Source: Telephone interviews conducted in this research (2018)

### Social media platform usage behavior



n=1374 multiple selection question

Source: InsightXplorer (September 2018)



n=2535

Source: Telephone interviews conducted in this research (2018)

Usage rate of IM brands (%)n=2455	Total	Gender		Age											
		Male	Female	12~14	15~19	20~24	25~29	30~34	35~39	40~44	45~49	50~54	55~59	60~64	65+
LINE	99.2	99.1	99.4	96.2	97.0	100	100	98.3	99.5	100	99.5	99.3	99.6	100	99.1
Facebook Messenger	26.8	26.0	27.7	64.0	47.8	38.1	30.2	29.6	29.4	22.6	24.7	20.2	13.6	8.5	5.8
WeChat	21.4	22.1	20.6	9.0	18.0	18.0	23.8	27.5	22.9	26.4	25.6	21.3	15.1	17.1	17.4
Skype	7.2	8.0	6.4	0.0	2.2	8.8	6.7	11.3	11.2	6.7	7.6	5.4	6.8	6.0	5.3
WhatsApp	4.7	4.3	5.0	0.0	0.0	6.7	5.9	8.4	7.5	6.3	6.8	1.6	1.6	1.6	1.1

n=2455 multiple selection question

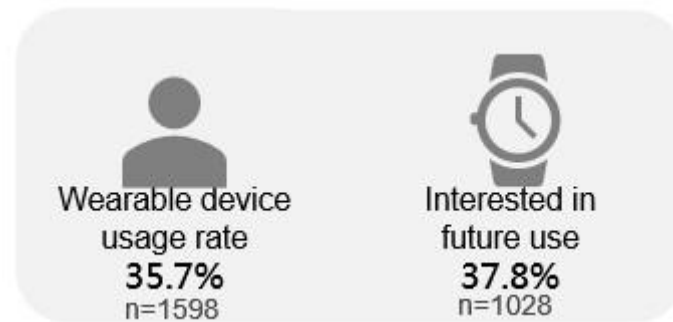
Source: Telephone interviews conducted in this research (2018)



n=1179 multiple selection question

Source: InsightXplorer (September 2018)

### 3. Smart Device



Source: [InsightXplorer](#) (May 2018), [InsightXplorer](#) (October 2018), and [InsightXplorer](#) (November 2018)

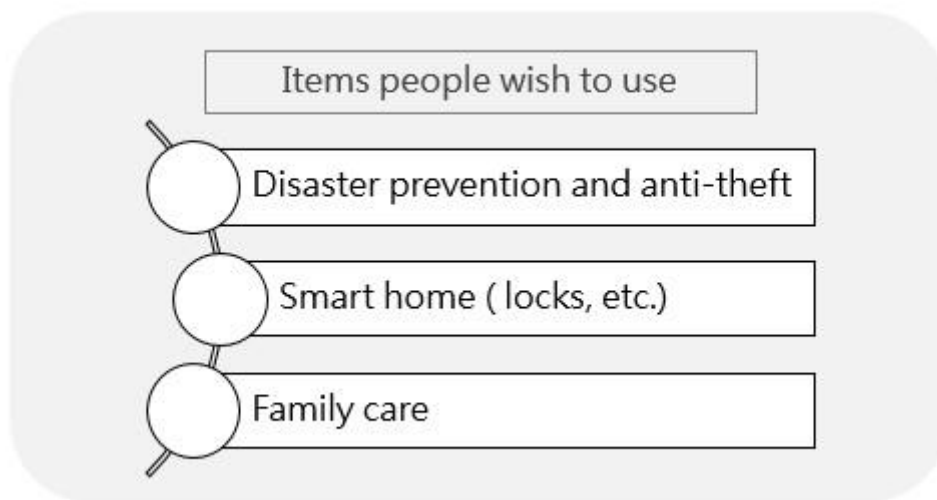
Usage rate of wearables brands		%
1	Xiaomi	49.3%
2	Apple	29.4%
3	Samsung	20.9%
4	Sony	12.3%
5	ASUS	7.3%
6	Huawei	5.9%
7	Garmin	5.6%
8	LG	4.2%
9	Acer	4.0%
10	Lifesense	3.2%

n=482 multiple selection question

Source: [InsightXplorer](#) (May 2018), [InsightXplorer](#) (October 2018), and [InsightXplorer](#) (November 2018)



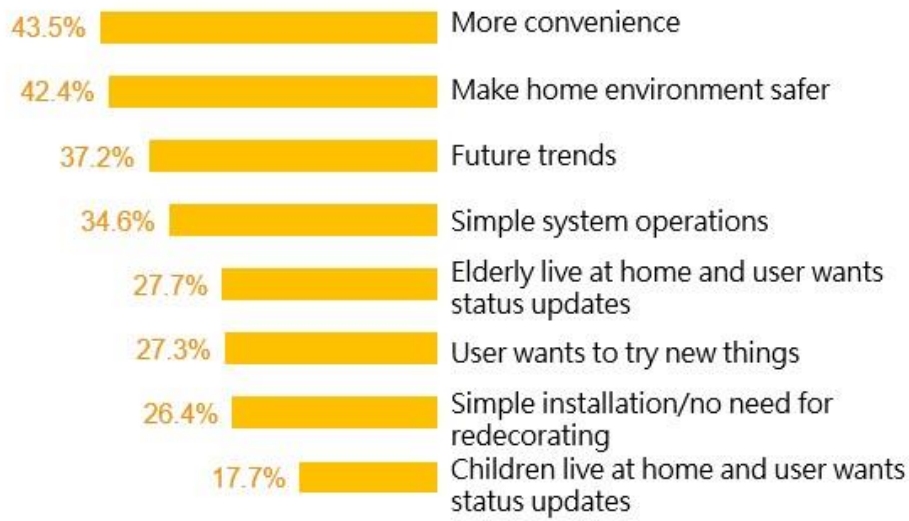
Source: InsightXplorer (October 2018), and [InsightXplorer](#) (November 2018)



n=1023

Source: [InsightXplorer](#) (November 2018)

### Reason for using



n=695 multiple selection question

Source: [InsightXplorer](#) (November 2018)

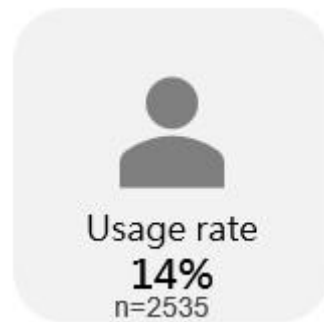
Usage rate of Smart home brands		%
1	MIJIA	35.1%
2	kbro	27.6%
3	Chunghwa Telecom	25.1%
4	Secom	16.0%
5	Google Home	15.8%
6	Far Eas Tone	13.6%
7	Philips Hue	10.8%
8	Apple HomeKit	8.4%
9	EQL ( E-life Mall Corporation )	8.2%
10	ASUS SmartHome	8.1%

n=985 multiple selection question

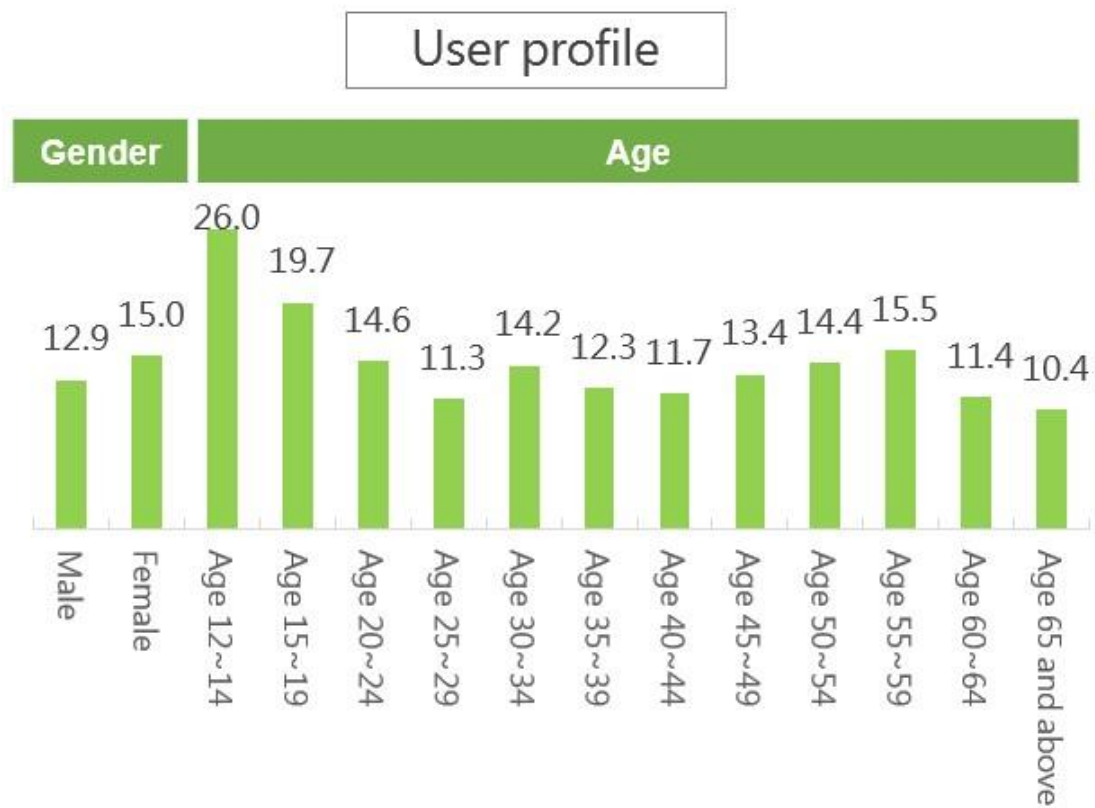
Source: [InsightXplorer](#) (2018/05) 、 [InsightXplorer](#) (2018/10)



## 4. E-Learning

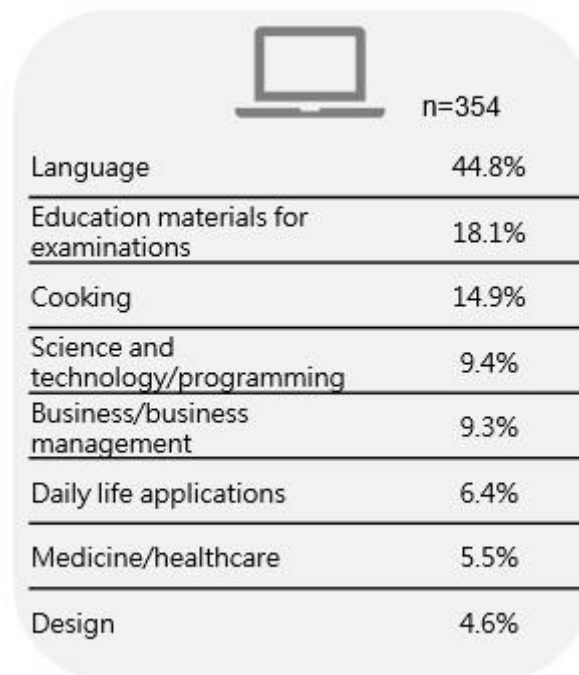


Source: Telephone interviews conducted in this research (2018)



n=354

Source: Telephone interviews conducted in this research (2018)



Source: Telephone interviews conducted in this research (2018)

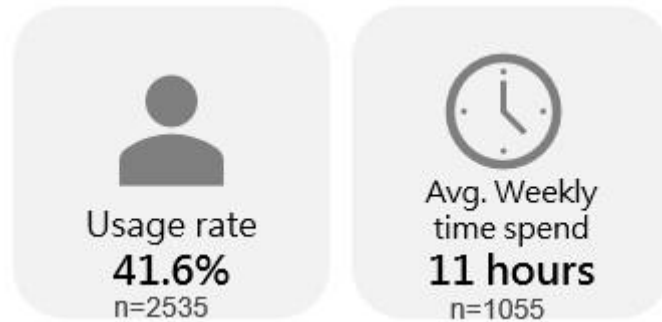
### Learning Contents

Male		Female		
1	Language	37.1%	Language	51.6%
2	Education materials for examinations	21.5%	Cooking	24.2%
3	Science and technology/programming	15.7%	Education materials for examinations	15.2%
4	Business/business management	13.0%	Daily life applications	6.9%
5	Design	7.1%	Medicine/healthcare	6.4%

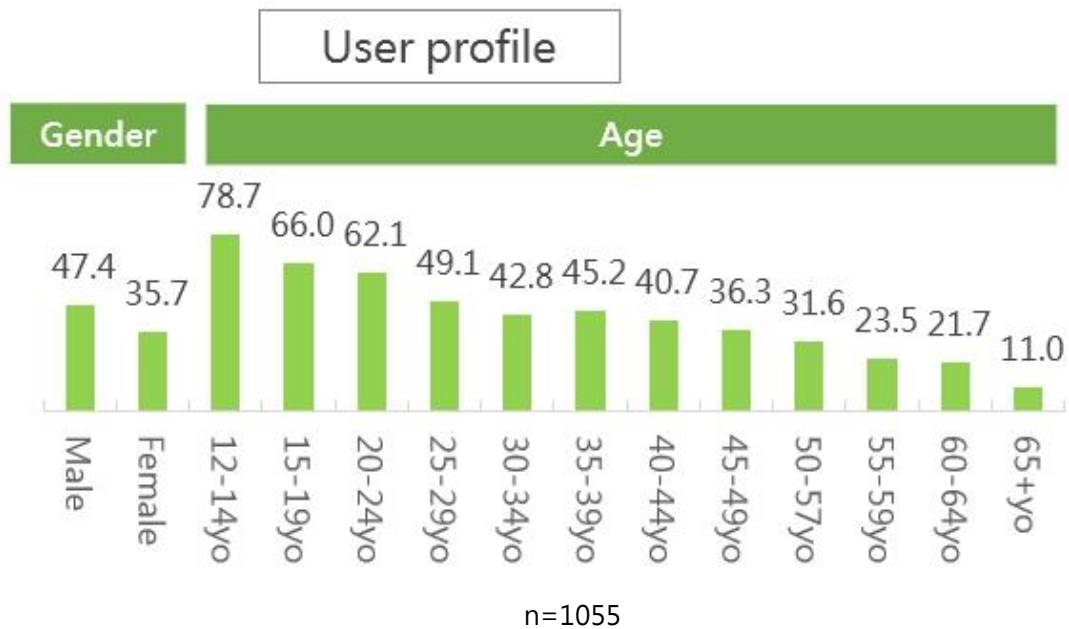
n=354 multiple selection question

Source: Telephone interviews conducted in this research (2018)

## 5. Online Gaming



Source: Telephone interviews conducted in this research (2018)



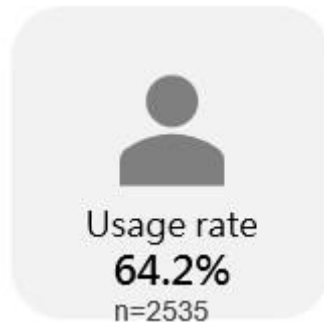
Source: Telephone interviews conducted in this research (2018)



Source: Telephone interviews conducted in this research (2018)

## B. Economy driven

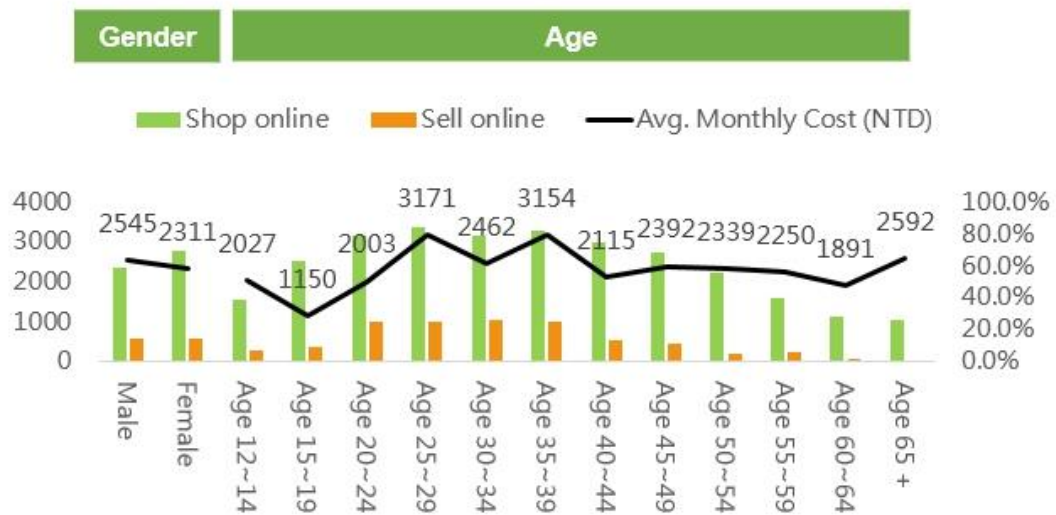
### 1. E Commerce



Source: Telephone interviews conducted in this research (2018) and InsightXplorer (Mar. 2018)



Source: Telephone interviews conducted in this research (2018) and InsightXplorer (Mar. 2018)



\*Age 12-14 and age 65 and above are small sample size. Thus the figures are subject to bias and are for reference only.

n=2535

Source: Telephone interviews conducted in this research (2018) and InsightXplorer (Mar. 2018)

Items bought frequently		
1	Clothing, Accessories	45.7%
2	Kitchenware, bathroom, and cleaning	25.7%
3	Food, beverage, meal coupon	21.5%
4	Computers and related products, software	18.2%
5	Household appliances, video games	16.7%
6	Books, stationery, DVD	13.1%
7	Cosnmetic, health care	12.8%
8	Shoes, bags	9.5%

n=1621

Source: Telephone interviews conducted in this research (2018) and InsightXplorer (Mar. 2018)

Operating model	Definitions	Representative businesses
B2B	Transactions between businesses	Taiwantrade
C2C	Transactions between consumers	Yahoo! Auction, Ruten, Shopee, PChome personal stores
B2C	Businesses offer goods or services to consumers	Yahoo! Shopping, Momo Shopping, PChome Shopping/24H
B2B2C	Businesses offer goods or services to consumers on online platforms	Yahoo! Mall, Momo Mall, PChome Mall, Shopee Mall, pcone
O2O	Use of online marketing to guide customers to offline consumption	17 Life, Gomaji

Only representative operators are listed due to lack of space

Source: MIC, III (2017), [online source](#), and information compiled by InsightXplorer

Operator type	Representative businesses
Taiwanese e-commerce operators	Listed: PChome, PChome Mall, ETMall, Gomaji, MOMO.com Inc. Not listed: Books.com Co., Ltd., Lativ, Pinkoi
Online shopping platforms of foreign companies	Yahoo! Auction, Yahoo! Shopping, Yahoo! Mall Ruten, Ruten (Taiwanese and Japanese joint venture), Carousell (Singapore), Shopee (Singapore)
Platforms with investment from finance and media operators	Momo Shopping, udn Shopping, Treemall, Orenda
Platforms operated by retailers with physical stores	ibon mart, Tsann Kuen Quick 3, EcLife Shopping, Carrefour Online Shopping
Platforms with investment from telecom operator	Myfone Shopping, friDay Shopping

Only representative operators are listed due to lack of space

Source: MIC, III (2017), [online source](#), and information compiled by InsightXplorer



PC users' top 10 e-commerce and retail websites <sup>1</sup>	Total pages browsed (million pages)	Average pages browsed per person	Average visits per person	Heavy users of e-commerce	
				Pages browsed (million)	Proportion of browsing on each website <sup>3</sup>
1 Momo Shopping	75	28	5.7	61	81.1%
2 Yahoo! Kimo Auction	471	179	5.2	400	84.8%
3 Ruten Auction	468	179	7.0	414	88.3%
4 PChome <sup>2</sup>	118	46	4.1	82	69.5%
5 Yahoo! Kimo Shopping	50	20	3.1	37	73.2%
6 Shopee	85	39	6.9	74	87.8%
7 Yahoo Kimo Mall	60	30	3.6	48	80.4%
8 Taobao	75	38	4.3	61	81.5%
9 Books.com	50	28	3.0	34	68.0%
10 PChome Mall	106	81	5.5	96	90.3%

<sup>1</sup> Price comparison websites are excluded in this ranking

<sup>2</sup> "PChome" includes the combined traffic of PChome Online Shopping, PChome 24h Shopping, PChome Mall, and PChome Global Shopping

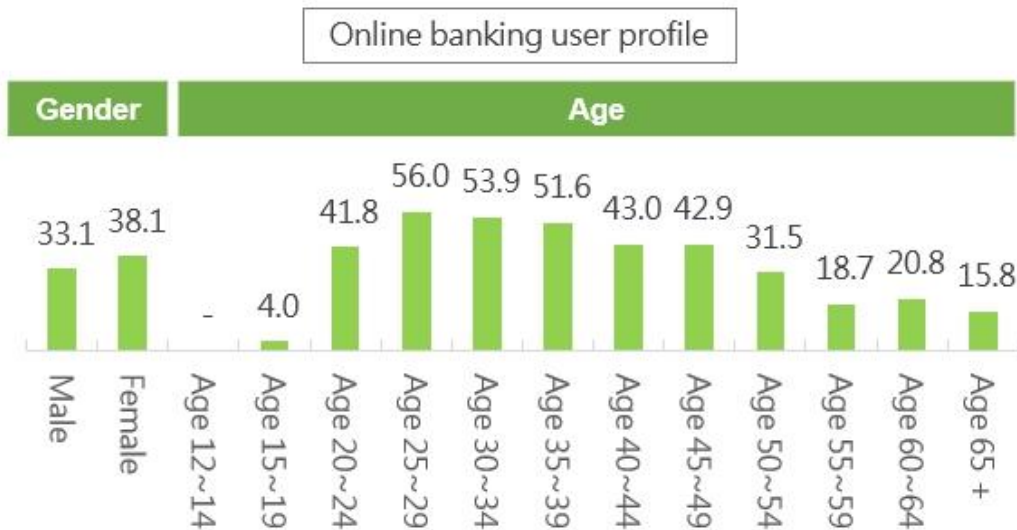
<sup>3</sup> For instance, the browsing volume of heavy users of "Momo Shopping" is divided by the total browsing volume of the entire website =  $61 / 75 = 81.1\%$

Source: [InsightXplorer](#) (January 2018)

## 2. FinTech

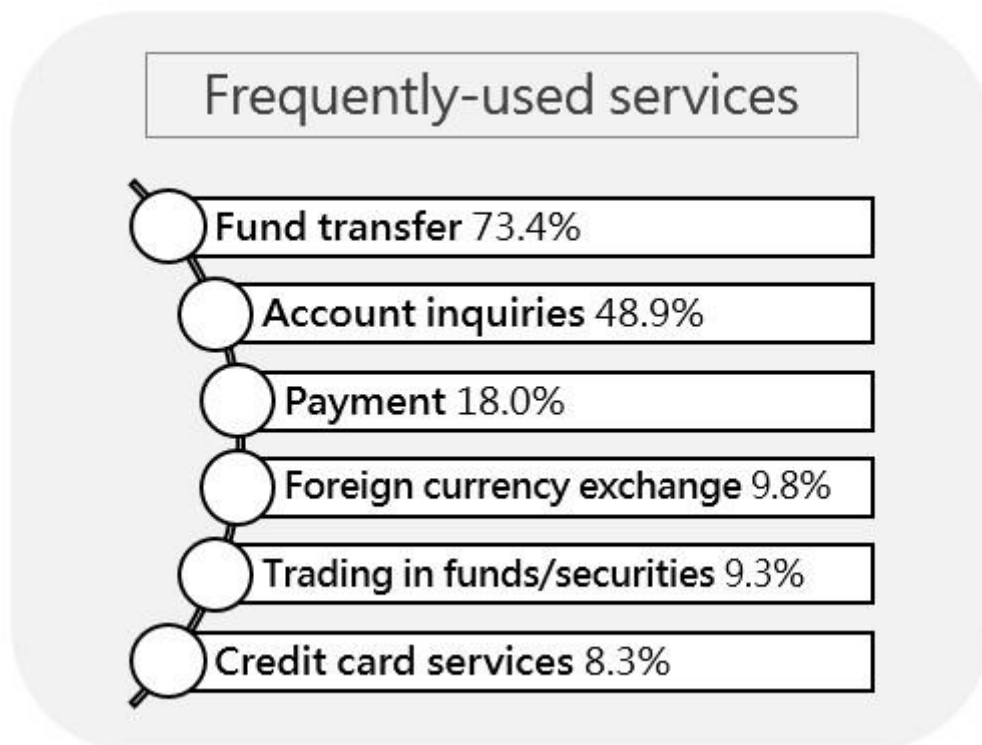


Source: Telephone interviews conducted in this research (2018)



n=2535

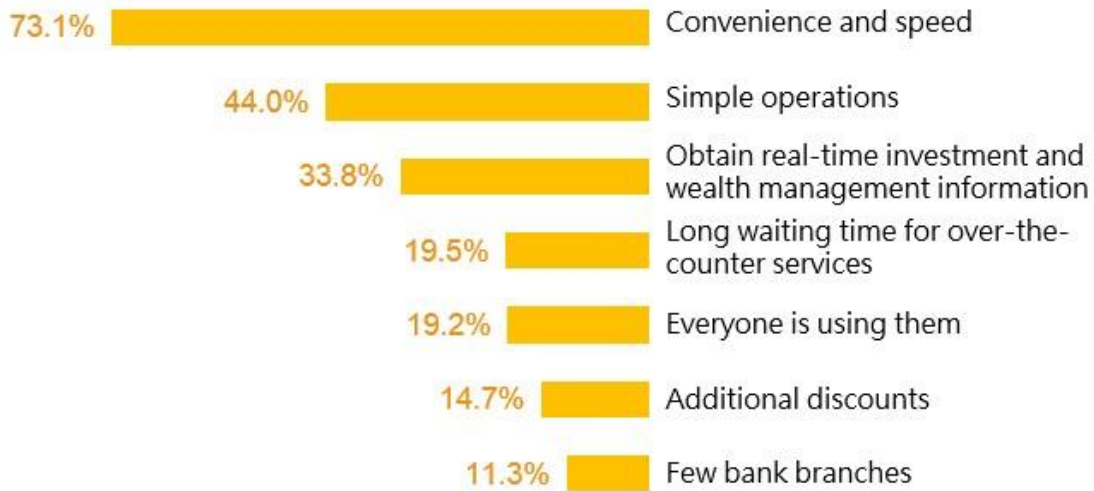
Source: Telephone interviews conducted in this research (2018)



n=902

Source: InsightXplorer (May 2018) and telephone interviews conducted in this research (2018)

## Reason for using online banking



n=1505 multiple selection question

Source: InsightXplorer (May 2018) and telephone interviews conducted in this research (2018)

## Online banking rank by users

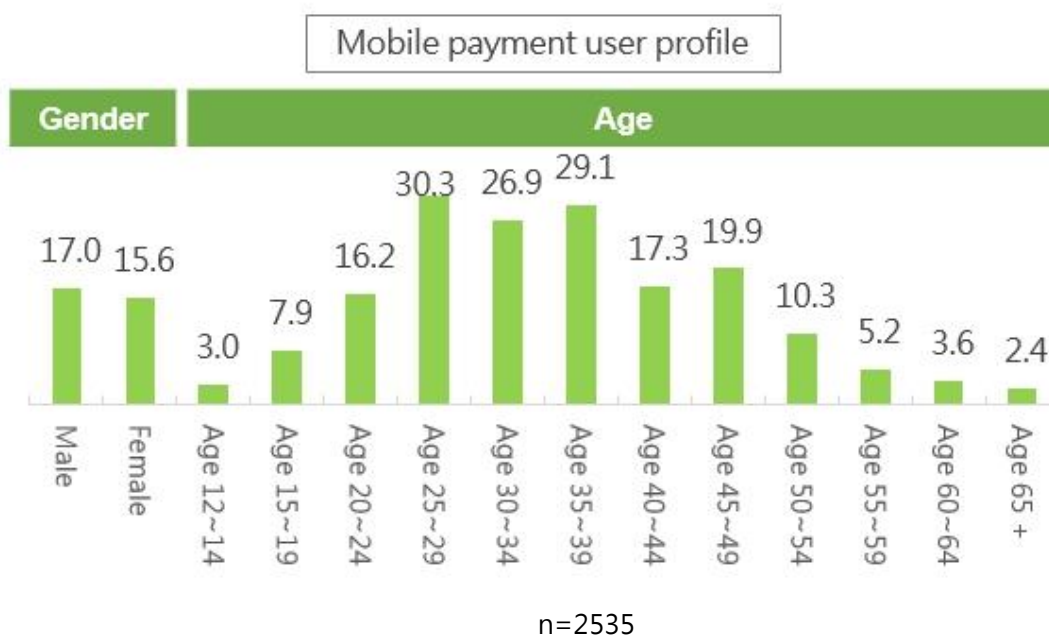
Webpage Rank by users		Apps Rank by users	
1	CTBC BANK	1	CTBC BANK
2	Cathay United Bank	2	Cathay United Bank
3	E.SUN BANK	3	E.SUN BANK
4	Chunghwa Post	4	Taishin International Bank
5	Taishin International Bank	5	Chunghwa Post
6	Bank Of Taiwan	6	Taipei Fubon Bank
7	Taipei Fubon Bank	7	Citibank Taiwan
8	Citibank Taiwan	8	Bank Of Taiwan

n=175

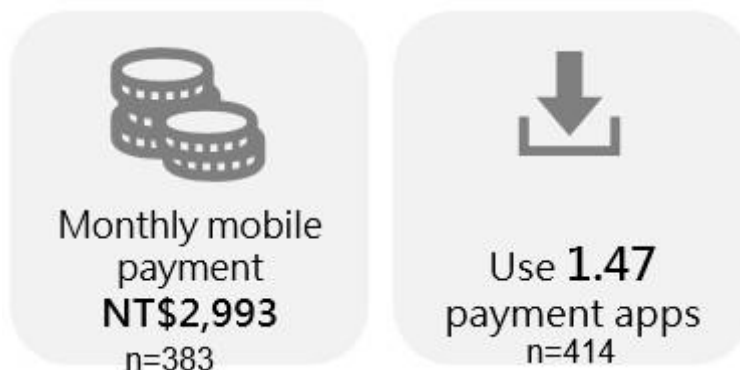
Source: InsightXplorer (May 2018) and telephone interviews conducted in this research (2018)



Source: Telephone interviews conducted in this research (2018)

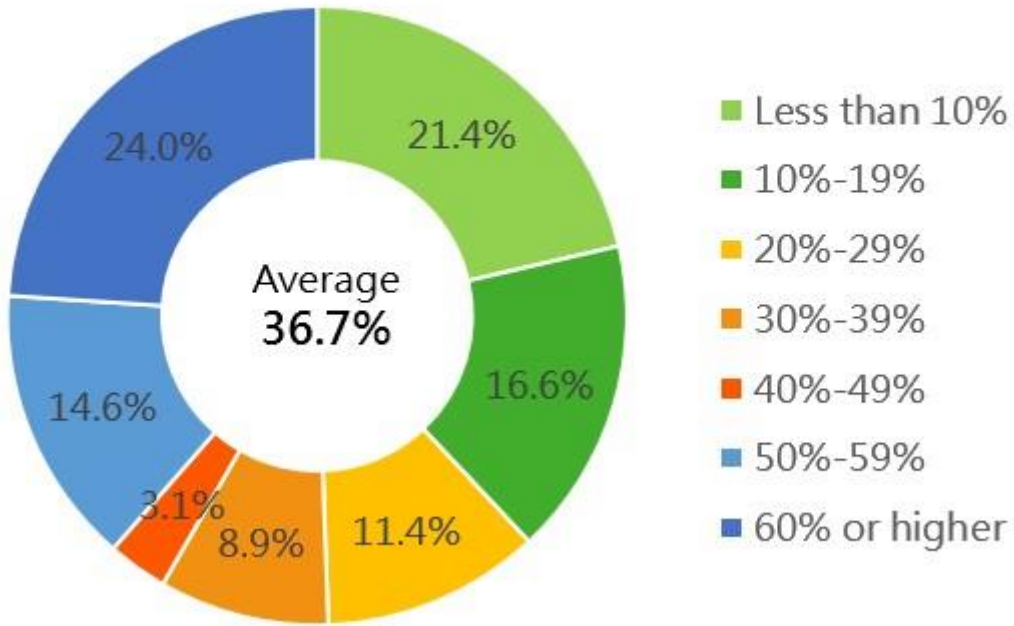


Source: Telephone interviews conducted in this research (2018)



Source: InsightXplorer (May 2018) and telephone interviews conducted in this research (2018)

### Mobile payment ratio



n=726

Source: InsightXplorer (May 2018)

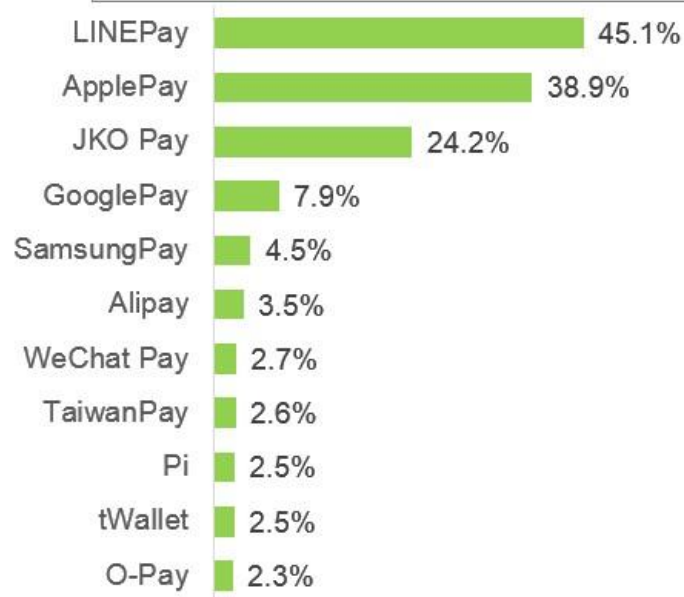
### Difficulties in using mobile payment

Rankings of Difficulties	
Mobile payment not accepted in frequented stores	43.4%
Clerks unfamiliar with mobile payment	37.1%
Mobile payment does not support and cannot bind frequently used cards	29.0%
Difficulties in certification and identification for payment	23.4%
No difficulties	22.4%

n=726 multiple selection question

Source: InsightXplorer (May 2018)

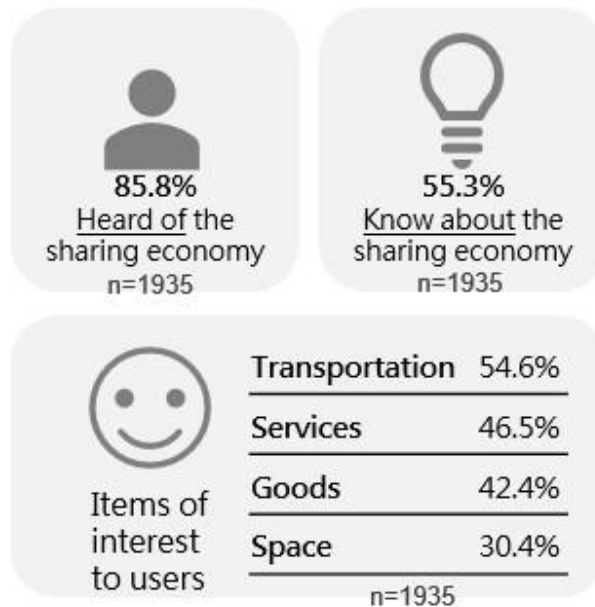
### Mobile payment brand banking rank by users



n=414 multiple selection question

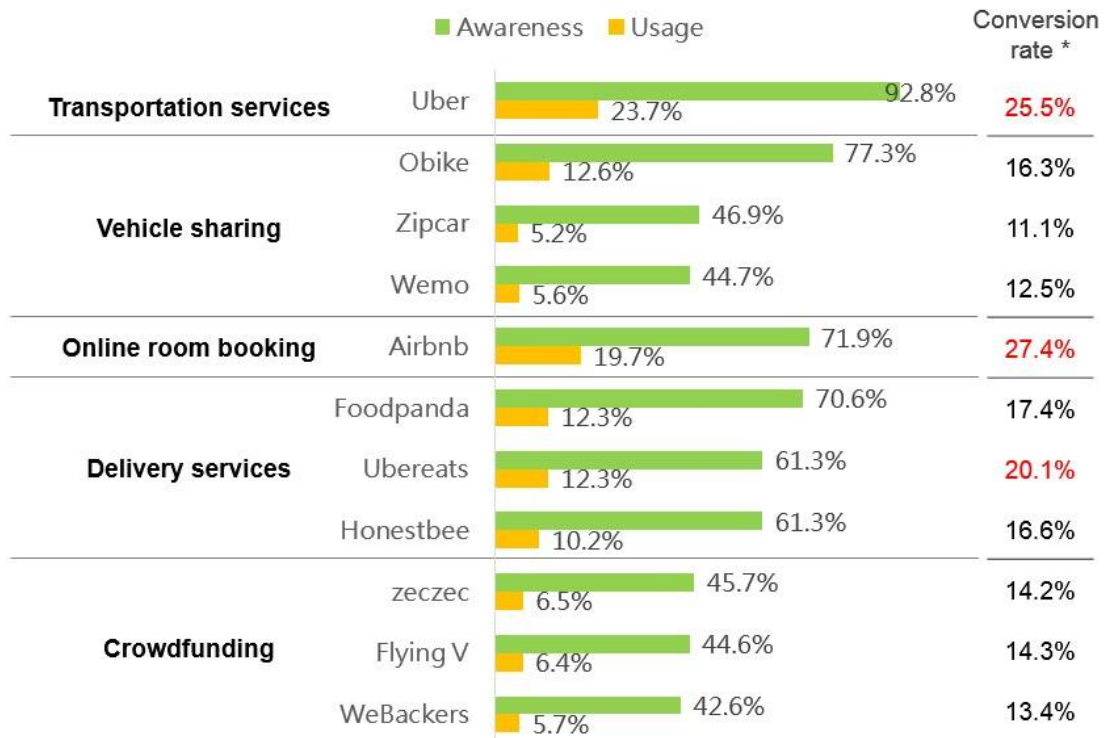
Source: Telephone interviews conducted in this research (2018) and InsightXplorer (May 2018)

### 3. Sharing Economy



Source: InsightXplorer (July 2018)





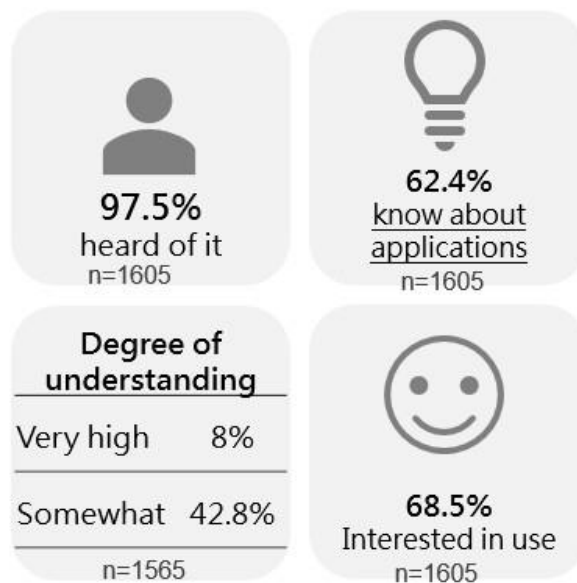
n=1935 multiple selection question

\*Conversion rate = usage rate/knowledge rate

Source: InsightXplorer (July 2018)

## C. Innovative technologies

### 1. AI



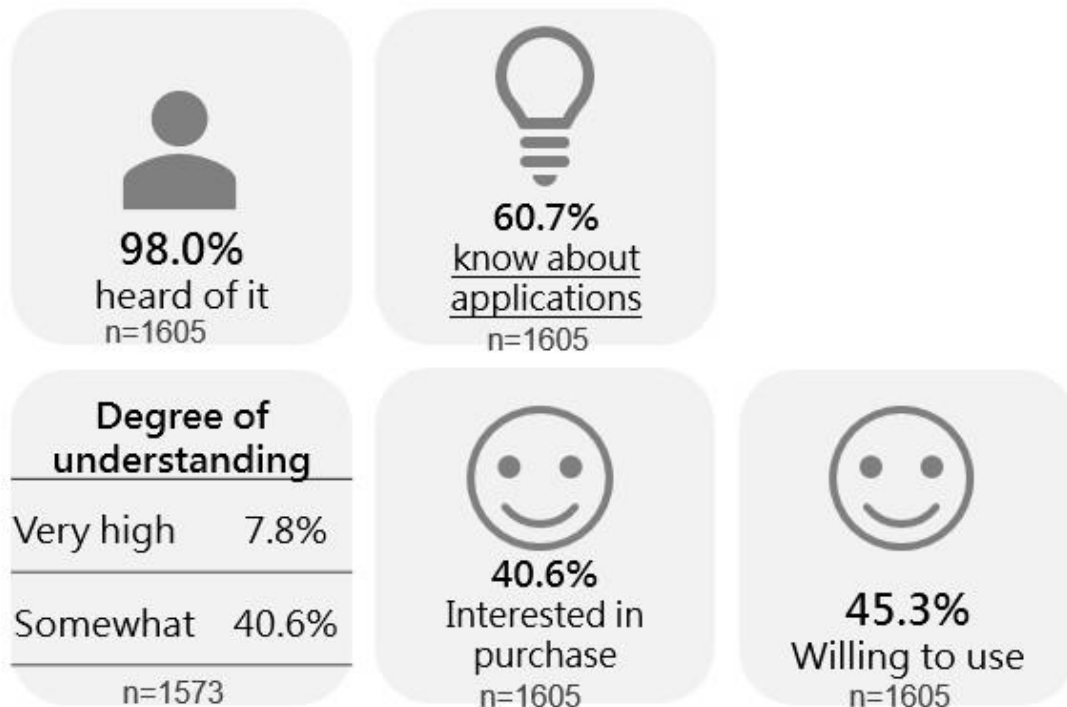
Source: InsightXplorer (December 2018)

## Services used

Voice recognition	58.8%
Facial recognition	52.0%
Robots (including chatbots, companion robots, etc.)	41.1%
Smart speaker	24.0%
Self-driving cars	23.0%

n=1547 multiple selection question  
Source: InsightXplorer (December 2018)

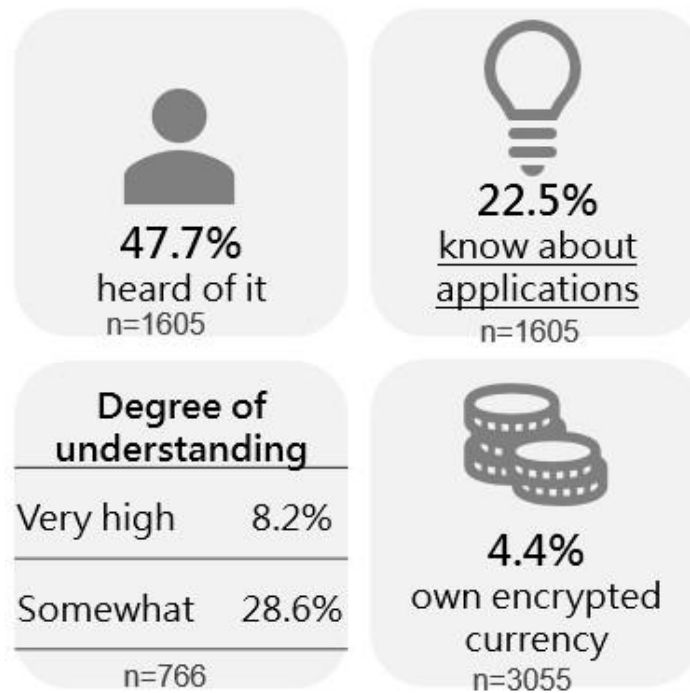
## 2. Self-Driving Cars



Source: InsightXplorer (December 2018)

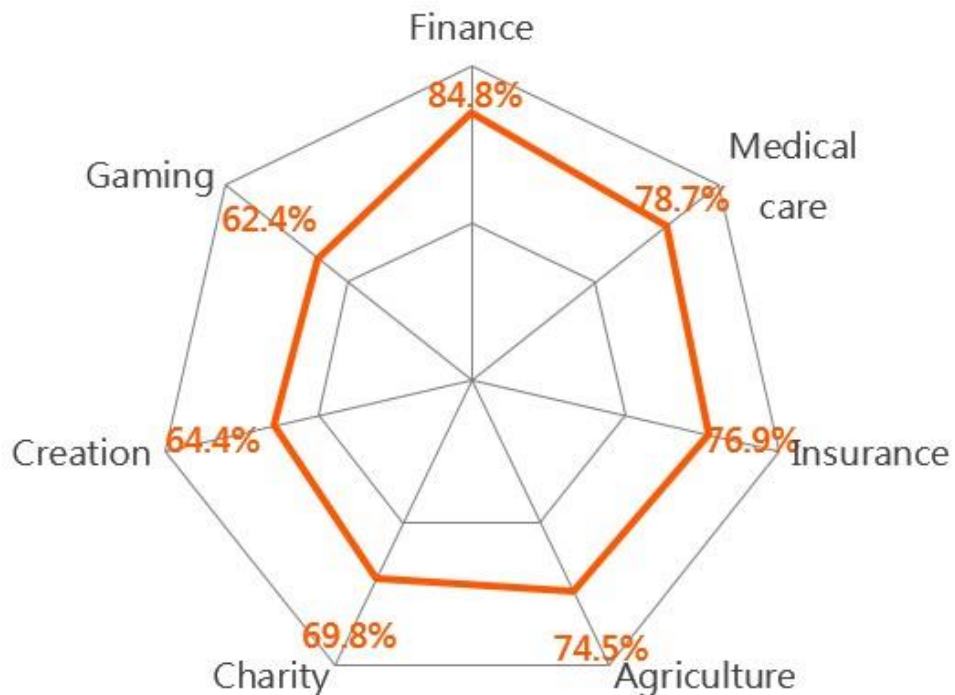


### 3. Blockchain



Source: InsightXplorer (December 2018)

## Assessment of the importance of applications



Medical care: Integrate scattered medical information and use encryption technology to allow patients to select authorized recipients.

Creation: Use blockchain music release platforms to let musicians publish their works while making profitability and profit sharing rules more transparent

Insurance: Integrate medical records to speed up claim systems

Charity: When using virtual currencies for donations, blockchains allow users to understand the purpose of accounts and improve account transparency

Agriculture: Record agricultural production, transportation, and sales records, improve the credibility of production records, and make agricultural transactions more transparent

Gaming: Encrypt gamers' personal information and transactions of virtual items to facilitate transactions in an open a secure environment.

Finance: Use encryption and transparency of blockchains to protect account transfer records

n=1605 single selection question

Source: InsightXplorer (December 2018)



## VI. Survey Methodology





## VI. Survey Methodology

CATI	
Target	Residents in Taiwan aged 12 and above
Population	Households in 6 municipalities and 16 cities/counties in Taiwan. * Based on Oct. 2018 Monthly Demographic Statistics Report released by the Ministry of Interior
Survey Period	Oct. 30, 2018 to Nov. 29, 2018
Sample Number	Telephone Interview, using Computer-Assisted Telephone Interview (CATI) system. 3088 valid samples; at 95% confidence level, the margin of error was $\pm 1.76\%$
Sampling Method	A stratified random sampling was used by separating the population elements into strata of 6 municipalities and 16 cities/counties in Taiwan. The sample size of each stratum was determined by using the proportional allocation method.

## Document Analysis

### Sources

Taiwan Network Information Center provided

National research reports

International research reports

InsightXplorer Ltd.

- IX Survey online survey
- Comscore

Public information