

## Chapter 4 Operational Highlights

### Performance by division

	<b>Consumer Business Group</b>	<b>Enterprise Business Group</b>	<b>Home Business Group</b>	<b>Retail Business</b>
Brand name	Taiwan Mobile	TWM Business Solution	TWM Broadband	momo
Services	<ul style="list-style-type: none"> <li>● Voice, data and mobile value-added services for consumers</li> </ul>	<ul style="list-style-type: none"> <li>● Voice and data mobile services for enterprises</li> <li>● Fixed-line services</li> <li>● Cloud and enterprise total solutions</li> </ul>	<ul style="list-style-type: none"> <li>● Pay TV services (CATV/DTV)</li> <li>● Cable broadband services</li> <li>● Others</li> </ul>	<ul style="list-style-type: none"> <li>● E-commerce</li> <li>● TV home shopping</li> </ul>

Unit: NT\$m

	<b>Telecom business</b>		<b>Cable TV business</b>	<b>Retail business</b>
	<b>Mobile business</b>	<b>Fixed-line broadband business</b>		
Market position	One of top three mobile operators in a five-player market, with a market share of around 24% in terms of mobile subscribers	One of top three internet service providers (ISP)	Fourth-largest multiple system operator (MSO), covering about 11% of households in Taiwan	Ranked first in B2C e-commerce
2020 revenue*	61,533		6,193	67,198
2020 EBIT*	11,325		2,208	2,219

\* Source: 2020 financial reports. The difference between the sum of each division and consolidated numbers was due to inter-division adjustments and eliminations.

## Scope of Business

### Business overview

#### Telecom Business

#### 1. Telecom products and services

##### **Consumer Business Group**

Besides providing basic mobile voice and broadband services, the Consumer Business Group also offers diversified value-added services to create an integrated mobile entertainment user experience. These value-added services include video and music streaming, mobile commerce, instant messenger, IoT-related services and smart home services.

##### **Enterprise Business Group**

The Enterprise Business Group offers a full range of information and communication integration service solutions to enterprise clients. Building on its solid foundation in mobile, fixed network and other telecommunications based services, the group can serve as a partner in the fields of 5G solutions, IoT, cloud, AI and information security protection.

## 2. Telecom revenue breakdown

Unit: NT\$mn

Item	Year	2020	
		Revenue	% of total
Service revenue		45,007	73%
Device sales		16,526	27%
Total		61,533	100%

## 3. New telecom products and services

### Consumer Business Group

- (1) Smarter Home ecosystem: Integrates related services within Fubon Group – smart home appliances, over-the-top media services, wearable devices, home security monitoring, etc. – to create an all-in-one smart home solution for users.
- (2) Provides users a whole new entertainment experience with 5G smart stadium application via 5G networks and multi-access edge computing (MEC).

### Enterprise Business Group

- (1) Software as a service (SaaS):

With companies expected to step up deployment of cloud services in the post-pandemic era, the Enterprise Business Group has launched services such as virtual desktop infrastructure (VDI) and backup to help enterprise customers easily access company resources anywhere.

- (2) Cloud security service:

As enterprises increasingly outsource cloud security services, TWM is working with leading corporations to provide comprehensive information security solutions, including cloud firewalls, cloud web application firewall (WAF), abnormal traffic monitoring with log services and security operations center (SOC) services.

- (3) 5G/Internet of Things:

The group is focusing on the development of IoT platforms, such as the TWM over-the-air (OTA) and other value-added services, to strengthen platform differentiation. TWM is also expanding its ecosystem partners from IoT to 5G domain to launch 5G enterprise private network services and vertical application services.

## Cable TV Business (Home Business Group)

### 1. CATV products and services

Its main operations cover a variety of products and services, including cable TV, HD digital TV, high-speed fiber-optic internet access, over-the-top (OTT) service platform, HomeSecurity services, A1 Box and digital TV channel content agency.

## 2. CATV revenue breakdown

Unit: NT\$mn

Item	Year	2020	
		Revenue	% of total
Pay TV service		3,407	55%
Cable broadband service		1,560	25%
TV content agency and others*		1,226	20%
Total		6,193	100%

\* Including channel leasing revenues

## 3. New CATV products and services

### (1) HD digital TV services:

TWM has led the industry in ushering in a whole new era in home entertainment with its introduction of 4K content and multi-angle vision.

### (2) High-speed fiber-optic internet access services:

Given the increasing demand for high-speed internet access, TWM Broadband launched 1Gbps fiber-optic internet access with WiFi 6, and will offer high-speed internet access above 1Gbps in the near future.

### (3) Digital home services:

TWM launched HomeSecurity AI services for businesses and households by integrating AI human detection technology and digital real-time monitoring. The Company is developing multiple value-added services, such as IoT, and cloud games.

## Retail Business (momo.com Inc. or “momo”)

### 1. Retail products and services

momo offers e-commerce and TV home shopping services

#### (1) e-commerce

momo sells over 3 million stock keeping units (SKUs), 25% of which offer 24-hour delivery guarantee. It also provides 24-hour online customer service and a supplier contact platform to satisfy customers' shopping needs.

#### (2) TV home shopping

Self-owned professional studio and filming team provides momo TV programs to 5 million cable TV and 2.1 million MOD households nationwide.

Provides 0800 toll-free hotline and mobile app for consumers to purchase products featured on momo TV programs or the momo TV app. A customer service team works around the clock to answer questions about product features, purchase and return policy.

## 2. Retail revenue breakdown

Unit: NT\$mn

Item	Year	2020	
		Revenue	% of total
E-commerce		61,586	92%
TV home shopping and others		5,612	8%
Total		67,198	100%

## 3. New categories and services

- (1) momo has continued to introduce more international brands and to enhance long-term relationships with brand partners. With the aid of key opinion leaders, live-streaming, social commerce marketing and cross-selling within Fubon Group, momo has added new categories, such as books, used cars and fresh food, to boost sales. Its TV home shopping has also developed new categories and introduced more overseas niche products to enhance its unique platform and broaden its customer base.
- (2) momo has stepped up its logistics network build-out to accelerate last-mile delivery to offer customers greater convenience. In terms of mobile device application, momo introduced AI technology to enhance visual and voice searches, as well as to ensure information security.
- (3) momo's TV home shopping business has steadily adapted to changes in consumer lifestyle and trends. To enhance engagement with its client base and boost customer stickiness, it has expanded its TV fan clubs' operation, launched a TV app, broadcast live-stream videos on Facebook and listed on Chunghwa Telecom's MOD. It has also laid out plans for cooperation with Heran channel and major OTT operators.
- (4) momo will establish a logistics center in southern Taiwan to improve shipping efficiency.

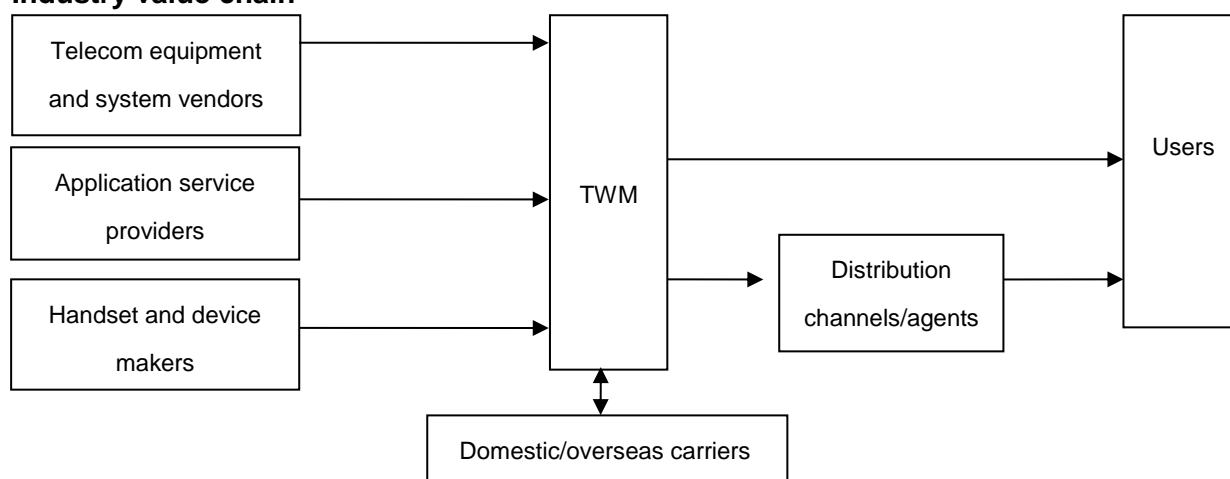
## Industry overview

### Consumer Business Group

#### 1. Industry status and development

The telecom industry entered a pure 4G era from 2019, then launched 5G services on non-standalone (NSA) 5G network architectures at the mid-year of 2020. With the 5G SA-capable devices become available in the market in 2021H2, the telecom industry will enter 5G SA network era.

#### 2. Industry value chain



### 3. Product development trends and competitive landscape

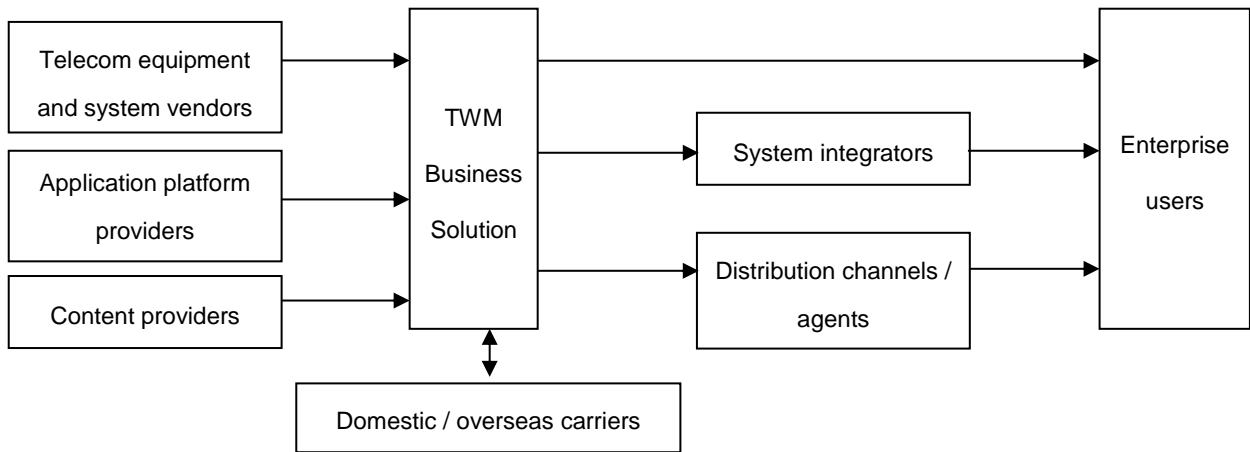
With the launch of 5G services, the three major telecoms upgraded their unlimited data plan to NT\$1,399. Increasing demand for 5G smartphones, wearable devices and smart home applications is expected to help end the price war and boost ARPU.

## Enterprise Business Group

### 1. Industry status and development

On May 31, 2019, the Legislative Yuan passed the "Telecommunications Management Act," easing the restrictions on telecoms leasing or sharing networks and spectrums, as well as granting of permits, which is expected to accelerate the development of vertical applications. The launch of 5G services, move into cloud computing and digital transformation have intensified market competition. Telecoms have ceased to be just providers of basic telecommunications services, but expanded to offer customers more diversified and flexible integrated solutions and application services.

### 2. Industry value chain



### 3. Product development trends and competitive landscape

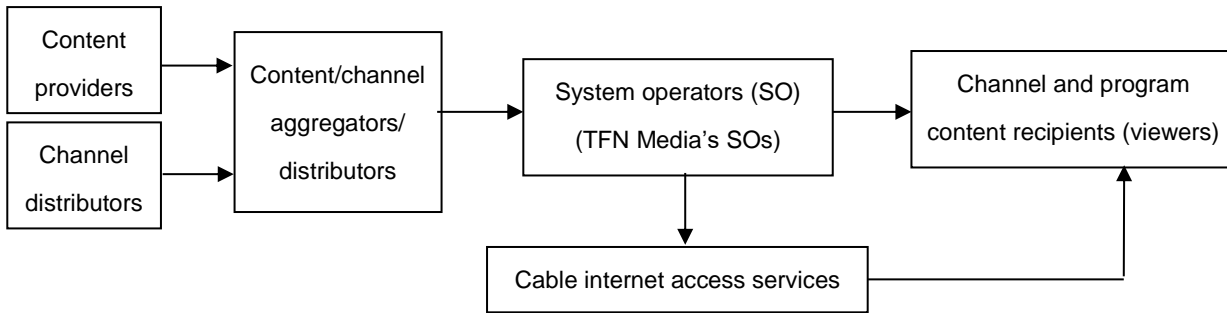
In the enterprise market, Chunghwa Telecom (CHT), which has fixed network services and economies of scale, is the main target of competition. The diverse applications and unlimited possibilities that 5G offers could provide a breakthrough in the competitive landscape. Given the rising demand for vertically integrated applications, the cooperation of 5G ecosystem partners will become increasingly important.

## Home Business Group

### 1. Industry status and development

Cable TV faces challenges from alternative services, such as IPTV, digital terrestrial TV and other emerging media (e.g., OTT video streaming) that have successively entered the market. The cable TV industry is facing a critical period of transformation.

## 2. Industry value chain



Thanks to its control over last mile access to customers, TWM Broadband is aiming to take the lead in vertical integration to build up its core competitiveness and explore new business opportunities in the digital age.

## 3. Product development trends and competitive landscape

Fixed broadband is a saturated market that is dominated by Chunghwa Telecom and characterized by slowing growth. However, with the advance of technology, fiber-optic internet access service speed has reached 1Gpbs. Operators now compete on price and speed. Furthermore, with the CATV industry becoming fully digitalized, user demand for high-definition digital TV channels and OTT content has increased. 4K content and smart home applications such as internet-connected and voice control devices are the future trends.

## Retail Business

### 1. Industry status and development

Consumers can order by telephone or through virtual platforms, choosing from a plethora of convenient payment options and receive the product within a short period.

### 2. Industry value chain



momo sources its products from suppliers and sell them through its TV home shopping networks, online shopping sites and mail order catalogues for members and general consumers.

### 3. Product development trends and competitive landscape

- (1) E-commerce: Competition is no longer limited to e-commerce channels. Fast delivery and cold chain logistics services are maturing. Groceries have become a new focus of competition between e-commerce platforms and hypermarket chains.
- (2) TV home shopping: The rise of virtual shopping platforms, such as e-commerce and mobile commerce, has intensified competition in TV home shopping. momo has countered this by collaborating with key opinion leaders or influencers, launching its own mobile apps and leveraging its social platform and capabilities, including live streaming, to bolster engagement with its members and customer base.

## Research and development expenditure

Research and development expenses totaled NT\$214,996 thousand in 2020 and NT\$19,146 thousand in January 2021. Continued investment in the research and development of more advanced technologies is expected to increase customer satisfaction, which in turn should boost value-added service revenue and overall operations growth.

## Major research and development achievements

Project name	Description
Deep learning-based resource allocation for 5G heterogeneous mobile networks	This project applied reinforcement learning to optimize resource allocation for 5G heterogeneous networks. At the same time, a handover model was established based on convolutional neural networks, so that base stations can predict handover events and allocate network resources in advance. The proposed deep learning-based method aimed to optimize the deployment of 5G heterogeneous networks by improving communication quality, while saving energy and reducing carbon emissions.
myVideo	Extended myVideo service to Apple TV box, provided live service on VR devices, as well as new types of payment mechanisms, such as Apple IAP, Line Pay and Google IAP, and continued to support more set-top box devices.
Smarter Home	Built a smart home AIoT ecosystem and platform; integrated Google Nest smart speakers and many types of home appliances from various brands to provide users an easy way to make their home smarter.
Construction of intelligent warehousing	To boost shipments by satellite warehouses, an intelligent warehouse was built to develop product sales projections and optimize distribution, stocking and sorting at satellite warehouses.

## Sales development plans

### Consumer Business Group

#### 1. Short-term plan

- (1) Offer higher subsidies for longer-term contract plans to attract more 5G true users and provide more 5G value-added services to boost revenue.
- (2) Provide “Double Play Bundle” and “Double Play Add-on” packages – one-stop shopping for fixed broadband and mobile services. The packages are designed to meet customers’ need for high-speed broadband services indoors and outdoors, and help users build a smarter home.
- (3) Build Taiwan Mobile Smarter Home ecosystem by integrating group applications and providing innovative products and services.

#### 2. Medium to long-term plan

- (1) Enhance video content by developing more original series, introduce deep-learning recommendation models, and integrate smart speakers’ full functions to meet customers’ demand for entertainment by creating differentiated and personalized Smarter Home services.

- (2) Utilize 5G network to develop new applications and launch cloud gaming services with international partners to increase 5G penetration rate and ARPU.
- (3) Leverage the group's resources and services – including telecommunications, e-commerce, finance and sports – to provide users with diversified services and bring group synergy into full play.

## **Enterprise Business Group**

### **1. Short-term plan**

- (1) Keep developing services and total solutions that improve enterprise efficiency; strengthen cooperation with government agencies; combine 5G technical strengths with innovative application thinking; and gather 5G ecosystem partners to promote smart cities, self-driving cars, industrial innovation and upgrading, among others.
- (2) Provide complete cloud services to satisfy the requirements of different types of enterprises and establish a professional sales team.
- (3) Continue to develop products and services that assist enterprises in digital transformation and integrated service solutions that improve business efficiency.

### **2. Long-term plan**

In addition to operating telecommunications services, the Company is targeting simultaneous development of AIoT, ICT integration services, cloud, information security and a 5G test field through the following:

- (1) Establishing strategic alliances with partners, constructing an industrial ecosystem, working together to promote enterprise business solutions, improving corporate customer operating efficiency, and expanding overseas markets.
- (2) Integrating AIoT, cloud and other innovative applications to assist domestic industries and enterprises in upgrading, accelerating actual applications of AI, and seizing opportunities in the 5G era.
- (3) Integrating channels to raise sales productivity and increase customer satisfaction.

## **Home Business Group**

### **1. Short-term plan**

- (1) TWM Broadband will continue to optimize its network infrastructure in regions where it is already operating CATV systems and provide more HD digital content and video on demand to set the foundation for its digital services.
- (2) TWM Broadband launched 1Gbps super high-speed internet access service and HD digital TV service to boost its cable broadband and digital TV service penetration rates, and increase its ratio of high-speed broadband internet users.

### **2. Long-term plan**

The Home Business Group plans to integrate HD digital content, multiple-viewing terminal devices, high-speed fiber-optic internet access services and cloud technology to introduce more innovative and value-added digital TV services, allowing families and individual subscribers to enjoy the benefits of “multi-screens and a cloud” (i.e., mobile phones, PCs, tablets and TVs) and lead them toward smart living.



## **Retail Business**

### **1. Short-term plan**

- (1) E-commerce: Provide differentiated and value-added services by leveraging big data analysis to optimize product portfolios and recommend more personalized products to customers; deepen cooperation between momo and leading brands; and integrate offline and online loyalty programs.
- (2) TV home shopping: Enhance distribution channel's competitiveness by listing more branded products from overseas, cultivating fan bases on social platforms, such as Facebook and LINE, and cooperating with e-commerce suppliers to expand product offerings.

### **2. Medium to long-term plan**

- (1) E-commerce: Increase market share to further dominate B2C market by implementing a multi-channel sales strategy, optimizing search functions, facilitating short-chain logistics efficiency, and improving user experience (UX) and user interface (UI).
- (2) Take a pro-active approach in raising momo's brand image, further explore Asia's TV shopping market, export best-selling products across multiple countries, leverage the group's marketing resources and sales channels to enhance operating efficiency, and provide innovative services through mobile and cloud platforms.

## **Market and Sales Overview**

### **Market analysis**

#### **Consumer Business Group**

##### **1. Main products and service areas**

The Company provides mobile services nationwide, covering Taiwan and the outlying islands of Kinmen and Matsu.

##### **2. Market status**

As of October 2020, the mobile subscription penetration rate had reached 125%. Although the market is mature, 5G's commercialization offers exciting opportunities as demand for IoT, broadband, smart devices and value-added services surges.

##### **3. Competitive advantages**

###### **(1) Diversification strategy**

The Company integrates telecom, cable and e-commerce to provide diversified telecom bundle plans and increase user stickiness through cross-selling.

###### **(2) Innovative 5G services**

The Company provides customers integrated entertainment digital services, such as myVideo, MyMusic and myBook. Moreover, TWM works with partners in the ecosystem to launch new services, such as smart stadium, smart home and cloud gaming, in the 5G market.