

Chapter 4 Operational Highlights

Performance by division

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

Unit: NT\$m

	Telecom business		Cable TV business	Retail business
	Mobile business	Fixed-line broadband business		
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 (excluding 040 prefix)	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
2022 revenue*	65,692		6,333	103,436
2022 EBIT*	10,134		2,170	4,285

* Source: 2022 financial reports. The difference between the sum of each division and consolidated numbers was due to interdivisional adjustments and eliminations.

Scope of Business

Business overview

Telecom Business

1. Telecom products and services

Consumer Business Group

Besides providing customers mobile voice and data services, the Consumer Business Group also offers diversified value-added services and exclusive games and devices. These value-added services include video and music streaming, online cloud gaming, mobile devices, instant messenger, IoT-related services, and smart home services. In October 2022, the Company launched “OP Life” – a one-stop integrated service – to give users the ultimate innovative audiovisual experience.

Enterprise Business Group

The Enterprise Business Group offers a full range of one-stop services to corporate clients. Aside from providing basic telecommunication services, the Enterprise Business Group can also serve as an enterprise's partner in the fields of 5G solutions, cloud services, IoT and information security.

2. Telecom revenue breakdown

Unit: NT\$mn

Item	Year	2022	
		Revenue	% of total
Service revenue		46,508	71%
Device sales		19,184	29%
Total		65,692	100%

3. New telecom products and services

Consumer Business Group

- (1) OP Life one-stop solution: Offer "Gamer" mobile game/VR device packages; adopt Matter connectivity standards to offer better Smarter Home packages.
- (2) momo ecosystem: Deepen cooperation with the installation of a TWM e-shop on momo's platform, offering exclusive "momobile member's day" deals for TWM users and facilitating purchases of devices and accessories using momo coins on myfone stores.
- (3) Diversified metaverse experience: MyMoji booths allow users to create their own 3D interactive avatar that they can use on popular apps on TWM's platform.

Enterprise Business Group

- (1) Multi-cloud and hybrid cloud solutions:

By combining telecom services, Smart IT service and public cloud, TWM provides solutions to help customers build private cloud services using TWM's data center for their production environment while deploying public cloud services such as AI and SaaS for related application development and testing.

- (2) AI and industrial solutions:

TWM continues to cooperate with partners in the industrial ecosphere and is working on becoming a Tier 1 Amazon Web Services (AWS) Partner Network. The Company has launched manufacturing data governance solutions with CloudMile to provide data monitoring, analysis and cloud AI solutions, such as preventive maintenance and detecting abnormal activities. In addition, it has collaborated with Cadmen and Rescale to create a one-stop "industrial simulation solutions" based on Taiwan Cloud Computing (TWCC) services, as well as provide a One AI platform to help developers

quickly prepare data, build models, and achieve efficient deployment and maintenance operations and landing applications.

(3) 5G/Internet of Vehicles:

TWM works with private 5G vertical application partners to develop private 5G dedicated and shared services. Moreover, it has bolstered its partners' commercial promotions to boost their market share in IoV and continue to develop new IoT platform services (IoTBS, IoTA, eSIM).

Cable TV and Broadband (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	2022	
		Revenue	% of total
Pay TV service		3,155	50%
Cable broadband service		1,943	31%
TV content agency and others*		1,235	19%
Total		6,333	100%

* Including channel leasing revenue

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 its 1Gbps+WiFi 6 and Mesh WiFi 6 service, and aims to offer even faster access in the near future.

(3) Digital home services:

The Company is developing multiple value-added services, such as IoT, cloud games and smart home applications.

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 4 million stock keeping units (SKUs), a quarter 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

momo has its own professional studio and filming team that provides momo TV programs to 5 million cable TV and 2.1 million MOD households nationwide.

0800 toll-free hotline and mobile app allow 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, as well as purchase and return policy.

2. Retail revenue breakdown

Unit: NT\$m

Item	Year	2022	
		Revenue	% of total
E-commerce		98,607	95%
TV home shopping and others		4,829	5%
Total		103,436	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 and fresh food, to boost sales. Its TV home shopping platform has also developed new product categories, and introduced more overseas niche products to enhance its unique platform and broaden its customer base.

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 enhance information security.

(2) 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' operations, 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 livestreaming influencers and major OTT operators.

(3) momo plans to set up logistics centers in southern and central Taiwan to improve shipping efficiency.

Industry overview

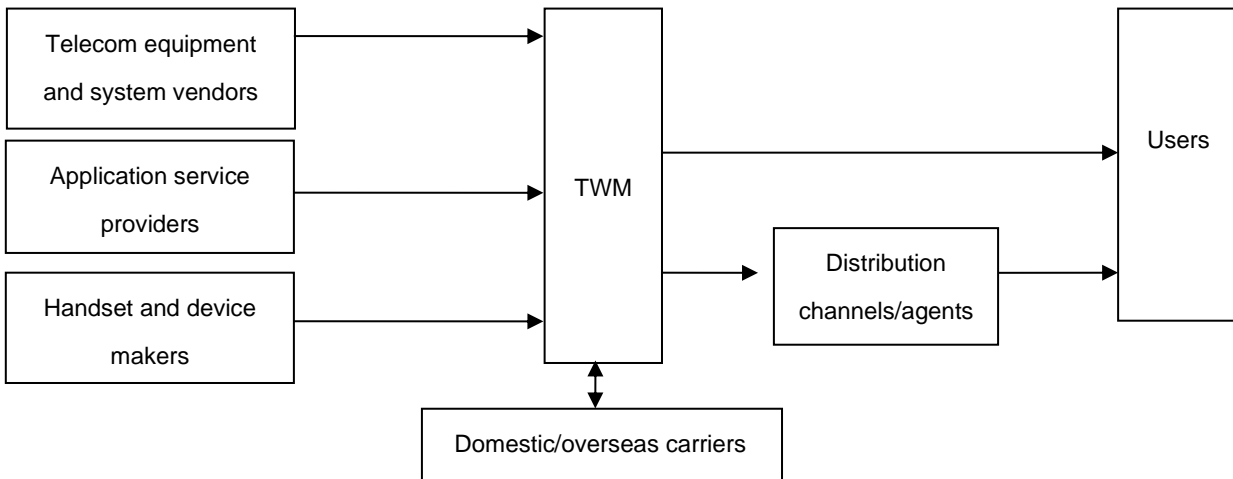
Consumer Business Group

1. Industry status and development

It has been almost three years since 5G's launch. The heavy investment in 5G network buildout has peaked, but there is still no 5G killer app.

The mergers of Taiwan Mobile and Taiwan Star and Far EasTone and Asia Pacific Telecom are still waiting for regulatory approval. Once approved, they could reduce pricing competition.

2. Industry value chain



3. Product development trends and competitive landscape

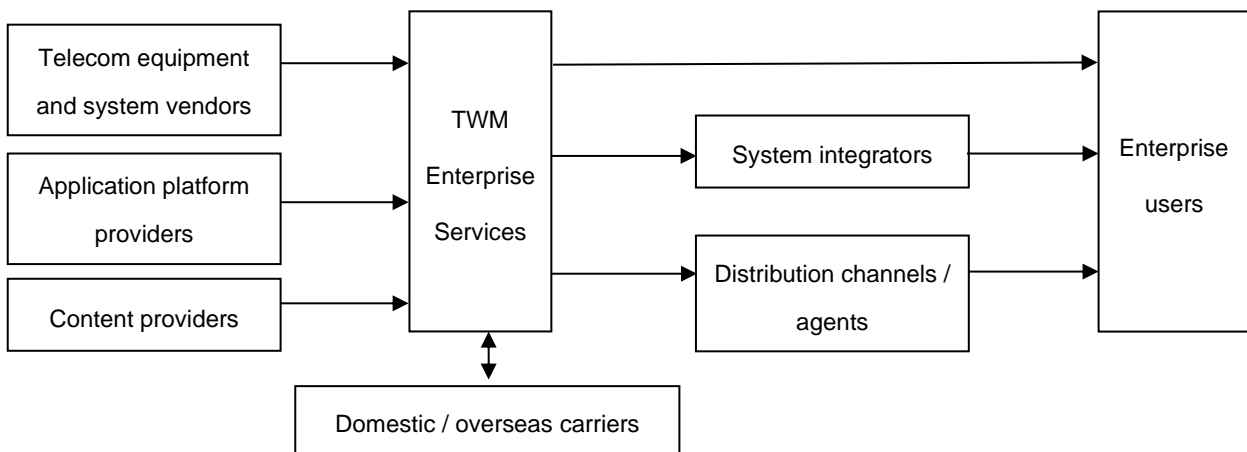
The three major operators are focused on upgrading users' contribution to increase revenue. Industry consolidation when the two proposed mergers are approved could lead to the withdrawal of low-tier unlimited data plans. The 5G competition would switch to smart home, IoT, exclusive devices and streaming/video services.

Enterprise Business Group

1. Industry status and development

The COVID-19 pandemic has changed the way we work and live, spurring new developments in communications technology, as demand for cloud, IoT and information security services increased. These changes have ushered in more business opportunities for telecom companies.

2. Industry value chain



3. Product development trends and competitive landscape

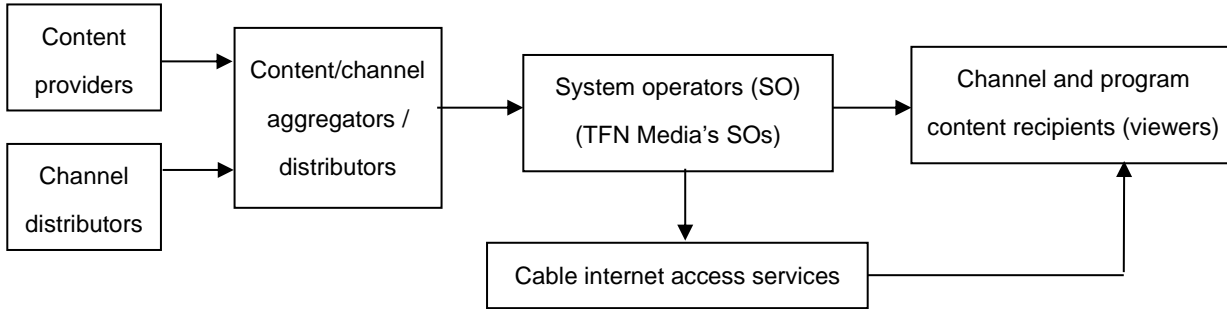
In the enterprise market, telecom operators face competition not only from traditional service providers, but also from other industries. The promotion of 5G development during the COVID-19 pandemic has also given rise to various innovative vertical application business opportunities, including IoT, smart factories, smart healthcare, smart retail and smart cities, underscoring the growing importance of cross-disciplinary cooperation.

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



Aided by 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. Technological advances and the demand for 5G indoor coverage have also spurred intense competition 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

As a leader in the B2C market, momo continues to build up its logistics and warehousing system, providing fast delivery services and a one-stop shopping experience for consumers, while expanding its economies of scale and raising barriers to entry in the B2C industry.

2. Industry value chain



momo sources its products from suppliers and sells 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 challenge by collaborating with key opinion leaders or influencers, launching its own mobile apps and leveraging its social platform and capabilities, including livestreaming, to bolster engagement with members and its customer base.

Research and development expenditure

Research and development expenses totaled NT\$391.273 million in 2022 and NT\$36.79 million in January 2023. 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 acceleration technology for ray-tracing model	Apply deep-learning technique on ray-tracing model to accelerate the estimation of 3D building images' effect on a base station's coverage and received signal strength.
myVideo	Develop 5G video applications such as selectable multiple streams on one screen. Adopt watermarking solution to enhance streaming video security.
MyMusic	Cooperate with other telecom operators to expand sales channels. Work with strategic partner SoundOn to enrich Podcast service content. Build a gamification marketing platform to attract young people using MyMusic.
Number masking service	Enrich communication platform as a service (CPaaS) application programming interfaces for various integration scenarios. Introduce number masking service to transportation industry.
Intelligence overdue collection model	Use AI machine learning algorithms to optimize overdue collection process.
AI optical character recognition (OCR) for Chinese handwriting	Develop a Chinese handwriting recognition mechanism using AI OCR technology and 13,500+ traditional Chinese handwriting datasets.
myfone online service	Design a customer-centric self-service system that encourages users to subscribe to and purchase TWM products online.
M+ Messenger	Improve office collaboration functions and integrate cloud PBX to enrich voice communication for enterprise customers.
Phone number tokenization and management regulations	Convert consumers' phone numbers into tokens to protect personal data, as well as enable suppliers and logistics providers to contact buyers during the delivery process.

Sales development plans

Consumer Business Group

1. Short-term plan

- (1) The Company has developed more OP Life packages, such as Gamer by bundling mobile/VR gaming and devices, and Smarter Home with Matter devices. These packages are expected to drive ARPU higher and increase customer loyalty.
- (2) The Company offers diversified and exclusive services such as Disney+ and YouTube Premium to expand its 5G competitive advantages and grow its 5G customer base. The Company will keep on investing in exclusive content for MyVideo to enhance product differentiation.
- (3) The Company has strengthened cooperation with momo to provide unique 5G packages. A TWM e-shop will be built on the momo platform and a “momobile members’ day” will be set for TWM users. The Company also plans to expand channels that accept momo coins to enlarge its ecosystem.
- (4) As the agent of League of Legends PC game, the Company is exploring business opportunities and expanding its customer base in the gaming industry. Another collaboration involves bundling GeForce Now with Logitech’s G Cloud device.

2. Medium to long-term plan

- (1) Become a smart home leader: The Company’s “Taiwan Mobile Smarter Home” brand strives to provide integrated services by offering a better network environment, smart appliances and smart devices to users. For individual consumers, the Company creates holistic solutions including products, services, and channel; and for enterprise customers, the Company aims to become a core partner for smart housing companies.
- (2) Develop metaverse industries, social media platforms and hardware information related to virtual reality (VR), augmented reality (AR), mixed reality (MX) and extended reality (XR). The Company is open to opportunities for cooperation, aiding users in exploring metaverse through their own digital avatars by creating new application services on Web3.

Enterprise Business Group

1. Short-term plan

- (1) Actively develop solutions for the manufacturing, retail, medical care, finance and government sectors, and integrate 5G technology and partner application services to promote industrial innovation and upgrading.
- (2) Promote cloud services to meet the needs of enterprises.
- (3) Implement sustainable value in the process of enterprise product promotion and cultivate brand ESG development.

2. Long-term plan

- (1) Actively expand the industrial ecosystem, launch innovative vertical integration solutions that meet different industries' requirements, improve enterprise customers' operating efficiency, and expand TWM’s presence in foreign markets.
- (2) Continue to develop diversified cloud services and accelerate the practical applications of AI to help corporate customers speed up their digital transformation.
- (3) Improve sales growth productivity and strengthen the relationship between customers and TWM products.

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, as well as 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 experience 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 nationwide and international roaming services. The coverage includes Taiwan and the outlying islands of Kinmen and Matsu.