UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 20-F

(Mark One)

☐ **REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR (g) OF THE SECURITIES EXCHANGE ACT OF 1934**

OR

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2021

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

OR

☐ **SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

Date of event requiring this shell company report
For the transition period from to
Commission file number 001-31731

Chunghwa Telecom Co., Ltd.

(Exact name of Registrant as specified in its charter)
Chunghwa Telecom Co., Ltd.
(Translation of Registrant's name into English)
Taiwan, Republic of China
(Jurisdiction of incorporation or organization)
21-3 Hsinyi Road, Section 1, Taipei, Taiwan 10048, Republic of China
(Address of principal executive offices)

Cho-Fen (Angela) Tsai
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Taiwan, Republic of China
Tel: +886 2 2344-5488
E-mail: chtir@cht.com.tw
(Name, Telephone, E-mail and/or Facsimile number and Address of Company Contact Person)

Securities registered or to be registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Shares, par value NT$10 per share	**N/A**	**New York Stock Exchange***
American Depositary Shares, as evidenced by American Depositary Receipts, each representing 10 Common Shares	**CHT**	**New York Stock Exchange**

Securities registered or to be registered pursuant to Section 12(g) of the Act:
None
Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act:
None

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by the annual report.

7,757,446,545 Common Shares

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. ☒ Yes ☐ No

If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934. ☐ Yes ☒ No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. ☒ Yes ☐ No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this Chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). ☒ Yes ☐ No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☒ Accelerated filer ☐ Non-accelerated filer ☐ Emerging growth company ☐

If an emerging growth company that prepares its financial statements in accordance with U.S. GAAP, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards† provided pursuant to Section 13(a) of the Exchange Act. ☐

† The term "new or revised financial accounting standard" refers to any update issued by the Financial Accounting Standards Board to its Accounting Standards Codification after April 5, 2012.

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C.) 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

U.S. GAAP ☐ International Financial Reporting Standards as issued by the International Accounting Standards Board ☒ Other ☐

If "Other" has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow. ☐ Item 17 ☐ Item 18

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). ☐ Yes ☒ No

(APPLICABLE ONLY TO ISSUERS INVOLVED IN BANKRUPTCY PROCEEDINGS DURING THE PAST FIVE YEARS)

Indicate by check mark whether the registrant has filed all documents and reports required to be filed by Sections 12, 13 or 15(d) of the Securities Exchange Act of 1934 subsequent to the distribution of securities under a plan confirmed by a court. ☐ Yes ☐ No

* Not for trading, but only in connection with the listing on the New York Stock Exchange of the American Depositary Shares

CHUNGHWA TELECOM CO., LTD.

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FISCAL YEAR ENDED DECEMBER 31, 2021
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SUPPLEMENTAL INFORMATION

All references to “we,” “us,” “our,” “Chunghwa Telecom” and “our company” in this annual report are to Chunghwa Telecom Co., Ltd. and our consolidated subsidiaries, unless the context otherwise requires. All references to “shares” and “common shares” are to our common shares, par value NT$10 per share, and to “ADSs” are to our American depositary shares, each of which represents ten of our common shares. The ADSs are issued under the deposit agreement, as amended, supplemented or modified from time to time, originally dated as of July 17, 2003, among Chunghwa Telecom Co., Ltd. and the Bank of New York, and amended and restated on November 14, 2007, among Chunghwa Telecom Co., Ltd. and JP Morgan Chase Bank, as depository, and the holders and beneficial owners of American Depositary Receipts issued thereunder. All references to “Taiwan” are to the island of Taiwan and other areas under the effective control of the Republic of China. All references to “the government” or “the ROC government” are to the government of the Republic of China. All references to “the Ministry of Transportation and Communications” or “the MOTC” are to the Ministry of Transportation and Communications of the Republic of China. All references to “the National Communications Commission” or “the NCC” are to the National Communications Commission of the Republic of China. All references to the “Securities and Futures Bureau” are to the Securities and Futures Bureau of the Republic of China or its predecessors, as applicable. “ROC GAAP” means the generally accepted accounting principles of the Republic of China, “U.S. GAAP” means the generally accepted accounting principles of the United States, “IFRSs” means International Financial Reporting Standards as issued by the International Accounting Standards Board, and “Taiwan IFRSs” means the International Financial Reporting Standards as issued by the International Accounting Standards Board and endorsed by the Financial Supervisory Commission, or the FSC, which are required to be adopted by applicable companies in the ROC pursuant to the “Framework for Adoption of International Financial Reporting Standards by Companies in the ROC” promulgated by the FSC on May 14, 2009. Any discrepancies in any table between totals and sums of the amounts listed are due to rounding. Unless otherwise indicated, or the context otherwise requires, references in this annual report to financial and operational data for a particular year refer to the fiscal year of our company ending December 31 of that year. When we refer to our “privatization” or our being “privatized” in this annual report, we mean our status as a non-state-owned entity after the government reduced its ownership of our outstanding common shares, including our common shares owned by entities majority-owned by the government, to less than 50%. We were privatized on August 12, 2005.

We publish our consolidated financial statements in New Taiwan dollars, the lawful currency of the Republic of China. In this annual report, “NT$” and “NT dollars” mean New Taiwan dollars, “$,” “US$” and “U.S. dollars” mean United States dollars. For the convenience of readers, NT dollar amounts used in this annual report for, and as of, the year ended December 31, 2021 have been translated into U.S. dollar amounts using US$1.00=NT$27.74, set forth in the statistical release of the Federal Reserve Board on December 30, 2021. The U.S. dollar translation appears in parentheses next to the relevant NT dollar amount. We make no representation that any New Taiwan dollar amounts or U.S. dollar amounts referred to in this annual report could have been or could be converted into U.S. dollars or NT dollars, as the case may be, at any particular rate or at all. On April 6, 2022, the exchange rate was NT$28.67 to US$1.00.

FORWARD-LOOKING STATEMENTS IN THIS ANNUAL REPORT MAY NOT BE REALIZED

This annual report contains forward-looking statements, including statements regarding:

- general local and global economic conditions;
- the political stability of our local region;
- our business and operating strategies;
- our network expansion plans;
- our business, operations and prospects;
- our financial condition and results of operations;
- our dividend policy;
- the telecommunications industry regulatory environment in Taiwan;
- future developments in the telecommunications industry in Taiwan; and
- possible disruptions in commercial activities caused by natural and human-induced disasters, and outbreaks of contagious diseases such as the COVID-19 pandemic.

These forward-looking statements are generally indicated by the use of forward-looking terminology such as "believe," "expect," "anticipate," "estimate," "plan," "aim," "seek," "project," "may," "will" or other similar words that express an indication of actions or results of actions that may or are expected to occur in the future. These statements reflect our current views with respect to future events and are subject to risks, uncertainties and assumptions, many of which are beyond our control. The forward-looking statements are contained principally in the sections entitled "Item 3. Key Information—D. Risk Factors," "Item 4. Information on the Company" and "Item 5. Operating and Financial Review and Prospects." These statements are made under the "safe harbor" provisions of the U.S. Private Securities Litigation Reform Act of 1995. We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our financial condition, results of operations, business strategy and financial needs. You should not place undue reliance on these statements, which apply only as of the date of this annual report. These forward-looking statements are based on our own information and on information from other sources we believe to be reliable. Actual results may differ materially from those expressed or implied by these forward-looking statements. Factors that could cause differences include, but are not limited to, those discussed under "Item 3. Key Information—D. Risk Factors." In light of these risks, uncertainties and assumptions, the forward-looking events discussed in this annual report might not occur and our actual results could differ materially from those anticipated in these forward-looking statements. The forward-looking statements made in this annual report relate only to events or information as of the date on which the statements are made in this annual report. Except as required by law, we undertake no obligation to update or revise publicly any forward-looking statements, whether as a result of new information, future events or otherwise, after the date on which the statements are made or to reflect the occurrence of unanticipated events. You should read this annual report completely and with the understanding that our actual future results may be materially different from what we expect.

PART I

ITEM 1. IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISERS

Not applicable.

ITEM 2. OFFER STATISTICS AND EXPECTED TIMETABLE

Not applicable.

ITEM 3. KEY INFORMATION

A. [Reserved]

B. Capitalization and Indebtedness

Not applicable.

C. Reasons for the Offer and Use of Proceeds

Not applicable.

D. Risk Factors

Our business and operations are subject to various risks, many of which are beyond our control. If any of the risks described below actually occurs, our business, financial condition or results of operations could be seriously harmed.

Risks Relating to Our Company and the Taiwan Telecommunications Industry

Extensive regulation of our industry may limit our flexibility to respond to market conditions and competition, and our business and revenue may suffer.

As a telecommunications service provider in Taiwan, we are subject to extensive regulation. The ROC Telecommunications Management Act, or the TMA, was passed by the Legislative Yuan on May 31, 2019 and promulgated by the President on June 26, 2019, with part of the provisions taking effect on July 1, 2020, and the remaining provisions regarding frequency allocation on November 1, 2020. According to the TMA, within three years of its effective date, the existing telecommunications enterprises shall register themselves with the NCC and become subject to the TMA. We have filed an application for the registration on July 31, 2020, and received the approval from the NCC on September 30, 2020. Since then, we have become subject to the TMA. See "Item 4. Information on the Company—B. Business Overview—Regulation" for more information on the regulatory environment applicable to us. Furthermore, pursuant to the TMA, as we have been designated by the NCC as a dominant Type I service provider of fixed communications under the Telecommunications Act before the TMA becomes effective, we shall continue to be subject to the NCC's supervision under the Telecommunications Act and the relevant implementation measures until the NCC designates our significant position in the specific market and adopts special implementation measures based on the TMA.

In particular, future decreases in tariff rates could immediately and substantially decrease our revenues. As a dominant Type I service provider under the Telecommunications Act, we are constrained in our ability to raise prices. On March 5, 2020, the NCC announced a tariff reduction in local network business and long distance network business effective from April 1, 2020 to March 31, 2024, which applies to us, being one of the dominant Type 1 service providers in local network business and long distance network business. See “Item 4. Information on the Company—B. Business Overview—Regulation” and “Item 5. Operating and Financial Review and Prospects—Overview—Tariff adjustments.” We cannot assure you that we will not be required to further reduce our tariffs again in the future. Any mandatory tariff reductions could have a material adverse effect on our revenues.

On December 14, 2020, the NCC issued a notice for the promulgation of the “Upper Limit on Access Charge for Mobile Broadband Operators,” which applies to all mobile broadband operators and is effective from January 1, 2021 to June 30, 2023. During the aforementioned effective term, the upper limit of mobile interconnection fees decreases year by year from NT$0.525 per minute in 2021 to NT$0.482 per minute in 2022, and then to NT$0.443 per minute in 2023 until June 30, 2023. The decrease of the upper limit on mobile access charges from 2021 to 2023 reduces the revenue as well as the expenses of the Company, and may cause an impact on the service price within the mobile market. The decrease of the upper limit on mobile access charges from 2021 to 2023 will reduce the revenue as well as the expenses of the Company, and may cause an impact on the service price in the mobile market.

Furthermore, the NCC approved our new fixed communications network interconnection fees on September 26, 2018. The interconnection fees for local telephone and domestic long distance telephone remain the same, while the interconnection fees from the mobile network to local telephone decrease. The tariff is effective from January 1, 2019 to December 31, 2022. See “Item 5. Operating and Financial Review and Prospects—Overview—Tariff adjustments.” The regulatory framework within which we operate may limit our flexibility to respond to market conditions, competition or changes.

NCC made a pre-announcement of the “Delimitation of Specific Telecommunications Service Markets” on December 20, 2021 for the delimitation of five specific telecommunications service markets, which will be the fixed-line voice market, fixed-line broadband market, fixed-line wholesale market, fixed-line voice access market, and the mobile voice access market. The specific telecommunications service markets are deemed required ex ante regulation for their lack of effective competition. CHT is predicted to be designated as the enterprise with significance in the aforementioned markets except for the voice access markets. The purpose of the delimitation of specific telecommunications service markets is to extend the control of the “Dominant Market Player” under the Telecommunications Act, and we will keep looking for the opportunity to strive for looser regulation.

The promulgation of “Ministry of Digital Development Organization Act” and the amendment of “Ministry of Transportation Organization Act” and “National Communications Commission Organization Act” were passed the three readings on December 28, 2021 by the Legislative Yuan. According to the aforementioned acts regarding organization reform, the Executive Yuan will establish the “Ministry of Digital Development” to integrate five main areas: telecommunications, information, cyber security, Internet and communications, and to overrule the work of infrastructure, environment, resource planning, and the digital transformation of public and private entities. The “Cyber Security Administration”, overseeing the protection of national cyber security, and the “Digital Industry Administration”, overseeing the development of digital economic industry, will be established under the Ministry of Digital Development. The management of communications resources, which are now governed by the National Communications Commission, and the planning of integral communications resources and the policy of industry subsidies and incentives, which are now governed by the Ministry of Transportations, will be transferred to the Ministry of Digital Development. It is expected that the Ministry of Digital Development will be launched in July 2022, at the earliest, and the policy-making uncertainties and communication costs caused by the assignment of authority and responsibility during the transitional period may increase and, in turn, affect our business.

If we fail to comply with the regulations of the ROC Fair Trade Act, we may be investigated and fined.

As a provider of telecommunication products and services, our business operations are subject to the regulations of the ROC Fair Trade Act, or the FTA, which is administered and enforced by the ROC Fair Trade Commission, or the FTC. The FTA requires, among other things, that the marketing and promotional materials of a business to be true and not misleading. The FTA also prohibits a business from participating or engaging in a cartel or other anti-competitive conduct. The FTC has the authority under the FTA to investigate and, where appropriate, impose fines and penalties on a business that violates any regulations promulgated by the FTA. The consequences of any such violations could have a material adverse effect on our business and results of operations. See “Item 4.

Information on the Company—B. Business Overview—Regulation" for a discussion of the FTA applicable to us. We have been investigated and penalized by the FTC in the past and may continue to be investigated or penalized by the FTC in the future if we fail to comply with the relevant regulations. As the FTA provides the FTC broad discretion to interpret cartel or other anti-competition actions and enforce the relevant clauses under the FTA and FTC might take a different view of our existing business operation in the wake of advancement of global regulatory trend, we are unable to predict whether or when the FTC would initiate investigations on any of our daily business activities or find us liable for violating the FTA in the future. The investigations of any penalties imposed by the FTC could interrupt our provision of products or services and have a negative impact on our reputation, business operations and results of operations.

If we do not or are unable to obtain and maintain the approvals to operate our business, our business prospects and future results of operations would be adversely affected.

We operate our businesses with approvals granted by the government. If these approvals are revoked or suspended or are not renewed, or if we are unable to obtain any additional licenses that we may need to operate or expand our business in the manner we desire, then our financial condition and results of operations, as well as our prospects, will suffer.

For example, in November 2017, we obtained 4G mobile broadband services spectrum licenses in 1800MHz and 2100MHz frequency bands from the government, which are valid until the end of 2030 and 2033, respectively. Although the obtained license expired in September 2020 due to changes of regulatory law, our right to use the spectrums are continuing during the period. Furthermore, the NCC held the auction for the fifth generation license, or 5G, mobile networks in December 2019, and we obtained spectrum in 3.5GHz and 28GHz frequency bands in February 2020. However, if we fail to obtain approval from the government for any of the above purposes, our business, operating results and financial condition may be materially and adversely affected.

If we are unable to successfully acquire and maintain the rights to use the frequency spectrums that we may need for our future business operations, our business prospects and future results of operations may be materially and adversely affected.

Market competition may adversely affect our growth and profitability by causing us to lose customers, charge lower tariffs or spend more on marketing.

The competitive landscape of the telecommunications industry in Taiwan is constantly changing. As of the date of this annual report, there are five mobile network operators in Taiwan providing mobile broadband services including us, and the degree of concentration of the telecommunication industry in Taiwan has been increasing in recent years. A few leading telecommunications service providers are seeking to enhance their competitiveness through mergers and acquisitions. Moreover, telecommunications service providers are making efforts to develop alliances and consolidation to achieve economies of scale resulting in the increasing concentration level of the Taiwan telecommunications market. The increased market concentration could adversely affect our competitive position.

We compete mainly by our leading 5G service and the design of effective tariffs. In 2021, the strategy of our mobile business was to focus on promoting the highest quality of 5G service to our customers. More customers upgrading to 5G plans will increase the possibility to raise our mobile services revenue. However, mobile network operators might offer aggressive promotional programs to attract consumers, such as unlimited low-priced data plans. We cannot assure you that we will be able to constantly raise our revenues from mobile broadband services in light of the current market landscape, which still could have a material adverse effect on our business prospects and our future results of operations.

Cable operators mainly promote high-speed internet access and TV converging solutions, and the bundled price is about 10% to 20% off ours. Furthermore, they offer low-price promotions about 40% to 60% off ours for competitors' users, and expand sales channels through cross-industry alliances, such as kbro Co., Ltd., or kbro, in alliance with momo.com Inc., and China Network System Co., Ltd., or CNS, in alliance with Far Eastern Group. Competitors may also roll out aggressive marketing plans such as bundling broadband internet and 4G/5G mobile services to stir the market. As a result, we could face increased competition for our broadband access and Multimedia on Demand, or MOD, and mobile services. If we are unable to compete successfully with the cable operators for broadband access and MOD services, our results of operations could be impacted.

Also, our over the top, or OTT, business may not be able to compete with video streaming providers such as Disney+, HBO GO, and Netflix, etc., some of which invest extensively in the contents and productions of original movies and TV series. Although in the face of such competition, we have invited other OTT providers to provide contents onto our platform, strengthened the cooperation with the suppliers of seven major Hollywood film companies and nearly 50 independent film companies, and further enhanced the exclusive cooperation with Netflix, to provide better user experience with more diverse contents, we do not rule out the possibility that our OTT customers may be attracted by other video streaming providers' massive and exclusive titles, and our OTT business growth might slow down and be limited.

As the mobile data access speeds have increased as technologies advanced, many of our customers have replaced fixed broadband services with high-speed mobile broadband services. Rates of customer growth have declined in our fixed broadband and may decline further, which may bring about further decreases in tariff rates and necessitate increases in our selling and marketing expenses. Any of these developments could adversely affect our business, financial condition and results of operations.

Our ability to deliver services may be disrupted due to a systems failure, shutdown in our networks, earthquakes or other natural disasters.

Taiwan is susceptible to earthquakes and typhoons. However, we do not carry insurance to cover damage caused by earthquakes, typhoons or other natural disasters or any resulting business interruption. Our services are currently carried through our fixed and mobile communications networks, as well as through our transmission networks consisting of optical fiber cable, microwave, submarine cable and satellite transmission links, which could be vulnerable to damage or interruptions in operations due to natural disasters. The occurrence of natural disasters could impact our ability to deliver services and have a negative effect on our results of operations. In 2021, we recorded losses on property, plant and equipment arising from natural disasters such as earthquakes and typhoons in the amount of approximately NT$3.4 million (US$0.1 million).

Our ability to deliver services could also be disrupted by systems failure, shutdown in our networks or other unanticipated problems at our facilities. In 2021, our submarine cable was broken one time, causing the suspension of our fixed line services, MOD, broadband access and mobile services in Juguang township, the southernmost of the Matsu Islands. The cable break was due to the removal of sand and gravel by a Chinese sand pumper dredger.

Furthermore, we might also be liable for losses claimed from our customers that were incurred from our failure to deliver our services. These potential liabilities could also have a material adverse effect on our results of operations.

Our long-term international bandwidth supply may be disrupted by unexpected delays for new international submarine cables.

The intensifying geopolitical conflicts have caused unexpected delays on operational and construction permit applications for several submarine cables in the South China Sea. In particular, the construction of our new submarine cable, SJC2, which connects various countries in the Asia Pacific region, has been delayed unexpectedly. The target service commencement date was pushed back to the third quarter of 2023, which is more than two years later than the original plan.

In the foreseeable future, submarine cables remain an indispensable international bandwidth solution, especially for Taiwan, and cannot be replaced by alternatives like satellite and microwave transmissions. Disruptions on new submarine cable projects will not only affect our services to individual customers but will also endanger our IDC, terrestrial links and international bandwidth sales, and eventually may have a material adverse effect on our business.

We are subject to litigation or other legal proceedings that could expose us to substantial liabilities.

We are from time to time involved in various litigation, arbitration or administrative proceedings in the ordinary course of our business. Any such claims, whether with or without merit, asserted or threatened, could be time-consuming and expensive to defend and could divert our management's attention and resources. See "Item 4. Information on the Company—B. Business Overview—Legal Proceedings." We cannot predict the outcome of these proceedings, and we cannot assure you that if a judgment is rendered against us in any or all of these proceedings, our financial condition and results of operations would not be materially and adversely affected.

Our success depends on our ability to attract and retain quality personnel.

In response to the rapidly evolving industry in which we operate, we need to continuously attract and retain skilled technical personnel, and we also depend on the continued service of our executive officers. Our business could suffer if we are unable to attract qualified personnel or lose the services of any of these personnel and cannot adequately replace them. In particular, we could not afford the loss of any of our talents since attracting a qualified talent is increasingly difficult. Moreover, any expansion by industry players may intensify the competition for qualified and experienced personnel in the Taiwan telecommunications industry. All the major three telecom operators in Taiwan, including us, are expanding the Information, Communication and Technology, or ICT, business and may increase the number of their employees as part of this expansion. In addition to telecom operators, some computer design companies and manufacturers are also expanding their business into this area and have been recruiting information technology related employees as well. We cannot assure you that we will be able to successfully attract and retain new information technology related employees. We may also need to increase employee compensation levels to attract and retain personnel, which in turn could result in an increase in our operating costs. We cannot assure you that the loss of the services of any of these personnel would not disrupt our business and operations and materially and adversely affect the quality of our services and harm our reputation.

We may not realize the benefits we expect from our investments, which may materially and adversely affect our business, financial condition, results of operations and prospects.

We have made significant capital investments in our network infrastructure and information technology systems. To continue developing our business and offer new and more sophisticated services, we intend to continue to invest in different areas and in new technologies. The launch of new and commercially viable products and services is important to the success of our business. We expect to continue making substantial capital expenditures to further develop our range of services and products.

Commercial acceptance by consumers of the new and more sophisticated services we offer may not occur at the rate or level expected, and we may not be able to successfully adapt these services to effectively and economically meet our customers' demands, thus impairing the expected return from our investments.

We cannot assure you that services enabled by the new technologies we are implementing, such as 5G, IDC, PSTN migration, international submarine cables, Internet of Things, or IoT, Software-Defined Networking, or SDN, Network Functions Virtualization, or NFV, LTE WLAN Aggregation, or LWA, License Assisted Access, or LAA, Voice over LTE, or VoLTE, Wi-Fi Calling, Artificial Intelligence, or AI, Augmented Reality, or AR, Virtual Reality, or VR, Multi-access Edge Computing, or MEC, Open Radio Access Network, or O-RAN, will be accepted by the public to the extent required to generate an acceptable rate of return. In addition, we could face the risk of unforeseen complications in the deployment of these new services and technologies, and we cannot assure you that we will not exceed our estimate of the necessary capital expenditure to offer such services. New services and technologies may not be developed and/or deployed according to expected schedules or may not achieve commercial acceptance or be cost-effective. We have also purchased equipment and technology infrastructure to establish our 5G network from suppliers across the globe, including Europe.

The failure of any of our services to achieve commercial acceptance could result in additional capital expenditures or a reduction in profitability to the extent that we are required under applicable accounting standards to recognize a charge for impairment of assets. Any such charge could materially and adversely affect our financial condition and results of operations. We recognized an impairment loss for investment properties, property, plant and equipment as well as intangible assets in the past. In 2021, we concluded that the recoverable amount representing the fair value less costs to sell of investment properties was higher than the carrying amount. Therefore, we recognized a reversal of impairment loss of NT$83.0 million (US$3.0 million) for investment properties and the amount was recognized only to the extent of impairment losses that had been recognized in prior years. In 2021, we evaluated and determined that the recoverable amount of the certain right-of-use assets was nil and recognized an impairment loss of NT$420 million (US$15.2 million) as a result.

In 2021, our subsidiary, Senao International Co., Ltd., or SENAO, evaluated the goodwill that arose in the acquisition of Youth Co., Ltd. and its subsidiaries, or Youth, and concluded that the recoverable amount of the goodwill was lower than the carrying value and recognized an impairment loss on intangible assets of NT$29.0 million (US$1.0 million).

Furthermore, we cannot assure you that we will be able to continue to maintain control of and consolidate the results of operations of our minority-owned subsidiaries. For example, we consolidate the results of operations of our subsidiary SENAO, because we have remained in control over SENAO’s relevant activities and have control over the governance of the entity. Please refer to Note 3 and Note 14 to our consolidated financial statements included elsewhere in this annual report for details of the relationship between SENAO and its parent company. We cannot assure you that we will be able to continue maintaining control over SENAO’s relevant activities. If we lose control of our minority-owned subsidiary, we will no longer be able to consolidate the results of operations of such subsidiary, which could adversely affect our consolidated results of operations and ability to meet the operating results guidance that we have projected.

We may also make equity investments in companies from time to time, but we cannot assure you of their profitability, and whether any losses related to our equity investments will not have a material adverse effect on our financial condition or results of operations. For example, we invested NT$4.19 billion in Next Commercial Bank Co., Ltd., or NCB in 2020. Though the bank serves as a pivotal strategic investment for our Company’s Fintech strategy, in the long run, it is still at an early stage and has yet to generate profits.

Changes in technology may render our current technologies obsolete or require us to obtain licenses for introducing new services or make substantial capital investments, and our failure to obtain financing of which or to successfully manage our liquidity and cash flows could have an adverse impact on our business, results of operations and financial conditions.

The telecommunications industry in Taiwan has been characterized by rapid increases in the diversity and sophistication of the technologies and services offered. As a result, we expect that we will need to constantly upgrade our telecommunications technologies and services in order to respond to competitive industry conditions and customer requirements. Developments of new technologies have rendered some less advanced technologies unpopular or obsolete. If we fail to develop, or obtain timely access to, new technologies and equipment, or if we fail to obtain the necessary licenses to provide services using these new technologies, we may lose our customers and market share and become less profitable.

In addition, the cost of implementing new technologies, upgrading our networks or expanding capacity could be significant. In particular, we have made and will continue to make substantial capital expenditures in the near future in order to effectively respond to technological changes, such as the continued expansion of our fiber optic networks and mobile broadband networks. To meet the increasingly robust high-bandwidth requirements of digital convergence services, we continue to expand construction of fiber optic networks, including passive optical networks, or PONs, and optical distribution networks, or ODNs. After we obtained 5G mobile broadband services spectrum in 3.5 GHz and 28 GHz frequency bands, we started to construct our 5G mobile broadband network. To the extent these expenditures exceed our cash resources, we have already sought additional debt or equity financing. Our ability to obtain additional financing will depend on a number of factors. These factors include our financial conditions, results of operations, cash flows and the prevailing market conditions in the domestic and international telecommunications industry, the cost of financing and conditions in the financial markets, and the issuance of relevant government and other regulatory approvals. Furthermore, failure to comply with covenants in our debt documents or repay debts when due may negatively affect our credit ratings, which will cause our financing costs to increase and weaken our fundraising capabilities, further affecting our liquidity position and financial conditions. On May 6, 2020, our board of directors authorized the issuance of domestic unsecured corporate bonds with an aggregate principal amount of NT$30.0 billion, which could be issued at once or separately within one year after the date. As of December 31, 2021, we had issued unsecured corporate bonds totaling NT$27.0 billion (US$1.0 billion). The net proceeds were used primarily for corporate development. On January 25, 2022, our board of directors further authorized the issuance of domestic unsecured corporate bonds with an aggregate principal amount of NT$10.0 billion, which could be issued at once or separately within one year. In March 2022, we have issued sustainability bond (unsecured corporate bond) totaling NT$3.5 billion, the proceeds of which are required to be used for investments in environmental sustainability and social development. Any inability to obtain the funding for our capital expenditures on commercially acceptable terms could jeopardize our expansion plans and materially and adversely affect our business prospects and future results of operations.

If new technologies adopted by us do not perform as expected, or if we are unable to effectively deliver new services based on these technologies in a commercially viable manner, our revenue growth and profitability will decline.

We are constantly evaluating new growth opportunities in the broader telecommunications industry. Some of these opportunities involve new services for which there are no proven markets, and may not develop as expected. Our ability to deploy and deliver these services will depend, in many instances, on new but unproven technologies. These new technologies may not perform as expected or generate an acceptable rate of return. In addition, we may not be able to successfully develop new technologies to effectively and economically deliver these services, or be able to compete successfully in the delivery of telecommunications services based on new technologies. In the 5G era, there could be more services beyond that of standard operators by delivering services via a B2B2X model, which is substantially dependent on the availability of applications and devices that third-party developers are developing. If we are unable to deliver commercially viable services based on the new technologies that we adopt, our financial condition and results of operations may be materially and adversely affected. In addition, we may need to cooperate with certain third parties to deliver these new services. To the extent that these third parties fail to perform their obligations or that we fail to thoroughly verify their qualifications and credentials, our ability to deliver these services or our financial condition and results of operations may be materially and adversely affected.

As an internet service provider, we may not be able to protect our customers and their information from cyber attacks, nor protect our services from disruptions due to cybersecurity breaches.

Driven by emerging technologies (including 5G applications, IoT, AI and cloud services), cybersecurity threats have evolved into multi-faceted mixed attacks. Any cybersecurity incident or privacy leakage will damage customers' rights and cause the Company penalties and financial losses. In addition, malware attacks, which are often imbedded into supply chain software, have become more frequent and diverse, and would adversely impact business services or privacy leakage.

The Cyber Security Management Act came into force on January 1, 2019. According to the Act, a critical infrastructure provider shall satisfy the requirements of the cybersecurity responsibility level, to amend and implement the cybersecurity maintenance plan. The "Administration Regulations of Cyber Security on Telecommunications Business", which was promulgated pursuant to the "Telecommunications Management Act", was enforced on July 1, 2020. According to the Regulations, telecommunications enterprises shall establish the cyber security maintenance plan and implement it accordingly. If we fail to comply with such requirements, we may be subject to administrative penalties. We may suffer negative consequences, such as remedial costs, increased cybersecurity protection costs, lost revenues, litigation and reputational damage due to cyber attacks. See "Item 4. Information on the Company—B. Business Overview—Cybersecurity and Personal Information Protection."

Our largest stockholder may take actions that conflict with our public stockholders' best interests.

As of December 31, 2021, our largest shareholder, the government of the ROC, through the MOTC, owned approximately 35.29% of our outstanding common shares. Accordingly, the government, through its control over our board, as all non-independent board members were appointed by the MOTC, may continue to have the ability to control our business, including matters relating to:

- any sale of all or substantially all of our assets;
- the approval of our annual operation and projects budget;
- the composition of our senior management;
- the timing and distribution of dividends;
- the election of a majority of our directors; and
- our business activities and direction.

We cannot assure you that our largest shareholder will not take actions that impair our ability to conduct our business competitively or conflict with the best interests of our public stockholders.

Actual or perceived health risks related to mobile handsets and base stations could lead to decreased mobile service usage and difficulties in increasing network coverage and could expose us to potential liability.

According to some published reports, the electromagnetic signals from mobile handsets and cellular base stations may pose health risks or interfere with the operation of electronic equipment. Although the findings of those reports are disputed, actual or perceived risks of using mobile communications devices or of cellular base stations could have a material adverse effect on mobile service providers, including us. For example, our customer base could be reduced, our customers may reduce their usage of our mobile services, we could encounter difficulties in obtaining sites for additional cellular base stations required to expand our network coverage or we may be requested to reduce the number of existing cellular base stations. As a result, our mobile services business may generate less revenue and our financial condition and results of operations may be materially and adversely affected. In addition, we could be exposed to potential liability for any health problems caused by mobile handsets and base stations.

Investor confidence in us may be adversely impacted if we or our independent registered public accountants are unable to attest to or express an unqualified opinion on the effectiveness of our internal control over financial reporting.

We are subject to the reporting requirements of the SEC. The SEC, as directed by Section 404 of the U.S. Sarbanes-Oxley Act of 2002, adopted rules requiring U.S. public companies to include a report of management on our internal control over financial reporting in their annual reports that contain an assessment by management of the effectiveness of our internal control over financial reporting. The effectiveness of our internal control over financial reporting has been audited by Deloitte & Touche, an independent registered public accounting firm, which has also audited our consolidated financial statements for the year ended December 31, 2021. Deloitte & Touche has issued an attestation report on the effectiveness of our internal control over financial reporting in accordance with the standards of the Public Company Accounting Oversight Board (United States). See “Item 15. Controls and Procedures—Attestation Report of the Registered Public Accounting Firm.”

While the management report included in this annual report concluded that our internal control over financial reporting was effective, we cannot assure you that our management will be able to conclude that our internal control over financial reporting is effective in future years. If in future years we fail to maintain effective internal control over financial reporting in accordance with the Sarbanes-Oxley Act, we could suffer a loss of investor confidence in the reliability of our consolidated financial statements, which in turn could negatively impact the trading price of our ADSs, and could result in lawsuits being filed against us by our stockholders or otherwise harm our reputation.

If we fail to maintain a good relationship with our labor unions, work stoppages or labor unrest could occur and the quality of our services as well as our reputation could suffer.

In accordance with the articles of association of Chunghwa Telecom Workers’ Union, except for the chief manager of each department, most of our employees are members of our principal labor union, the Chunghwa Telecom Workers’ Union. Since our incorporation in 1996, we have experienced disputes with our labor unions on such issues as employee benefits and retirement benefits in connection with our privatization as well as the right to protest. Despite having taken measures to improve relations, increase cooperation and ensure mutual benefit with our labor unions, such as increasing channels of communications by holding periodic labor resource review meetings and guaranteeing our labor unions a seat on our board of directors, we cannot assure you that we will be able to maintain a good relationship with our labor unions. Any deterioration in our relationship with our labor unions could result in work stoppages, strikes or threats to take such an action, which could disrupt our business and operations, materially and adversely affect the quality of our services and harm our reputation.

Any economic downturn or decline in the growth of the population in Taiwan may materially and adversely affect our financial condition, results of operations and prospects.

We conduct most of our operations and generate most of our revenues in Taiwan. Any slowdown in global economic growth, a decline in the Taiwan economy or a decrease in the growth of the population in Taiwan may materially and adversely affect our financial condition, results of operations and prospects. In particular, there have been concerns over the potential global economic slowdown, disputes between the United States and Mainland China, the COVID-19 pandemic, and global climate change issues, all of which could cause turbulence in the international and Taiwan's financial markets and the global technology industries.

Furthermore, Taiwan's economy is highly dependent on the technology industry. Although we have adopted a variety of measures to mitigate risks associated with the technology industry, any downturn in the global technology industry, including but not limited to, global semiconductor chip supply shortage, global supply chain disruption, interest rate fluctuation, inflation or deflation and changes in economic, fiscal and monetary policies in major economies, may have a material adverse effect on Taiwan's economy, which in turn, could adversely affect the demand for our products and services. There have also been concerns over the tension, armed conflicts, wars, civil unrest and geopolitical uncertainty in Russia, Ukraine, the Middle East, Asia Pacific (particularly Taiwan, Hong Kong, the South China Sea, and North Korea) and the Central Asia region, which has resulted or could result in higher volatility on oil prices and capital markets and in increasing costs of cybersecurity and network maintenance; the economic slowdown in Mainland China and the United States could also have a material adverse effect on economies around the world.

As our business is dependent on economic growth, any uncertainty or further deterioration in economic conditions could have a material adverse effect on our financial condition and results of operations. We cannot assure you that economic conditions in Taiwan will continue to improve in the future or that our business and operations will not be materially and adversely affected by deterioration in Taiwan's economy.

We face substantial political risks associated with doing business in Taiwan, particularly due to domestic political events and the tense relationship between the ROC and the People's Republic of China, which could adversely affect our financial condition and results of operations.

Our principal executive offices and substantially all of our assets are located in Taiwan, and substantially all of our revenues are derived from our operations in Taiwan. Accordingly, our business, financial condition and results of operations and the market price of our common shares and the ADSs may be affected by changes in ROC governmental policies, taxation, inflation or interest rates and by social instability and diplomatic and social developments in or affecting Taiwan, which are outside of our control. Taiwan has a unique international political status. Since 1949, Taiwan and Mainland China have been separately governed. The People's Republic of China, or PRC, claims that it is the sole government in China and that Taiwan is part of China.

In addition, the PRC government has refused to renounce the use of military force to gain control over Taiwan. Past developments in relations between the ROC and the PRC have on occasion depressed the market prices of the securities of companies in the ROC. Relations between the ROC and the PRC and other factors affecting military, political or economic conditions in Taiwan could materially and adversely affect our financial condition and results of operations, as well as the market price and the liquidity of our securities. In addition, the complexities of the relationship between the ROC and PRC require companies involved in cross-strait business operations to carefully monitor their actions and manage their relationships with both ROC and PRC governments. We cannot assure you that we will be able to successfully manage our relationships with the ROC and PRC governments for our cross-strait business operations, which could have an adverse effect on our ability to expand our business and conduct cross-strait business operations.

Any outbreak of contagious diseases, in particular the COVID-19 pandemic, may materially and adversely affect our business and operations, as well as our financial condition and results of operations.

Any outbreak of contagious diseases, such as the COVID-19, influenza, Zika virus, dengue fever or Ebola virus, may disrupt our ability to adequately staff our business and may generally disrupt our operations. If any of our employees is suspected of having contracted any contagious disease, we may under certain circumstances be required to implement a work-from-home policy or quarantine such employees and the affected areas of our premises; as a result, we may have to temporarily suspend part or all of our operations. For example, the COVID-19 pandemic may impact the health of our employee base, and in order to operate during the pandemic, we have implemented a work-from-home policy to protect our employees and have transitioned our employees to work remotely. We have also been affected by global supply chain disruption due to the impact of the COVID-19 pandemic. Together, these have led to substantial increases in the costs of our supply chain, mainly shipping containers, which we rely on to import our equipment. We have been taking, and plan to continue to take, various actions to allow us to navigate through the global supply chain disruption. These actions include, but are not limited to, obtaining new third party vendors for shipping containers, postponing or cancelling some or all of our product launches, reducing fixed costs and increasing our inventory on-hand to ensure products are available on time to sell. The COVID-19 pandemic affects the global economy, resulting in economic contraction and travel restrictions which cause the decrease in our roaming revenue. In addition, the pandemic affects the global production capacity and the supply chain of handsets, which leads customers to extend the replacement cycle. Therefore, our revenues generated from handset sales and mobile services may not achieve our original expectations. As for emerging services, lockdowns due to the COVID-19 pandemic might lead to difficulty in mobility, lacking labor, project delays or order-taking cancellations. Furthermore, any outbreak may restrict the level of economic activity in affected regions, including Taiwan, which may adversely affect our business and prospects. As a result, we cannot assure you that any outbreak of contagious diseases would not have a material adverse effect on our financial condition and results of operations.

Our operation may be interrupted, and our expansion may be limited, by power or utility shortage.

Our operation requires a continual supply of utilities such as electricity and water. Interruptions of electricity or water supply could result in temporary shutdowns of our operation. We may from time to time suffer power outages or surges in Taiwan caused by difficulties encountered by the public utility, or other power consumers on the same power grid. Some of these have resulted in interruptions to our operations. Any major suspension or termination of electricity could significantly harm our business, results of operations and financial conditions. If we are unable to secure reliable and uninterrupted supply of electricity in Taiwan, our services may be interrupted. Furthermore, we may suffer from a shortage of water in Taiwan, and we may need to incur additional costs and expenses to respond to such shortages in order to maintain our operations and services. Such incremental costs may affect our profitability and results of operations.

Organizational transformation may adversely affect our results of operations.

In January 2022, we introduced an ongoing organizational transformation to enhance our competitiveness and improve our longer-term operating results. We have realigned our organizational structure to operate as a customer-centric organization and have rearranged our management team and our operational activities by function. If the process of our organizational transformation cannot be successfully implemented, these transformation efforts may not prove successful and could affect our results of operations. In addition, we may not realize, in full or in part, the anticipated benefits, savings and improvements in our cost structure from our organizational transformation efforts due to unforeseen difficulties, delays or unexpected costs. The results of our efforts will also not be known until sometime in the future. Successful execution of our organizational transformation requires sustained management focus, organization, and coordination over time, as well as success in maintaining employee morale and business relationships. If we are unable to execute our organizational transformation successfully, our business, financial positions, results of operations, and cash flows could be adversely affected. After the organizational transformation, we may also be exposed to legal risks such as labor disputes, rulings or lawsuits filed by labor unions.

Stockholders may have more difficulty protecting their interests under the laws of the ROC than they would under the laws of the United States.

Our corporate affairs are governed by our Articles of Incorporation, the Telecommunications Act, and, starting from September 30, 2020, the TMA, and by the laws governing corporations incorporated in the ROC. See "—Extensive regulation of our industry may limit our flexibility to respond to market conditions and competition, and our business may suffer." The rights of stockholders and the responsibilities of management and the members of the board of directors of Taiwan companies are different from those applicable to a corporation incorporated in the United States. For example, controlling or major stockholders of Taiwan companies do not owe fiduciary duties to minority stockholders. As a result, holders of our common shares and ADSs may have more difficulties in protecting their interests in connection with actions taken by our management or members of our board of directors than they would as public stockholders of a United States corporation.

Our actual financial results may differ materially from our published guidance.

Starting in 2013, we continued to voluntarily publish our operating results guidance on an annual basis in accordance with the Taiwan IFRSs. We may from time to time update our operating results guidance after evaluating the effects of any changes to the estimates and assumptions that we used to calculate our projections of our operating results. Our projections are based on a number of estimates and assumptions that are inherently subject to significant uncertainties and contingencies, including the risk factors described in this annual report. In particular, our projections are forward-looking statements that are necessarily speculative in nature, and it can be expected that one or more of the estimates on which the projections were based will not materialize or will vary significantly from actual results, and such variances will likely increase overtime. Although our revenue, operating income, net income and EPS exceeded our expectations in 2021, our financial results will depend on future developments, which are highly uncertain and cannot be predicted.

Our results of operations and financial condition under Taiwan IFRSs may differ materially from our reported results of operations and financial condition under IFRSs.

While we have adopted Taiwan IFRSs for ROC reporting purposes, we adopt IFRSs for certain filings with the SEC, including our annual reports on Form 20-F. Taiwan IFRSs differs from IFRSs in certain significant respects, including to the extent that any new or amended standards or interpretations applicable under IFRSs may not be timely endorsed by the FSC. Furthermore, the dividends for 2021 that are expected to be declared at our 2022 annual general stockholders' meeting are calculated based on Taiwan IFRSs. It is difficult for us to determine the differences between Taiwan IFRSs and IFRSs on our financial statements as any new or amended standards or interpretations applicable under IFRSs may not be timely endorsed by the FSC.

Risks Relating to Ownership of Our ADSs and Common Shares

The value of your investment may be reduced by future sales of our ADSs or common shares by us, by the government of the ROC or by other stockholders.

The government may continue to sell our common shares. Sales of substantial amounts of ADSs or common shares by the government or any other stockholder in the public market, or the perception that future sales may occur, could depress the prevailing market price of our ADSs and common shares.

The market value of your investment may fluctuate due to the volatility of, and government intervention in, the Taiwan securities market.

Our common shares are traded on the Taiwan Stock Exchange, or the TWSE, which has a smaller market capitalization and is more volatile than the securities markets in the United States and many European countries. The market value of our ADSs may fluctuate in response to the fluctuation of the trading price of our common shares on the TWSE. The TWSE has experienced substantial fluctuations in the prices and trading volumes of listed securities, and there are currently limits on the range of daily price movements. In 2021, the TWSE Index reached a low of 14,902.03 on January 4, 2021, and peaked at 18,248.28 on December 29, 2021. On April 6, 2022, the TWSE Index closed at 17,522.50. The TWSE has experienced certain problems, including market manipulation, insider trading and payment defaults. The recurrence of these or similar problems could have a material adverse effect on the market price and liquidity of the securities of Taiwan companies, including our ADSs and common shares, in both the domestic and the international markets.

In response to declines and volatility in the securities markets in Taiwan, the government of the ROC formed the National Financial Stabilization Fund to support these markets through open market purchases of shares in Taiwan companies from time to time. The details of the transactions of the National Financial Stabilization Fund have not been made public. In addition, the government's Labor Insurance Fund and other funds associated with the government have in the past purchased, and may from time to time purchase, shares of Taiwan companies listed on the TWSE or other markets. As a result of these activities, the market price of common shares of Taiwan companies may have been and may currently be higher than the prices that would otherwise prevail in the open market. Market intervention by government entities, or the perception that such activity is taking place, may take place or has ceased, may cause sudden movements in the market prices of the securities of Taiwan companies, which may affect the market price and liquidity of our common shares and ADSs.

We may be sanctioned or the network establishment approval granted to us may be abolished for violations of limits on foreign ownership of our common shares, and these limits may materially and adversely affect our ability to obtain financing.

According to the TMA effective from July 1, 2020 (excluding certain articles regarding frequency allocation were set effective from November 1, 2020), the total amount of our shares directly held by foreigners shall not exceed 49%, and the total amount of our shares directly and indirectly held by foreigners shall not exceed 60%. As of April 6, 2022, foreign direct holdings of our outstanding share capital is at 16.7%. If we fail to comply with the applicable foreign ownership limitations, the network establishment approval granted to us may be abolished. We cannot predict the manner in which the NCC will exercise its authority over us in the case of a violation, or whether the NCC will lower the foreign ownership cap at any time.

If we are deemed to be in violation of our foreign ownership limitations, any consequences arising from such violation may materially and adversely affect us. Moreover, since we are unable to control ownership of our common shares or ADSs representing our common shares, and we have no ability to stop transfers among stockholders, or force particular stockholders to sell their shares, we may be subject to monetary fines, or the network establishment approval granted to us may be abolished, even if there is no fault of our own. In that event, our business could be disrupted, our reputation could be damaged and the market price of our ADSs and common shares could decline. These limitations may also materially and adversely affect our ability to obtain adequate financing to fund our future capital requirements or to obtain strategic partners, and alternate forms of financing may not be available on terms favorable to us or at all.

Restrictions on the ability to deposit our common shares into our ADS program may adversely affect the liquidity and price of the ADSs.

The ability to deposit our common shares into our ADS program is restricted by ROC law, under which no person or entity, including you and us, may deposit our common shares into our ADS program unless the Securities and Futures Bureau has not objected within a prescribed period following the filing with it of an application to do so, except for the deposit of the common shares into our ADS program and for the issuance of additional ADSs in connection with:

- distribution of share dividends or free distribution of our common shares;
- exercise of preemptive rights of ADS holders applicable to the common shares evidenced by our ADSs in the event of capital increases for cash; or
- purchases of our common shares in the TWSE by the investor directly or through the depositary and delivery of such common shares or delivery of our common shares held by such investors to the custodian for deposit into our ADS program, subject to the following conditions: (a) the depositary may accept deposit of those shares and issue the corresponding number of ADSs with regard to such deposits only if the total number of ADSs outstanding after the deposit does not exceed the number of ADSs previously approved by the Securities and Futures Bureau, plus any ADSs issued pursuant to the events described above; and (b) this deposit may only be made to the extent previously issued ADSs have been cancelled.

As a result of the limited ability to deposit common shares into our ADS program, the prevailing market price of our ADSs on the New York Stock Exchange, or NYSE, may differ from the prevailing market price of the equivalent number of our common shares on the TWSE.

You will be more restricted in your ability to exercise voting rights than the holders of our common shares, which may diminish your influence over our corporate affairs and may reduce the value of your ADSs.

Holders of American depositary receipts evidencing our ADSs may exercise voting rights with respect to the common shares represented by these ADSs only in accordance with the provisions of our deposit agreement. The deposit agreement provides that, upon receipt of notice of any meeting of holders of our common shares, the depositary bank will, as soon as practicable thereafter if requested by us in writing, mail to ADS holders the notice of the meeting sent by us, voting instruction forms and a statement as to the manner in which instructions may be given by the holders.

Generally, ADS holders will not be able to exercise voting rights attached to the underlying securities on an individual basis. Under the deposit agreement, the voting rights attached to the underlying securities must be exercised as to all matters subject to a vote of stockholders collectively in the same manner, except in the case of an election of directors. The election of our directors is by means of cumulative voting. In the event the depositary does not receive voting instructions from ADS holders in accordance with the deposit agreement, our chairman or his or her designee will be entitled to vote the common shares represented by the ADSs in the manner he or she deems appropriate at his or her discretion, which may not be in your interest.

Your right to participate in any future rights offerings may be limited, which may cause dilution to your holdings.

We may from time to time distribute rights to our stockholders, including rights to acquire our securities. Under the deposit agreement, the depositary will not offer you those rights unless the distribution to ADS holders of both the rights and any related securities are either registered under the U.S. Securities Act of 1933, as amended, or the Securities Act, or exempt from registration under the Securities Act. We are under no obligation to file a registration statement with respect to any such rights or securities or to endeavor to cause such a registration statement to be declared effective. Moreover, we may not be able to establish an exemption from registration under the Securities Act. Accordingly, you may be unable to participate in our rights offerings and may experience dilution in your holdings.

If the depositary is unable to sell rights that are not exercised or not distributed or if the sale is not lawful or reasonably practicable, it will allow the rights to lapse, in which case you will receive no value for these rights.

Changes in exchange controls that restrict your ability to convert proceeds received from your ownership of ADSs may have an adverse effect on the value of your investment.

Your ability to convert proceeds received from your ownership of ADSs depends on existing and future exchange control regulations of the ROC. Under the current laws and regulations of the ROC, an ADS holder or the depositary, without obtaining further approvals from the Central Bank of the ROC (Taiwan) or any other governmental authority or agency of the ROC, may convert NT dollars into other currencies, including U.S. dollars, in respect of:

- the proceeds of the sale of common shares represented by ADSs or received as share dividends with respect to the common shares and deposited into the depositary receipt facility; and
- any cash dividends or distributions received from the common shares represented by ADSs.

In addition, the depositary may also convert into NT dollars incoming payments for purchases of common shares for deposit in the depositary receipt facility against the creation of additional ADSs. If you withdraw the common shares underlying your ADSs and become a holder of our common shares, you may convert into NT dollars subscription payments for rights offerings. The depositary may be required to obtain foreign exchange approval from the Central Bank of the ROC (Taiwan) on a payment-by-payment basis for conversion from NT dollars into foreign currencies of the proceeds from the sale of subscription rights of new common shares. Although it is expected that the Central Bank of the ROC (Taiwan) will grant approval as a routine matter, required approvals may not be obtained in a timely manner, or at all.

Under the ROC Foreign Exchange Control Law, the Executive Yuan of the ROC may, without prior notice but subject to subsequent legislative approval rendered within ten days from such imposition, impose foreign exchange controls or other restrictions in the event of, among other things, a material change in domestic or international economic conditions which might threaten the stability of the domestic economy in Taiwan.

You are required to register with the TWSE and appoint several local agents in Taiwan if you withdraw common shares from our ADS facility and become our stockholder, which may make your ownership burdensome.

If you are a non-ROC person and wish to withdraw common shares represented by your ADSs from our ADS facility and hold those common shares, you are required under the current laws and regulations of the ROC to appoint an agent, also referred to as a tax guarantor, in the ROC for filing tax returns and making tax payments. A tax guarantor must meet certain qualifications set by the Ministry of Finance of the ROC and, upon appointment, becomes a guarantor of your ROC tax obligations. If you wish to repatriate profits derived from the sale of withdrawn common shares or cash dividends or interest on funds derived from the withdrawn common shares, you will be required to submit evidence of your appointment of a tax guarantor and the approval of the appointment by the ROC tax authorities. You may not be able to appoint and obtain approval for a tax guarantor in a timely manner.

In addition, under the current laws of the ROC, you will be required to be registered as a foreign investor with the TWSE for making investments in the ROC securities market prior to your withdrawal and holding of common shares represented by the ADSs. You will be required to appoint a local agent in Taiwan to, among other things, open a securities trading account with a local securities brokerage firm and a bank account to remit funds, exercise stockholders' rights and perform other functions as holders of ADSs may designate. You must also appoint a local bank to act as custodian for handling confirmation and settlement of trades, safekeeping of securities and cash proceeds and reporting and declaration of information. Without the relevant registration and appointment of the local agent and custodian and the opening of a securities trading account and bank account, you will not be able to hold, subsequently sell or otherwise transfer our common shares withdrawn from the ADS facilities on the TWSE.

ITEM 4. INFORMATION ON THE COMPANY

A. History and Development of the Company

Our legal and commercial name is Chunghwa Telecom Co., Ltd. We were officially established on July 1, 1996 as part of the privatization efforts by the government of the ROC and operate under the Statute of Chunghwa Telecom Co., Ltd. Prior to our formation, we were operating as a business unit of the Directorate General of Telecommunications, which was the predecessor of the NCC. The common shares of the Company have been listed on the TWSE under the trading code "2412" since October 2000 and its ADSs have been listed on the NYSE under the symbol "CHT" since July 2003. We were privatized as a result of a secondary ADS offering and concurrent domestic auction of our common shares on August 12, 2005, as the ownership by the government of the ROC was reduced to less than 50%. The privatization has enabled us to develop our business and respond to changing market conditions more rapidly and efficiently. Today, we are the largest full telecommunication service provider in Taiwan. Our principal executive offices are located at 21-3 Hsinyi Road, Section 1, Taipei 10048, Taiwan, ROC, and our telephone number is (886) 2-2344-5488. Our website address is https://www.cht.com.tw. The information on our website does not form a part of this annual report. Our agent for service of process in any suit or proceeding arising out of or relating to our shares, ADSs, American depository receipt, or ADR, and deposit agreement in the United States is CT Corporation System, 111 8th Avenue, 13th Floor, New York, NY 10011.

We are the largest telecommunications service provider in Taiwan and one of the largest in Asia in terms of revenue. As an integrated telecommunications service provider, our principal services include:

- domestic fixed communications services, including local and domestic long distance telephone services, broadband access services, local and domestic long distance leased line services, Wi-Fi services, MOD services, domestic data services, ICT projects and other domestic services;
- mobile communications services, including mobile voice and data services, sales of mobile handsets, ICT projects and other mobile services;
- internet services, including data communication services, such as HiNet and HiLink, application value-added services, or VAS, such as Wi-Fi mesh network, Smart Speaker, Big Data, cybersecurity, IDC, cloud and services provided to the government;
- international fixed communications services, including ILD telephone services, international leased line services, international data services, satellite services, ICT projects and other international services; and
- other services, including non-telecom services.

We enjoy leading positions across a number of areas in terms of both revenues and customers. We are Taiwan's largest fixed communications services provider as well as Taiwan's largest mobile communications service provider. We are also Taiwan's largest broadband access and internet service provider. As for the IPTV service, our MOD service is the largest video platform in Taiwan in terms of the number of customers. In 2021, our revenues were NT$210.5 billion (US$7.6 billion), our consolidated net income was NT$37.0 billion (US$1.3 billion) and our basic earnings per share was NT$4.59 (US$0.17).

In 2021, we made capital expenditures totaling NT$35.3 billion (US$1.3 billion). See "Item 5. Operating and Financial Review and Prospects—B. Liquidity and Capital Resources—Capital Expenditures" for a detailed discussion of our capital expenditures.

Competitive Strengths

We believe that our primary competitive strengths are:

- our position as an integrated, full-service telecommunications provider as well as ICT service provider and our premium brand and broad customer base in Taiwan; and
- our capital resources and technology.

We are an integrated full-service telecommunications provider as well as ICT service provider and have premium brand and broad customer base in Taiwan.

We are the largest telecommunications service provider in Taiwan with a leading position in fixed communications services, mobile communications services, internet services, and multimedia services. We are also a major ICT service provider in areas such as cybersecurity, cloud, IoT, IDC and Big Data analysis.

Broad range of communications products and services. We are confident with our ability to provide an attractive and comprehensive range of both telecommunications services and ICT total solutions to our business and residential customers. In addition, we are able to offer innovative customized ICT services and competitive tariff packages to deliver customer-centric services.

Broad network coverage. In order to provide higher bandwidth services for our customers, we have been constructing our fiber to the x, or FTTx, network since 2003. We have successfully migrated many of our customers to higher speed FTTx service. As of December 31, 2021, network coverage of FTTx with speeds of 1 Gbps and higher was approximately 88.0%. In addition, our mobile communications network provides nationwide coverage. Our large mobile spectrum allocation, together with our extensive network coverage, positions us well for the continued expansion of our mobile services in Taiwan. We are also continuing to build our Wi-Fi network to offload mobile network capacity in residential areas and public areas where subscriber density and usage is high, such as urban areas, airports and convenience stores. We aim to provide seamless broadband connections to better serve our customers. To facilitate working from home arrangement during the outbreak of the COVID-19 pandemic, we launched fiber optic internet service with speeds up to 2 gigabits per second on both downloading and uploading in 2021.

Brand awareness, distribution channels and customer service. Our brand "Chunghwa Telecom" has a reputation for quality and reliability. We serve our large customer base through our extensive customer service network in Taiwan. See "—B. Business Overview—Marketing, Sales and Distribution—Sales and Distribution." Our extensive sales and distribution channels help us attract additional customers and develop new business opportunities. We eagerly enhance user experience at different channels. We integrate our online store and offline channels, with our Big Data capability, to accelerate the development of our Online-to-Offline business. To enhance customers' online experience, we provide customized online purchase processes by leveraging our capability to analyze Big Data, and accurately analyze customer preferences and behaviors, and target different customer groups for implementing accurate marketing initiatives to improve sales success rates and reduce marketing costs. Customers can apply for various services online through websites or apps, and make queries with us in real time. We have also built logistic systems to deliver mobile handsets and smart home appliances to our customers. In addition, customers can also order online and enjoy quality services at designated offline stores to save waiting time.

In 2021, we obtained several domestic and international awards which recognized our service quality, Environmental, Social and Governance, or ESG, practices and network achievement. We have been awarded The Asset ESG Corporate Jade Award by The Asset Magazine. We have also been awarded by Capital Finance International (UK) with Best Telecom Holding Governance Asia 2021. In addition, we were recognized by Speedtest as the No.1 Mobile Speed and Coverage in Taiwan 5G Speedtest Award™ report and were the winner of Opensignal "5G Download Speed" and "Fastest 5G Upload Speed," as well as "5G Game Experience," "5G Video Experience," and "5G Voice App Experience". In the Reader's Digest Trusted Brands Awards, we have stood out and won the Platinum Award for 4G Internet Service Provider and for Phone Service in Taiwan. We were also awarded Taiwan Telecommunication Services Company, Taiwan Mobile Data Services Company, Taiwan Data Center Services Company, as well as Taiwan Private 5G Network Customer Value Leadership Award of the Year in 2021 Frost & Sullivan Best Practices Awards.

Operational expertise. Our management and employees have extensive operating experience and technical knowledge for the future growth of emerging businesses. We also believe we will continue to attract and retain high-quality information technology talents.

We have the capital resources and technology to retain our leading position.

Strong capital structure. We believe we have great financial resources in Taiwan. Our low debt-to-equity capital structure, together with our strong operating cash flows, provides us with the flexibility and resources to invest in capital-intensive and growing businesses. We started to construct our 5G base stations in the first half of 2020 and continue to enhance our existing 4G/5G mobile broadband networks, our expansion of FTTx broadband access services, IP-based MOD/OTT services, fixed-line/mobile VAS, ICT-related services and service platforms. In addition, we also deploy Narrowband-IoT and LTE Cat-M1 networks for IoT applications. We will also continue to make strategic investments in or acquire emerging growth companies to further expand our business to retain our leading position in the future. We will continue to construct facilities of data center and cloud services, and will cooperate with international public cloud service providers, including Google Cloud Platform, or GCP, Amazon Web Service, or AWS, and Microsoft Azure, to deliver hybrid cloud solutions to enterprise customers in order to be a competitive IDC and multi-cloud service provider in Taiwan. In addition, we will continue to construct new submarine cables linking the U.S.A. and Asia-Pacific region as well as expand the bandwidth of outbound connections and enhance network strengthen to attract more OTT services providers to increase their investments in Taiwan.

Advanced network technology. By the end of 2021, more than 88% of households in Taiwan can enjoy ultra-fast connectivity with our FTTH network. We will still expand FTTH network coverage of households in 2022, based on the requirement of ultra-fast connectivity service in Taiwan. In 2021, we also continued to enhance our 4G/5G mobile broadband networks. Our investment in network infrastructure places us in a position to capture a significant share of the internet and high-speed data transmission market. We have developed MEC technology and successfully launched it to the market, enabling us to maintain a market-leading position in the 5G private network.

Research and development expertise. In 2021, our research and development expenses accounted for 1.8% of our revenues. See "Item 5. Operating and Financial Review and Prospects—C. Research and Development, Patents and Licenses—Research and Development" for descriptions about areas of our research and development. We believe our focus on research and development will allow us to efficiently develop and deploy new technologies and services ahead of our competitors.

Business Strategies

Our key strategic objectives are to maintain our position as a leading integrated telecommunications services provider in Taiwan and to enhance our profit margins of ICT services by leveraging our strong sales forces and research capacity.

Consistent with our strategic objectives, we have developed the following business strategies:

Execute strategic transformation for a customer-centric and sustainable operation

In response to business model evolution in the telecommunications market and intensified competition, we have implemented a customer-centric strategic transformation plan to establish a solid foundation for further business development. Under the guiding principle of customer-centric value creation, the "Rise on Together, 2021" strategic transformation plan was carried out from 2019 to 2021. We sought to improve our competitive advantage by strengthening our core businesses, deploying emerging services, optimizing our cost structure and further enhancing fundamentals, such as next-generation networks, IT infrastructure and human resource planning.

Within the past three years, we have leveraged digitalization to upgrade service quality, enhanced subscriber numbers and revenues to make our core business turn around. For the emerging business, we have focused business development on key emerging services and industries and expanded ecosystems via strategic investment and alliances. Regarding cost optimization, we have optimized costs and expenses to establish a more stable and solid financial structure. In addition, to enhance our core competency, we have continued the upgrade of new-generation networks, commenced IT transformation, and strengthened talent acquisition to sustain future growth.

Customers-centric strategies take roots in our company, and we initiate the transformation of three business groups and three technology groups to cater to customer demands and grasp business opportunities. We also aim to establish the accountability culture in our company. Furthermore, under the promotion of ESG sustainable development, we aim to become a leader in green smart living and an enabler of digital economy. We will make the best effort to ensure the competitiveness and business growth of our company to enhance value to customers, shareholders, employees and the society.

Focus on our core strengths while expanding our scope of services to capture new growth opportunities

We endeavor to maintain our strong market position in telecommunication business and seek to expand the scope of our business beyond network services by offering service platforms and VAS to capture new opportunities and generate revenue growth, such as IoT platforms. We also continue to enhance our MOD/OTT service platform, which offers digital contents, live broadcasting and subscription video on demand, or SVoD, services.

Broadband services: We have strived to maintain our broadband market share and enjoy the increase of average revenue per user, or ARPU, for our FTTx internet services. We believe customer demands owing to digital transformation will continue and we will grasp those opportunities in the new normal. We expect to continue to offer various incentives for our FTTx customers to upgrade to 300Mbps -1Gbps or even higher speed FTTH services in 2022. We are continuing the build-out of our FTTH infrastructure, and we believe these efforts will help us maintain our competitive advantage for broadband services. A high-quality broadband network is also essential for our high-definition MOD services. By offering 4K services, we enable our customers to enjoy quality content via our MOD platform. We leverage our robust cloud infrastructure to offer IPTV/OTT services and stay abreast with international trends.

We are also committed to improving our MOD business by facilitating the overall TV operating environment, and starting from August 2019, we launched optional service packages to provide customers with self-selected channel services to focus on users' performance and provide self-selected mechanism to encourage user-centric perspectives.

We have been deepening our partnerships with content providers to offer customers attractive content and services, including introducing of exclusive high-quality 4K contents and sourcing attractive contents, among others. In addition, we leverage our advantages to enhance our video service performance and strengthen precise marketing in the competitive industry. In the meantime, with the combination of our TV+PC/NB+PAD+ mobile phone OTT content services, we aim to provide our customers with ultra-high quality package services via MOD and Hami Video, which makes our video service indispensable to consumers' daily life.

Mobile Communications: We launched 5G services on June 30, 2020. Our strategy for mobile services includes the following initiatives:

- Enhancing 5G penetration rates by accelerating 5G network construction;
- Maintaining 4G mobile broadband network quality to increase ARPU;
- Reallocating resources to guide mobile subscriptions toward high-end plans;

- Maintaining ample Wi-Fi hotspots to offer more wireless internet access service and to offload data traffic from our mobile networks; we had offered approximately 41.5 thousand Wi-Fi hotspots by the end of 2021; and
- Leveraging our 5G, LTE Cat-M1, Narrowband IoT and technology capabilities to cooperate with potential partners to explore opportunities for future 5G IoT business development.

Internet services: Our strategy for internet services is to continue to build on the success of our HiNet internet services and enhance our internet application VAS, such as Security Operation Center, or SOC, IDC and cloud services. In 2022, we will continue to promote our IDC, cloud (including Google Cloud Platform, Amazon Web Service, or AWS, and Microsoft Azure) and cybersecurity services to help our business customers decrease management costs; we will also launch new services related to AI, Big Data, Blockchain and Smart Health.

Emerging services: We continue to leverage our core telecommunication infrastructure and services to expand ICT services. Our goal is to become the Leading Provider of Smart Life and the Enabler of Digital Economy, and expand international business. In order to drive the development of various emerging ICT services, we provide high-quality platforms, cooperate with strategic partners to build an industrial ecosystem, and combine with strategic investment, mergers and acquisitions. With the strength and reliability of our technologies and services, we believe that we have the competitive advantages to continue expanding our ICT services in the future. Furthermore, we have invested in an internet-only bank, namely Next Commercial Bank Co., Ltd., or NCB, with banking, insurance and retail partners. NCB, established in January 2020, has obtained the regulatory approval of the business license in December 2021, and planned to launch its services in the first half of 2022.

Emphasize quality of service and customer satisfaction

Quality of service is critical in attracting and retaining customers and enhancing our long-term profitability. In order to continually enhance and improve the quality of our services, we have, in addition to the quality assurance function of our regular operating units, established a number of dedicated task forces to monitor our network performance. Our senior management sets our quality evaluation criteria and regularly reviews the quality of our performance.

To ensure customer loyalty and achieve customer-centric spirit with high-quality services, we consistently focus on and invest in the optimization of the entire customer journey. In terms of network quality, we constantly strive for precise expansion and create seamless coverage of the three networks, including fixed networks, mobile networks and Wi-Fi, to cater to high-speed Internet access demand. We develop new data-driven approaches to strengthen customer engagement and retention to enhance customer stickiness. Through accurate labeling and big data analytics of customer intentions, we push forward data-driven service process optimization and target customer segment marketing and caring. We also establish online and offline multiple service networks for customer service touchpoints and provide 7x24 all-around professional services and feedback channels to enhance customer experience and satisfaction.

Improve operational and cost efficiency

We continue to focus on cost control and improve our operational and cost efficiency by migrating to more advanced networks, such as electronic purchasing and sophisticated operational support systems.

Our short-term goal is to achieve customer-centric digital transformation. The important tasks that need to be completed in recent years are as follows:

- Constructing a digital transformation environment and providing business innovation services: promoting agile development, providing smart services by leveraging our AI and Big Data capability to increase the ratio of transactions on digital channels, optimizing user experience/customer experience design, leveraging automation/intellectualization to transform workflow;
- Optimizing system service efficiency and supporting business operation activities: promoting information systems into the cloud, sharing information technology resources;

- Expanding the use of information resources and effectively reducing operating costs: strengthening efficiency of resource allocation, more efficient procurements through centralization, digitalization and specialization in the process; and
- Adopting AI-integrated Interactive Voice Response, or IVR, system: providing real time conversational self-service, identifying customer intention and providing immediate assistance on a real time basis to improve customer satisfaction and reduce staff manpower.

In addition, we are undergoing a digital transformation to ensure better operational and cost efficiency. Key achievements of our digital transformation in 2021 are as follows:

- Developing a customer-centric operation system: enhancing our customer management system to improve efficiency and reduce labor cost, upgrading our corporate client management system to reduce labor hours, and building up our one-stop online store to increase services generated from our online store;
- Digitalizing our internal operations: promoting our digital services, and completing Robotic Process Automation (RPA), usage scenarios, sorting planning and development in major systems; and
- Cost optimization by cloud application: migrating projects into our public cloud to save the cost of labors, migrating systems into public cloud PoC to increase operational efficiency, and effectively reducing IT and maintenance costs by integrating our data centers, and integrating our IT technology with the customer service system to create a positive and cohesive user experience and user interface.

Our long-term goal is to optimize our capital expenditures by focusing on investing in innovative products and services with attractive return profiles. We continue the construction of our fiber-based fixed-line and mobile network to increase the network bandwidth and enhance operational efficiencies. We continue to enhance our mobile network and construct high capacity Wi-Fi/Fiber-Wireless networks to offload mobile network traffic. We will continue to leverage our core telecommunication infrastructure and services to expand the ICT business, including 5G services, IDC services, PSTN migration, international submarine cable services, cloud services, IoT, enterprise total solutions and government projects.

Expand our business through alliances, acquisitions and investments

We continuously expand our business in growth areas, such as ICT services, through alliances, acquisitions and investments. We believe that our experience, operational scale and large customer base make us an attractive ally for other service providers.

Alliances. We have formed and will continue to pursue alliances with content providers, multimedia service platform providers, customer premises equipment providers, internet portal operators and ICT solutions partners to diversify our business operations and enhance our service offerings. We cooperated with Microsoft to create AIoT Smart Ecosystem. In December 2020, we obtained AWS’s certification Managed Services Provider. In January 2021, we obtained Azure's highest-level professional certification Azure Expert Managed Services Provider and became the first telecom provider in Greater China to obtain Azure Expert MSP. In June 2021, we had officially become a Google Cloud Premier Partner and provide professional physical-virtual integrated services such as hybrid cloud to enterprises.

Acquisition and Investments. We have focused our acquisition strategy on making strategic acquisitions of companies that we believe to be fulfilled our long-term strategic goals. We have focused our investment strategy on the development of new businesses and the enhancement of our operational efficiency, especially the aspects of 5G and ICT services. Recently we have entered into the following notable transactions:

We have invested in NCB in January 2020 and obtained 41.9% of its equity interests and 6 out of 15 seats on the board of directors. NCB is planning to launch its services in the first half of 2022.

We increased our ownership interest in International Integrated Systems, Inc., or IISI, a company that provides system integration, IT solution and consultation, from 31.16% to 51.54% on July 1, 2020. Upon completion of the transaction, we gained control over IISI to develop and deepen the Fintech business and enterprise market. By the end of 2021, our holdings in IISI decreased to 51.02% because the employee stock options were exercised.

To extend our business in Southeast Asia, in 2021, we invested in Indonesia through a joint venture arrangement with local partners, aiming to explore ICT business and investment opportunities and to capitalize on the strong market potentials in this country.

For expanding 5G business in ASEAN market, we signed MOU with CAT Telecom Public Company Limited, or CAT, in December 2019, which was merged by National Telecom in January 2021, and we continue to explore the opportunity of further cooperation.

In order to integrate our mid- to long-term strategic development, in 2021, we strategically invested PChome to strengthen Fintech services and emerging digital business, and WiAdvance Technology Corporation to enhance cloud services; also, in 2022, we participated Taiwania Capital Buffalo Fund VI, L.P. to explore emerging business opportunities.

Going forward, we will focus on the digital economy and innovative businesses and may consider making other equity investments and acquisitions that we believe are complementary to our business and strategic goals. By cooperating with other companies and leveraging our advantages, we strive to gain market share in the 5G, AI IoT, or AIoT, and AR/VR business. Furthermore, we will continue to explore opportunities to strengthen our cooperation with companies in ASEAN countries, either in traditional telecommunication business and smart city ICT businesses.

Maintain focus on maximizing stockholder value

We are committed to maximizing stockholder value and intend to maintain a sustainable dividend policy. Under the ROC Company Act, companies are allowed to distribute special cash dividends from capital surplus. In addition, the accumulated legal reserve that we had set aside in previous years has amounted to the aggregate par value of our outstanding share capital. Therefore, according to relevant regulations, we are not required to appropriate profits to our legal reserve starting from 2015. With the approval of our board of directors in February 2022, our payout ratio was 99.98% in 2021 after adjusting for unappropriated earnings. See “Item 8. Financial Information—A. Consolidated Statements and Other Financial Information.”

B. Business Overview

Our Principal Lines of Business

Our core business segments are our domestic fixed communications business, mobile communications business, internet business and international fixed communications business.

Domestic Fixed Communications Business

The provision of domestic fixed communications services is one of our principal business activities. Our domestic fixed communications business includes local telephone services and domestic long distance telephone services, broadband access services, local and domestic long distance leased line services, Wi-Fi services, MOD services, and other domestic services, including ICT services. We also provide interconnection with our fixed-line network to other mobile and fixed-line operators. Our revenues from domestic fixed communications services were NT$65.7 billion and NT$69.5 billion and NT$64.8 billion (US$2.4 billion), respectively, in 2019, 2020 and 2021, representing 31.7%, 33.4% and 30.8% of our total revenue in such periods.

Local Telephone

The following table sets forth our revenues from local telephone services for the periods indicated.

	Year Ended December 31			
	2019	2020	2021	
	NT$	NT$	NT$	US$
		(in billions)		(in millions)
Local telephone revenues:				
Usage	8.5	7.8	7.4	267.2
Subscription	14.9	14.4	14.1	509.3
Interconnection	0.6	0.5	0.5	19.7
Pay telephone	0.1	0.1	0.1	3.5
Other	1.6	1.7	1.7	56.9
Total	25.7	24.5	23.8	856.6

We provide local telephone services to approximately 9.6 million customers in Taiwan. Our fixed-line network reaches virtually all homes and businesses in Taiwan. Revenues from local telephone services comprised 12.4%, 11.8% and 11.3% of our total revenues in 2019, 2020 and 2021, respectively. As of December 31, 2021, approximately 73.2% of our local telephone customers were residential customers. We are the leader of the local telephone service market, with an average subscriber market share of approximately 92.5%, 92.1% and 91.7% in 2019, 2020 and 2021, respectively.

The following table sets forth information with respect to our local telephone customers and penetration rates as of the dates indicated.

	As of December 31		
	2019	2020	2021
	(in thousands, except percentages and per household data)		
Taiwan population[(1)]	23,603	23,561	23,375
Fixed line customers:			
Residential	7,472	7,268	7,066
Business	2,691	2,629	2,583
Total	10,163	9,897	9,649
Penetration rate (as a percentage of the population)	43.1%	42.0%	41.3%
Lines in service per household	0.85	0.81	0.78

(1) Data from the Department of Population, Ministry of the Interior, ROC.

With the continued development of internet technologies, demand for local customer lines has been declining. The number of fixed-line customers decreased by 2.6% in 2020 compared to 2019 and decreased by 2.5% in 2021 compared to 2020. We attribute the decrease in fixed-line customers to a general industry-wide trend of migrating from fixed-line services to internet telephony services and voice over internet protocol, or VoIP, applications.

Minutes from local calls decreased in 2019, 2020 and 2021 due to the impact of mobile substitution and increased use of VoIP applications.

We charge our local telephone service customers a monthly fee and a usage fee. We also charge separate fees for some VAS. The monthly fees for our primary tariff plans are NT$70 for residential customers and NT$295 for business customers. Our primary peak time rate is NT$1.6 for three minutes, and our off-peak time rate is NT$1.0 for ten minutes. Our rates are the same for residential and business customers.

The following table sets forth information with respect to the average local telephone usage charge per minute for the periods indicated.

	Year Ended December 31		
	2019	2020	2021
	NT$	NT$	NT$
Average local telephone usage fee (per minute)	1.39	1.40	1.39
Growth rate (compared to the same period in the prior year)	1.5%	0.7%	-0.7%

Average per minute usage charges remained relatively stable from 2020 to 2021.

Domestic Long Distance Telephone

We provide domestic long distance telephone services in Taiwan. Total revenues from domestic long distance telephone services were NT$2.2 billion, NT$2.0 billion and NT$1.9 billion (US$0.1 billion) in 2019, 2020 and 2021, respectively, representing 1.1%, 1.0% and 0.9% of our total revenues in such periods. This decrease was mainly due to the migration to mobile services and increased use of VoIP applications. Our average market share by minutes in the domestic long distance market was approximately 82.0%, 81.6% and 82.1% in 2019, 2020 and 2021, respectively.

We provide so-called “intelligent” network services over our domestic long distance network, including toll-free calling and virtual private networks, or VPN, services and others.

Broadband Access

We provide broadband internet access through connections based on our FTTx and ADSL technologies. Our revenues from our broadband access services in 2019, 2020 and 2021 were NT$18.0 billion, NT$18.1 billion and NT$18.6 billion (US$0.7 billion), respectively. We provide broadband access services to other internet service providers that do not have their own network infrastructure, and as a result, our broadband customers also include some customers that use only our broadband data access lines and choose another provider for internet service provider, or ISP, services.

From 2019 to 2021, we continued accelerating our high-speed FTTx household coverage. We offer various promotional packages to encourage more migration of our FTTx subscribers to higher speed FTTx service. In 2021, FTTx revenue reached 95.3% of our total broadband revenue. Subscriber migration to our broadband of 300 Mbps or higher continued to increase by 45.0% year-over-year, as we continue focusing on higher speed migration.

Our subscriber market share of Taiwan’s broadband market was approximately 68.0%, 65.6% and 62.6% in 2019, 2020 and 2021, respectively.

The following table sets forth our broadband service customers as of each of the dates indicated.

	Year Ended December 31		
	2019	2020	2021
FTTx service customers (in thousands)	3,619	3,620	3,687
ADSL service customers (in thousands)	786	728	667

We have experienced competition in broadband from cable operators and other fixed-line operators. As faster wireless technologies, such as 5G and 4G LTE, have been deployed, some customers have replaced fixed broadband services with high-speed mobile broadband services. Our strategy is to continue the deployment of higher speed FTTx network so as to maintain our competitiveness.

The following table sets forth our ARPU for each of the periods indicated.

	Year Ended December 31		
	2019	2020	2021
	NT$	NT$	NT$
ARPU for broadband services per month(1)	707	724	745
ARPU for FTTx services per month(2)	778	793	812

(1) ARPU for our broadband services per month is calculated as the sum of (a) broadband access revenues for the relevant period divided by the average of the number of our broadband access customers on the first and last days of the period divided by the number of months in the relevant period and (b) HiNet ISP service revenues divided by the average of the number of HiNet ISP service subscribers on the first and last days of the period divided by the number of months in the relevant period.

(2) ARPU for FTTx services per month is calculated as the sum of (a) FTTx access revenues for the relevant period divided by the average of the number of our FTTx access customers on the first and last days of the period divided by the number of months in the relevant period and (b) HiNet FTTx ISP service revenues divided by the average of the number of HiNet FTTx ISP service subscribers on the first and last days of the period divided by the number of months in the relevant period.

Our overall broadband ARPU increased in 2020 and 2021 mainly due to the higher speed migration and the increasing demand of working from home resulting from the COVID-19 pandemic.

Leased Line Services—Local and Domestic Long Distance

We are the leading provider of domestic leased line services in Taiwan. Leased line services involve offering exclusive lines that allow point-to-point connection for voice and data traffic. Leased lines are used by business customers to assemble their own private networks and by telecommunications service providers to establish networks to offer telecommunications services.

We provide data transmission services to major corporate customers in Taiwan. We also provide leased lines to other mobile and fixed-line service operators for interconnection with our fixed-line network and for connection within their networks. Our local and domestic long distance leased line services revenues were NT$4.1 billion, NT$4.3 billion and NT$4.4 billion (US$0.2 billion) in 2019, 2020 and 2021, respectively. Revenues remain relatively stable year-over-year and we continue to migrate customers to higher speed services.

Wi-Fi Services

As of December 31, 2019, 2020 and 2021, we had a total of approximately 2.8 million, 2.6 million and 2.9 million residential and business customers that leased our access points, respectively. We also provide home Wi-Fi devices rental services, and the number of home Wi-Fi devices continued to soar by 167% year over year. In addition, we had more than 41.5 thousand hot spots in public areas by the end of 2021, such as convenience stores, airports and international convention centers, where our smartphone subscribers can access our Wi-Fi network and help to offload mobile data network traffic.

MOD Services

Using video streaming technology through set-top boxes connected to our FTTx and ADSL data connections, our MOD customers can access TV shows, video on demand, OTT, and other services. We have over 196 channels, including 193 high definitions, or HD, and 2 4K resolution, or 4K, channels, and over 40,000 hours of on-demand programs as of December 31, 2021. In addition to our regular packaged offerings, we also offer SVoD services for film and drama. In addition, starting from 2017, our MOD platform has successfully provided OTT services such as KKTV and Netflix. As of December 31, 2021, we had approximately 2.06 million MOD customers, including approximately 1.20 million SVoD subscriptions and approximately 1.37 million channel subscriptions. We continue to see upsells in our tiered pricing channel packages and digital convergence packages.

Our MOD revenues were NT$3.6 billion, NT$3.6 billion and NT$3.7 billion (US$133.6 million) in 2019, 2020 and 2021, respectively. The increase in revenue from 2019 to 2021 was mainly due to the successful pricing strategies and subscribers' opts for the highest price package among the tiered pricing schemes, which further results in the increase of ARPU. We are pleased to see that our customers continued to sign up for additional SVoD programs and OTT services. In addition, starting from August 2019, we have launched optional service packages by customized subscription mechanism to satisfy customers' preference. In 2020, the main reason for the decrease in the number of customers and the slowdown in revenue growth was mainly due to the impact of the COVID-19 pandemic which reduced people's consumption power. We will continue to develop our customer relationship by investing in content with higher video performance on our different platforms. This strategy enables us to maintain our leading position as the largest video platform in Taiwan.

ICT and Other Services

Our ICT and other services in domestic fixed communications business include ICT services and corporate solutions. See "Emerging Services."

Mobile Communications Business

Mobile communications services are one of our principal business activities. Our mobile communications services include mobile services, sales of mobile handsets and wearable devices and ICT and other mobile services.

Mobile Services

We are Taiwan's largest provider of mobile services in terms of both revenues and customers. In 2019, we generated revenues of NT$58.7 billion, or 28.3% of our total revenues, from mobile services. In 2020, we generated revenues of NT$56.7 billion, or 27.3% of our total revenues, from mobile services. In 2021, we generated revenues of NT$58.0 billion (US$2.1 billion), or 27.6% of our total revenues, from mobile services. The increase in mobile services revenue was mainly due to the launch of 5G services and customers' upgrade to 5G plan.

Our ARPU per month decreased from NT$461 to NT$427 in 2020 mainly due to the decrease in roaming revenue mentioned above and the increase of IoT subscribers, which resulted in the dilution of ARPU. Our ARPU per month further decreased to NT$418 in 2021, also resulting from the increase of IoT subscribers.

We remain the largest mobile operator in Taiwan in terms of revenues and number of customers, although the two smaller operators, Asia Pacific Telecom Co., Ltd., or APTG, and Taiwan Star Telecom Corporation Ltd., or T-Star, continue to offer low-priced data plans to gain customers. We had approximately 11.9 million mobile customers, including IoT SIMs, and a market share of approximately 36.1% in terms of total mobile customers and approximately 38.9% in terms of total mobile services revenues in Taiwan, as of December 31, 2021.

In October 2013, we obtained a 4G mobile broadband services spectrum of 10MHz paired spectrum in the 900MHz frequency band and 25MHz paired spectrum in the 1800MHz frequency band. We paid NT$39.1 billion to the government for the spectrum. The license is valid until December 31, 2030. We launched 4G mobile broadband services in May 2014.

In December 2015, we obtained an additional spectrum for 4G mobile broadband services of 30MHz paired spectrum in the 2500MHz and 2600MHz frequency bands, and we paid NT$10.0 billion to the government. The license is valid until December 31, 2033. We put these 2500MHz and 2600MHz frequency bands into use on March 24, 2016.

In November 2017, we further obtained spectrum for 4G mobile broadband services of 5MHz paired spectrum in the 1800MHz frequency band and 20MHz paired spectrum in the 2100MHz frequency band, and we paid NT$10.9 billion to the government. The licenses are valid until December 31 of 2030 and 2033, respectively.

In February 2020, we obtained spectrum for 5G mobile broadband services of 90MHz spectrum over 3.5GHz frequency bands and 600MHz spectrum over 28GHz frequency bands, and we paid NT$48.4 billion to the government. The license is valid until December 31 of 2040. We launched 5G services on June 30, 2020.

The following table sets forth information regarding our mobile service operations and our mobile customer base for the periods indicated.

	As of or for the Year Ended December 31		
	2019	2020	2021
Taiwan population (in thousands)(1)	23,603	23,561	23,375
Total mobile revenues in Taiwan (in billions)(2)	NT$162.1	NT$153.7	NT$155.0
Annualized churn rate(3)	18.22%	11.60%	9.43%
Minutes of usage (in millions of minutes):			
Incoming	5,887	5,264	4,865
Outgoing	6,214	5,575	5,211
Average minutes of usage per user per month(4)(5)	95	82	72

(1) Data from the Department of Population, Ministry of the Interior, ROC.
(2) Data from the statistical monthly release by the NCC, in the ROC, which include mobile revenues from 4G and 5G mobile broadband services.
(3) Measuring the rate of customer disconnections from mobile service, determined by totaling the monthly churn rate, which is determined by dividing a) our aggregate voluntary and involuntary deactivations during the month by b) the average number of customers during the month (calculated by averaging the number of customers at the beginning of the month and the end of the month). The calculation includes both prepaid and postpaid customers.
(4) The number of mobile customers is based on the number of SIM cards.
(5) Average minutes of use per user per month is calculated by dividing the total minutes of use during the period by the average of the number of our mobile customers on the first and last days of the period and dividing the result by the number of months in the relevant period.

The total mobile customers in Taiwan had reached approximately 29.6 million as of December 31, 2021. Mobile penetration was approximately 126.5% on the same date. The overall mobile services market experienced an increase of 0.9% in revenues in 2021 mainly driven by the 5G migration.

We offer incentives, such as mobile handset subsidies for the immediate purchase, when new customers agree to sign a service contract with us or when existing customers renew their contracts with us ranging from 12 months to 48 months.

Our tariffs for post-paid mobile customers primarily consist of usage fees and monthly fees. We also offer discounts on usage fees for calls made between our mobile customers to encourage subscription to our mobile service.

As of December 31, 2021, we had approximately 1.3 million prepaid customers, representing approximately 10.7% of our total mobile customers. Prepaid customers do not pay monthly fees but pay a higher usage charge per second. Once the prepayment has been fully utilized, a prepaid customer can make additional prepayments to continue the service. Alternatively, the customer may become a post-paid customer while retaining the same telephone number.

Sales of Mobile Handsets and Wearable Devices

We engage in the distribution and sales of mobile handsets and wearable devices for use on our mobile network to customers through our directly-owned stores, our online store, our subsidiary SENAO, and also through third-party retailers. See “Marketing Strategy—Distribution Channels” and “Sales and Distribution” in “—Marketing, Sales and Distribution.”

ICT and Other Services

Our ICT and other services in our mobile communications business include ICT services and corporate solutions, leveraged by our Narrowband-IoT, LTE Cat-M1 networks and 5G private network. See “Emerging Services.”

Internet Business

Our internet business includes data communication services, application VAS and services provided to the government. Our revenues from internet business represented 14.5%, 15.5% and 15.7% of our revenues in 2019, 2020 and 2021, respectively. In 2021, our revenues from internet business as a percentage of our revenues increased mainly due to the demand of broadband speed upgrade amid the work-from-home trend and stay-at-home economy.

Data Communication Services

Our data communication service includes HiNet, our brand name as an ISP, and HiLink, a VPN service for enterprises. The following table sets forth HiNet's subscribers as of each of the dates indicated.

	As of December 31		
	2019	2020	2021
		(in thousands)	
Total internet subscribers in Taiwan	6,206	6,317	6,608
HiNet subscribers:			
HiNet FTTx subscribers	3,353	3,355	3,421
HiNet ADSL, dial-up, and other access technology subscribers	647	595	548
Total HiNet subscribers	4,000	3,950	3,969

Our ISP service subscribers decreased from 2019 to 2021 mainly due to the competition from cable broadband operators and substitution by mobile broadband services. We are still the largest ISP in Taiwan, with a subscriber market share of 60.1% among 132 ISPs in Taiwan as of December 31, 2021. As of December 31, 2021, approximately 83.0% of our broadband customers were also HiNet subscribers, using HiNet as their ISP, and 98.0% of our FTTx service customers subscribed HiNet ISP service.

Application VAS and Services Provided to the Government

Application VAS and services provided to the government includes services regarding IDC, cloud computing, cybersecurity and IoT. See "Emerging Services." We have developed an open IoT application platform featured with functions of cloud computing, Big Data analysis, AI and AR, etc., to enlarge the cooperation with IoT industry as well as strengthen its domestic ecosystem. We will continue to explore new IoT applications such as smart metering, smart energy, smart agriculture and smart transportation.

International Fixed Communications Business

Our international fixed communications business includes ILD telephone services, international leased line services, satellite services and ICT and other international services.

ILD Telephone Services

We provide ILD telephone services in Taiwan. Our ILD services consist primarily of international direct dial services and the wholesale of ILD traffic. Total revenues from ILD telephone services comprised 2.2%, 1.2% and 1.0% of our revenues in 2019, 2020 and 2021, respectively. Our ILD telephone revenues decreased by 46.0% to NT$2.5 billion from 2019 to 2020 due to our strategy to reduce low-margin revenues, such as the wholesale of ILD traffic. Due to the same reasons, our ILD telephone revenues further decreased by 13.0% to NT$2.2 billion (US$0.1 billion) from 2020 to 2021. Our average market share of the ILD market by minutes was approximately 69.6%, 50.9%, and 47.1% in 2019, 2020 and 2021, respectively. Certain comparative figures have been reclassified to conform with the current year's presentation.

Total incoming call volume decreased by 69.3% from 2019 to 2020 due to our new strategy to reduce low-margin revenues, such as the wholesale of ILD traffic. Total incoming call volume decreased by 37.5% from 2020 to 2021 due to our new strategy to reduce low-margin revenues, such as the wholesale of ILD traffic. Due to the same reasons, total outgoing call volume decreased by 53.0% from 2019 to 2020 and further decreased by 41.1% in 2021.

Leased Line Services—International

We are a leading provider of international leased line services in Taiwan. Leased line services involve offering exclusive lines that allow point-to-point connection for voice and data traffic. Leased lines are used by business customers to assemble their own private networks and by telecommunications service providers to establish networks to offer telecommunications services.

We provide data transmission services to major corporate customers in Taiwan. Since August 2001, licenses have been awarded to a total of five undersea cable operators, including us, to engage in leased line services. Rental fees for ILD leased lines are generally based on transmission speed and distance. We continue to experience a decline in rental fees for international leased lines, partly as a result of competition from other international leased line service providers. In response, we continue to implement marketing and service campaigns to retain our high-value corporate customers. Our international leased line services revenues were NT$2.5 billion, NT$2.2 billion and NT$2.2 billion (US$0.1 million) in 2019, 2020 and 2021, respectively. Revenue decreased in 2020 mainly due to the fact that customers converted to indefeasible rights of use, or IRU, and the effect of the COVID-19 pandemic, while increased in 2021 mainly due to the incremental bandwidth demand driven by increasing usage of cloud services.

Satellite Services

We entered into a contract with ST-2 Satellite Ventures Pte., Ltd. on March 12, 2010 to lease capacity on the ST-2 satellite. The lease term is 15 years. As our ST-2 satellite is in good operating condition, the useful lifetime expectancy is extended for another three years and three months after evaluation in 2021. Please refer to Note 40 to our consolidated financial statements included elsewhere in this annual report for further details.

In addition, we have two satellite communication centers that enable us to provide TV broadcasts, satellite VAS and backup systems for use in major emergencies. We also provide satellite services to Southeast Asia.

The ROC government adjusted the frequency configuration of the 3.5GHz band in order to release the 5G license. Some of the frequency of the ST-2 satellite C band was transferred to 5G in May 2020.

ICT and Other Services

Our ICT and other services in our international fixed communications business include corporate solution services. See “Emerging Services.”

Others

Our other business segment includes our non-telecom services, including semiconductor testing components and printed circuit board sales made by our subsidiary, CHPT.

Emerging Services

The revenues from our ICT business are classified in “ICT and Other Services” of each business segment except internet business. By integrating various technologies, such as cloud computing, cybersecurity, Big Data, IoT and accelerating emerging services, we provide customized ICT total solutions to assist our business customers in improving efficiency and reducing management costs.

Through computer-driven data analysis, our iEN service can help companies and corporations implement energy-saving measures. In addition, our iEN can also support households as well as enterprises to build an automatic interior environment in areas, including security, solar energy generation, parking and communications.

We provide HiNet Advanced Networks Defense System, or ANDs, together with our subsidiary, CHT Security. ANDs can combine with HiNet Security Fleet solution to upgrade the security of users’ information systems.

Our IDC is under centralized management, and we saw increasing occupancy in our highest-rated Banqiao IDC with strong potential demand, which has driven us to work on our next business expansion.

CHT cloud service is a Multi-Cloud Network Convergence service. With a high-quality global network as the basis for all kinds of cloud services, it integrates our company's hicloud and other public cloud services, including Amazon Web Services, Microsoft Azure, and Google Cloud Platform.

We also provide Content Delivery Network, or CDN, service. This service is effective in speeding the delivery of content of websites with high traffic. The closer the CDN server is to the user geographically, the faster the content will be delivered to the user. We provide CDN service to internet content providers to ensure stable quality when programs are broadcasted. We will expedite CDN construction to enhance digital convergence product competitiveness. In addition, starting from 2020, we launched value-added Web Application Firewall, or WAF, to cater to increasing cybersecurity demands. Besides, our CDN is effectively integrated with IDC. With the combined solution, customers can place the server in IDC as the origin site and CDN distribute the site traffic to the internet with high efficiency and stable quality.

Interconnection

We provide interconnection of our fixed line network and mobile network with other operators.

The following table sets forth our interconnection fee revenues and costs for the periods indicated. These revenues and costs are included, depending on the nature of the call made, in domestic fixed communications or mobile communications revenues and expenses, respectively.

	Year Ended December 31			
	2019	2020	2021	
	NT$	NT$	NT$	US$
		(in billions)		(in millions)
Interconnection fee revenues:				
Fixed line	0.6	0.6	0.6	22.1
Mobile	0.9	0.7	0.6	21.0
Interconnection costs:				
Fixed line	0.6	0.5	0.4	15.1
Mobile	1.6	1.3	0.9	33.4

The interconnection rate between fixed-line customers and other fixed-line customers is NT$0.32 per minute during peak times and NT$0.09 per minute during off-peak times. The interconnection rate for calls initiated by mobile customers to fixed-line customers has been NT$0.4383 per minute during peak times and NT$0.2148 per minute during off-peak times since January 2019. See "Item 5. Operating and Financial Review and Prospects—Overview—Tariff adjustments."

Our mobile interconnection revenues and costs decreased from 2019 to 2021 mainly due to (1) the NCC mandating a mobile interconnection rate reduction over a period of four years starting from November 2017 from NT$1.15 per minute to NT$0.525 per minute, and (2) decreasing traffic volume attributable to VoIP substitution.

Currently, for fixed-line-to-mobile calls, the fixed-line network operators have the right to set the rates of telecommunication fees and to be charged to customers, but fixed-line network operators have to pay interconnection fees to mobile network operators in accordance with the interconnection rate prescribed by the NCC. Fixed interconnection costs decreased from 2019 to 2021 mainly due to (1) reduction of mobile interconnection rate for fixed-line-to-mobile calls, and (2) decreasing traffic volume attributable to VoIP substitution.

In accordance with governmental regulations, the contracts governing our interconnection arrangements must specifically address a number of prescribed issues. For example, our interconnection charge should reflect our costs with respect to the network elements used. In addition, cost increases are subject to approval by the regulatory authorities. We expect that our interconnection contracts will generally be reviewed annually, although we may also enter into long-term contracts.

Marketing, Sales and Distribution

Marketing Strategy

In order to retain and expand our large customer base and to encourage our customers to increase their use of our services and products, we continue to focus our marketing strategy on the following areas.

- Services and Products: We continually develop new VAS and products based on different market segments, with the aim of increasing our high-usage customers and enhancing customer loyalty.
- Pricing and Promotions: We design flexible pricing packages that allow customers to select and design special promotional packages to encourage usage.
- Distribution Channels: We seek to broaden our distribution reach by strengthening our cross-industry alliances and marketing relationships. Furthermore, to expand our sales channels more effectively, we also implement an external sales agent system by collaborating with SENAO, Synnex Technology International Corporation and Tsann Kuen Trans-Nation Group, enabling us to get closer to every customer. In addition, we have set up an online store for years to improve our operational efficiency and to reach more young people.
- Enterprise Customers: We continually update and expand our ICT products such as Big Data analysis, cybersecurity and cloud computing to keep us as a one-stop services provider to our corporate customers and inspire them to improve their efficiency and competitiveness.
- Branding: We are committed to further strengthening the Chunghwa Telecom brand and image as well as strengthening and expanding market recognition of our specialized product brands, such as HiNet, MOD and Hami. We plan to leverage our leading market position to strengthen the overall product brands.

Sales and Distribution

As of December 31, 2021, we had 17 operations offices for operations, 447 service centers and 15 customer service call centers for sales and customer service. In addition, we have simplified transaction process on our online store to improve customers' experience, and we enhanced our service efficiency by increasing digital channel access of contactless transactions.

We also had 243 SENAO exclusive service stores as of December 31, 2021. To enhance our distribution capacity, even though our equity ownership in SENAO decreased from 31.33% as of January 15, 2007 to 28.18% as of February 28, 2022. Our investment in SENAO continues to enhance our mobile handset distribution and sales capabilities in which customers can subscribe to our broadband service, MOD service and other services at SENAO retail stores. See "Item 7. Major Stockholders and Related Party Transactions—B. Related Party Transactions" for a discussion of the agreement between the parent company and SENAO about our business cooperation.

Competition

We face competition in virtually all aspects of our business.

Domestic Fixed Communications

- Local and domestic long distance telephone services: Revenue from local and domestic long distance telephone service of telecommunication services providers has continuously decreased in the past years primarily due to mobile and VoIP substitution. Competition from mobile data service providers increased significantly due to the popularity of smart mobile devices and mobile applications such as LINE and WeChat.

- Leased line services: Major competitors in this field are four fixed line operators, including TWM Broadband, New Century Infocomm Tech. Co., Ltd., APTG and Taiwan Optical Platform Co., Ltd. The leased line services providers primarily compete on the basis of price and the bandwidth speed of services.
- Broadband access services: Major competitors in this field are five multiple-system operators, or MSOs, including kbro, CNS, TWM Broadband, Taiwan Fixed Network Co., Ltd. and Taiwan Optical Platform Co., Ltd., and one fiber broadband service provider, namely Taiwan Intelligent Fiber Optic Network. With the increasing speed of mobile data service, we also face fierce competition from mobile data providers. The broadband access service providers primarily compete on the basis of price and the bandwidth speed of services.
- MOD services: Major competitors in this field include five cable TV MSOs, 27 independent cable TV operators as well as OTT service providers. These service providers compete on the basis of price and multimedia content.

Mobile Communications

There are five mobile operators in Taiwan, including Chunghwa Telecom, Taiwan Mobile, Far EasTone, T-Star and APTG. All of these five operators have 4G and 5G mobile broadband licenses. Each mobile broadband network operator has been providing promotional programs to attract consumers, including unlimited data plans. In recent years, T-Star and APTG provided unlimited data plans with extremely low prices and acquired many subscribers. In 2019, we aimed at bundling attractive handsets in order to increase our service revenues and mitigate the impact of low-priced data plans launched in 2018. In 2020, with effective 4G subscriber retention and 5G migration, we were pleased to see net increases in our post-paid mobile subscribers. In April 2021, our mobile service revenue successfully turned positive, along with an upward trend throughout 2021. We believe such factors will contribute to our growth in our mobile business.

In addition to the mobile network operators, the NCC has issued a total of 16 mobile virtual network operators, or MVNO, licenses, which allow operators without a spectrum allocation to provide mobile services by leasing the capacity and facilities of a mobile service network from a licensed mobile service provider.

We compete in the mobile services market primarily on the basis of premium brand, quality of service, network reliability and attractiveness of service packages. See “Network Infrastructure—Mobile Services Network” for a discussion on our advantage of mobile broadband services spectrum.

Internet

Our primary competitors in internet services are other internet service providers, including SeedNet and TWM Broadband. We compete in the internet services market primarily on the basis of technology, speed of transmission, amount of bandwidth available for use, network coverage and VAS. See “—Emerging Services” for a discussion on our ICT services.

International Fixed Communications

Our major competitors are TWM Broadband, New Century Infocomm Tech. Co., Ltd. and APTG, which have provided fixed-line services since June 2001. These operators are primarily focused on ILD services and enterprise customer services, which typically generate a higher revenue than residential customers.

There are four submarine cable licenses granted by NCC since August 2001, including East Asia Network Inc., owned by Telstra, Reach Cable Networks Limited, owned by PCCW Global, FLAG Telecom Taiwan Services Limited, owned by GCX Corporation, and Taiwan International Gateway Corporation, offering international leased line services to the other fixed-line operators, internet service providers and international simple resale, or ISR, operators.

Our ILD services compete with ILD resale services and VoIP services such as those provided by mobile applications.

Emerging Services

Our major competitors in ICT services are system integration service providers, including HwaCom Systems Inc., MiTAC Information Technology Corp., NEC Taiwan Ltd., Acer Incorporated, Tatung Company, SYSTEX Corporation, SYSCOM Group, IBM Corporation, HP Company, Stark Technology Inc., and Advantech Co., Ltd.

Network Infrastructure

Our network infrastructure consists of transmission networks that convey voice and data traffic, switching networks that route traffic between networks, and mobile, internet, leased line and data switching networks.

We purchase most of our network equipment from well-known international suppliers. As part of the purchase contract, these suppliers deliver and install the equipment for us. We also purchase from local suppliers a variety of components such as transmission lines, switches, telephone sets, MOD set-top boxes and radio transmitters.

Approximately 11,828 of our employees were engaged in network infrastructure development, maintenance, operations and planning as of December 31, 2021.

Transmission Networks

As of December 31, 2021, our transmission networks consisted of approximately 2.7 million fiber kilometers of fiber optic cable for trunking and approximately 10.7 million fiber kilometers of fiber optic cable for local loop.

Due to the emergence of Packet Transport Network, or PTN, technology, a cost-effective method for transmitting data services, we began the deployment of PTN in 2013. Due to the high utilization of our existing Re-configurable Optical Add-Drop Multiplexer, or ROADM, network, we began to introduce Optical Transport Network, or OTN, to meet the demand of 100G wavelength services in 2014. After completing a trial of per-wavelength transmission rates of 200 Gbps, we began to introduce the technology of 200Gbps per wavelength in our OTN network in 2018. We had deployed 649 100Gbps-wavelength and 287 200Gbps-wavelength in the OTN network and 24,180 GbEs in the PTN network by the end of 2021.

As part of our strategic focus on the internet and data markets, our local loop connections mainly adopt FTTx technology. This enables us to provide broadband services, such as MOD, high-speed internet access and VPN. As of December 31, 2021, we have constructed approximately 11.0 million FTTx ports. Our FTTx service can offer high-speed broadband internet access rates up to 2 Gbps. For low bandwidth demand, we use ADSL technology to provide the internet connection services to our customers.

Switching Networks

Domestic telecommunications network. Our domestic public switched telephone network currently consists of 19 message areas connected by a long distance network. As of December 31, 2021, we had 38 long distance exchanges, which are interconnection points between our telecommunications network and approximately 14.0 million telephone lines, which reached virtually all homes and businesses in Taiwan.

We currently have intelligent networks installed over our public switched telephone networks for our domestic long distance and international networks, as well as a local intelligent network mainly in the Taipei, Taichung and Kaohsiung metropolitan areas. Our intelligent network is designed to facilitate the use of VAS by providing more information about calls and allowing greater management of those calls.

As of December 31, 2021, our Next Generation Network, or NGN core network capacity consisted of 4,642,000 local telephone subscribers, comprising 3,641,000 Session Initiation Protocol-based, or SIP-based, and 1,001,000 Access Gateway-based, or AG-based, subscribers.

Our NGN Managed IP backbone network consists of an inner core network and an outer core network. We owned high-speed NGN Managed IP backbone network by the end of 2021 with 12 sets of 4Tbps switch routers for the inner core network and more than 34 sets of 4Tbps/1.6Tbps switch routers for the outer core network. The bandwidth of the network was approximately 2,060 Gbps as of December 31, 2021. We believe this network will enable us to meet the increasing demand for NGN services, such as VoIP, and all managed services, including MOD and VPN.

International network. Our international transmission infrastructure consists of transoceanic submarine cable system, which links our national network directly to 111 telecommunications service providers across 46 international destinations as of December 31, 2021.

International calls are routed between Taiwan and international destinations through one of our two international switching centers, one located in Taipei and the other in Kaohsiung. Each center had time-division multiplexing, or TDM, international gateway switches and NGN international gateway switch. We had a trunk capacity of 60,000 channels in total as of December 31, 2021.

In 2018, we started to build the Southeast Asia-Japan 2 Submarine Cable, or SJC2, with several Asian telecom companies. The cable features up to seven pairs of high capacity optical fiber with a total capacity of 126 Terabits per second. Its high capacity allows it to support high bandwidth intensive requirements, such as the IoT, robotics, analytics and AR or VR applications. In 2021, we joined another consortium cable called APRICOT to further lay a solid cornerstone for Chunghwa Telecom's international business plan in the Asia-Pacific region. As of December 31, 2021, we had invested in 32 submarine cables, 13 of which landed in Taiwan. The total invested capacity has reached more than 26Tbps.

Mobile Services Network

Our mobile services network consists of:

- cell sites, which are physical locations equipped with a base station consisting of transmitters, receivers and other equipment used to communicate through radio channels with customers' mobile handsets within the range of a cell;
- C-RAN (Centralized Radio Access Network), which split base stations into two parts, the RRU (Radio Remote Unit) and the BBU (Base Band Unit). The RRUs stay at the cell site, while the BBUs are aggregated into a centralized office;
- RNC (radio network controller) for 3G, which connect to, and control, the base station within each cell site;
- cellular switching service centers for 3G, which control the base station controllers and the processing and routing of telephone calls;
- SGSN (serving GPRS support nodes), which connect the GPRS network to the base station controllers;
- MME (mobility management entity), which connects the base station to our 4G core network that is responsible for control side;
- S GW (Serving Gateway), which connects the base stations to our 4G core network that is responsible for data side;
- PDN GW (Packet Data Network Gateway), which connects our 4G core network to the internet; and
- transmission lines, which link (i) with respect to the 3G/4G network, the mobile switching service centers, MME, S GW, base station controllers, base stations and the public switched telephone network, and (ii) with respect to the GPRS/4G core network, the base station controllers, the support nodes, PDN GW and the internet.

In May 2014, we launched our 4G mobile broadband services with 10MHz paired spectrum in the 900MHz frequency band and 25MHz paired spectrum in the 1800MHz frequency band. In December 2015, we obtained an additional spectrum for 4G mobile broadband services of 30MHz paired spectrum in the 2500MHz and 2600MHz frequency bands. In June 2017, we implemented four frequency band CA technology into our 1800/2600MHz frequency band base stations that is expected to increase users' downlink speed over 500 Mbps. In November 2017, we further obtained a spectrum for 4G mobile broadband services of 5MHz paired spectrum in the 1800MHz frequency band and 20MHz paired spectrum in the 2100MHz frequency band. After that, we own three consecutive 20MHz spectrum in 1800MHz, 2100MHz and 2600MHz frequency bands, which may provide higher data transmission rates.

In February 2020, we acquired 5G spectrums allocated 90MHz bandwidth in the 3.5GHz frequency band and 600MHz bandwidth in the 28GHz frequency band. In June 2020, we launched 5G mobile broadband services. We use C-RAN architecture to enhance 5G RAN performance and reduce network maintenance costs.

We have also installed an intelligent network on our existing mobile services network infrastructure, which enables us to provide additional functions, such as prepaid and VPN services as well as a wide range of VAS.

Internet Network

HiNet, our internet service provider, has the largest internet access network in Taiwan, with 31 points of presence, approximately 5,393,000 broadband remote access server ports and a backbone bandwidth of approximately 15,733 Gbps as of December 31, 2021. We aim to increase HiNet's points of presence and backbone bandwidth to approximately 18,733 Gbps by the end of 2022.

HiNet's broadband backbone network consists of an inner core network and an outer core network. We had high-speed internet protocol backbone network by the end of 2021 with 16 sets of 46Tbps/28.8Tbps/10.24Tbps switch routers for the inner core network and more than 48 sets of 28.8Tbps/10.56Tbps/5.28Tbps/2.64Tbps switch routers for the outer core network. We also built CDN to meet the needs of Internet/OTT services. Our CDN consists of 18 domestic and five overseas point-of-presences and the total capacity is approximately 2,520 Gbps. We believe these networks will enable us to meet the increasing demand for our internet services.

HiNet's total international connection bandwidth is 2,937 Gbps as of December 31, 2021. As we expect that internet traffic flows to and from the United States will continue to increase, we have been continuously expanding our bandwidth to the United States. We also endeavor to increase our links to other countries, including Japan, Korea, Hong Kong, Singapore, Mainland China, Malaysia, Thailand, the United Kingdom, Germany and the Netherlands.

Leased Line and Data Switching Networks

We operate leased line networks on both a managed and unmanaged basis. In addition, we operate a number of switched digital networks used principally for the provision of packet-switched, frame relay, asynchronous transfer mode technology and a multi-protocol label switching internet protocol VPN. As of December 31, 2021, we had 260 frame relay ports, 755 asynchronous transfer mode ports and approximately 132,111 multi-protocol label switching internet protocol VPN virtual ports.

Our data networks support a variety of transmission technologies, including frame relay, asynchronous transfer mode and Ethernet technology. We have also built up our HiLink VPN that combines internet protocol and asynchronous transfer mode technologies. The advantage of HiLink VPN based on multi-protocol label switching technology is that it can carry different classes of services, such as video, voice and data together to provide services with various qualities of service, high-performance transmission and fast forward solution in an enhanced security network. HiLink VPN can be accessed by xDSL/FTTx/NG-SDH and can include built-in mechanisms that can deal with overlapping internet protocol addresses. Therefore, the network potentially is less costly and requires less management for business applications.

Cybersecurity and Personal Information Protection

In order to ensure full security of our critical infrastructure and critical information infrastructure, we referenced Cybersecurity Framework, or CSF, of the National Institute of Standards and Technology in the U.S., as well as domestic and international standards and regulations, including the Administration Regulations of Cyber Security on Telecommunications Business, Cyber Security Management Act, Personal Information Protection Act, General Data Protection Regulation, or GDPR, BS10012, ISO27001, ISO27011, to establish our Cyber Security and Privacy Protection Risk Management Framework.

Our risk management committee tracks and manages risk control issues of cybersecurity and privacy protection on a monthly basis. When a risk is greater than our risk appetite, or where there is a major crisis, the convener of risk management committee will report to our audit committee, and if necessary, report to our board of directors accordingly. In 2021, we arranged and were covered by data protection insurance to prevent potential major financial losses from cyber security incidents and safeguard the rights of our customers and investors. In 2021, there were no incidents of material risks arising from cybersecurity or personal information protection.

Our Senior Executive Vice President of Business serves as the Chief Information Security Officer, or CISO, and Data Protection Officer, or DPO, and formed a unit with Cyber Security Department, to (i) align regulations with technology advancement for new business development, (ii) coordinate the overall cybersecurity policy, (iii) enact and amend required security specifications, (iv) utilize equipment for centralized security monitor (v) defense and mitigate enterprise security risks, (vi) accelerate new business development, and (vii) provide customers with secure and reliable digital ecosystem.

To prevent increasing cyber risks and threats, we have established CHT SOC, which is responsible for security controls, and threats of smart detection and intelligence, quick incidents response since 2013. Key sequential measures are described below.

- Identification: regulatory compliance, cybersecurity policy and procedures, cybersecurity roles and responsibilities, asset management, risk management strategy and assessment, supply chain management;
- Protection: critical infrastructure security, network and system security, software/application development security, access control security, end-point security, operation and management security, data security, personal information security;
- Detection: vulnerability analysis and patch management, multi-layer protection, intelligent SOC and multi-vector detection;
- Response: incident report and response, anomaly analysis, forensics and decision-making, recovery and improvement plan, cybersecurity intelligence sharing and joint defense enhancing; and
- Improvement: awareness training, cybersecurity and personal data incident drills, internal and external audits, third party certification, performance evaluation, continual improvement.

We evaluate security governance based on risk management orientation, and formulate annual key security measures and key performance indicators based on external trends, such as regulations, security threats, international standards, development trend, and internal risk assessment results, including internal and external audits, our SOC threats detected, crisis resolution and review, and incorporate them into our employees' performance assessments. We review and adjust the security strategy, policy and procedures regularly, and comply with internal and external audits. We are required to pass government administrative security and privacy protection check and obtain third parties certifications, such as ISO 27001, ISO 27011, BS10012, CSA STAR Certification.

For more information, please refer to our website. The information on our website does not form a part of this annual report.

Property, Plant and Equipment

Our property, plant and equipment consist mainly of telecommunications equipment, land and buildings located throughout Taiwan. Although we have a significant amount of land and buildings throughout Taiwan, most of our properties are for operational use and only a small part of them are for investment purposes, which were classified as "investment properties" in our consolidated financial statements included in this annual report. Notes 16 and 18 to our consolidated financial statements, included elsewhere in this annual report, provide additional details as to our "Property, plant and equipment" and "Investment properties," respectively. See "Item 3. Key Information—D. Risk Factors— Risks Relating to Our Company and the Taiwan Telecommunications Industry—Our ability to deliver services may be disrupted due to a systems failure, shutdown in our networks, earthquakes or other natural disasters" for a discussion of environmental issues that may affect utilization of our assets.

We continue to revitalize our own assets through rental income focused strategies and explore the development opportunities to increase the value of our land and buildings. We have received approximately NT$863.7 million (US$31.1 million) in rental income from properties in 2021. We completed a staff dormitory in Taoyuan City in December 2021 to attract and maintain outstanding human resources, and we are also developing a commercial building in Nangang, Taipei City.

Insurance

We do not carry comprehensive insurance for our properties or any insurance for business disruptions. We do, however, maintain in-transit insurance for key materials, such as cables, equipment and equipment components. We do not carry insurance for the ST-2 satellite since we only lease it for our operations instead of owning the satellite.

Employees

Please refer to "Item 6. Directors, Senior Management and Employees—D. Employees" for a discussion of our employees.

Our Pension Plans

Currently, we offer two types of employee retirement plans—our defined contributions plan and defined benefits plan—which are administered in accordance with the Republic of China Labor Standards Act and the Republic of China Labor Pension Act.

Legal Proceedings

From time to time, we are involved in various legal and arbitration proceedings of a nature considered to be in the ordinary course of our business. It is our policy to provide for reserves related to these legal matters when it is probable that a liability has been incurred and the amount is reasonably estimable. From time to time, we have also been assessed fines by various government agencies, such as the NCC and FTC, but none of these fines has had a significant effect on our financial condition or results of operations.

Except as disclosed in our annual report, we believe that we have not been involved in any legal or arbitration proceedings during 2019, 2020 and 2021 that would have a significant effect on our financial condition or results of operations; however, we cannot give you any assurance with respect to the ultimate outcome of any asserted claims against us or legal or arbitration proceedings involving us.

Capital Expenditures

See “Item 5. Operating and Financial Review and Prospects—B. Liquidity and Capital Resources—Capital Expenditures” for a discussion of our capital expenditures.

Enforceability of Judgments in Taiwan

We are a company limited by shares and incorporated under the ROC Company Act. All of our directors, executive officers and some of the experts named in this annual report are residents of Taiwan and a substantial portion of our assets and the assets of those persons are located in Taiwan. As a result, it may not be possible for investors to effect service of process upon us or those persons outside of Taiwan, or to enforce against them judgments obtained in courts outside of Taiwan. We have been advised by our ROC counsel that in their opinion any final judgment obtained against us in any court other than the courts of the ROC in connection with any legal suit or proceeding arising out of or relating to the ADSs will be enforced by the courts of the ROC without further review of the merits only if the court of the ROC in which enforcement is sought is satisfied that:

- the court rendering the judgment has jurisdiction over the subject matter according to the laws of the ROC;
- the judgment and the court procedure resulting in the judgment are not contrary to the public order or good morals of the ROC;
- the judgment is a final judgment for which the period of appeal has expired or from which no appeal can be taken;
- if the judgment was rendered by default by the court rendering the judgment, we, or the above-mentioned persons, were duly served within a reasonable period of time in accordance with the laws and regulations of the jurisdiction of the court or process was served on us with judicial assistance of the ROC; and
- judgments at the courts of the ROC are recognized and enforceable in the court rendering the judgment on a reciprocal basis.

A party seeking to enforce a foreign judgment in the ROC would be required to obtain foreign exchange approval from the Central Bank of the ROC (Taiwan) for the payment out of Taiwan of any amounts recovered in connection with the judgment denominated in a currency other than NT dollars if a conversion from NT dollars to a foreign currency is involved.

Regulation

Regulatory Authorities

Prior to March 1, 2006, we were under the supervision of the MOTC and the Directorate General of Telecommunications. On March 1, 2006, the NCC was formed in accordance with the National Communications Commission Organization Act, which was intended to transfer regulatory authority over the Taiwan telecommunications industry from the MOTC and the Directorate General of Telecommunications to the NCC.

Under the National Communications Commission Organization Act, the NCC was comprised of seven commissioners, which are full-time positions. The premier of the Executive Yuan shall nominate the commissioners and appoint one of them to serve as chairperson, and one as vice chairperson. The nomination shall be approved and appointed by the Legislative Yuan. The tenure of the commissioners is four years, and the commissioners may be re-appointed to serve a consecutive term. Starting from August 1, 2020, there are seven commissioners, including the chairperson Yaw-Shyang Chen and the vice chairperson Po-Tsung Wong, both of whom began on August 1, 2020.

Telecommunications Management Act

Due to the rapid development of the borderless internet application services and the rapid evolution of network technology, the regulatory framework of the Telecommunications Act and relevant regulations thereunder can no longer meet the need of the telecommunications industry, and may even restrain the digital convergence and innovation of the telecommunications industry. Therefore, the Telecommunications Management Act, or the TMA, and relevant regulations thereunder were enacted, which adopt an "administration by activity" model, to dissolve the regulatory framework of the Telecommunications Act and relevant regulations thereunder, which adopts an "administration by business" model and the concession approval system.

The TMA was passed by the Legislative Yuan on May 31, 2019 and promulgated by the President on June 26, 2019. The Executive Yuan issued an ordinance on June 29, 2020 to set the effective date of the TMA (excluding certain articles regarding frequency allocation) on July 1, 2020, and issued an ordinance on October 22, 2020 to set the effective date of the remaining articles of the TMA regarding frequency allocation on November 1, 2020. According to the TMA, within three years upon the enforcement thereof, the existing telecommunications enterprises shall register themselves with the NCC for the transition into being governed by the TMA. We filed an application for the aforementioned transition registration on July 31, 2020, and the application was approved by the NCC on September 30, 2020. With respect to Type I telecommunications enterprises that have been designed as dominant market players according to the Telecommunications Act before the enforcement of the TMA and related implementation measures, from the period between the TMA taking effect and the competent authority determining their significant position in the specific market and hence adopting special control measures therefor based on the TMA, the competent authority still supervises them in accordance with the Telecommunications Act and implementation measures thereof. As we were declared by the former competent authority MOTC as a dominant Type I service provider for fixed-line services, we were constrained in our ability to raise prices, and we must not engage in the following activities:

- directly or indirectly hinder a request for interconnection with its proprietary technology by other Type I service providers;
- refuse to release to other Type I service providers the calculation methods of its interconnection fees and other relevant materials;
- improperly determine, maintain or change its tariffs or means of services;
- reject, without due cause, a request for leasing network components by other Type I service providers;
- reject, without due cause, a request for leasing lines by other service providers or customers;
- reject, without due cause, a request for negotiation or testing by other service providers or customers;
- reject, without due cause, a request for negotiation for co-location by other service providers;
- discriminate, without due cause, against other service providers or customers; or
- abuse its position as a dominant provider, or engage in other unfair competition activities as determined by the regulatory authorities.

The impact caused by the enforcement of the TMA on us and the telecommunications industry include: (i) reducing the entry barrier to the telecommunications markets by changing the original concession/approval system to the registration system, which spurs the competition of the market; (ii) loosening unnecessary restrictions. General enterprises shall have only ordinary obligations to the minimum necessary extent, provided that certain enterprises with significance in the specific telecommunications service markets will be subject to more stringent control measures. Since we may be regarded as the enterprise with significance in the specific telecommunications service markets, we will be required to bear more stringent obligations; (iii) restricting the right of telecommunications enterprises to use private lands and buildings. Only where the telecommunications infrastructure of a public switched telecommunications network cannot be established without passing through private lands or buildings or can be established with an enormous amount of money, the establishment may be made by passing through private lands or buildings on the premise of selecting the least harmful location and manner; (iv) opening up domestic roaming, frequency transferring, frequency leasing, frequency lending or frequency sharing mechanisms, which allows the telecommunication enterprises to use spectrums and conduct network constructions more flexibly and changes the competition status of the telecommunications market. The main provisions of the Telecommunications Management Act are summarized as follows:

Reducing the entry barrier to the telecommunications market:

The Telecommunications Management Act reduces the entry barrier to the telecommunications market by changing the concession approval system to the registration system. According to the Telecommunications Management Act, telecommunications service providers with any of the following activities shall register as a telecommunications enterprise with the competent authority:

(1) negotiating interconnection with other telecommunications enterprises or apply for a ruling therewith;

(2) applying for the assignment of a radio frequency, except the radio frequency with any of the following purposes:

- for emergency subsidy, experimental research and development, dedicated telecommunications network, public use or other public welfare related uses;
- for the use of terrestrial radio business or terrestrial television business;
- for the use of wireless local loop, satellite link or microwave link in a different time or different locations;
- for the use of testing a station established under telecommunications networks;
- military radio frequencies.

(3) applying for the assignment of identification code or signal point code for establishing a Public Switched Telecommunications Network, or PSTN;

(4) applying for the assignment of subscriber numbers.

However, if any telecommunications service provider fails to make the aforementioned registration, the only consequence is that it will not be granted the rights provided under the Telecommunications Management Act.

Specifying the obligations of telecommunications enterprises:

The TMA categorizes the obligations of telecommunications enterprises into three levels: general obligations, special obligations and designated obligations:

(1) General Obligations:

The obligations borne by all the telecommunications enterprises that have filed the registration with the NCC include:

- disclosing the information regarding service conditions, telecommunications network's quality and data transmission management methods/conditions, in an obvious, public and reachable method;
- separating the accounting items of telecommunications service and non-telecommunications service;

- adopting appropriate and necessary measures to protect the confidentiality of communications;
- providing consumer complaint handling channels;
- preserving communications and accounting records within a specific period of time;
- notifying the NCC when service is suspended;
- sharing the expenses incurred by the telecommunications universal service, if the annual revenue of the telecommunications enterprise generated from telecommunications services reaches a certain amount.

(2) Special Obligations:

The obligations borne by the telecommunications enterprises that are granted specific resources or determined by the NCC include:

- the telecommunications enterprises that use subscriber numbers allocated by the competent authority to provide voice services shall provide free emergency communications services, number portability services and equal access services;
- the telecommunications enterprises that have established a PSTN using telecommunications resources or other telecommunications enterprises announced by the NCC shall draw up an info-communications security maintenance plan;
- the telecommunications enterprises of which the types of services are special or the ones that receive consumer complaints frequently, as designated by the NCC, shall set forth standard service contracts, conduct regular self-evaluation for the quality of telecommunications services, and co-establish complaint handling channels for telecommunications consumers.

(3) Designated Obligations:

In order to fulfill the need of policy or the competent laws and regulations, relevant competent authorities may designate the telecommunications enterprises which meet certain conditions to take relevant necessary measures, including disaster prevention and assistance, communication security and surveillance, protection of the rights and interests of the people with disabilities and the telecommunications universal services.

To meet the need of the rapid-changing market and ensure effective competition in the telecommunications service market, the enterprises under control are changed from dominant market players to the enterprises with significance in the specific telecommunications service market, which are subject to different levels of corrective actions according to the Telecommunications Management Act.

The NCC is entitled to adopt control measures for those with market significance in the specific telecommunications service market if necessary, including:

- the NCC may order enterprises with significance in the specific telecommunications service market to disclose necessary information, conditions, procedures and expenses in terms of interconnection, network access components or use of telecommunications infrastructure;
- the NCC may prohibit enterprises with significance in the specific telecommunications service market from making discrimination, setting the service fee that may cause a cross-subsidy, price squeeze or any other abuse of power and hence impede fair competition (including doing so for the subsidiaries, affiliates or partners thereof);
- the NCC may request enterprises with significance in the specific telecommunications service market to provide interconnection, network access components or relevant telecommunications infrastructure;
- the NCC may order enterprises with significance in the specific telecommunications service market to draw up and publish a template agreement related to the provision of interconnection or network access.

We may be regarded as the enterprise with significance in the specific telecommunications service market. If so, the aforementioned control measures may be levied on us.

The opportunity of accessing to and using information may be different due to gender, race, class, geographic area of residence or other factors, which is called "digital divide".

The Telecommunications Management Act tries to resolve the problem caused by digital divide from the following aspects by opening the market, introducing competition and new technology and continuing the promotion of telecommunications universal service:

- narrowing the urban-rural gap;
- ensuring the right of access and use of the minority and disadvantaged groups;
- facilitating the establishment of updated telecommunications infrastructures.

The Telecommunications Management Act removes the restriction on telecommunications network construction imposed by the Telecommunications Act and allows enterprises to establish the telecommunications networks that meet their business needs and develop new technology and equipment.

To ensure the security of network and information, in addition to the PSTN where telecommunications resources including frequency and telecommunications number is used, the telecommunications network where no telecommunications resource is used while telecommunications services are actually provided based on the network-to-network characteristic of the internet, such as iTaiwan, is also regarded as the PSTN, and are both subject to a unified cyber security standard. Besides, there are some protection obligations relating to the establishment of PSTN and the provision of telecommunications services specified in the Telecommunications Management Act, including using the telecommunications equipment that complies with national security concerns and cyber security standards, establishing the equipment for the performance of communication surveillance, adopting cyber security protection plan and ensuring the security of critical telecommunications infrastructure, to ensure and maintain national security, cyber security and public security.

The Telecommunications Management Act changes the method of frequency allocation specified in the Telecommunications Act, allowing the competent authority to allocate frequency by auction, open tender or other appropriate methods according to the characteristic and purpose of use of the frequency.

As a result, the efficiency of the use of frequency can be improved, the development of radio technology can be ensured, and the development of the new technology and services of communications can be encouraged.

Fair Trade Act

According to the TMA, to ensure effective competition in the telecommunications service market, the competent authority is entitled to adopt control measures for those with market significance in the specific telecommunications service market if necessary, including ordering those enterprises to disclose necessary information, conditions, procedures and expenses in terms of interconnection, network access components or use of telecommunications infrastructure; prohibiting those enterprises from making discrimination, setting the service fee that may cause a cross-subsidy, price squeeze or any other abuse of power and hence impede fair competition (including doing so for the subsidiaries, affiliates or partners thereof); requesting those enterprises to provide interconnection, network access components or relevant telecommunications infrastructure; ordering those enterprises to draw up and publish a template agreement related to the provision of interconnection or network access.

By comparison to the TMA, the Fair Trade Act, or the FTA, plays a more comprehensive role in regulating all matters relating to competition between enterprises. The Fair Trade Act seeks to deter and prevent anti-competitive conduct by granting the Fair Trade Commission's powers to investigate and to impose penalties.

The FTA is administered and enforced by the Fair Trade Commission, or the FTC, which has independent administration rights granted to it under the Fair Trade Act and is empowered to impose disciplinary actions for fair trade matters. The Fair Trade Commission may initiate an investigation either on its own account in accordance with its discretion granted by the Fair Trade Act or upon receipt of a complaint.

Regulation on Telecommunications Enterprise with Monopoly Status

The term "monopoly" used in the FTA refers to the circumstance where an enterprise conducts its business operation in a relevant market without facing any competition or where an enterprise is able to dominate the relevant market and block competition in the market. If there are two or more enterprises within the same market that do not engage in any price competition with each other, the whole group of non-competing enterprises should be deemed as a single monopoly enterprise in the market.

The FTC has the ultimate discretion to consider an enterprise as a monopolistic enterprise upon any other events evidencing such enterprise's capability to affect the supply and demand in relevant market or eliminate competition.

Under the FTA, any enterprise with monopoly status is prohibited from engaging in any of the following activities:

- directly or indirectly, by using any unfair method to prevent any other enterprises from competing;
- improperly set, maintain or change the price for goods or the remuneration for services;
- forcing the enterprise's trading counterpart to give preferential treatment without justification; or
- abusing its market power.

According to the FTC's Explanation on Regulations Governing Telecommunication Industry, a telecommunications enterprise with monopoly status is likely to be involved with the following activities regulated by the FTA: conducting predatory pricing, price squeezing, cross-subsidies, price discrimination, blocking access to essential facilities, inappropriate preference or differential treatment and entering into long-term agreements to restrict the ability to change counterparties.

If the FTC finds an enterprise liable for violation of regulations governing monopoly, the FTC could impose a monetary fine of not more than NT$100,000,000 each time and order such enterprise to cease such wrongdoing, rectify the conduct or take any necessary corrective action. If the FTC finds such violation serious, it may further impose a monetary fine exceeding NT$100,000,000 but up to 10% of the total sales of the enterprise in the preceding fiscal year. Furthermore, the responsible person of such enterprise who engaged in such wrongdoing may be sentenced to imprisonment of not more than three years if the enterprise fails to follow FTC's order to cease the wrongdoing, rectify the conduct or take any necessary corrective action.

Regulations on Concerted Action (Cartel) in Telecommunication Industry

The term "concerted action (cartel)" as used in the FTA means the competing enterprises at the same production and/or marketing stage, by means of contract, agreement or any other form of mutual understanding, jointly determine the price of goods or services, quantity, technology, products, facilities, trading counterparts, or trading territory with respect to such goods and services, or any other behavior that restrict each other's business activities, resulting in an impact on the market function with respect to production, trade in goods, or supply and demand of services. The FTC may assume a concerted action exists based on the market condition, the feature of goods or services, cost and profit, and the economic feasibility for enterprises to conduct concerted action.

Under the FTA, enterprises are prohibited from engaging in any concerted actions unless the FTC holds the concerted action may be beneficial to the overall economy and public interest.

According to the FTC's Explanation on Regulations Governing Telecommunication Industry, a telecommunications enterprise may be able to involve with the following concerted actions: entering into common pricing agreements, restriction of output and market segregation, concerted refusal to deal, or entering into agreements for exchange of information.

If the FTC finds an enterprise liable for violation of regulations governing concerted action (cartel), the FTC could impose a monetary fine of not more than NT$100,000,000 each time and order such enterprise to cease such wrongdoing, rectify the conduct or take any necessary corrective action. If the FTC finds such violation is serious, it may further impose a monetary fine exceeding NT$100,000,000 but up to 10% of the total sales of the enterprise in the preceding fiscal year. Furthermore, the responsible person of such enterprise who engaged in such wrongdoing may be sentenced to imprisonment of not more than three years if the enterprise fails to follow FTC's order to cease the wrongdoing, rectify the conduct or take any necessary corrective action.

Regulations on Restrict Competition in Telecommunication Industry

The FTA prohibits any enterprise from conducting any of the following activities that may restrict competition:

- forcing another enterprise to discontinue supply, purchase or other business transactions with a particular enterprise for the purpose of injuring such particular enterprise;
- treating another enterprise discriminatively without justification;
- preventing competitors from participating or engaging in competition by inducing customers with low price or other illegal inducements;
- forcing another enterprise to refrain from competing in price, or to take part in a merger, or a concerted action, or to perform vertical restrictions by coercion, inducement with interest, or other improper methods; or
- setting improper restrictions on its trading counterparts' business activity as the condition to reach business engagement.

If any enterprise violates the regulations governing unfair competition, the FTC may order it to cease therefrom, rectify its conduct or take necessary corrective action within the time prescribed in the order; in addition, the FTC may assess upon such enterprise an administrative fine of not less than NT$100,000 nor more than NT$50,000,000. Should such enterprise fail to cease therefrom, rectify the conduct or take any necessary corrective action after the lapse of the prescribed period, the FTC may continue to order such enterprise to cease therefrom, rectify the conduct or take any necessary corrective action within the time prescribed in the order, and each time may successively assess thereupon an administrative fine of not less than NT$200,000 nor more than NT$100,000,000 until its ceasing therefrom, rectifying its conduct or taking the necessary corrective action.

Regulations on the Representations or Symbol Used by Telecommunications Enterprise on Goods or in Advertisement

The FTA prohibits any enterprise from making or using false or misleading representations or symbols as to price, quantity, quality, content, production process, production date, valid period, method of use, purpose of use, place of origin, manufacturer, place of manufacturing, processor, place of processing on goods, or any items which attract customers or in advertisements, or in any other way making known to the public.

If an enterprise violates the applicable provisions under the FTA that prohibit false or misleading representations, the FTC may order it to cease therefrom, rectify its conduct or take necessary corrective action within the time prescribed in the order; in addition, the FTC may assess upon such enterprise an administrative fine of not less than NT$50,000 nor more than NT$25,000,000. Should such enterprise fail to cease therefrom, rectify the conduct or take any necessary corrective action after the lapse of the prescribed period, the FTC may continue to order such enterprise to cease therefrom, rectify the conduct or take any necessary corrective action within the time prescribed in the order, and each time may successively assess thereupon an administrative fine of not less than NT$100,000 nor more than NT$50,000,000 until its ceasing therefrom, rectifying its conduct or taking the necessary corrective action.

Personal Information Protection Act

Under the Personal Information Protection Act, or PIPA, every individual or governmental or non-governmental agencies, including us, should be subject to certain requirements and restrictions for collecting, processing or using personal data. The definition of "personal data" is extended to cover a broad scope, including the name, date of birth, ID number, special features, fingerprints, marital status, family, education, occupation, medical records, medical history, genetic information, sex life, health examination report, criminal records, contact information, financial status, social activities, and any other data which is sufficient to directly or indirectly identify a specific person. If we fail to comply with the PIPA, we may be subject to serious punishment for civil claims, criminal offenses and administrative liabilities: the ceiling of the aggregate compensation amount for damages payable in a single case will be up to NT$200 million or the actual value of loss arising from our violation provided the amount of actual value of such loss is higher than NT$200 million; the defendant may be subject to imprisonment of up to five years; and the penalty for administrative liabilities will be up to NT$500,000 for each violation, and may be imposed consecutively if such violation continues.

Corporate Responsibilities: Environmental, Social and Governance (ESG) Initiatives

We are dedicated to global stewardship, focusing on sustainable environmental, social practices, and responsible governance activities. We utilize a comprehensive continuous improvement methodology in all aspects of our business in Taiwan. We established a Corporate Social Responsibility Committee in 2006 and were also the first telecommunications service provider in Taiwan to release corporate social responsibility (CSR) reports as early as 2008. We have annually published the reports after then. During the years, our CSR initiatives have been awarded a number of domestic and international CSR awards. In 2021, we restructured the Corporate Social Responsibility Committee into the Sustainability Development Committee to reflect the United Nations' Sustainable Development Goals. The Sustainability Development Committee was tasked to develop our future ESG strategy and comply with the vision and mission of our sustainability development, and we currently focus our ESG efforts on the following key areas:

Environmental Sustainability

We monitor and seek to incorporate environmental sustainability practices and principles in our operations, products and supply chain. Our environmental sustainability initiatives mainly include:

- Carbon emission reduction: we plan to reduce Scope 1 and 2 Greenhouse Gas, or GHG, in 2021 and have long-term targets with emission reductions. Our plan for carbon emissions in 2030 is half of those in 2020, and we committed to reaching net-zero by 2050 for these same emissions categories. We have taken a series of actions, such as replacing old infrastructure with virtual network functions and planning to retire old company cars with electric vehicles, to achieve carbon reduction.

- Sustainable procurement: we obtained certifications on ISO standards, such as ISO 14046 Water Footprint and ISO 14067 Carbon Footprint in 2019. Our procurement decisions and processes are also in compliance with ISO 20400 Sustainable Procurement Guidance.

- Member of Innovative Optical and Wireless Network (IOWN) global forum: as a member of IOWN, we are working with international telecommunication companies to explore multi-domain cutting-edge technologies to achieve better energy efficiency and reduce carbon emissions such as end-to-end all photonic networks and innovative applications.

- Sustainable corporate bonds: in January 2022, our board of directors authorized the issuance of domestic unsecured corporate bonds with an aggregate principal amount of NT$10.0 billion. In March 2022, we have issued sustainability bond (unsecured corporate bond) totaling NT$3.5 billion. The proceeds will be used to finance business developments, including investments for environmental protection or social development.

Social Responsibility

We are committed to leveraging our technologies and capabilities to practice digital empowerments and providing a safe and healthy work environment to our employees and further contributing to our society. Our social responsibilities mainly include:

- Society giveback: we take actions for the Sustainable Development Goals, which are United Nations' blueprint for achieving a better and more sustainable future. We, therefore, proposed the "5I SDGs" initiative, namely iHelping, iSharing, iLearning, iTechnology, iProtecting, to minimize the digital divide and create digital opportunities. We also organize company volunteers to participate in local community services and proactively assist the communities.

- Technologies making a positive impact on our society: we constantly contribute to our society with our innovation and technology. During the COVID-19 pandemic, we assisted the Taiwan government in developing the "SMS Contact Tracing Platform" within three days. Together with our innovatively developed "Epidemic Control Assistance Platform", we have become the government's strongest backing for epidemic prevention.

- Equality in our workplace: we are committed to creating a workplace with equality where every employee enjoys the right to equality and non-discrimination. We launched a series of activities to advocate gender equality, adhered to the increase of female employees, and persisted in the implementation of sufficient employment policies.

- Occupational safety and health: we instruct our employees to be responsible for observing health and safety laws and regulations. We encourage our employees to take necessary precautions and immediately report accidents, injuries and unsafe practices or conditions. In addition, we are the first telecommunications service provider in Taiwan to comply with ISO 45001:2018.

Corporate Governance

Our governance practices serve an essential role in our ability to conduct our operations responsibly and ethically. Our governance practices mainly include:

- Governance with diversity and inclusion: we have worked to create diversity so that we are more reflective of our society with a range of perspectives to support our business decision making. Our directors also prioritize inclusion and ensure equal access of all genders and groups of employees to training, career development, nominations for promotions and professional opportunities.

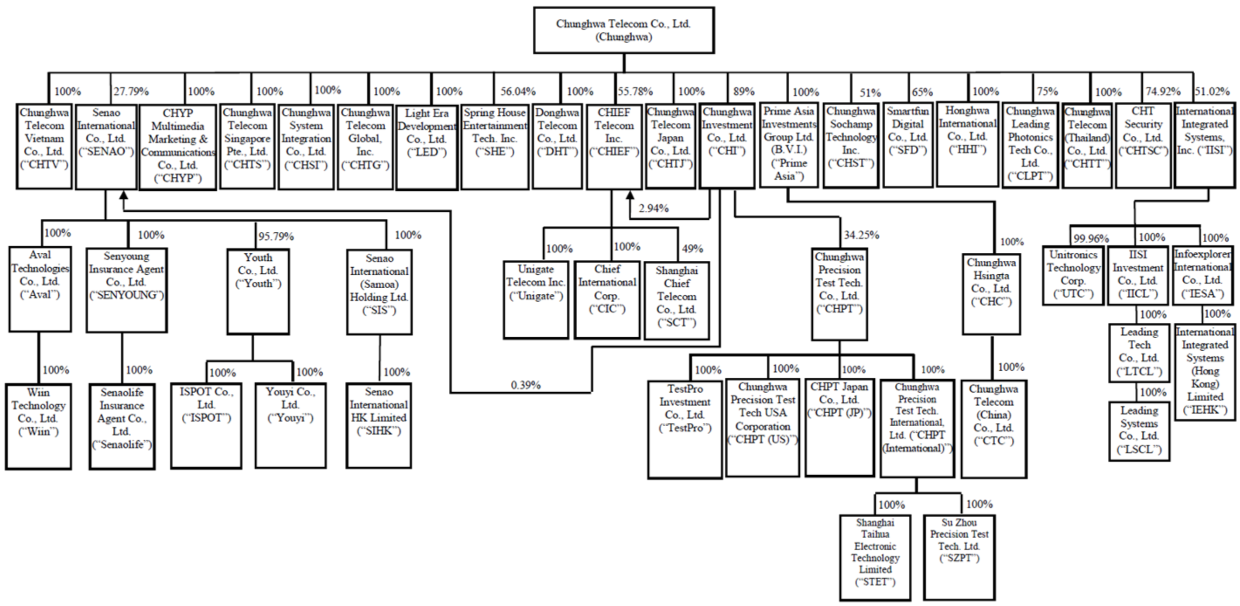
- Linking senior management compensation to ESG targets: Our senior management's sustainability achievements have been routinely acknowledged alongside traditional key performance indicators (KPIs). We set measurable ESG targets for the senior executives and have begun introducing these ESG targets in their compensation packages.

- Strategy alignment: we are committed to strong corporate governance that directly aligns with our long-term strategies and financial and operating plans. In the environment of increased market competition, we also timely adjust our strategies to optimize our business and enhance our management control.

For further information on our ESG initiatives, please see our annual Corporate Social Responsibility Reports, publicly available on our CSR website. The information contained on our website is not incorporated herein by reference and does not constitute part of this annual report.

C. Organizational Structure

Set forth below is a diagram indicating our organization structure as of March 31, 2022. Please refer to Exhibit 8.1 for the subsidiaries' jurisdiction of incorporation.



D. Property, Plant and Equipment

Please refer to "—B. Business Overview" for a discussion of our property, plant and equipment.

ITEM 4A. UNRESOLVED STAFF COMMENTS

None.

ITEM 5. OPERATING AND FINANCIAL REVIEW AND PROSPECTS

You should read the following discussion of our financial condition and results of operations together with the consolidated financial statements and the notes to such statements included in this annual report.

For the convenience of readers, NT dollar amounts used in this section for, and as of, the year ended December 31, 2021 have been translated into U.S. dollar amounts using US$1.00=NT$27.74, set forth in the statistical release of the Federal Reserve Board on December 30, 2021. The U.S. dollar translation appears in parentheses next to the relevant NT dollar amount.

Overview

A number of recent and expected future developments have had, and in the future may have, a material impact on our financial condition and results of operations. These developments include:

- changes in our revenue composition and sources of revenue growth;
- tariff adjustments;
- capital expenditures as a result of technological improvements and changes in our business;
- personnel expenses; and
- taxation.

Each of these developments is discussed below.

Changes in our revenue composition and sources of revenue growth

Our domestic fixed communications business revenues are derived primarily from the provision of local, domestic long distance, broadband access, leased line service, MOD, and other domestic services, including ICT, cloud services, corporate solution services, billing handling services and the leasing of real estate properties. In addition, we also derive fixed-line revenues from providing interconnection services to other carriers. Our revenues from mobile communications business are principally derived from the provision of mobile services, sales of mobile handsets, tablets and wearable devices and other mobile services. Our revenues from internet business are generated principally from HiNet internet service, data communication services, internet VAS, IDC and other internet services, including ICT and cloud services. Our revenues from international fixed communications business are derived primarily from ILD, international leased line, international data services, satellite services and other international services. Our other revenues are principally derived from non-telecom services.

The table below sets forth the revenues from our principal lines of business as a percentage of total revenues for the periods indicated.

	Year Ended December 31		
	2019	2020	2021
Revenues:			
Domestic fixed communications business	31.7%	33.4%	30.8%
Mobile communications business	46.0	43.5	45.3
Internet business	14.5	15.5	15.7
International fixed communications business	5.5	4.2	4.3
Others	2.3	3.4	3.9
Total	100.0%	100.0%	100.0%

Our domestic fixed communications business has been an important source of revenue over the last three years. We derive domestic fixed communications revenue from the provision of FTTx and ADSL access services that provides customers with data access lines. Revenue from domestic fixed communication increased as a percentage of our total revenue in 2020, mainly attributable to the increase in ICT and broadband access revenues, which was partially offset by the decline of local and domestic long-distance revenues. Revenues from domestic fixed communication decreased as a percentage of our total revenue in 2021, mainly attributable to the decrease of ICT project revenue, which was partially offset by the increase of broadband access revenue. We believe that the domestic fixed communications business will continue to generate a significant portion of our revenues.

Revenues from our mobile communications business were a major contributor to our revenues over the last three years. In 2020, the percentage of total revenues derived from the mobile communications business decreased mainly attributable to the decline in handset sales and roaming revenue resulting from travel restrictions in response to the COVID-19 pandemic. In 2021, the percentage of total revenues derived from the mobile communications business increased mainly attributable to the 5G migration and the launch of iPhone 13. We believe that our mobile communications business will continue to generate a significant portion of our revenues.

Our internet business has been another important source of revenue over the last three years. We derived internet business revenues from the provision of data communication services, application VAS and services provided to the government. In 2020, the percentage increased mainly due to the revenues from IDC, cloud services, IoT, cybersecurity services, HiNet and HiLink. In 2021, the percentage of revenues from internet services within total revenues further increased mainly due to the demand for broadband speed upgrades amid the work-from-home trend.

We derived our international fixed communications revenues mainly from ILD telephone services and international ICT services. In 2020, the percentage of total revenues derived from the international fixed communications business decreased mainly due to our strategy to reduce low-margin revenues, such as the wholesale of ILD traffic. In 2021, the percentage of total revenues derived from the international fixed communications business increased mainly attributable to the revenue recognition of ICT projects.

Our other revenues increased from 2019 to 2021. The increase was mainly due to operating growth derived from the increase of ownership interests in International Integrated Systems, Inc., or IISI in the second half of 2020.

Tariff adjustments

We adjust our tariffs and offer promotional packages from time to time primarily in response to market conditions. We also from time to time are required to adjust our pricing in line with domestic regulations.

On March 8, 2017, the NCC announced a plan for tariff reductions effective from April 1, 2017 to March 31, 2020. The reduction plan applies to the wholesale tariffs for IP peering and domestic leased line services, which was subject to a reduction by ΔCPI-5.1749%, and to the monthly fees for fixed-line broadband access services (excluding FTTH, FTTB, ADSL, and the services with downlink and uplink speeds both over 100 Mbps), which was subject to a reduction by ΔCPI-3.19%. The ΔCPI for 2018 that was used for the tariff reduction starting from April 1, 2019 was 1.35%. On March 5, 2020, the NCC announced a new round for tariff reductions effective from April 1, 2020 to March 31, 2024. The new round of reduction plan applies to the wholesale tariffs for IP peering and domestic leased line services, which was subject to a reduction by ΔCPI-7.48%, and to the monthly fees for xDSL and FTTx services (excluding ADSL, the services with downlink speed of 12 Mbps and below, and the services with downlink speeds of 300 Mbps and over), which was subject to a reduction by ΔCPI-2.15%. The ΔCPI for 2019 that was used for the tariff reduction starting from April 1, 2020 was 0.56%. The ΔCPI for 2020 that was used for the tariff reduction starting from April 1, 2021 was -0.23%. The ΔCPI for 2021 that was used for the tariff reduction starting from April 1, 2022 was 1.96%. We do not expect such tariff reduction to have a material adverse impact on our results of operations.

In addition, on August 23, 2017, the NCC determined that, starting from November 2017, our tariff in the mobile interconnection fees should be reduced from NT$1.15 per minute to NT$0.571 per minute in four years.

On December 14, 2020, the NCC determined that starting from January 1, 2021 to June 30, 2023, our tariff in the mobile interconnection fees decreases year by year from NT$0.525 per minute in 2021 to NT$0.482 per minute in 2022, and then to NT$0.443 per minute in 2023 until June 30, 2023.

Furthermore, the NCC approved our new fixed communications network interconnection fees on September 26, 2018. The interconnection fees for local telephone and domestic long distance telephone remain the same, while the interconnection fees from mobile network to local telephone decrease, from NT$0.4851 to NT$0.4383 per minute during peak times and from NT$0.2531 to NT$0.2148 per minute during off-peak times. The tariff is effective from January 1, 2019 to December 31, 2022.

Besides the mandatory tariff reduction mentioned above, we, from time to time, voluntarily implemented tariff adjustments in our broadband and mobile businesses in the past few years to consolidate our market share.

Capital expenditures as a result of technological improvements and changes in our business

In recent years, we have focused on modernizing and upgrading our mobile services network and on developing our FTTx network, which enables transmission of digital information at a high bandwidth over fiber loops. Our priority is to construct fiber networks in new buildings and areas with demand for 500 Mbps and 1 Gbps per household for 300 Mbps and above per household, and 10 Gbps for enterprises in the near future. Our long-term goal is to optimize our capital expenditures by focusing on investing in innovative products and services with attractive return profiles. We evaluate our investment opportunities by benchmarking them against internal return requirements.

Personnel expenses

Personnel expenses constitute a significant portion of our operating costs and expenses. In 2019, 2020 and 2021, personnel expenses represented 27.7%, 27.0% and 27.1% of our total operating costs and expenses, respectively. The table below sets forth information regarding our personnel expenses and as a percentage of our total operating costs and expenses for the periods indicated.

	Year Ended December 31					
	2019		2020		2021	
	(in billions of NT$, except percentages)					
Total personnel expenses	46.2	27.7%	45.0	27.0%	44.7	27.1%
Total operating costs and expenses	166.7	100.0%	166.8	100.0%	165.2	100.0%

At the time of our privatization, we settled all of our then existing defined benefit pension obligations in full. After completing our privatization on August 12, 2005, all of our continuing employees were deemed to have commenced employment as of August 12, 2005 for seniority purposes under our pension plans in effect after privatization. Under applicable ROC regulations, upon our privatization, the MOTC assumed the obligation to make annuity payments to all of our employees that retired before our privatization.

Taxation

The income tax rate for profit-seeking enterprises is 20% in the ROC. Prior to 2018, the income tax rate for profit-seeking enterprises was 17% in the ROC. We benefit from tax incentives, including tax credits of up to 15% of some of our research and development expenses in accordance with the Statute for Innovating Industries.

After-tax earnings generated from January 1, 1998 and not distributed to stockholders as dividends in the following year were assessed with a 10% unappropriated earnings tax. According to the amendment to the Income Tax Law, the rate of the ROC unappropriated earnings tax was adjusted from 10% to 5% against our unappropriated earnings generated from January 1, 2018 and the allowed tax credit (against our earnings generated since January 1, 2018) was canceled. Such amendment has been applied to our annual tax filings made starting January 1, 2019. See "Item 10. Additional Information—E. Taxation—ROC Taxation—Dividends." Under IFRSs, the 5% tax on unappropriated earnings is accrued during the year the earnings arise and adjusted to the extent that distributions are approved by the stockholders in the following year. As a result, our effective tax rates were 19.0% and 19.6% in 2020 and 2021, respectively.

A. Operating Results

The following table sets forth our revenues, operating costs and expenses, income from operations and other financial data for the periods indicated.

	Year Ended December 31			
	2019	2020	2021	
	NT$	NT$	NT$	US$
	(in billions)			
Revenues:				
Domestic Fixed Communications	65.7	69.5	64.8	2.4
Mobile communications	95.5	90.2	95.2	3.4
Internet	30.1	32.1	33.1	1.2
International fixed communications	11.5	8.7	9.1	0.3
Others	4.7	7.1	8.3	0.3
Total revenues	207.5	207.6	210.5	7.6
Operating costs	135.9	137.0	135.1	4.9
Operating expenses:				
Marketing	22.2	20.9	21.0	0.8
General and administrative	4.8	5.0	5.3	0.2
Research and development	3.9	3.9	3.7	0.1
Expected credit loss	(0.1)	—	0.1	-
Total operating expenses	30.8	29.8	30.1	1.1
Other income and expenses	(0.1)	1.6	(0.4)	-
Income from operations	40.7	42.4	44.9	1.6
Non-operating income and expenses	1.2	0.4	1.1	-
Income before income tax	41.9	42.8	46.0	1.6
Income tax expense	8.0	8.1	9.0	0.3
Consolidated net income	33.9	34.7	37.0	1.3
Attributable to:				
Stockholders of the parent	32.9	33.4	35.6	1.2
Noncontrolling interests	1.0	1.3	1.4	0.1

The following table sets forth our revenues, operating costs and expenses, income from operations and other financial data as a percentage of our total revenues for the periods indicated.

	Year Ended December 31		
	2019	2020	2021
	(as percentages of total revenues)		
Revenues:			
Domestic fixed communications	31.7%	33.4%	30.8%
Mobile communications	46.0	43.5	45.3
Internet	14.5	15.5	15.7
International fixed communications	5.5	4.2	4.3
Others	2.3	3.4	3.9
Total revenues	100.0%	100.0%	100.0%
Operating costs	65.5%	66.0%	64.2%
Operating expenses:			
Marketing	10.7	10.1	9.9
General and administrative	2.3	2.4	2.5
Research and development	1.9	1.9	1.8
Expected credit loss	(0.1)	-	0.1
Total operating expenses	14.8	14.4	14.3
Other income and expenses	(0.1)	0.8	(0.2)
Income from operations	19.6	20.4	21.3
Non-operating income and expenses	0.6	0.2	0.5
Income before income tax	20.2	20.6	21.8
Income tax expense	3.9	3.9	4.3
Consolidated net income	16.3%	16.7%	17.5%
Attributable to:			
Stockholders of the parent	15.9%	16.1%	16.8%
Noncontrolling interests	0.4%	0.6%	0.7%

Each of our operating segments is managed separately because each represents a strategic business unit that serves a different market. We measure our segment performances mainly based on revenues and income before income tax.

The year ended December 31, 2021 compared with the year ended December 31, 2020

Revenues

Our revenues include domestic fixed communications revenues, mobile communications revenues, internet revenues, international fixed communications revenues, and other revenues.

Our revenues increased to NT$210.5 billion (US$7.6 billion) in 2021 as compared to NT$207.6 billion in 2020, primarily due to increases in revenues generated from mobile communications owning to 5G roll out, internet services driven by new lifestyle opportunities due to COVID-19 pandemic, and international fixed communications, which were offset by decreases in domestic fixed communications.

Domestic fixed communications

Our domestic fixed communications revenues include local telephone services revenues, domestic long distance telephone services revenues, broadband access revenues, domestic leased line revenues, MOD revenues, and domestic ICT and other services revenues.

Domestic fixed communications revenues accounted for 33.4% and 30.8% of our revenues in 2020 and 2021, respectively. Our domestic fixed communications revenues decreased by 6.7% from NT$69.5 billion in 2020 to NT$64.8 billion (US$2.4 billion) in 2021, primarily due to decrease of ICT project revenue, local and domestic long distance telephone services revenue, which were partially offset by the increase of broadband access revenue as a result of the demand of broadband speed upgrade amid the work-from-home trend and stay-at-home economy.

Local telephone services. Our local telephone revenues decreased from NT$24.5 billion in 2020 to NT$23.8 billion (US$0.9 billion) in 2021 with a 4.0% decline in traffic volume from 5.6 billion minutes in 2020 to 5.3 billion minutes in 2021. The decline in traffic volume was primarily due to traffic migration from fixed-line services to internet telephone services and VoIP applications. We expect this trend to continue as broadband and mobile services become more popular in Taiwan.

Domestic long distance telephone services. Our domestic long distance telephone revenues decreased by 3.7% from NT$2.0 billion in 2020 to NT$1.9 billion (US$0.1 billion) in 2021. This decrease was mainly due to the increased use of VoIP applications.

Broadband access. Revenues generated from broadband access increased from NT$18.1 billion in 2020 to NT$18.6 billion (US$0.7 billion) in 2021, mainly due to market's growing demand for fixed broadband services.

Domestic leased line. We keep migrating domestic leased line customers to higher speed broadband services. Revenues generated from domestic leased line services increased from NT$4.3 billion in 2020 to NT$4.4 billion (US$0.2 billion) in 2021.

MOD. Revenues generated from our MOD services increased by 1.9% from NT$3.6 billion in 2020 to NT$3.7 billion (US$0.1 billion) in 2021 as a result of our successful pricing strategies to enhance upsell.

Domestic ICT and other services. Other revenues decreased by 27.0% from NT$17.0 billion in 2020 to NT$12.4 billion (US$0.4 billion) in 2021. This was mainly due to the decrease of ICT project revenue.

Mobile communications

Our mobile communications revenues include mobile services revenues and sales of mobile handsets, tablets and wearable device revenues.

Revenues from our mobile communications business accounted for 43.5% and 45.3% of our revenues in 2020 and 2021, respectively. Revenues from our mobile communications business increased by 5.6% from NT$90.2 billion in 2020 to NT$95.2 billion (US$3.4 billion) in 2021 due to our turnaround with a positive growth trend of mobile service revenues and the increase of sales of mobile handsets, tablets and wearable devices.

Mobile services. Revenues from our mobile services accounted for 27.3% and 27.6% of our revenues in 2020 and 2021, respectively. Revenues from our mobile services increased by 2.3% from NT$56.7 billion in 2020 to NT$58.0 billion (US$2.1 billion) in 2021 mainly driven by 5G migration and 4G upsell.

Sales of mobile handsets, tablets and wearable devices. Revenues from our sales of mobile handsets, tablets and wearable devices accounted for 15.5% and 16.8% of our revenues in 2020 and 2021, respectively. Revenues from our sales of mobile handsets, tablets and wearable devices increased by 10.3% from NT$32.1 billion in 2020 to NT$35.4 billion (US$1.3 billion) in 2021, mainly due to the increase in the average unit price of handsets.

Internet

Revenues from internet business accounted for 15.5% and 15.7% of our revenues in 2020 and 2021, respectively. Revenues from our internet services increased by 3.0% from NT$32.1 billion in 2020 to NT$33.1 billion (US$1.2 billion) in 2021 mainly due to the demand for broadband speed upgrades amid the work-from-home trend and stay-at-home economy, which further propelled the growth of higher-speed service adopters.

International fixed communications

Our international fixed communications revenues include ILD telephone services revenues, international leased line and international intelligent network service revenues, and global ICT & cloud services revenues.

International fixed communications revenues accounted for 4.2% and 4.3% of our revenues in 2020 and 2021, respectively. Our international fixed communications revenues increased by 4.6% from NT$8.7 billion in 2020 to NT$9.1 billion (US$0.3 billion) in 2021. This increase was mainly due to increase in revenues generated from global ICT & Cloud Services.

ILD telephone services. Our ILD telephone revenues decreased by 13.0% from NT$2.5 billion in 2020 to NT$2.2 billion (US$0.1 billion) in 2021 due to our new strategy to reduce low-margin revenues such as the wholesale of ILD traffic.

International leased line and International intelligent network service. Our international leased line and international intelligent network service increased by 2.7% from NT$4.7 billion in 2020 to NT$4.8 billion (US$0.1 billion) in 2021. The increase was mainly due to the incremental bandwidth demand driven by increasing usage of cloud services.

Global ICT & cloud services. Our global ICT & cloud services revenues increased by 58.4% from NT$0.9 billion in 2020 to NT$1.4 billion (US$0.1 billion) in 2021. The increase was mainly due to the receipt of ST-2 satellite compensation from the government.

Others

Other revenues accounted for 3.4% and 3.9% of our revenues in 2020 and 2021, respectively. Our other revenues increased from NT$7.1 billion in 2020 to NT$8.3 billion (US$0.3 billion) in 2021. The increase was mainly due to operating growth derived from the increase of ownership interests in International Integrated Systems, Inc., or IISI in the second half of 2020.

Operating Costs and Expenses

Our operating costs and expenses include depreciation and amortization expenses, personnel expenses, cost of goods sold, interconnection and service costs, marketing expenses, costs of materials and maintenance and spectrum usage and license fees.

Operating costs and expenses decreased by 1.0% from NT$166.8 billion in 2020 to NT$165.2 billion (US$6.0 billion) in 2021. This decrease was primarily due to the completion of some large ICT projects and the decrease in personnel expenses due to employee retirement, which was partially offset by an increase in cost of goods sold, depreciation expense, and amortization expense of 5G concession. The increase in cost of goods sold was mainly driven by the increase in sales volume and higher cost of handsets sold. The increase in depreciation expenses was driven by the accelerating construction of 5G network.

Operating Costs and Expenses by Business Segment

	Domestic Fixed Communications	Mobile Communications	Internet	International Fixed Communications	Others	Adjustment	Total
			(in billions of NT$)				
For the year ended December 31, 2021							
Operating costs and expenses	56.2	90.6	22.5	9.5	17.5	(31.1)	165.2
Depreciation and amortization	14.0	20.3	2.5	1.4	1.0	—	39.2
For the year ended December 31, 2020							
Operating costs and expenses	64.6	82.9	23.0	9.8	15.2	(28.7)	166.8
Depreciation and amortization	14.2	17.8	2.7	1.4	1.0	—	37.1

Domestic fixed communications

Our domestic fixed communications costs and expenses decreased by 12.9% from NT$64.6 billion in 2020 to NT$56.2 billion (US$2.0 billion) in 2021, primarily due to a decrease in ICT project costs as a result of the completion of some major ICT projects in 2020; a decrease in personnel expenses mainly due to employee retirement; and a decrease in franchise fee as we received registration approval from the NCC according to TMA and no longer need to pay franchise fee starting from October 2020.

Mobile communications

Our mobile communications operating costs and expenses increased by 9.2% from NT$82.9 billion in 2020 to NT$90.6 billion (US$3.3 billion) in 2021. This increase was primarily due to an increase in cost of goods sold mainly driven by the increase in sales volume and higher cost of handsets sold. Depreciation expenses and amortization expenses of 5G concession increased as well mainly due to accelerating construction of 5G network deployment.

Internet

Our internet operating costs and expenses decreased by 2.2% from NT$23.0 billion in 2020 to NT$22.5 billion (US$0.8 billion) in 2021 primarily due to a decrease in ICT project costs as a result of the completion of some major ICT projects in 2020.

International fixed communications

Our international fixed communications costs and expenses decreased by 2.5% from NT$9.8 billion in 2020 to NT$9.5 billion (US$0.4 billion) in 2021 primarily due to a decrease in rental expenses as a result of the termination of some indefeasible rights of use, or IRU contracts.

Others

The costs and expenses from our other business increased by 15.0% from NT$15.2 billion in 2020 to NT$17.5 billion (US$0.6 billion) in 2021 primarily due to the consolidation of International Integrated Systems, Inc., or IISI and its subsidiaries as a result of step acquisition completed on July 1, 2020.

Other Income and Expenses

We recorded net other income of NT$1.6 billion in 2020 and net other expenses of NT$0.4 billion (US$13.0 million) in 2021, respectively. The differences between 2020 and 2021 were primarily due to the gains resulting from asset revitalization in 2020 and the impairment loss on right-of-use assets in 2021.

Income from Operations and Operating Margin

As a result of the foregoing, our income from operations increased by 6.1% from NT$42.4 billion in 2020 to NT$44.9 billion (US$1.6 billion) in 2021. Our operating margin increased from 20.4% in 2020 to 21.3% in 2021.

The following table sets forth certain information regarding our revenues and income before income tax by business segment for the periods indicated.

	Domestic Fixed Communications	Mobile Communications	Internet	International Fixed Communications	Others	Adjustment	Total
	(in billions of NT$)						
For the year ended December 31, 2021							
Revenues from external customers	64.8	95.2	33.1	9.1	8.3	—	210.5
Intersegment service revenues	17.4	1.6	3.9	2.0	6.2	(31.1)	—
	82.2	96.8	37.0	11.1	14.5	(31.1)	210.5
Segment income before income tax	26.1	6.3	14.5	1.2	(2.1)	—	46.0
For the year ended December 31, 2020							
Revenues from external customers	69.5	90.2	32.1	8.7	7.1	—	207.6
Intersegment service revenues	15.9	1.5	4.0	1.9	5.4	(28.7)	—
	85.4	91.7	36.1	10.6	12.5	(28.7)	207.6
Segment income before income tax	22.5	8.8	13.1	0.8	(2.4)	—	42.8

As a result of the foregoing, segment income before tax for our domestic fixed communications business increased by 16.2% from NT$22.5 billion in 2020 to NT$26.1 billion (US$1.0 billion) in 2021; segment income before tax for our mobile communications business decreased by 27.5% from NT$8.8 billion in 2020 to NT$6.3 billion (US$0.2 billion) in 2021; segment income before tax for our internet business increased by 10.6% from NT$13.1 billion in 2020 to NT$14.5 billion (US$0.5 billion) in 2021; segment income before tax for our international fixed communications business increased by 40.5% from NT$0.8 billion in 2020 to NT$1.2 billion (US$42.0 million) in 2021; and segment loss for our other business segments decreased by 12.1% from NT$2.4 billion in 2020 to NT$2.1 billion (US$0.1 billion) in 2021.

Non-operating Income and Expenses

Our non-operating income increased from NT$0.4 billion in 2020 to NT$1.1 billion (US$41.0 million) in 2021. The increase was primarily due to an increase in valuation gain on financial assets and liabilities at fair value through profit or loss and an increase in foreign currency exchange gain.

Income Tax

Our income tax was NT$8.1 billion and NT$9.0 billion (US$0.3 billion) in 2020 and 2021, respectively. Our effective tax rate increased from 19.0% in 2020 to 19.6% in 2021.

Net Income

As a result of the foregoing, our net income attributable to stockholders of the parent was NT$33.4 billion and NT$35.6 billion (US$1.2 billion) in 2020 and 2021, respectively. Our net margin increased from 16.1% in 2020 to 16.8% in 2021.

The year ended December 31, 2020 compared with the year ended December 31, 2019

Revenues

Our revenues remain stable at NT$207.6 billion (US$7.4 billion) in 2020 as compared to NT$207.5 billion in 2019, primarily due to increases in revenues generated from domestic fixed communications and internet services, partially offset by decreases in mobile communications, and international fixed communications. Certain comparative figures have been reclassified to conform with the current year's presentation.

Domestic fixed communications

Domestic fixed communications revenues accounted for 31.7% and 33.4% of our revenues in 2019 and 2020, respectively. Our domestic fixed communications revenues increased by 5.7% from NT$65.7 billion in 2019 to NT$69.5 billion (US$2.5 billion) in 2020, primarily due to growth in ICT, broadband access revenues and MOD revenues, which were partially offset by the decrease in local and domestic long distance telephone services.

Local telephone services: Our local telephone revenues decreased from NT$25.7 billion in 2019 to NT$24.5 billion (US$0.9 billion) in 2020 with a 9.8% decline in traffic volume from 6.2 billion minutes in 2019 to 5.6 billion minutes in 2020. The decline in traffic volume was primarily due to the traffic migration from fixed-line services to internet telephone services and VoIP applications. We expect this trend to continue as broadband and mobile services become more popular in Taiwan.

Domestic long distance telephone services: Our domestic long distance telephone revenues decreased by 8.2% from NT$2.2 billion in 2019 to NT$2.0 billion (US$0.1 billion) in 2020. This decrease was mainly due to the increased use of VoIP applications.

Broadband access: Revenues generated from broadband access slightly increased from NT$18.0 billion in 2019 to NT$18.1 billion (US$0.6 billion) in 2020, mainly due to the increasing number of our customers adopting our higher-priced data plans.

Domestic leased line: We keep migrating domestic leased line customers to higher speed broadband services. Revenues generated from domestic leased line services increased from NT$4.1 billion in 2019 to NT$4.3 billion (US$0.2 billion) in 2020.

MOD: Revenues generated from our MOD services increased by 0.9% from NT$3.6 billion in 2019 to NT$3.64 billion (US$0.1 billion) in 2020. This increase was due to the upsell in our tiered-pricing channel packages and digital convergence packages.

Domestic ICT and other services: Other revenues increased by 40.4% from NT$12.1 billion in 2019 to NT$17.0 billion (US$0.6 billion) in 2020. This was mainly due to revenue recognition of large government ICT projects.

Mobile communications

Revenues from our mobile communications business accounted for 46.0% and 43.5% of our revenues in 2019 and 2020, respectively. Revenues from our mobile communications business decreased by 5.5% from NT$95.5 billion in 2019 to NT$90.2 billion (US$3.2 billion) in 2020. This decrease was due to the decline in mobile service revenues and sales of mobile handsets, tablets and wearable devices.

Mobile services. Revenues from our mobile services accounted for 28.3% and 27.3% of our revenues in 2019 and 2020, respectively. Revenues from our mobile services decreased by 3.4% from NT$58.7 billion in 2019 to NT$56.7 billion (US$2.0 billion) in 2020 due to market competition and decrease in roaming revenue resulting from travel restrictions in response to the COVID-19 pandemic.

Sales of mobile handsets, tablets and wearable devices. Revenues from our sales of mobile handsets, tablets and wearable devices accounted for 17.1% and 15.5% of our revenues in 2019 and 2020, respectively. Revenues from our sales of mobile handsets, tablets and wearable devices decreased by 9.7% from NT$35.5 billion in 2019 to NT$32.1 billion (US$1.1 billion) in 2020, mainly due to the COVID-19 pandemic, the delay in the release of the next-generation iPhone, and the extension of the mobile phone replacement cycle.

Internet

Revenues from internet business accounted for 14.5% and 15.5% of our revenues in 2019 and 2020, respectively. Revenues from our internet services increased by 6.7% from NT$30.1 billion in 2019 to NT$32.1 billion (US$1.1 billion) in 2020 mainly due to the increase in revenues generated from services such as IDC, Cloud, IoT, cybersecurity, HiNet and HiLink.

International fixed communications

International fixed communications revenues accounted for 5.5% and 4.2% of our revenues in 2019 and 2020, respectively. Our international fixed communications revenues decreased by 24.3% from NT$11.5 billion in 2019 to NT$8.7 billion (US$0.3 billion) in 2020. This decrease was mainly due to the decrease in revenues generated from ILD telephone service.

ILD telephone services. Our ILD telephone revenues decreased by 46.0% from NT$4.6 billion in 2019 to NT$2.5 billion (US$0.1 billion) in 2020 due to our new strategy to reduce low-margin business such as the wholesale of ILD traffic.

International leased line and international data services. Our international leased line and international data revenues increased by 3.3% from NT$4.5 billion in 2019 to NT$4.6 billion (US$0.2 billion) in 2020. The increase was mainly due to the growing demand from OTT providers.

International ICT and other services. Our international ICT and other revenues decreased by 49.5% from NT$1.8 billion in 2019 to NT$0.9 billion (US$0.03 billion) in 2020. The decrease was mainly generated from our subsidiary Chunghwa Telecom Singapore Pte., Ltd.

Others

Other revenues accounted for 2.3% and 3.4% of our revenues in 2019 and 2020, respectively. Our other revenues increased from NT$4.7 billion in 2019 to NT$7.1 billion (US$0.3 billion) in 2020. The increase was mainly due to operating growth derived from one of our subsidiaries, CHPT, a semiconductor testing company and the increase of ownership interests in International Integrated Systems, Inc. ("IISI") in the second half of 2020.

Operating Costs

Our operating costs include depreciation and amortization expenses, personnel expenses, cost of goods sold, interconnection and service costs, marketing expenses, costs of materials and maintenance and spectrum usage and license fees.

Our operating costs increased by 0.8% from NT$135.9 billion in 2019 to NT$137.0 billion (US$4.9 billion) in 2020. This increase was primarily due to the completion of some major ICT projects in 2020, which was partially offset by a decrease of NT$4.3 billion (US$0.2 billion) in interconnection costs.

Operating Expenses

Our operating expenses decreased by 3.2% from NT$30.8 billion in 2019 to NT$29.8 billion (US$1.0 billion) in 2020.

Marketing

Our marketing expenses decreased by 5.9% from NT$22.2 billion in 2019 to NT$20.9 billion (US$0.7 billion) in 2020. This decrease was primarily due to a decrease in personnel expenses and promotion expenses.

General and administrative

Our general and administrative expenses increased by 5.2% from NT$4.8 billion in 2019 to NT$5.0 billion (US$0.2 billion) in 2020. This increase was primarily due to an increase in personnel expenses.

Research and development

Our research and development expenses remained stable at NT$3.9 billion (US$0.1 billion) in 2019 and 2020.

Expected credit loss

We reversed credit loss of NT$0.1 billion in 2019 and recognized expected credit loss of NT$45.0 million (US$2.0 million) in 2020, respectively.

Operating Costs and Expenses by Business Segment

	Domestic Fixed Communications	Mobile Communications	Internet	International Fixed Communications	Others	Adjustment	Total
	(in billions of NT$)						
For the year ended December 31, 2020							
Operating costs and expenses	64.6	82.9	23.0	9.8	15.2	(28.7)	166.8
Depreciation and amortization	14.2	17.8	2.7	1.4	1.0	—	37.1
For the year ended December 31, 2019							
Operating costs and expenses	62.3	85.8	21.5	12.8	12.9	(28.6)	166.7
Depreciation and amortization	14.8	16.3	2.9	1.5	0.8	—	36.3

Domestic fixed communications

Our domestic fixed communications costs and expenses increased by 3.6% from NT$62.3 billion in 2019 to NT$64.6 billion (US$2.3 billion) in 2020, primarily due to an increase of NT$5.0 billion (US$0.2 billion) in ICT project costs, a decrease of NT$1.8 billion (US$0.1 billion) in personnel expenses and a decrease of NT$0.6 billion (US$21.0 million) in depreciation, amortization and rental expenses.

Mobile communications

Our mobile communications operating costs and expenses decreased by 3.3% from NT$85.8 billion in 2019 to NT$82.9 billion (US$3.0 billion) in 2020. This decrease was primarily due to a decrease of NT$2.9 billion (US$0.1 billion) in costs of goods sold, a decrease of NT$0.5 billion (US$18.9 million) in interconnection costs and an increase of NT$1.2 billion (US$42 million) in amortization expenses of 5G concession.

Internet

Our internet operating costs and expenses increased by 6.7% from NT$21.5 billion in 2019 to NT$23.0 billion (US$0.8 billion) in 2020. This increase was primarily due to an increase of NT$0.9 billion (US$33.5 million) in ICT project costs and an increase of NT$0.4 billion (US$15.7 million) in maintenance and rental expenses

International fixed communications

Our international fixed communications costs and expenses decreased by 23.6% from NT$12.8 billion in 2019 to NT$9.8 billion (US$0.3 billion) in 2020. The decrease was primarily due to a decrease of NT$3.0 billion (US$0.1 billion) in international settlement costs.

Others

The costs and expenses from our other business increased by 18.6% from NT$12.9 billion in 2019 to NT$15.2 billion (US$0.5 billion) in 2020. The increase was primarily due to an increase of NT$1.3 billion (US$46.3 million) from our new subsidiary International Integrated Systems, Inc. since July 1, 2020 and an increase of NT$0.9 billion (US$30.3 million) from our other subsidiaries.

Other Income and Expenses

We recorded net other expenses of NT$0.1 billion in 2019 and net other income of NT$1.6 billion (US$57.0 million) in 2020, respectively. The differences between 2019 and 2020 were primarily due to the gains resulting from asset revitalization in 2020.

Income from Operations and Operating Margin

As a result of the foregoing, our income from operations increased by 4.2% from NT$40.7 billion in 2019 to NT$42.4 billion (US$1.5 billion) in 2020. Our operating margin increased from 19.6% in 2019 to 20.4% in 2020.

The following table sets forth certain information regarding our revenues and income before income tax by business segment for the periods indicated.

	Domestic Fixed Communications	Mobile Communications	Internet	International Fixed Communications	Others	Adjustment	Total
			(in billions of NT$)				
For the year ended December 31, 2020							
Revenues from external customers	69.5	90.2	32.1	8.7	7.1	—	207.6
Intersegment service revenues	15.9	1.5	4.0	1.9	5.4	(28.7)	—
	85.4	91.7	36.1	10.6	12.5	(28.7)	207.6
Segment income before income tax	22.5	8.8	13.1	0.8	(2.4)	—	42.8
For the year ended December 31, 2019							
Revenues from external customers	65.7	95.5	30.1	11.5	4.7	—	207.5
Intersegment service revenues	16.1	1.6	4.0	2.1	4.8	(28.6)	—
	81.8	97.1	34.1	13.6	9.5	(28.6)	207.5
Segment income before income tax	19.5	11.3	12.5	0.8	(2.2)	—	41.9

As a result of the foregoing, segment income before tax for our domestic fixed communications business increased by 15.2% from NT$19.5 billion in 2019 to NT$22.5 billion (US$0.8 billion) in 2020; segment income before tax for our mobile communications business decreased by 22.0% from NT$11.3 billion in 2019 to NT$8.8 billion (US$0.3 billion) in 2020; segment income before tax for our internet business increased by 4.8% from NT$12.5 billion in 2019 to NT$13.1 billion (US$0.5 billion) in 2020; segment income before tax for our international fixed communications business remained stable at NT$0.8 billion (US$30.0 million) in 2019 and 2020; and segment loss for our other business segments increased by 7.6% from NT$2.2 billion in 2019 to NT$2.4 billion (US$0.1 billion) in 2020.

Non-operating Income and Expenses

Our non-operating income decreased from NT$1.2 billion in 2019 to NT$0.4 billion (US$17.0 million) in 2020. The decrease was primarily due to a decrease in the share of profits of associates accounted for using equity method, a decrease in interest income and an increase in interest expense.

Income Tax

Our income tax was NT$8.0 billion and NT$8.1 billion (US$0.3 billion) in 2019 and 2020, respectively. Our effective tax rate remained stable at 19.0% in 2019 and 2020.

Net Income

As a result of the foregoing, our net income attributable to stockholders of the parent was NT$32.9 billion and NT$33.4 billion (US$1.2 billion) in 2019 and 2020, respectively. Our net margin increased from 15.9% in 2019 to 16.1% in 2020.

B. Liquidity and Capital Resources

Liquidity

The following table sets forth the summary of our cash flows for the periods indicated:

	Year Ended December 31			
	2019	2020	2021	
	NT$	NT$	NT$	US$
	(in billions)			
Net cash provided by operating activities	72.4	74.5	74.9	2.7
Net cash used in investing activities	(27.1)	(68.3)	(31.2)	(1.1)
Net cash used in financing activities	(38.9)	(9.8)	(34.3)	(1.2)
Effect of exchange rate changes	0.0	0.0	0.0	0.0
Net increase (decrease) in cash and cash equivalents	6.4	(3.6)	9.4	0.4
Cash and cash equivalents at end of year	34.1	30.4	39.8	1.4

Our primary source of liquidity is cash flow from operations, which represents operating profit adjusted for non-cash items, primarily depreciation and amortization and changes in current assets and liabilities. Notes 22, 23, 24 and 25 to our consolidated financial statements, included elsewhere in this annual report, provide additional details as to our bank loans, commercial paper payable and bonds payable. We believe that our working capital is sufficient to meet our present cash flow requirements.

In 2021, we generated NT$74.9 billion (US$2.7 billion) in net cash from operating activities as compared to NT$74.5 billion in 2020. The increase was primarily due to an increase in income before income tax, an increase in trade notes and accounts receivable from 5G business and a decrease in payment to international carriers due to our strategy to reduce low-margin wholesale business.

In 2020, we generated NT$74.5 billion in net cash from operating activities as compared to NT$72.4 billion in 2019. The increase was primarily due to an increase in cash inflows from the completion of project business and a decrease in trade notes and accounts payable.

In 2019, we generated NT$72.4 billion (US$2.4 billion) in net cash from operating activities as compared to NT$66.4 billion in 2018. The increase was primarily due to an increase in cash inflows from the completion of project business and a decrease in contribution to the pension funds.

Historically, net cash from operating activities has been sufficient to cover our capital expenditures, including ongoing expansion and modernization of our networks.

In 2021, net cash used in investing activities was NT$31.2 billion (US$1.1 billion), a decrease from NT$68.3 billion in 2020. The decrease was primarily due to an increase in acquisition of property, plant and equipment in 2021 offset by a one-time payment of NT$47.4 billion in 2020 for acquiring the 5G mobile broadband spectrum.

In 2020, net cash used in investing activities was NT$68.3 billion, an increase from NT$27.1 billion in 2019. The change was primarily due to a payment of NT$47.4 billion in 2020 for acquiring the 5G mobile broadband spectrum, offset by a decrease in acquisition of property, plant and equipment as well as an increase in proceeds from disposals of property, plant and equipment resulting from asset revitalization.

In 2019, net cash used in investing activities was NT$27.1 billion, a decrease from NT$32.6 billion in 2018. The change was primarily due to a decrease in acquisition of property, plant and equipment and a net increase in cash flows of negotiable certificates of deposit with maturities of more than three months. The decrease is partially offset by a one-time payment of NT$4.2 billion in 2019 in acquisition of investments accounted for using equity method.

In 2021, our net cash used in financing activities totaled NT$34.3 billion (US$1.2 billion), which mainly reflected NT$33.4 billion in dividends being paid.

In 2020, our net cash used in financing activities totaled NT$9.8 billion, which mainly reflected NT$32.8 billion in dividends paid, a net increase in short-term bills payable and issuance of bonds.

In 2019, our net cash used in financing activities totaled NT$38.9 billion, which mainly reflected NT$34.7 billion in dividends paid and NT$3.7 billion in payments for the principal of lease liabilities.

As of December 31, 2021, we had remaining commitments under non-cancelable contracts with various parties, including acquisition of lands and buildings of NT$0.6 billion (US$20.6 million) and acquisition of telecommunications related inventory and equipment of NT$21.6 billion (US$0.8 billion).

Our Board of Directors approved the acquisition of the 900MHz frequency band and equipment from Asia Pacific Telecom Co., Ltd. in November 2021. The transaction amount is expected to be in the range from NT$1.6 billion (US$58.6 million) to NT$2.1 billion (US$75.0 million); however, the actual amount will be determined according to the approval date of the related authority and mutual negotiations.

We committed that when our ownership interest in NCB is greater than 25% and NCB encounters financial difficulty or capital adequacy ratio of NCB cannot meet the related regulation requirements, we will provide financial support to assist NCB to maintain in healthy financial condition.

Capital Resources

We have historically financed our capital expenditure requirements with our cash flows from operations and some bank loans. In future years, we have capital expenditure requirements for the ongoing expansion and upgrade of our networks, including 5G mobile broadband, IDC, FTTx, PSTN migration, international submarine cables, service platforms and IoT. We also expect to make dividend payments on an ongoing basis. See “Item 8. Financial Information—A. Consolidated Statements and Other Financial Information. Furthermore, we may require working capital from time to time to finance purchases of materials for our maintenance and other overhead expenses. We expect to primarily rely on cash generated from operations and, to a lesser extent, loans from commercial banks to meet our planned capital expenditures, make our planned dividend payments, repay debts and fulfill other commitments over the next twelve months.

As of December 31, 2021, our primary source of liquidity was NT$39.8 billion (US$1.4 billion) in cash and cash equivalents. In addition, the unused line of credit for unsecured bank loans and commercial paper payable and secured bank loans amounted to NT$61.7 billion (US$2.2 billion) and NT$1.6 billion (US$57.7 million), respectively, as of December 31, 2021.

As of December 31, 2021, we had bonds payable in the amount of NT$27.0 billion (US$1.0 billion) at interest rates ranging from 0.42% to 0.59%.

As of December 31, 2021, our subsidiary, Chunghwa Sochamp Technology Inc., had short-term unsecured loans of NT$65 million (US$2.3 million) at interest rates ranging from 1.97% to 2.43%.

As of December 31, 2021, our subsidiary Light Era had long-term secured loans in the amount of NT$1.6 billion (US$57.7 million) due in 2024 at an interest rate of 0.89%.

As part of the government's effort to upgrade the existing telecommunications infrastructure, we and other public utility companies were required by the ROC government to contribute a certain amount of money to a Piping Fund, administered by the Taipei City Government. A total of NT$1.0 billion was contributed by us on August 15, 1996. This fund is used to finance various telecommunications infrastructure projects. We accounted for the contribution as other financial assets on our consolidated balance sheets.

Note 41 to our consolidated financial statements included elsewhere in this annual report provides a description of the assets that are pledged as collaterals for bank loans, custom duties of the imported materials and warranties of contract performance as well as the bank deposits for the restricted purpose in accordance with The Management, Utilization, and Taxation of Repatriated Offshore Funds Act in the ROC.

Capital Expenditures

Substantially all of our capital expenditures in 2019, 2020 and 2021 were made for operations in the ROC. We have financed our capital expenditures using cash flow from operations and bank loans. The following table sets forth a summary of our capital expenditures for the periods indicated.

	Year Ended December 31					
	2019		2020		2021	
	(in billions of NT$, except percentages)					
Capital Expenditures:						
Domestic fixed communications business	12.1	50%	11.5	49%	13.3	38%
Mobile communications business	7.8	32	8.8	38	16.8	48
Internet business	1.4	6	1.4	6	2.9	8
International fixed communications business	1.1	5	0.8	3	0.5	1
Others	1.8	7	1.0	4	1.8	5
Total capital expenditures	24.2	100%	23.5	100%	35.3	100%

The following table sets forth a summary of our planned capital expenditures for the year ending December 31, 2022.

	Year Ending December 31, 2022	
	(in billions of NT$, except percentages)	
Capital Expenditures:		
Mobile communications business	14.5	40%
Others	22.3	60
Total capital expenditures	36.8	100%

We expect our total capital expenditures to be approximately NT$36.8 billion in 2022. Our capital expenditures for 2022 are planned to be allocated to our 5G network deployment, IDC construction, FTTx network expansion, international submarine cables, public switching telephone network transforming to internet protocol network, service platforms, cloud computing, IoT, ESG, and asset activation. We expect to finance these capital expenditures with our cash flows from operations and bank loans.

As of December 31, 2021, we had remaining commitments under non-cancelable contracts with various parties, including the acquisition of lands and buildings of NT$0.6 billion (US$20.6 million) and acquisition of telecommunications related inventory and equipment of NT$21.6 billion (US$0.8 billion).

Our Board of Directors approved the acquisition of the 900MHz frequency band and equipment from Asia Pacific Telecom Co., Ltd. in November 2021. The transaction amount is expected to be in the range from NT$1.6 billion (US$58.6 million) to NT$2.1 billion (US$75.0 million); however, the actual amount will be determined according to the approval date of the related authority and mutual negotiations.

We committed that when our ownership interest in NCB is greater than 25% and NCB encounters financial difficulty or capital adequacy ratio of NCB cannot meet the related regulation requirements, we will provide financial support to assist NCB to maintain in healthy financial condition.

Inflation

We do not believe that inflation in Taiwan has had a material impact on our results of operations in 2019, 2020 and 2021.

Recent Accounting Pronouncements

Major differences between IFRSs and Taiwan IFRSs

While we have adopted Taiwan IFRSs for ROC reporting purposes, we adopt IFRSs for certain filings with the SEC, including our annual reports on Form 20-F for the year ended December 31, 2013 and thereafter.

Taiwan IFRSs differs from IFRSs in certain significant respects, including to the extent that any new or amended standards or interpretations applicable under IFRSs may not be timely endorsed by the FSC. Therefore, these pronouncements will not be applicable to Taiwan IFRSs until endorsed by the FSC. Some of the major differences between IFRSs and Taiwan IFRSs that are relevant to us as of the date of this annual report are set forth below.

- The “income taxes on unappropriated earnings” should be recognized at the year of earnings under IFRSs, while it should be recognized at the year of distribution under Taiwan IFRSs.
- Prior to incorporation, according to the laws and regulations applicable to state-owned enterprises in Taiwan, we recorded revenue from fixed-line service at the time the connection service was performed or the prepaid card was sold. Upon incorporation, net assets greater than capital stock was credited as additional paid-in capital. Part of our additional paid-in capital was from unearned revenues from fixed-line services as of that date. Under IFRSs, following the revenue recognition guidance, the above service revenue should be treated as deferred income and recognized over the time when the service is continuously provided or as consumed. Therefore, upon our first adoption of IFRSs, we should retrospectively decrease additional paid-in capital while increasing unappropriated earnings on the transition date of January 1, 2012. There is no difference in recognition of unearned revenues or deferred income between IFRSs and Taiwan IFRSs. However, according to the guidance released by the TWSE in March 2012, which is a part of Taiwan IFRSs, the additional paid-in capital under ROC GAAP that is not specifically promulgated under Taiwan IFRSs should not be adjusted on the transition date of January 1, 2012. Therefore, we retain such additional paid-in capital under Taiwan IFRSs.

It is difficult for us to determine the differences between Taiwan IFRSs and IFRSs on our financial statements as any new or amended standards or interpretations applicable under IFRSs may not be timely endorsed by the FSC.

Other recent accounting pronouncements under IFRSs

For a summary of new standards, amendments and interpretations issued under IFRSs but not effective for 2021 and which have not been adopted early by us, see Note 5 to our consolidated financial statements included elsewhere in this annual report.

C. Research and Development, Patents and Licenses

Research and Development

Looking back at the year 2021, global telecommunications operators faced intense competition from OTT and social media providers. In addition to actively promoting 5G network construction and innovative services, global telecommunications operators mapped out their digital transformation strategies to meet such challenges. We have also undertaken the 3-year transformation plan aiming at four major areas, including core businesses, emerging businesses, cost optimization, and core competency improvement. Our Telecommunication Laboratories strives to align itself with the strategy by leveraging its capabilities in emerging technologies, while implementing next-generation networks, on which various converging services for the three major markets of individuals, families, and enterprises are provided. Key research and development achievements of our Telecommunication Laboratories in 2021 are as follows:

Forward-looking network and cloud technologies:

- Network Communication: 5G Standalone, or SA network, 5G edge computing, 5G private network, 5G time-frequency synchronization, telecom network function virtualization and cloudification, ultra-high-speed broadband access network, co-existence solution of 5G and Low-Earth Orbit, or LEO, satellite network, interference analysis of 5G and LEO satellite network, universal radio access, 3GPP non-terrestrial networks (NTN), etc.
- Operation and maintenance management: fixed-mobile network convergence operation management, SDN network control, 5G private network management, data-driven operation management, intelligent operation management for autonomous network, etc.
- Cloud computing platform: multi-cloud management, hicloud public cloud service, container management, software-defined data center, telecom cloud, etc.

Innovative information and communication application services:

- AIoT: AIoT edge computing, smart energy management, smart meters, health cloud teleconsultation, emergency medical operation center platform, smart construction applications, etc.
- Smart transportation and safety: smart traffic control, traffic law enforcement technology, self-driving vehicle management, big data analytics in traffic and transportation, public transit data analytics, smart railway, smart container terminal, automated gate, drone inspection, high-speed dynamic weighbridge integration solution, etc.
- Digital convergence: low-latency, multi-angle live streaming, cloud class-rooms, AR/MR(Augmented Reality / Mixed Reality) applications, multi-location co-performance in real time, 5G video entertainment, remote video collaboration, end-to-end secure communication, etc.
- Artificial Intelligence, or AI: speech-to-text and text-to-speech, smart home voice control, task-based dialogue robots, AI PaaS intelligent analysis platform, text categorization and topic analysis, etc.
- Cybersecurity: Identity authentication, blockchain, cybersecurity threat detection, enterprise cybersecurity protection, etc.
- Digital finance: mobile payment, reward points value-added services, etc.

In 2021 a total of 161 patents were filed, and 167 patents were granted, while at least 16 domestic and foreign honors were awarded for the R&D achievements.

D. Trend Information

See "—Overview" for a discussion of the most significant recent trends that have had, and in the future may have, a material impact on our results of operations, financial condition and capital expenditures. In addition, see discussions included in this Item for a discussion of known trends, uncertainties, demands, commitments or events that we believe are reasonably likely to have a material effect on our net operating revenues, income from continuing operations, profitability, liquidity or capital resources, or that would cause reported financial information not necessarily to be indicative of future operating results or financial condition.

E. Critical Accounting Estimates

Summarized below are our accounting policies that we believe are both important to the portrayal of our financial results and involve the need for management to make estimates about the effect of matters that are uncertain in nature. Actual results may differ from these estimates, judgments and assumptions. Certain accounting policies are particularly critical because of their significance to our reported financial results and the possibility that future events may differ significantly from the conditions and assumptions underlying the estimates used and judgments made by our management in preparing our financial statements. The following discussion should be read in conjunction with the consolidated financial statements and related notes, which are included in this annual report.

Critical Accounting Judgments

Revenue Recognition

We identify the performance obligations in the contract with the customers, allocate transaction price to each performance obligation and recognize revenue when performance obligations are satisfied.

Sales of products are recognized as revenue when we deliver products and the customer accepts and controls the product. Except for consumer electronic products such as mobile devices sold in channel stores usually in the form of cash, we recognize revenues and corresponding trade notes and accounts receivable for sale of other electronic devices.

Usage revenues from fixed-line services (including local, domestic long distance and international long distance telephone services), mobile services, internet and data services, and interconnection and call transfer fees from other telecommunications companies and carriers are billed in arrears and are recognized based upon seconds or minutes of traffic processed when the services are provided in accordance with contract terms. The usage revenues and corresponding trade notes and accounts receivable are recognized monthly.

Other revenues are recognized as follows: (a) one-time subscriber connection fees (on fixed-line services) are first recognized as contract liabilities and revenues are recognized subsequently over the average expected customer service periods, (b) monthly fees (on fixed-line services, mobile, Internet and data services) and related receivables are accrued monthly, and (c) prepaid services (fixed-line, mobile, Internet and data services) are recognized as contract liabilities upon collection considerations from customers and are recognized as revenues subsequently based upon actual usage by customers.

Where we enter into transactions which involve both the provision of telecommunications service bundled with products such as handsets, total consideration received from products and telecommunications service in these arrangements are allocated based on their relative standalone selling price. The amount of sales revenue recognized for products is not limited to the amount paid by the customer for the products. When the amount of sales revenue recognized for products exceeded the amount paid by the customer for the products, the difference is recognized as contract assets. Contract assets are reclassified to accounts receivable when the amounts become collectible from customers subsequently. When the amount of sales revenue recognized for products was less than the amount paid by the customer for the products, the difference is recognized as contract liabilities and revenues are recognized subsequently when the telecommunications services are provided.

For project business contracts, if a substantial part of our promise to customers is to manage and coordinate the various tasks and assume the risks of those tasks to ensure the individual goods or services are incorporated into the combined output, they are treated as a single performance obligation since we provide a significant integration service. We recognize revenues and corresponding accounts receivable when the project business contract is completed and accepted by customers. For some project contracts, we do not create an asset with an alternative use to us and have an enforceable right to payment for performance completed to date; therefore, performance obligations are satisfied and revenues are recognized over time.

For service contracts such as maintenance and warranties, customers simultaneously receive and consume the benefits provided by us; thus, revenues and corresponding accounts receivable of service contracts are recognized over the related service period.

When another party is involved in providing goods or services to a customer, we are acting as a principal if we control the specified good or service before that good or service is transferred to a customer; otherwise, we are acting as an agent. When we are acting as a principal, gross inflow of economic benefits arising from transactions is recognized as revenue. When we are acting as an agent, revenue is recognized as its share of transaction.

Business Combinations

Acquisitions of businesses are accounted for using the acquisition method. Acquisition-related costs are generally recognized in profit or loss as they are incurred.

Goodwill is measured as the excess of the sum of the consideration transferred and the fair value of the acquirer's previously held equity interests in the acquiree over the net of the acquisition-date amounts of the identifiable assets acquired and the liabilities assumed.

Noncontrolling interests that are present ownership interests and entitle their holders to a proportionate share of the entity's net assets in the event of liquidation are measured at the non-controlling interests' proportionate share of the recognized amounts of the acquiree's identifiable net assets.

When a business combination is achieved in stages, our previously held equity interest in an acquiree is remeasured to fair value at the acquisition date and the resulting gain or loss is recognized in profit or loss. Amounts arising from interests in the acquiree prior to the acquisition date that have previously been recognized in other comprehensive income are recognized on the same basis as would be required had those interests been directly disposed of by ourselves.

Control over Subsidiaries

Some entities are our subsidiaries, although we only own less than 50% ownership interest in these entities. After considering our absolute size of holding in the entity and the relative size of and the dispersion of shares owned by the other stockholders, and the contractual arrangements between us and other investors, potential voting interests and the written agreement between stockholders, the management concluded that we have a sufficiently dominant voting interest to direct the relevant activities of the entity and to have control over the governance of the entity and therefore we have control over these entities.

Investments in Unconsolidated Companies

An associate is an entity over which we have significant influence and that is neither a subsidiary nor an interest in a joint venture. A joint venture is a joint arrangement whereby we and other parties that have joint control of the arrangement and have rights to the net assets of the arrangement.

Investments accounted for using the equity method include investments in associates and interests in joint ventures. Under the equity method, an investment in an associate or joint venture is initially recognized at cost and adjusted thereafter to recognize our share of profit or loss and other comprehensive income of the associate and joint venture as well as the distribution received.

When we reduce our ownership interest in an associate or a joint venture but we continue to use the equity method, we reclassify to profit or loss the proportion of the gain or loss that had previously been recognized in other comprehensive income relating to that reduction in ownership interest if that gain or loss would be reclassified to profit or loss on the disposal of the related assets or liabilities.

Any excess of the cost of acquisition over our share of the fair value of the identifiable net assets and liabilities of an associate and joint venture at the date of acquisition is recognized as goodwill, which is included within the carrying amount of the investment and shall not be amortized. Any excess of our share of the net fair value of the identifiable assets and liabilities over the cost of acquisition, after reassessment, is recognized immediately in profit or loss.

We assess the impairment of investments accounted for using the equity method whenever triggering events or changes in circumstances indicate that an investment may be impaired and carrying value may not be recoverable. The entire carrying amount of the investment, including goodwill, is tested for impairment as a single asset by comparing its recoverable amount with its carrying amount. We measure the impairment based on the projected future cash flow of the investees, the underlying assumptions for which had been formulated by such investees' internal management team, taking into account sales growth and capacity utilization. Any impairment loss recognized forms part of the carrying amount of the investment. Any reversal of that impairment loss is recognized to the extent that the recoverable amount of the investment subsequently increases.

Some of our equity investments are classified as financial assets at fair value through other comprehensive income, or FVOCI. On initial recognition, we may make an irrevocable election to designate investments in equity instruments as at FVOCI; however, designation at FVOCI is not permitted if the equity investment is held for trading or if it is contingent consideration recognized by an acquirer in a business combination.

Investments in equity instruments at FVOCI are subsequently measured at fair value with gains and losses arising from changes in fair value recognized in other comprehensive income and accumulated in other equity. The cumulative gain or loss will not be reclassified to profit or loss on disposal of the equity investments. Instead, it will be transferred to retained earnings.

Some of our other equity investments are mandatorily classified as financial asset at fair value through profit or loss, or FVTPL. Financial assets mandatorily classified as at FVTPL include investments in equity instruments which are not designated as at FVOCI.

Financial assets at FVTPL are stated at fair value, with any gains or losses arising on remeasurement recognized in profit or loss. The net gain or loss recognized in profit or loss does not incorporate any dividend earned on the financial asset.

For the assets and liabilities measured at fair value without quoted prices in active markets, our management determines the appropriate valuation techniques for the fair value measurements and whether to engage third party qualified appraisers based on the related regulations and professional judgments. Information about the valuation techniques and inputs used in determining the fair value of various assets and liabilities, please refer to Note 39 to our consolidated financial statements included elsewhere in this annual report. If the actual changes of inputs in the future differ from expectation, the fair value may vary accordingly. We update inputs periodically to monitor the appropriateness of the fair value measurement.

Accounting for Income Taxes

Income tax expense represents the sum of the tax currently payable and deferred tax.

The current tax is based on taxable profit for the year. Taxable profit differs from profit as reported in the consolidated statements of comprehensive income because of items of income or expense that are taxable or deductible in other years and items that are never taxable or deductible. The liability for current tax is calculated using tax rates that have been enacted or substantively enacted by the end of the reporting period. Income tax on unappropriated earnings is accrued during the period the earnings arise and adjusted to the extent that distributions are approved by the stockholders in the following year. Adjustments of prior years' tax liabilities are added to or deducted from the current year's tax provision.

Deferred tax is recognized on temporary differences between the carrying amounts of assets and liabilities in the consolidated financial statements and the corresponding tax bases used in the computation of taxable profit. If the temporary difference arises from the initial recognition, other than in a business combination, of assets and liabilities in a transaction that affects neither the taxable profit nor the accounting profit, the resulting deferred tax asset or liability is not recognized. In addition, a deferred tax liability is not recognized on a taxable temporary difference arising from initial recognition of goodwill.

Deferred tax liabilities are generally recognized for all taxable temporary differences. Deferred tax assets are generally recognized for all deductible temporary differences, unused loss carry forwards and unused tax credits from purchase of machinery, equipment and technology, and research and development expenditures to the extent that it is probable that taxable profits will be available against which those deductible temporary differences can be utilized.

Deferred tax liabilities are recognized for taxable temporary differences associated with investments in subsidiaries and associates, and interests in joint ventures, except where we are able to control the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. Deferred tax assets arising from deductible temporary differences associated with such investments and interests are only recognized to the extent that it is probable that there will be sufficient taxable profits against which to utilize the benefits of the temporary differences and they are expected to reverse in the foreseeable future.

The carrying amount of deferred tax assets is reviewed at the balance sheet date and reduced to the extent that it is no longer probable that sufficient taxable profits will be available to allow all or part of the asset to be recovered. A previously unrecognized deferred tax asset is also reviewed at the end of each reporting period and recognized to the extent that it has become probable that future taxable profit will allow the deferred tax asset to be recovered.

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply in the period in which the liability is settled or the asset realized, based on tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period. The measurement of deferred tax assets and liabilities reflects the tax consequences that would follow from the manner in which we expect, at the end of the reporting period, to recover or settle the carrying amount of the assets and liabilities.

Current and deferred tax are recognized in profit or loss, except when they relate to items that are recognized in other comprehensive income, in which case, the current and deferred tax are also recognized in other comprehensive income.

Where current tax or deferred tax arises from the initial accounting for a business combination, the tax effect is included in the accounting for the business combination.

Key Sources of Estimation and Uncertainty

Impairment of Trade notes and Accounts Receivable

The provision for impairment of trade notes and accounts receivable is based on assumptions about risk of default and expected loss rates. We use judgment in making these assumptions and in selecting the inputs to the impairment calculation, based on our past experience, current market conditions as well as forward-looking information at the end of each reporting period. For details of the key assumptions and inputs used, please refer to Note 10 to our consolidated financial statements included elsewhere in this annual report. Where the actual future cash flows are less than expected, a material impairment loss may arise.

We recognize lifetime Expected Credit Loss (ECL) for trade notes and accounts receivable. Expected credit losses reflect the weighted average of credit losses with the respective risks of a default occurring as the weights. Lifetime ECL represents the expected credit losses that will result from all possible default events over the expected life of a financial instrument.

The expected credit losses on receivables are estimated using a provision matrix by reference to past default experience of the customers and an analysis of the customers' current financial positions, as well as the forward-looking indicators such as macroeconomic business indicators. When there are pieces of evidence indicating that the counterparty is in evasion, bankruptcy, deregistration of its company or the accounts receivable are over two years past due and the recoverable amount cannot be reasonably estimated, we write off the trade notes and accounts receivable. For accounts receivable that have been written off, we continue to engage in enforcement activity to attempt to recover the receivables due. Where recoveries are made, these are recognized in profit or loss.

Provision for inventory valuation and obsolescence

Inventories are stated at the lower of cost or net realizable value. Estimates of net realizable value are based on the most reliable evidence available at the time the estimates are made at the end of the reporting period. These estimates take into consideration fluctuations of price or cost directly relating to events occurring after the end of the period to the extent that such events confirm conditions existing at the end of the period. Inventory write-downs are determined on an item by item basis, except for those similar items which could be categorized into the same groups. We use the inventory holding period and turnover as the evaluation basis for inventory obsolescence losses.

Useful Lives of Long-Lived Assets

A significant portion of our total assets consists of long-lived assets, primarily property, plant and equipment and definite-lived intangibles. We estimate the useful lives of property, plant and equipment and other long-lived assets with finite lives in order to determine the period of time over which depreciation and amortization expenses should be recorded. The useful lives are estimated at the time assets are acquired and are based on historical experience with similar assets as well as the anticipated technological evolution or other environmental changes. Further, we review the estimated useful lives of long-lived assets at the balance sheet date. If technological changes were to occur more rapidly than anticipated or in a different form than anticipated, the useful lives assigned to these assets may need to be shortened, resulting in the recognition of increased depreciation and amortization in the relevant periods.

Impairment of long-lived assets, right-of-use assets, intangible assets and incremental costs of obtaining contracts

We assess the impairment of long-lived assets, right-of-use assets and intangible assets whenever triggering events or changes in circumstances indicate that the asset may be impaired and carrying value may not be recoverable. Indications we consider important which could trigger an impairment review include, but are not limited to, the following:

- External sources of information:
  - during the period, an asset's market value has declined significantly more than what would be expected as a result of the passage of time or normal use.
  - significant changes with an adverse effect on the entity have taken place during the period, or will take place in the near future, in the technological, market, economic or legal environment in which the entity operates or in the market to which an asset is dedicated.
  - market interest rates or other market rates of return on investments have increased during the period, and those increases are likely to affect the discount rate used in calculating an asset's value in use and decrease the asset's recoverable amount materially.
  - the carrying amount of the net assets of the entity is more than its market capitalization.
- Internal sources of information:
  - evidence is available of obsolescence or physical damage of an asset.
  - significant changes with an adverse effect on the entity have taken place during the period, or are expected to take place in the near future, in the extent to which, or manner in which, an asset is used or is expected to be used.

- evidence is available from internal reporting that indicates that the economic performance of an asset is, or will be, worse than expected.

When an indication of impairment is identified for long-lived assets, right-of-use assets and intangible assets other than goodwill, any excess of the carrying amount of an asset over its recoverable amount is recognized as a loss. If the recoverable amount increases in a subsequent period, the amount previously recognized as impairment would be reversed and recognized as a gain. However, the adjusted amount may not exceed the carrying amount that would have been determined, as if no impairment loss had been recognized.

Impairment loss from the assets related to incremental cost of obtaining contracts is recognized to the extent that the carrying amount of the assets exceeds the remaining amount of consideration that we expect to receive in exchange for related goods or services less the costs which relate directly to providing those goods or services.

Goodwill represents the excess of the consideration paid for business acquisition over the fair value of identifiable net assets acquired. Goodwill is tested for impairment at least annually, or if an event occurs or circumstances change which indicates that the fair value of goodwill is below its carrying amount, an impairment loss is recognized. A subsequent reversal of such impairment loss is not allowed.

In 2019, 2020 and 2021, we determined that some of our investment properties' recoverable amount, which represented the fair value less costs to sell of some land and buildings was higher than the carrying amount and recognized reversals of impairment loss of NT$57 million, NT$27 million and NT$83 million (US$3.0 million), respectively.

In 2019, 2020 and 2021, our subsidiary, SENAO, evaluated the goodwill that arose in the acquisition of Youth and its subsidiaries and concluded the recoverable amount of the goodwill was lower than the carrying value and recognized an impairment loss of NT$9 million, NT$9 million and NT$29 million (US$1.0 million), respectively.

In 2021, our subsidiary, SENAO evaluated the trademark that arose in the acquisition of Youth and its subsidiaries and concluded the recoverable amount of the license agreement and the trademark were lower than the carrying value and recognized impairment loss of $0.2 million (US$0.01 million).

In 2019, our subsidiaries, CHPT and CHSI, evaluated that certain miscellaneous equipment, construction in progress and equipment to be accepted will not be used in the future and there was no active market for sale; therefore, we determined that the recoverable amount of such assets was nil and recognized impairment losses of NT$93 million. In 2020 and 2021, there was no indication that property, plant and equipment was impaired, so we did not recognize any impairment loss.

In 2021, we evaluated and determined that the recoverable amount of certain of our right-of-use assets was nil; therefore, we recognized an impairment loss of NT$420 million (US$15.1 million).

Pension Benefits

Payments to defined contribution retirement benefit plans are recognized as an expense when employees rendered services entitling them to the contributions.

Defined benefit costs (including service cost, net interest and remeasurement) under the defined benefit retirement benefit plans are determined using the projected unit credit method. Actuarial assumptions comprise the discount rate, rate of employee turnover, and long-term average future salary increase. Changes in economic circumstances and market conditions will affect these assumptions and may have a material impact on the amount of the expense and the liability.

Service cost (including current service cost and gains or losses on settlements) and net interest on the net defined benefit liability (asset) are recognized as employee benefits expense in the period they occur. Remeasurement, comprising (a) actuarial gains and losses; and (b) the return on plan assets, excluding amounts included in net interest on the net defined benefit liability (asset), is recognized in other comprehensive income in the period in which they occur. Remeasurement recognized in other comprehensive income is reflected immediately in retained earnings and will not be reclassified to profit or loss.

Net defined benefit liability (asset) represents the actual deficit (surplus) in our defined benefit plans. Any surplus resulting from this calculation is limited to the present value of any refunds from the plans or reductions in future contributions to the plans.

Curtailment or settlement gains or losses on the defined benefit plan are recognized when the curtailment or settlement occurs.

Leasing

At the inception of a contract, we assess whether the contract is, or contains, a nature of lease.

As a lessor, we recognize rental income from operating leases on a straight-line basis over the term of the relevant lease.

As a lessee, we recognize right-of-use assets and lease liabilities for all leases at the commencement date of a lease, except for lease payments for low-value assets are recognized as expenses on a straight-line basis over the lease terms accounted for applying for recognition exemption.

Right-of-use assets are initially measured at cost, which comprises the initial measurement of lease liabilities and for lease payments made at or before the commencement date. Right-of-use assets are subsequently measured at cost less accumulated depreciation and accumulated impairment losses and adjusted for any remeasurement of the lease liabilities. Right-of-use assets are presented separately on the consolidated balance sheets.

Right-of-use assets are depreciated using the straight-line basis from the commencement dates to the earlier of the end of the useful lives of the right-of-use assets or the end of the lease terms.

Lease liabilities were initially measured at the present value of the lease payments, which comprise fixed payments, in-substance fixed payments, variable lease payments which depend on an index or a rate. The lease payments are discounted using the interest rate implicit in a lease, if that rate can be readily determined. If such rate cannot be readily determined, the lessee’s incremental borrowing rate is used. In determining a lessee’s incremental borrowing rate used in discounting lease payments, a risk-free rate for relevant duration and the same currency is selected as a reference rate. The lessee’s credit spread adjustments and lease specific adjustments are also taken into account.

Lease liabilities are subsequently measured at amortized cost using the effective interest method, with interest expense recognized over the lease terms. When there is a change in a lease term or a change in future lease payments resulting from a change in an index or a rate used to determine those payments, we remeasure the lease liabilities with a corresponding adjustment to the right-of-use-assets. However, if the carrying amount of the right-of-use assets is reduced to zero, any remaining amount of the remeasurement is recognized in profit or loss. We account for the remeasurement of the lease liability as a result of the decrease of lease scope by decreasing the carrying amount of the right-of-use assets and recognizes in profit or loss any gain or loss on the partial or full termination of the lease. Lease liabilities are presented separately on the consolidated balance sheets.

Variable lease payments not depending on an index or a rate are recognized as expenses in the periods in which they are incurred.

ITEM 6. DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEES

A. Directors and Senior Management

Our Articles of Incorporation provides for a board of directors consisting of seven to fifteen directors bestowed with a three-year tenure. The following table sets forth the name, age and position of each of our directors and such person's position as of February 28, 2022. There is no family relationship among any of these persons. These directors have terms until June 20, 2022. Pursuant to the ROC Company Act, a person may serve as our director in his or her personal capacity or as the representative of another legal entity. A director who serves as the representative of a legal entity may be removed or replaced at any time at the discretion of that legal entity, and the replacement director may serve the remainder of the term of office of the replaced director. All of our non-independent directors are representatives of the MOTC.

Name	Age	Position
Chi-Mau Sheih	68	Chairman, Chief Executive Officer and Director
Shui-Yi Kuo	57	President and Director
Yu-Lin Huang	59	Director
Lien-Chuan Lee	60	Director
Shin-Yi Chang	62	Director
Sin-Horng Chen	68	Director
Hung-Yi Hsiao	48	Director
Shih-Hung Tseng	61	Director
Lo-Yu Yen	66	Independent Director
JenRan Chen	63	Independent Director
Yu-Fen Lin	51	Independent Director
Chung-Chin Lu	63	Independent Director
Yi-Chin Tu	46	Independent Director

Chi-Mau Sheih is the Chairman, Chief Executive Officer and director of our company. Mr. Sheih assumed the role of our Chairman and Chief Executive Officer on April 22, 2019. He has served as the President and director of our company since January 2017. Mr. Sheih served as a Senior Executive Vice President of our company from 2010 to 2017, the President of Southern Taiwan Business Group from 2007 to 2010, and the President of Central Taiwan Business Group from 2006 to 2007. Mr. Sheih specializes in business management, ICT, cyber security, cloud computing, big data applications, and commerce, and he holds an MBA degree from National Taiwan University.

Shui-Yi Kuo is the President and director of our company. Mr. Kuo has been our President since May 8, 2019. Prior to that, he served as our Senior Executive Vice President and Chief Financial Officer from August 2017 to September 2020 and the Senior Executive Vice President of Investment of the Company from March 2017 to August 2017. He also served as the Vice President of the Company's Investment Department from November 2014 to March 2017. From November 2013 to November 2014, Mr. Kuo served as the President of the Company's subsidiary, Light Era Development Co., Ltd. In addition, from March 2008 to November 2013, Mr. Kuo served as the Vice President of the Company's Accounting Department. Mr. Kuo specializes in accounting and finance, and he holds a master's degree in Accounting from National Chengchi University.

Yu-Lin Huang is a director of our company. Dr. Huang is currently the President of the Taiwan Foundation for Democracy. He is also a professor of the Civil Engineering Department of the National Yang Ming Chiao Tung University. He had been the Political Deputy Minister of the MOTC and the Director General of the Construction Bureau of Taichung City. Dr. Huang specializes in project management, project financing, infrastructure investment and privatization, and he holds a Ph.D. degree in Civil and Environmental Engineering from University of California at Berkeley.

Lien-Chuan Lee is a director of our company. Mr. Lee is currently the Vice Minister of the Ministry of Culture, or the MOC. Mr. Lee served as Secretary General, Executive Secretary of Legal Affairs, and Director

General of General Planning of the MOC from 2012 to 2017. Mr. Lee also worked at the Ministry of Finance, Ministry of Economic Affairs, and Executive Yuan, and served as Senior Executive Officer, Senior Specialist and Senior Executive Officer for 13 years. Mr. Lee has been an instructor for over 20 years in Soochow University and Tamkang University, teaching courses of international finance, investment theory and practice ad futures theory and practice. Mr. Lee specializes in financial management, cultural and digital content investment and interdisciplinary integration of cultural and technology, and he holds a master's degree in Economics from National Chengchi University.

Shin-Yi Chang is a director of our company. Mr. Chang is currently the Director of the Accounting Department of the MOTC. Mr. Chang specializes in accounting and he holds a master's degree in Business Administration from National Taiwan University.

Sin-Horng Chen is a director of our company. Dr. Chen is currently a Chair Professor in the Department of Electrical Engineering of National Yang Ming Chiao Tung University. Dr. Chen also serves as an independent director of Chinesegamer International Corp. Dr. Chen specializes in speech signal processing, speech recognition and speech synthesis, and he holds a Ph.D. degree in Electrical Engineering from Texas Tech University.

Hung-Yi Hsiao is a director of our company. Dr. Hsiao is currently a professor in the Department of Law, School of Law and Dean of Office of International & Cross-Strait Academic Exchange of Soochow University. Dr. Hsiao also serves as the Chairman of China Electric Manufacturing Corp. Dr. Hsiao specializes in criminal law and technology law, and he holds a Ph.D. degree in Law from Soochow University in Taiwan.

Shih-Hung Tseng is the labor director of our company. Mr. Tseng is currently the President of Chunghwa Telecom's Corporate Union, Tainan Branch. Mr. Tseng specializes in ICT, and he graduated from the Electronic Engineering Department of Kun Shan Institute of Technology.

Lo-Yu Yen is an independent director of our company. Mr. Yen is currently the Chairman of the Entrepreneurs Co-Creation Platform. He also serves as an independent director of Sinyi Realty Inc. and Qisda Corp. Mr. Yen is also a legal representative of Chinese Television System Inc. Mr. Yen worked at international accounting and consulting firms in Taiwan, the US and Mainland China for 30 years. Mr. Yen specializes in accounting and finance, and he holds a master's degree in Accounting from National Chengchi University. Mr. Yen has CPA certificates both in the ROC and in the United States.

JenRan Chen is an independent director of our company. Mr. Chen is currently the Executive Board Director of Pixnet Digital Media Technology Co., Ltd., the largest social media in Taiwan. He also serves as an independent director of Ezfly International Travel Agent Co., Ltd. He is the co-founder and ex-CEO of Yam Digital Technology Co., Ltd, the very first Chinese search engine, and former General Manager of Chinese Television System. Mr. Chen specializes in innovation management, team building, strategy management and IT services, and he holds a master's degree in Sociology from National Taiwan University.

Yu-Fen Lin is an independent director of our company. Ms. Lin is the co-founder and managing partner of Lex & Honor Law offices. She is a transactional attorney with a board practice in business planning, corporate compliance and finance transactions. Ms. Lin also serves as an independent director of Bank SinoPac Co., Ltd. and SINBON Electronics Co., Ltd. Ms. Lin specializes in international commercial investment, corporate investment law, administrative and public laws related legal consultancy, and she holds a bachelor's degree of Laws and Political Science from National Taiwan University.

Chung-Chin Lu is an independent director of our company. Dr. Lu is a professor in the Department of Electrical Engineering, National Tsing Hua University, Taiwan. Dr. Lu specializes in digital communications, error-correcting codes, systems bioinformatics, quantum computation and quantum communications, and machine learning, and he holds a Ph.D. degree in Electrical Engineering from the University of Southern California, USA.

Yi-Chin Tu is an independent director of our company. Mr. Tu is currently the founder of Taiwan AI Labs. Prior to that, Mr. Tu worked for Microsoft for 11 years and the National Human Genome Research Institute in the USA for three years. Mr. Tu is also the founder of the non-profit open-source organization of BBS club, PTT. Mr.

Tu specializes in artificial intelligence (AI), AI data governance, software platform R&D and digital talent incubation, and he holds a master's degree in Computer Science and Information Engineering from National Taiwan University.

The following person served as our director during 2021 but is no longer serving with us due to replacement.

Chin-Tsai Pan was a director of our company. Mr. Pan is currently a Deputy Senior Engineer of Kaohsiung Branch, Chunghwa Co., Ltd. Mr. Pan graduated from Kaohsiung Industrial High School.

The following table sets forth the name, age and position of each of our executive officers and such person's position as of February 28, 2022. There is no family relationship among any of these persons.

Name	Age	Position
Hong-Chan Ma	65	Senior Executive Vice President
Rong-Shy Lin	56	Senior Executive Vice President
Wei-Kuo Hong	61	Senior Executive Vice President
Yu-Shen Chen	45	Senior Executive Vice President and Chief Financial Officer
Tian-Tsair Su	59	President of Consumer Business Group
Li-Show Wu	63	President of Enterprise Business Group
Chih-Cheng Chien	61	President of Network Technology Group
Hsueh-Lan Wu	63	President of International Business Group
Chau-Young Lin	59	President of Data Communications Business Group

Hong-Chan Ma has been the Senior Executive Vice President since August 2018. Mr. Ma is also the CISO and DPO of our company, and a director of CHIEF Telecom Inc, or CHIEF, one of our consolidated subsidiaries. See "Item 4. Information on the Company—B. Business Overview—Cybersecurity and Personal Information Protection." He was the President of our Data Communications Business Group from August 2015 to August 2018. Prior to that, he served as the Vice President of our Marketing Department from September 2012 to August 2015, and the Assistant Vice President of our Marketing Department from January 2011 to September 2012. Mr. Ma holds a master's degree in Management Science from National Chiao Tung University in Taiwan.

Rong-Shy Lin has been the Senior Executive Vice President since June 2020. Dr. Lin was the President of our Data Communications Business Group from November 2018 to June 2020. Prior to that, he served as the President of our Telecommunication Laboratories from November 2017 to November 2018, and the Vice President of our Telecommunication Laboratories from February 2017 to November 2017. Dr. Lin holds a Ph.D. degree in Information Engineering from National Chiao Tung University in Taiwan.

Wei-Kuo Hong has been the Senior Executive Vice President since June 2020. Dr. Hong was the President of our Telecommunication Training Institute from November 2018 to June 2020. Prior to that, he served as the Vice President of our Telecommunication Training Institute from May 2017 to November 2018, and the Assistant Vice President of our Investment Department from May 2012 to May 2017. Dr. Hong holds a Ph.D. degree in Industrial Administration from National Tsing Hua University in Taiwan.

Yu-Shen Chen has been the Senior Executive Vice President and Chief Financial Officer since September 2020. He has been the Professor of Accounting at National Chengchi University since August 2015. Dr. Chen holds a Ph.D. degree in Accounting from State University of New York at Buffalo.

Tian-Tsair Su has been the President of our Consumer Business Group since January 2022. He is also a director of SENAO International Co., Ltd. Mr. Su was the Chairman of Honghwa International Co., Ltd. from August 2019 to January 2022. Prior to that, he served as the Senior Executive Vice President of Administration from November 2017 to August 2019, and the Vice President of our Corporate Planning Department from May 2013 to November 2017. Mr. Su holds a master's degree in Electrical Engineering from National Cheng Kung University.

Li-Show Wu has been the President of our Enterprise Business Group since January 2019. Ms. Wu is also a director of SENAO. She was the Chairman of Honghwa International Co., Ltd. from November 2017 to January 2019. Prior to that, she served as the Senior Executive Vice President of Administration from November 2016 to November 2017, and the Vice President of our Marketing Department from August 2015 to November 2016. Ms. Wu holds a master's degree in Applied Mathematics from National Chiao Tung University in Taiwan.

Chih-Cheng Chien has been the President of our Network Technology Group since January 2022. He is also a director of SENAO International Co., Ltd. Dr. Chien was the President of our Mobile Business Group from January 2021 to January 2022. Prior to that, he served as the President of our Telecommunication Training Institute from June 2020 to January 2021, and the Advisor of our Overseas New Business Office from November 2018 to June 2020. Dr. Chien holds a Ph.D. degree in Engineering Technology from National Taiwan University of Science and Technology.

Hsueh-Lan Wu has been the President of our International Business Group since November 2018. Ms. Wu was the Vice President of our Enterprise Business Group from March 2018 to November 2018. Prior to that, she served as the Vice President of our Marketing Department from November 2016 to March 2018, and the Vice President of our Enterprise Business Group from November 2013 to November 2016. Ms. Wu holds a master's degree in Information Management from National Taiwan University.

Chau-Young Lin has been the President of our Data Communications Business Group since June 2020. He is also a director of Chunghwa Precision Test Tech. Co., Ltd. Dr. Lin was the Senior Executive Vice President of Administration from August 2019 to June 2020. Prior to that, he was the President of our Southern Taiwan Business Group from March 2018 to August 2019, and the Vice President of our Enterprise Business Group from July 2016 to March 2018. Dr. Lin holds a Ph.D. degree in Electronic Engineering from National Taiwan University of Science and Technology.

The following person served as our executive officers during 2021 and retired in the same year.

Yi-Fong Chang was the President of our Southern Taiwan Business Group from August 2019 to January 2022. He was the Chairman of Honghwa International Co., Ltd. from January 2019 to August 2019. Prior to that, he was the Vice President of our Northern Taiwan Business Group from October 2011 to January 2019, and the Deputy Principal Engineer from March 2009 to October 2011. Mr. Chang holds a master's degree in Engineering Technology from National Taiwan University of Science and Technology.

B. Compensation

The board of directors has set up a compensation committee to be responsible for drafting, approving and periodically reviewing the compensation proposals for the directors and managers. See "C. Board Practices" for a discussion of our compensation committee.

- the chairman of our board of directors may receive a fixed monthly income of NT$353,376 and a non-fixed income, including but not limited to performance-related bonuses or other rewards, which may not exceed his fixed income. The chairman will not receive any additional compensation for his role as a director;
- our president may receive a fixed monthly income of NT$345,524 and a non-fixed income, including but not limited to performance-related bonuses or other rewards, which may not exceed his fixed income. The president will not receive any additional compensation for his role as a director;
- independent directors who concurrently serve in military, public office or hold teaching or administrative post may receive a fixed monthly compensation of NT$8,500, and those who do not concurrently serve in military or public office or hold teaching or administrative post may receive a monthly compensation of NT$60,000; and
- directors who serve in military, public office or hold teaching or administrative post may receive a monthly compensation of NT$8,500, and those directors who do not serve in military and public office or hold teaching or administrative post may receive a monthly compensation of NT$30,000.

Our Chairman and Chief Executive Officer, Mr. Chi-Mau Sheih, and our President, Mr. Shui-Yi Kuo, our labor director Mr. Shih-Hung Tseng, who succeeded on April 6, 2021, and Mr. Chin-Tsai Pan, who dismissed on

April 5, 2021 to our board of directors, respectively, do not receive monthly compensation for acting as our directors because they receive salaries as employees.

The aggregate amount of compensation to our directors and executive officers in 2019, 2020 and 2021 was NT$115,079,161, NT$117,485,681 and NT$106,456,778 (US$3,837,663.2), respectively. The aggregate amount of compensation in 2021 includes a NT$63,185,021 (US$2,277,758.5) salary payment for directors and executive officers, a NT$0 (US$0) pension payment for executive officers, a NT$38,551,757 (US$1,389,753.3) bonus accrued for directors and a NT$4,720,000 (US$170,151.4) bonus accrued for executive officers. See "Item 10. Additional Information—B. Memorandum and Articles of Incorporation—Dividends and Distributions" for a discussion of the distribution of bonuses and earnings.

All of our non-independent directors are legal representatives of the MOTC. The bonus in the amount of NT$35,803,428 (US$1,290,678.7) was paid directly to the MOTC in 2021 because such earnings distributions are not the individual income of these directors. Independent directors will not receive any earnings distributions.

Pursuant to ROC disclosure rules, we have disclosed the compensation range of our directors and senior management for the fiscal year ended December 31, 2021 as follows, excluding bonus accrued for legal entity the MOTC:

Total Compensation	**Directors**
Below NT$1,000,000	Shin-Yi Chang, Lien-Chuan Lee, Sin-Horng Chen, Yu-Lin Huang, Hung-Yi Hsiao, Lo-Yu Yen, JenRan Chen, Yu-Fen Lin, Chung-Chin Lu, Yi-Chin Tu, Chin-Tsai Pan(1)
NT$1,000,000 to NT$1,999,999	Shih-Hung Tseng(1)
NT$2,000,000 to NT$3,499,999	None
NT$3,500,000 to NT$4,999,999	None
NT$5,000,000 to NT$9,999,999	Chi-Mau Sheih(2), Shui-Yi Kuo(3)
Above NT$10,000,000	None
Total	14 people

(1) As salary for serving as our employee.
(2) As salary for serving as our Chief Executive Officer.
(3) As salary for serving as our President.

Total Compensation	**Senior Management**
Below NT$1,000,000	None
NT$1,000,000 to NT$1,999,999	None
NT$2,000,000 to NT$3,499,999	Yu-Shen Chen(1)
NT$3,500,000 to NT$4,999,999	Wei-Kuo Hong, Hsueh-Lan Wu, Chih-Cheng Chien
NT$5,000,000 to NT$9,999,999	Hong-Chan Ma, Rong-Shy Lin, I-Feng Chang, Li-Show Wu, Chau-Young Lin
NT$10,000,000 to NT$14,999,999	None
Above NT$15,000,000	None
Total	9 people

(1) Dr. Chen has been a member of the senior management of our company since September 2020.

The compensation committee shall periodically review and assess compensation packages for the Board of Directors and executive management, which are then approved by the Board of Directors.

The compensation of the senior executives is linked to various KPI assessments, such as corporate performance, subordinate unit performance, and personal performance, and ESG as an additional reference point for changing compensation.

We accrued NT$2,881,618 (US$103,880) pension expense for executive officers mentioned above in 2021. See "Item 5. Operating and Financial Review and Prospects—Overview—Personnel expenses" and Note 29 to our consolidated financial statements included elsewhere in this annual report for descriptions about our pension plans. We do not have any service contracts with any directors providing for any benefits upon termination of employment.

C. Board Practices

We currently have 13 directors, including five independent directors. All of our directors were elected on June 21, 2019, except for Mr. Lien-Chuan Lee and Mr. Shih-Hung Tseng who were reassigned as the juristic-person directors by the MOTC. The term is until June 20, 2022. Pursuant to the ROC Company Act, the directors may be removed from office at any time by a resolution adopted at a stockholders' meeting. The chairman of our board of directors is elected by our directors. Our chairman presides at all meetings of our board of directors and also has the authority to act as our representative. We have not entered into any contract with any of our directors by which our directors are expected to receive benefits upon termination of their employment.

Our Articles of Incorporation provides for a board of directors consisting of seven to fifteen directors, one-fifth of whom shall be expert representatives. Pursuant to the ROC Company Act, the ROC Securities and Exchange Act and Article 12-1 of our Articles of Incorporation provides for the election of, starting from the fifth commencement of the board of directors, at least three independent directors out of the 7-to-15-member board. The term "independent director" may have a different meaning when used in Taiwan than in other jurisdictions. We have used a nominating process, with the stockholders choosing the directors, including independent directors from the list of nominees. With respect to certain material decisions to be made by our board of directors as specified in the ROC Securities and Exchange Act, the Business Mergers and Acquisitions Act and other relevant laws and regulations, including the adoption or amendment to our internal control system, material loans or guarantees, the issuance of equity-type securities, matters in which directors have personal interests, the appointment and discharge of auditors, approval of financial reports, the appointment and discharge of financial, accounting or internal auditing officers and other matters prescribed by the ROC FSC or other relevant competent authorities, the dissenting opinion or qualified opinion of an independent director is required to be noted in the minutes of the board of directors' meeting and disclosed on the website maintained by the TWSE.

Our audit committee was established in September 2004 in accordance with the rules set forth in the NYSE Listed Company Manual, and was comprised of three independent directors. See "Item 16G. Corporate Governance—Audit Committee." Starting from the date of the annual general meeting in June 2013, we have established a new audit committee that replaces our supervisors and our old audit committee in accordance with Paragraph 1, Article 14-4 of the ROC Securities and Exchange Act and our Articles of Incorporation, and as a result, we simultaneously comply with the relevant rules of the NYSE Listed Company Manual and the relevant rules and regulations in the ROC. Accordingly, our audit committee is currently composed of all independent directors, namely Lo-Yu Yen, JenRan Chen, Yu-Fen Lin, Chung-Chin Lu and Yi-Chin Tu to be the members of the audit committee.

Under the ROC Company Act, a person may serve as our director in his personal capacity or as the representative of another legal entity. A director who serves as the representative of a legal entity may be removed or replaced at any time at the discretion of that legal entity, and the replacement director may serve the remainder of the term of office of the replaced director. Except for our five independent directors, all of our directors are representatives of the MOTC.

The business address of our directors and executive officers is the same as our registered address.

Our audit committee approves and handles following items: (i) the adoption of or amendments to the internal control system pursuant to Article 14-1 of the Securities and Exchange Act; (ii) assessment of the effectiveness of the internal control system; (iii) the adoption or amendment, pursuant to Article 36-1 of the Securities and Exchange Act, of procedures for handling financial or business activities of a material nature, such as acquisition or disposal of assets, derivatives trading, loaning of funds to others, and endorsements or guarantees for others; (iv) a matter bearing on the personal interest of a director; (v) a material asset or derivatives transaction; (vi) a material monetary loan, endorsement, or provision of guarantee; (vii) the offering, issuance, or private placement of any equity-type securities; (viii) the hiring or dismissal of a CPA, or the compensation given thereto; (ix) the appointment or discharge of a financial, accounting, or internal auditing supervisor; (x) annual financial reports; (xi) the matters regulated by the Business Mergers and Acquisitions Act; (xii) the first to third quarter financial reports; (xiii) communication with the CPA; (xiv) negotiating conflicts over financial reports between the management team and the CPA; (xv) discussing and reporting other financial information and required disclosures under the Securities Exchange Act of the U.S. with the management team and the CPA; and (xvi) any other material matter so required by our company or the relevant competent authorities. Our board of directors has concluded that Lo-Yu Yen is our audit committee financial expert.

In addition to our audit committee, we also have a corporate strategy committee. Our corporate strategy committee may comprise of five to nine directors. Currently, there are eight directors on the Committee. It is responsible for: (i) reviewing and advising on our mid- to long-term goals and strategies; (ii) major investments and mergers and acquisitions; (iii) major reorganizations of our company; (iv) applications for or returns of business licenses; (v) annual operating plans and budget compilations and revisions; (vi) capital increases or decreases; and (vii) other major strategic decisions that may affect our development. Conclusions made by the corporate strategy committee are considered at a subsequent board of directors meeting.

Article 14-6 of the ROC Securities and Exchange Act requires all listed companies to establish a compensation committee for directors, supervisors and managers' compensation, which includes salary, stock options and other rewards, as well as authorizes the FSC to enact a regulation on the authorities of the compensation committee and the qualifications of its members. Accordingly, our compensation committee is composed of three independent directors (Lo-Yu Yen, JenRan Chen and Yu-Fen Lin) and is responsible for (i) stipulating and periodically reviewing the performance of the directors and managers, as well as the policy, system, standard, and structure of salary and compensation; and (ii) periodically reviewing and stipulating the salary and compensation of the directors and managers. The proposals of the compensation committee should be presented to the board of directors for discussion. See "Item 10. Additional Information—B. Memorandum and Articles of Incorporation—Directors and Audit Committee."

In addition, our board of directors engages with management on information security/cybersecurity issues. See "Item 4. Information on the Company—B. Business Overview—Cybersecurity and Personal Information Protection."

In November 2003, the SEC approved changes to the NYSE's listing standards related to the corporate governance practices of listed companies. Under these rules, listed foreign private issuers, like us, must disclose any significant ways in which their corporate governance practices differ from those followed by NYSE-listed non-foreign private issuers under the NYSE's listing standards. See "Item 16G. Corporate Governance." A copy of the significant differences between our corporate governance practices and NYSE corporate governance rules applicable to non-foreign private issuers is also available on our website http://www.cht.com.tw. The information contained on our website is not a part of this annual report.

D. Employees

As of December 31, 2021, we had 31,812 employees on a consolidated basis. Approximately 99% of our employees were based in the ROC. The following table is a breakdown of our employees from 2019 to 2021 on a consolidated basis.

	2019	2020	2021
Employees			
Technical	15,633	16,352	16,150
Operations	14,513	14,031	13,852
Administrative	1,746	1,835	1,810
Total	31,892	32,218	31,812

The following table is a breakdown of our employees of Chunghwa Telecom Co., Ltd. from 2019 to 2021.

	2019	2020	2021
Employees			
Technical	12,406	12,115	11,855
Operations	7,998	7,711	7,311
Administrative(1)	1,257	1,224	1,185
Total	21,661	21,050	20,351

(1) Included directors of Chunghwa Telecom Co., Ltd. in accordance with the ROC requirements.

As of December 31, 2021, 85.8% of our employees of Chunghwa Telecom Co., Ltd. had bachelor, master or doctoral degrees.

As of December 31, 2021, approximately 99% of our employees on a non-consolidated basis were members of our principal labor union. Our collective agreement sets forth work rules, grievance procedures and provides for union participation in performance evaluations and promotion decisions. Our union members also occupy a majority of the seats on our employee welfare and pension fund committees. We will continue to maintain a good relationship with our labor unions. We strive to have good communication with our employees and the labor unions by inviting representatives of our labor unions to attend various meetings related to the performance of our employees.

Pursuant to our Articles of Incorporation, our employees are entitled to 1.7% to 4.3% of the distributable earnings as employee compensation. Our practice in the past to determine the amount of the compensation has been based on the operating results. In the third quarter of 2021, we distributed compensation to our employees of NT$1.2 billion (US$43.3 million).

E. Share Ownership

As of February 28, 2022, our directors and executive officers personally held an aggregate of 381,182 shares of our common shares, representing around 0.005% of our outstanding common shares. The following table sets forth information with respect to the beneficial ownership of our common shares as of February 28, 2022 by each of our directors and executive officers.

Name	Number	%
Chi-Mau Sheih	72,054	*
Shui-Yi Kuo	35,000	*
Yu-Lin Huang	—	—
Lien-Chuan Lee	—	—
Shin-Yi Chang	—	—
Sin-Horng Chen	15,729	*
Hung-Yi Hsiao	—	—
Shih-Hung Tseng	2,245	*
Lo-Yu Yen	—	—
JenRan Chen	—	—
Yu-Fen Lin	—	—
Chung-Chin Lu	—	—
Yi-Chin Tu	—	—
Hong-Chan Ma	—	—
Rong-Shy Lin	40,361	*
Wei-Kuo Hong	—	—
Yu-Shen Chen	100,000	*
Tian-Tsair Su	32,341	*
Li-Show Wu	32,964	*
Chih-Cheng Chien	19,600	*
Hsueh-Lan Wu	18,000	*
Chau-Young Lin	12,888	*

* Stockholder beneficially owns less than 1.0% of our outstanding common shares.

Employee Stock Subscription Program

Under our Articles of Incorporation, we must reserve up to 10% to 15% of any new shares for subscription by our employees whenever we issue new shares for cash, unless otherwise approved by the central competent authority.

Our consolidated subsidiary, SENAO, is publicly traded on the TWSE and resolved to grant a stock options plan for its employees to purchase common stock of SENAO. As of December 31, 2019, 2020 and 2021, there were no outstanding stock options.

In 2015, 2017, 2018 and 2020, our consolidated subsidiary, CHIEF, which has been a public company since November 17, 2015, granted stock options to its employees entitling them to purchase common stock of CHIEF. As of December 31, 2019, 2020 and 2021, participants in CHIEF's stock incentive plan had outstanding stock options to purchase 1.3 million, 0.6 million and 0.4 million common shares of CHIEF, respectively.

In 2019 and 2021, CHTSC, another consolidated subsidiary of ours, granted a stock options plan for its employees to purchase common stock of CHTSC. As of December 31, 2019, 2020 and 2021, participants in CHTSC's incentive plan had outstanding stock options to purchase 4.5 million, 4.3 million and 6.5 million common shares of CHTSC, respectively.

In 2013 and 2014, our consolidated subsidiary, IISI, which has been a public company since October 20, 2016, granted stock options to its employees entitling them to purchase common stock of IISI. As of December 31, 2020, participants in IISI's stock incentive plan had outstanding stock options to purchase 0.5 million common shares of IISI. As of December 31, 2021, there were no outstanding stock options.

In 2021, our consolidated subsidiary, CLPT, granted stock options to its employees entitling them to purchase common stock of CLPT. As of December 31, 2021, participants in CLPT's stock incentive plan had outstanding stock options to purchase 0.6 million common shares of CLPT.

See Note 35 to our consolidated financial statements, included elsewhere in this annual report, for additional details regarding share-based payment arrangements of SENAO, CHIEF, CHTSC, IISI and CLPT.

ITEM 7. MAJOR STOCKHOLDERS AND RELATED PARTY TRANSACTIONS

A. Major Stockholders

The following table sets forth information known to us with respect to the beneficial ownership of our shares (i) as of February 28, 2022, the most recent practicable date and (ii) as of certain book closure dates in each of the preceding three years, for the stockholders known by us to own at least 5.0% of our outstanding common shares. Beneficial ownership is determined in accordance with the SEC's rules.

	As of March 31, 2019		As of March 31, 2020		As of March 31, 2021		As of February 28, 2022	
Name	number	%	number	%	number	%	number	%
The ROC government(1)(2)	3,268,238,684	42.13	3,263,615,684	42.07	3,265,349,684	42.10	3,301,701,984	42.56
The MOTC	2,737,718,976	35.29	2,737,718,976	35.29	2,737,718,976	35.29	2,737,718,976	35.29
Shin Kong Life Insurance Co., Ltd(2)	543,451,184	7.01	579,803,184	7.47	632,961,184	8.16	493,359,184	6.36

(1) Includes shares held through the MOTC and other government-controlled entities.
(2) Information as of July 25, 2018, July 27, 2019, July 4, 2020, and August 27, 2021 the latest book closure date, which were the most recent practicable dates for us to obtain complete ownership information.

As of February 28, 2022, 30 record holders held 20,602,198 ADSs (each representing ten common shares), which represents approximately 2.7% of our total outstanding common shares. Because many of these ADSs were held by brokers or other nominees, we cannot ascertain the exact number of beneficial shareholders with addresses in the United States.

None of our shareholders has different voting rights from other shareholders. See "Item 10. Additional Information—B. Memorandum and Articles of Incorporation—Voting Rights." We are not aware of any arrangement that may, at a subsequent date, result in a change of control of our company.

B. Related Party Transactions

We have not extended any loans or credit to any of our directors or executive officers, and we have not provided guarantees for borrowings by any of these persons. We have not entered into any fee-paying contracts with any of these persons for them to provide services not within his or her capacity as a director or executive officer of our company, except that two of our directors who are also our employees receive salaries from our company in their capacity as our employees.

Please refer to "Item 4. Information on the Company—A. History and Development of the Company" for a discussion of our alliances, acquisitions and investments. Please refer to Notes 3, 14, 15 and 40 to our consolidated financial statements included elsewhere in this annual report for descriptions of Chunghwa's subsidiaries, investments accounted for using equity method, and related party transactions.

On April 1, 2007, Chunghwa entered into an agreement with SENAO making SENAO the exclusive distributor of mobile handsets to Chunghwa's retail outlets. Under the terms of the agreement, SENAO also provides mobile handset sales services in Chunghwa's retail outlets, exclusively sells Chunghwa's SIM cards in SENAO's own retail stores, and gets commission, subsidies of handset sold and warranties from Chunghwa. For the year ended December 31, 2021, SENAO received NT$6.0 billion (US$0.2 billion) from Chunghwa. Chunghwa also sells mobile handsets to SENAO. For the year ended December 31, 2021, Chunghwa sold mobile handsets to SENAO, which amounted to NT$5.5 billion (US$0.2 billion).

Honghwa contracted with Chunghwa to provide on-site sales services in Chunghwa's retail stores and on-site equipment installation services to Chunghwa's customers. Chunghwa paid Honghwa approximately NT$6.3 billion (US$0.2 billion) in 2021 for these services.

Chunghwa acquired network equipment and related supplies from Chunghwa System Integration for approximately NT$1.5 billion (US$55.6 million) in 2021.

Chunghwa paid Taiwan International Standard Electronics approximately NT$1.0 billion (US$36.2 million) in 2021 for the purchase of telecommunications exchange facilities and related supplies, and the maintenance expenses.

Terms and conditions of the foregoing transactions with related parties were not significantly different from transactions with non-related parties. When no similar transactions with non-related parties can be referenced, terms and conditions were determined in accordance with mutual agreements.

C. Interests of Experts and Counsel

Not applicable.

ITEM 8. FINANCIAL INFORMATION

A. Consolidated Statements and Other Financial Information

See Item 18 for a list of all consolidated financial statements filed as part of this annual report on Form 20-F.

We are not currently involved in material litigation or other proceedings that may have or have had in the recent past, significant effects on our financial position or profitability. See "Item 4. Information on the Company—B. Business Overview—Legal Proceedings."

For our policy on dividend distributions, see "Item 10. Additional Information—B. Memorandum and Articles of Incorporation—Dividends and Distributions." The following table sets forth the dividends declared on each of our common shares and in the aggregate for each of the years from 2017 to 2021. All of these dividends were paid, in the fiscal year following the period with respect to which the dividends relate.

	Dividends Per Common Share(1)	Total Dividends(1)
	NT$	NT$ in billions
Year ended December 31, 2017	4.7960	37.2
Year ended December 31, 2018	4.4790	34.7
Year ended December 31, 2019	4.2260	32.8
Year ended December 31, 2020	4.3060	33.4
Year ended December 31, 2021(2)	4.6080	35.7

(1) Cash dividend unless otherwise indicated.

(2) Dividends for 2021, which are calculated based on Taiwan IFRSs, were approved by the board of directors in February 2022 and to be declared at our annual general stockholders' meeting scheduled on May 27, 2022. Our payout ratio was 99.98% in 2021 after the adjustment of unappropriated earnings.

We are committed to maximizing stockholder value and intend to maintain a sustainable dividend policy, subject to a number of commercial factors, including the interests of our stockholders, cash requirements for future capital expenditures and investments, as well as relevant industry and market practice. The amount of our net income determined for purposes of calculating our annual dividend payout will be calculated based on Taiwan IFRSs, which may differ from the amount of our net income determined in accordance with IFRSs.

B. Significant Changes

Other than as disclosed elsewhere in this annual report, we have not experienced any significant changes since the date of the annual consolidated financial statements included in this annual report.

ITEM 9. THE OFFER AND LISTING

A. Offer and Listing Details

Market Price Information for Our Common Shares

Our common shares have been listed on the TWSE under the number "2412" since October 27, 2000. There is no public market outside Taiwan for our common shares. The closing price for our common shares on the TWSE on April 6, 2022 was NT$127 per share.

Market Price Information for Our American Depositary Shares

Our ADSs have been listed on the NYSE under the symbol "CHT" since July 17, 2003. The outstanding ADSs are identified by the CUSIP number 17133Q502. The closing price for our ADSs on the NYSE on April 6, 2022 was US$44.5 per ADS. Each of our ADSs represents the right to receive ten shares.

As of April 6, 2022, a total of 20,776,334 ADSs and 7,757,446,545 common shares (including those represented by ADSs) were outstanding. With certain limited exceptions, holders of shares that are not ROC persons are required to hold these shares through a brokerage or custodial account in the ROC.

B. Plan of Distribution

Not applicable.

C. Markets

The principal trading market for our common shares is the TWSE and the principal trading market for our ADSs is the NYSE.

D. Selling Stockholders

Not applicable.

E. Dilution

Not applicable.

F. Expenses of the Issue

Not applicable.

ITEM 10. ADDITIONAL INFORMATION

A. Share Capital

Not applicable.

B. Memorandum and Articles of Incorporation

Set forth below is information relating to our capital structure, including brief summaries of material provisions of our Articles of Incorporation, the ROC Securities and Exchange Law, the ROC Company Act, and the Telecommunications Management Act, all as currently in effect. The following summaries are qualified in their entirety by reference to our Articles of Incorporation, the ROC Securities and Exchange Law, the ROC Company Act, and the Telecommunications Management Act.

Objects and Purpose

The scope of business of Chunghwa Telecom Co., Ltd. as set forth in Article 2 of our Articles of Incorporation, includes (i) telecommunications enterprises, (ii) installation of the computer equipment and radio-frequency equipment whose operation is controlled by the telecommunication business, (iii) telecommunications equipment wholesale, retail and engineering businesses, (iv) engineering and operation of information software and information process service businesses, (v) apparatus and electric appliance installation and construction business, (vi) television program production, distribution and commercial business, (vii) broadcasting program distribution and commercial business, (viii) the third party payment business, (ix) water pipe construction business, (x) machinery and equipment manufacturing business, (xi) traffic signal installation and construction, and traffic labels construction business, (xii) medical device wholesale and retail business, and (xiii) other businesses, except any business requiring a special permit or otherwise restricted by law or regulation.

General

Under our Articles of Incorporation, our authorized capital was NT$120,000,000,000 divided into 12,000,000,000 common shares, with a par value of NT$10 per share. We have set aside 200,000,000 common shares from the aforementioned common shares for the exercise of any future issuances of stock warrants, preferred shares with warrants, and bonds with warrants. Our paid-in capital is NT$77,574,465,450 divided into 7,757,446,545 common shares. We currently do not have any other equity in the form of preferred shares, bonds or otherwise outstanding as of the date of this annual report.

The MOTC, on behalf of the government of the ROC, owned approximately 35.29% of our outstanding common shares as of December 31, 2021. The remainder of our outstanding shares is held by public stockholders and other investors.

Directors and Audit Committee

Our Articles of Incorporation provide for a board of directors consisting of seven to fifteen directors, and one-fifth of these directors shall be professionals of domain knowledge. See “Item 6. Directors, Senior Management and Employees—C. Board Practices.” Pursuant to the ROC Securities and Exchange Act, for a company that has established an audit committee, unless otherwise provided for by law, the provisions regarding supervisors in the ROC Securities and Exchange Act, the ROC Company Act, and other laws and regulations shall apply mutatis mutandis to the audit committee.

Under the ROC Company Act, our board of directors, in conducting our business, shall act in accordance with laws and regulations, our Articles of Incorporation and the resolutions adopted at the meetings of our stockholders. Where any resolution adopted by our board of directors contravenes laws, our Articles of Incorporation and the resolutions adopted at the meetings of our stockholders, thereby causing loss or damage to us, all directors taking part in the adoption of such resolution shall be liable to compensate us for such loss or damage; however, those directors whose disagreement appears on record or is expressed in writing shall be exempted from liability.

If our board of directors decides, by resolution, to commit any act in violation of any law or our Articles of Incorporation, any of our independent directors or any stockholder who has continuously held our shares for a period of one year or longer may request our board of directors to discontinue such act. One or more stockholders who have held 1% or more of the total number of our outstanding shares for six months or a longer time may send a written request to require an independent director to bring an action on our behalf against a director for losses suffered by us as a result of unlawful actions. In addition, if our stockholders' meeting resolves to institute an action against a director, we shall, within 30 days from the date of such resolution, institute the action. In case of a lawsuit between us and a director, an independent director shall act on our behalf, unless otherwise provided by law; and our stockholders meeting may also appoint some other person to act on our behalf in a lawsuit.

According to the ROC Company Act, our board of directors owes fiduciary duty to us. Our directors are liable for the damages to be sustained by us if they breach their fiduciary duty. In addition, if a director, his or her spouse, his or her blood relative within second degree of kinship, or any company which has a controlling or subordinate relation with him or her, have a personal interest in a matter to be discussed at the meeting of the board of directors, the director shall specify such conflict; if the conflict may cause damages to our company, the director shall abstain from voting on the matter, and shall not serve as a proxy and vote on behalf of another director.

According to our Articles of Incorporation, the remuneration and compensation of the directors shall be determined by the board of directors based on the participation and the contribution of each director in the business operation of our company and referencing the regular standards of other corporations in the similar industry. Our Articles of Incorporation do not impose a mandatory retirement age for our directors. Furthermore, our Articles of Incorporation do not impose a shareholding qualification for each director. According to our Code of Ethics, we may not extend any loans to our directors.

Dividends and Distributions

At each annual general stockholders' meeting, our board of directors submits to the stockholders for their approval any proposal for the distribution of dividends or the making of any other distribution to stockholders from our net income for the preceding fiscal year. All common shares outstanding and fully paid as of the relevant record date are entitled to share equally in any dividend or other distribution so approved. Dividends may be distributed in cash, in the form of common shares or a combination of the two, as determined by the stockholders at the meeting.

We are not permitted to distribute dividends or make other distributions to stockholders in any year in which we do not have any net income or unappropriated earnings (excluding reserves). The ROC Company Act also requires that 10% of our annual net income, less prior years' losses and outstanding tax, if any, be set aside as a legal reserve until the accumulated legal reserve equals our paid-in capital. We may also set aside special reserve by the resolution of our stockholders' meeting. In addition, our Articles of Incorporation provide that at least 50% of the remaining portion of the net income, less accumulated losses, outstanding taxes, the legal reserve and any special reserve, plus accumulated retained earnings from prior years will be distributed as dividends to stockholders. Under our Articles of Incorporation, not less than 50% of the total amount of the distributed dividends must be in cash, but if the cash dividends to be distributed are less than NT$0.10 per share, the dividends may be distributed in the form of shares. The actual percentage of distribution would take actual profitability of the year, capital budgeting, and status of finance into consideration, and would be executed following a resolution of shareholders' meeting.

Pursuant to our current Articles of Incorporation, in annual profit-making year, we should distribute 1.7% to 4.3% of profit as employees' compensation, and not more than 0.17% of profit should be distributed as directors' compensation; however, if we have any accumulated losses, an amount to offset losses should be reserved in advance.

Under the ROC Company Act, if we do not incur a loss, we are permitted to make distributions on a pro rata basis to our stockholders of additional common shares or cash by the legal reserve, the premium derived from the issuance of new shares and the income from endowments received by us. We are allowed to make the above distributions to our stockholders by legal reserve only if the legal reserve exceeds 25% of our paid-in capital. Furthermore, subject to the provision under our Articles of Incorporation, such distribution should firstly be made by the premium derived from the issuance of new shares.

Changes in Share Capital

Under the ROC Company Act, any change in our authorized share capital requires an amendment to our Articles of Incorporation, which in turn requires approval at our stockholders' meeting. Authorized but unissued common shares may be issued, subject to applicable ROC law, upon terms as our board of directors may determine.

Preemptive Rights

Under the ROC Company Act and our Articles of Incorporation, when we issue new shares for cash, unless otherwise approved by the central competent authority, our employees have rights to subscribe for between 10% and 15% of the new issue, and we have rights to restrain the shares subscribed by employees from being transferred within a specific period of time, which should not be longer than two years. Except for the shares reserved in accordance with the ROC Company Act, we are required to inform our existing shareholders of their rights to subscribe for additional shares pro rata to their respective shareholding and to note that the shareholders will lose their pre-emptive right if they fail to subscribe for the new shares within the prescribed period. In the event that there is any new share that has not been subscribed for by the existing shareholders or our employees pursuant to their respective pre-emptive rights, we may offer such shares to other investors through public offering or private negotiation with any person designated by us.

In addition, in accordance with the ROC Securities and Exchange Act, a public company such as us that intends to offer new shares for cash must offer to the public at least 10% of the shares to be sold except in certain limited circumstances. This percentage can be increased by a resolution passed at a stockholders' meeting, held in accordance with the Company Act and our Articles of Incorporation, which would diminish the number of new shares subject to the preemptive rights of existing stockholders.

Meetings of Stockholders

Pursuant to the ROC Securities and Exchange Act, as a listed company, we must hold a general shareholders' meeting within six months after the end of each fiscal year and may not seek any extension for such meeting. These meetings are generally held in New Taipei City, Taiwan. Special stockholders' meetings may be convened by resolution of the board of directors, or by the board of directors upon the written request of any stockholder or stockholders who have held 3% or more of the issued shares continuously for one year or longer, or by the stockholders who have held over 50% of the issued shares continuously for three months or longer. Stockholders' meetings may also be convened by an independent director. Notice in writing of general meetings of stockholders, stating the place, time and agenda must be dispatched to each stockholder at least 30 days, in the case of general meetings, and 15 days, in the case of special meetings, before the date set for each meeting. Except in certain circumstances described below, a majority of the holders of all issued and outstanding common shares present at a stockholders' meeting constitutes a quorum for meetings of stockholders. Stockholders of 1% or more of the total number of our outstanding shares are entitled to submit, during the period of time prescribed by us no less than ten days, one proposal each year for consideration at our annual general stockholders' meeting in accordance with the ROC Company Act.

Voting Rights

As previously required by the ROC Company Act, our Articles of Incorporation provide that a holder of common shares has one vote for each common share. Cumulative voting applies to the election of our directors. The election of independent and non-independent directors should be held simultaneously while the ballots for the election of directors and independent directors are cast separately. According to Article 146-1 of the Insurance Act of the ROC, insurance companies that hold our shares may not be our directors or vote for the election of our directors.

In general, a resolution can be adopted by the holders of more than one-half of the common shares represented at a stockholders' meeting at which the holders of more than half of all issued and outstanding common shares are present. Under the ROC Company Act, the approval by more than one-half of the common shares represented at a stockholders' meeting in which a quorum of at least two-thirds of all issued and outstanding common shares are represented is required for major corporate actions, including:

- amendment to our Articles of Incorporation;
- entering into, modification or termination of any contracts regarding leasing of all business, outsourcing of operations or joint operations;
- transfer of the whole or substantial part of our business or assets;
- taking over of the whole of the business or assets of any other company which would have significant impact on our operations;
- distribution of any share dividend;
- dissolution;
- merger or spin-off; and
- dismissing of directors.

Alternatively, the ROC Company Act provides that in the case of a public company, such as us, a resolution may be adopted by the holders of at least two-thirds of the common shares represented at a meeting of stockholders at which holders of more than one-half of issued and outstanding common shares are present.

A stockholder may be represented at a general or special meeting by proxy if a valid proxy form, which is printed by the company, is delivered to us five days before the commencement of the general or special stockholders' meeting. Except for trust enterprises or share registrar approved by the Securities and Futures Bureau of the FSC, where one person is appointed as proxy by two or more stockholders who together hold more than 3% of the total issued common shares, the votes of those stockholders in excess of 3% of the outstanding common shares shall not be counted. Alternatively, if the stockholder would like to exercise its voting right at a general or special meeting but cannot be present at the meeting in person, we have set up an electronic voting mechanism for such stockholder to exercise voting right. The stockholder is not allowed to exercise voting right through an electronic voting mechanism if such stockholder fails to revoke the granted proxy (if any) at least two days prior to the general or special meeting.

At the time of any vote, if a director of a public company has pledged more than half of the holding at the time the director was elected, such director will not be allowed to exercise the voting rights with respect to the number of shares pledged in excess of the half of the number of shares that such director held in such public company at the time the director was elected. The maximum number of shares ineligible for voting pursuant to the provision above cannot exceed half of the number of shares that such director held in such public company at the time the director was elected. In addition, any shares that were ineligible for voting pursuant to the above provision would not count as being present for such vote, but may be counted as present for calculation of attendance quorum.

Any stockholder who has a personal interest in the matter under discussion at a stockholders' meeting, the outcome of which may impair our interests, shall not vote or exercise voting rights on behalf of another stockholder; the shares held by such stockholder will not be counted as present for such vote but, may be counted as present for calculation of attendance quorum.

Holders of our ADSs generally will not be able to exercise voting rights on the common shares underlying ADSs on an individual basis.

Other Rights of Stockholders

Under the ROC Company Act and the Business Mergers and Acquisitions Act, dissenting stockholders are entitled to appraisal rights in certain major corporate actions, such as a planned transfer of the whole or part of the business or a proposed merger by us. A dissenting stockholder may request us to purchase back all of the shares owned by the stockholder at a fair price determined by mutual agreement or determined by the court if a mutual agreement cannot be reached. For example, if we propose to split up or to consolidate or merge with another company, stockholders may exercise their appraisal rights by serving a written notice or raising his objection verbally with a record prior to or during the related stockholders' meeting. Moreover, a stockholder has the right to file a petition in the court for annulment of any resolution adopted at a stockholders' meeting where the procedures for convening the stockholders' meeting or the method of adopting the resolutions at the meeting is contrary to law or our Articles of Incorporation.

We have adopted a nomination procedure for election of directors as stipulated in the ROC Company Act, which provides that stockholders holding 1% or more of our total issued shares may submit to us a list of candidates for directors, including independent directors.

Register of Stockholders and Record Dates

Our share registrar, Yuanta Securities Co., Ltd., maintains our register of stockholders at its offices in Taipei City, Taiwan. Under the ROC Company Act, we may, by giving advance public notice, set a record date and close the register of stockholders for a specified period in order for us to determine the stockholders or pledgees that are entitled to rights pertaining to the common shares. The specified period starting from such record date (to determine the entitled stockholders or pledgees) required is as follows:

- general stockholders' meeting—60 days;
- special stockholders' meeting—30 days; and
- relevant record date for distribution of dividends or other entitlements—5 days.

Annual Consolidated Financial Statements

At least ten days before the annual general stockholders' meeting, our annual consolidated financial statements prepared in accordance with Taiwan IFRSs, the business report, and the earnings distribution or losses offsetting proposal, must be available at our principal office in Taipei City, Taiwan for inspection by the stockholders.

Transfer of Common Shares

In accordance with our Articles of Incorporation, all of our shares are currently issued and transferred in book-entry form instead of issuing physical share certificates. After the book closure date, the Taiwan Depository & Clearing Corporation, or the TDCC, will deliver the names and addresses of the shareholders as of the book closure date to our registrar, Yuanta Securities Co., Ltd. Only shareholders as of the book closure date can assert shareholder rights against us.

Acquisition of Our Own Common Shares

Under the ROC Company Act, with minor exceptions, we cannot acquire our own common shares. Any common shares acquired by us, under certain of such minor exceptions, must be sold at the market price within six months after their acquisition.

In addition, under the ROC Securities and Exchange Act, a company whose shares are listed on the TWSE or traded on the Taipei Exchange (formerly known as Gre Tai Securities Market) may, pursuant to a board resolution adopted by a majority consent at a meeting attended by more than two-thirds of the directors and pursuant to the procedures prescribed by the Securities and Futures Bureau of the FSC, purchase its shares for the following purposes on the TWSE, the Taipei Exchange or by a tender offer:

(1) for transfers of shares to its employees;

(2) for conversion into shares from bonds with warrants, preferred shares with warrants, convertible bonds, convertible preferred shares or certificates of warrants issued by us; and

(3) for maintaining its credit and its stockholders' equity, provided that the shares so purchased shall be cancelled thereafter.

The total shares purchased by us shall not exceed 10% of our total issued and outstanding shares. In addition, the total amount for purchase of the shares shall not exceed the aggregate amount of our retained earnings, the premium from our shares issues and the realized portion of our capital surplus.

The shares purchased by us pursuant to items (1) and (2) above shall be transferred to the intended transferees within five years after the purchase; otherwise the same shall be cancelled. For the shares to be cancelled pursuant to item (3) above, we shall complete amendment registration for such cancellation within six months after the purchase.

The shares purchased by us shall not be pledged or hypothecated. In addition, we may not exercise any stockholders' rights attaching to these shares. Under the ROC Company Act, we may transfer the treasury stock to our employees and impose transfer restrictions on the shares up to two years.

Liquidation Rights

In the event of our liquidation, the assets remaining after payment of all debts, liquidation expenses and taxes will be distributed pro rata to the stockholders in accordance with the relevant provisions of the ROC Company Act.

Substantial Stockholders and Transfer Restrictions

The ROC Securities and Exchange Act currently requires for public companies that (i) each director, supervisor, manager, as well as their respective spouses, minor children and nominees, and substantial stockholder (i.e., a stockholder who, together with his or her spouse, minor children or nominees, holds more than 10% of the shares of a public company) to report any change in that person's shareholding to the issuer of the shares on a monthly basis and (ii) each director, supervisor, manager or substantial stockholder holding such common shares for more than a six month period to report his or her intent to transfer any shares listed on the TWSE or traded on the Taipei Exchange (formerly known as Gre Tai Securities Market) to the Securities and Futures Bureau of the FSC at least three days before the intended transfer, unless the number of shares to be transferred each day is no more than 10,000 shares. ADS holders holding more than 10% of our common shares, including common shares represented by ADSs, may be subject to the above-mentioned obligations.

In addition, the number of shares that can be sold or transferred on the TWSE or the Taipei Exchange (formerly known as Gre Tai Securities Market) by any person subject to the restrictions described above on any given day may not exceed:

- 0.2% of the outstanding shares of the company in the case of a company with no more than 30 million outstanding shares;
- 0.2% of 30 million shares plus 0.1% of the outstanding shares exceeding 30 million shares in the case of a company with more than 30 million outstanding shares; or
- in any case, 5% of the average daily trading volume (number of shares) on the TWSE or the Taipei Exchange for the ten consecutive trading days preceding the reporting day on which day the director, supervisor, manager or substantial stockholder or their respective spouse, minor child or nominee reports the intended share transfer to the Securities and Futures Bureau.

Block trading, auction sale, purchase by auction, after-hours trading and sales or transfers of our ADSs are not subject to these restrictions; however, these restrictions will still apply to sales of common shares upon withdrawal of ADSs.

C. Material Contracts

We have not entered into any material contracts other than in the ordinary course of business and other than those described elsewhere in this annual report.

D. Exchange Controls

Foreign Investment and Exchange Controls in Taiwan

We have extracted from publicly available documents the information presented in this section. Please note that citizens of the PRC and entities organized in the PRC are subject to special ROC laws, rules and regulations, which are not discussed in this section.

General

Historically, foreign investments in the securities market of Taiwan were restricted. However, commencing in 1983, the Taiwan government has from time to time enacted legislation and adopted regulations to make foreign investment in the Taiwan securities market possible. Initially, only overseas investment trust funds of authorized securities investment trust enterprises established in Taiwan were permitted to invest in the Taiwan securities market. Since January 1, 1991, qualified foreign institutional investors are allowed to make investments in the Taiwan listed securities market. Since March 1, 1996, overseas Chinese, non-resident foreign institutional and individual investors (other than qualified foreign institutional investors), called "general foreign investors," are permitted to make direct investments in the Taiwan securities market.

Foreign Investment in Taiwan Securities Market

On December 28, 1990, the Executive Yuan, the cabinet of the ROC government, approved guidelines drafted by the Securities and Futures Commission (the predecessor of the Securities and Futures Bureau), which, since January 1, 1991, has allowed direct foreign investment in Taiwan's securities that are listed on the TWSE or other Taiwan securities approved by the Securities and Futures Bureau by certain eligible qualified foreign institutional investors.

In addition to qualified foreign institutional investors, certain individual and foreign institutional investors which meet certain qualifications set by the Securities and Futures Bureau may invest in the shares of TWSE-listed companies, the Taipei Exchange (formerly known as Gre Tai Securities Market) traded companies, emerging market companies or other Taiwan securities approved by the Securities and Futures Bureau up to a limit of US$50 million (in the case of institutional investors) and US$5 million (in the case of individual investors) after obtaining permission from the TWSE.

On September 30, 2003 and June 15, 2004, the Securities and Futures Bureau issued amendments to the "Guideline Governing Investment in Securities by Overseas Chinese and Foreign Nationals" and relevant regulations, in which the Securities and Futures Bureau lifted certain restrictions and simplified the procedures required for foreign investments in Taiwan's securities market. The amendment focuses mainly on the following aspects:

- The concept of "qualified foreign institutional investors" no longer exists. Foreign investors are reclassified as "off-shore foreign institutional investors," "on-shore foreign institutional investors," "off-shore general foreign investors," and "on-shore general foreign investors" based on whether they are institutions or natural persons, and whether they have presences in Taiwan.
- For foreign investors to invest in Taiwan's securities market, registration with the TWSE, instead of the approval of the Securities and Futures Bureau, is required. The TWSE may withdraw or rescind the registration if the application documents submitted by foreign investors are untrue or incomplete, or if any material violation of the relevant regulations exists.
- Off-shore foreign investors may provide the securities they hold as the underlying shares of depositary receipts and act as selling stockholders in depositary receipts offerings.
- Off-shore foreign institutional investors are required to appoint their agent or nominee to attend the stockholders' meeting of the invested company.

Currently, subject to the specific restriction imposed by relevant regulations, the off-shore foreign institutional investors may invest in the Taiwan securities market without any amount of restriction. However, a ceiling may be separately determined by the Securities and Futures Bureau after consultation with the Central Bank of the ROC (Taiwan) for investment by offshore overseas Chinese and foreign individual investors.

Foreign Investment Approval

Other than investments permitted under Guideline Governing Investment in Securities by Overseas Chinese and Foreign Nationals, foreign investors (other than PRC persons) who wish to make (i) direct investments in the shares of Taiwan private companies or (ii) investment in 10% or more of the equity shares of a Taiwan company listed on TWSE or Taipei Exchange in any single transaction are required to submit a "foreign investment approval" application to the Investment Commission of the Ministry of Economic Affairs of Taiwan, or the "Investment Commission" or other government authority to qualify for benefits granted under the Statute for Investment by Foreign Nationals. The Investment Commission or other government authority reviews each foreign investment approval application and approves or disapproves the application after consultation with other governmental agencies. Any non-Taiwan person possessing a foreign investment approval may remit capital for the approved investment and repatriate annual net profits and interests and cash dividends attributable to an approved investment. Stock dividends, investment capital and capital gains attributable to the investment may be repatriated with approval of the Investment Commission or other government authority.

In addition to the general restrictions against direct investment by non-Taiwan persons in Taiwan companies, non-Taiwan persons are currently prohibited from investing in prohibited industries in Taiwan under the Negative List promulgated by the Executive Yuan from time to time. The prohibition on direct foreign investment in the prohibited industries in the Negative List is absolute with the consequence of certain specific exemptions from the application of the Negative List. Under the Negative List, some other industries are restricted so that non-Taiwan persons may directly invest only up to a specified level and with the specific approval of the relevant authority which is responsible for enforcing the legislation which the negative list is intended to implement. The telecommunication industry is a restricted industry under the Negative List.

Depositary Receipts

In April 1992, the Securities and Futures Bureau began allowing Taiwan companies listed on the TWSE, with the prior approval of the Securities and Futures Bureau, to sponsor the issuance and sale of depositary receipts evidencing depositary shares. In December 1994, the ROC Ministry of Finance began allowing companies whose shares are traded on the Taipei Exchange (formerly known as Gre Tai Securities Market) also to sponsor the issuance and sale of depositary receipts evidencing depositary shares representing shares of its capital stock. Approvals for these issuances are still required.

After the issuance of a depositary share, a holder of the depositary receipt evidencing the depositary shares may request the depositary issuing the depositary share to cause the underlying shares to be sold in Taiwan and to distribute the proceeds of the sale to or to withdraw the shares and deliver the shares to the depositary receipt holder. A citizen of the PRC is not permitted to withdraw and hold our shares.

If you are an offshore foreign institutional investor holding the depositary receipts, you must register with the TWSE as a foreign investor before you will be permitted to withdraw the shares represented by the depositary receipts. In addition to obtaining registration with the TWSE, you must also (i) appoint a qualified local agent to, among other things, open a securities trading account with a local securities brokerage firm and a bank account to remit funds, exercise stockholders' rights and perform other functions as holders of ADSs may designate, (ii) appoint a custodian bank to hold the securities and cash proceeds, confirm transactions, settle trades and report and declare other relevant information; and (iii) appoint a tax guarantor as guarantor for the full compliance of the withdrawing depositary receipt holder's tax filing and payment obligations in the ROC. A depositary receipt holder not registered as a foreign investor with the TWSE, or not has made the necessary appointments as outlined above, will be unable to hold or subsequently transfer the shares withdrawn from the depositary receipt facility.

No deposits of shares may be made in a depositary receipt facility and no depositary shares may be issued against deposits without specific Securities and Futures Bureau approval, unless they are:

(i) stock dividends;

(ii) free distributions of shares;

(iii) due to the exercise by the depositary receipt holder preemptive rights in the event of capital increases for cash; or

(iv) if permitted under the deposit agreement and custody agreement and within the amount of depositary receipts which have been withdrawn, due to the direct purchase by investors or purchase through the depositary on the TWSE or the Taipei Exchange (formerly known as Gre Tai Securities Market) or delivery by investors of the shares for deposit in the depositary receipt facility. In this event, the total number of depositary receipts outstanding after an issuance cannot exceed the number of issued depositary receipts previously approved by the Securities and Futures Bureau of the FSC in connection with the offering plus any ADSs issued pursuant to the events described in (i), (ii) and (iii) above.

An ADS holder or the depositary, without obtaining further approvals from the Central Bank of the ROC (Taiwan) or any other governmental authority or agency of the ROC, may convert NT dollars into other currencies, including U.S. dollars, in respect of:

- the proceeds of the sale of common shares represented by ADSs or received as share dividends with respect to the common shares and deposited into the depositary receipt facility; and
- any cash dividends or distributions received from the common shares.

In addition, the depositary may also convert into NT dollars incoming payments for purchases of common shares for deposit in the depositary receipt facility against the creation of additional ADSs. If you withdraw the common shares underlying your ADSs and become a holder of our common shares, you may convert into NT dollars subscription payment for rights offerings. The depositary may be required to obtain foreign exchange payment approval from the Central Bank of the ROC (Taiwan) on a payment-by-payment basis for conversion from NT dollars into foreign currencies of the proceeds from the sale of subscription rights of new common shares. Although it is expected that the Central Bank of the ROC (Taiwan) will grant approval as a routine matter, required approvals may not be obtained in a timely manner, or at all.

Exchange Controls

Taiwan's Foreign Exchange Control Statute and regulations provide that all foreign exchange transactions must be executed by banks designated to handle foreign exchange transactions by the FSC and by the Central Bank of the ROC (Taiwan). Current regulations favor trade-related foreign exchange transactions. Consequently, foreign currency earned from exports of merchandise and services may now be retained and used freely by exporters. All foreign currency needed for the importation of merchandise and services may be purchased freely from the designated foreign exchange banks.

Aside from trade-related foreign exchange transactions, Taiwan companies and residents may remit to and from Taiwan foreign currencies of up to US$50 million (or its equivalent) and US$5 million, (or its equivalent), respectively, in each calendar year. These limits apply to remittances involving conversion between New Taiwan dollars and U.S. dollars or other foreign currencies. A requirement is also imposed on all private enterprises to register all medium and long-term foreign debt with the Central Bank of the ROC (Taiwan).

In addition, a foreign person without an alien resident card or an unrecognized foreign entity may remit to and from Taiwan foreign currencies of up to US$100,000 per remittance if required documentation is provided to Taiwan authorities. This limit applies only to remittances involving conversion between New Taiwan dollars and U.S. dollars or other foreign currencies.

E. Taxation

ROC Taxation

The discussion below describes the principal ROC tax consequences of the ownership and disposition of ADSs representing common shares and of common shares. It applies to you only if you are:

- an individual who is not a citizen of the ROC, who owns ADSs or common shares and who is not physically present in Taiwan for 183 days or more during any calendar year; or
- a corporation or a non-corporate body that is organized under the laws of a jurisdiction other than the ROC for profit-making purposes and has no fixed place of business or other permanent establishments in Taiwan.

You should also consult your tax advisors concerning the tax consequences of owning ADSs and common shares in the ROC and any other relevant taxing jurisdiction to which they are subject.

Dividends

Dividends declared by us out of our retained earnings and distributed to you are subject to ROC withholding tax, currently at the rate of 21%, pursuant to the amendment to the Standards of Withholding Rates for Various Incomes promulgated by the Ministry of Finance of the ROC effective from January 1, 2018, on the amount of the distribution in the case of cash dividends or on the par value of the common shares in the case of stock dividends.

Share or cash dividends paid by us out of our capital surplus which are derived from the issuance of shares at a premium are not subject to ROC withholding tax. According to the rulings of Ref. Tai-Tsai-Hsuei-Tzi-09504509440 issued by the Ministry of Finance of the ROC, if a company reduces its share capital and redeems for cash its outstanding common shares issued to the company's stockholders by capitalization of capital surplus, those premiums under the capitalized capital surplus derived from re-evaluation of assets, sale of lands and/or merger with other enterprises shall be deemed as the gain in the stockholders' capital investment, and shall be deemed as stockholders' dividend income (or investment revenue) and be subject to ROC income tax.

As the legal reserve is set-aside from company's profit earnings (after tax) in accordance with Article 237 of the ROC Company Act, receipt of distribution of legal reserve shall be deemed as stockholders' dividend income (or investment revenue) and be subject to ROC income tax collected by way of withholding at the time of distribution, currently at the rate of 21%, unless a lower withholding rate is provided under a tax treaty between the ROC and the jurisdiction where the non-ROC stockholder is a resident.

Capital Gains

Gains from the sale of property in the ROC are generally subject to ROC income tax. Effective January 1, 2016, capital gain on the sale of common shares, including common shares withdrawn from the ADS facility, realized by a non-resident individual or non-resident entity is no longer subject to the capital gain tax and is further exempted from alternative minimum tax, or the AMT.

Sales of ADSs by you are regarded as transactions relating to property located outside the ROC and thus any gains derived therefrom are currently not subject to ROC income tax.

Preemptive Rights

Distributions of statutory preemptive rights for common shares in compliance with ROC law are not subject to any ROC tax. Proceeds derived from sales of statutory preemptive rights evidenced by securities are subject to securities transaction tax at the rate of 0.3% of the gross amount received. Proceeds derived from sales of statutory preemptive rights which are not evidenced by securities are subject to capital gains tax at the rate of 20% of the gains realized if the seller is a non-ROC resident regardless of whether the non-ROC resident is an individual or entity.

Subject to compliance with ROC law, we, at our sole discretion, can determine whether statutory preemptive rights shall be evidenced by issuance of securities.

Securities Transaction Tax

A securities transaction tax, at the rate of 0.3% of the gross amount received, payable by the seller will be withheld upon a sale of common shares in Taiwan. Transfers of ADSs are not subject to ROC securities transaction tax. According to a letter issued by the Ministry of Finance of the ROC in 1996, withdrawal of common shares from the deposit facility will not be subject to ROC securities transaction tax.

Estate Taxation and Gift Tax

ROC estate tax is payable on any property within Taiwan of a deceased person who is a non-resident individual, and ROC gift tax is payable on any property within Taiwan donated by any such person. Under ROC estate and gift tax laws, common shares issued by Taiwan companies are deemed located in Taiwan regardless of the location of the owner. It is not clear whether a holder of ADSs will be considered to own common shares for this purpose. Starting from May 12, 2017, estate tax is payable at rates ranging from 10% of the first NT$50,000,000 to 20% of amounts over NT$100,000,000, and gift tax is payable at rates ranging from 10% of the first NT$25,000,000 to 20% of amounts over NT$50,000,000.

Tax Treaty

The ROC does not have an income tax treaty with the United States. On the other hand, the ROC has income tax treaties with Indonesia, Israel, Singapore, South Africa, Australia, Vietnam, New Zealand, Malaysia, North Macedonia, Switzerland, the Netherlands, United Kingdom, Gambia, Senegal, Sweden, Belgium, Denmark, Paraguay, Hungary, France, India, Slovakia, Germany, Thailand, Eswatini, Luxembourg, Kiribati, Austria, Italy, Japan, Canada, Poland, Czech Republic and Saudi Arabia, which may limit the rate of ROC withholding tax on dividends paid with respect to common shares in Taiwan companies. It is unclear whether if you hold ADSs, you will be considered to hold common shares for the purposes of these treaties. Accordingly, if you may otherwise be entitled to the benefits of the relevant income tax treaty, you should consult your tax advisors concerning your eligibility for the benefits with respect to the ADSs.

Unappropriated Earnings Tax

Under the ROC Income Tax Act, a 10% unappropriated earnings tax will be imposed on a company for its after-tax earnings generated after January 1, 1998 which are not distributed in the following year. The unappropriated earnings tax so paid will further reduce the retained earnings available for future distribution. According to the amendment to the Income Tax Law, the rate of the ROC unappropriated earnings tax was adjusted from 10% to 5% against our unappropriated earnings generated from January 1, 2018. Such amendment applied to our annual tax filings made starting from January 1, 2019.

U.S. Federal Income Tax Considerations for U.S. Holders

The following is a summary of certain U.S. federal income tax consequences, as of the date hereof, of the ownership and disposition of our shares and ADSs. The discussion set forth below is applicable to beneficial owners of our shares or ADSs that hold the shares or ADSs as capital assets and that are U.S. holders (defined below) and non-residents of the ROC. You are a U.S. holder if you are:

- an individual who is a citizen or resident of the United States;
- a corporation, or other entity taxable as a corporation for U.S. federal income tax purposes, created or organized in or under the laws of the United States, any state thereof or the District of Columbia;
- an estate the income of which is subject to U.S. federal income taxation regardless of its source;
- a trust if it is subject to the primary supervision of a court within the United States and one or more U.S. persons have the authority to control all substantial decisions of the trust; or
- a trust that has a valid election in effect under applicable U.S. Treasury regulations to be treated as a U.S. person.

This summary is based on the provisions of the Internal Revenue Code of 1986, as amended (the "Code"), and regulations, rulings and judicial decisions thereunder as of the date hereof, and such authorities may be replaced, revoked or modified so as to result in U.S. federal income tax consequences different from those discussed below. It is for general purposes only and you should not consider it to be tax advice. In addition, it is also based in part on representations made by the depositary and assumes that the deposit agreement and any related agreement will be performed in accordance with their terms. This summary does not represent a detailed description of all the U.S. federal income tax consequences to you in light of your particular circumstances and does not address the effects of any state, local or non-U.S. tax laws (or other U.S. federal tax consequences, such as U.S. federal estate or gift tax consequences or the Medicare tax on net investment income). In addition, it does not represent a detailed description of the U.S. federal income tax consequences applicable to you if you are subject to special treatment under the U.S. federal income tax laws, including if you are:

- a dealer in securities or currencies;
- a trader in securities if you elect to use a mark-to-market method of accounting for your securities holdings;
- a financial institution or an insurance company;
- a regulated investment company;
- a real estate investment trust;
- a tax-exempt organization;
- a person liable for alternative minimum tax;
- a person holding shares or ADSs as part of a hedging, integrated or conversion transaction, constructive sale or straddle;
- a person required to accelerate the recognition of any item of gross income with respect to our shares or ADSs as a result of such income being recognized on an applicable financial statement;
- a person owning, actually or constructively, 10% or more of our stock (by vote or value);
- a partnership or other pass-through entity for U.S. federal income tax purposes; or
- a person whose "functional currency" is not the U.S. dollar.

We cannot assure you that a later change in law will not alter significantly the tax considerations that we describe in this summary. If a partnership (or other entity or arrangement treated as a partnership for U.S. federal income tax purposes) holds our shares or ADSs, the tax treatment of a partner will generally depend upon the status of the partner and the activities of the partnership. If you are a partnership or a partner of a partnership holding our shares or ADSs, you should consult your tax advisor.

You should consult your own tax advisor concerning the particular U.S. federal income tax consequences to you of the ownership and disposition of the shares or ADSs, as well as the consequences to you arising under the laws of any other taxing jurisdiction.

In general, for U.S. federal income tax purposes, a U.S. holder who is the beneficial owner of an ADS will be treated as the owner of the shares underlying such ADS. Deposits or withdrawals of shares, actually or constructively, by U.S. holders for ADSs will not be subject to U.S. federal income tax.

Taxation of Dividends

The gross amount of distributions (other than certain pro rata distributions of shares to all stockholders) you receive on your shares or ADSs, including amounts withheld in respect of ROC withholding taxes, will generally be treated as dividend income to you to the extent the distributions are made from our current or accumulated earnings and profits as calculated according to U.S. federal income tax principles. These amounts (including withheld taxes) will be includible in your gross income as ordinary income on the day you actually or constructively receive the distributions, which in the case of an ADS will be the date actually or constructively received by the depositary. You will not be entitled to claim a dividends-received deduction allowed to corporations under the Code with respect to distributions you receive from us.

Subject to applicable limitations (including a minimum holding period requirement), dividends received by non-corporate U.S. holders from a qualified foreign corporation may be treated as "qualified dividend income" that is subject to reduced rates of taxation. Subject to the discussion below under "—Passive Foreign Investment Company," a foreign corporation is generally treated as a qualified foreign corporation with respect to dividends paid by that corporation on shares (or ADSs backed by such shares) that are readily tradable on an established securities market in the United States. Under current U.S. Treasury Department guidance, our ADSs, which are listed on the NYSE, but not our shares, are treated as readily tradable on an established securities market in the United States. Thus, we do not believe that dividends that we pay on our shares that are not represented by ADSs currently meet the conditions required for these reduced tax rates. There also can be no assurance that our ADSs will continue to be readily tradable on an established securities market in the United States in later years, or that our shares will be readily tradable on an established securities market in any given year. You should consult your own tax advisor regarding the application of these rules given your particular circumstances.

The amount of any dividend paid in NT dollars will equal the U.S. dollar value of the NT dollars you receive, calculated by reference to the exchange rate in effect on the date you actually or constructively receive the dividend, which in the case of an ADS will be the date actually or constructively received by the depositary, regardless of whether the NT dollars are actually converted into U.S. dollars. If the NT dollars received as a dividend are converted into U.S. dollars on the date they are actually or constructively received, you generally will not be required to recognize foreign currency gain or loss in respect of the dividend income. If the NT dollars received as a dividend are not converted into U.S. dollars on the date of receipt, you will have a basis in the NT dollars equal to their U.S. dollar value on the date of receipt. Any gain or loss you realize if you subsequently sell or otherwise dispose of the NT dollars will be treated as ordinary income or loss from sources within the United States for foreign tax credit limitation purposes.

Subject to certain conditions and limitations under the Code, you may be entitled to a credit against your U.S. federal income taxes or a deduction for any ROC taxes that are withheld from dividend distributions made to you. The limitation on foreign taxes eligible for credit is calculated separately with respect to specific classes of income. For purposes of calculating the foreign tax credit, dividends we pay with respect to shares or ADSs will generally be considered passive category income from sources outside the United States. Further, a U.S. holder that has held shares or ADSs for less than a specified minimum period during which it is not protected from risk of loss, or is obligated to make payments related to the dividends, may not be allowed a foreign tax credit for foreign taxes imposed on dividends paid on shares or ADSs. The rules governing the foreign tax credit are complex. We therefore urge you to consult your tax advisor regarding the availability of the foreign tax credit under your particular circumstances.

To the extent that the amount of any distribution you receive exceeds our current and accumulated earnings and profits for a taxable year, as determined under U.S. federal income tax principles, the distribution will first be treated as a tax-free return of capital, causing a reduction in your adjusted basis in the shares or ADSs and thereby increasing the amount of gain, or decreasing the amount of loss, you will recognize on a subsequent disposition of the shares or ADSs. The balance in excess of adjusted basis, if any, will be taxable to you as capital gain recognized on a sale or exchange. However, we do not expect to keep earnings and profits in accordance with U.S. federal income tax principles. Therefore, you should expect that a distribution will generally be reported as a dividend.

It is possible that pro rata distributions of shares or ADSs to all stockholders may be made in a manner that is not subject to U.S. federal income tax. The basis of any new shares or ADSs so received will generally be determined by allocating your basis in the old shares or ADSs between the old shares or ADSs and the new shares or ADSs, based on their relative fair market values on the date of distribution.

For U.S. tax purposes, any such tax-free share distribution would not result in foreign source income to you. Consequently, you may not be able to use the foreign tax credit associated with any ROC withholding tax imposed on such distributions unless you can use the credit (subject to applicable limitations) against U.S. federal income tax due on other foreign source income in the appropriate category for foreign tax credit purposes.

Taxation of Capital Gains

When you sell or otherwise dispose of your shares or ADSs, you will generally recognize capital gain or loss in an amount equal to the difference between the U.S. dollar value of the amount realized for the shares or ADSs and your basis in the shares or ADSs, determined in U.S. dollars. Such gain or loss will generally be long-term capital gain or loss if you have held the shares or ADSs for more than one year. If you are an individual or other non-corporate holder, long-term capital gains will be eligible for reduced rates of taxation. Your ability to deduct capital losses is subject to limitations. For foreign tax credit limitation purposes, such gain or loss will generally be treated as U.S. source gain or loss.

Any ROC securities transaction taxes that you pay upon the disposition of shares generally will not be creditable foreign taxes for U.S. federal income tax purposes. You are urged to consult your tax advisors regarding the U.S. federal income tax consequences of these taxes.

Passive Foreign Investment Company

We believe that we were not a "passive foreign investment company," or PFIC, for U.S. federal income tax purposes for our taxable year ending on December 31, 2021, and we do not expect to become a PFIC for our current taxable year or in the future, although there can be no assurance in this regard. If we were treated as a PFIC for any taxable year during which you held our shares or ADSs, you could be subject to additional U.S. federal income taxes on gain recognized with respect to the shares or ADSs and on certain distributions, plus an interest charge on certain taxes treated as having been deferred under the PFIC rules.

Non-corporate U.S. holders will not be eligible for reduced rates of taxation on any dividends received from us if we are a PFIC in the taxable year in which such dividends are paid or in the preceding taxable year.

Information Reporting and Backup Withholding

In general, information reporting will apply to dividends in respect of our shares or ADSs and the proceeds from the sale, exchange or other disposition of our shares or ADSs that are paid to you within the United States (and in certain cases, outside the United States), unless you are an exempt recipient such as a corporation. A backup withholding tax may apply to such payments if you fail to provide a taxpayer identification number or certification of exempt status or fail to report in full dividend and interest income.

Backup withholding is not an additional tax and any amounts withheld under the backup withholding rules will be allowed as a refund or a credit against your U.S. federal income tax liability provided the required information is timely furnished to the U.S. Internal Revenue Service.

F. Dividends and Paying Agents

Not applicable.

G. Statement by Experts

Not applicable.

H. Documents on Display

We have filed this annual report on Form 20-F, including exhibits, with the SEC. As allowed by the SEC, in Item 19 of this annual report, we incorporate by reference certain information we have already filed with the SEC. This means that we can disclose important information to you by referring you to another document filed separately with the SEC. The information incorporated by reference is considered to be part of this annual report.

You may read and copy this annual report, including the exhibits incorporated by reference in this annual report, at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549 and at the SEC's regional offices in New York, New York and Chicago, Illinois. You also can obtain copies of this annual report, including the exhibits incorporated by reference in this annual report, from the SEC's Public Reference Room and regional offices upon payment of a duplicating fee.

The SEC also maintains a website at www.sec.gov that contains reports, proxy statements and other information regarding registrants that file electronically with the SEC. Our annual report and some of the other information submitted by us to the SEC may be accessed through this website.

I. Subsidiary Information

Not applicable.

ITEM 11. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Market risk is the risk of loss related to adverse changes in market prices, including interest rates and foreign exchange rates, of financial instruments. In the normal course of business, we are routinely subject to a variety of risks, including market risk associated with interest rate movements, currency rate movements on non-NT dollar-denominated assets and liabilities and equity price movements on our portfolio of equity securities.

We regularly assess these financial instruments and their ability to address market risk and have established policies and business practices to protect against the adverse effects of these and other potential exposures.

Interest Rate Risk

We do not expect interest rate risk to have a material impact on our financial condition and results of operations. Please refer to "Item 5. Operating and Financial Review and Prospects—B. Liquidity and Capital Resources" for a discussion of our loans.

For our non-fixed interest rate loans, the interest rates will change in accordance with the benchmark rates of the banks we borrowed from. For the financial assets, the risk associated with fluctuating interest rates is principally confined to our cash deposits in banks, which is one of the many ways we manage our capital. Assuming an increase or decrease of 0.25% in the interest rates of our non-fixed interest rate financial assets and loans, our profit before tax for the year ended December 31, 2021 would have increased or decreased by NT$31.3 million (US$1.1 million). We have not used any derivative financial instruments to hedge interest rate risk. We have not been exposed, nor do we anticipate being exposed to material risks due to changes in interest rates. As of December 31, 2021, our cash and cash equivalents amounted to NT$39.8 billion (US$1.4 billion). Interest income from our cash deposits in banks accounts for only a very small percentage of our total revenue. Therefore, we believe our exposure to interest rate risk is immaterial.

Foreign Currency Risk

We are exposed to foreign currency risk as a result of (i) our foreign currency and derivative trading activities; (ii) our telecommunications equipment being sourced from overseas suppliers; (iii) our international settlement payments associated with our services for international calls and roaming traffic; and (iv) investment denominated in foreign currencies.

We entered into forward exchange contracts to reduce our exposure to foreign currency risk due to fluctuations in exchange rates. Outstanding forward exchange contracts on December 31, 2021 were as follows:

FX Instrument	Currencies Involved	Maturity Period	Contract Amount
Forward exchange contracts-Buy	NT$/EUR	2022.03	NT$257 million/EUR8 million
Forward exchange contracts-Buy	NT$/EUR	2022.03	NT$228 million/EUR7 million

Note 38 to our consolidated financial statements included elsewhere in this annual report provides a sensitivity analysis for foreign currency risk.

Equity Price Risk

We are exposed to equity price risk as a result of holding other company's equity and we manage our investment portfolio in accordance with our internal policies and procedures.

The table below presents the carrying amount and accumulated unrealized gain or loss for our financial assets at fair value through profit or loss, or FVTPL, and financial assets at fair value through other comprehensive income, or FVOCI, as of December 31, 2021.

	Carrying Amount	Unrealized Gain	Unrealized Loss
	NT$	NT$	NT$
		(in millions)	
Financial assets at FVTPL			
Listed stocks	3	—	—
Non-listed stocks and limited partnership	909	92	7
Financial assets at FVOCI			
Listed stocks	459	81	—
Non-listed stocks	3,157	431	568

The value of our equity holdings fluctuates depending on the market conditions. Assuming an increase or decrease of 5% in the equity prices, our profit before tax and other comprehensive income before tax for the year ended December 31, 2021 would have increased or decreased by NT$46 million (US$1.7 million) and NT$181 million (US$6.5 million) as a result of the changes in fair value of financial assets at FVTPL and financial assets at FVOCI, respectively. However, we do not expect the gains and losses in the values of the equities that we hold to have a material impact on our financial condition and results of operations.

ITEM 12. DESCRIPTION OF SECURITIES OTHER THAN EQUITY SECURITIES

A. Debt Securities

Not applicable

B. Warrants and Rights

Not applicable

C. Other Securities

Not applicable

D. American Depositary Shares

Depositary Fees

Under the terms of the deposit agreement for our ADSs, an ADS holder may have to pay the following service fees to the depositary:

Service	Fees
Issuance of ADSs	Up to US$5.00 per 100 ADS issued
Cancellation of ADSs	Up to US$5.00 per 100 ADS cancelled
Distribution of cash dividends or other cash distributions	Up to US$2.00 per 100 ADS held
Distribution of ADSs pursuant to stock dividends, free stock distributions or exercises of rights	Up to US$5.00 per 100 ADS held
Distribution of securities other than ADSs or rights to purchase additional ADSs	Up to US$5.00 per 100 ADS held

Depositary Charges

In addition, an ADS holder shall be responsible for the following charges:

- taxes (including applicable interest and penalties) and other governmental charges;
- such registration fees as may from time to time be in effect for the registration of common shares or other deposited securities on the share register and applicable to transfers of common shares or other deposited securities to or from the name of the custodian, the depositary or any nominees upon the making of deposits and withdrawals, respectively;
- such cable, telex and facsimile transmission and delivery expenses as are expressly provided in the deposit agreement to be at the expense of ADS holders and beneficial owners of ADSs;
- the expenses and charges incurred by the depositary in the conversion of foreign currency; and
- the fees and expenses incurred by the depositary, the custodian or any nominee in connection with the servicing or delivery of deposited securities.

Depositary fees payable upon the issuance and cancellation of ADSs are typically paid to the depositary by the brokers (on behalf of their clients) receiving the newly-issued ADSs from the depositary and by the brokers (on behalf of their clients) delivering the ADSs to the depositary for cancellation. The brokers in turn charge these transaction fees to their clients.

Depositary fees payable in connection with distributions of cash or securities to ADS holders and the depositary services fee are charged by the depositary to the holders of record of ADSs as of the applicable ADS record date. The depositary fees payable for cash distributions are generally deducted from the cash being distributed. In the case of distributions other than cash (i.e., stock dividends, rights offerings), the depositary charges the applicable fee to the ADS record date holders concurrent with the distribution. In the case of ADSs registered in the name of the investor (whether certificated or un-certificated in direct registration), the depositary sends invoices to the applicable record date ADS holders. In the case of ADSs held in brokerage and custodian accounts via the central clearing and settlement system, The Depository Trust Company, or DTC, the depositary generally collects its fees through the systems provided by DTC (whose nominee is the registered holder of the ADSs held in DTC) from the brokers and custodians holding ADSs in their DTC accounts. The brokers and custodians who hold their clients' ADSs in DTC accounts in turn charge their clients' accounts the amount of the fees paid to the depositary.

In the event of refusal to pay the depositary fees and charges, the depositary may, under the terms of the deposit agreement, refuse the requested service until payment is received or may set off the amount of the depositary fees from any distribution to be made to the ADS holder.

The fees and charges ADS holders may be required to pay may vary overtime and may be changed by us and by the depositary. ADS holders will receive prior notice of such changes.

Payments by Depositary

In 2021, we received US$0.6 million net payments (after deducting the 30% U.S. withholding tax) from JPMorgan Chase Bank, N.A., the Depositary Bank for our ADR program. The payments were intended to cover certain of our expenses incurred in relation to the ADR program for the year, including:

- investor relations efforts;
- legal fees, NYSE listing fees, proxy process expenses, and SEC filing fees;
- Sarbanes-Oxley and accounting related expenses in connection with ongoing SEC compliance and listing requirements; and
- other ADR program-related expenses.

PART II

ITEM 13. DEFAULTS, DIVIDEND ARREARAGES AND DELINQUENCIES

None.

ITEM 14. MATERIAL MODIFICATIONS TO THE RIGHTS OF SECURITY HOLDERS AND USE OF PROCEEDS

None.

ITEM 15. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

As of the end of the period covered by this annual report, an evaluation has been carried out under the supervision and with the participation of our management, including our chief executive officer and our chief financial officer, of the effectiveness of the design and operation of our disclosure controls and procedures, as such term is defined under Rules 13a-14(c) and 15d-14(c) promulgated under the Securities Exchange Act of 1934, as amended. Based on that evaluation, our chief executive officer and chief financial officer have concluded that our disclosure controls and procedures are effective in ensuring that material information required to be disclosed in this annual report is recorded, processed, summarized and reported to them for assessment, and required disclosure is made within the time period specified in the rules and forms of the SEC.

Management's Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Rule 13a-15(f) under the Securities Exchange Act of 1934, as amended, for our company. Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board (IASB), or IFRSs, and includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of a company's assets, (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of consolidated financial statements in accordance with IFRSs, and that a company's receipts and expenditures are being made only in accordance with authorizations of a company's management and directors, and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of a company's assets that could have a material effect on the consolidated financial statements.

Because of its inherent limitations, a system of internal control over financial reporting can provide only reasonable assurance with respect to consolidated financial statement preparation and presentation and may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

As required by Section 404 of the Sarbanes-Oxley Act of 2002 and related rules as promulgated by the SEC, management assessed the effectiveness of our internal control over financial reporting as of December 31, 2021 using criteria established in Internal Control-Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

Based on this assessment, management concluded that our internal control over financial reporting was effective as of December 31, 2021 based on the criteria established in Internal Control-Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

Deloitte & Touche, an independent registered public accounting firm who has also audited our consolidated financial statements as of and for the year ended December 31, 2021, has issued an attestation report on the effectiveness of our internal control over financial reporting in accordance with the standards of the Public Company Accounting Oversight Board (United States).

Attestation Report of the Registered Public Accounting Firm

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and the Board of Directors of Chunghwa Telecom Co., Ltd.

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of Chunghwa Telecom Co., Ltd. and subsidiaries (the "Company") as of December 31, 2021, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2021, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended December 31, 2021, of the Company and our report dated April 15, 2022, expressed an unqualified opinion on those consolidated financial statements.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying "Management's Annual Report on Internal Control over Financial Reporting." Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of consolidated financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the consolidated financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ DELOITTE & TOUCHE
Deloitte & Touche
Taipei, Taiwan
Republic of China

April 15, 2022

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting that occurred during the year ended December 31, 2021 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

ITEM 16A. AUDIT COMMITTEE FINANCIAL EXPERT

Lo-Yu Yen is our audit committee financial expert and independent director. See “Item 6. Directors, Senior Management and Employees —C. Board Practices.”

The SEC has indicated that the designation of Mr. Yen as the audit committee financial expert does not: (i) make Mr. Yen an “expert” for any purpose, including without limitation for purposes of Section 11 of the Securities Act of 1933, as amended, as a result of this designation; (ii) impose any duties, obligations or liability on Mr. Yen that are greater than those imposed on him as a member of the audit committee and the board of directors in the absence of such designation; or (iii) affect the duties, obligations or liability of any other member of the audit committee or the board of directors.

ITEM 16B. CODE OF ETHICS

We have adopted a Code of Ethics and Ethical Corporate Management Best Practice Principles that applies to our directors, managers, employees, and mandataries, including our chief executive officer and chief financial officer. We have posted a copy of our Code of Ethics and Ethical Corporate Management Best Practice Principles on our website at https://www.cht.com.tw/en/home/cht/about-cht/corporate-governance/other-bylaws.

ITEM 16C. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The following table sets forth the aggregate fees by categories specified below in connection with certain professional services rendered by Deloitte & Touche (PCAOB ID No. 1060), our principal accountant for the years indicated. We did not pay any other fees to Deloitte & Touche during the periods indicated below.

	Year Ended December 31		
	2020	2021	
	NT$	NT$	US$
		(in millions)	
Audit fees[(1)]	43.4	49.3	1.8
Audit-related fees[(2)]	—	—	—
Tax fees[(3)]	—	—	—
All other fees[(4)]	0.4	0.3	—

(1) “Audit fees” means the aggregate fees billed in each of the fiscal years listed for professional services rendered by our principal accountant for the audit of our annual consolidated financial statements or services that are normally provided by the auditors in connection with statutory and regulatory filings or engagements.

(2) "Audit-related fees" means the aggregate fees billed in each of the fiscal years listed for assurance and related services by our principal accountant that are reasonably related to the performance of the audit or review of our consolidated financial statements and are not reported under "Audit fees." Services comprising the fees disclosed under the category of "Audit-related fees" involve principally the issuance of agreed-upon procedures letters.

(3) "Tax fees" means the aggregate fees billed in each of the fiscal years listed for professional services rendered by our principal accountant for tax compliance, tax advice and tax planning. Services comprising the fees disclosed under the category of "Tax Fees" involve tax advice.

(4) "All other fees" means the aggregate fees billed in each of the last two fiscal years for products and services provided by our principal accountant other than the services reported in items (1) to (3) above.

All audit and non-audit services provided by Deloitte & Touche were pre-approved by our audit committee according to the revised Rule 201(c) (7) of Regulation S-X, entitled "Audit Committee Administration of the Engagement," that served to strengthen requirements regarding auditor independence.

ITEM 16D. EXEMPTIONS FROM THE LISTING STANDARDS FOR AUDIT COMMITTEES

None.

ITEM 16E. PURCHASES OF EQUITY SECURITIES BY THE ISSUER AND AFFILIATED PURCHASERS

Not applicable.

ITEM 16F. CHANGE IN REGISTRANT'S CERTIFYING ACCOUNTANT

Not applicable.

ITEM 16G. CORPORATE GOVERNANCE

As a ROC company listed on the NYSE, we are subject to the U.S. corporate governance rules to the extent that these rules are applicable to foreign private issuers. The following summary details the significant differences between our corporate governance practices and corporate governance standards for non-foreign private issuers (e.g., U.S. companies) under the NYSE Listed Company Manual.

Under Section 303A of the NYSE Listed Company Manual, NYSE-listed foreign private issuers may, in general, follow their home country corporate governance practices in lieu of most of the new NYSE corporate governance requirements. However, all NYSE-listed foreign private issuers must comply with Sections 303A.06, 303A.11, 303A.12(b) and 303A.12(c) of the NYSE Listed Company Manual.

The Legal Framework. In general, corporate governance principles for Taiwanese companies are set forth in the ROC Company Act, the ROC Securities Exchange Act, regulations promulgated by the Securities and Futures Bureau of the FSC and, to the extent they are listed on the TWSE, listing rules of the TWSE. Corporate governance principles under provisions of ROC law may differ in significant ways to corporate governance standards for non-foreign private issuers listed on the NYSE. Committed to high standards of corporate governance, we have generally brought our corporate governance in line with U.S. regulations. However, we have not adopted certain recommended NYSE corporate governance standards where such standards are not in conformity with ROC laws or regulations or generally prevailing business practices in Taiwan. We believe the following to be the significant differences between our corporate governance practices and NYSE corporate governance rules applicable to non-foreign private issuers listed on the NYSE.

Director Independence. The NYSE corporate governance rules applicable to non-foreign private issuers listed on the NYSE require companies to have a majority of independent directors on the board of directors. The ROC Securities Exchange Act requires the independent directors of a public company to comprise of no less than two persons and one-fifth of the total number of directors. We currently have five independent directors on our thirteen-member board of directors. We follow the standards regulated under the ROC Securities Exchange Act and by the FSC for determining director independence, which are comparable to the standards imposed by the NYSE.

In addition, under the ROC requirements, our board of directors is not required to make a formal determination of a director's independence. Nevertheless, we believe that our independent directors are free from any business or other relationships that would impair the exercise of their independent judgment. Furthermore, pursuant to the NYSE Listed Company Manual, non-executive directors must meet on a regular basis without the management directors present. All of our directors attend our board of directors' meetings; however, no separate meeting is held among non-executive directors.

Audit Committee. On April 1, 2003, the SEC adopted final rules relating to the audit committee requirements. Foreign private issuers listed on the NYSE were required to comply with the related NYSE corporate governance rules by July 31, 2005. Our audit committee was established in September 2004 in accordance with the rules set forth in the NYSE Listed Company Manual. According to the NYSE corporate governance rules applicable to non-foreign private issuers listed on the NYSE, the board must review the status of any audit member that serves on more than three audit committees. There is no such requirement under the ROC law, which allows a person to serve as an independent director on up to four public companies in the ROC.

Section 303A.07 of the NYSE Listed Company Manual requires issuers to have at least three directors on the audit committee that meets the definition of independence set forth under Rule 10A-3 of the Exchange Act and Section 303A of the NYSE Listed Company Manual. There is no such requirement under the ROC law, which requires all independent directors of a public company to be members of the audit committee if the company has established such a committee.

On February 20, 2013, the FSC of the ROC announced that any (i) financial holding company, bank, bill finance company or insurance company, (ii) listed company whose paid-in capital reaches NT$50 billion or (iii) integrated securities firm controlled by a financial holding company, should establish an audit committee to replace supervisors. On December 19, 2018, the FSC further announced that, effective from January 1, 2020, all companies listed on TWSE/ Taipei Exchange should establish an audit committee to replace supervisors. As a result, our new audit committee started from the date of the annual general meeting on June 25, 2013, and is maintained as of the date of this annual report. See "Item 6. Directors, Senior Management and Employees—C. Board Practices." We now simultaneously comply with the relevant rules of the NYSE Listed Company Manual and the relevant rules and regulations in the ROC.

Nominating/Corporate Governance Committee and Corporate Governance Principles. The NYSE corporate governance rules applicable to non-foreign private issuers listed on the NYSE require companies to have a nominating/corporate governance committee, composed entirely of independent directors. In addition to identifying individuals qualified to become board members, the nominating/corporate governance committee must develop and recommend to the board a set of corporate governance principles. The ROC Company Act does not require companies incorporated in the ROC to have a nominating/corporate governance committee. We do not currently have a nominating committee or a corporate governance committee; however, we do have formulated our company's Code of Corporate Governance to follow.

Currently, our board of directors performs the duties of a corporate governance committee and regularly reviews our corporate governance principles and practices. The ROC Company Act requires that directors shall be elected by stockholders. Our Articles of Incorporation requires us, beginning in the fifth commencement, to establish at least three independent directors in the number of directors. The elections for directors shall proceed with the candidate nomination mechanism; the stockholders shall elect the directors from among the nominees listed in the roster of director candidates. Stockholders holding 1% or more of our outstanding shares are entitled to nominate candidates of directors in writing to us. The numbers of candidates nominated by stockholders shall not exceed the numbers of directors to be elected; neither the numbers of candidates nominated by the Board. Elections for independent and non-independent directors shall proceed concurrently, and the number of elected independent and non-independent directors shall be calculated separately.

Non-foreign private issuers listed on the NYSE are also required to adopt and disclose corporate governance guidelines. We currently comply with the ROC Non-Binding Corporate Governance Best Practice Principles for TWSE/Taipei Exchange Listed Companies promulgated by the TWSE, or Best Practice Principles, and we explain differences between our practice and the principles, if any, in our ROC annual report.

Compensation Committee. The NYSE corporate governance rules applicable to non-foreign private issuers listed on the NYSE require companies to have a compensation committee, composed entirely of independent directors. Article 14-6 of the ROC Securities and Exchange Act requires all listed companies to establish a compensation committee for directors, supervisors and managers' compensation, which includes salary, stock options and other rewards, as well as authorizes the Competent Authority (i.e., FSC) to enact a regulation on the authorities of the compensation committee and the qualifications of its members. See "Item 6. Directors, Senior Management and Employees—C. Board Practices" for description of our compliance.

Code of Business Conduct and Ethics. The NYSE corporate governance rules applicable to non-foreign private issuers listed on the NYSE require companies must adopt a code of business conduct and ethics for directors, officers and employees and promptly disclose any waivers of the code for directors or executive officers. We have adopted Code of Ethics which applies to our directors, managers and employees, and Ethical Corporate Management Best Practice Principles that applies to our directors, managers, employees and persons having substantial control over us. We have filed Code of Ethics and Ethical Corporate Management Best Practice Principles as an exhibit to our annual report filed with the U.S. SEC and a copy is available to any stockholder upon request.

Equity Compensation Plans. The NYSE corporate governance rules applicable to non-foreign private issuers listed on the NYSE require that equity compensation plans be approved by a company's stockholders. Under the ROC Company Act and the ROC Securities and Exchange Act, the distribution of compensation to employees should be decided by the board of directors and reported in stockholders' meeting. The approval of stockholders' meeting is required for any issuances of restricted stock to employees, and the board of director has authority to approve employee stock option plans and to grant options to employees pursuant to such plans, subject to the approval of the FSC, and to approve share buy-back programs and transfer of shares to employees under such programs. We intend to follow only the ROC requirements.

Means to Communicate with Non-Management Directors. The NYSE corporate governance rules applicable to non-foreign private issuers listed on the NYSE require companies to establish a means for stockholders, employees and other interested parties to communicate with non-management directors. The ROC law does not have comparable requirements. However, according to the Best Practice Principles, companies are required to establish channels of communication with employees and encourage employees to communicate directly with the management or directors so as to reflect employees' opinions about the management, financial conditions and material decisions of the company concerning employee welfare. We have complied with these provisions.

Internal Audit Function. The NYSE corporate governance rules applicable to non-foreign private issuers listed on the NYSE require companies to establish an internal audit function to provide management and the audit committee with assessments of the company's risk management processes and system of internal control. We have complied with the Best-Practice Principles by setting up an internal control/audit system in accordance with the ROC Regulations Governing Establishment of Internal Control Systems by Public Companies.

CEO Certification to the NYSE. The NYSE listing standards require the CEO of companies to certify compliance with NYSE corporate governance standards annually. ROC law does not contain such requirement. In this regard, we only follow the ROC corporate governance requirement which does not require CEO annual certification. However, our CEO and CFO are required to certify in the 20-F annual report that, to his or her knowledge the information contained therein fairly represents in all material respects the financial condition and results of operations of our company.

ITEM 16H. MINE SAFETY DISCLOSURE

Not applicable.

ITEM 16I. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTION

Not applicable.

PART III

ITEM 17. FINANCIAL STATEMENTS

The Registrant has elected to provide the consolidated financial statements and related information specified in Item 18 in lieu of Item 17.

ITEM 18. FINANCIAL STATEMENTS

The following is a list of the consolidated financial statements and report of independent registered public accounting firm included in this annual report beginning on page F-1.

INDEX TO THE CONSOLIDATED FINANCIAL STATEMENTS

ITEM 19. EXHIBITS

Exhibit Number	Description of Exhibits
1.1*	Articles of Incorporation of Chunghwa Telecom Co., Ltd. (English translation), as last amended by Annual General Meeting on August 20, 2021.
2.1	Form of Amended and Restated Deposit Agreement dated as of November 2007 among Chunghwa Telecom Co. Ltd., JPMorgan Chase Bank, N.A., as depositary, and all holders from time to time of ADRs issued thereunder, including the Form of American Depositary Receipt (incorporated by reference to Exhibit (a) to the Registrant's Registration Statement on Form F-6 (File No. 333-147321) filed with the Commission on November 13, 2007).
2.2	Description of our securities registered pursuant to Section 12 of the Securities Exchange Act of 1934 (incorporated by reference to Exhibit 2.2 to the Registrant's Annual Report on Form 20-F for the fiscal year ended December 31, 2019 (File No. 001-31731) filed with the Commission on April 17, 2020).
8.1*	List of Subsidiaries.
11.1*	Code of Ethics (English translation), as last amended by the board of directors on September 28, 2021.
11.2*	Ethical Corporate Management Best Practice Principles (English translation), as last amended by the board of directors on September 28, 2021.
12.1*	Certification of our Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
12.2*	Certification of our Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
13.1*	Certification of our Chief Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
13.2*	Certification of our Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS*	Inline XBRL Instance Document.
101.SCH*	Inline XBRL Taxonomy Extension Schema Document.
101.CAL*	Inline XBRL Taxonomy Extension Calculation Linkbase Document.
101.DEF*	Inline XBRL Taxonomy Extension Definition Linkbase Document.
101.LAB*	Inline XBRL Taxonomy Extension Label Linkbase Document.
101.PRE *	Inline XBRL Taxonomy Extension Presentation Linkbase Document.
104*	Cover Page Interactive Data File (embedded within the Inline XBRL document).

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* Filed herewith.

SIGNATURES

The registrant hereby certifies that it meets all of the requirements for filing on Form 20-F and that it has duly caused and authorized the undersigned to sign this annual report on its behalf.

CHUNGHWA TELECOM CO., LTD.

By: /s/ CHI-MAU SHEIH
Name: Chi-Mau Sheih
Title: Chairman and Chief Executive Officer

Date: April 15, 2022

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and the Board of Directors of Chunghwa Telecom Co., Ltd.

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Chunghwa Telecom Co., Ltd. and subsidiaries (the "Company") as of December 31, 2020 and 2021, the related consolidated statements of comprehensive income, changes in equity, and cash flows for each of the three years in the period ended December 31, 2021, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2020 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2021, in conformity with International Financial Reporting Standards as issued by the International Accounting Standards Board.

Our audits also comprehended the translation of New Taiwan dollar amounts into U.S. dollar amounts and, in our opinion, such translation has been made in conformity with the basis stated in Note 6 to the consolidated financial statements. Such U.S. dollar amounts are presented solely for the convenience of readers outside the Republic of China.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2021, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated April 15, 2022, expressed an unqualified opinion on the Company's internal control over financial reporting.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current-period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (1) relates to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Revenue Recognition on Mobile Service – Refer to Notes 3 and 31 to the consolidated financial statements

Critical Audit Matter Description

The Company’s mobile service revenue consists of subscriber-based charges made up of a significant volume of low-dollar transactions. Because of the complexity and a variety of subscriber-based charges as well as a large number of transactions, the Company uses highly automated systems to process and record its revenue transactions.

Given the Company’s systems to process and record revenue are highly automated, auditing revenue was complex and challenging due to the extent of audit effort required and involvement of professionals with expertise in information technology (IT) necessary for us to identify, test, and evaluate the Company’s IT systems.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to the Company’s systems to process revenue transactions included the following, among others:

- With the assistance of our IT specialists, we:
  - Identified the significant systems used to process revenue transactions and tested the general IT controls over each of these systems, including testing of user access controls and change management controls.
  - Performed testing of system interface controls and automated controls within the relevant revenue streams, as well as the controls designed to ensure the accuracy and completeness of revenue.
- We tested internal controls within the relevant revenue business processes, including those in place to reconcile the various systems to the Company’s accounting system.
- We selected samples from mobile service revenue and agreed to customer contracts and records of cash receipts.

/s/ DELOITTE & TOUCHE
Deloitte & Touche
Taipei, Taiwan Republic of China

April 15, 2022

We have served as the Company's auditor since 1998.

CHUNGHWA TELECOM CO., LTD. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS
December 31, 2020 and 2021
(In Millions of New Taiwan or U.S. Dollars)

		2020	2021	
ASSETS	**Notes**	**NT$**	**NT$**	**US$ (Note 6)**
CURRENT ASSETS				
Cash and cash equivalents	3, 7	$ 30,420	$ 39,779	$ 1,434
Financial assets at fair value through profit or loss	3, 4, 8	10	3	—
Hedging financial assets	3, 21	2	—	—
Contract assets	3, 31	5,331	5,554	200
Trade notes and accounts receivable, net	3, 4, 10, 14, 31	22,622	23,947	863
Receivables from related parties	40	230	41	1
Inventories	3, 4, 11, 41	12,409	11,327	408
Prepayments	12	2,306	2,330	84
Other current monetary assets	13, 29, 36	6,124	5,061	183
Other current assets	20, 33, 41	2,349	2,979	108
Total current assets		81,803	91,021	3,281
NONCURRENT ASSETS				
Financial assets at fair value through profit or loss	3, 4, 8	677	909	33
Financial assets at fair value through other comprehensive income	3, 4, 9, 36	7,193	3,616	130
Investments accounted for using equity method	3, 15, 36	6,695	7,137	257
Contract assets	3, 31	2,495	2,608	94
Property, plant and equipment	3, 4, 14, 16, 36, 40, 41	281,416	289,100	10,423
Right-of-use assets	3, 4, 17, 40	11,009	11,051	398
Investment properties	3, 4, 18, 36, 40	9,621	9,663	348
Intangible assets	3, 4, 14, 19, 36	90,285	83,945	3,026
Deferred income tax assets	3, 14, 33	3,133	2,785	100
Incremental costs of obtaining a contract	3, 31	1,000	988	36
Net defined benefit assets	3, 4, 14, 29	3,373	3,391	122
Prepayments	12	2,214	1,798	65
Other noncurrent assets	20, 36, 41, 42	5,266	4,863	176
Total noncurrent assets		424,377	421,854	15,208
TOTAL		$ 506,180	$ 512,875	$ 18,489

(Continued)

LIABILITIES AND EQUITY	Notes	2020 NT$	2021 NT$	2021 US$ (Note 6)
CURRENT LIABILITIES				
Short-term loans	22	$ 67	$ 65	$ 2
Short-term bills payable	23	6,999	—	—
Financial liabilities at fair value through profit or loss	3, 4, 8	—	6	—
Hedging financial liabilities	3, 21	—	8	—
Contract liabilities	3, 31, 40	13,437	12,234	441
Trade notes and accounts payable	26	15,591	18,063	651
Payables to related parties	40	646	392	14
Current tax liabilities	3, 33	6,157	6,530	235
Lease liabilities	3, 4, 17, 36, 40	3,382	3,211	116
Other payables	27, 36	23,988	24,437	881
Provisions	3, 14, 28	314	285	10
Current portion of long-term loans	24, 41	1,600	—	—
Other current liabilities		1,042	998	37
Total current liabilities		73,223	66,229	2,387
NONCURRENT LIABILITIES				
Long-term loans	24, 41	—	1,600	58
Bonds payable	25	19,980	26,977	972
Contract liabilities	3, 31	7,289	6,840	247
Deferred income tax liabilities	3, 14, 33	1,967	2,189	79
Provisions	3, 14, 28	101	142	5
Lease liabilities	3, 4, 17, 36, 40	6,215	7,062	255
Customers’ deposits	40	4,827	5,336	192
Net defined benefit liabilities	3, 4, 14, 29	3,415	2,288	82
Other noncurrent liabilities		1,890	5,082	184
Total noncurrent liabilities		45,684	57,516	2,074
Total liabilities		118,907	123,745	4,461
EQUITY ATTRIBUTABLE TO STOCKHOLDERS OF THE PARENT				
Common stocks		77,574	77,574	2,796
Additional paid-in capital		149,790	149,810	5,401
Retained earnings				
Legal reserve		77,574	77,574	2,796
Special reserve		2,676	2,676	97
Unappropriated earnings		67,574	70,157	2,529
Total retained earnings		147,824	150,407	5,422
Others		927	(408)	(15)
Total equity attributable to stockholders of the parent	14, 30	376,115	377,383	13,604
NONCONTROLLING INTERESTS	14, 30	11,158	11,747	424
Total equity		387,273	389,130	14,028
TOTAL		$ 506,180	$ 512,875	$ 18,489

(Concluded)

The accompanying notes are an integral part of the consolidated financial statements.

CHUNGHWA TELECOM CO., LTD. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
YEARS ENDED DECEMBER 31, 2019, 2020 and 2021
(In Millions of New Taiwan or U.S. Dollars, Except Earnings Per Share That Are in New Taiwan or U.S. Dollars)

		2019	2020	2021	
	Notes	NT$	NT$	NT$	US$ (Note 6)
REVENUES	3, 31, 40, 45	$207,520	$207,609	$210,478	$ 7,588
OPERATING COSTS	3, 11, 29, 31, 32, 40, 45	135,953	137,029	135,111	4,871
GROSS PROFIT		71,567	70,580	75,367	2,717
OPERATING EXPENSES					
Marketing		22,220	20,913	20,944	755
General and administrative		4,758	5,006	5,293	191
Research and development		3,941	3,850	3,688	133
Expected credit loss (reversal of credit loss)		(125)	45	143	5
Total operating expenses	3, 10, 29, 32, 40, 45	30,794	29,814	30,068	1,084
OTHER INCOME AND EXPENSES	16, 17, 18, 19, 20, 32, 45	(127)	1,595	(369)	(13)
INCOME FROM OPERATIONS		40,646	42,361	44,930	1,620
NON-OPERATING INCOME AND EXPENSES					
Interest income	45	251	116	95	3
Other income	9, 32, 40	531	470	378	14
Other gains and losses	15, 32, 38, 40	84	(159)	461	17
Interest expense	17, 32, 40, 45	(104)	(206)	(218)	(8)
Share of profits of associates and joint ventures accounted for using equity method	15, 45	459	244	421	15
Total non-operating income and expenses		1,221	465	1,137	41
INCOME BEFORE INCOME TAX		41,867	42,826	46,067	1,661
INCOME TAX EXPENSE	3, 33	7,946	8,122	9,020	325
NET INCOME		33,921	34,704	37,047	1,336
TOTAL OTHER COMPREHENSIVE INCOME (LOSS)					
Items that will not be reclassified to profit or loss:					
Remeasurements of defined benefit pension plans	29	1,527	1,193	390	14
Unrealized gain or loss on investments in equity instruments at fair value through other comprehensive income	3, 30, 38	171	519	(1,186)	(43)
Gain or loss on hedging instruments subject to basis adjustment	3, 21	(1)	2	(10)	—
Share of remeasurements of defined benefit pension plans of associates and joint ventures	15	(2)	(4)	(4)	—
Income tax relating to items that will not be reclassified to profit or loss	33	(305)	(239)	(78)	(3)
		1,390	1,471	(888)	(32)

(Continued)

CHUNGHWA TELECOM CO., LTD. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
YEARS ENDED DECEMBER 31, 2019, 2020 and 2021
(In Millions of New Taiwan or U.S. Dollars, Except Earnings Per Share That Are in New Taiwan or U.S. Dollars)

	Notes	2019 NT$	2020 NT$	2021 NT$	2021 US$ (Note 6)
Items that may be reclassified subsequently to profit or loss:					
Exchange differences arising from the translation of the foreign operations		$ (61)	$ (177)	$ (77)	$ (3)
Share of exchange differences arising from the translation of the foreign operations of associates and joint ventures	15	(1)	(4)	(1)	—
Income tax relating to items that may be reclassified subsequently	33	—	—	—	—
		(62)	(181)	(78)	(3)
Total other comprehensive income (loss), net of income tax		1,328	1,290	(966)	(35)
TOTAL COMPREHENSIVE INCOME		$ 35,249	$ 35,994	$ 36,081	$ 1,301
NET INCOME ATTRIBUTABLE TO					
Stockholders of the parent		$ 32,947	$ 33,419	$ 35,616	$ 1,284
Noncontrolling interests		974	1,285	1,431	52
		$ 33,921	$ 34,704	$ 37,047	$ 1,336
COMPREHENSIVE INCOME ATTRIBUTABLE TO					
Stockholders of the parent		$ 34,282	$ 34,713	$ 34,652	$ 1,249
Noncontrolling interests		967	1,281	1,429	52
		$ 35,249	$ 35,994	$ 36,081	$ 1,301
EARNINGS PER SHARE	34				
Basic		$ 4.25	$ 4.31	$ 4.59	$ 0.17
Diluted		$ 4.24	$ 4.30	$ 4.59	$ 0.17
EARNINGS PER EQUIVALENT ADS					
Basic		$ 42.47	$ 43.08	$ 45.91	$ 1.66
Diluted		$ 42.42	$ 43.03	$ 45.86	$ 1.65

The accompanying notes are an integral part of the consolidated financial statements.

(Concluded)

CHUNGHWA TELECOM CO., LTD. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY
YEARS ENDED DECEMBER 31, 2019, 2020 and 2021
(In Millions of New Taiwan or U.S. Dollars)

	Equity Attributable to Stockholders of the Parent												
			Retained Earnings				Others						
	Common Stocks NT$	Additional Paid-in Capital NT$	Legal Reserve NT$	Special Reserve NT$	Unappropriated Earnings NT$	Total Retained Earnings NT$	Exchange Differences Arising from the Translation of the Foreign Operations NT$	Unrealized Gain or Loss on Financial Assets at Fair Value through Other Comprehensive Income NT$	Gain or Loss on Hedging Instruments NT$	Total Others NT$	Total Equity Attributable to Stockholders of the Parent NT$	Noncontrolling Interests NT$	Total Equity NT$
BALANCE, JANUARY 1, 2019	$ 77,574	$ 149,762	$ 77,574	$ 2,676	$ 66,575	$ 146,825	$ (79)	$ 538	$ 1	$ 460	$ 374,621	$ 9,837	$384,458
Appropriation of 2018 earnings													
Cash dividends distributed by Chunghwa	—	—	—	—	(34,746)	(34,746)	—	—	—	—	(34,746)	—	(34,746)
Cash dividends distributed by subsidiaries	—	—	—	—	—	—	—	—	—	—	—	(710)	(710)
Unclaimed dividend	—	1	—	—	—	—	—	—	—	—	1	—	1
Net income for the year ended December 31, 2019	—	—	—	—	32,947	32,947	—	—	—	—	32,947	974	33,921
Other comprehensive income (loss) for the year ended December 31, 2019	—	—	—	—	1,208	1,208	(69)	197	(1)	127	1,335	(7)	1,328
Total comprehensive income (loss) for the year ended December 31, 2019	—	—	—	—	34,155	34,155	(69)	197	(1)	127	34,282	967	35,249
Share-based payment transactions of subsidiaries	—	(1)	—	—	—	—	—	—	—	—	(1)	22	21
Net decrease in noncontrolling interests	—	—	—	—	—	—	—	—	—	—	—	(1)	(1)
BALANCE, DECEMBER 31, 2019	77,574	149,762	77,574	2,676	65,984	146,234	(148)	735	—	587	374,157	10,115	384,272
Appropriation of 2019 earnings													
Cash dividends distributed by Chunghwa	—	—	—	—	(32,783)	(32,783)	—	—	—	—	(32,783)	—	(32,783)
Cash dividends distributed by subsidiaries	—	—	—	—	—	—	—	—	—	—	—	(775)	(775)
Unclaimed dividend	—	2	—	—	—	—	—	—	—	—	2	—	2
Change in additional paid-in capital from investments in associates and joint ventures accounted for using equity method	—	—	—	—	—	—	—	—	—	—	—	(2)	(2)
Change in additional paid-in capital for not proportionately participating in the capital increase of subsidiaries	—	—	—	—	—	—	—	—	—	—	—	—	—
Net income for the year ended December 31, 2020	—	—	—	—	33,419	33,419	—	—	—	—	33,419	1,285	34,704
Other comprehensive income (loss) for the year ended December 31, 2020	—	—	—	—	937	937	(167)	522	2	357	1,294	(4)	1,290
Total comprehensive income (loss) for the year ended December 31, 2020	—	—	—	—	34,356	34,356	(167)	522	2	357	34,713	1,281	35,994
Disposal of investments in equity instruments at fair value through other comprehensive income	—	—	—	—	17	17	—	(17)	—	(17)	—	—	—
Share-based payment transactions of subsidiaries	—	26	—	—	—	—	—	—	—	—	26	63	89
Net increase in noncontrolling interests	—	—	—	—	—	—	—	—	—	—	—	476	476
BALANCE, DECEMBER 31, 2020	77,574	149,790	77,574	2,676	67,574	147,824	(315)	1,240	2	927	376,115	11,158	387,273
Appropriation of 2020 earnings													
Cash dividends distributed by Chunghwa	—	—	—	—	(33,404)	(33,404)	—	—	—	—	(33,404)	—	(33,404)
Cash dividends distributed by subsidiaries	—	—	—	—	—	—	—	—	—	—	—	(896)	(896)
Unclaimed dividend	—	2	—	—	—	—	—	—	—	—	2	—	2
Change in additional paid-in capital from investments in associates and joint ventures accounted for using equity method	—	1	—	—	—	—	—	—	—	—	1	—	1
Net income for the year ended December 31, 2021	—	—	—	—	35,616	35,616	—	—	—	—	35,616	1,431	37,047
Other comprehensive income (loss) for the year ended December 31, 2021	—	—	—	—	311	311	(77)	(1,188)	(10)	(1,275)	(964)	(2)	(966)
Total comprehensive income (loss) for the year ended December 31, 2021	—	—	—	—	35,927	35,927	(77)	(1,188)	(10)	(1,275)	34,652	1,429	36,081
Disposal of investments in equity instruments at fair value through other comprehensive income	—	—	—	—	60	60	—	(60)	—	(60)	—	—	—
Share-based payment transactions of subsidiaries	—	17	—	—	—	—	—	—	—	—	17	56	73
BALANCE, DECEMBER 31, 2021	$ 77,574	$ 149,810	$ 77,574	$ 2,676	$ 70,157	$ 150,407	$ (392)	$ (8)	$ (8)	$ (408)	$ 377,383	$ 11,747	$389,130
BALANCE, DECEMBER 31, 2021 (IN MILLIONS OF US$ - Note 6)	$ 2,796	$ 5,401	$ 2,796	$ 97	$ 2,529	$ 5,422	$ (15)	$ —	$ —	$ (15)	$ 13,604	$ 424	$ 14,028

The accompanying notes are an integral part of the consolidated financial statements.

CHUNGHWA TELECOM CO., LTD. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS
YEARS ENDED DECEMBER 31, 2019, 2020 and 2021
(In Millions of New Taiwan or U.S. Dollars)

	2019	2020	2021	
	NT$	NT$	NT$	US$ (Note 6)
CASH FLOWS FROM OPERATING ACTIVITIES				
Income before income tax	$ 41,867	$ 42,826	$ 46,067	$ 1,661
Adjustments for:				
Depreciation	30,923	30,942	31,832	1,148
Amortization	4,253	5,424	6,569	237
Amortization of incremental costs of obtaining contracts	1,173	772	815	29
Expected credit loss (reversal of credit loss)	(125)	45	143	5
Interest expense	104	206	218	8
Interest income	(251)	(116)	(95)	(3)
Dividend income	(296)	(246)	(154)	(6)
Compensation cost of share-based payment transactions	2	8	19	—
Share of profits of associates and joint ventures accounted for using equity method	(459)	(244)	(421)	(15)
Loss (gain) on disposal of property, plant and equipment	38	(1,428)	3	—
Gain on disposal of investment properties	—	(151)	—	—
Loss on disposal of intangible assets	—	2	—	—
Loss (gain) on disposal of financial instruments	(4)	2	—	—
Gain on disposal of investments accounted for using equity method	(151)	(10)	(4)	—
Provision for impairment loss and obsolescence of inventory	475	1,161	207	7
Impairment loss on property, plant and equipment	93	—	—	—
Impairment loss on right-of-use assets	—	—	420	15
Reversal of impairment loss on investment properties	(57)	(27)	(83)	(3)
Impairment loss on intangible assets	9	9	29	1
Impairment loss on other assets	44	—	—	—
Valuation loss (gain) on financial assets and liabilities at fair value through profit or loss, net	38	99	(243)	(9)
Others	(26)	4	(133)	(5)
Changes in operating assets and liabilities:				
Decrease (increase) in:				
Contract assets	173	(203)	(336)	(12)
Trade notes and accounts receivable	4,039	4,071	(1,339)	(48)
Receivables from related parties	7	(214)	189	7
Inventories	(2,698)	3,915	875	32
Prepayments	115	173	392	14
Other current monetary assets	(155)	355	(386)	(14)
Other current assets	146	156	(630)	(23)
Incremental cost of obtaining contracts	(781)	(829)	(803)	(29)
Increase (decrease) in:				
Contract liabilities	6,701	(3,289)	(1,652)	(60)
Trade notes and accounts payable	(5,152)	21	2,468	89
Payables to related parties	(264)	(8)	(255)	(9)
Other payables	697	(924)	248	9
Provisions	97	95	13	—
Other current liabilities	(159)	46	(12)	—
Net defined benefit plans	534	(174)	(756)	(27)
Cash generated from operations	80,950	82,469	83,205	2,999
Interests paid	(104)	(161)	(192)	(6)
Income taxes paid	(8,419)	(7,852)	(8,155)	(294)
Net cash provided by operating activities	72,427	74,456	74,858	2,699

(Continued)

CHUNGHWA TELECOM CO., LTD. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS
YEARS ENDED DECEMBER 31, 2019, 2020 and 2021
(In Millions of New Taiwan or U.S. Dollars)

	2019	2020	2021	
	NT$	NT$	NT$	US$ (Note 6)
CASH FLOWS FROM INVESTING ACTIVITIES				
Acquisition of financial assets at fair value through other comprehensive income	$ (60)	$ (85)	$ (313)	$ (11)
Proceeds from disposal of financial assets at fair value through other comprehensive income	—	297	2,912	105
Proceeds from return of financial assets at fair value through other comprehensive income	9	—	—	—
Acquisition of financial assets at fair value through profit or loss	(443)	(39)	(44)	(2)
Proceeds from disposal of financial assets at fair value through profit or loss	146	30	25	1
Acquisition of time deposits and negotiable certificates of deposit with maturities of more than three months	(14,381)	(5,216)	(17,369)	(626)
Proceeds from disposal of time deposits and negotiable certificates of deposit with maturities of more than three months	16,520	6,630	18,446	665
Acquisition of repurchase agreements collateralized by bonds with maturities of more than three months	(15)	—	—	—
Proceeds from disposal of repurchase agreements collateralized by bonds with maturities of more than three months	—	15	—	—
Acquisition of investments accounted for using equity method	(4,190)	(10)	(330)	(12)
Proceeds from disposal of investments accounted for using equity method	32	—	9	—
Acquisition of property, plant and equipment	(24,166)	(23,511)	(35,333)	(1,274)
Proceeds from disposal of property, plant and equipment	48	319	27	1
Acquisition of intangible assets	(363)	(47,605)	(256)	(9)
Acquisition of investment properties	(1)	(54)	(1)	—
Proceeds from disposal of investment properties	—	188	—	—
Decrease (increase) in other noncurrent assets	(1,122)	(208)	338	12
Interests received	257	125	95	3
Dividends received	602	516	622	22
Net cash inflow on acquisition of subsidiaries	—	354	—	—
Net cash used in investing activities	(27,127)	(68,254)	(31,172)	(1,125)

(Continued)

CHUNGHWA TELECOM CO., LTD. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS
YEARS ENDED DECEMBER 31, 2019, 2020 and 2021
(In Millions of New Taiwan or U.S. Dollars)

	2019	2020	2021	
	NT$	NT$	NT$	US$ (Note 6)
CASH FLOWS FROM FINANCING ACTIVITIES				
Proceeds from short-term loans	$ 575	$ 115	$ 154	$ 6
Repayments of short-term loans	(585)	(142)	(156)	(6)
Proceeds from short-term bills payable	—	41,000	5,000	180
Repayments of short-term bills payable	—	(34,000)	(12,000)	(433)
Proceeds from issuance of bonds	—	20,000	7,000	252
Payments for transaction costs attributable to the issuance of bonds	—	(21)	(7)	—
Increase in customers' deposits	8	62	477	17
Payments for the principal of lease liabilities	(3,728)	(3,683)	(3,729)	(134)
Increase in other noncurrent liabilities	233	342	3,191	115
Cash dividends paid	(34,746)	(32,783)	(33,404)	(1,204)
Cash dividends distributed to noncontrolling interests	(710)	(775)	(896)	(32)
Change in other noncontrolling interests	18	81	54	2
Unclaimed dividend	1	2	2	—
Net cash used in financing activities	(38,934)	(9,802)	(34,314)	(1,237)
EFFECT OF EXCHANGE RATE CHANGES ON CASH AND CASH EQUIVALENTS	39	(30)	(13)	—
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	6,405	(3,630)	9,359	337
CASH AND CASH EQUIVALENTS, BEGINNING OF THE YEAR	27,645	34,050	30,420	1,097
CASH AND CASH EQUIVALENTS, END OF THE YEAR	$ 34,050	$ 30,420	$ 39,779	$ 1,434

(Concluded)

The accompanying notes are an integral part of the consolidated financial statements.

1. GENERAL

Chunghwa Telecom Co., Ltd. (“Chunghwa”) was incorporated on July 1, 1996 in the Republic of China (“ROC”). Chunghwa is a company limited by shares and, prior to August 2000, was wholly owned by the Ministry of Transportation and Communications (“MOTC”). Prior to July 1, 1996, the current operations of Chunghwa were carried out under the Directorate General of Telecommunications (“DGT”). The DGT was established by the MOTC in June 1943 to take primary responsibility in the development of telecommunications infrastructure and to formulate policies related to telecommunications. On July 1, 1996, the telecom operations of the DGT were spun-off as Chunghwa which continues to carry out the business and the DGT continues to be the industry regulator.

Effective August 12, 2005, the MOTC completed the process of privatizing Chunghwa by reducing the government ownership to below 50% in various stages. In July 2000, Chunghwa received approval from the Securities and Futures Commission (the “SFC”) for a domestic initial public offering and its common stocks were listed and traded on the Taiwan Stock Exchange (the “TWSE”) on October 27, 2000. Certain of Chunghwa’s common stocks were sold, in connection with the foregoing privatization plan, in domestic public offerings at various dates from August 2000 to July 2003. Certain of Chunghwa’s common stocks were also sold in an international offering of securities in the form of American Depository Shares (“ADS”) on July 17, 2003 and were listed and traded on the New York Stock Exchange (the “NYSE”). The MOTC sold common stocks of Chunghwa by auction in the ROC on August 9, 2005 and completed the second international offering on August 10, 2005. Upon completion of the share transfers associated with these offerings on August 12, 2005, the MOTC owned less than 50% of the outstanding shares of Chunghwa and completed the privatization plan.

Chunghwa together with its subsidiaries are hereinafter referred to collectively as the “Company”.

2. APPROVAL OF FINANCIAL STATEMENTS

The consolidated financial statements were authorized for issue by the management on March 28, 2022.

3. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Statement of Compliance

The accompanying consolidated financial statements have been prepared in conformity with International Financial Reporting Standards as issued by the International Accounting Standards Board (collectively, “IFRSs”).

Basis of Preparation

The consolidated financial statements have been prepared on the historical cost basis except for certain financial instruments that are measured at fair values and net defined benefit liabilities (assets) which are measured at the present value of the defined benefit obligations less the fair value of plan assets.

Current and Noncurrent Assets and Liabilities

Current assets include:

a. Assets held primarily for the purpose of trading;

b. Assets expected to be realized within twelve months after the reporting period; and

c. Cash and cash equivalents unless the asset is restricted from being exchanged or used to settle a liability for at least twelve months after the reporting period.

Current liabilities include:

a. Liabilities held primarily for the purpose of trading;

b. Liabilities due to be settled within twelve months after the reporting period; and

c. Liabilities for which the Company does not have an unconditional right to defer settlement for at least twelve months after the reporting period.

Assets and liabilities that are not classified as current are classified as noncurrent.

Light Era Development Co., Ltd. ("LED") engages mainly in development of property for rent and sale. The assets and liabilities of LED related to property development within its operating cycle, which is over one year, are classified as current items.

Basis of Consolidation

a. Principles for preparing consolidated financial statements

The consolidated financial statements incorporate the financial statements of Chunghwa and entities controlled by Chunghwa (its subsidiaries).

Income and expenses of subsidiaries acquired are included in the consolidated statement of comprehensive income from the acquisition date.

When necessary, adjustments are made to the financial statements of subsidiaries to bring their accounting policies in line with those used by the Company.

All inter-company transactions, balances, income and expenses are eliminated in full upon consolidation.

<u>Attribution of total comprehensive income to noncontrolling interests</u>

Total comprehensive income of subsidiaries is attributed to the stockholders of the parent and to the noncontrolling interests even if it results in the noncontrolling interests having a deficit balance.

<u>Changes in the Company's ownership interests in subsidiaries</u>

Changes in the Company's ownership interests in subsidiaries that do not result in the Company losing control over the subsidiaries are accounted for as equity transactions. The carrying amounts of the Company's interests and the noncontrolling interests are adjusted to reflect the changes in their relative interests in the subsidiaries. Any difference between the amount by which the noncontrolling interests are adjusted and the fair value of the consideration paid or received is recognized directly in equity and attributed to stockholders of the parent.

b. The subsidiaries in the consolidated financial statements

The detail information of the subsidiaries at the end of reporting period was as follows:

Name of Investor	Name of Investee	Main Businesses and Products	Percentage of Ownership interests December 31 2020	2021	Note
Chunghwa Telecom Co., Ltd.	Senao International Co., Ltd. (“SENAO”)	Handset and peripherals retailer, sales of CHT mobile phone plans as an agent	28	28	a)
	Light Era Development Co., Ltd. (“LED”)	Planning and development of real estate and intelligent buildings, and property management	100	100	
	Donghwa Telecom Co., Ltd. (“DHT”)	International private leased circuit, IP VPN service, and IP transit services	100	100	b)
	Chunghwa Telecom Singapore Pte., Ltd. (“CHTS”)	International private leased circuit, IP VPN service, and IP transit services	100	100	
	Chunghwa System Integration Co., Ltd. (“CHSI”)	Providing system integration services and telecommunications equipment	100	100	
	Chunghwa Investment Co., Ltd. (“CHI”)	Investment	89	89	
	CHIEF Telecom Inc. (“CHIEF”)	Network integration, internet data center (“IDC”), communications integration and cloud application services	56	56	c)
	CHYP Multimedia Marketing & Communications Co., Ltd. (“CHYP”)	Digital information supply services and advertisement services	100	100	
	Prime Asia Investments Group Ltd. (B.V.I.) (“Prime Asia”)	Investment	100	100	
	Spring House Entertainment Tech. Inc. (“SHE”)	Software design services, internet contents production and play, and motion picture production and distribution	56	56	
	Chunghwa Telecom Global, Inc. (“CHTG”)	International private leased circuit, internet services, and transit services	100	100	
	Chunghwa Telecom Vietnam Co., Ltd. (“CHTV”)	Intelligent energy saving solutions, international circuit, and information and communication technology (“ICT”) services	100	100	
	Smartfun Digital Co., Ltd. (“SFD”)	Providing diversified family education digital services	65	65	
	Chunghwa Telecom Japan Co., Ltd. (“CHTJ”)	International private leased circuit, IP VPN service, and IP transit services	100	100	
	Chunghwa Sochamp Technology Inc. (“CHST”)	Design, development and production of Automatic License Plate Recognition software and hardware	51	51	
	Honghwa International Co., Ltd. (“HHI”)	Telecommunications engineering, sales agent of mobile phone plan application and other business services, etc.	100	100	
	Chunghwa Leading Photonics Tech Co., Ltd. (“CLPT”)	Production and sale of electronic components and finished products	75	75	
	Chunghwa Telecom (Thailand) Co., Ltd. (“CHTT”)	International private leased circuit, IP VPN service, ICT and cloud VAS services	100	100	

(Continued)

Name of Investor	Name of Investee	Main Businesses and Products	Percentage of Ownership interests December 31 2020	2021	Note
	CHT Security Co., Ltd. ("CHTSC")	Computing equipment installation, wholesale of computing and business machinery equipment and software, management consulting services, data processing services, digital information supply services and internet identify services	80	77	d)
	International Integrated Systems, Inc. ("IISI")	IT solution provider, IT application consultation, system integration and package solution	51	51	e)
Senao International Co., Ltd.	Senao International (Samoa) Holding Ltd. ("SIS")	International investment	100	100	f)
	Youth Co., Ltd. ("Youth")	Sale of information and communication technologies products	96	96	g)
	Aval Technologies Co., Ltd. ("Aval")	Sale of information and communication technologies products	100	100	
	Senyoung Insurance Agent Co., Ltd. ("SENYOUNG")	Property and liability insurance agency	100	100	
Youth Co., Ltd.	ISPOT Co., Ltd. ("ISPOT")	Sale of information and communication technologies products	100	100	
	Youyi Co., Ltd. ("Youyi")	Maintenance of information and communication technologies products	100	100	
Aval Technologies Co., Ltd.	Wiin Technology Co., Ltd. ("Wiin")	Sale of information and communication technologies products	100	100	
Senyoung Insurance Agent Co., Ltd.	Senaolife Insurance Agent Co., Ltd. ("Senaolife")	Life insurance services	100	100	
CHIEF Telecom Inc.	Unigate Telecom Inc. ("Unigate")	Telecommunications and internet service	100	100	
	Chief International Corp. ("CIC")	Telecommunications and internet service	100	100	
	Shanghai Chief Telecom Co., Ltd. ("SCT")	Telecommunications and internet service	49	49	h)
Chunghwa Investment Co., Ltd.	Chunghwa Precision Test Tech. Co., Ltd. ("CHPT")	Production and sale of semiconductor testing components and printed circuit board	34	34	i)
Chunghwa Precision Test Tech. Co., Ltd.	Chunghwa Precision Test Tech. USA Corporation ("CHPT (US)")	Design and after-sale services of semiconductor testing components and printed circuit board	100	100	j)
	CHPT Japan Co., Ltd. ("CHPT (JP)")	Related services of electronic parts, machinery processed products and printed circuit board	100	100	
	Chunghwa Precision Test Tech. International, Ltd. ("CHPT (International)")	Wholesale and retail of electronic materials, and investment	100	100	k)
Senao International (Samoa) Holding Ltd.	Senao International HK Limited ("SIHK")	International investment	100	100	l)

(Continued)

Name of Investor	Name of Investee	Main Businesses and Products	Percentage of Ownership interests December 31 2020	2021	Note
Senao International HK Limited	Senao International Trading (Shanghai) Co., Ltd. ("SITS")	Sale of information and communication technologies products	100	—	m)
Prime Asia Investments Group Ltd. (B.V.I.)	Chunghwa Hsingta Co., Ltd. ("CHC")	Investment	100	100	
Chunghwa Hsingta Co., Ltd.	Chunghwa Telecom (China) Co., Ltd. ("CTC")	Integrated information and communication solution services for enterprise clients, and intelligent energy network service	100	100	n)
Chunghwa Precision Test Tech. International, Ltd.	Shanghai Taihua Electronic Technology Limited ("STET")	Design of printed circuit board and related consultation service	100	100	
	Su Zhou Precision Test Tech. Ltd. ("SZPT")	Assembly processed of circuit board, design of printed circuit board and related consultation service	100	100	o)
International Integrated Systems, Inc.	Infoexplorer International Co., Ltd.("IESA")	Investment	100	100	p)
	IISI Investment Co., Ltd. ("IICL")	Investment	100	100	p)
	Unitronics Technology Corp. ("UTC")	Development and maintenance of information system	99.96	99.96	p)
Infoexplorer International Co., Ltd.	International Integrated Systems (Hong Kong) Limited ("IEHK")	Investment and technical consulting service	100	100	p)
IISI Investment Co., Ltd.	Leading Tech Co., Ltd. ("LTCL")	Investment	100	100	p)
Leading Tech Co., Ltd.	Leading Systems Co., Ltd. ("LSCL")	Investment	100	100	p)
Leading Systems Co., Ltd.	International Integrated Systems Inc. (Shanghai) ("IISS")	Development and maintenance of information system	100	—	p) q)
International Integrated Systems Inc. (Shanghai)	Huiyu Shanghai Management Consultancy Co., Ltd. ("HSMC")	Development and maintenance of information system	—	—	p) r)

(Concluded)

a) Chunghwa continues to control six out of eleven seats of the Board of Directors of SENAO through the support of large beneficial stockholders. As a result, the Company treated SENAO as a subsidiary.

b) DHT reduced and returned its capital to its stakeholders in March 2021. The Company's ownership interest in DHT remained the same

c) CHIEF issued new shares in March 2020, December 2020, March 2021 and December 2021 as its employees exercised options. Therefore, the Company's ownership interest in CHIEF decreased to 59.08% and 58.89% as of December 31, 2020 and 2021, respectively.

d) CHTSC issued new shares in February 2021 as its employees exercised options. Therefore, the Company's ownership interest in CHTSC decreased to 77.46% as of December 31, 2021.

e) Chunghwa obtained 20.38% ownership interest in IISI in July 2020 and Chunghwa's ownership interest in IISI increased to 51.54% by considering the previously held ownership interest in IISI. Chunghwa obtained over half of the seats of the Board of Directors of IISI; therefore, Chunghwa gained control over IISI and treated it as a subsidiary. IISI issued new shares in September 2020 and January 2021 as its employees exercised options; therefore, the Company's ownership interest in IISI decreased to 51.20% and 51.02% as of December 31, 2020 and 2021, respectively.

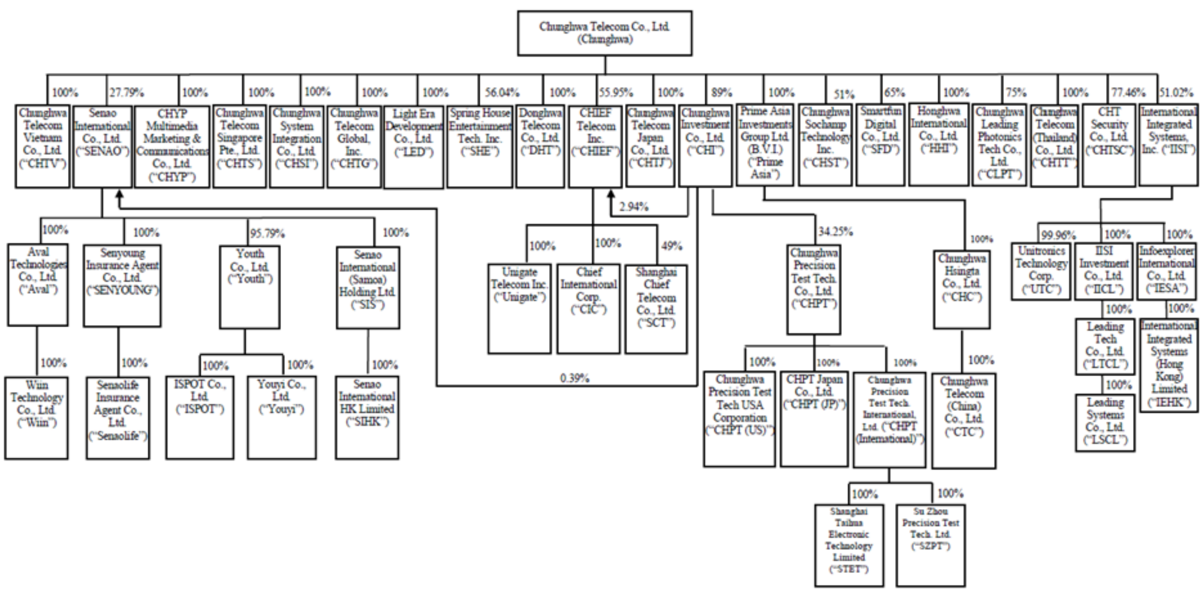
f) SIS reduced and returned its capital to its stakeholders in November 2020 and July 2021. SIS reduced 8.14% and 48.15% of its capital to offset accumulated deficits in February and October 2021, respectively. The Company's ownership interest in SIS remained the same.

g) SENAO subscribed for all the shares in the capital increase of Youth in April 2020. Therefore, the Company's ownership interest in Youth increased from 92.89% to 95.79%.

h) CHIEF has two out of three seats of the Board of Directors of SCT according to the mutual agreements among stockholders and gained control over SCT; hence, SCT is deemed as a subsidiary of the Company.

i) Though the Company's ownership interest in CHPT is less than 50%, the management considered the absolute and relative size of ownership interest, and the dispersion of shares owned by the other stockholders and concluded that the Company has a sufficiently dominant voting interest to direct the relevant activities; hence, CHPT is deemed as a subsidiary of the Company.
j) CHPT increased its investment in CHPT (US) proportionally in August 2021 and the Company's ownership interest in CHPT (US) remained the same.
k) CHPT increased its investment in CHPT (International) proportionally in April 2021 and the Company's ownership interest in CHPT (International) remained the same.
l) SIHK reduced and returned its capital to its stakeholders in November 2020 and May 2021. SIHK reduced 8.15% and 47.79% of its capital to offset accumulated deficits in January and August 2021, respectively. The Company's ownership interest in SIHK remained the same.
m) SITS completed its liquidation in April 2021.
n) CTC was approved to end and dissolve its business in August 2020. The liquidation of CTC is still in process.
o) CHPT (International) increased its investment in SZPT proportionally in July 2021. The Company's ownership interest in SZPT remained the same.
p) It is a subsidiary of IISI.
q) IISS completed its liquidation in August 2021
r) HSMC completed its liquidation in December 2020.

The following diagram presented information regarding the relationship and percentages of ownership interests between Chunghwa and its subsidiaries as of December 31, 2021.



Business Combinations

Acquisitions of businesses are accounted for using the acquisition method. Acquisition-related costs are generally recognized in profit or loss as they are incurred.

Goodwill is measured as the excess of the sum of the consideration transferred and the fair value of the acquirer's previously held equity interests in the acquiree over the net of the acquisition-date amounts of the identifiable assets acquired and the liabilities assumed.

Noncontrolling interests that are present ownership interests and entitle their holders to a proportionate share of the entity's net assets in the event of liquidation are measured at the noncontrolling interests' proportionate share of the recognized amounts of the acquiree's identifiable net assets.

When a business combination is achieved in stages, the Company's previously held equity interest in an acquiree is remeasured to fair value at the acquisition date and the resulting gain or loss is recognized in profit or loss. Amounts arising from interests in the acquiree prior to the acquisition date that have previously been recognized in other comprehensive income are recognized on the same basis as would be required had those interests been directly disposed of by the Company.

Foreign Currencies

In preparing the financial statements of each individual entity, transactions in currencies other than the entity's functional currency (foreign currencies) are recognized at the rates of exchange prevailing at the dates of the transactions.

At the end of each reporting period, monetary items denominated in foreign currencies are retranslated at the rates prevailing at that date. Exchange differences on monetary items arising from settlement or translation are recognized in profit or loss in the period in which they arise.

Non-monetary items carried at fair value that are denominated in foreign currencies are retranslated at the rates prevailing at the date when the fair value was determined and related exchange differences are recognized in profit or loss. Conversely, when the fair value changes were recognized in other comprehensive income, related exchange difference shall be recognized in other comprehensive income.

Non-monetary items that are measured at historical cost in a foreign currency are not retranslated.

Chunghwa uses New Taiwan dollars (NT$) as the functional currency. For the purpose of presenting consolidated financial statements, the assets and liabilities of the Company's foreign operations (including those subsidiaries, associates and joint ventures in other countries or currencies used different with Chunghwa) are translated into New Taiwan dollars using exchange rates prevailing at the end of each reporting period. Income and expense items are translated at the average exchange rates for the period. Exchange differences arising, if any, are recognized in other comprehensive income and attributed to stockholders of the parent and noncontrolling interests as appropriate.

Cash Equivalents

Cash equivalents include those maturities within three months from the date of acquisition, highly liquid, readily convertible to a known amount of cash and are subject to an insignificant risk of changes in value such as commercial papers, negotiable certificates of deposit, time deposits, repurchase agreements collateralized by bonds and stimulus vouchers. These cash equivalents are held for the purpose of meeting short-term cash commitments.

Inventories

Inventories are stated at the lower of cost or net realizable value item by item, except for those that may be appropriate to group items of similar or related inventories. Net realizable value is the estimated selling price of inventories less all estimated costs of completion and costs necessary to make the sale. The calculation of the cost of inventory is derived using the weighted-average method.

Buildings and Land Consigned to Construction Contractors

Inventories of LED are stated at the lower of cost or net realizable value item by item, except for those that may be appropriate to group as similar items or related inventories. Land acquired before construction is classified as land held for development and then reclassified as land held under development after LED begins its construction project.

Upon the completion of the construction project, LED recognizes revenues in the amount of proceeds from customers for land and buildings and related costs when ownership is transferred to the customers. The unsold portion of the completed construction project is transferred to land and building held for sale.

Investments in Associates and Joint Ventures

An associate is an entity over which the Company has significant influence and that is neither a subsidiary nor an interest in a joint venture. A joint venture is a joint arrangement whereby the Company and other parties that have joint control of the arrangement have rights to the net assets of the arrangement.

Investments accounted for using the equity method include investments in associates and interests in joint ventures. Under the equity method, an investment in an associate and a joint venture is initially recognized at cost and adjusted thereafter to recognize the Company's share of profit or loss and other comprehensive income of the associate and joint venture as well as the distribution received. The Company also recognizes its share in changes in the associates and joint ventures.

When the Company subscribes for new shares of an associate and a joint venture at a percentage different from its existing ownership percentage, the resulting carrying amount of the investment differs from the amount of the Company's proportionate interest in the associate and joint venture. The Company records such a difference as an adjustment to investments with the corresponding amount charged or credited to additional paid-in capital. When the adjustment should be debited to additional paid-in capital but the additional paid-in capital recognized from investments accounted for using equity method is insufficient, the shortage is debited to retained earnings.

Any excess of the cost of acquisition over the Company's share of the fair value of the identifiable net assets and liabilities of an associate and a joint venture at the date of acquisition is recognized as goodwill, which is included within the carrying amount of the investment and shall not be amortized. Any excess of the Company's share of the net fair value of the identifiable assets and liabilities over the cost of acquisition is recognized immediately in profit or loss.

The entire carrying amount of an investment (including goodwill) is tested for impairment as a single asset by comparing its recoverable amount with its carrying amount. Any impairment loss recognized is not allocated to any asset, including goodwill, that forms part of the carrying amount of the investment. Any reversal of that impairment loss is recognized to the extent that the recoverable amount of the investment subsequently increases.

The Company discontinues the use of the equity method from the date on which its investment ceases to be an associate and a joint venture. Any retained investment is measured at fair value at that date, and the fair value is regarded as the investment's fair value on initial recognition as a financial asset. The difference between the previous carrying amount of the associate and joint venture attributable to the retained interest and its fair value is included in the determination of the gain or loss on disposal of the associate and joint venture. The Company accounts for all amounts previously recognized in other comprehensive income in relation to that associate and joint venture on the same basis as would be required had that associate and joint venture directly disposed of the related assets or liabilities.

When the Company transacts with its associate and joint venture, profits and losses resulting from the transactions with the associate and joint venture are recognized in the Company's consolidated financial statements only to the extent of interests in the associate and joint venture that are not related to the Company.

Property, Plant and Equipment

Property, plant and equipment are initially measured at cost and subsequently measured at cost less accumulated depreciation and accumulated impairment loss.

Property, plant and equipment in the course of construction are depreciated and classified to the appropriate categories of property, plant and equipment when completed and ready for their intended use.

Depreciation on property, plant and equipment is recognized using the straight-line method. Each significant part is depreciated separately. Freehold land is not depreciated. The estimated useful lives, residual values and depreciation method are reviewed at the end of each year, with the effect of any changes in estimate accounted for on a prospective basis.

On derecognition of an item of property, plant and equipment, the difference between the net disposal proceeds and the carrying amount of the asset is recognized in profit or loss in the period in which the property is derecognized.

Investment Properties

Investment properties are properties held to earn rentals and/or for capital appreciation. Investment properties also include land held for a currently undetermined future use.

Investment properties are measured initially at cost, including transaction costs. Subsequent to initial recognition, investment properties are measured at cost less accumulated depreciation and accumulated impairment loss. Depreciation is recognized using the straight-line method.

For a transfer from the investment properties to property, plant and equipment, the deemed cost of the property, plant and equipment for subsequent accounting is its carrying amount at the commencement of owner-occupation.

For a transfer from the property, plant and equipment to investment properties, the deemed cost of the investment properties for subsequent accounting is its carrying amount at the end of owner-occupation.

For a contract where a land owner provides land for the construction of buildings by a property developer in exchange for a certain percentage of the buildings, any exchange gain or loss is recognized when the exchange transaction occurs if the exchange transaction has commercial substance.

On derecognition of the investment properties, the difference between the net disposal proceeds and the carrying amount of the asset is recognized in profit or loss in the period in which the property is derecognized.

Goodwill

Goodwill arising from the acquisition of a business is carried at cost as established at the date of acquisition of the business less accumulated impairment loss.

For the purpose of impairment testing, goodwill is allocated to each of the Company's cash-generating units or groups of cash-generating units (referred to as "cash-generating unit") that are expected to benefit from the synergies of the business combination.

A cash-generating unit to which goodwill has been allocated is tested for impairment annually, or more frequently when there is an indication that the unit may be impaired, by comparing its carrying amount, including the attributable goodwill, with its recoverable amount. However, if the goodwill allocated to a cash-generating unit was acquired in a business combination during the current annual period, that unit shall be tested for impairment before the end of the current annual period. If the recoverable amount of the cash-generating unit is less than its carrying amount, the impairment loss is allocated first to reduce the carrying amount of any goodwill allocated to the unit and then to the other assets of the unit pro rata based on the carrying amount of each asset in the unit. Any impairment loss is recognized directly in profit or loss. An impairment loss recognized for goodwill is not reversed in subsequent periods.

Intangible Assets Other Than Goodwill

Intangible assets with finite useful lives that are acquired separately are initially measured at cost and subsequently measured at cost less accumulated amortization and accumulated impairment loss. Amortization is recognized on a straight-line basis. The estimated useful life, residual value, and amortization method are reviewed at the end of each reporting period, with the effect of any changes in estimate being accounted for on a prospective basis. The residual value of an intangible asset with a finite useful life shall be assumed to be zero unless the Company expects to dispose of the intangible asset before the end of its economic life.

Intangible assets acquired in a business combination and recognized separately from goodwill are initially recognized at their fair value at the acquisition date (which is regarded as their cost). Subsequent to initial recognition, they are measured on the same basis as intangible assets that are acquired separately.

Gains or losses arising from derecognition of an intangible asset, measured as the difference between the net disposal proceeds and the carrying amount of the asset, are recognized in profit or loss in the period in which the asset is derecognized.

Impairment of Property, Plant and Equipment, Right-of-use Assets, Investment Properties, Intangible Assets Other Than Goodwill and Incremental Costs of Obtaining Contracts

At the end of each reporting period, the Company reviews the carrying amounts of its property, plant and equipment, right-of-use assets, investment properties and intangible assets, excluding goodwill, to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss. When it is not possible to estimate the recoverable amount of an individual asset, the Company estimates the recoverable amount of the cash-generating unit to which the asset belongs.

Intangible assets not yet available for use are tested for impairment at least annually, and whenever there is an indication that the asset may be impaired.

Recoverable amount is the higher of fair value less costs to sell and value in use. If the recoverable amount of an asset or cash-generating unit is estimated to be less than its carrying amount, the carrying amount of the asset or cash-generating unit is reduced to its recoverable amount, with the resulting impairment loss recognized in profit or loss.

Impairment loss from the assets related to incremental cost of obtaining contracts is recognized to the extent that the carrying amount of the assets exceeds the remaining amount of consideration that the Company expects to receive in exchange for related goods or services less the costs which relate directly to providing those goods or services.

When an impairment loss is subsequently reversed, the carrying amount of the asset or cash-generating unit is increased to the revised estimate of its recoverable amount, but only to the extent of the carrying amount that would have been determined had no impairment loss been recognized for the asset or cash-generating unit in prior years. A reversal of an impairment loss is recognized in profit or loss.

Financial Instruments

Financial assets and financial liabilities are recognized when the Company becomes a party to the contractual provisions of the instruments.

Financial assets and financial liabilities are initially measured at fair value. Transaction costs that are directly attributable to the acquisition of financial assets and financial liabilities (other than financial assets and financial liabilities at fair value through profit or loss) are added to the fair value of the financial assets or financial liabilities, as appropriate, on initial recognition. Transaction costs directly attributable to the acquisition of financial assets or financial liabilities at fair value through profit or loss are recognized immediately in profit or loss.

a. Financial assets

   All regular way purchases or sales of financial assets are recognized and derecognized on a trade date basis. The regular way of transaction means the purchase or sale of financial assets delivered within the time frame established by regulation or convention in the marketplace.

   1) Measurement category

      a) Financial assets at fair value through profit or loss (FVTPL)

Financial asset is classified as at FVTPL when the financial asset is mandatorily classified as at FVTPL. Financial assets mandatorily classified as at FVTPL include investments in equity instruments which are not designated as at fair value through other comprehensive income (FVOCI).

Financial assets at FVTPL are stated at fair value, with any gains or losses arising on remeasurement recognized in profit or loss. The net gain or loss recognized in profit or loss does not incorporate any dividend earned on the financial asset. Fair value is determined in the manner described in Note 38.

b) Financial assets at amortized cost

Financial assets that meet the following conditions are subsequently measured at amortized cost:

i. The financial asset is held within a business model whose objective is to hold financial assets in order to collect contractual cash flows; and

ii. The contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Subsequent to initial recognition, financial assets at amortized cost are measured at amortized cost, which equals to gross carrying amount determined by the effective interest method less any impairment loss, except for short-term receivables as the effect of discounting is immaterial. Exchange differences are recognized in profit or loss.

Interest income is calculated by applying the effective interest rate to the gross carrying amount of such financial assets.

c) Investments in equity instruments at FVOCI

On initial recognition, the Company may make an irrevocable election to designate investments in equity instruments as at FVOCI. Designation at FVOCI is not permitted if the equity investment is held for trading or if it is contingent consideration recognized by an acquirer in a business combination.

Investments in equity instruments at FVOCI are subsequently measured at fair value with gains and losses arising from changes in fair value recognized in other comprehensive income and accumulated in other equity. The cumulative gain or loss will not be reclassified to profit or loss on disposal of the equity investments. Instead, it will be transferred to retained earnings.

Dividends on these investments in equity instruments are recognized in profit or loss when the Company’s right to receive the dividends is established, unless the dividends clearly represent a recovery of part of the cost of the investment.

2) Impairment of financial assets and contract assets

The Company recognizes a loss allowance for expected credit losses on financial assets at amortized cost (including accounts receivable) and contract assets.

The Company recognizes lifetime Expected Credit Loss (ECL) for accounts receivable and contract assets. For all other financial instruments, the Company recognizes lifetime ECL when there has been a significant increase in credit risk since initial recognition. If, on the other hand, the credit risk on the financial instrument has not increased significantly since initial recognition, the Company measures the loss allowance for that financial instrument at an amount equal to 12-month ECL.

Expected credit losses reflect the weighted average of credit losses with the respective risks of a default occurring as the weights. Lifetime ECL represents the expected credit losses that will result from all possible default events over the expected life of a financial instrument. In contrast, 12-month ECL represents the portion of ECL that is expected to result from default events on a financial instrument that are possible within 12 months after the reporting date.

The Company recognizes an impairment loss for all financial instruments with a corresponding adjustment to their carrying amount through a loss allowance account.

3) Derecognition of financial assets

The Company derecognizes a financial asset only when the contractual rights to the cash flows from the asset expire, or when it transfers the financial asset and substantially all the risks and rewards of ownership of the asset to another entity.

On derecognition of a financial asset measured at amortized cost in its entirety, the difference between the asset’s carrying amount and the sum of the consideration received and receivable is recognized in profit or loss.

On derecognition of investments in equity instruments at FVOCI in its entirety, the cumulative gain or loss is directly transferred to retained earnings, and it is not reclassified to profit or loss.

b. Financial liabilities

1) Subsequent measurement

Except for financial liabilities at FVTPL, all the financial liabilities are subsequently measured at amortized cost using the effective interest method.

2) Derecognition of financial liabilities

The Company derecognizes financial liabilities when, and only when, the Company’s obligations are discharged, cancelled or expired. The difference between the carrying amount of the financial liability derecognized and the consideration paid and payable, including any non-cash assets transferred or liabilities assumed, is recognized in profit or loss.

c. Derivative financial instruments

The Company enters into derivative financial instruments to manage its exposure to foreign exchange rate risks, including forward exchange contracts.

Derivatives are initially measured at fair value at the date the derivative contracts are entered into and are subsequently remeasured to their fair value at the end of each reporting period. The resulting gain or loss is recognized in profit or loss immediately unless the derivative is designated and effective as a hedging instrument, in which event the timing of the recognition in profit or loss depends on the nature of the hedge relationship. When the fair value of derivative financial instruments is positive, the derivative is recognized as a financial asset; when the fair value of derivative financial instruments is negative, the derivative is recognized as a financial liability.

Hedge Accounting

The Company designates some derivatives instruments as cash flow hedges. Hedges of foreign exchange risk on firm commitments are accounted for as cash flow hedges.

The effective portion of changes in the fair value of derivatives that are designated and qualify as cash flow hedges is recognized in other comprehensive income. The gain or loss relating to the ineffective portion is recognized immediately in profit or loss.

The associated gains or losses that were recognized in other comprehensive income are reclassified from equity to profit or loss as a reclassification adjustment in the line item relating to the hedged item in the same period when the hedged item affects profit or loss. If a hedge of a forecast transaction subsequently results in the recognition of a non-financial asset or a non-financial liability, the associated gains and losses that were recognized in other comprehensive income are removed from equity and are included in the initial cost of the non-financial asset or non-financial liability.

The Company discontinues hedge accounting only when the hedging relationship ceases to meet the qualifying criteria; for instance, when the hedging instrument expires or is sold, terminated or exercised. The cumulative gain or loss on the hedging instrument that has been previously recognized in other comprehensive income from the period when the hedge was effective remains separately in equity until the forecast transaction occurs. When a forecast transaction is no longer expected to occur, the gain or loss accumulated in equity is recognized immediately in profit or loss.

Provisions

Provisions are measured at the best estimate of the expenditure required to settle the Company's obligation at the end of the reporting period, taking into account the risks and uncertainties surrounding the obligation. The provisions for warranties claims are made by management according to the sales agreements which represent the management's best estimate of the future outflow of economic benefits. The provisions of warranties claims are recognized as operating cost in the period in which the goods are sold. The provision for onerous contracts represents the present obligation resulting from the measurement for the unavoidable costs of meeting the Company's contractual obligations exceed the economic benefits expected to be received from the contracts.

Revenue Recognition

The Company identifies the performance obligations in the contract with the customers, allocates transaction price to each performance obligation and recognizes revenue when performance obligations are satisfied.

Sales of products are recognized as revenue when the Company delivers products and the customer accepts and controls the product. Except for consumer electronic products such as mobile devices sold in channel stores usually in the form of cash, the Company recognizes revenues for sale of other electronic devices and corresponding trade notes and accounts receivable.

Usage revenues from fixed-line services (including local, domestic long distance and international long distance telephone services), mobile services, internet and data services, and interconnection and call transfer fees from other telecommunications companies and carriers are billed in arrears and are recognized based upon seconds or minutes of traffic processed when the services are provided in accordance with contract terms. The usage revenues and corresponding trade notes and accounts receivable are recognized monthly.

Other revenues are recognized as follows: (a) one-time subscriber connection fees (on fixed-line services) are first recognized as contract liabilities and revenues are recognized subsequently over the average expected customer service periods, (b) monthly fees (on fixed-line services, mobile, internet and data services) and related receivables are accrued monthly, and (c) prepaid services (fixed-line, mobile, internet and data services) are recognized as contract liabilities upon collection considerations from customers and are recognized as revenues subsequently based upon actual usage by customers.

Where the Company enters into transactions which involve both the provision of telecommunications service bundled with products such as handsets, total consideration received from products and telecommunications service in these arrangements are allocated based on their relative standalone selling price. The amount of sales revenue recognized for products is not limited to the amount paid by the customer for the products. When the amount of sales revenue recognized for products exceeded the amount paid by the customer for the products, the difference is recognized as contract assets. Contract assets are reclassified to accounts receivable when the amounts become collectible from customers subsequently. When the amount of sales revenue recognized for products was less than the amount paid by the customer for the products, the difference is recognized as contract liabilities and revenues are recognized subsequently when the telecommunications services are provided.

For project business contracts, if a substantial part of the Company's promise to customers is to manage and coordinate the various tasks and assume the risks of those tasks to ensure the individual goods or services are incorporated into the combined output, they are treated as a single performance obligation since the Company provides a significant integration service. The Company recognizes revenues and corresponding accounts receivable when the project business contract is completed and accepted by customers. For some project contracts, the Company does not create an asset with an alternative use to the Company and has an enforceable right to payment for performance completed to date; therefore, performance obligations are satisfied and revenues are recognized over time.

For service contracts such as maintenance and warranties, customers simultaneously receive and consume the benefits provided by the Company; thus, revenues and corresponding accounts receivable of service contracts are recognized over the related service period.

When another party is involved in providing goods or services to a customer, the Company is acting as a principal if it controls the specified good or service before that good or service is transferred to a customer; otherwise, the Company is acting as an agent. When the Company is acting as a principal, gross inflow of economic benefits arising from transactions is recognized as revenue. When the Company is acting as an agent, revenue is recognized as its share of transaction.

Incremental Costs of Obtaining Contracts

Commissions and equipment subsidy related to telecommunications service as a result of obtaining contracts are recognized as an asset under the incremental costs of obtaining contracts to the extent the costs are expected to be recovered and are amortized over the contract period. However, the Company elects not to capitalize the incremental costs of obtaining contracts if the amortization period of the assets that the Company otherwise would have recognized is expected to be one year or less.

Leasing

At inception of a contract, the Company assesses whether the contract is, or contains, a lease.

a. The Company as lessor

   Rental income from operating leases is recognized on a straight-line basis over the term of the relevant lease.

b. The Company as lessee

   The Company recognizes right-of-use assets and lease liabilities for all leases at the commencement date of a lease, except for lease payments for low-value assets are recognized as expenses on a straight-line basis over the lease terms accounted for applying recognition exemption.

   Right-of-use assets are initially measured at cost, which comprises the initial measurement of lease liabilities and for lease payments made at or before the commencement date. Right-of-use assets are subsequently measured at cost less accumulated depreciation and accumulated impairment losses and adjusted for any remeasurement of the lease liabilities. Right-of-use assets are presented separately on the consolidated balance sheets.

   Right-of-use assets are depreciated using the straight-line basis from the commencement dates to the earlier of the end of the useful lives of the right-of-use assets or the end of the lease terms.

Lease liabilities were initially measured at the present value of the lease payments, which comprise fixed payments, in-substance fixed payments, variable lease payments which depend on an index or a rate. The lease payments are discounted using the interest rate implicit in a lease, if that rate can be readily determined. If such rate cannot be readily determined, the lessee's incremental borrowing rate is used.

Lease liabilities are subsequently measured at amortized cost using the effective interest method, with interest expense recognized over the lease terms. When there is a change in a lease term or a change in future lease payments resulting from a change in an index or a rate used to determine those payments, the Company remeasures the lease liabilities with a corresponding adjustment to the right-of-use-assets. However, if the carrying amount of the right-of-use assets is reduced to zero, any remaining amount of the remeasurement is recognized in profit or loss. The Company accounts for the remeasurement of the lease liability as a result of the decrease of lease scope by decreasing the carrying amount of the right-of-use assets and recognizes in profit or loss any gain or loss on the partial or full termination of the lease. Lease liabilities are presented separately on the consolidated balance sheets.

Variable lease payments not depending on an index or a rate are recognized as expenses in the periods in which they are incurred.

Borrowing Costs

All borrowing costs are recognized in profit or loss in the period in which they are incurred.

Government Grants

Government grants are not recognized until there is reasonable assurance that the Company will comply with the conditions attached to government grants and that the grants will be received.

Government grants related to income are recognized in profit or loss on a systematic basis over the periods in which the Company recognizes expenses of the related costs for which the grants are intended to compensate. Specifically, government grants whose primary condition is that the Company should construct noncurrent assets are recognized as deferred revenue and transferred to profit or loss on a systematic and rational basis over the useful lives of the related assets.

Government grants that become receivable as compensation for expenses or losses already incurred are recognized in profit or loss in the period in which they become receivable.

Employee Benefits

a. Short-term employee benefits

   Liabilities recognized in respect of short-term employee benefits are measured at the undiscounted amount of the benefits expected to be paid in exchange for the related service.

b. Retirement benefits

   Payments to defined contribution retirement benefit plans are recognized as an expense when employees have rendered service entitling them to the contributions.

   Defined benefit costs (including service cost, net interest and remeasurement) under the defined benefit retirement benefit plans are determined using the projected unit credit method. Service cost (including current service cost and gains or losses on settlements) and net interest on the net defined benefit liability (asset) are recognized as employee benefits expense in the period they occur. Remeasurement, comprising (a) actuarial gains and losses; and (b) the return on plan assets, excluding amounts included in net interest on the net defined benefit liability (asset), is recognized in other comprehensive income in the period in which they occur. Remeasurement recognized in other comprehensive income is reflected immediately in retained earnings and will not be reclassified to profit or loss.

Net defined benefit liability (asset) represents the actual deficit (surplus) in the Company's defined benefit plan. Any surplus resulting from this calculation is limited to the present value of any refunds from the plans or reductions in future contributions to the plans.

c. Other long-term employee benefits

Other long-term employee benefits are accounted for in the same way as the accounting required for defined benefit plan except that remeasurement is recognized in profit or loss.

Share-based Payment Arrangements - Employee Stock Options

The fair value determined at the grant date of the employee share options is expensed on a straight-line basis over the vesting period, based on the Company's estimate of employee stock options that are expected to ultimately vest, with a corresponding increase in additional paid-in capital - employee stock options. If the equity instruments granted vest immediately at the grant date, expenses are recognized in full in profit or loss.

At the end of each reporting period, the Company revises its estimate of the number of employee share options expected to vest. The impact of the revision of the original estimates, if any, is recognized in profit or loss such that the cumulative expense reflects the revised estimate, with a corresponding adjustment to additional paid-in capital - employee stock options.

Income Tax

Income tax expense represents the sum of the tax currently payable and deferred tax.

a. Current tax

The current tax is based on taxable profit for the year. Taxable profit differs from profit as reported in the consolidated statements of comprehensive income because of items of income or expense that are taxable or deductible in other years and items that are never taxable or deductible. The Company's liability for current tax is calculated using tax rates that have been enacted or substantively enacted by the end of the reporting period.

Income tax on unappropriated earnings is accrued during the period the earnings arise and adjusted to the extent that distributions are approved by the stockholders in the following year.

Adjustments of prior years' tax liabilities are added to or deducted from the current year's tax provision.

b. Deferred tax

Deferred tax is recognized on temporary differences between the carrying amounts of assets and liabilities in the consolidated financial statements and the corresponding tax bases used in the computation of taxable profit. A deferred tax liability is not recognized on taxable temporary difference arising from initial recognition of goodwill.

Deferred tax liabilities are generally recognized for all taxable temporary differences. Deferred tax assets are generally recognized for all deductible temporary differences, unused loss carry forward and unused tax credits from purchases of machinery, equipment and technology and research, and development expenditures, etc. to the extent that it is probable that taxable profits will be available against which those deductible temporary differences can be utilized.

Deferred tax liabilities are recognized for taxable temporary differences associated with investments in subsidiaries, associates, and joint ventures, except where the Company is able to control the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. Deferred tax assets arising from deductible temporary differences associated with such investments and interests are only recognized to the extent that it is probable that there will be sufficient taxable profits against which to utilize the benefits of the temporary differences and they are expected to reverse in the foreseeable future.

The carrying amount of deferred tax assets is reviewed at the end of each reporting period and reduced to the extent that it is no longer probable that sufficient taxable profits will be available to allow all or part of the asset to be recovered. A previously unrecognized deferred tax asset is also reviewed at the end of each reporting period and recognized to the extent that it has become probable that future taxable profit will allow the deferred tax asset to be recovered.

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply in the period in which the liability is settled or the asset realized, based on tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period. The measurement of deferred tax assets and liabilities reflects the tax consequences that would follow from the manner in which the Company expects, at the end of the reporting period, to recover or settle the carrying amount of its assets and liabilities.

c. Current and deferred tax

Current and deferred tax are recognized in profit or loss, except when they relate to items that are recognized in other comprehensive income, in which case, the current and deferred tax are also recognized in other comprehensive income.

Where current tax or deferred tax arises from the initial accounting for a business combination, the tax effect is included in the accounting for the business combination.

4. CRITICAL ACCOUNTING JUDGMENTS AND KEY SOURCES OF ESTIMATION, UNCERTAINTY AND ASSUMPTION

In the application of the Company's accounting policies, the management is required to make judgments, estimates and assumptions which are based on historical experience and other factors that are not readily apparent from other sources. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed by the management on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimate is revised if the revision affects only that period or in the period of the revision and future periods if the revision affects both current and future periods.

a. Critical accounting judgments

1) Revenue recognition

The Company's project agreements are mainly to provide one or more customized equipment or services to customers. In order to fulfill the agreements, another party may be involved in some agreements. The Company considers the following factors to determine whether the Company is a principal of the transaction: whether the Company is the primary obligation provider of the agreements, its exposures to inventory risks and the discretion in establishing prices, etc. The determination of whether the Company is a principal or an agent will affect the amount of revenue recognized by the Company. Only when the Company is acting as a principal, gross inflows of economic benefits arising from transactions is recognized as revenue.

2) Control over subsidiaries

As discussed in Note 3, “Summary of Significant Accounting Policies - Basis of Consolidation”, some entities are subsidiaries of the Company although the Company only owns less than 50% ownership interests in these entities. After considering the Company’s absolute size of holding in the entity and the relative size of and the dispersion of shares owned by the other stockholders, and the contractual arrangements between the Company and other investors, potential voting interests and the written agreement between stockholders, the management concluded that the Company has a sufficiently dominant voting interest to direct the relevant activities of the entity and to have control over the governance of the entity and therefore the Company has control over these entities.

b. Key sources of estimation uncertainty and assumption

The following are the key assumptions concerning the future, and other key sources of estimation uncertainty at the end of the reporting period. Actual results may differ from these estimates.

1) Impairment of trade notes and accounts receivable

The provision for impairment of trade notes and accounts receivable is based on assumptions on probability of default and expected credit loss rates. The Company uses judgment in making these assumptions and in selecting the inputs to the impairment calculation, based on the Company’s past experience, current market conditions as well as forward looking information at the end of each reporting period. For details of the key assumptions and inputs used, see Note 10. Where the actual future cash flows are less than expected, a material impairment loss may arise.

2) Fair value measurements and valuation processes

For the assets and liabilities measured at fair value without quoted prices in active markets, the Company’s management determines the appropriate valuation techniques for the fair value measurements and whether to engage third party qualified appraisers based on the related regulations and professional judgments.

Information about the valuation techniques and inputs used in determining the fair value of various assets and liabilities was disclosed in Note 38. If the actual changes of inputs in the future differ from expectation, the fair value may vary accordingly. The Company updates inputs periodically to monitor the appropriateness of the fair value measurement.

3) Provision for inventory valuation and obsolescence

Inventories are stated at the lower of cost or net realizable value. Estimates of net realizable value are based on the most reliable evidence available at the time the estimates are made at the end of reporting period. These estimates take into consideration fluctuations of price or cost directly relating to events occurring after the end of the period to the extent that such events confirm conditions existing at the end of the period. Inventory write-downs are determined on an item by item basis, except for those similar items which could be categorized into the same groups. The Company uses the inventory holding period and turnover as the evaluation basis for inventory obsolescence losses.

4) Impairment of property, plant and equipment, right-of-use assets, investment properties and intangible assets

In the process of evaluating the potential impairment of tangible and intangible assets, the Company is required to consider internal and external indicators of impairment and make subjective judgments in determining the independent cash flows, useful lives, expected future revenue and expenses related to the specific asset groups within the context of the telecommunication industry. Any changes in these estimates based on changed economic conditions or business strategies could result in significant impairment charges in future periods.

5) Useful lives of property, plant and equipment

As discussed in Note 3, "Summary of Significant Accounting Policies - Property, Plant and Equipment", the Company reviews estimated useful lives of property, plant and equipment at the end of each year.

6) Recognition and measurement of defined benefit plans

Net defined benefit liabilities (assets) and the resulting pension expense under defined benefit pension plans are calculated using the Projected Unit Credit Method. Actuarial assumptions comprise the discount rate, employee turnover rate, average future salary increase and etc. Changes in economic circumstances and market conditions will affect these assumptions and may have a material impact on the amount of the expense and the liability.

7) Lessees' incremental borrowing rates

In determining a lessee's incremental borrowing rate used in discounting lease payments, a risk-free rate for relevant duration and the same currency is selected as a reference rate. The lessee's credit spread adjustments and lease specific adjustments are also taken into account.

5. APPLICATION OF NEW AND AMENDED INTERNATIONAL FINANCIAL REPORTING STANDARDS

Amendments to IFRSs and the New Interpretation That Are Mandatorily Effective for the Current Year

The Company has applied Amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16: Interest Rate Benchmark Reform-phase 2. The application of these amendments has had no impact on the disclosures or amounts recognized in the Company's consolidated financial statements.

New and Amended IFRSs in Issue But Not Yet Effective

The Company has not applied the following new and amended IFRSs that have been issued but are not yet effective.

New or Amended Standards and Interpretations		Effective Date Issued by IASB (Note 1)
Amendments to IFRSs	Annual Improvements to IFRS Standards 2018-2020	January 1, 2022 (Note 2)
Amendments to IFRS 3	Reference to the Conceptual Framework	January 1, 2022 (Note 3)
Amendments to IAS 16	Property, Plant and Equipment - Proceeds before Intended Use	January 1, 2022 (Note 4)
Amendments to IAS 37	Onerous Contracts - Cost of Fulfilling a Contract	January 1, 2022 (Note 5)
Amendments to IFRS 10 and IAS 28	Sale or Contribution of Assets between An Investor and Its Associate or Joint Venture	To be determined by IASB
Amendments to IAS 1	Classification of liabilities as current or noncurrent	January 1, 2023
Amendments to IAS 1	Disclosure of Accounting Policies	January 1, 2023 (Note 6)
Amendments to IAS 8	Definition of Accounting Estimates	January 1, 2023 (Note 7)
Amendments to IAS 12	Deferred Tax related to Assets and Liabilities arising from a Single Transaction	January 1, 2023 (Note 8)

Note 1: The aforementioned new or amended standards or interpretations are effective after fiscal year beginning on or after the effective dates, unless specified otherwise.

Note 2: The amendments to IFRS 9 are applied prospectively to financial liabilities that are exchanged or modified on or after the annual reporting periods beginning on or after January 1, 2022.

Note 3: The amendments are applicable to business combinations for which the acquisition date is on or after the annual reporting period beginning on or after January 1, 2022.

Note 4: The amendments are applicable to property, plant and equipment that are brought to the location and condition necessary for them to be capable of operating in the manner intended by management on or after January 1, 2021.

Note 5: The amendments are applicable to contracts for which the entity has not yet fulfilled all its obligations on January 1, 2022.

Note 6: The amendments will be applied prospectively for annual reporting periods beginning on or after January 1, 2023.

Note 7: The amendments are applicable to changes in accounting estimates and changes in accounting policies that occur on or after the beginning of the annual reporting period beginning on or after January 1, 2023.

Note 8: Except that deferred taxes will be recognized for temporary differences associated with leases and decommissioning obligations on January 1, 2022, the amendments will be applied prospectively to transactions that occur on or after January 1, 2022.

The application of "Amendments to IFRSs: Annual Improvements to IFRS Standards 2018-2020", "Amendments to IFRS 3: Reference to the Conceptual Framework", "Amendments to IAS 16: Property, Plant and Equipment - Proceeds before Intended Use" and "Amendments to IAS 37: Onerous Contracts - Cost of Fulfilling a Contract" will not have material impact on the Company's consolidated financial statements.

As of the date the consolidated financial statements were authorized for issue, the Company is continuously assessing whether the application of "Amendments to IFRS 10 and IAS 28: Sale or Contribution of Assets between An Investor and Its Associate or Joint Venture", "Amendments to IAS 1: Classification of liabilities as current or noncurrent", "Amendments to IAS 1: Definition of Accounting Policies", "Amendments to IAS 8: Definition of Accounting Estimates", and "Amendments to IAS 12: Deferred Tax related to Assets and Liabilities arising from a Single Transaction" will have the impact on the Company's financial position and operating result. The Company will disclose the relevant impact when the assessment is completed.

6. U.S. DOLLAR AMOUNTS

The Company maintains its accounts and expresses its consolidated financial statements in New Taiwan dollars. For readers' convenience only, U.S. dollar amounts presented in the accompanying consolidated financial statements have been translated from New Taiwan dollars as set forth in the statistical release of the Federal Reserve Board of the United States as of December 30, 2021, which was NT$27.74 to US$1.00. The convenience translations should not be construed as representations that the New Taiwan dollar amounts have been, could have been, or could in the future be, converted into U.S. dollars at this or any other rate of exchange.

7. CASH AND CASH EQUIVALENTS

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Cash		
Cash on hand	$ 487	$ 440
Bank deposits	10,961	15,647
	11,448	16,087
Cash equivalents (with maturities of less than three months)		
Commercial papers	$ 14,061	$ 13,530
Negotiable certificates of deposit	2,600	7,500
Time deposits	2,308	2,657
Stimulus vouchers	3	5
	18,972	23,692
	$ 30,420	$ 39,779

The annual yield rates of bank deposits, commercial papers, negotiable certificates of deposit and time deposits as of balance sheet dates were as follows:

	December 31	
	2020	2021
Bank deposits	0.00%-0.40%	0.00%-0.45%
Commercial papers	0.14%-0.26%	0.17%-0.30%
Negotiable certificates of deposit	0.24%-0.30%	0.27%-0.30%
Time deposits	0.10%-3.60%	0.01%-3.60%

8. FINANCIAL INSTRUMENTS AT FAIR VALUE THROUGH PROFIT OR LOSS

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Financial assets-current		
Mandatorily measured at FVTPL		
Derivatives (not designated for hedge)		
Forward exchange contracts	$ 2	$ —
Non-derivatives		
Listed stocks - domestic	8	3
	$ 10	$ 3
Financial assets-noncurrent		
Mandatorily measured at FVTPL		
Non-derivatives		
Non-listed stocks - domestic	$ 441	$ 648
Non-listed stocks - foreign	236	237
Limited partnership - domestic	—	24
	$ 677	$ 909
Financial liabilities-current		
Held for trading		
Derivatives (not designated for hedge)		
Forward exchange contracts	$ —	$ 6

Outstanding forward exchange contracts not designated for hedge as of balance sheet dates were as follows:

	Currency	Maturity Period	Contract Amount (In Millions)
December 31, 2020			
Forward exchange contracts - buy	NT$/EUR	2021.03	NT$50/EUR2
Forward exchange contracts - sell	US$/NT$	2021.02-03	US$14/NT379
December 31, 2021			
Forward exchange contracts - buy	NT$/EUR	2022.03	NT$257/EUR8

The Company entered into the above forward exchange contracts to manage its exposure to foreign currency risk due to fluctuations in exchange rates. However, the aforementioned derivatives did not meet the criteria for hedge accounting.

9. FINANCIAL ASSETS AT FAIR VALUE THROUGH OTHER COMPREHENSIVE INCOME - NONCURRENT

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Domestic investments		
Listed stocks	$ 2,754	$ 459
Non-listed stocks	4,325	3,030
Foreign investments		
Non-listed stocks	114	127
	$ 7,193	$ 3,616

The Company holds the above foreign and domestic stocks for medium to long-term strategic purposes and expects to profit from long-term investment. Accordingly, the management elected to designate these investments in equity instruments at FVOCI as they believe that recognizing short-term fair value fluctuations of these investments in profit or loss is not consistent with the Company's strategy of holding these investments for long-term purposes.

The Company holds Powtec Electro Chemical Corporation ("Powtec") as financial assets at FVOCI. The Board of Directors of Powtec resolved in February 2020 to file a petition with court for the declaration of its bankruptcy which was adjudged by the court in April 2020. The Company evaluated and determined the fair value of such investment was nil after its declaration of bankruptcy and recognized related loss in the consolidated statements of comprehensive income for the year ended December 31, 2019.

The Company disposed of its investment in China Airlines, Ltd. starting from December 2020 and sold all its shares by February 2021. The total fair value of the disposed investment were $568 million and $2,636 million in 2020 and 2021, respectively. The Company disposed of its investments in UUPON Inc. (UUPON) and Cotech Engineering Fuzhou Corp. in October and December 2021 and the fair value of the disposed investment were $1 million and $4 million, respectively.

CHI obtained significant influence over AgriTalk Technology Inc. ("ATT") and Imedtac Co., Ltd. ("IME") in July 2021 and August 2021, respectively. Therefore, the aforementioned investments were reclassified from financial asset at FVOCI to associates at fair value of $19 million and $45 million, respectively. (Please refer to Note 15 (a)).

The related unrealized gain on financial assets at FVOCI of $17 million and $60 million were transferred from other equity to retained earnings upon the aforementioned disposals in 2020 and 2021, respectively.

CHI participated in the private placement of PChome Online Inc. in the amount of $200 million in October 2021.

The Company recognized dividend income of $296 million and $246 million for the years ended December 31, 2019 and 2020, respectively, from the investments still held on December 31, 2019 and 2020.

The Company recognized dividend income of $154.0 million for the year ended December 31, 2021, from the investments still held on December 31, 2021, of which $153.9 million was from the outstanding investments on December 31, 2021.

10. TRADE NOTES AND ACCOUNTS RECEIVABLE, NET

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Trade notes and accounts receivable	$ 24,776	$ 25,552
Less: Loss allowance	(2,154)	(1,605)
	$ 22,622	$ 23,947

The main credit terms range from 30 to 90 days.

The Company serves a large consumer base for telecommunications business; therefore, the concentration of credit risk is limited. When having transactions with customers, the Company considers the record of arrears in the past. In addition, the Company may also collect some telecommunication charges in advance to reduce the payment arrears in subsequent periods.

The Company adopted a policy of dealing with counterparties with certain credit ratings for project business and to obtain collateral where necessary to mitigate the risk of loss arising from defaults. Credit rating information is provided by independent rating agencies where available and, if such credit rating information is not available, the Company uses other publicly available financial information and its own historical transaction experience to rate its major customers. The Company continues to monitor the credit exposure and credit ratings of its counterparties and spread the credit risk amongst qualified counterparties.

In order to mitigate credit risk, the management of the Company has delegated a team responsible for determining credit limits, credit approvals and other monitoring procedures to ensure the recoverability of receivables. In addition, the Company reviews the recoverable amount of receivables at balance sheet dates to ensure that adequate allowance is provided for possible irrecoverable amounts. In this regard, the management believes the Company's credit risk could be reasonably reduced.

The Company applies the simplified approach to providing for expected credit losses prescribed by IFRS 9, which permits the use of lifetime expected loss provision for receivables. The expected credit losses on receivables are estimated using a provision matrix by reference to past default experience of the customers and an analysis of the customers' current financial positions, as well as the forward-looking indicators such as macroeconomic business indicators.

When there is evidence indicating that the counterparty is in evasion, bankruptcy, deregistration of its company or the accounts receivable are over two years past due and the recoverable amount cannot be reasonable estimated, the Company writes off the trade notes and accounts receivable. For accounts receivable that have been written off, the Company continues to engage in enforcement activity to attempt to recover the receivables due. Where recoveries are made, these are recognized in profit or loss.

Except for receivables arising from telecommunications business and project business, the Company's remaining accounts receivable are limited. Therefore, only Chunghwa's provision matrix arising from telecommunications business and project business is disclosed below:

December 31, 2020

	Not Past Due NT$	Past Due Less than 30 Days NT$	Pass Due 31 to 60 Days NT$	Pass Due 61 to 90 Days NT$	Pass Due 91 to 120 Days NT$	Pass Due 121 to 180 Days NT$	Pass Due over 180 Days NT$	Total NT$
				(In Millions)				
Telecommunications business								
Expected credit loss rate (Note a)	0%-2%	2%-24%	3%-68%	11%-83%	28%-90%	52%-96%	100%	
Gross carrying amount	$ 15,839	$ 204	$ 51	$ 31	$ 30	$ 25	$ 626	$16,806
Loss allowance (Lifetime ECL)	(56)	(21)	(24)	(25)	(24)	(21)	(626)	(797)
Amortized cost	$ 15,783	$ 183	$ 27	$ 6	$ 6	$ 4	$ —	$16,009
Project business								
Expected credit loss rate (Note b)	0%-5%	5%	10%	30%	50%	80%	100%	
Gross carrying amount	$ 3,473	$ 64	$ 27	$ 9	$ 2	$ 3	$ 1,288	$ 4,866
Loss allowance (Lifetime ECL)	(20)	(3)	(3)	(3)	(1)	(2)	(1,288)	(1,320)
Amortized cost	$ 3,453	$ 61	$ 24	$ 6	$ 1	$ 1	$ —	$ 3,546

December 31, 2021

	Not Past Due NT$	Past Due Less than 30 Days NT$	Pass Due 31 to 60 Days NT$	Pass Due 61 to 90 Days NT$	Pass Due 91 to 120 Days NT$	Pass Due 121 to 180 Days NT$	Pass Due over 180 Days NT$	Total NT$
				(In Millions)				
Telecommunications business								
Expected credit loss rate (Note a)	0%-1%	1%-22%	3%-62%	11%-80%	25%-90%	49%-97%	100%	
Gross carrying amount	$ 16,411	$ 282	$ 82	$ 45	$ 31	$ 31	$ 603	$17,485
Loss allowance (Lifetime ECL)	(51)	(23)	(29)	(30)	(25)	(28)	(603)	(789)
Amortized cost	$ 16,360	$ 259	$ 53	$ 15	$ 6	$ 3	$ —	$16,696
Project business								
Expected credit loss rate (Note b)	0%-5%	5%	10%	30%	50%	80%	100%	
Gross carrying amount	$ 3,988	$ —	$ 7	$ 14	$ —	$ 2	$ 770	$ 4,781
Loss allowance (Lifetime ECL)	(8)	—	(1)	(4)	—	(1)	(770)	(784)
Amortized cost	$ 3,980	$ —	$ 6	$ 10	$ —	$ 1	$ —	$ 3,997

Note a: Please refer to Notes 31 and 45 for the information of disaggregation of telecommunications service revenue. The expected credit loss rate applicable to different business revenue varies so as to reflect the risk level indicating by factors like historical experience.

Note b: The project business has different loss types according to the customer types. The expected credit loss rate listed above is for general customers. When the customer is a government-affiliated entity, it is anticipated that there will not be an instance of credit loss. Customers with past history of bounced checks or accounts receivable exceeding six months overdue are classified as high-risk customers, with an expected credit loss rate of 50%, increasing by period as the days overdue increase.

Movements of loss allowance for trade notes and accounts receivable were as follows:

	Year Ended December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Beginning balance	$ 2,360	$ 2,154
Add: Provision for credit loss	49	123
Add: Acquired by business combinations (Note 14)	2	—
Less: Amounts written off	(257)	(672)
Ending balance	$ 2,154	$ 1,605

11. INVENTORIES

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Merchandise	$ 3,903	$ 4,070
Project in process	6,167	4,805
Work in process	126	145
Raw materials	137	224
	10,333	9,244
Land held under development	1,999	1,999
Construction in progress	77	84
	$ 12,409	$ 11,327

The operating costs related to inventories were $49,258 million, $53,847 million and $51,180 million for the years ended December 31, 2019, 2020 and 2021, respectively.

For the years ended December 31, 2019, 2020 and 2021, valuation loss on inventories recognized as operating costs included the amounts of $475 million, $1,161 million and $207 million, respectively.

As of December 31, 2020 and 2021, inventories of $2,076 million and $2,083 million, respectively, were expected to be recovered for a time period longer than twelve months. The aforementioned amount of inventories is related to property development owned by LED.

Land held under development and construction in progress was mainly developed by LED for Qingshan Sec., Dayuan Dist., Taoyuan City project. The Board of Directors of LED resolved to sign a joint construction and separate sale contract with Farglory Land Development Co., Ltd. in June 2021.

12. PREPAYMENTS

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Prepaid rents	$ 2,864	$ 2,349
Others	1,656	1,779
	$ 4,520	$ 4,128
Current		
Prepaid rents	$ 652	$ 566
Others	1,654	1,764
	$ 2,306	$ 2,330
Noncurrent		
Prepaid rents	$ 2,212	$ 1,783
Others	2	15
	$ 2,214	$ 1,798

Prepaid rents comprised the prepayments from the lease agreements applying the recognition exemption and the prepayments for leases that do not meet the definition of leases under IFRS 16.

13. OTHER CURRENT MONETARY ASSETS

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Time deposits and negotiable certificates of deposit with maturities of more than three months	$ 4,596	$ 3,499
Others	1,528	1,562
	$ 6,124	$ 5,061

The annual yield rates of time deposits and negotiable certificates of deposit with maturities of more than three months at the balance sheet dates were as follows:

	December 31	
	2020	2021
Time deposits and negotiable certificates of deposit with maturities of more than three months	0.07%-2.25%	0.03%-2.70%

14. SUBSIDIARIES

a. Information on subsidiaries with material noncontrolling interests

The table below shows details of less than wholly owned subsidiaries of the Company that have material noncontrolling interests:

Subsidiaries	Place of Incorporation and Principal Place of Business	Proportion of Ownership Interests and Voting Rights Held by Noncontrolling Interests December 31 2020	2021
SENAO	Taiwan	72%	72%
CHPT	Taiwan	66%	66%

	Profit Allocated to Noncontrolling Interests Year Ended December 31 2019 NT$	2020 NT$	2021 NT$	Accumulated Noncontrolling Interests December 31 2020 NT$	2021 NT$
			(In Millions)		
SENAO	$ 291	$ 312	$ 421	$ 4,189	$ 4,337
CHPT	$ 414	$ 604	$ 588	4,606	4,933
Individually immaterial subsidiaries with noncontrolling interests				2,363	2,477
				$ 11,158	$ 11,747

Summarized financial information in respect of SENAO and its subsidiaries that has material noncontrolling interests is set out below. The summarized financial information below represented amounts before intercompany eliminations.

	December 31 2020 NT$	2021 NT$
	(In Millions)	
Current assets	$ 6,834	$ 7,963
Noncurrent assets	$ 3,194	$ 2,981
Current liabilities	$ 3,854	$ 4,561
Noncurrent liabilities	$ 416	$ 418
Equity attributable to the parent	$ 1,569	$ 1,628
Equity attributable to noncontrolling interests	$ 4,189	$ 4,337

	Year Ended December 31		
	2019	2020	2021
	NT$	NT$	NT$
		(In Millions)	
Revenues and income	$ 29,131	$ 27,232	$ 31,302
Costs and expenses	28,725	26,797	30,715
Profit for the year	$ 406	$ 435	$ 587
Profit attributable to the parent	$ 115	$ 123	$ 166
Profit attributable to noncontrolling interests	291	312	421
Profit for the year	$ 406	$ 435	$ 587
Other comprehensive income (loss) attributable to the parent	$ (7)	$ 1	$ 2
Other comprehensive income attributable to noncontrolling interests	22	2	5
Other comprehensive income for the year	$ 15	$ 3	$ 7
Total comprehensive income attributable to the parent	$ 108	$ 124	$ 168
Total comprehensive income attributable to noncontrolling interests	313	314	426
Total comprehensive income for the year	$ 421	$ 438	$ 594
Net cash flow from operating activities	$ 538	$ 862	$ 654
Net cash flow from investing activities	235	54	215
Net cash flow from financing activities	(718)	(687)	(690)
Effect of exchange rate changes on cash and cash equivalents	—	—	—
Net cash inflow	$ 55	$ 229	$ 179
Dividends paid to noncontrolling interests	$ 269	$ 269	$ 278

Summarized financial information in respect of CHPT and its subsidiaries that has material noncontrolling interests is set out below. The summarized financial information below represented amounts before intercompany eliminations.

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Current assets	$ 4,122	$ 4,657
Noncurrent assets	$ 4,013	$ 4,063
Current liabilities	$ 1,115	$ 1,183
Noncurrent liabilities	$ 12	$ 32
Equity attributable to CHI	$ 2,402	$ 2,572
Equity attributable to noncontrolling interests	$ 4,606	$ 4,933

	Year Ended December 31		
	2019	2020	2021
	NT$	NT$	NT$
		(In Millions)	
Revenues and income	$ 3,404	$ 4,221	$ 4,254
Costs and expenses	2,775	3,301	3,360
Profit for the year	$ 629	$ 920	$ 894
Profit attributable to CHI	$ 215	$ 316	$ 306
Profit attributable to noncontrolling interests	414	604	588
Profit for the year	$ 629	$ 920	$ 894
Other comprehensive loss attributable to CHI	$ (1)	$ —	$ (1)
Other comprehensive loss attributable to noncontrolling interests	(2)	—	(2)
Other comprehensive loss for the year	$ (3)	$ —	$ (3)
Total comprehensive income attributable to CHI	$ 214	$ 316	$ 305
Total comprehensive income attributable to noncontrolling interests	412	604	586
Total comprehensive income for the year	$ 626	$ 920	$ 891
Net cash flow from operating activities	$ 507	$ 1,483	$ 1,090
Net cash flow from investing activities	(1,426)	(533)	(519)
Net cash flow from financing activities	(349)	(349)	(414)
Effect of exchange rate changes on cash and cash equivalents	(5)	1	(1)
Net cash inflow (outflow)	$ (1,273)	$ 602	$ 156
Dividends paid to noncontrolling interests	$ 216	$ 216	$ 259

b. Equity transactions with noncontrolling interests

CHIEF issued new shares in March 2019, November 2019, March 2020, December 2020, March 2021 and December 2021, as its employees exercised options. Therefore, the Company’s ownership interest in CHIEF decreased to 59.08% and 58.89% as of December 31, 2020 and 2021, respectively. See Note 35(b) for details.

CHTSC issued new shares in February 2021 as its employees exercised options. Therefore, the Company’s ownership interest in CHTSC decreased to 77.46% as of December 31, 2021. See Note 35(c) for details.

IISI issued new shares in September 2020 and January 2021 as its employees exercised options. Therefore, the Company’s ownership interest in IISI decreased to 51.20% and 51.02% as of December 31, 2020 and 2021, respectively. See Note 35(d) for details.

SENAO subscribed for all the shares in the capital increase of Youth in April 2020; therefore, the Company’s ownership interest in Youth increased.

The above transactions were accounted for as equity transactions since the Company did not cease to have control over these subsidiaries.

The detailed information of the equity transactions for the years ended December 31, 2019, 2020 and 2021 was as follows:

	Year Ended December 31, 2019
	CHIEF Share-Based Payment
	NT$ (In Millions)
Cash consideration received from noncontrolling interests	$ 19
The proportionate share of the carrying amount of the net assets of the subsidiary transferred to noncontrolling interests	(20)
Differences arising from equity transactions	$ (1)
Line items for equity transaction adjustments	
Additional paid-in capital - arising from changes in equities of subsidiaries	$ (1)

	Year Ended December 31, 2020		
	CHIEF Share-Based Payment	SENAO Not Proportionately Participating in the Capital Increase of Youth	IISI Share-Based Payment
	NT$	NT$ (In Millions)	NT$
Cash consideration received from noncontrolling interests	$ 75	$ —	$ 7
The proportionate share of the carrying amount of the net assets of the subsidiary transferred to noncontrolling interests	(49)	—	(7)
Differences arising from equity transactions	$ 26	$ —	$ —
Line items for equity transaction adjustments			
Additional paid-in capital - arising from changes in equities of subsidiaries	$ 26	$ —	$ —

	Year Ended December 31, 2021		
	CHIEF Share-Based Payment	CHTSC Share-Based Payment	IISI Share-Based Payment
	NT$	NT$ (In Millions)	NT$
Cash consideration received from noncontrolling interests	$ 29	$ 21	$ 4
The proportionate share of the carrying amount of the net assets of the subsidiary transferred to noncontrolling interests	(17)	(19)	(1)
Differences arising from equity transactions	$ 12	$ 2	$ 3
Line items for equity transaction adjustments			
Additional paid-in capital - arising from changes in equities of subsidiaries	$ 12	$ 2	$ 3

c. Business combinations

1) Subsidiary acquired

In order to develop and cultivate the enterprise customer market, Chunghwa obtained 20.38% ownership interest in IISI by cash on July 1, 2020, the acquisition date. (Note) Chunghwa's ownership interest in IISI increased to 51.54% by considering the previously held ownership interest in IISI. Chunghwa obtained over half of the seats of the Board of Directors of IISI; therefore, Chunghwa gained control over IISI and included IISI and its subsidiaries in the consolidated financial statements starting from the acquisition date. IISI mainly engages in information system development and maintenance service business, etc.

Note: IISI issued new shares in April 2020 as its employees exercised options; therefore, the percentage of ownership interest in IISI obtained on the acquisition date is lower than that approved by Chunghwa's Board of Directors in January 2020.

2) Assets acquired and liabilities assumed at acquisition date

		IISI and Its Subsidiaries
Current assets		
Cash and cash equivalents	$	588
Contract assets		583
Trade notes and accounts receivable		165
Inventories		141
Prepayments		114
Other current monetary assets		114
Other current assets		75
Noncurrent assets		
Property, plant and equipment		48
Right-of-use assets		70
Intangible assets		12
Deferred income tax assets		6
Other noncurrent assets		102
Current liabilities		
Short-term loans		(4)
Contract liabilities		(334)
Trade notes and accounts payable		(257)
Current tax liabilities		(19)
Lease liabilities		(26)
Other payables		(266)
Provisions		(15)
Other current liabilities		(30)
Noncurrent liabilities		
Deferred income tax liabilities		(3)
Lease liabilities		(45)
Net defined benefit liabilities		(32)
Other noncurrent liabilities		(5)
	$	982

The trade notes and accounts receivable acquired in business combination transactions have a fair value of $165 million and a gross contractual amount of $167 million. The best estimate of the contractual cash flows not expected to be collected as of the acquisition date was $2 million.

3) Goodwill arising from acquisition

	IISI and Its Subsidiaries
Consideration transferred	$ 234
Add: Fair value of equity interest held before the acquisition date	327
Add: Noncontrolling interest (48.46% of the identifiable net assets of IISI and its subsidiaries)	476
Less: Fair value of identifiable net assets acquired	(982)
Goodwill arising from acquisition	$ 55

The goodwill arising from the acquisition of IISI mainly represents the control premium. In addition, the consideration paid for the combination included amounts attributed to the benefits of expected synergies and the assembled workforces of IISI. These benefits are not recognized separately from goodwill because they do not meet the recognition criteria for identifiable intangible assets.

Goodwill arising from business combinations is not deductible for tax purposes.

4) Net cash inflow on acquisition of subsidiaries

	IISI and Its Subsidiaries
Cash and cash equivalents acquired	$ 588
Less: Consideration paid in cash	(234)
	$ 354

5) Impact of acquisition on the financial results of the Company

The financial results of the acquiree since the acquisition date to December 31, 2020 included in the consolidated statements of comprehensive income are as follows:

	IISI and Its Subsidiaries
Revenue	$ 1,348
Profit	$ 68

Had the business combination been in effect at the beginning of the annual reporting period, the Company's revenue and profit would have been $208,605 million and $34,747 million for the year ended December 31, 2020, respectively. This pro-forma information is for illustrative purposes only and is not necessarily an indication of revenue and results of operations of the Company that actually would have been achieved had the acquisition been completed on January 1, 2020, nor is it intended to be a projection of future results.

In determining the pro-forma revenue and profit of the Company had IISI been acquired at the beginning of the financial year, the management calculated amortization of intangible assets acquired on the basis of the fair values arising in the initial accounting for the business combination rather than the carrying amounts recognized in the pre-acquisition financial statements.

15. INVESTMENTS ACCOUNTED FOR USING EQUITY METHOD

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Investments in associates	$ 6,685	$ 7,127
Investment in joint venture	10	10
	$ 6,695	$ 7,137

a. Investments in associates

	Carrying Amount December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Material associate		
Next Commercial Bank Co., Ltd. ("NCB")	$ 3,777	$ 3,592
Associates that are not individually material		
Listed		
Senao Networks, Inc. ("SNI")	841	926
KingwayTek Technology Co., Ltd. ("KWT")	213	222
Non-listed		
ST-2 Satellite Ventures Pte., Ltd. ("STS")	488	518
Viettel-CHT Co., Ltd. ("Viettel-CHT")	363	447
Taiwan International Standard Electronics Co., Ltd. ("TISE")	324	341
WiAdvance Technology Corporation ("WATC")	—	254
Chunghwa PChome Fund I Co., Ltd. ("CPFI")	193	221
So-net Entertainment Taiwan Limited ("So-net")	225	217
KKBOX Taiwan Co., Ltd. ("KKBOXTW")	163	157
Taiwan International Ports Logistics Corporation ("TIPL")	56	70
CHT Infinity Singapore Pte. Ltd. ("CISG")	—	55
Imedtac Co., Ltd. ("IME")	—	45
Click Force Co., Ltd. ("CF")	33	37
AgriTalk Technology Inc. ("ATT")	—	18
Cornerstone Ventures Co., Ltd. ("CVC")	6	7
Alliance Digital Tech Co., Ltd. ("ADT")	3	—
UUPON Inc. ("UUPON")	—	—
International Integrated Systems, Inc. ("IISI")	—	—
MeWorks Limited (HK) ("MeWorks")	—	—
	$ 6,685	$ 7,127

The percentages of ownership interests and voting rights in associates held by the Company as of balance sheet dates were as follows:

	% of Ownership Interests and Voting Rights	
	December 31	
	2020	2021
Material associate		
Next Commercial Bank Co., Ltd. ("NCB")	42	42
Associates that are not individually material		
Senao Networks, Inc. ("SNI")	34	34
KingwayTek Technology Co., Ltd. ("KWT")	23	23
ST-2 Satellite Ventures Pte., Ltd. ("STS")	38	38
Viettel-CHT Co., Ltd. ("Viettel-CHT")	30	30
Taiwan International Standard Electronics Co., Ltd. ("TISE")	40	40
WiAdvance Technology Corporation ("WATC")	—	20
Chunghwa PChome Fund I Co., Ltd. ("CPFI")	50	50
So-net Entertainment Taiwan Limited ("So-net")	30	30
KKBOX Taiwan Co., Ltd. ("KKBOXTW")	30	30
Taiwan International Ports Logistics Corporation ("TIPL")	27	27
CHT Infinity Singapore Pte. Ltd. ("CISG")	—	40
Imedtac Co., Ltd. ("IME")	—	7
Click Force Co., Ltd. ("CF")	49	49
AgriTalk Technology Inc. ("ATT")	—	17
Cornerstone Ventures Co., Ltd. ("CVC")	49	49
Alliance Digital Tech Co., Ltd. ("ADT")	14	—
UUPON Inc. ("UUPON")	—	—
International Integrated Systems, Inc. ("IISI")	—	—
MeWorks Limited (HK) ("MeWorks")	—	—

Summarized financial information of NCB was set out below:

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Assets	$ 9,907	$ 9,197
Lliabilities	(789)	(525)
Equity	$ 9,118	$ 8,672
The percentage of ownership interest held by the Company	41.9%	41.9%
Equity attributable to the Company	$ 3,820	$ 3,634
Unrealized gain or loss from downstream transactions	(43)	(42)
The carrying amount of investment	$ 3,777	$ 3,592

	Period from the Beginning Date of Preparation to December 31, 2019	Year Ended December 31	
		2020	2021
	NT$	NT$ (In Millions)	NT$
Revenues	$ —	$ —	$ —
Net loss for the period	$ (276)	$ (605)	$ (446)
Other comprehensive income	—	—	—
Total comprehensive loss for the period	$ (276)	$ (605)	$ (446)

Except for NCB, no associate is considered individually material to the Company. Summarized financial information of associates that are not individually material to the Company was as follows:

	Year Ended December 31		
	2019	2020	2021
	NT$	NT$ (In Millions)	NT$
The Company's share of profits	$ 575	$ 540	$ 607
The Company's share of other comprehensive loss	(3)	(8)	(6)
The Company's share of total comprehensive income	$ 572	$ 532	$ 601

The Level 1 fair values of associates based on the closing market prices as of the balance sheet dates were as follows:

	December 31	
	2020	2021
	NT$ (In Millions)	NT$
SNI	$ 1,708	$ 1,699
KWT	$ 676	$ 910

The Company invested and obtained 50% ownership interest in CPFI. However, as the Company has only two out of five seats of the Board of Directors of CPFI and has no control but significant influence over CPFI. Therefore, the Company recognized CPFI as an investment in associate.

The Company invested and obtained 49% ownership interest in CVC. However, as the Company has only two out of five seats of the Board of Directors of CVC and has no control but significant influence over CVC. Therefore, the Company recognized CVC as an investment in associate.

The participation of establishing NCB was approved by Chunghwa's Board of Directors in January 2019. The establishment of NCB was approved by the Financial Supervisory Commission in July 2019 and the incorporation of NCB was approved by the ROC's Ministry of Economic Affairs Department of Commerce in January 2020. Chunghwa prepaid investment funds to NCB in February and November 2019 amounting to $4,190 million, for ownership interest of 41.90%. Although Chunghwa is the single largest stockholder of NCB, it only obtained six out of fifteen seats of the Board of Directors of NCB. In addition, the management considered the size of ownership interest and the dispersion of shares owned by the other stockholders, other holdings are not extremely dispersed. Chunghwa is not able to direct its relevant activities. Therefore, Chunghwa does not have control over NCB and merely has significant influence over NCB and treats it as an associate. NCB mainly engages in online banking business in Taiwan.

IISI issued new shares in March, September 2019 and April 2020, as its employees exercised options; therefore, the Company's ownership interest in IISI decreased to 31.47% and 31.16% as of December 31, 2019 and June 30, 2020, respectively. Chunghwa's Board of Directors approved the investment of 20.58% ownership interest in IISI in January 2020 and the equity transaction was completed on July 1, 2020 ("acquisition date"). As the business combination was achieved in stages, the Company remeasured the previously held equity interest of IISI and recognized gain on disposal of $1 million under "other gains and losses" on the consolidated statements of comprehensive income. The Company treated IISI as a subsidiary starting from the acquisition date and included IISI and its subsidiaries in the consolidated financial statements. Please refer to Note 14(c).

The Company disposed some shares of KWT in April 2019 before KWT traded its shares on the General Stock Market of the Taipei Exchange according to the local requirements and recognized gain on disposal of $151 million. In addition, the Company did not participate in the capital increase of KWT in May 2019 and KWT repurchased its stock from December 2019 to February 2020. Therefore, the Company's ownership interest in KWT changed to 22.72% as of December 31, 2020.

The Company disposed of all shares of MeWorks in September 2020.

UUPON reduced 95.44% of its capital to offset accumulated deficits in September 2020 and the Company did not participate in the capital increase of UUPON in October 2020. Therefore, the Company's ownership interest in UUPON decreased to 5.36% and lost its significant influence over UUPON. Hence the Company discontinued to treat UUPON as an associate. Instead, the Company treated it as a financial asset at fair value through other comprehensive income and recognized gain on disposal of $15 million under "other gains and losses" on the consolidated statements of comprehensive income.

The Company invested $274 million and obtained 20.33% ownership interest by participating in the capital increase of WATC in March 2021. WATC mainly engages in software solution integration.

The Company invested $56 million and obtained 40.00% ownership interest in CISG in June 2021. CISG mainly engages in investment business.

The Company owns 14% equity shares of ADT. Considering the seats that the Company controls in the Board of Directors of ADT and the relative size of ownership interest and the dispersion of shares owned by the other stockholders, the Company has significant influence over ADT. ADT completed its liquidation in August 2021. The Company received the liquidation distribution of $9 million and recognized gain on disposal of $4 million under "other gains and losses" on the consolidated statements of comprehensive income.

The Company invested and obtained 17.19% ownership interest in ATT. The Company originally treated it as a financial asset at FVOCI. However, as the Company obtained one out of three seats of the Board of Directors of ATT in July 2021 and has significant influence over ATT, the Company reclassified it as an associate.

The Company invested and obtained 7.54% ownership interest in IME. The Company originally treated it as a financial asset at FVOCI. However, as the Company obtained one out of five seats of the Board of Directors of IME in August 2021 and has significant influence over IME, the Company reclassified it as an associate. IME issued new shares in December 2021 as its employees exercised options; therefore, the Company's ownership interest in IME decreased to 6.74% as of December 31, 2021.

b. Investment in joint venture

The Company invested $10 million to establish a joint venture, CHT SEA, with Delta Electronics, Inc. and Kwang Hsing Industrial Co., Ltd. in December 2020 and obtained 51% ownership interest of CHT SEA. However, according to the mutual agreements among stockholders, the Company does not individually direct CHT SEA's relevant activities and has joint control with the other party; therefore, the Company treated CHT SEA as a joint venture.

	Carrying Amount		% of Ownership Interests and Voting Rights	
	December 31		December 31	
Name of Joint Venture	2020	2021	2020	2021
Non-listed				
Chunghwa SEA Holdings ("CHT SEA")	$ 10	$ 10	51	51

The joint venture is not considered individually material to the Company. Summarized financial information of CHT SEA was set out below:

	Year Ended December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
The Company's share of loss	$ —	$ —
The Company's share of other comprehensive income	—	—
The Company's share of total comprehensive loss	$ —	$ —

16. PROPERTY, PLANT AND EQUIPMENT

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Assets used by the Company	$ 273,823	$ 281,849
Assets subject to operating leases	7,593	7,251
	$ 281,416	$ 289,100

a. Assets used by the Company

	Land	Land Improvements	Buildings	Computer Equipment	Telecommuni-cations Equipment	Transportation Equipment	Miscellaneous Equipment	Construction in Progress and Equipment to be Accepted	Total
	NT$	NT$	NT$	NT$	NT$	NT$	NT$	NT$	NT$
					(In Millions)				
Cost									
Balance on January 1, 2019	$100,355	$ 1,600	$ 69,328	$ 14,258	$ 711,863	$ 3,882	$ 9,874	$ 18,645	$ 929,805
Additions	—	—	1,221	57	120	1	149	21,612	23,160
Disposal	(38)	(7)	(3)	(1,916)	(30,417)	(51)	(405)	—	(32,837)
Effect of foreign exchange differences	—	—	—	—	(37)	—	(1)	(6)	(44)
Others	(1,214)	25	455	606	24,503	80	473	(26,499)	(1,571)
Balance on December 31, 2019	$ 99,103	$ 1,618	$ 71,001	$ 13,005	$ 706,032	$ 3,912	$ 10,090	$ 13,752	$ 918,513
Accumulated depreciation and impairment									
Balance on January 1, 2019	$ —	$ (1,337)	$ (26,862)	$ (12,143)	$ (596,850)	$ (3,651)	$ (7,292)	$ —	$(648,135)
Depreciation expenses	—	(43)	(1,301)	(827)	(23,906)	(91)	(688)	—	(26,856)
Disposal	—	6	3	1,909	30,380	51	402	—	32,751
Impairment losses	—	—	—	—	—	—	(64)	(29)	(93)
Effect of foreign exchange differences	—	—	—	—	16	—	1	—	17
Others	—	(1)	183	(7)	22	(3)	(21)	—	173
Balance on December 31, 2019	$ —	$ (1,375)	$ (27,977)	$ (11,068)	$ (590,338)	$ (3,694)	$ (7,662)	$ (29)	$(642,143)
Balance on January 1, 2019, net	$100,355	$ 263	$ 42,466	$ 2,115	$ 115,013	$ 231	$ 2,582	$ 18,645	$ 281,670
Balance on December 31, 2019, net	$ 99,103	$ 243	$ 43,024	$ 1,937	$ 115,694	$ 218	$ 2,428	$ 13,723	$ 276,370
Cost									
Balance on January 1, 2020	$ 99,103	$ 1,618	$ 71,001	$ 13,005	$ 706,032	$ 3,912	$ 10,090	$ 13,752	$ 918,513
Additions	67	—	18	55	118	1	150	24,786	25,195
Disposal	(270)	(19)	(49)	(1,245)	(20,619)	(45)	(520)	(29)	(22,796)
Effect of foreign exchange differences	—	—	—	—	(91)	—	—	(7)	(98)
Acquired by business combinations (Note 14)	—	—	—	70	—	—	72	—	142
Others	3,091	31	(81)	521	25,336	26	508	(29,973)	(541)
Balance on December 31, 2020	$101,991	$ 1,630	$ 70,889	$ 12,406	$ 710,776	$ 3,894	$ 10,300	$ 8,529	$ 920,415

(Continued)

	Land	Land Improvements	Buildings	Computer Equipment	Telecommunications Equipment	Transportation Equipment	Miscellaneous Equipment	Construction in Progress and Equipment to be Accepted	Total
	NT$	NT$	NT$	NT$	NT$	NT$	NT$	NT$	NT$
					(In Millions)				
Accumulated depreciation and impairment									
Balance on January 1, 2020	$ —	$ (1,375)	$ (27,977)	$ (11,068)	$ (590,338)	$ (3,694)	$ (7,662)	$ (29)	$ (642,143)
Depreciation expenses	—	(43)	(1,366)	(770)	(23,994)	(68)	(666)	—	(26,907)
Disposal	—	19	49	1,243	20,600	45	504	29	22,489
Effect of foreign exchange differences	—	—	—	—	41	—	—	—	41
Acquired by business combinations (Note 14)	—	—	—	(40)	—	—	(54)	—	(94)
Others	—	—	47	(4)	28	(1)	(48)	—	22
Balance on December 31, 2020	$ —	$ (1,399)	$ (29,247)	$ (10,639)	$ (593,663)	$ (3,718)	$ (7,926)	$ —	$ (646,592)
Balance on December 31, 2020, net	$ 101,991	$ 231	$ 41,642	$ 1,767	$ 117,113	$ 176	$ 2,374	$ 8,529	$ 273,823
Cost									
Balance on January 1, 2021	$ 101,991	$ 1,630	$ 70,889	$ 12,406	$ 710,776	$ 3,894	$ 10,300	$ 8,529	$ 920,415
Additions	—	—	37	72	84	—	198	35,222	35,613
Disposal	—	(1)	(29)	(1,734)	(27,916)	(84)	(470)	—	(30,234)
Effect of foreign exchange differences	—	—	—	—	(64)	—	(2)	(6)	(72)
Others	654	33	461	473	30,654	117	783	(32,959)	216
Balance on December 31, 2021	$ 102,645	$ 1,662	$ 71,358	$ 11,217	$ 713,534	$ 3,927	$ 10,809	$ 10,786	$ 925,938
Accumulated depreciation and impairment									
Balance on January 1, 2021	$ —	$ (1,399)	$ (29,247)	$ (10,639)	$ (593,663)	$ (3,718)	$ (7,926)	$ —	$ (646,592)
Depreciation expenses	—	(43)	(1,401)	(716)	(24,802)	(65)	(701)	—	(27,728)
Disposal	—	1	29	1,724	27,900	84	466	—	30,204
Effect of foreign exchange differences	—	—	—	—	31	—	1	—	32
Others	—	(1)	41	(1)	1	—	(45)	—	(5)
Balance on December 31, 2021	$ —	$ (1,442)	$ (30,578)	$ (9,632)	$ (590,533)	$ (3,699)	$ (8,205)	$ —	$ (644,089)
Balance on December 31, 2021, net	$ 102,645	$ 220	$ 40,780	$ 1,585	$ 123,001	$ 228	$ 2,604	$ 10,786	$ 281,849

(Concluded)

CHPT evaluated that certain miscellaneous equipment, construction in progress and equipment to be accepted used for manufacturing specific PCB will not be used in the future and there was no active market for sale; therefore, CHPT determined that the recoverable amount of such assets was nil and recognized impairment losses of $89 million for the year ended December 31, 2019. CHSI evaluated that certain miscellaneous equipment will not be used in the future and there was no active market for sale; therefore, CHSI determined that the recoverable amount of such assets was nil and recognized impairment losses of $4 million for the year ended December 31,

2019. The aforementioned impairment losses were included in other income and expenses of statements of comprehensive income.

There was no indication that property, plant and equipment was impaired; therefore, the Company did not recognize any impairment loss for the years ended December 31, 2020 and 2021.

Chunghwa signed a joint development agreement with the MOTC previously which stated that the MOTC would provide the national land and Chunghwa would be in charge of the planning and construction for the MOTC's office building, Chunghwa's Renai office building, etc. According to the agreement, the MOTC and Chunghwa would each own a certain percentage of the buildings, and Chunghwa is to pay or get the reimbursement for the difference between the assessed value of the land and the construction cost paid by Chunghwa on behalf of the MOTC. The difference amounting to $1,057 million due to the MOTC was reported to Chunghwa's Board of Directors in May 2020. Chunghwa paid the aforementioned amount in May 2021 and the property registration of the respective asset was completed in July 2021.

The Company participated in the government-led urban renewal project in Xingzheng Section, Xindian District, New Taipei City. The Company provided land as a building lot while Kindom Development Corp., chosen through public selection by the New Taipei City Government, acted as the urban renewal developer. The property registration was completed in 2020. With respect to the Company's trade-in share of land and buildings, only the trade-in buildings had commercial substance. Therefore, the gain on the asset exchange transaction of $1,268 million (included in "gains and losses on disposal of property, plant and equipment") was recognized at the difference between the carrying amount of the trade-out land of $37 million and the fair value of trade-in buildings of $1,305 million (included in "investment properties"). The aforementioned gain on disposal was included under "other income and expenses" in the consolidated statements of comprehensive income.

Depreciation expense for assets used by the Company is computed using the straight-line method over the following estimated service lives:

Land improvements	10-30 years
Buildings	
Main buildings	20-60 years
Other building facilities	3-15 years
Computer equipment	1-8 years
Telecommunications equipment	
Telecommunication circuits	2-30 years
Telecommunication machinery and antennas equipment	2-30 years
Transportation equipment	3-10 years
Miscellaneous equipment	
Leasehold improvements	1-9 years
Mechanical and air conditioner equipment	3-16 years
Others	1-15 years

b. Assets subject to operating leases

	Land	Land Improvements	Buildings	Total
	NT$	NT$	NT$	NT$
		(In Millions)		
Cost				
Balance on January 1, 2019	$ 3,617	$ 1	$ 3,583	$ 7,201
Additions	—	—	4	4
Transferred from (to) assets used by the Company	1,362	(1)	255	1,616
Balance on December 31, 2019	$ 4,979	$ —	$ 3,842	$ 8,821
Accumulated depreciation and impairment				
Balance on January 1, 2019	$ —	$ (1)	$ (1,265)	$ (1,266)
Depreciation expenses	—	—	(74)	(74)
Transferred to (from) assets used by the company	—	1	(158)	(157)
Balance on December 31, 2019	$ —	$ —	$ (1,497)	$ (1,497)
Balance on January 1, 2019, net	$ 3,617	$ —	$ 2,318	$ 5,935
Balance on December 31, 2019, net	$ 4,979	$ —	$ 2,345	$ 7,324
Cost				
Balance on January 1, 2020	$ 4,979	$ —	$ 3,842	$ 8,821
Others	(6)	—	394	388
Balance on December 31, 2020	$ 4,973	$ —	$ 4,236	$ 9,209
Accumulated depreciation and impairment				
Balance on January 1, 2020	$ —	$ —	$ (1,497)	$ (1,497)
Depreciation expenses	—	—	(82)	(82)
Others	—	—	(37)	(37)
Balance on December 31, 2020	$ —	$ —	$ (1,616)	$ (1,616)
Balance on December 31, 2020, net	$ 4,973	$ —	$ 2,620	$ 7,593
Cost				
Balance on January 1, 2021	$ 4,973	$ —	$ 4,236	$ 9,209
Others	(164)	—	(102)	(266)
Balance on December 31, 2021	$ 4,809	$ —	$ 4,134	$ 8,943
Accumulated depreciation and impairment				
Balance on January 1, 2021	$ —	$ —	$ (1,616)	$ (1,616)
Depreciation expenses	—	—	(77)	(77)
Others	—	—	1	1
Balance on December 31, 2021	$ —	$ —	$ (1,692)	$ (1,692)
Balance on December 31, 2021, net	$ 4,809	$ —	$ 2,442	$ 7,251

The Company leases out land and buildings with lease terms between 1 to 20 years. The lessees do not have bargain purchase options to acquire the assets at the expiry of the lease periods.

The future aggregate lease collection under operating lease for the freehold plant, property and equipment was as follows:

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Year 1	$ 347	$ 371
Year 2	288	301
Year 3	231	210
Year 4	164	159
Year 5	125	135
Onwards	1,180	1,177
	$ 2,335	$ 2,353

The above items of property, plant and equipment subject to operating leases are depreciated on a straight-line basis over their estimated useful lives as follows:

Land improvements	10-30 years
Buildings	
Main buildings	35-60 years
Other building facilities	3-15 years

17. LEASE ARRANGEMENTS

a. Right-of-use assets

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Land and buildings		
Handsets base stations	$ 7,096	$ 6,988
Others	1,708	1,538
Equipment	2,205	2,525
	$ 11,009	$ 11,051

	Year Ended December 31		
	2019	2020	2021
	NT$	NT$	NT$
		(In Millions)	
Additions to right-of-use assets	$ 3,803	$ 3,796	$ 4,669
Depreciation charge for right-of-use assets			
Land and buildings			
Handsets base stations	$ 2,728	$ 2,729	$ 2,789
Others	821	786	786
Equipment	419	416	410
	$ 3,968	$ 3,931	$ 3,985

Chunghwa entered into a contract with ST-2 Satellite Ventures Pte., Ltd. to lease capacity on the ST-2 satellite. However, certain frequency that ST-2 satellite originally used was transferred for the use of 5G spectrum to the government, Chunghwa evaluated and determined that the recoverable amount of the related right-of-use assets was nil. Therefore, Chunghwa recognized an impairment loss of $420 million for the year ended December 31, 2021. The impairment loss was included under “other income and expenses” in the consolidated statement of comprehensive income. The Company did not have impairment of right-of-use assets for the years ended December 31, 2019 and 2020.

The Company did not have significant sublease of right-of-use assets for the years ended December 31, 2019, 2020 and 2021.

b. Lease liabilities

	December 31			
	2020		2021	
	NT$		NT$	
	(In Millions)			
Lease liabilities				
Current	$	3,382	$	3,211
Noncurrent		6,215		7,062
	$	9,597	$	10,273

Ranges of discount rates for lease liabilities were as follows:

	December 31	
	2020	2021
Land and buildings		
Handsets base stations	0.46%-1.18%	0.37%-1.18%
Others	0.46%-9.00%	0.37%-9.00%
Equipment	0.46%-2.99%	0.37%-2.99%

c. Important lease-in activities and terms

The Company mainly enters into lease-in agreements of land and buildings for handsets base stations located throughout Taiwan with lease terms ranging from 1 to 20 years. The lease agreements do not contain bargain purchase options to acquire the assets at the expiration of the respective leases. For majority of the lease-in agreements on handsets base station, the Company has the right to terminate the agreement prior to the expiration date if the Company is unable to build the required telecommunication equipment, either due to legal restrictions, controversial events, or other events.

The Company also leases land and buildings for the use of offices, server rooms, and stores with lease terms from 1 to 30 years. Most of the lease agreements for national land adjust the lease payment according to the changes of the announced land values by the authority. At the expiry of the lease term, the Company does not have bargain purchase options to acquire the assets.

The lease agreements for equipment include a contract between Chunghwa and ST-2 Satellite Ventures Pte., Ltd. to lease capacity on the ST-2 satellite. For the information of lease agreements with related parties, please refer to Note 40 to the consolidated financial statements for details.

d. Other lease information

	Year Ended December 31					
	2019		2020		2021	
	NT$		NT$		NT$	
			(In Millions)			
Expenses relating to low-value asset leases	$	7	$	8	$	8
Expenses relating to variable lease payments not included in the measurement of lease liabilities	$	6	$	5	$	7
Total cash outflow for leases	$	3,826	$	3,776	$	3,813

The Company leases certain equipment which qualifies as low-value asset leases. The Company has elected to apply the recognition exemption and, thus, not to recognize right-of-use assets and lease liabilities for these leases.

Lease-out arrangements under operating leases for freehold property, plant, and equipment and investment properties were set out in Notes 16 and 18 to the consolidated financial statements.

18. INVESTMENT PROPERTIES

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Carrying amount		
Investment properties	$ 9,621	$ 9,663

	Investment Properties
	NT$ (In Millions)
Cost	
Balance on January 1, 2019	$ 9,392
Additions	1
Disposal	(6)
Reclassification	(173)
Balance on December 31, 2019	$ 9,214
Accumulated depreciation and impairment	
Balance on January 1, 2019	$ (1,105)
Depreciation expense	(25)
Disposal	6
Reclassification	22
Reversal of impairment loss	57
Balance on December 31, 2019	$ (1,045)
Balance on January 1, 2019, net	$ 8,287
Balance on December 31, 2019, net	$ 8,169
Cost	
Balance on January 1, 2020	$ 9,214
Additions (Note 16)	1,359
Disposal	(37)
Reclassification	126
Balance on December 31, 2020	$ 10,662
Accumulated depreciation and impairment	
Balance on January 1, 2020	$ (1,045)
Depreciation expense	(22)
Reclassification	(1)
Reversal of impairment loss	27
Balance on December 31, 2020	$ (1,041)
Balance on December 31, 2020, net	$ 9,621
Cost	
Balance on January 1, 2021	$ 10,662
Additions	1
Balance on December 31, 2021	$ 10,663
Accumulated depreciation and impairment	
Balance on January 1, 2021	$ (1,041)
Depreciation expense	(42)
Reversal of impairment loss	83
Balance on December 31, 2021	$ (1,000)
Balance on December 31, 2021, net	$ 9,663

After the evaluation of land and buildings, the Company concluded the recoverable amount which represented the fair value less costs to sell of some land and buildings was higher than the carrying amount. Therefore, the Company recognized reversal of impairment losses of $57 million, $27 million and $83 million for the years ended December 31, 2019, 2020 and 2021, respectively, and the amounts were recognized only to the extent of impairment losses that had been recognized in prior years. The reversal of impairment loss was included in other income and expenses in the consolidated statements of comprehensive income.

Depreciation expense is computed using the straight-line method over the following estimated service lives:

Land improvements	10-30 years
Buildings	
Main buildings	35-60 years
Other building facilities	4-10 years

The fair values of the Company's investment properties as of December 31, 2020 and 2021 were determined by Level 3 fair value measurements inputs based on the appraisal reports conducted by independent appraisers. Those appraisal reports are based on the comparison approach, income approach or cost approach. Key assumptions and the fair values were as follows:

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Fair value	$ 22,644	$ 25,548
Overall capital interest rate	0.93%-3.03%	0.91%-3.05%
Profit margin ratio	12%-20%	8%-20%
Discount rate	—	—
Capitalization rate	0.73%-2.20%	0.53%-2.11%

All of the Company's investment properties are held under freehold interest.

The future aggregate lease collection under operating lease for investment properties is as follows:

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Year 1	$ 115	$ 107
Year 2	95	82
Year 3	75	62
Year 4	53	55
Year 5	38	39
Onwards	58	78
	$ 434	$ 423

19. INTANGIBLE ASSETS

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Carrying amount		
Mobile Broadband Concession	$ 89,019	$ 82,820
Computer software	788	673
Goodwill	246	217
Others	232	235
	$ 90,285	$ 83,945

	Mobile Broadband Concession NT$	Computer Software NT$	Goodwill NT$ (In Millions)	Others NT$	Total NT$
Cost					
Balance on January 1, 2019	$ 70,144	$ 3,426	$ 236	$ 373	$ 74,179
Additions-acquired separately	—	358	—	5	363
Disposal	(10,179)	(356)	—	—	(10,535)
Effect of foreign exchange differences	—	—	—	—	—
Others	—	2	—	—	2
Balance on December 31, 2019	$ 59,965	$ 3,430	$ 236	$ 378	$ 64,009
Accumulated amortization and impairment					
Balance on January 1, 2019	$ (20,632)	$ (2,467)	$ (27)	$ (109)	$ (23,235)
Amortization expenses	(3,840)	(388)	—	(25)	(4,253)
Disposal	10,179	356	—	—	10,535
Impairment losses	—	—	(9)	—	(9)
Effect of foreign exchange differences	—	—	—	—	—
Balance on December 31, 2019	$ (14,293)	$ (2,499)	$ (36)	$ (134)	$ (16,962)
Balance on January 1, 2019, net	$ 49,512	$ 959	$ 209	$ 264	$ 50,944
Balance on December 31, 2019, net	$ 45,672	$ 931	$ 200	$ 244	$ 47,047
Cost					
Balance on January 1, 2020	$ 59,965	$ 3,430	$ 236	$ 378	$ 64,009
Additions-acquired separately	48,373	226	—	6	48,605
Disposal	—	(338)	—	(3)	(341)
Effect of foreign exchange differences	—	—	—	—	—
Acquired by business combinations (Note 14)	—	1	55	11	67
Others	—	1	—	—	1
Balance on December 31, 2020	$ 108,338	$ 3,320	$ 291	$ 392	$ 112,341
Accumulated amortization and impairment					
Balance on January 1, 2020	$ (14,293)	$ (2,499)	$ (36)	$ (134)	$ (16,962)
Amortization expenses	(5,026)	(371)	—	(27)	(5,424)
Disposal	—	338	—	1	339
Impairment losses	—	—	(9)	—	(9)
Effect of foreign exchange differences	—	—	—	—	—
Acquired by business combinations (Note 14)	—	—	—	—	—
Balance on December 31, 2020	$ (19,319)	$ (2,532)	$ (45)	$ (160)	$ (22,056)
Balance on December 31, 2020, net	$ 89,019	$ 788	$ 246	$ 232	$ 90,285
Cost					
Balance on January 1, 2021	$ 108,338	$ 3,320	$ 291	$ 392	$ 112,341
Additions-acquired separately	—	225	—	31	256
Disposal	—	(344)	—	(10)	(354)
Effect of foreign exchange differences	—	—	—	—	—
Others	—	2	—	—	2
Balance on December 31, 2021	$ 108,338	$ 3,203	$ 291	$ 413	$ 112,245
Accumulated amortization and impairment					
Balance on January 1, 2021	$ (19,319)	$ (2,532)	$ (45)	$ (160)	$ (22,056)
Amortization expenses	(6,199)	(341)	—	(29)	(6,569)
Disposal	—	343	—	11	354
Impairment losses	—	—	(29)	—	(29)
Effect of foreign exchange differences	—	—	—	—	—
Others	—	—	—	—	—
Balance on December 31, 2021	$ (25,518)	$ (2,530)	$ (74)	$ (178)	$ (28,300)
Balance on December 31, 2021, net	$ 82,820	$ 673	$ 217	$ 235	$ 83,945

For long-term business development, Chunghwa participated in the 5G mobile broadband license bidding hosted by the NCC and paid the deposit for 5G spectrum bidding amounting to $1,000 million (included in other assets) in October 2019. Chunghwa paid $48,373 million, including the aforementioned deposit, in February 2020 for the aforementioned license to obtain 90MHz in the 3.5GHz spectrum and 600MHz in the 28GHz spectrum.

The concessions are granted and issued by the NCC. The concession fees are amortized using the straight-line method over the period from the date operations commence through the date the license expires or the useful life, whichever is shorter. The 4G concession fees will be fully amortized by December 2030 and December 2033, and 5G concession fees will be fully amortized by December 2040.

The computer software is amortized using the straight-line method over the estimated useful lives of 1 to 10 years. Other intangible assets are amortized using the straight-line method over the estimated useful lives of 1 to 20 years. Goodwill is not amortized.

SENAO evaluated the goodwill, license agreement and the trademark that arose in the acquisition of Youth and its subsidiaries at the end of each year. SENAO determined the smallest identifiable group of assets that generates cash inflows as single cash generating units by business type and evaluated the recoverable amount of those cash generating units by their value in use. The management of SENAO estimated the cash flow projections based on the financial budgets for the following five years. Discount rates were 12.3%, 12.1% and 12.1% as of December 31, 2019, 2020 and 2021, respectively and were used to calculate the recoverable amount of related cash generating units by discounting aforementioned cash flows.

SENAO concluded the recoverable amount of the goodwill was lower than the carrying value and recognized impairment loss of $9 million, $9 million and $29 million for the years ended December 31, 2019, 2020 and 2021, respectively. In addition, SENAO concluded the recoverable amount of the license agreement and the trademark were lower than the carrying value and recognized impairment loss of $0.2 million for the year ended December 31, 2021. The aforementioned impairment losses were included in other income and expenses of consolidated statements of comprehensive income.

20. OTHER ASSETS

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Spare parts	$ 2,156	$ 2,836
Refundable deposits	2,009	1,971
Other financial assets	1,000	1,000
Others	2,450	2,035
	$ 7,615	$ 7,842
Current		
Spare parts	$ 2,156	$ 2,836
Others	193	143
	$ 2,349	$ 2,979
Noncurrent		
Refundable deposits	$ 2,009	$ 1,971
Other financial assets	1,000	1,000
Others	2,257	1,892
	$ 5,266	$ 4,863

Other financial assets - noncurrent was Piping Fund. As part of the government’s effort to upgrade the existing telecommunications infrastructure, Chunghwa and other public utility companies were required by the ROC government to contribute to a Piping Fund administered by the Taipei City Government. This fund was used to finance various telecommunications infrastructure projects. Net assets of this fund will be returned proportionately after the project is completed.

Chunghwa evaluated that certain other assets will not be used in the future and there was no active market for sale; therefore, the Company determined that the recoverable amount of such assets was nil and recognized impairment losses of $44 million for the year ended December 31, 2019. The aforementioned impairment loss was included in other income and expenses in the statements of comprehensive income.

21. HEDGING FINANCIAL INSTRUMENTS

Chunghwa's hedge strategy is to enter into forward exchange contracts - buy to avoid its foreign currency exposure to certain foreign currency denominated equipment payments in the following six months. In addition, Chunghwa's management considers the market condition to determine the hedge ratio and enters into forward exchange contracts with the banks to avoid the foreign currency risk.

Chunghwa signed equipment purchase contracts with suppliers and entered into forward exchange contracts to avoid foreign currency risk exposure to Euro-denominated purchase commitments. Those forward exchange contracts were designated as cash flow hedges. When forecast purchases actually take place, basis adjustments are made to the initial carrying amounts of hedged items.

For the hedges of highly probable forecast sales and purchases, as the critical terms (i.e. the notional amount, life and underlying) of the forward foreign exchange contracts and their corresponding hedged items are the same, the Company performs a qualitative assessment of effectiveness and it is expected that the value of the forward contracts and the value of the corresponding hedged items will systematically change in opposite direction in response to movements in the underlying exchange rates.

The main source of hedge ineffectiveness in these hedging relationships is the effect of credit risks of the Company and the counterparty on the fair value of the forward exchange contracts. Such credit risks do not impact the fair value of the hedged item attributable to changes in foreign exchange rates. No other sources of ineffectiveness emerged from these hedging relationships.

The following tables summarized the information relating to the hedges for foreign currency risk.

December 31, 2019

Hedging Instruments	Currency	Notional Amount	Maturity	Forward Rate	Line Item in Balance Sheet	Carrying Amount Asset	Carrying Amount Liability	Change in Fair Values of Hedging Instruments Used for Calculating Hedge Ineffectiveness
		(In Millions)				NT$	NT$ (In Millions)	NT$
Cash flow hedge								
Forecast purchases - forward exchange contracts	NT$/EUR	NT$ 84/EUR 2	2020.03	$ 33.66	Hedging financial assets (liabilities)	$ —	$ —	$ (1)

Hedged Items	Change in Value of Hedged Item Used for Calculating Hedge Ineffectiveness	Accumulated Gain or Loss on Hedging Instruments in Other Equity: Continuing Hedges	Accumulated Gain or Loss on Hedging Instruments in Other Equity: Hedge Accounting No Longer Applied
	NT$	NT$ (In Millions)	NT$
Cash flow hedge			
Forecast equipment purchases	$ 1	$ —	$ —

December 31, 2020

Hedging Instruments	Currency	Notional Amount	Maturity	Forward Rate	Line Item in Balance Sheet	Carrying Amount Asset	Carrying Amount Liability	Change in Fair Values of Hedging Instruments Used for Calculating Hedge Ineffectiveness
		(In Millions)				NT$	NT$ (In Millions)	NT$
Cash flow hedge								
Forecast purchases - forward exchange contracts	NT$/EUR	NT$ 201/ EUR 6	2021.03	$ 34.45	Hedging financial assets (liabilities)	$ 2	$ —	$ 2

Hedged Items	Change in Value of Hedged Item Used for Calculating Hedge Ineffectiveness	Accumulated Gain or Loss on Hedging Instruments in Other Equity: Continuing Hedges	Accumulated Gain or Loss on Hedging Instruments in Other Equity: Hedge Accounting No Longer Applied
	NT$	NT$ (In Millions)	NT$
Cash flow hedge			
Forecast equipment purchases	$ (2)	$ 2	$ —

December 31, 2021

Hedging Instruments	Currency	Notional Amount	Maturity	Forward Rate	Line Item in Balance Sheet	Carrying Amount Asset	Carrying Amount Liability	Change in Fair Values of Hedging Instruments Used for Calculating Hedge Ineffectiveness
		(In Millions)				NT$	NT$ (In Millions)	NT$
Cash flow hedge								
Forecast purchases - forward exchange contracts	NT$/EUR	NT$ 228/ EUR 7	2022.03	$ 32.54	Hedging financial assets (liabilities)	$ —	$ 8	$ (10)

Hedged Items	Change in Value of Hedged Item Used for Calculating Hedge Ineffectiveness	Accumulated Gain or Loss on Hedging Instruments in Other Equity: Continuing Hedges	Accumulated Gain or Loss on Hedging Instruments in Other Equity: Hedge Accounting No Longer Applied
	NT$	NT$ (In Millions)	NT$
Cash flow hedge			
Forecast equipment purchases	$ 10	$ (8)	$ —

Year ended December 31, 2019

	Comprehensive Income				
				Reclassification from Equity to Profit or Loss and the Adjusted Line Item	
Hedge Transaction	Hedging Gain or Loss Recognized in OCI	Amount of Hedge Ineffectiveness Recognized in Profit or Loss	Line Item in Which Hedge Ineffectiveness is Included	Amount Reclassified to P/L and the Adjusted Line Item	Due to Hedged Future Cash Flows No Longer Expected to Occur
	NT$	NT$	NT$ (In Millions)	NT$	NT$
Cash flow hedge					
Forecast equipment purchases	$ (1)	$ —	—	$ (2)	$ —
				Construction in progress and equipment to be accepted	Other gains and losses

Year ended December 31, 2020

	Comprehensive Income			Reclassification from Equity to Profit or Loss and the Adjusted Line Item	
Hedge Transaction	Hedging Gain or Loss Recognized in OCI	Amount of Hedge Ineffectiveness Recognized in Profit or Loss	Line Item in Which Hedge Ineffectiveness is Included	Amount Reclassified to P/L and the Adjusted Line Item	Due to Hedged Future Cash Flows No Longer Expected to Occur
	NT$	NT$	NT$ (In Millions)	NT$	NT$
Cash flow hedge					
Forecast equipment purchases	$ 2	$ —	—	$ 21	$ —
				Construction in progress and equipment to be accepted	Other gains and losses

Year ended December 31, 2021

	Comprehensive Income			Reclassification from Equity to Profit or Loss and the Adjusted Line Item	
Hedge Transaction	Hedging Gain or Loss Recognized in OCI	Amount of Hedge Ineffectiveness Recognized in Profit or Loss	Line Item in Which Hedge Ineffectiveness is Included	Amount Reclassified to P/L and the Adjusted Line Item	Due to Hedged Future Cash Flows No Longer Expected to Occur
	NT$	NT$	NT$ (In Millions)	NT$	NT$
Cash flow hedge					
Forecast equipment purchases	$ (10)	$ —	—	$ (43)	$ —
				Construction in progress and equipment to be accepted	Other gains and losses

22. SHORT-TERM LOANS

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Unsecured bank loans	$ 67	$ 65

The annual interest rates of bank loans were as follows:

	December 31	
	2020	2021
Unsecured bank loans	1.12%-2.33%	1.97%-2.43%

23. SHORT-TERM BILLS PAYABLE

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Commercial paper payable	$ 7,000	$ —
Less: Discounts on commercial paper payable	(1)	$ —
	$ 6,999	$ —

The annual interest rates of commercial paper payable were as follows:

	December 31	
	2020	2021
Commercial paper payable	0.34%-0.36%	—

24. LONG-TERM LOANS

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Secured bank loans (Note 41)	$ 1,600	$ 1,600
Less: Current portion	(1,600)	—
	$ -	$ 1,600

The annual interest rates of bank loans were as follows:

	December 31	
	2020	2021
Secured bank loans	0.72%	0.89%

LED obtained a secured loan from Chang Hwa Bank in September 2010. Interest is paid monthly. $300 million and $1,350 million were originally due in December 2014 and September 2015, respectively. In October 2014, the bank borrowing mentioned above was extended to September 2018 for one time repayment. LED made an early repayment of $50 million in April 2015. LED entered into a contract with Chang Hwa Bank to renew the contract upon the maturity of the aforementioned contract in December 2017 and the due date of the renewed contract is September 2021. Furthermore, LED entered into another contract with Chang Hwa Bank to renew the contract upon the maturity of the aforementioned contract in August 2021 and the due date of the renewed contract is September 2024.

25. BONDS PAYABLE

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Unsecured domestic bonds	$ 20,000	$ 27,000
Less: Discounts on bonds payable	(20)	(23)
	$ 19,980	$ 26,977

The major terms of unsecured domestic bonds issued by Chunghwa were as follows:

Issuance	Tranche	Issuance Period	Total Amount	Coupon Rate	Repayment and Interest Payment
2020-1	A	July 2020 to July 2025	$ 8,800	0.50%	One-time repayment upon maturity; interest payable annually
	B	July 2020 to July 2027	7,500	0.54%	The same as above
	C	July 2020 to July 2030	3,700	0.59%	The same as above
2021-1	A	April 2021 to April 2026	1,900	0.42%	The same as above
	B	April 2021 to April 2028	4,100	0.46%	The same as above
	C	April 2021 to April 2031	1,000	0.50%	The same as above

26. TRADE NOTES AND ACCOUNTS PAYABLE

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Trade notes and accounts payable	$ 15,591	$ 18,063

Trade notes and accounts payable were attributable to operating activities and the trading conditions were agreed separately.

27. OTHER PAYABLES

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Accrued salary and compensation	$ 9,450	$ 10,126
Payables to contractors	1,779	3,015
Accrued compensation to employees and remuneration to directors and supervisors	1,691	1,997
Amounts collected for others	1,308	1,426
Payables to equipment suppliers	1,049	1,154
Accrued maintenance costs	1,040	1,011
Payable on land (Note 16)	1,057	—
Others	6,614	5,708
	$ 23,988	$ 24,437

28. PROVISIONS

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Warranties	$ 182	$ 213
Onerous contracts	171	147
Employee benefits	57	63
Others	5	4
	$ 415	$ 427
Current	$ 314	$ 285
Noncurrent	101	142
	$ 415	$ 427

	Warranties NT$	Onerous Contracts NT$	Employee Benefits NT$	Others NT$	Total NT$
			(In Millions)		
Balance on January 1, 2019	$ 132	$ 19	$ 51	$ 5	$ 207
Additional provisions recognized	127	48	9	—	184
Used / forfeited during the year	(86)	—	(1)	—	(87)
Balance on December 31, 2019	$ 173	$ 67	$ 59	$ 5	$ 304
Balance on January 1, 2020	$ 173	$ 67	$ 59	$ 5	$ 304
Additional / (reversal of) provisions recognized	131	92	(2)	—	221
Used / forfeited during the year	(122)	(3)	—	—	(125)
Acquired by business combinations (Note 14)	—	15	—	—	15
Balance on December 31, 2020	$ 182	$ 171	$ 57	$ 5	$ 415
Balance on January 1, 2021	$ 182	$ 171	$ 57	$ 5	$ 415
Additional / (reversal of) provisions recognized	102	(24)	7	(1)	84
Used / forfeited during the year	(71)	—	(1)	—	(72)
Effect of foreign exchange differences	—	—	—	—	—
Balance on December 31, 2021	$ 213	$ 147	$ 63	$ 4	$ 427

a. The provision for warranty claims represents the present value of the management's best estimate of the future outflow of economic benefits that will be required under the Company's obligation for warranties in sales agreements. The estimate has been made based on historical warranty experience.

b. The provision for employee benefits represents vested long-term service compensation accrued.

c. The provision for onerous contracts represents the present obligation resulting from the measurement for the unavoidable costs of meeting the Company's contractual obligations exceed the economic benefits expected to be received from the contracts.

29. RETIREMENT BENEFIT PLANS

a. Defined contribution plans

The pension plan under the Labor Pension Act of ROC (the "LPA") is considered as a defined contribution plan. Based on the LPA, Chunghwa and its domestic subsidiaries make monthly contributions to employees' individual pension accounts at 6% of monthly salaries and wages. Its foreign subsidiaries would make monthly contributions based on the local pension requirements.

b. Defined benefit plans

Chunghwa completed its privatization plans on August 12, 2005. Chunghwa is required to pay all accrued pension obligations including service clearance payment, lump sum payment under civil service plan, additional separation payments, etc. upon the completion of the privatization in accordance with the Statute Governing Privatization of Stated-owned Enterprises. After paying all pension obligations for privatization, the plan assets of Chunghwa should be transferred to the Fund for Privatization of Government-owned Enterprises (the "Privatization Fund") under the Executive Yuan. On August 7, 2006, Chunghwa transferred the remaining balance of fund to the Privatization Fund. However, according to the instructions of MOTC, Chunghwa was requested to administer the distributions to employees for pension obligations including service clearance payment, lump sum payment under civil service plan, additional separation payments, etc. upon the completion of the privatization and recognized in other current monetary assets.

Chunghwa and its subsidiaries SENAO, CHIEF, CHSI, SHE, IISI and UTC with the pension mechanism under the Labor Standards Law in the ROC are considered as defined benefit plans. These pension plans provide benefits based on an employee's length of service and average six-month salary prior to retirement. Chunghwa and its subsidiaries contribute an amount no more than 15% of salaries paid each month to their respective pension funds (the Funds), which are administered by the Labor Pension Fund Supervisory Committee (the Committee) and deposited in the names of the Committees in the Bank of Taiwan. The plan assets are held in a commingled fund which is operated and managed by the government's designated authorities; as such, the Company does not have any right to intervene in the investments of the funds. According to the Article 56 of the Labor Standards Law in the ROC, entities are required to contribute the difference in one appropriation to their pension funds before the end of next March when the balance of the Funds is insufficient to pay the eligible employees who meet the retirement criteria in the following year.

The amounts included in the consolidated balance sheets arising from the Company's obligation in respect of its defined benefit plans were as follows:

	December 31	
	2020	**2021**
	NT$	**NT$**
	(In Millions)	
Present value of funded defined benefit obligations	$ 39,536	$ 35,502
Fair value of plan assets	(39,494)	(36,605)
Funded status - deficit (surplus)	$ 42	$ (1,103)
Net defined benefit liabilities	$ 3,415	$ 2,288
Net defined benefit assets	(3,373)	(3,391)
	$ 42	$ (1,103)

Movements in the defined benefit obligations and the fair value of plan assets were as follows:

	Present Value of Funded Defined Benefit Obligations	Fair Value of Plan Assets	Net Defined Benefit Liabilities (Assets)
	NT$	NT$ (In Millions)	NT$
Balance on January 1, 2019	$ 41,397	$ 39,027	$ 2,370
Current service cost	2,927	—	2,927
Interest expense/interest income	400	390	10
Amounts recognized in profit or loss	3,327	390	2,937
Remeasurement on the net defined benefit liability			
Return on plan assets (excluding amounts included in net interest)	—	1,338	(1,338)
Actuarial losses recognized from changes in demographic assumptions	6	—	6
Actuarial losses recognized from changes in financial assumptions	647	—	647
Actuarial gains recognized from experience adjustments	(842)	—	(842)
Amounts recognized in other comprehensive income	(189)	1,338	(1,527)
Contributions from employer	—	2,099	(2,099)
Benefits paid	(3,034)	(3,034)	—
Benefits paid directly by the Company	(304)	—	(304)
Balance on December 31, 2019	41,197	39,820	1,377
Current service cost	2,052	—	2,052
Interest expense/interest income	298	297	1
Amounts recognized in profit or loss	2,350	297	2,053
Remeasurement on the net defined benefit liability			
Return on plan assets (excluding amounts included in net interest)	—	1,308	(1,308)
Actuarial losses recognized from changes in financial assumptions	590	—	590
Actuarial gains recognized from experience adjustments	(475)	—	(475)
Amounts recognized in other comprehensive income	115	1,308	(1,193)
Contributions from employer	—	1,964	(1,964)
Benefits paid	(3,919)	(3,919)	—
Benefits paid directly by the Company	(263)	—	(263)
Acquired by business combinations (Note 14)	56	24	32
Balance on December 31, 2020	39,536	39,494	42
Current service cost	1,253	—	1,253
Interest expense/interest income	190	195	(5)
Amounts recognized in profit or loss	1,443	195	1,248
Remeasurement on the net defined benefit liability			
Return on plan assets (excluding amounts included in net interest)	—	501	(501)
Actuarial gain recognized from changes in demographic assumptions	(434)	—	(434)
Actuarial loss recognized from experience adjustments	545	—	545
Amounts recognized in other comprehensive income	111	501	(390)
Contributions from employer	—	1,727	(1,727)
Benefits paid	(5,312)	(5,312)	—
Benefits paid directly by the Company	(276)	—	(276)
Balance on December 31, 2021	$ 35,502	$ 36,605	$ (1,103)

Relevant pension costs recognized in profit and loss for defined benefit plans were as follows:

	Year Ended December 31		
	2019	2020	2021
	NT$	NT$ (In Millions)	NT$
Operating costs	$ 1,726	$ 1,205	$ 725
Marketing expenses	866	603	367
General and administrative expenses	164	121	80
Research and development expenses	103	72	44
	$ 2,859	$ 2,001	$ 1,216

The Company is exposed to following risks for the defined benefits plans under the Labor Standards Law in the ROC:

a. Investment risk

Under the Labor Standards Law in the ROC, the rate of return on assets shall not be lower than the average interest rate on a two-year time deposit published by the local banks and the government is responsible for any shortfall in the event that the rate of return is less than the required rate of return. The plan assets are held in a commingled fund mainly invested in foreign and domestic equity and debt securities and bank deposits which is operated and managed by the government's designated authorities; as such, the Company does not have any right to intervene in the investments of the funds.

b. Interest rate risk

The decline in government bond interest rate will increase the present value of the obligation on the defined benefit plan, while the return on plan assets will increase. The net effect on the present value of the obligation on defined benefit plan is partially offset by the return on plan assets.

c. Salary risk

The calculation of the present value of defined benefit obligations is referred to the plan participants' future salary. Hence, the increase in plan participants' salary will increase the present value of the defined benefit obligations.

The most recent actuarial valuation of plan assets and the present value of the defined benefit obligations were carried out by the independent actuary.

The principal assumptions used for the purpose of the actuarial valuations were as follows:

	Measurement Date December 31	
	2020	2021
Discount rates	0.50%	0.50%
Expected rates of salary increase	1.00%-2.25%	1.00%-2.25%

If reasonably possible changes of the respective significant actuarial assumptions occur at the end of reporting periods, while holding all other assumptions constant, the present values of the defined benefit obligations would increase (decrease) as follows:

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Discount rates		
0.5% increase	$ (1,208)	$ (1,073)
0.5% decrease	$ 1,284	$ 1,139
Expected rates of salary increase		
0.5% increase	$ 1,372	$ 1,217
0.5% decrease	$ (1,303)	$ (1,157)

The sensitivity analysis presented above may not be representative of the actual change in the present value of the defined benefit obligations as it is unlikely that the change in assumptions would occur in isolation of one another as some of the assumptions may be correlated.

Furthermore, in presenting the above sensitivity analysis, the present value of the defined benefit obligations has been calculated using the projected unit credit method at the end of the reporting period, which is the same as that applied in calculating the defined benefit obligation liability recognized in the consolidated balance sheets.

There is no change in the methods and assumptions used in preparing the sensitivity analysis from the previous period.

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
The expected contributions to the plan for the next year	$ 1,932	$ 1,681
The average duration of the defined benefit obligations	6.4-13 years	6.3-12 years

As of December 31, 2021, the Company’s maturity analysis of the undiscounted benefit payments was as follows:

Year	Amount
	NT$
	(In Millions)
2022	$ 2,693
2023	6,330
2024	9,721
2025	10,864
2026 and thereafter	36,890
	$ 66,498

30. EQUITY

a. Share capital

1) Common stocks

	December 31			
	2020		2021	
	NT$		NT$	
	(In Millions)			
Number of authorized shares		12,000		12,000
Authorized shares	$	120,000	$	120,000
Number of issued and paid shares		7,757		7,757
Issued and outstanding shares	$	77,574	$	77,574

Each issued common stock with par value of $10 entitled the right to vote and receive dividends.

2) Global depositary receipts

The MOTC and some stockholders sold some common stocks of Chunghwa in an international offering of securities in the form of American Depositary Shares (“ADS”) (one ADS represents 10 common stocks) in July 2003, August 2005, and September 2006. The ADSs were traded on the New York Stock Exchange since July 17, 2003. As of December 31, 2021, the outstanding ADSs were 202 million common stocks, which equaled 20 million units and represented 2.60% of Chunghwa’s total outstanding common stocks.

The ADS holders generally have the same rights and obligations as other common stockholders, subject to the provision of relevant laws. The exercise of such rights and obligations shall comply with the related regulations and deposit agreement, which stipulate, among other things, that ADS holders are entitled to, through deposit agents:

a) Exercise their voting rights,

b) Sell their ADSs, and

c) Receive dividends declared and subscribe to the issuance of new shares.

b. Additional paid-in capital

The adjustments of additional paid-in capital for the years ended December 31, 2019, 2020 and 2021 were as follows:

	Share Premium	Movements of Additional Paid-in Capital for Associates and Joint Ventures Accounted for Using Equity Method	Movements of Additional Paid-in Capital Arising from Changes in Equities of Subsidiaries	Difference between Consideration Received and Carrying Amount of the Subsidiaries' Net Assets upon Disposal	Donated Capital	Stockholders' Contribution Due to Privatization	Total
	NT$	NT$	NT$	NT$	NT$	NT$	NT$
				(In Millions)			
Balance on January 1, 2019	$ 126,045	$ —	$ 2,064	$ 987	$ 18	$ 20,648	$ 149,762
Unclaimed dividend	—	—	—	—	1	—	1
Share-based payment transactions of subsidiaries	—	—	(1)	—	—	—	(1)
Balance on December 31, 2019	$ 126,045	$ —	$ 2,063	$ 987	$ 19	$ 20,648	$ 149,762
Balance on January 1, 2020	$ 126,045	$ —	$ 2,063	$ 987	$ 19	$ 20,648	$ 149,762
Unclaimed dividend	—	—	—	—	2	—	2
Change in additional paid-in capital for not proportionately participating in the capital increase of subsidiaries	—	—	—	—	—	—	—
Share-based payment transactions of subsidiaries	—	—	26	—	—	—	26
Balance on December 31, 2020	$ 126,045	$ —	$ 2,089	$ 987	$ 21	$ 20,648	$ 149,790
Balance on January 1, 2021	$ 126,045	$ —	$ 2,089	$ 987	$ 21	$ 20,648	$ 149,790
Unclaimed dividend	—	—	—	—	2	—	2
Change in additional paid-in capital from investments in associates and joint ventures accounted for using equity method	—	1	—	—	—	—	1
Share-based payment transactions of subsidiaries	—	—	17	—	—	—	17
Balance on December 31, 2021	$ 126,045	$ 1	$ 2,106	$ 987	$ 23	$ 20,648	$ 149,810

Under the R.O.C. relevant laws, additional paid-in capital from share premium, donated capital and the difference between consideration received and the carrying amount of the subsidiaries' net assets upon disposal may be utilized to offset deficits. Furthermore, when Chunghwa has no deficit, it may be distributed in cash or capitalized, which however is limited to a certain percentage of Chunghwa's paid-in capital except the additional paid-in capital arising from unclaimed dividend can only be utilized to offset deficits.

The additional paid-in capital from movements of paid-in capital arising from changes in equities of subsidiaries may only be utilized to offset deficits.

Among additional paid-in capital from movements of investments in associates and joint ventures accounted for using equity method, the portion arising from the difference between consideration received and the carrying amount of the subsidiaries' net assets upon disposal may be utilized to offset deficits; furthermore, when the Company has no deficit, it may be distributed in cash or capitalized. However, other additional paid-in capital recognized in proportion of share ownership may only be utilized to offset deficits.

c. Retained earnings and dividends policy

In accordance with the Chunghwa's Articles of Incorporation, Chunghwa must pay all outstanding taxes, offset deficits in prior years and set aside a legal reserve equal to 10% of its net income before distributing a dividend or making any other distribution to stockholders, except when the accumulated amount of such legal reserve equals to Chunghwa's total issued capital, and depending on its business needs or requirements, may also set aside or reverse special reserves. No less than 50% of the remaining earnings comprising remaining balance of net income, if any, plus cumulative undistributed earnings shall be distributed as stockholders' dividends, of which cash dividends to be distributed shall not be less than 50% of the total amount of dividends to be distributed. If cash dividend to be distributed is less than $0.10 per share, such cash dividend shall be distributed in the form of common stocks.

Special reserve was appropriated in accordance with the relevant laws and regulations or as requested by local authority. Pursuant to existing regulations, the Company should appropriate a special reserve when the net amount of other equity items is negative at the end of reporting period upon the earnings distribution. Distributions can be made out of any subsequent reversal of the debit to other equity items.

The appropriation for legal reserve shall be made until the accumulated reserve equals the aggregate par value of the outstanding capital stock of Chunghwa. This reserve can only be used to offset a deficit, or when the legal reserve has exceeded 25% of Chunghwa's paid-in capital, the excess may be transferred to capital or distributed in cash.

The appropriations of the 2019 and 2020 earnings of Chunghwa approved by the stockholders in their meetings on May 29, 2020 and August 20, 2021, respectively, were as follows:

	Appropriation of Earnings		Dividends Per Share (NT$)	
	For Fiscal Year 2019	For Fiscal Year 2020	For Fiscal Year 2019	For Fiscal Year 2020
Cash dividends	$ 32,783	$ 33,404	$ 4.226	$ 4.306

The appropriations of earnings for 2021 had been proposed by Chunghwa's Board of Directors on February 23, 2022. The appropriations and dividends per share were as follows:

	Appropriation of Earnings	Dividends Per Share (NT$)
Special reserve	$ 408	
Cash dividends	35,746	$ 4.608

The appropriations of earnings for 2021 are subject to the resolution of the stockholders' meeting planned to be held on May 27, 2022.

d. Others

1) Exchange differences arising from the translation of the foreign operations

The exchange differences arising from the translation of the foreign operations from their functional currency to New Taiwan dollars were recognized as exchange differences arising from the translation of the foreign operations in other comprehensive income.

2) Unrealized gain or loss on financial assets at FVOCI

	Year Ended December 31		
	2019	2020	2021
	NT$	NT$ (In Millions)	NT$
Beginning balance	$ 538	$ 735	$ 1,240
Unrealized gain or loss for the year			
Equity instruments	197	522	(1,188)
Transferred accumulated gain or loss to unappropriated earnings resulting from the disposal of equity instruments (Note 9)	—	(17)	(60)
Ending balance	$ 735	$ 1,240	$ (8)

e. Noncontrolling interests

	Year Ended December 31		
	2019	2020	2021
	NT$	NT$	NT$
		(In Millions)	
Beginning balance	$ 9,837	$ 10,115	$ 11,158
Attributable to noncontrolling interests			
Net income for the year	974	1,285	1,431
Exchange differences arising from the translation of the foreign operations	8	(14)	—
Unrealized gain or loss on financial assets at FVOCI	(26)	(3)	2
Remeasurements of defined benefit pension plans	15	17	(5)
Income tax relating to remeasurements of defined benefit pension plans	(3)	(3)	1
Share of other comprehensive loss of associates and joint ventures accounted for using equity method	(1)	(1)	—
Cash dividends distributed by subsidiaries	(710)	(775)	(896)
Share-based payment transactions of subsidiaries	22	63	56
Change in additional paid-in capital for not proportionately participating in the capital increase of subsidiaries	—	—	—
Change in additional paid-in capital from investments in associates and joint ventures accounted for using equity method	—	(2)	—
Net increase (decrease) in noncontrolling interests	(1)	476	—
Ending balance	$ 10,115	$ 11,158	$ 11,747

31. REVENUE

	Year Ended December 31		
	2019	2020	2021
	NT$	NT$	NT$
		(In Millions)	
Revenue from contracts with customers	$ 206,360	$ 206,396	$ 208,412
Other revenues			
Government grants income	205	219	1,037
Rental income	818	843	864
Others	137	151	165
	1,160	1,213	2,066
Total	$ 207,520	$ 207,609	$ 210,478

For the information of performance obligations related to customer contracts, please refer to Note 3 Summary of Significant Accounting Policies for details.

a. Disaggregation of revenue

2019

	Domestic Fixed Communi-cations Business	Mobile Communi-cations Business	Internet Business	International Fixed Communi-cations Business	Others	Total
	NT$	NT$	NT$	NT$	NT$	NT$
			(In Millions)			
Main Products and Service Revenues						
Mobile services revenue	$ —	$ 58,703	$ —	$ —	$ —	$ 58,703
Sales of products	1,957	35,545	41	265	3,785	41,593
Local telephone and domestic long distance telephone services revenue	27,929	—	—	—	—	27,929
Broadband access and domestic leased line services revenue	22,116	—	—	—	—	22,116
Data Communications internet services revenue	—	—	21,003	—	—	21,003
International network and leased line services revenue	—	—	—	7,066	—	7,066
Others	13,064	1,142	8,790	4,144	810	27,950
	$ 65,066	$ 95,390	$ 29,834	$ 11,475	$ 4,595	$ 206,360

2020

	Domestic Fixed Communi-cations Business	Mobile Communi-cations Business	Internet Business	International Fixed Communi-cations Business	Others	Total
	NT$	NT$	NT$	NT$	NT$	NT$
			(In Millions)			
Main Products and Service Revenues						
Mobile services revenue	$ —	$ 56,724	$ —	$ —	$ —	$ 56,724
Sales of products	2,214	32,112	107	313	4,645	39,391
Local telephone and domestic long distance telephone services revenue	26,475	—	—	—	—	26,475
Broadband access and domestic leased line services revenue	22,420	—	—	—	—	22,420
Data Communications internet services revenue	—	—	21,447	—	—	21,447
International network and leased line services revenue	—	—	—	3,884	—	3,884
Others	17,695	1,307	10,255	4,485	2,313	36,055
	$ 68,804	$ 90,143	$ 31,809	$ 8,682	$ 6,958	$ 206,396

2021

	Domestic Fixed Communi-cations Business	Mobile Communi-cations Business	Internet Business	International Fixed Communi-cations Business	Others	Total
	NT$	NT$	NT$	NT$	NT$	NT$
			(In Millions)			
Main Products and Service Revenues						
Mobile services revenue	$ —	$ 58,048	$ —	$ —	$ —	$ 58,048
Sales of products	2,173	35,414	128	12	5,180	42,907
Local telephone and domestic long distance telephone services revenue	25,704	—	—	—	—	25,704
Broadband access and domestic leased line services revenue	23,012	—	—	—	—	23,012
Data Communications internet services revenue	—	—	22,281	—	—	22,281
International network and leased line services revenue	—	—	—	4,367	—	4,367
Others	13,255	1,222	10,428	4,246	2,942	32,093
	$ 64,144	$ 94,684	$ 32,837	$ 8,625	$ 8,122	$ 208,412

b. Contract balances

	January 1, 2020	December 31	
		2020	2021
	NT$	NT$	NT$
		(In Millions)	
Trade notes and accounts receivable (Note 10)	$ 26,408	$ 22,622	$ 23,947
Contract assets			
Products and service bundling	$ 6,943	$ 7,232	$ 7,197
Others	116	612	983
Less : Loss allowance	(17)	(18)	(18)
	$ 7,042	$ 7,826	$ 8,162
Current	$ 4,441	$ 5,331	$ 5,554
Noncurrent	2,601	2,495	2,608
	$ 7,042	$ 7,826	$ 8,162
Contract liabilities			
Telecommunications business	$ 12,772	$ 13,602	$ 13,144
Project business	10,360	6,687	5,435
Products and service bundling	39	16	4
Others	510	421	491
	$ 23,681	$ 20,726	$ 19,074
Current	$ 16,840	$ 13,437	$ 12,234
Noncurrent	6,841	7,289	6,840
	$ 23,681	$ 20,726	$ 19,074

The changes in the contract asset and the contract liability balances primarily result from the timing difference between the satisfaction of performance obligations and the payments collected from customers. Significant changes of contract assets and liabilities recognized resulting from product and service bundling were as follows:

	Year Ended December 31		
	2019	2020	2021
	NT$	NT$ (In Millions)	NT$
Contract assets			
Net increase of customer contracts	$ 6,066	$ 5,972	$ 6,035
Reclassified to trade receivables	(6,405)	(5,681)	(6,039)
	$ (339)	$ 291	$ (4)
Contract liabilities			
Net increase of customer contracts	$ 22	$ 7	$ —
Recognized as revenues	(89)	(30)	(12)
	$ (67)	$ (23)	$ (12)

The Company applies the simplified approach to recognize expected credit losses prescribed by IFRS 9, which permits the use of lifetime expected loss provision for receivables. Contract assets will be reclassified to trade receivables when the corresponding invoice is billed to the client. Contract assets have substantially the same risk characteristics as the trade receivables of the same types of contracts. Therefore, the Company concluded that the expected loss rates for trade receivables can be applied to the contract assets.

Revenue recognized for the period that was included in the contract liability at the beginning of the year was as follows:

	Year Ended December 31		
	2019	2020	2021
	NT$	NT$ (In Millions)	NT$
Telecommunications business	$ 6,186	$ 5,492	$ 5,952
Project business	3,973	6,092	4,630
Others	404	512	431
	$ 10,563	$ 12,096	$ 11,013

c. Incremental costs of obtaining contracts

	December 31	
	2020	2021
	NT$ (In Millions)	NT$
Noncurrent		
Incremental costs of obtaining contracts	$ 1,000	$ 988

The Company considered the past experience and the default clauses in the telecommunications service contracts and believes the commissions and equipment subsidies paid for obtaining such contracts are expected to be recoverable; therefore, such costs were capitalized. Amortization expenses for the years ended December 31 2019, 2020 and 2021 were $1,173 million, $772 million and $815 million, respectively.

d. Remaining Performance Obligations

As of December 31, 2021, the aggregate amount of transaction price allocated to performance obligations for non-cancellable telecommunications service contracts that are unsatisfied is $29,380 million. The Company recognizes revenue when service is provided over contract terms. The Company expects to recognize such revenue of $18,350 million, $8,603 million and $2,427 million in 2022, 2023 and 2024, respectively. The variable consideration collected from customers on nonrecurring basis resulting from exceeded usage from monthly fee and revenue recognized for contracts that the Company has a right to consideration from customers in the amount corresponding directly with the value to the customers of the Company's performance completed to date have been excluded from the disclosure of remaining performance obligations.

As of December 31, 2021, the aggregate amount of transaction price allocated to performance obligations for non-cancellable project business contracts that are unsatisfied is $19,030 million. The Company recognizes revenues when the project business contract is completed and accepted by customers. The Company expects to recognize such revenue of $9,033 million, $4,781 million and $5,216 million in 2022, 2023 and 2024, respectively. Project business contracts whose expected duration are less than a year have been excluded from the aforementioned disclosure.

32. NET INCOME

a. Other income and expenses

	Year Ended December 31		
	2019	2020	2021
	NT$	NT$ (In Millions)	NT$
Gain (loss) on disposal of property, plant and equipment	$ (38)	$ 1,428	$ (3)
Impairment loss on property, plant and equipment	(93)	—	—
Impairment loss on right-of-use assets	—	—	(420)
Gain on disposal of investment properties, net	—	151	—
Reversal of impairment loss on investment properties	57	27	83
Loss on disposal of intangible assets	—	(2)	—
Impairment loss on intangible assets	(9)	(9)	(29)
Impairment loss on other assets	(44)	—	—
	$ (127)	$ 1,595	$ (369)

b. Other income

	Year Ended December 31		
	2019	2020	2021
	NT$	NT$ (In Millions)	NT$
Dividend income	$ 296	$ 246	$ 154
Rental income	85	70	70
Others	150	154	154
	$ 531	$ 470	$ 378

c. Other gains and losses

	Year Ended December 31		
	2019	2020	2021
	NT$	NT$	NT$
		(In Millions)	
Valuation gain (loss) on financial assets and liabilities at fair value through profit or loss, net	$ (38)	$ (99)	$ 243
Foreign currency exchange gain or loss, net	16	(47)	230
Gain on disposal of investments accounted for using equity method, net	151	10	4
Gain (loss) on disposal of financial instruments, net	4	(2)	—
Others	(49)	(21)	(16)
	$ 84	$ (159)	$ 461

d. Interest expenses

	Year Ended December 31		
	2019	2020	2021
	NT$	NT$	NT$
		(In Millions)	
Interest on bonds payable	$ —	$ 46	$ 132
Interest on lease liabilities	85	80	69
Interest paid to financial institutions	17	79	16
Others	2	1	1
	$ 104	$ 206	$ 218

e. Impairment loss (reversal of impairment loss)

	Year Ended December 31		
	2019	2020	2021
	NT$	NT$	NT$
		(In Millions)	
Contract assets	$ (2)	$ 1	$ —
Trade notes and accounts receivable	$ (54)	$ 49	$ 123
Other receivables	$ (69)	$ (5)	$ 20
Inventories	$ 475	$ 1,161	$ 207
Property, plant and equipment	$ 93	$ —	$ —
Right-of-use assets	$ —	$ —	$ 420
Investment properties	$ (57)	$ (27)	$ (83)
Intangible assets	$ 9	$ 9	$ 29
Other assets	$ 44	$ —	$ —

f. Depreciation and amortization expenses

	Year Ended December 31		
	2019	2020	2021
	NT$	NT$ (In Millions)	NT$
Property, plant and equipment	$ 26,930	$ 26,989	$ 27,805
Right-of-use assets	3,968	3,931	3,985
Investment properties	25	22	42
Intangible assets	4,253	5,424	6,569
Incremental costs of obtaining contracts	1,173	772	815
Total depreciation and amortization expenses	$ 36,349	$ 37,138	$ 39,216
Depreciation expenses summarized by functions			
Operating costs	$ 28,957	$ 29,056	$ 30,021
Operating expenses	1,966	1,886	1,811
	$ 30,923	$ 30,942	$ 31,832
Amortization expenses summarized by functions			
Operating costs	$ 5,196	$ 5,971	$ 7,172
Marketing expenses	96	100	93
General and administrative expenses	95	82	75
Research and development expenses	39	43	44
	$ 5,426	$ 6,196	$ 7,384

g. Employee benefit expenses

	Year Ended December 31		
	2019	2020	2021
	NT$	NT$ (In Millions)	NT$
Post-employment benefit			
Defined contribution plans	$ 654	$ 708	$ 784
Defined benefit plans	2,859	2,001	1,216
	3,513	2,709	2,000
Share-based payment			
Equity-settled share-based payment	2	8	19
Other employee benefit	42,640	42,246	42,654
Total employee benefit expenses	$ 46,155	$ 44,963	$ 44,673
Summary by functions			
Operating costs	$ 23,587	$ 23,005	$ 22,734
Operating expenses	22,568	21,958	21,939
	$ 46,155	$ 44,963	$ 44,673

Chunghwa distributes employees' compensation at the rates from 1.7% to 4.3% and remuneration to directors not higher than 0.17%, respectively, of pre-tax income. As of December 31, 2021, the payables of the employees' compensation and the remuneration to directors were $1,429 million and $39 million, respectively. Such amounts have been approved by the Chunghwa's Board of Directors on February 23, 2022 and will be reported to the stockholders in their meeting planned to be held on May 27, 2022.

If there is a change in the proposed amounts after the annual consolidated financial statements are authorized for issue, the difference is recorded as a change in accounting estimate.

The compensation to the employees and remuneration to the directors of 2019 and 2020 approved by the Board of Directors on February 26, 2020 and February 23, 2021, respectively, were as follows:

	2019	2020
	Cash	Cash
	NT$	NT$
	(In Millions)	
Compensation distributed to the employees	$ 1,126	$ 1,202
Remuneration paid to the directors	35	36

There was no difference between the initial accrual amounts and the amounts proposed in the Board of Directors in 2020 and 2021 of the aforementioned compensation to employees and the remuneration to directors.

33. INCOME TAX

a. Income tax recognized in profit or loss

The major components of income tax expense were as follows:

	Year Ended December 31		
	2019	2020	2021
	NT$	NT$	NT$
		(In Millions)	
Current tax			
Current tax expenses recognized for the year	$ 8,109	$ 8,172	$ 8,490
Income tax on unappropriated earnings	(20)	8	181
Income tax adjustments on prior years	(91)	(22)	(150)
Others	12	19	7
	8,010	8,177	8,528
Deferred tax			
Deferred tax expense (benefits) recognized for the year	(63)	(81)	489
Income tax adjustments on prior years	(1)	26	3
	(64)	(55)	492
Income tax expense recognized in profit or loss	$ 7,946	$ 8,122	$ 9,020

Reconciliation of accounting profit and income tax expense was as follows:

	Year Ended December 31		
	2019	2020	2021
	NT$	NT$	NT$
		(In Millions)	
Income before income tax	$ 41,867	$ 42,826	$ 46,067
Income tax expense calculated at the statutory rate	$ 8,373	$ 8,565	$ 9,213
Nondeductible income and expenses in determining taxable income	18	15	8
Unrecognized loss carryforwards	7	4	(1)
Tax-exempt income	(148)	(367)	(30)
Income tax on unappropriated earnings	(20)	8	181
Investment credits	(203)	(131)	(217)
Effect of different tax rates of group entities operating in other jurisdictions	(9)	10	(10)
Income tax adjustments on prior years	(92)	4	(147)
Others	20	14	23
Income tax expense recognized in profit or loss	$ 7,946	$ 8,122	$ 9,020

The applicable tax rate used by the entities subject to the Income Tax Act of the Republic of China is 20%, while the applicable tax rate used by subsidiaries in China is 25%. Tax rates used by other entities of the Company operating in other jurisdictions are based on the tax laws in those jurisdictions.

In July 2019, the President of the ROC announced the amendments to the Statute of Industrial Innovation, which stipulate that the unappropriated earnings in 2018 and thereafter that are used to build or acquire certain assets or technologies are allowed as deduction when computing the income tax on unappropriated earnings. The Company has deducted the reinvested capital expenditure while calculating income tax on unappropriated earnings.

b. Income tax recognized in other comprehensive income

	Year Ended December 31		
	2019	**2020**	**2021**
	NT$	**NT$**	**NT$**
		(In Millions)	
Deferred tax			
Remeasurement on defined benefit pension plans	$ 305	$ 239	$ 78
Exchange differences arising from the translation of the foreign operations	—	—	—
Total income tax expense recognized in other comprehensive income	$ 305	$ 239	$ 78

c. Current tax assets and liabilities

	December 31	
	2020	**2021**
	NT$	**NT$**
	(In Millions)	
Current tax assets		
Tax refund receivable (included in other current assets - others)	$ 1	$ 5
Current tax liabilities		
Income tax payable	$ 6,157	$ 6,530

d. Deferred income tax assets and liabilities

The movements of deferred income tax assets and liabilities were as follows:

For the year ended December 31, 2019

	January 1, 2019 NT$	Recognized in Profit or Loss NT$	Recognized in Other Comprehensive Income NT$	December 31, 2019 NT$
		(In Millions)		
Deferred income tax assets				
Temporary differences				
Defined benefit pension plans	$ 2,307	$ 32	$ (305)	$ 2,034
Share of profit or loss of associates and joint ventures accounted for using equity method	389	13	—	402
Allowance for doubtful receivables over quota	435	(31)	—	404
Valuation loss on inventory	88	53	—	141
Deferred revenue	111	(13)	—	98
Estimated warranty liabilities	26	8	—	34
Valuation loss on financial instruments	5	8	—	13
Others	178	(73)	—	105
	3,539	(3)	(305)	3,231
Loss carryforwards	41	(13)	—	28
	$ 3,580	$ (16)	$ (305)	$ 3,259

	January 1, 2019 NT$	Recognized in Profit or Loss NT$	Recognized in Other Comprehensive Income NT$	December 31, 2019 NT$
		(In Millions)		
Deferred income tax liabilities				
Temporary differences				
Defined benefit pension plans	$ (1,832)	$ 74	$ —	$ (1,758)
Land value incremental tax	(95)	—	—	(95)
Deferred revenue for award credits	(31)	2	—	(29)
Unrealized foreign exchange gain, net	(1)	—	—	(1)
Intangible assets	(32)	3	—	(29)
Others	(1)	1	—	—
	$ (1,992)	$ 80	$ —	$ (1,912)

For the year ended December 31, 2020

	January 1, 2020	Acquired by business combinations (Note 14)	Recognized in Profit or Loss	Recognized in Other Comprehensive Income	December 31, 2020
	NT$	NT$	NT$ (In Millions)	NT$	NT$
Deferred income tax assets					
Temporary differences					
Defined benefit pension plans	$ 2,034	$ 1	$ 20	$ (239)	$ 1,816
Share of profit or loss of associates and joint ventures accounted for using equity method	402	—	(1)	—	401
Allowance for doubtful receivables over quota	404	—	(39)	—	365
Valuation loss on inventory	141	3	155	—	299
Deferred revenue	98	—	(25)	—	73
Estimated warranty liabilities	34	—	2	—	36
Valuation loss on financial instruments	13	—	20	—	33
Others	105	2	(17)	—	90
	3,231	6	115	(239)	3,113
Loss carryforwards	28	—	(8)	—	20
	$ 3,259	$ 6	$ 107	$ (239)	$ 3,133

	January 1, 2020	Acquired by business combinations (Note 14)	Recognized in Profit or Loss	Recognized in Other Comprehensive Income	December 31, 2020
	NT$	NT$	NT$ (In Millions)	NT$	NT$
Deferred income tax liabilities					
Temporary differences					
Defined benefit pension plans	$ (1,758)	$ —	$ (54)	$ —	$ (1,812)
Land value incremental tax	(95)	—	—	—	(95)
Deferred revenue for award credits	(29)	—	(1)	—	(30)
Unrealized foreign exchange gain, net	(1)	—	1	—	—
Intangible assets	(29)	—	2	—	(27)
Others	—	(3)	—	—	(3)
	$ (1,912)	$ (3)	$ (52)	$ —	$ (1,967)

For the year ended December 31, 2021

	January 1, 2021 NT$	Recognized in Profit or Loss NT$	Recognized in Other Comprehensive Income NT$	December 31, 2021 NT$
		(In Millions)		
Deferred income tax assets				
Temporary differences				
Defined benefit pension plans	$ 1,816	$ 6	$ (78)	$ 1,744
Share of profit or loss of associates and joint ventures accounted for using equity method	401	—	—	401
Allowance for doubtful receivables over quota	365	(100)	—	265
Valuation loss on inventory	299	(102)	—	197
Deferred revenue	73	(24)	—	49
Estimated warranty liabilities	36	7	—	43
Valuation loss on financial instruments	33	(33)	—	—
Others	90	(15)	—	75
	3,113	(261)	(78)	2,774
Loss carryforwards	20	(9)	—	11
	$ 3,133	$ (270)	$ (78)	$ 2,785

	January 1, 2021 NT$	Recognized in Profit or Loss NT$	Recognized in Other Comprehensive Income NT$	December 31, 2021 NT$
		(In Millions)		
Deferred income tax liabilities				
Temporary differences				
Defined benefit pension plans	$ (1,812)	$ (157)	$ —	$ (1,969)
Land value incremental tax	(95)	—	—	(95)
Deferred revenue for award credits	(30)	(25)	—	(55)
Unrealized foreign exchange gain, net	—	(26)	—	(26)
Intangible assets	(27)	3	—	(24)
Valuation gain on financial instruments	—	(16)	—	(16)
Others	(3)	(1)	—	(4)
	$ (1,967)	$ (222)	$ —	$ (2,189)

e. Items for which no deferred income tax assets have been recognized

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Loss carryforwards		
Expire in 2022	$ 10	$ —
Expire in 2023	8	—
Expire in 2024	8	1
Expire in 2025	19	15
Expire in 2026	8	8
Expire in 2027	3	3
Expire in 2028	1	1
Expire in 2029	1	1
Expire in 2030	—	—
Expire in 2031	—	—
	$ 58	$ 29

f. Information about unused loss carryforwards

As of December 31, 2021 unused loss carryforwards were as follows:

Remaining Creditable Amount NT$ (In Millions)	Expiry Year
$ 1	2022
1	2023
1	2024
18	2025
10	2026
3	2027
1	2028
2	2029
2	2030
2	2031
$ 41	

g. Income tax examinations

Income tax returns of Chunghwa, SENAO, ISPOT, Youth, Youyi, Aval, Wiin, SENYOUNG, Senaolife, CHYP, CHSI, CHI, CHPT, SFD, CLPT, CHTSC, CHIEF, Unigate, SHE, CHST, HHI, IISI and UTC have been examined by the tax authorities through 2019. Income tax returns of LED has been examined by the tax authorities through 2020.

34. EARNINGS PER SHARE

Net income and weighted average number of common stocks used in the calculation of earnings per share were as follows:

Net Income

	Year Ended December 31		
	2019	2020	2021
	NT$	NT$ (In Millions)	NT$
Net income used to compute the basic earnings per share			
Net income attributable to the parent	$ 32,947	$ 33,419	$ 35,616
Assumed conversion of all dilutive potential common stocks			
Employee stock options and employee compensation of subsidiaries	(4)	(7)	(6)
Net income used to compute the diluted earnings per share	$ 32,943	$ 33,412	$ 35,610

Weighted Average Number of Common Stocks

(Millions Shares)

	Year Ended December 31		
	2019	2020	2021
Weighted average number of common stocks used to compute the basic earnings per share	7,757	7,757	7,757
Assumed conversion of all dilutive potential common stocks			
Employee compensation	8	8	8
Weighted average number of common stocks used to compute the diluted earnings per share	7,765	7,765	7,765

As Chunghwa may settle the employee compensation in shares or cash, Chunghwa shall presume that it will be settled in shares and take those shares into consideration when calculating the weighted average number of outstanding shares used in the calculation of diluted EPS if the shares have a dilutive effect. The dilutive effect of the shares needs to be considered until the approval of the number of shares to be distributed to employees as compensation in the following year.

35. SHARE-BASED PAYMENT ARRANGEMENT

a. SENAO share-based compensation plan (“SENAO Plan”) described as follows:

Effective Date	Grant Date	Stock Options Units (In Thousands)	Exercise Price NT$
2012.05.28	2013.05.07	10,000	$66.20 (Original price$93.00)

Each option is eligible to subscribe for one common share when exercisable. Under the terms of the SENAO Plan, the options are granted at an exercise price equal to the closing price of the SENAO’s common stocks listed on the TWSE on the higher of closing price or par value. The SENAO Plan has an exercise price adjustment formula upon the changes in common stocks equity (including cash capital increase, new share issue through capitalization of earnings and additional paid-in capital, merger, spin off and new share issue for Global Depositary Shares, and so on) or distribution of cash dividends. The options of the SENAO Plan are valid for six years and the graded vesting schedule for which 50% of options granted will vest two years after the grant date and another two tranches of 25%, each will vest three and four years after the grant date respectively.

Information about SENAO's outstanding stock options for the year ended December 31, 2019 was as follows:

	Year Ended December 31, 2019	
	Granted on May 7, 2013	
	Number of Options (In Thousands)	Weighted-average Exercise Price NT$
Employee stock options		
Options outstanding at beginning of the year	5,318	$ 66.20
Options forfeited	(5,318)	—
Options outstanding at end of the year	—	—
Options exercisable at end of the year	—	—

As of December 31, 2019, 2020 and 2021, there were no outstanding stock options.
No compensation cost was recognized for the years ended December 31, 2019, 2020 and 2021.

SENAO used the fair value method to evaluate the options using the Black-Scholes model and the related assumptions and the fair value of the options were as follows:

	Stock Options Granted on May 7, 2013
Grant-date share price (NT$)	$ 93.00
Exercise price (NT$)	$ 93.00
Dividend yield	—
Risk-free interest rate	0.91%
Expected life	4.375 years
Expected volatility	36.22%
Weighted average fair value of grants (NT$)	$ 28.72

Expected volatility was based on the historical share price volatility of SENAO over the period equal to the expected life of the SENAO Plan.

b. CHIEF share-based compensation plan ("CHIEF Plan") described as follows:

Effective Date	Grant Date	Stock Options Units	Exercise Price NT$
2015.11.17	2015.10.22	2,000.00	$34.40 (Original price$43.00)
2017.12.18	2017.12.19	950.00	$128.70 (Original price$147.00)
	2018.10.31	50.00	$134.50 (Original price$147.00)
2020.09.16	2020.11.13	200.00	$199.70 (Original price$206.00)

Each option is eligible to subscribe for one thousand common stocks when exercisable. The options are granted to specific employees that meet the vesting conditions. The CHIEF Plan has an exercise price adjustment formula upon the changes in common stocks or distribution of cash dividends. The options of the CHIEF Plan are valid for five years and the graded vesting schedule will vest two years after the grant date.

The Board of Directors of CHIEF resolved to issue stock options on October 26, 2020 and authorized the chairman to decide the grant date. Afterwards, the grant date was decided as November 13, 2020.

The compensation costs for stock options for the years ended December 31, 2019, 2020 and 2021 were as follows:

	Year Ended December 31		
	2019	2020	2021
	NT$	NT$	NT$
		(In Millions)	
Granted on October 22, 2015	$ 0.3	$ —	$ —
Granted on December 19, 2017	0.6	0.2	0.1
Granted on October 31, 2018	0.6	0.3	0.2
Granted on November 13, 2020	—	1.3	9.7
	$ 1.5	1.8	10.0

CHIEF modified the plan terms of stock options granted on December 19, 2017 in June 2019, July 2020 and September 2021; therefore, the exercise price changed from $140.60 to $135.60, $132.70 and $128.70 per share, respectively. The modification did not cause any incremental fair value granted.

CHIEF modified the plan terms of stock options granted on October 31, 2018 in June 2019, July 2020 and September 2021; therefore, the exercise price changed from $147.00 to $141.70, $138.70 and $134.50 per share, respectively. The modification did not cause any incremental fair value granted.

CHIEF modified the plan terms of stock options granted on November 13, 2020 in September 2021; therefore, the exercise price changed from $206.00 to $199.70 per share. The modification did not cause any incremental fair value granted.

Information about CHIEF's outstanding stock options for the years ended December 31, 2019, 2020 and 2021 was as follows:

	Year Ended December 31, 2019					
	Granted on October 22, 2015		Granted on December 19, 2017		Granted on October 31, 2018	
	Number of Options	Weighted Average Exercise Price (NT$)	Number of Options	Weighted Average Exercise Price (NT$)	Number of Options	Weighted Average Exercise Price (NT$)
Employee stock options						
Options outstanding at beginning of the year	882.75	$ 34.40	925.00	$ 140.60	50.00	$ 147.00
Options exercised	(547.25)	34.40	—	—	—	—
Options forfeited	(21.25)	—	(28.00)	—	(4.00)	—
Options outstanding at end of the year	314.25	34.40	897.00	135.60	46.00	141.70
Options exercisable at end of the year	314.25	34.40	448.50	135.60	—	—

	Year Ended December 31, 2020							
	Granted on October 22, 2015		Granted on December 19, 2017		Granted on October 31, 2018		Granted on November 13, 2020	
	Number of Options	Weighted Average Exercise Price (NT$)	Number of Options	Weighted Average Exercise Price (NT$)	Number of Options	Weighted Average Exercise Price (NT$)	Number of Options	Weighted Average Exercise Price (NT$)
Employee stock options								
Options outstanding at beginning of the year	314.25	$ 34.40	897.00	$ 135.60	46.00	$ 141.70	—	$ —
Options granted	—	—	—	—	—	—	200.00	206.00
Options exercised	(314.25)	34.40	(448.50)	135.60	(21.00)	138.70	—	—
Options forfeited	—	—	(21.00)	—	(4.00)	—	—	—
Options outstanding at end of the year	—	—	427.50	132.70	21.00	138.70	200.00	206.00
Options exercisable at end of the year	—	—	213.75	132.70	—	—	—	—

	Year Ended December 31, 2021					
	Granted on December 19, 2017		Granted on October 31, 2018		Granted on November 13, 2020	
	Number of Options	Weighted Average Exercise Price (NT$)	Number of Options	Weighted Average Exercise Price (NT$)	Number of Options	Weighted Average Exercise Price (NT$)
Employee stock options						
Options outstanding at beginning of the year	427.50	$ 132.70	21.00	$ 138.70	200.00	$ 206.00
Options exercised	(213.75)	132.70	(10.50)	134.50	—	—
Options forfeited	(0.50)	—	—	—	(6.00)	—
Options outstanding at end of the year	213.25	128.70	10.50	134.50	194.00	199.70
Options exercisable at end of the year	213.25	128.70	—	—	—	—

As of December 31, 2020, information about employee stock options outstanding was as follows:

Granted on December 19, 2017

Options Outstanding				Options Exercisable	
Range of Exercise Price	Number of Options	Weighted Average Remaining Contractual Life	Weighted Average Exercise Price	Number of Options	Weighted Average Exercise Price
NT$		(Years)	NT$		NT$
$ 132.70	427.50	1.96	$ 132.70	213.75	$ 132.70

Granted on October 31, 2018

Options Outstanding				Options Exercisable	
Range of Exercise Price	Number of Options	Weighted Average Remaining Contractual Life	Weighted Average Exercise Price	Number of Options	Weighted Average Exercise Price
NT$		(Years)	NT$		NT$
$ 138.70	21.00	2.83	$ 138.70	—	$ —

Granted on November 13, 2020

Options Outstanding				Options Exercisable	
Range of Exercise Price	Number of Options	Weighted Average Remaining Contractual Life	Weighted Average Exercise Price	Number of Options	Weighted Average Exercise Price
NT$		(Years)	NT$		NT$
$ 206.00	200.00	4.87	$ 206.00	—	$ —

As of December 31, 2020, all the stock options granted in 2015 were exercised or forfeited.

As of December 31, 2021, information about employee stock options outstanding was as follows:

Granted on December 19, 2017

Options Outstanding				Options Exercisable	
Range of Exercise Price	Number of Options	Weighted Average Remaining Contractual Life	Weighted Average Exercise Price	Number of Options	Weighted Average Exercise Price
NT$		(Years)	NT$		NT$
$ 128.70	213.25	0.96	128.70	213.25	128.70

Granted on October 31, 2018					
Options Outstanding				Options Exercisable	
Range of Exercise Price NT$	Number of Options	Weighted Average Remaining Contractual Life (Years)	Weighted Average Exercise Price NT$	Number of Options	Weighted Average Exercise Price NT$
134.50	10.50	1.83	$ 134.50	—	$ —

Granted on November 13, 2020					
Options Outstanding				Options Exercisable	
Range of Exercise Price NT$	Number of Options	Weighted Average Remaining Contractual Life (Years)	Weighted Average Exercise Price NT$	Number of Options	Weighted Average Exercise Price NT$
$ 199.70	194.00	3.87	$ 199.70	—	$ —

As of December 31, 2021, all the stock options granted in 2015 were exercised or forfeited.

CHIEF used the fair value method to evaluate the options using the Black-Scholes model and binomial option pricing model and the related assumptions and the fair value of the options were as follows:

	Stock Options Granted on October 22, 2015	Stock Options Granted on December 19, 2017	Stock Options Granted on October 31, 2018	Stock Options Granted on November 13, 2020
Grant-date share price (NT$)	$ 39.55	$ 95.92	$ 166.00	$ 356.00
Exercise price (NT$)	$ 43.00	$ 147.00	$ 147.00	$ 206.00
Dividend yield	—	—	—	—
Risk-free interest rate	0.86%	0.62%	0.72%	0.18%
Expected life	5 years	5 years	5 years	5 years
Expected volatility	21.02%	17.35%	16.60%	34.61%
Weighted average fair value of grants (NT$)	$ 4,863	$ 2,318	$ 33,540	$ 173,893

The expected volatility for the options granted in 2020 was based on CHIEF’s average annualized historical share price volatility from June 5, 2018, CHIEF’s listing date on Taipei Exchange, to the grant date. The expected volatilities for the options granted from 2015 to 2018 were based on the average annualized historical share price volatility of CHIEF’s comparable companies before the grant date.

c. CHTSC share-based compensation plan (“CHTSC Plan”) described as follows:

The Board of Directors of CHTSC resolved to issue 4,500 and 3,500 stock options on December 20, 2019 and February 20, 2021, respectively. Each option is eligible to subscribe for one thousand common stocks when exercisable and the exercise price are both $19.085 per share. The options are granted to specific employees that meet the vesting conditions. The CHTSC Plan has an exercise price adjustment formula upon the changes in common stocks. The options of the CHTSC Plan are valid for five years and the graded vesting schedule will vest one year after the grant date.

The compensation costs for stock options for the years ended December 31, 2019, 2020 and 2021 were as follows:

	Year Ended December 31		
	2019	2020	2021
	NT$	NT$ (In Millions)	NT$
Granted on December 20, 2019	$ 0.2	$ 5.7	$ 2.9
Granted on February 20, 2021	—	—	5.5
	$ 0.2	5.7	8.4

Information about CHTSC's outstanding stock options for the years ended December 31, 2019, 2020 and 2021 was as follows:

	Year Ended December 31, 2019 Granted on December 20, 2019	
	Number of Options	Weighted average Exercise Price (NT$)
Employee stock options		
Options outstanding at beginning of the year	—	$ —
Options granted	4,500	19.085
Options outstanding at end of the year	4,500	19.085
Options exercisable at end of the year	—	—

	Year Ended December 31, 2020 Granted on December 20, 2019	
	Number of Options	Weighted average Exercise Price (NT$)
Employee stock options		
Options outstanding at beginning of the year	4,500	$ 19.085
Options forfeited	(172)	—
Options outstanding at end of the year	4,328	19.085
Options exercisable at end of the year	1,082	19.085

	Year Ended December 31, 2021			
	Granted on December 20, 2019		Granted on February 20, 2021	
	Number of Options	Weighted average Exercise Price (NT$)	Number of Options	Weighted average Exercise Price (NT$)
Employee stock options				
Options outstanding at beginning of the year	4,328	$ 19.085	—	$ —
Options granted	—	—	3,500	19.085
Options exercised	(1,082)	19.085	—	—
Options forfeited	(72)	—	(176)	—
Options outstanding at end of the year	3,174	19.085	3,324	19.085
Options exercisable at end of the year	1,058	19.085	—	—

As of December 31, 2020, information about employee stock options outstanding was as follows:

Granted on December 20, 2019

Options Outstanding						Options Exercisable		
Range of Exercise Price NT$		Number of Options	Weighted Average Remaining Contractual Life (Years)	Weighted Average Exercise Price NT$		Number of Options	Weighted Average Exercise Price NT$	
$	19.085	4,328	3.97	$	19.085	1,082	$	19.085

As of December 31, 2021, information about employee stock options outstanding was as follows:

Granted on December 20, 2019

Options Outstanding						Options Exercisable		
Range of Exercise Price NT$		Number of Options	Weighted Average Remaining Contractual Life (Years)	Weighted Average Exercise Price NT$		Number of Options	Weighted Average Exercise Price NT$	
$	19.085	3,174	2.97	$	19.085	1,058	$	19.085

Granted on February 20, 2021

Options Outstanding						Options Exercisable		
Range of Exercise Price NT$		Number of Options	Weighted Average Remaining Contractual Life (Years)	Weighted Average Exercise Price NT$		Number of Options	Weighted Average Exercise Price NT$	
$	19.085	3,324	4.14	$	19.085	—	$	—

CHTSC used the fair value method to evaluate the options using the Black-Scholes model and the related assumptions and the fair value of the options were as follows:

	Stock Options Granted on December 20, 2019		Stock Options Granted on February 20, 2021	
Grant-date share price (NT$)	$	20.17	$	23.76
Exercise price (NT$)	$	19.085	$	19.085
Dividend yield		12.49%		15.18%
Risk-free interest rate		0.54%		0.25%
Expected life		5 years		5 years
Expected volatility		42.41%		47.35%
Weighted average fair value of grants (NT$)	$	2,470	$	3,350

Expected volatility was based on the average annualized historical share price volatility of CHTSC's comparable companies before the grant date.

d. IISI share-based compensation plan ("IISI Plan") described as follows:

IISI issued 1,335 and 1,665 stock options in August 2013 and January 2014, respectively. Each option is eligible to subscribe for one thousand common stocks when exercisable. The options are granted to specific employees of IISI and its subsidiaries that meet the vesting conditions. The options of the IISI Plan are valid for seven years and the graded vesting schedule will vest at certain percentages starting from two years after the grant date. The exercise price of the original options is $14 per share. After the options are issued, if the common stocks of IISI change, the exercise price of the options should be adjusted according to the prescribed formula.

No compensation cost of stock options granted was recognized for the six months ended December 31, 2020 and the year ended December 31, 2021.

Information about IISI's outstanding stock options for the years ended December 31, 2020 and 2021 was as follows:

	Year Ended December 31, 2020			
	Granted in August 2013		Granted in January 2014	
	Number of Options	Weighted Average Exercise Price (NT$)	Number of Options	Weighted Average Exercise Price (NT$)
Employee stock options				
Options outstanding at beginning of the year	—	$ —	—	$ —
Options outstanding upon the date of business combination	1,022.96	14.00	580.00	14.00
Options exercised	(432.50)	14.00	(50.00)	14.00
Options forfeited	(590.46)	—	—	—
Options outstanding at end of the year	—	—	530.00	14.00
Options exercisable at end of the year	—	—	530.00	14.00

	Year Ended December 31, 2021	
	Granted in January 2014	
	Number of Options	Weighted Average Exercise Price (NT$)
Employee stock options		
Options outstanding at beginning of the year	530.00	$ 14.00
Options exercised	(261.00)	14.00
Options forfeited	(269.00)	—
Options outstanding at end of the year	—	—
Options exercisable at end of the year	—	—

As of December 31, 2020, information about employee stock options outstanding was as follows:

Granted in January 2014					
Options Outstanding				Options Exercisable	
Range of Exercise Price	Number of Options	Weighted Average Remaining Contractual Life	Weighted Average Exercise Price	Number of Options	Weighted Average Exercise Price
NT$		(Years)	NT$		NT$
$ 14.00	530.00	0.04	$ 14.00	530.00	$ 14.00

As of December 31, 2020, the options granted to employees in 2013 have been fully exercised or forfeited.

As of December 31, 2021, all the stock options granted in 2013 and 2014 were exercised or forfeited.

IISI used the fair value method to evaluate the options using the Black-Scholes model and the related assumptions and the fair value of the options were as follows:

	Stock Options Granted in August 2013	Stock Options Granted in January 2014
Grant-date share price (NT$)	$ 12.51	$ 14.51
Exercise price (NT$)	$ 14.00	$ 14.00
Dividend yield	6%	6%
Risk-free interest rate	1.20%-1.39%	1.16%-1.32%
Expected life	4.5-5.5 years	4.5-5.5 years
Expected volatility	36.01%-36.62%	35.28%-35.97%
Weighted average fair value of grants (NT$)	$ 1,670	$ 2,345

Expected volatility was based on the average annualized historical share price volatility of IISI's comparable companies before the grant date.

e. CLPT share-based compensation plan ("CLPT Plan") described as follows:

The Board of Directors of CLPT resolved to issue 690 stock options on February 26, 2021. Each option is eligible to subscribe for one thousand common stocks when exercisable and the exercise price is $15.90 per share (original price is $16.87 per share). The options are granted to specific employees that meet the vesting conditions. The CLPT Plan has an exercise price adjustment formula upon the changes in common stocks or distribution of cash dividends. The options of the CLPT Plan are valid for four years and the graded vesting schedule will vest two years after the grant date.

The compensation cost was $0.9 million for the year ended December 31, 2021.

CLPT modified the plan terms of stock options granted on February 26, 2021 in September 2021; therefore, the exercise price changed from $16.87 to $15.90 per share. The modification did not cause any incremental fair value granted.

Information about CLPT's outstanding stock options for the year ended December 31, 2021 was as follows:

	Year Ended December 31, 2021	
	Granted on February 26, 2021	
	Number of Options	Weighted average Exercise Price (NT$)
Employee stock options		
Options outstanding at beginning of the year	—	$ —
Options granted	690	$ 16.87
Options forfeited	(140)	—
Options outstanding at end of the year	550	15.90
Options exercisable at end of the year	—	—

As of December 31, 2021, information about employee stock options outstanding was as follows:

Options Outstanding				Options Exercisable	
Range of Exercise Price NT$	Number of Options	Weighted Average Remaining Contractual Life (Years)	Weighted Average Exercise Price NT$	Number of Options	Weighted Average Exercise Price NT$
$ 15.90	550.00	3.16	$ 15.90	—	$ —

CLPT used the fair value method to evaluate the options using the Black-Scholes model and the related assumptions and the fair value of the options were as follows:

	Stock Options Granted on February 26, 2021
Grant-date share price (NT$)	$ 17.63
Exercise price (NT$)	$ 16.87
Dividend yield	—
Risk-free interest rate	0.31%
Expected life	4 years
Expected volatility	35.22%
Weighted average fair value of grants (NT$)	$ 4,750

Expected volatility was based on the average annualized historical share price volatility of CLPT's comparable companies before the grant date.

36. NON-CASH TRANSACTIONS

Except for those disclosed in other notes, the Company entered into the following non-cash investing and financing activities:

Investing activities	Year Ended December 31 2019 NT$	2020 NT$ (In Millions)	2021 NT$
Increase in property, plant and equipment	$ 23,164	$ 25,195	$ 35,613
Changes in other payables	1,002	(1,684)	(280)
Acquisition of property, plant and equipment	$ 24,166	$ 23,511	$ 35,333
Increase in investment properties	$ 1	$ 1,359	$ 1
Trade-in investment properties from asset exchange transaction (Note 16)	—	(1,305)	—
Acquisition of investment properties	$ 1	$ 54	$ 1
Increase in intangible assets	$ 363	$ 48,605	$ 256
Changes in other assets	—	(1,000)	—
Acquisition of intangible assets	$ 363	$ 47,605	$ 256
Disposal of property, plant and equipment	$ 86	$ 307	$ 30
Gain (loss) on disposal of property, plant and equipment	(38)	1,428	(3)
Trade-in investment properties from asset exchange transaction (Note 16)	—	(1,305)	—
Changes in other payables	—	(80)	—
Changes in other current monetary assets	—	(31)	—
Proceeds from disposal of property, plant and equipment	$ 48	$ 319	$ 27
Disposal of financial assets at fair value through other comprehensive income	$ —	$ 568	$ 2,705
Changes in other current monetary assets	—	(271)	271
Reclassified to investment accounted for using equity method	—	—	(64)
Proceeds from disposal of financial assets at fair value through other comprehensive income	$ —	$ 297	$ 2,912

Financing activities

	Balance on January 1, 2019	Cash Flows from Financing Activities	Changes in Non-Cash Transactions		Cash Flows from Operation Activities - Interest Paid	Balance on December 31, 2019
			New Leases	Others		
	NT$	NT$	NT$ (In Millions)	NT$	NT$	NT$
Lease liabilities	$ 10,340	$ (3,728)	$ 3,803	$ (572)	$ (85)	$ 9,758

	Balance on January 1, 2020	Cash Flows from Financing Activities	Changes in Non-Cash Transactions			Cash Flows from Operation Activities - Interest Paid	Balance on December 31, 2020
			New Leases	Acquired by business combination (Note 14)	Others		
	NT$	NT$	NT$	NT$ (In Millions)	NT$	NT$	NT$
Lease liabilities	$ 9,758	$ (3,683)	$ 3,796	$ 71	$ (265)	$ (80)	$ 9,597

	Balance on January 1, 2021	Cash Flows from Financing Activities	Changes in Non-Cash Transactions		Cash Flows from Operation Activities - Interest Paid	Balance on December 31, 2021
			New Leases	Others		
	NT$	NT$	NT$ (In Millions)	NT$	NT$	NT$
Lease liabilities	$ 9,597	$ (3,729)	$ 4,669	$ (195)	$ (69)	$ 10,273

37. CAPITAL MANAGEMENT

The Company manages its capital to ensure that entities in the Company will be able to continue as going concerns while maximizing the return to stakeholders through the optimization of the debt and equity balance.

The capital structure of the Company consists of debt of the Company and the equity attributable to the parent.

Some consolidated entities are required to maintain minimum paid-in capital amount as prescribed by the applicable laws.

The management reviews the capital structure of the Company as needed. As part of this review, the management considers the cost of capital and the risks associated with each class of capital. According to the management's suggestions, the Company maintains a balanced capital structure through paying cash dividends, increasing its share capital, purchasing outstanding shares, and issuing new debt or repaying debt.

38. FINANCIAL INSTRUMENTS

Categories of Financial Instruments

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Financial assets		
Measured at FVTPL		
Mandatorily measured at FVTPL	$ 687	$ 912
Hedging financial assets	2	—
Financial assets at amortized cost (Note a)	62,405	71,799
Financial assets at FVOCI	7,193	3,616
Financial liabilities		
Measured at FVTPL		
Held for trading	—	6
Hedging financial liabilities	—	8
Measured at amortized cost (Note b)	62,557	64,747

Note a: The balances included cash and cash equivalents, trade notes and accounts receivable, receivables from related parties, other current monetary assets and refundable deposits (classified as other noncurrent assets), which were financial assets measured at amortized cost.

Note b: The balances included short-term loans, short-term bills payable, trade notes and accounts payable, payables to related parties, partial other payables, customers' deposits, bonds payable and long-term loans (included current portion) which were financial liabilities carried at amortized cost.

Financial Risk Management Objectives

The main financial instruments of the Company include equity investments, trade notes and accounts receivable, trade notes and accounts payable, lease liabilities, loans, short-term bills payable and bonds payable. The Company's Finance Department provides services to its business units, co-ordinates access to domestic and international capital markets, monitors and manages the financial risks relating to the operations of the Company through internal risk reports which analyze exposures by degree and magnitude of risks. These risks include market risk (including foreign currency risk, interest rate risk and other price risk), credit risk, and liquidity risk.

The Company seeks to minimize the effects of these risks by using derivative financial instruments to hedge risk exposures. The use of financial derivatives is governed by the Company's policies approved by the Board of Directors. Those derivatives are used to hedge the risks of exchange rate fluctuation arising from operating or investment activities. Compliance with policies and risk exposure limits is reviewed by the Company's Finance Department on a continuous basis. The Company does not enter into or trade financial instruments, including derivative financial instruments, for speculative purposes.

Chunghwa reports the significant risk exposures and related action plans timely and actively to the audit committee and if needed to the Board of Directors.

a. Market risk

The Company is exposed to market risks of changes in foreign currency exchange rates and interest rates. The Company uses forward exchange contracts to hedge the exchange rate risk arising from assets and liabilities denominated in foreign currencies.

There were no changes to the Company's exposure to market risks or the manner in which these risks are managed and measured.

1) Foreign currency risk

The carrying amounts of the Company’s foreign currency denominated monetary assets and monetary liabilities at the balance sheet dates were as follows:

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Assets		
USD	$ 2,711	$ 2,010
EUR	15	49
SGD	170	260
JPY	22	37
RMB	30	89
HKD	69	70
Liabilities		
USD	768	890
EUR	957	861
SGD	1,049	1,964
JPY	10	13
RMB	—	39
HKD	8	16

The carrying amounts of the Company’s derivatives with exchange rate risk exposures at the balance sheet dates were as follows:

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Assets		
USD	$ —	$ —
EUR	4	—
Liabilities		
USD	—	—
EUR	—	14

Foreign currency sensitivity analysis

The Company is mainly exposed to the fluctuations of the currencies USD, EUR, SGD, JPY, RMB and HKD as listed above.

The following table details the Company's sensitivity to a 5% increase and decrease in the functional currency against the relevant foreign currencies. 5% is the sensitivity rate used when reporting foreign currency risk internally to key management personnel and represents management's assessment of the reasonably possible changes in foreign exchange rates. The sensitivity analysis includes only outstanding foreign currency denominated monetary items and forward exchange contracts. A positive number below indicates an increase in pre-tax profit or equity where the functional currency weakens 5% against the relevant currency.

	Year Ended December 31		
	2019	2020	2021
	NT$	NT$ (In Millions)	NT$
Profit or loss			
Monetary assets and liabilities (a)			
USD	$ 83	$ 97	$ 56
EUR	(10)	(47)	(41)
SGD	(52)	(44)	(85)
JPY	—	1	1
RMB	—	1	3
HKD	(1)	3	3
Derivatives (b)			
USD	1	(19)	—
EUR	3	3	13
Equity			
Derivatives (c)			
EUR	4	10	11

a) This is mainly attributable to the exposure to foreign currency denominated receivables and payables of the Company outstanding at the balance sheet dates.

b) This is mainly attributable to forward exchange contracts.

c) This is mainly attributable to the changes in the fair value of derivatives that are designated as cash flow hedges.

For a 5% strengthening of the functional currency against the relevant currencies, there would be an equal and opposite effect on the pre-tax profit or equity for the amounts shown above.

2) Interest rate risk

The carrying amounts of the Company's exposures to interest rates on financial assets and financial liabilities at the balance sheet dates were as follows:

	December 31	
	2020	2021
	NT$ (In Millions)	NT$
Fair value interest rate risk		
Financial assets	$ 24,218	$ 27,671
Financial liabilities	36,576	37,249
Cash flow interest rate risk		
Financial assets	9,306	14,171
Financial liabilities	1,667	1,665

Interest rate sensitivity analysis

The sensitivity analyses below have been determined based on the exposure to interest rates for non-derivative instruments at the end of the reporting period. A 25 basis point increase or decrease is used when reporting interest rate risk internally to key management personnel and represents management's assessment of the reasonably possible change in interest rates.

If interest rates had been 25 basis points higher/lower and all other variables were held constant, the Company's pre-tax income would increase/decrease by $15 million, $19 million and $31 million for the years ended December 31, 2019, 2020 and 2021, respectively. This is mainly attributable to the Company's exposure to floating interest rates on its financial assets, short-term and long-term loans.

3) Other price risk

The Company is exposed to equity price risks arising from holding other company's equity. Equity investments are held for strategic rather than trading purposes. The management managed the risk through holding various risk portfolios. Further, the Company assigned finance and investment departments to monitor the price risk.

Equity price sensitivity analysis

The sensitivity analyses below have been determined based on the exposure to equity price risks at the end of the reporting period.

If equity prices had been 5% higher/lower, pre-tax profit and pre-tax other comprehensive income for the year ended December 31, 2019 would have increased/decreased by $39 million and $358 million as a result of the changes in fair value of financial assets at FVTPL and financial assets at FVOCI, respectively. If equity prices had been 5% higher/lower, pre-tax profit and pre-tax other comprehensive income for the year ended December 31, 2020 would have increased/decreased by $34 million and $360 million as a result of the changes in fair value of financial assets at FVTPL and financial assets at FVOCI, respectively. If equity prices had been 5% higher/lower, pre-tax profit and pre-tax other comprehensive income for the year ended December 31, 2021 would have increased/decreased by $46 million and $181 million as a result of the changes in fair value of financial assets at FVTPL and financial assets at FVOCI, respectively.

b. Credit risk

Credit risk refers to the risk that a counterparty would default on its contractual obligations resulting in financial loss to the Company. The maximum credit exposure of the aforementioned financial instruments is equal to their carrying amounts recognized in the consolidated balance sheet as of the balance sheet date.

The Company has large trade receivables outstanding with its customers. A substantial majority of the Company's outstanding trade receivables are not covered by collateral or credit insurance. The Company has implemented ongoing measures including enhancing credit assessments and strengthening overall risk management to reduce its credit risk. While the Company has procedures to monitor and limit exposure to credit risk on trade receivables, there can be no assurance such procedures will effectively limit its credit risk and avoid losses. This risk is heightened during periods when economic conditions worsen.

As the Company serves a large number of unrelated consumers, the concentration of credit risk was limited.

c. Liquidity risk

The Company manages and maintains sufficient cash and cash equivalent position to support the operations and reduce the impact on fluctuation of cash flow.

1) Liquidity and interest risk tables

The following tables detailed the Company's remaining contractual maturity for its non-derivative financial liabilities with agreed repayment periods. The tables had been drawn up based on the undiscounted cash flows of financial liabilities based on the earliest date on which the Company is required to pay.

December 31, 2020

	Weighted Average Effective Interest Rate (%)	Less than 1 Month NT$	1-3 Months NT$	3 Months to 1 Year NT$ (In Millions)	1-5 Years NT$	More than 5 Years NT$	Total NT$
Non-derivative financial liabilities							
Non-interest bearing	—	$ 37,749	$ —	$ 2,476	$ 4,827	$ —	$ 45,052
Floating interest rate instruments	0.78	—	7	1,660	—	—	1,667
Fixed interest rate instruments	0.50	7,000	—	—	8,800	11,200	27,000
		$ 44,749	$ 7	$ 4,136	$ 13,627	$ 11,200	$ 73,719

Information about the maturity analysis for lease liabilities was as follows:

	Less than 1 Year NT$	1-3 Years NT$	3-5 Years NT$ (In Millions)	More than 5 Years NT$	Total NT$
Lease liabilities	$ 3,397	$ 4,240	$ 1,691	$ 409	$ 9,737

December 31, 2021

	Weighted Average Effective Interest Rate (%)	Less than 1 Month NT$	1-3 Months NT$	3 Months to 1 Year NT$ (In Millions)	1-5 Years NT$	More than 5 Years NT$	Total NT$
Non-derivative financial liabilities							
Non-interest bearing	—	$ 40,895	$ —	$ 1,997	$ 5,336	$ —	$ 48,228
Floating interest rate instruments	0.95	—	15	50	1,600	—	1,665
Fixed interest rate instruments	0.51	—	—	—	10,700	16,300	27,000
		$ 40,895	$ 15	$ 2,047	$ 17,636	$ 16,300	$ 76,893

Information about the maturity analysis for lease liabilities was as follows:

	Less than 1 Year NT$	1-3 Years NT$	3-5 Years NT$ (In Millions)	More than 5 Years NT$	Total NT$
Lease liabilities	$ 3,228	$ 4,126	$ 1,808	$ 1,244	$ 10,406

The following table detailed the Company's liquidity analysis for its derivative financial instruments. The table had been drawn up based on the undiscounted gross inflows and outflows on those derivatives that require gross settlement.

	Less than 1 Month NT$	1-3 Months NT$	3 Months to 1 Year NT$ (In Millions)	1-5 Years NT$	Total NT$
December 31, 2020					
Gross settled					
Forward exchange contracts					
Inflows	$ —	$ 635	$ —	$ —	$ 635
Outflows	—	631	—	—	631
	$ —	$ 4	$ —	$ —	$ 4
December 31, 2021					
Gross settled					
Forward exchange contracts					
Inflows	$ —	$ 471	$ —	$ —	$ 471
Outflows	—	485	—	—	485
	$ —	$ (14)	$ —	$ —	$ (14)

2) Financing facilities

	December 31 2020 NT$	2021 NT$
	(In Millions)	
Facility of unsecured bank loan and commercial paper payable		
Amount used	$ 7,068	$ 65
Amount unused	59,277	61,620
	$ 66,345	$ 61,685
Facility of secured bank loan facility		
Amount used	$ 1,600	$ 1,600
Amount unused	20	—
	$ 1,620	$ 1,600

39. FAIR VALUE INFORMATION

The fair value measurement guidance establishes a framework for measuring fair value and expands disclosure about fair value measurements. The standard describes a fair value hierarchy based on three levels of inputs that may be used to measure fair value. These levels are:

Level 1 fair value measurements: These measurements are those derived from quoted prices (unadjusted) in active markets for identical assets or liabilities.

Level 2 fair value measurements: These measurements are those derived from inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices).

Level 3 fair value measurements: These measurements are those derived from valuation techniques that include inputs for the asset or liability that are not based on observable market data (unobservable inputs).

a. Financial instruments that are not measured at fair value but for which fair value is disclosed

Except those listed in the table below, the Company considers that the carrying amounts of financial assets and liabilities not measured at fair value approximate their fair values or the fair values cannot be reliable estimated.

	December 31, 2020		December 31, 2021	
	Carrying Value	Fair Value	Carrying Value	Fair Value
Financial liabilities				
Financial liabilities measured at amortized cost				
Bonds payable	$ 19,980	$ 20,078	$ 26,977	$ 27,082

The fair value of bonds payable is measured using Level 2 inputs. The valuation of fair value is based on the quoted market prices provided by third party pricing services.

b. Financial instruments that are measured at fair value on a recurring basis

December 31, 2020

	Level 1	Level 2	Level 3	Total
Financial assets at FVTPL				
Derivatives	$ —	$ 2	$ —	$ 2
Listed stocks	8	—	—	8
Non-listed stocks	—	—	677	677
	$ 8	$ 2	$ 677	$ 687
Hedging financial assets	$ —	$ 2	$ —	$ 2
Financial assets at FVOCI				
Listed stocks	$ 2,754	$ —	$ —	$ 2,754
Non-listed stocks	—	—	4,439	4,439
	$ 2,754	$ —	$ 4,439	$ 7,193
Financial liabilities at FVTPL				
Derivatives	$ —	$ —	$ —	$ —

December 31, 2021

	Level 1	Level 2	Level 3	Total
Financial assets at FVTPL				
Listed stocks	$ 3	$ —	$ —	$ 3
Non-listed stocks	—	—	885	885
Limited partnership	—	—	24	24
	$ 3	$ —	$ 909	$ 912
Financial assets at FVOCI				
Listed stocks	$ 459	$ —	$ —	$ 459
Non-listed stocks	—	—	3,157	3,157
	$ 459	$ —	$ 3,157	$ 3,616
Financial liabilities at FVTPL				
Derivatives	$ —	$ 6	$ —	$ 6
Hedging financial liabilities	$ —	$ 8	$ —	$ 8

There were no transfers between Levels 1 and 2 for the years ended December 31, 2019, 2020 and 2021.

The reconciliations for financial assets measured at Level 3 were listed below:

2019

Financial Assets	Measured at Fair Value through Profit or Loss NT$	Measured at Fair Value through Other Comprehensive Income NT$ (In Millions)	Total NT$
Balance at January 1, 2019	$ 517	$ 4,033	$ 4,550
Acquisition	300	—	300
Recognized in profit or loss under "Other gains and losses"	(39)	—	(39)
Recognized in other comprehensive income under "Unrealized gain or loss on financial assets at fair value through other comprehensive income"	—	676	676
Proceed from return of investments	—	(9)	(9)
Balance at December 31, 2019	$ 778	$ 4,700	$ 5,478
Unrealized loss in 2019	$ (39)		

2020

Financial Assets	Measured at Fair Value through Profit or Loss NT$	Measured at Fair Value through Other Comprehensive Income NT$ (In Millions)	Total NT$
Balance at January 1, 2020	$ 778	$ 4,700	$ 5,478
Reclassified from investments accounted for using equity method	—	2	2
Recognized in profit or loss under "Other gains and losses"	(101)	—	(101)
Recognized in other comprehensive income under "Unrealized gain or loss on financial assets at fair value through other comprehensive income"	—	(263)	(263)
Balance at December 31, 2020	$ 677	$ 4,439	$ 5,116
Unrealized loss in 2020	$ (101)		

2021

Financial Assets	Measured at Fair Value through Profit or Loss	Measured at Fair Value through Other Comprehensive Income	Total
	NT$	NT$ (In Millions)	NT$
Balance at January 1, 2021	$ 677	$ 4,439	$ 5,116
Acquisition	25	81	106
Disposal	—	(5)	(5)
Reclassified to investments accounted for using equity method	—	(64)	(64)
Recognized in profit or loss under "Other gains and losses"	251	—	251
Recognized in other comprehensive income under "Unrealized gain or loss on financial assets at fair value through other comprehensive income"	—	(1,294)	(1,294)
Proceeds from return of capital due to capital reduction from investees	(44)	—	(44)
Balance at December 31, 2021	$ 909	$ 3,157	$ 4,066
Unrealized gain in 2021	$ 232		

The fair values of financial assets and financial liabilities of Level 2 are determined as follows:

1) The fair values of financial assets and financial liabilities with standard terms and conditions and traded in active markets are determined with reference to quoted market prices.

2) For derivatives, fair values are estimated using discounted cash flow model. Future cash flows are estimated based on observable inputs including forward exchange rates at the end of the reporting periods and the forward and spot exchange rates stated in the contracts, discounted at a rate that reflects the credit risk of various counterparties.

The fair values of non-listed domestic and foreign equity investments were Level 3 financial assets and determined using the market approach by reference the Price-to-Book ratios (P/B ratios) of peer companies that traded in active markets, using the income approach, in which the discounted cash flow is used to capture the present value of the expected future economic benefits to be derived from the ownership of these investees, or using assets approach. The Company originally used the market approach to measure the fair value of its investment in Taipei Financial Center Corp.; however, as the stock market was impacted by COVID-19 pandemic, the multiples of the referenced companies were changed significantly. With continuing impact of COVID-19 pandemic, the Company evaluated that the income approach, instead of the former market approach, would better reflect the future cash flows of Taipei Financial Center Corp. Therefore, the Company changed its valuation technique to the income approach starting from the second quarter of 2021. The significant unobservable inputs used were listed in the below table. An increase in growth rate of long-term revenue, a decrease in discount for the lack of marketability or noncontrolling interests discount, or a decrease in the weighted average cost of capital ("WACC") would result in increases in the fair values.

	December 31	
	2020	2021
Discount for lack of marketability	14.73%-20.00%	16.05%-20.00%
Noncontrolling interests discount	17.29%-25.00%	17.29%-25.00%
Growth rate of long-term revenue	—	0.19%
WACC	—	8.50%

If the inputs to the valuation model were changed to reflect reasonably possible alternative assumptions while all the other variables were held constant, the fair values of equity investments would increase (decrease) as below table.

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Discount for lack of marketability		
5% increase	$ (320)	$ (32)
5% decrease	$ 320	$ 32
Noncontrolling interests discount		
5% increase	$ (47)	$ (19)
5% decrease	$ 47	$ 19
Long-term revenue growth rates		
0.1% increase	$ —	$ 25
0.1% decrease	$ —	$ (25)
WACC		
1% increase	$ —	$ (288)
1% decrease	$ —	$ 350

40. RELATED PARTIES TRANSACTIONS

The ROC Government, one of Chunghwa's customers, has significant equity interest in Chunghwa. Chunghwa provides fixed-line services, wireless services, internet and data and other services to the various departments and institutions of the ROC Government in the normal course of business and at arm's-length prices. Except for those disclosed in other notes or this note, the transactions with the ROC government bodies have not been disclosed because the transactions are not individually or collectively significant. However, the related revenues and operating costs have been appropriately recorded.

a. The Company engages in business transactions with the following related parties:

Company	Relationship
Taiwan International Standard Electronics Co., Ltd.	Associate
So-net Entertainment Taiwan Limited	Associate
KKBOX Taiwan Co., Ltd.	Associate
KingwayTek Technology Co., Ltd.	Associate
UUPON Inc.	Associate (Note 1)
Taiwan International Ports Logistics Corporation	Associate
International Integrated Systems, Inc.	Subsidiary (Note 2)
Senao Networks, Inc.	Associate
EnRack Tech. Co., Ltd.	Subsidiary of the Company's associate, Senao Networks, Inc.
Emplus Technologies, Inc.	Subsidiary of the Company's associate, Senao Networks, Inc.
ST-2 Satellite Ventures Pte., Ltd.	Associate
CHT Infinity Singapore Pte. Ltd.	Associate
Viettel-CHT Co., Ltd.	Associate
Click Force Co., Ltd.	Associate
Alliance Digital Tech Co., Ltd.	Associate (Note 3)
Chunghwa PChome Fund I Co., Ltd.	Associate
Cornerstone Ventures Co., Ltd.	Associate
Next Commercial Bank Co., Ltd.	Associate
WiAdvance Technology Corporation	Associate
AgriTalk Technology Inc.	Associate (Note 4)
Imedtac Co., Ltd.	Associate (Note 4)
Chunghwa SEA Holdings	Joint venture
Other related parties	
Chunghwa Telecom Foundation	A nonprofit organization of which the funds donated by Chunghwa exceeds one third of its total funds
Senao Technical and Cultural Foundation	A nonprofit organization of which the funds donated by SENAO exceeds one third of its total funds
Sochamp Technology Co., Ltd.	Investor of significant influence over CHST
E-Life Mall Co., Ltd.	One of the directors of E-Life Mall and a director of SENAO are members of an immediate family
Engenius Technologies Co., Ltd.	Chairman of Engenius Technologies Co., Ltd. is a member of SENAO's management
Cheng Keng Investment Co., Ltd.	Chairman of Cheng Keng Investment Co., Ltd. and SENAO's chief executive officer are members of an immediate family
Cheng Feng Investment Co., Ltd.	Chairman of Cheng Feng Investment Co., Ltd. and SENAO's chief executive officer are members of an immediate family
All Oriented Investment Co., Ltd.	Chairman of All Oriented Investment Co., Ltd. and SENAO's chief executive officer are members of an immediate family

(Continued)

Company	Relationship
Hwa Shun Investment Co., Ltd.	Chairman of Hwa Shun Investment Co., Ltd. and SENAO's chief executive officer are members of an immediate family
Yu Yu Investment Co., Ltd.	Chairman of Yu Yu Investment Co., Ltd. and SENAO's chief executive officer are members of an immediate family
Divine Fine Foods & Wine Inc.	Chairman of Divine Fine Foods & Wine Inc. and SENAO's chief executive officer are members of an immediate family (Note 5)
United Daily News Co., Ltd.	Investor of significant influence over SFD
Shenzhen Century Communication Co., Ltd.	Investor of significant influence over SCT
Advantech Co., Ltd.	Investor of significant influence over IISI
Chunghwa Post Co., Ltd.	Government-related entity as Chunghwa Telecom

(Concluded)

Note 1: UUPON was previously an associate. As the Company did not participate in the capital increase of UUPON in October 2020; therefore, the Company lost its significant influence over UUPON. Since then, UUPON was no longer a related party of the Company. Please refer to Note 15.

Note 2: IISI was an associate and has become a subsidiary starting from July 1, 2020 ("acquisition date"). Please refer to Note 14(c). All transactions within the Company were eliminated upon consolidation since the acquisition date.

Note 3: ADT completed its liquidation in August 2021. Please refer to Note 15.

Note 4: ATT and IME were previously treated as financial assets at FVOCI. As the Company acquired seats in the Board of Directors of each company and has significant influence over ATT and IME in July and August 2021, respectively, these investments are reclassified as associates. Please refer to Note 15.

Note 5: Divine Fine Foods & Wine Inc. replaced its responsible persons in October 2021. Since then, Divine Fine Foods & Wine Inc. is no longer a related party of the Company.

b. Balances and transactions between Chunghwa and its subsidiaries, which are related parties of Chunghwa, have been eliminated on consolidation and are not disclosed in this note. Terms of the foregoing transactions with related parties were not significantly different from transactions with non-related parties. When no similar transactions with non-related parties can be referenced, terms were determined in accordance with mutual agreements. Details of transactions between the Company and other related parties are disclosed below:

1) Operating transactions

	Revenues		
	Year Ended December 31		
	2019	2020	2021
	NT$	NT$ (In Millions)	NT$
Associates	$ 274	$ 1,508	$ 499
Others	76	66	55
	$ 350	$ 1,574	$ 554

	Operating Costs and Expenses Year Ended December 31		
	2019	2020	2021
	NT$	NT$	NT$
		(In Millions)	
Associates	$ 964	$ 715	$ 853
Others	76	68	74
	$ 1,040	$ 783	$ 927

2) Non-operating transactions

	Non-operating Income and Expenses Year Ended December 31		
	2019	2020	2021
	NT$	NT$	NT$
		(In Millions)	
Associates	$ 41	$ 37	$ 38
Others	4	3	3
	$ 45	$ 40	$ 41

3) Receivables

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Associates	$ 229	$ 35
Others	1	6
	$ 230	$ 41

4) Contract liabilities-current

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Associates	$ 183	$ —

5) Payables

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Associates	$ 643	$ 386
Others	3	6
	$ 646	$ 392

6) Customers' deposits

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Associates	$ 5	$ 16

7) Acquisition of property, plant and equipment

	Year Ended December 31		
	2019	2020	2021
	NT$	NT$	NT$
		(In Millions)	
Associates	$ 242	$ 375	$ 398

8) Disposal of property, plant and equipment and investment properties to Chunghwa Post Co., Ltd.

	Proceeds		
	Year Ended December 31		
	2019	2020	2021
	NT$	NT$	NT$
		(In Millions)	
Associates	$ —	$ —	$ 10
Others (Chunghwa Post Co., Ltd.)	—	386	—
	$ —	$ 386	$ 10

	Gain on Disposal		
	Year Ended December 31		
	2019	2020	2021
	NT$	NT$	NT$
		(In Millions)	
Associates	$ —	$ —	$ 2
Others (Chunghwa Post Co., Ltd.)	—	310	—
	$ —	$ 310	$ 2

9) Lease-in agreements

Chunghwa entered into a contract with ST-2 Satellite Ventures Pte., Ltd. on March 12, 2010 to lease capacity on the ST-2 satellite. This lease term is for 15 years which should start from the official operation of ST-2 satellite and the total contract value is approximately $6,000 million (SGD$261 million), including a prepayment of $3,068 million at the inception of the lease, and the rest of amount should be paid annually when ST-2 satellite starts its official operation. ST-2 satellite was launched in May 2011 and began its official operation in August 2011. As ST-2 satellite is in good operating condition, the useful life is extended for another 3 years and 3 months after evaluation in 2021. The Board of Directors of Chunghwa approved to extend the lease period accordingly with the original contract terms in December 2021; therefore, Chunghwa acquired right-of-use asset of $1,125 million from the aforementioned lease extension.

The lease liabilities of ST-2 Satellite Ventures Pte., Ltd. as of December 31, 2020 and 2021 were as follows:

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Lease liabilities - current	$ 182	$ 173
Lease liabilities - noncurrent	817	1,741
	$ 999	$ 1,914

The interest expense recognized for the aforementioned lease liabilities for the years ended December 31, 2019, 2020 and 2021 were $11 million, $9 million and $7 million, respectively.

c. Compensation of key management personnel

The compensation of directors and other key management personnel for the years ended December 31, 2019, 2020 and 2021 were as follows:

	Year Ended December 31		
	2019	2020	2021
	NT$	NT$	NT$
		(In Millions)	
Short-term employee benefits	$ 263	$ 290	$ 321
Post-employment benefits	9	11	7
Share-based payment	—	—	2
	$ 272	$ 301	$ 330

The compensation of directors and key management personnel was mainly determined by the compensation committee having regard to the performances and market trends.

41. PLEDGED ASSETS

The following assets are pledged as collaterals for bank loans, custom duties of the imported materials and warranties of contract performance as well as the bank deposits for the restricted purpose in accordance with The Management, Utilization, and Taxation of Repatriated Offshore Funds Act in the ROC.

	December 31	
	2020	2021
	NT$	NT$
	(In Millions)	
Property, plant and equipment	$ 2,462	$ 2,432
Land held under development (included in inventories)	1,999	—
Restricted assets (included in other assets - others)	209	163
	$ 4,670	$ 2,595

42. SIGNIFICANT CONTINGENT LIABILITIES AND UNRECOGNIZED COMMITMENTS

Except for those disclosed in other notes, the Company's significant commitments and contingent liabilities as of December 31, 2021 were as follows:

a. Acquisitions of land and buildings of $572 million.

b. Acquisitions of telecommunications-related inventory and equipment of $21,630 million.

c. Unused letters of credit amounting to $10 million.

d. A commitment to contribute $2,000 million to a Piping Fund administered by the Taipei City Government, of which $1,000 million was contributed by Chunghwa on August 15, 1996 (classified as other monetary assets - noncurrent). If the fund is not sufficient, Chunghwa will contribute the remaining $1,000 million upon notification from the Taipei City Government.

e. Chunghwa committed that when its ownership interest in NCB is greater than 25% and NCB encounters financial difficulty or the capital adequacy ratio of NCB cannot meet the related regulation requirements, Chunghwa will provide financial support to assist NCB in maintaining a healthy financial condition.

f. Chunghwa's Board of Directors approved the acquisition of the 900MHz frequency band and equipment from Asia Pacific Telecom Co., Ltd. in November 2021. The transaction amount is expected to be in the range from $1,626 million to $2,081 million; however, the actual amount will be determined according to the approval date of the related authority and mutual negotiations.

43. SIGNIFICANT SUBSEQUENT EVENTS

a. Chunghwa's Board of Directors approved the issuance of unsecured domestic bonds in January 2022. The total amount of the bonds will not exceed $10,000 million and the issuance period will not exceed 10 years. The bonds could be issued at a one-time basis or separately.

b. Chunghwa's Board of Directors approved an investment in Taiwania Capital Buffalo Fund VI, L.P. at the amount of $600 million in January 2022.

c. Chunghwa launched its organizational transformation based on customer-centric structure effective from January 2022.

44. OTHER MATTERS

The Company has assessed the economic impact of COVID-19 pandemic and determined that there were no significant impacts on the Company's consolidated financial statements as of the date the consolidated financial statements were authorized for issue. The Company will continue to monitor developments of the pandemic and assess the related impacts.

45. SEGMENT INFORMATION

The Company has the following reportable segments that provide different products or services. The reportable segments are managed separately because each segment represents a strategic business unit that serves different markets. Segment information is provided to the CEO who allocates resources and assesses segment performance. The Company's measure of segment performance is mainly based on revenues and income before income tax. The Company's reportable segments are as follows:

a. Domestic fixed communications business - the provision of local telephone services, domestic long distance telephone services, broadband access, and related services;

b. Mobile communications business - the provision of mobile services, sales of mobile handsets and data cards, and related services;

c. Internet business - the provision of HiNet services and related services;

d. International fixed communications business - the provision of international long distance telephone services and related services;

e. Others - the provision of non-telecom services and the corporate related items not allocated to reportable segments.

Some operating segments have been aggregated into a single operating segment taking into account the following factors: (a) similar economic characteristics such as long-term gross profit margins; (b) the nature of the telecommunications products and services are similar; (c) the nature of production processes of the telecommunications products and services are similar; (d) the type or class of customer for the telecommunications products and services are similar; and (e) the methods used to provide the services to the customers are similar.

The accounting policies of the operating segments are the same as those described in Note 3.

a. Segment revenues and operating results

Analysis by reportable segment of revenues and operating results of continuing operations are as follows:

	Domestic Fixed Communi-cations Business NT$	Mobile Communi-cations Business NT$	Internet Business NT$	International Fixed Communi-cations Business NT$	Others NT$	Total NT$
			(In Millions)			
Year ended December 31, 2019						
Revenues						
From external customers	$ 65,728	$ 95,469	$ 30,091	$ 11,485	$ 4,747	$207,520
Intersegment revenues	16,065	1,564	3,951	2,079	4,914	28,573
Segment revenues	$ 81,793	$ 97,033	$ 34,042	$ 13,564	$ 9,661	236,093
Intersegment elimination						(28,573)
Consolidated revenues						$207,520
Segment income (loss) before income tax	$ 19,537	$ 11,250	$ 12,515	$ 799	$ (2,234)	$ 41,867
Year ended December 31, 2020						
Revenues						
From external customers	$ 69,469	$ 90,230	$ 32,115	$ 8,695	$ 7,100	$207,609
Intersegment revenues	15,930	1,536	3,966	1,875	5,369	28,676
Segment revenues	$ 85,399	$ 91,766	$ 36,081	$ 10,570	$ 12,469	236,285
Intersegment elimination						(28,676)
Consolidated revenues						$207,609
Segment income (loss) before income tax	$ 22,504	$ 8,777	$ 13,120	$ 829	$ (2,404)	$ 42,826
Year ended December 31, 2021						
Revenues						
From external customers	$ 64,780	$ 95,249	$ 33,082	$ 9,096	$ 8,271	$210,478
Intersegment revenues	17,430	1,588	3,869	2,009	6,260	31,156
Segment revenues	$ 82,210	$ 96,837	$ 36,951	$ 11,105	$ 14,531	241,634
Intersegment elimination						(31,156)
Consolidated revenues						$210,478
Segment income (loss) before income tax	$ 26,142	$ 6,362	$ 14,512	$ 1,165	$ (2,114)	$ 46,067

b. Other segment information

Other information reviewed by the chief operating decision maker or regularly provided to the chief operating decision maker was as follows:

For the year ended December 31, 2019

	Domestic Fixed Communi-cations Business NT$	Mobile Communi-cations Business NT$	Internet Business NT$	International Fixed Communi-cations Business NT$	Others NT$	Total NT$
			(In Millions)			
Share of profits of associates and joint ventures accounted for using equity method	$ —	$ —	$ —	$ —	$ 459	$ 459
Interest income	$ 15	$ 9	$ 20	$ 41	$ 166	$ 251
Interest expenses	$ 5	$ 58	$ 1	$ 12	$ 28	$ 104
Operating costs and expenses	$ 56,269	$ 72,952	$ 13,850	$ 11,427	$ 12,249	$166,747
Depreciation and amortization	$ 14,842	$ 16,254	$ 2,914	$ 1,547	$ 792	$ 36,349
Capital expenditure	$ 12,071	$ 7,773	$ 1,425	$ 1,117	$ 1,780	$ 24,166
Impairment loss on property, plant and equipment	$ —	$ —	$ —	$ —	$ 93	$ 93
Reversal of impairment loss on investment properties	$ 57	$ —	$ —	$ —	$ —	$ 57
Impairment loss on intangible assets	$ —	$ 9	$ —	$ —	$ —	$ 9
Impairment loss on other assets	$ 13	$ —	$ 13	$ —	$ 18	$ 44

For the year ended December 31, 2020

	Domestic Fixed Communi-cations Business NT$	Mobile Communi-cations Business NT$	Internet Business NT$	International Fixed Communi-cations Business NT$	Others NT$	Total NT$
			(In Millions)			
Share of profits of associates and joint ventures accounted for using equity method	$ —	$ —	$ —	$ —	$ 244	$ 244
Interest income	$ 13	$ 5	$ 17	$ 22	$ 59	$ 116
Interest expenses	$ 6	$ 56	$ 1	$ 10	$ 133	$ 206
Operating costs and expenses	$ 59,371	$ 69,211	$ 15,241	$ 8,573	$ 14,447	$166,843
Depreciation and amortization	$ 14,250	$ 17,800	$ 2,669	$ 1,450	$ 969	$ 37,138
Capital expenditure	$ 11,483	$ 8,827	$ 1,397	$ 779	$ 1,025	$ 23,511
Gain (loss) on disposal of property, plant and equipment	$ 1,442	$ (3)	$ —	$ —	$ (11)	$ 1,428
Gain on disposal of investment properties	$ 151	$ —	$ —	$ —	$ —	$ 151
Reversal of impairment loss on investment properties	$ 27	$ —	$ —	$ —	$ —	$ 27
Impairment loss on intangible assets	$ —	$ 9	$ —	$ —	$ —	$ 9

For the year ended December 31, 2021

	Domestic Fixed Communi-cations Business NT$	Mobile Communi-cations Business NT$	Internet Business NT$	International Fixed Communi-cations Business NT$	Others NT$	Total NT$
			(In Millions)			
Share of profits of associates and joint ventures accounted for using equity method	$ —	$ —	$ —	$ —	$ 421	$ 421
Interest income	$ 7	$ 4	$ 13	$ 5	$ 66	$ 95
Interest expenses	$ 4	$ 48	$ 1	$ 8	$ 157	$ 218
Operating costs and expenses	$ 51,013	$ 74,973	$ 14,150	$ 8,409	$ 16,634	$165,179
Depreciation and amortization	$ 13,978	$ 20,313	$ 2,471	$ 1,417	$ 1,037	$ 39,216
Capital expenditure	$ 13,299	$ 16,809	$ 2,943	$ 445	$ 1,837	$ 35,333
Impairment loss on right-of-use assets	$ —	$ —	$ —	$ 420	$ —	$ 420
Reversal of impairment loss on investment properties	$ 83	$ —	$ —	$ —	$ —	$ 83
Impairment loss on intangible assets	$ —	$ 29	$ —	$ —	$ —	$ 29

c. Main products and service revenues

The following is an analysis of the Company’s revenue from its major products and services.

	Year Ended December 31		
	2019 NT$	2020 NT$	2021 NT$
		(In Millions)	
Mobile services revenue	$ 58,703	$ 56,724	$ 58,048
Sales of products	41,593	39,391	42,907
Local telephone and domestic long distance telephone services revenue	27,929	26,475	25,704
Broadband access and domestic leased line services revenue	22,116	22,420	23,012
Data communications internet services revenue	21,003	21,447	22,281
International network and leased line services revenue	7,066	3,884	4,367
Others	29,110	37,268	34,159
	$ 207,520	$ 207,609	$ 210,478

d. Geographic information

The users of the Company’s services are mainly from Taiwan, ROC. The revenues it derived outside Taiwan are mainly revenues from international long distance telephone and leased line services. The geographic information for revenues was as follows:

	Year Ended December 31		
	2019 NT$	2020 NT$	2021 NT$
		(In Millions)	
Taiwan, ROC	$ 197,895	$ 200,881	$ 204,473
Overseas	9,625	6,728	6,005
	$ 207,520	$ 207,609	$ 210,478

The Company has long-lived assets in U.S., Singapore, Hong Kong, China, Vietnam, Japan, and Thailand and except for $3,746 million and $3,234 million as of December 31, 2020 and 2021, respectively, in the aforementioned areas, the other long-lived assets are located in Taiwan, ROC.

e. Major customers

As of December 31, 2019, 2020 and 2021, the Company did not have any single customer whose revenue exceeded 10% of the total revenues.

Exhibit 1.1

ARTICLES OF INCORPORATION OF CHUNGHWA TELECOM CO., LTD.

1. All of 26 articles adopted by Promoters Meeting on June 11, 1996.
2. Article 15 amended by the Annual General Meeting on December 26, 1997.
3. Articles 2 and 22 amended by the Annual General Meeting on November 25, 1998.
4. Paragraph 1 of Article 21 amended by the Extraordinary General Meeting on July 13, 1999.
5. Articles 2, 3, 6, 7, 10, 12, 13, 19, 21, and 22 amended, and Articles 6-1 and 7-1 added by the Annual General Meeting on June 4, 2001.
6. Articles 2, 7, 8, 9, 10, 19, 21, and 22 amended and Article 5 deleted by the Annual General Meeting on June 21, 2002.
7. Article 2 amended by the Annual General Meeting on June 17, 2003.
8. Articles 2 and 22 amended by the Annual General Meeting on June 25, 2004.
9. Articles 2, 3, 6, 10, 11, 12, 14, 17, 19, 20, 22, 23, and 25 amended, and Articles 12-1, 18-1, and 18-2 added by the Annual General Meeting on May 30, 2006.
10. Articles 2, 12-1, 14, 22, and 23 amended, and Article 18-1 deleted by the Annual General Meeting on June 15, 2007.
11. Articles 2, 6, and 14 amended by the Annual General Meeting on June 19, 2008.
12. Articles 2, 6,12 and 13 amended, and Article 6-1 deleted by the Annual General Meeting on June 19, 2009.
13. Article 2 amended by the Annual General Meeting on June 18, 2010.
14. The title of Chapter IV and Articles 12, 12-1, 14, 19, 20, and 22 amended by the Annual General Meeting on June 22, 2012.
15. The title of Chapter IV, Articles 2, 12, 13, 18-2, 21 and 22 amended; Articles 17 and 18 deleted, and Article 13-1 added by the Annual General Meeting on June 25, 2013.
16. Articles 2 and 15 amended by the Annual General Meeting on June 24, 2014.
17. Articles 1, 2 and 7-1 amended by the Annual General Meeting on June 26, 2015.
18. Articles 2 and 22 amended, and Article 22-1 added by the Annual General Meeting on June 24, 2016.
19. Article 2 amended by the Annual General Meeting on June 15, 2018.
20. Article 2 amended by the Annual General Meeting on June 21, 2019.
21. Article 2 amended by the Annual General Meeting on May 29, 2020.
22. Article 1, 2, 14, 19 and 20 amended by the Annual General Meeting on August 20, 2021.

Chapter I - General Provisions

Article 1 - The Company is promoted by the Ministry of Transportation and Communications ("MOTC") and others and organized under the Telecommunication Law and the provisions of the Company Law pertaining to companies limited by shares and is named "Chunghwa Telecom Co., Ltd.".

The English name of the Company is "Chunghwa Telecom Co., Ltd.".

In response to the implementation of Telecommunications Management Act, the Company has completed the telecommunication business conversion registration on September 30, 2020, and the telecommunication business is changed to be governed under the Telecommunications Management Act.

Article 2 - The scope of business of the Company shall be as follows:

1) Telecommunications Enterprises (G903010);

2) Installation of the Computer Equipment Business (E605010);

3) Telecommunication Equipment Wholesale Business (F113070);

4) Telecommunication Equipment Retail Business (F213060);

5) Telecommunication Engineering Business (E701010);

6) Installation of the Radio-Frequency Equipment whose operation is controlled by the Telecommunication Business (E701030);

7) Information Software Service Business (I301010);

8) Rental Business (JE01010);

9) Other Wholesale Businesses (F199990);

10) Management and Consulting Service Business (I103060);

11) Other Corporation Service Businesses (IZ99990);

12) Other Retail Businesses (F299990);

13) Online Certification Service Businesses (IZ13010);

14) Supply of Electronic Information Service Businesses (I301030);

15) Information Process Service Business (I301020);

16) Telecommunication Account Application Agency Businesses (IE01010);

17) Residential and Commercial Building Development, Rental and Sales Businesses (H701010);

18) Development of Special District/Zone Businesses (H701040);

19) Real Estate Rental Businesses (H703100);

20) Community Common Cable Television Equipment Businesses (J502020);

21) Exhibition Service Businesses (JB01010);

22) Parking Lot Operation Businesses (G202010);

23) Environmental Assessment Service Businesses (J101050);

24) Computer and Accessories Manufacturing Service (CC01110);

25) Information Storage and Process Equipment Manufacturing Businesses (CC01120);

26) Other Electrical and Electronic Machinery & Equipment Manufacturing Businesses (CC01990);

27) General Hotel Business (J901020);

28) Computer and Administrative Device Wholesale Businesses (F113050);

29) Information Software Wholesale Businesses (F118010);

30) Computer and Administrative Device Retail Businesses (F213030);

31) Information Software Rental Businesses (F218010);

32) Energy Service Business (IG03010);

33) Engineering Consulting Business (I101061);

34) Refrigeration and Air-Conditioning Consulting Business (E602011);

35) Automatic Control Equipment Engineering Business (E603050);

36) Lighting Equipment Installation Business (E603090);

37) Non-store Retailer Business (F399040);

38) Power Equipment Installation and Maintenance Business (E601010);

39) Electrical Appliance Installation Business (E601020);

40) Instrument Installation Engineering Business (EZ05010);

41) Television Program Production Business (J503020);

42) Broadcasting and Television Program Launch Business (J503030);

43) Broadcasting and Television Advertising Business (J503040);

44) Production, Licensed Recording and Supply of Videotape Program Business (J503050);

45) The Third Party Payment Business (I301040);

46) Water Pipe Construction Business (E501011);

47) Machinery and Equipment Manufacturing Business (CB01010);

48) Traffic Signals Installation and Construction Business (E603080);

49) Traffic Labels Construction Business (EZ06010);

50) Medical Device Wholesale Business (F108031);

51) Medical Device Retail Business (F208031);

52) Metrological Instruments Importing Business (F401181);

53) Metrological Instruments Repairing Business (JA02051);

54) Metrological Instruments Manufacturing Business (CE01021);

55) Except the permitted business, the Company may engage in other businesses not prohibited or restricted by laws and regulations (ZZ99999).

The Company may handle endorsement and guaranty affairs in accordance with the Operation Procedures for the Endorsement and Guaranty of the Company if there is any business needs.

Article 3 - In the event that the Company invests in another business as a limited-liability shareholder, the total investment amount may not exceed the total paid-in capital of the Company. Investment not related to telecommunications may not exceed 20% of the total paid-in capital of the Company.

Article 4 - The head office of the Company is located in Taipei City and the Company may establish branch office(s) and liaison office(s) at appropriate locations within or outside the territory of the Republic of China.

Article 5 - (Deleted)

Chapter II - Shares

Article 6 - The registered capital of the Company shall be One Hundred Twenty Billion New Taiwan Dollars (NT$120,000,000,000), divided into Twelve Billion (12,000,000,000) common shares with a par value of Ten New Taiwan Dollars (NT$10) per share. All the shares shall be issued in increments.

Two Hundred Million shares shall be set aside from the aforementioned common shares for the use as Stock Warrants, Preferred Shares with Warrants, and Bonds with Warrants.

For issuance of Stock Warrants where the price is less than the closing price of the Company shares on the date of issuance, or where the price of the treasury stocks to be transferred to the employees is less than the average price of the repurchased shares, shareholders representing the majority of the issued shares shall be present and approval by at least 2/3 of the presenting shareholders shall be required.

Article 6-1 - (Deleted)

Article 7 - The share certificates of the Company shall bear the shareholders' names, be signed or sealed by the Chairman and at least two other directors, be serially numbered, affixed with the corporate seal of the Company, and legalized by the Ministry of Economic Affairs ("MOEA") (hereinafter referred to as the "Competent Authority") or its certified issuance registration agency before they are issued in accordance with the relevant laws.

When issuing new shares, the Company may print a share certificate in respect of the full number of shares to be issued at that time, and shall arrange for the certificate to be kept by a centralized securities custodian institution, in which case the preceding requirement for serial numbering of share certificates shall not apply.

Shares issued by the Company may also be exempt from printing of share certificates, and the Company shall arrange for such shares to be recorded by a centralized securities custodian institution, in which case the preceding 2 paragraphs shall not apply.

Any affair with regard to the shares of the Company shall be handled in accordance with the Guidelines for Handling Stock Affairs by a Public Issuing Company.

Article 7-1 - The stocks issued by the Company, upon the request of the centralized securities custodian institution, may be merged in exchange for the security with large par value.

Chapter III - Shareholders' Meeting

Article 8 - Shareholders' meetings shall be of two types: annual general meeting and extraordinary general meeting. Except as otherwise provided in the Company Law, shareholders' meetings shall be convened by the Board of Directors.

The annual general meeting shall be convened at least once every year and shall be convened within six (6) months after the close of each fiscal year except as otherwise approved by the Competent Authority for good cause shown.

The extraordinary general meeting shall be convened at such time as may be deemed necessary pursuant to relevant laws and regulations.

Article 9 - Where a shareholders’ meeting is convened by the Board of Directors, the chairman of the Company shall act as the chairman of the shareholders' meeting. In the event that the chairman is to be on leave of absence or cannot attend the meeting for any cause whatsoever, the vice-chairman, or where the chairman and the vice-chairman are both to be on leave of absence or cannot attend the meeting for any cause whatsoever, one of the directors appointed by the chairman, or, where there is no appointment, a director elected among all the directors, may act on behalf of the chairman.

Where a shareholders' meeting is convened by a person with authority other than the Board of Directors, such convener shall act as the chairman of the shareholders' meeting. Where there are two (2) or more conveners, the chairman of the meeting shall be elected amongst such conveners.

Article 10 - Unless otherwise specified by the law, each shareholder of the Company shall be entitled to one vote for each share held.

Article 11 - (Deleted)

Chapter IV – Directors and Audit Committee

Article 12 - The Company shall have seven (7) to fifteen (15) directors to form the Board of Directors, one-fifth (1/5) of whom shall be expert representatives.

The Board of Directors shall have one (1) chairman elected by and from among the directors with the concurrence of a general majority of the directors present at a meeting attended by at least two-thirds (2/3) of the directors and shall have one (1) vice-chairman elected in the same way.

The Board of Directors may establish various functional committees according to the laws and regulations or business needs.

The Company shall establish an audit committee starting from the 7th Board of Directors. The provisions related to supervisors under the Company Act, Securities and Exchange Act and other laws shall apply mutatis mutandis to the audit committee.

Article 12-1- In accordance with Articles 181-2 and 183 of the Securities and Exchange Act, the Company shall, beginning in the fifth commencement, establish at least three (3) independent directors to be included in the number of directors designated in the preceding Article.

The elections for directors of the Company shall proceed with the candidate nomination system; the shareholders shall elect the directors from among the nominees listed in the roster of candidates.

Elections for independent and non-independent directors shall proceed concurrently, and the number of elected directors shall be calculated separately.

The professional qualifications, restrictions on shareholding and concurrent post, affirmation of independence, nomination and election processes, exercise of authority and other requirements of independent directors shall be determined and executed in accordance with the Securities and Exchange Law and related regulations.

Article 13- The tenure of office of the directors will be three (3) years and they will be eligible for re-election.

In the event that the representative of a government or corporate body is elected as the director, the government or corporate body may reappoint such representative at anytime to supplement the original tenure.

Article 13-1- The remuneration and compensation of the directors shall be determined by the Board of Directors based on the participation and the contribution of each director in the business operation of the Company and referencing the regular standards of other corporations in the similar industry.

Article 14- The following items shall be decided by the Board of Directors:

1) Increase or reduction of capital of the Company.

2) Regulations with regard to the organization of the Company.

3) Establishment, amendment, and abolishment of the branch offices within or outside the territory of the Republic of China.

4) Examination of annual business budgets and final closing report.

5) Distribution of earnings or off-set of deficit.

6) The amount and term of domestic and foreign loan.

7) The amount of Investment.

8) Issuance of corporate bonds.

9) Policies regarding personnel matters, material purchase, accounting, and internal control.

10) Amendment and modifications of regulations of organization of the Board of Directors and the functional committee.

11) Amendment and modification of regulations with regard to the scope of duties of independent directors.

12) Appointment and removal of the president, executive vice presidents, presidents of branch offices, president of Telecommunication Laboratories, and president of Telecommunication Training Institute.

13) Appointment and removal of the chiefs of finance, accounting and internal audit.

14) Policies regarding recommendation of chairman and president to subsidiaries.

15) Other duties and powers granted by the law or by shareholders' meeting.

Article 15 - The Board of Directors' meeting shall be convened at least one time a quarter. The special Board of Directors' meeting shall be convened at such time as may be deemed necessary. Both meetings shall be convened by the chairman of the Company and such chairman shall act as the chairman of the meeting. In the event that the chairman cannot attend the meeting for any cause whatsoever, the vice-chairman, or where the chairman and the vice-chairman are both to be on leave of absence or cannot attend the meeting for any cause whatsoever, one of the directors appointed by the chairman, or, where there is no appointment, a director elected among all the directors, may act on behalf of the chairman.

Article 16 - All directors shall attend every Board of Directors' meeting; in case any of the directors cannot attend the meeting for any cause whatsoever, he/she may designate the other directors to act on his/her behalf and such agent shall present the proxy setting forth the vested power of the purpose of the meeting each time. However, each agent shall only accept one appointment from the directors.

Except as otherwise provided in the relevant laws or this Articles of Incorporation, any resolution of a Board of Directors' meeting shall be adopted at a meeting which at least general majority of the directors attend and at which meeting a general majority of the directors present vote in favor of such resolution.

Minutes of meetings shall be prepared for all resolutions adopted at a Board of Directors' meeting.

Article 17 - (deleted).

Article 18 - (deleted).

Article 18-1- (deleted).

Article 18-2- The Company may purchase liability insurance policies for directors during the term of their offices and within the scope of damages results from the performances of their official duties in order to reduce and disperse the risks for the Company and shareholders due to the fault, mistake, violation of duty, and inaccurate or misleading statements on part of the directors during the performance of their duties.

Chapter V - Managerial Officers

Article 19 - The Company shall have one (1) chief executive officer, to be served as a concurrent post by the chairman or by the president, to lead the managers in proposing and making significant policy decisions regarding to the Company and all affiliates of the Company.

The Company shall have one (1) president, several executive vice presidents and presidents of branch offices, and one (1) president for each of Telecommunication Laboratories and Telecommunication Training Institute.

The president shall be a director with professional knowledge in business of telecommunication or technology.

Article 20 - The president shall, in accordance with the decision made by the Board of Directors and with instruction from the chief executive officer, take charge of the affairs of the Company, and shall have the authority to sign on behalf of the Company; the executive vice presidents, presidents of branch offices, president of Telecommunication Laboratories, and president of Telecommunication Training Institute shall assist the president in all affairs, and shall have the power to sign on behalf of the Company within the scope set by rules decided by the president or authorized in writing by the president.

The division of powers and duties between the Board of Directors and the managers shall be determined in accordance with the Powers and Duties Chart.

Chapter VI - Accounting

Article 21 - The fiscal year of the Company shall be from January 1 to December 31 of each year.

At the end of each fiscal year, the Board of Directors shall prepare the following statements and reports, and shall submit the same to the annual general meeting for adoption according to the relevant legal procedures.

1) Report of Operations;

2) Financial statements;

3) Resolution governing the distribution of earnings or the making-up of losses.

Article 22 - In annual profit-making year, the Company should distribute 1.7% - 4.3% of profit as employees' compensation, and not more than 0.17% of profit should be distributed as Directors' compensation, however, that if the Company has any accumulated losses, an amount to offset should be reserved in advance.

The Company should by a resolution adopted by a majority vote at a meeting of the Board of Directors attended by two-thirds of the total number of directors, have the profit distributable as employees' compensation in the preceding paragraph distributed in the form of share or in cash; and report at the General Meeting of shareholders.

The provisions in the two preceding Paragraphs have retrospective effect and should apply to the determination of compensation to employees and Directors for the fiscal year of 2015.

Article 22-1- After the Company has paid all taxes due at the end of each fiscal year, the Company shall make up its accumulated losses and set aside ten percent (10 %) earning as a statutory revenue reserve before distribution of earnings, except when the accumulated amount of such legal reserve equals to the Company's total authorized capital. The Company may also set aside or reverse special reserve(s) according to the business needs or laws and regulations. A minimum of fifty percent (50%) of the total amount of the remaining amount, along with the accumulated retained earnings from the previous year, shall be distributed to shareholders. Cash dividends shall not be less than fifty percent (50%) of the total dividends, but when the cash dividends fall below NT$0.1 per share, dividends may be distributed in the form of shares.

The percentage of distribution stipulated in the preceding paragraph shall take actual profitability of the year, capital budgeting, and status of finance into consideration, and shall be executed following a resolution of shareholders' meeting.

Dividends and bonuses shall not be distributed where the Company has no earning.

Where the Company has no loss, it may distribute the capital reserve derived from the income of issuance of new shares at a premium, in whole or in part, by issuing new shares or by cash to shareholders in proportion to the number of their existing shares being held by each of them.

Article 23 - In the event that the Company issues new shares, excluding ad hoc ratification by the central competent authority, the Company shall reserve ten percent (10%) to fifteen percent (15%) of the total newly issued shares for preemptive subscription by employees of the Company.

Chapter VII - Supplementary Provisions

Article 24 - The regulations with regard to the organization of the Board of Directors and the Company shall be separately adopted.

Article 25 - Matters not specified herein shall be resolved in accordance with the Company Law.

Article 26 - This Articles of Incorporation was adopted on June 11, 1996.

Exhibit 8.1

LIST OF SUBSIDIARIES

(as of March 31, 2022)

NAME OF ENTITY	JURISDICTION OF INCORPORATION
CHIEF Telecom Inc.	Taiwan, R.O.C.
Unigate Telecom Inc.	Taiwan, R.O.C.
CHYP Multimedia Marketing & Communications Co., Ltd.	Taiwan, R.O.C.
Chunghwa Investment Co., Ltd.	Taiwan, R.O.C.
Chunghwa Precision Test Tech. Co., Ltd.	Taiwan, R.O.C.
Chunghwa System Integration Co., Ltd.	Taiwan, R.O.C.
Light Era Development Co., Ltd.	Taiwan, R.O.C.
Senao International Co., Ltd.	Taiwan, R.O.C.
Youth Co., Ltd.	Taiwan, R.O.C.
ISPOT Co., Ltd.	Taiwan, R.O.C.
Youyi Co., Ltd.	Taiwan, R.O.C.
Aval Technologies Co., Ltd.	Taiwan, R.O.C.
Wiin Technology Co., Ltd.	Taiwan, R.O.C.
SENYOUNG Insurance Agent Co., Ltd.	Taiwan, R.O.C.
Senaolife Insurance Agent Co., Ltd.	Taiwan, R.O.C.
Spring House Entertainment Tech. Inc.	Taiwan, R.O.C.
Honghwa International Co., Ltd.	Taiwan, R.O.C.
Chunghwa Sochamp Technology Inc.	Taiwan, R.O.C.
Smartfun Digital Co., Ltd.	Taiwan, R.O.C.
Chunghwa Leading Photonics Tech Co., Ltd.	Taiwan, R.O.C.
CHT Security Co., Ltd.	Taiwan, R.O.C.
International Integrated Systems, Inc.	Taiwan, R.O.C.
Unitronics Technology Corp.	Taiwan, R.O.C.
TestPro Investment Co., Ltd.	Taiwan, R.O.C.
Prime Asia Investments Group Ltd.	British Virgin Islands
Donghwa Telecom Co., Ltd.	Hong Kong
Senao International HK Limited	Hong Kong
Chunghwa Hsingta Co., Ltd.	Hong Kong
International Integrated Systems (Hong Kong) Limited	Hong Kong
Chunghwa Telecom Japan Co., Ltd.	Japan
CHPT Japan Co., Ltd.	Japan
IISI Investment Co., Ltd.	Mauritius
Leading Tech Co., Ltd.	Mauritius
Leading Systems Co., Ltd.	Mauritius
Chief International Corp.	Samoa Islands
Senao International (Samoa) Holding Ltd.	Samoa Islands
Chunghwa Precision Test Tech. International, Ltd.	Samoa Islands
Infoexplorer International Co., Ltd.	Samoa Islands
Chunghwa Telecom (China), Co., Ltd.	People’s Republic of China
Shanghai Taihua Electronic Technology Limited	People’s Republic of China
Su Zhou Precision Test Tech. Ltd.	People’s Republic of China
Shanghai Chief Telecom Co., Ltd.	People’s Republic of China
Chunghwa Telecom Singapore Pte., Ltd.	Singapore
Chunghwa Telecom Global, Inc.	United States of America
Chunghwa Precision Test Tech USA Corporation	United States of America
Chunghwa Telecom Vietnam Co., Ltd.	Vietnam
Chunghwa Telecom (Thailand) Co., Ltd.	Thailand

Exhibit 11.1

Code of Ethics of Chunghwa Telecom Co., Ltd.

1. All articles adopted by the 2nd special meeting of the Company's 3rd Board of Directors on April 28, 2004.
2. The amendment approved by the 12th meeting of the Company's 4th Board of Directors on March 28,2006.
3. The amendment approved by the 8th meeting of the Company's 6th Board of Directors on April 26,2011.
4. The amendment approved by the 17th meeting of the Company's 6th Board of Directors on August 29, 2012.
5. The amendment approved by the 2nd meeting of the Company's 7th Board of Directors on August 13, 2013.
6. The amendment approved by the 9th Board of Directors at the 5th interim meeting on September 28, 2021.

Article 1 Purpose and applicable scope

Chunghwa Telecom Co., Ltd. (hereinafter referred to as the “Company”) and its directors, managers and employees shall conduct business throughout the world in accordance with the highest ethical standards. This Code of Ethics is hereby stipulated in order to establish an obedience and maintenance standard.

The Code of Ethics embodies rules regarding individual and group responsibilities, as well as responsibilities to the Company, the public, and other stakeholders. This Code of Ethics applies to the Company’s directors, managers and employees. The purpose of this Code of Ethics is to prevent from wrongdoing and to cause their conducts to be in compliance with the following requirements:

1. Honesty and ethics;
2. Avoiding conflict of interest;
3. No appropriation for personal gains;
4. Caring for employees;
5. Keeping trade secrets;
6. Disclosing the Company’s information in a full, fair, accurate, timely, and understandable manner;
7. Treating fairly with the Company’s customers, suppliers, and competitors;
8. Protecting the Company’s assets and utilizing them in an efficient and legitimate manner;
9. Complying with laws, rules, and regulations;
10. Preventing from insider trading;
11. Preventing from corruption and bribery;
12. Implementing environmental protection and establish a healthy and safe working environment;
13. Reporting and handling discovered violations against the Code of Ethics; and
14. Full understanding and compliance with this Code of Ethics.

Article 2 Honesty and ethics

The Company’s directors, managers and employees shall act according to the ethics and perform their duties with honesty.

Honest conduct mentioned above refers to a conduct that is free from intent of fraud or fact of deception. Conduct in compliance with ethics refers to a conduct that meets the professional standards, including the handling of conflict of interests in connection with the personal matters or their duties.

Articles 3 Avoiding conflict of interest

“Conflicts of interests” stipulated in the previous Article refers to a situation where directors, managers and employees face a choice between their personal interests (financial interests or otherwise) and the interests of the Company.

Conflicts of interests will always cause public concerns toward the Company image. Services to the Company shall not be provided basing on personal interests, and directors, managers and employees are required to act in the Company’s best interest to avoid from any conflicts of interests.

Where the Company's directors, managers and employees are in a position whose objectivity may be questioned because of personal interests or interests of their spouse, children, or relatives within the second degree (including working for companies whose interests are in the direct competition with the Company) shall notify their immediate supervisor or the Company's Organization and Talent Development Department. Where any individual is aware that a material transaction or relationship might give rise to a personal conflict of interests, he/she shall discuss about the matter with his/her immediate supervisor or the Company's Organization and Talent Development Department immediately.

A conflict of interests may arise when a director takes action or has interests that might make him/her difficult to perform the director's duty objectively and effectively. A conflict of interests will arise where a director, or the director's spouses, children or relatives within the second degree, receives improper personal benefits because of the director's position in the Company. Directors shall not have a direct economic relationship with the Company unless otherwise authorized by Chunghwa's Board of Directors (hereinafter referred to as the "Board").

Loans to or guarantees in favor of directors, senior managers or their spouses, children, and relatives within the second degree are prohibited in order to avoid the conflicts of interests. Loans to the other personnel shall be reviewed and approved in advance pursuant to the Company's rules.

While potential conflict of interests involving directors, or senior managers shall be reviewed directly by the Board, those of other personnel of the Company shall be reviewed in accordance with the Company's relevant regulations. The relevant activities may be permitted if they are determined to be not harmful to the Company.

Article 4 No appropriation for personal gains

Directors, managers and employees have the obligation to protect the Company's legitimate interests. Any individual unless the Company otherwise agrees, shall not take advantage of the Company's assets, information or its position to obtain personal interests.

Any person is prohibited from competing with the Company unless it is otherwise approved in writing by the Company's Organization and Talent Development Department in advance.

Articles 5 Caring for Employees

Employees are the most important assets of the Company. The Company's sustainable development relies on excellent employees who have realized their dreams in an excellent working environment and abundant business opportunities. The Company's management shall be in compliance with the following requirements:

1. Complying with labor related laws and regulations;
2. Treating each employee fairly, openly, and justly;
3. Caring for employees, respecting employees, and listening to the employees;
4. Motivating employee's innovation and passion toward the Company;
5. Providing employees with a safe, healthy, and sanitary working environment;
6. Striving to improve working conditions;
7. Protecting employee's legitimate rights and interests;
8. Improving harmony relationship between employer and employees;
9. Creating working opportunities of employees and value; and
10. Implementing the compliance with collective bargaining agreement.

Article 6 Keeping trade secrets

"Trade secret" is defined under this Code of Ethics, which includes all the Company's trade secrets and information that is obtained from or through business or cooperative relationship which shall be kept confidential. The Company's directors, managers and employees shall keep the trade secret they obtain confidential, except where the disclosure is required by applicable laws, rules or regulations or authorized by the Company.

Article 7 Disclosing the Company's information in a full, fair, accurate, timely, and understandable manner

All the Company related transactions and any disposition of assets shall be reflected in the accounts, financial statements and records of the Company in a full, fair, accurate, and timely manner.

All directors, managers and employees handling the Company’s disclosure process are required to know and understand the relevant rules with respect to disclosure requirements within the scope of their duties and shall ensure that information in documents that the Company files with or submits to the Securities and Futures Bureau, Financial Supervisory Commission, Executive Yuan, R.O.C (hereinafter referred to as ” SFB”) and the U.S. Securities and Exchange Commission (hereinafter referred to as ”U.S. SEC”) or information otherwise disclosed to the public, is provided in a full, accurate, timely, and understandable manner.

The Company’s financial statements must be prepared in accordance with the Company's internal accounting principles so that the financial statements will fairly and completely reflect the business transactions and financial condition of the Company.

Directors, managers and employees shall not intentionally make (or cause others to make) any incomplete, misleading, or false statement to an attorney, accountant, government agencies, audit institutions, or relevant agencies (such as the SFB, New York Stock Exchange, or U.S. SEC). Any of the above mentioned personnel shall not directly or indirectly force, manipulate, mislead, or fraudulently influence any of the Company’s auditors if he/she knows (or should have known) that his/her actions, if successfully, have resulted in a significant misleading in the Company’s financial statements.

Article 8 Treating fairly with the Company

The Company strives to increase its market competitiveness through its superior performance and products without the use of illegal or unethical methods. The Company’s directors, managers and employees shall respect the rights and benefits of, and shall treat fairly with, the Company’s customers, suppliers, competitors, and employees, and shall not take unfair advantage of anyone through manipulation, concealment, abuse of privileged information, or any material misrepresentation. Any person shall not be engaged in any of the following activities:

1. Receiving from or giving to any customer, supplier, or any party related to the Company any rebate or other improper benefits;
2. Spreading false rumors about customers, suppliers, or competitors;
3. Intentionally misrepresenting the function, quality or content of the Company’s products and services; or
4. Taking unfair advantage of any third party to obtain unfair benefits in order to benefit the Company.

Article 9 Protecting the Company’s assets and utilizing them in an efficient and legitimate manner

The Company’s assets shall be well protected and can only be used for legitimate business purpose of the Company. The Company’s assets, whether tangible or intangible, may be used only by authorized employees or their designees unless it is otherwise permitted by the management.

Any person shall not make use of, steal, or intentionally misappropriate the assets of the Company or of any customers (including any trade secrets of the Company), for personal use, the use of another, or for other improper purpose. Any person shall not remove, destroy, or dispose of any valuables of the Company without the permission of management.

Article 10 Complying with applicable governmental laws, rules and regulations

Directors, managers and employees are obliged to comply with all the laws and regulations applicable to the Company’s business activities and with all the Company policies.

The Company’s business activities are subject to the relevant laws, regulations, and rules in the ROC and U.S., and are subject to market examination and other regulatory supervisory. The Company’s products and services are provided basing on contractual commitments which subject to the following principles:

1. Any person shall not intentionally violate any laws or regulations and shall consult with personnel in the internal legal department on any matter that is likely to violate any law or regulation or any of the Company’s contractual commitment.
2. Any person shall not obtain benefits from a customer and supplier by any illegitimate manner (including intention to mislead or manipulate) and shall not make a misstatement about the Company or its products

or services.

3. Any person shall not make a misstatement about facts, contractual terms, or Chunghwa policies to customer, supplier, or regulator. If a misstatement is made, it shall be presented to with the supervisor and the internal legal department for consultation and corrected as soon as possible.
4. Procedures established by the Company that governs the retention and destruction of records shall be in line with applicable laws and regulations, the Company policies, and business needs. Documents related to any pending or potential lawsuit or governmental investigation may not be destroyed, altered, or falsified. Where there is an event of litigation or government investigation, it shall be presented to the internal legal department for consultation and handled according to its instructions accordingly
5. Any of the following illegal business practices shall not be done with representatives of competing companies:
   （1） Setting prices jointly;
   （2） Allocating or dividing markets or customers;
   （3） Boycotting or refusing from trading with other customers, suppliers, or competitors; or
   （4） Engaging in any other illegal behavior that would restrain competition.
6. Any person shall not discuss or exchange sensitive business competing information with representatives of competing companies unless otherwise with a prior approval of the internal legal department or the compliance officer.

Article 11 Preventing from insider trading

Directors, managers and employees are prohibited from trading securities while they are in possession of material nonpublic information.

Directors, managers and employees shall comply with the relevant securities laws and the Company's policies regarding insider trading, securities transactions and processing of business confidential information.

The Company, directors, managers and employees shall follow the following basic rules when engaged in securities (including bonds) transactions:

1. Complying with all applicable insider trading related laws.
2. Unless otherwise permitted by the R.O.C. laws or approved by the relevant authority, any person shall not trade the Company securities while he/she possesses material and nonpublic information about the Company’s operations, activities, plans, or financial results.
3. Material information refers to the information that may affect someone’s decision to buy, hold, or sell a company’s securities. Material information includes a company’s expected earnings, significant businesses plans of acquisition or sale, and changes to senior high-level managers. Any trading is prohibited prior to disclosure of material information or within 18 hours after the disclosure.
4. Unless otherwise permitted by the laws or rules of the SFB or U.S. SEC, any person shall not trade securities of other companies when he/she possesses material nonpublic information about the companies. In addition, any person shall not trade securities of other companies when such trade will become illegal or result in a conflict of interests.
5. Material nonpublic information of the Company and other companies which belongs to the Company cannot be appropriated by any person and shall not be disclosed to the following persons even there is no profits arising therefrom:
   (1) The Company’s employees who does not need to know the information for operational purpose;
   (2) Non-The Company’s employees, unless otherwise a prior approval is obtained from the management.

6. The abovementioned rules apply to the Company's employees' spouses, children, relatives within the second degree, and anyone else who lives together. The Company's employees must be cautious when discussing about your work with friends, spouses, children, relatives within the second degree, anyone else who lives together, or with other employees.

The rules outlined above apply to the following situations:

1. Transactions of the Company’s common shares (including stock options), preferred shares, and bond.
2. Transfers of accumulated value of any Chunghwa common share in any Chunghwa benefit plan that is subject to an individual's control.
3. Under certain circumstances, purchases or sales of securities in other companies and transactions made in foreign securities markets.

An insider trading is prohibited by the Company. While the Company has established rules to avoid from insider trading, any person who is found to likely have involved in an insider trading shall be reported to relevant authority for investigation.

Article 12 Preventing from corruption and bribery

All directors, managers and employees shall comply with Ethical Corporate Management Best Practice Principles for the Company and the following regulations:

1. Shall not provide, commit, demand, or accept illegal gains in any form directly or indirectly in order to establish a business relationship or affect commercial transactions.
2. Shall make donation directly or indirectly to political parties or organizations and individuals involved in political activities only in accordance with the Political Donations Act and internal relevant business procedure of company, and shall not acquire any commercial interest and/or trade advantages.
3. Shall make charity donations or execute sponsorships only in accordance with relevant rules and internal operational procedure which shall not engage in any bribery.

Article 13 Implementing environmental protection and establishing a healthy and safe working environment

Directors, managers and employees of the Company shall comply with environmental protection related to laws and regulations, as well as the company internal rules for implementing the company’s environmental protection concept and realizing the company’s commitment to environmental protection. The Company values efficiency and recycle of various resources in all business activities. The Company actively participates in environmental protection activities and strives to protect environment.

Directors, managers and employees shall comply with applicable domestic and international laws, regulations and the company's internal rules for maintenance of safety of working environment and physical/mental health. The Company provides employees with periodical health examination, safety education, health education and training, and physical/mental health activities. Customers’ health and safety is the first priority in all business activities. The Company provides customers with the relevant information for the correct use of products and services as well as management methods.

Article 14 Reporting and handling discovered violations against the Code of Ethics

Where a director, manager and an employee becomes aware of or engages in any conduct or activity that is likely to violate this Code of Ethics or an applicable law or regulation, he/she shall promptly report the event to the Company’s Organization and Talent Development Department. Any person making the report shall provide enough information to enable the Company to properly address the matter.

The Company has established related procedures for submitting matters regarding accounting, internal accounting controls, or auditing matters to the Audit Committee.

Any person will not be subject to retaliation of any kind (or threat of retaliation) for reporting any ethical concerns, suspected violations to securities related law, or other suspected misconduct in good faith. Any person who believes that he/she has been under a retaliation (or threatened or harassed) as a result of above action shall immediately report the matter to his/her immediate supervisor or the Company Organization and Talent Development Department.

Article 15 Full understanding and compliance with this Code of Ethics

Each director, manager and employee is obliged to carefully read, clearly understand, and comply with this Code of Ethics and, as necessary, to seek clarification on any key point. Where a manager or employee fails to comply with this Code of Ethics, including his/her supervisors who fail to make a report, may be subject to disciplinary action of termination of the employment agreement.

The Company shall actively remind the importance of compliance with the company's policies. Any violation of certain of the Company's policies is likely to cause the Company and the relevant personnel to be responsible for civil liability and damages, administrative penalty, or criminal prosecution.

Any doubt regarding this Code of Ethics shall be directed to the immediate supervisor or the Company's Organization and Talent Development Department.

Article 16 Waivers

The Company may, by a prior approval, waive application to this Code of Ethics for directors, managers and employees under certain limited situations. The waivers for directors or senior managers shall be granted by the Board. Waivers of other personnel shall be reviewed by a special committee chaired by the Senior Executive Vice President of the company. Where the waiver shall be granted if it is in compliance with the laws or the company rules, the waiver that is not in violation of the company's legitimate business policies may be granted at discretion.

The Company shall promptly disclose to the shareholders about the names of directors or senior managers receiving the waiver, the contents of and reason for such waiver and state the same in the Company for the next issue.

Article 17 Application to affiliates and organization

Group enterprises or entities such as the Company's subsidiaries, institutes with direct or indirect cumulative donation funds exceeding 50%, and institutions or legal persons with substantial controlling power shall proceed with business activities in accordance with this Code of Ethics and may establish relevant provisions for need of business operation.

Article 18 Riders

This Code of Ethics is established solely for the internal use by the Company. It is not intended to and does not give any rights to any employee, customer, supplier, competitor, shareholder, or any other person or entity. It does not in any way constitute a commitment, by or on behalf of the Company, as to any fact, circumstance or legal conclusion.

Article 19 Enforcement

This Code of Ethics is enforced upon the approval of the Board and the same procedures will apply to amendment thereafter from time to time.

Exhibit 11.2

Ethical Corporate Management Best Practice Principles

for CHUNGHWA TELECOM CO., LTD.

1. All articles adopted by the 6th Board of Directors at the 5th meeting on December 28, 2010.

2. Amended by the 7th Board of Directors at the 2nd meeting on August 13, 2013.

3. Amended by the 9th Board of Directors at the 8th meeting on August 5, 2020.

4. Amended by the 9th Board of Directors at the 5th interim meeting on September 28, 2021.

Article 1 (Purpose of enactment and applicable scope)

The Ethical Corporate Management Best Practice Principles (“Principles”) is enacted to assist Chunghwa Telecom Co., Ltd. and its affiliated institutions (hereinafter referred to as the “Company”) to establish a corporate culture of ethical management and sound development.

The applicable scope of the Principles covers the Company’s subsidiaries, any foundation constituted as a juristic person to which the Company’s direct or indirect accumulated contribution of funds exceeds 50% of the total funds received, and other institutions or juridical persons which are substantially controlled by the Company (hereinafter referred to as the “Business Group”).

Article 2 (Prohibition of Unethical Conducts)

When engaging in commercial activities, directors, managers, employees, and mandataries of the Company or persons having substantial control over the Company (hereinafter referred to as the “Substantial Controllers”) shall not directly or indirectly offer, promise to offer, request or accept any improper benefits, nor commit unethical acts including breach of ethics, illegal acts, or breach of fiduciary duty (hereinafter referred to as the “Unethical Conduct”) for purposes of acquiring or maintaining benefits.

Parties referred to in the preceding paragraph include civil servants, political candidates, political parties or members of political parties, state-run or private-owned businesses or institutions, and directors, supervisors, managers, employees or Substantial Controllers or other interested parties of the same.

Article 3 (Types of benefits)

“Benefits” mentioned in the Principles means any valuable things, including money, endowments, commissions, positions, services, preferential treatment or rebates of any type or in any name. Benefits received or given occasionally in accordance with accepted social customs and that do not adversely affect specific rights and obligations shall be excluded.

Article 4 (Legal compliance)

The Company shall comply with the Company Act, Securities and Exchange Act, Business Accounting Act, Political Donations Act, Anti-Corruption Act, Government Procurement Act, Act on Recusal of Public Servants Due to Conflicts of Interest, TWSE/GTSM-listing related rules, or other laws or regulations regarding commercial activities, as the underlying basic premise to facilitate ethical corporate management.

Article 5 (Policy)

The Company shall abide by the operational philosophies of honesty, transparency and responsibility, base policies on the principle of good faith and obtain approval from the board of directors, and establish good corporate governance and risk control and management mechanism so as to create an operational environment for sustainable development.

Article 6 (Guidelines for Conduct)

The Company has established the "Procedures for Ethical Management and Guidelines for Conduct of Chunghwa Telecom Co., Ltd." (hereinafter referred to as the “Guidelines for Conduct”) in order to implement the operational philosophies and policies prescribed in the preceding article, which includes operating procedures, behavior guidelines, and training, etc.

The Guidelines for Conduct established in accordance with the previous paragraph shall comply with relevant laws and regulations of the territory where the Company and its Business Groups are operating.

Article 7 (The scope of the Guidelines for Conduct)

The Company shall analyze and assess on a regular basis business activities within their business scope which are at a higher risk of being involved in unethical conduct, and establish its Guidelines for Conduct accordingly and review their adequacy and effectiveness.

The Company should refer to prevailing domestic and foreign standards or guidance in establishing the "Guidelines for Conduct", which shall at least include preventive measures against the following:

1. Offering and acceptance of bribes.
2. Illegal political donations.
3. Improper charitable donations or sponsorship.
4. Offering or acceptance of unreasonable presents or hospitality, or other improper benefits.
5. Misappropriation of trade secrets and infringement of trademark rights, patent rights, copyrights, and other intellectual property rights.
6. Engaging in unfair competitive practices.
7. Damage directly or indirectly caused to the rights or interests, health, or safety of consumers or other stakeholders in the course of research and development, procurement, manufacture, provision, or sale of products and services.

Article 8 (Promises and executions)

The Company shall request their directors and senior management to issue a statement of compliance with the ethical management policy and require in the terms of employment that employees comply with such policy.

The Company and its Business Groups shall clearly specify in their rules and external documents, and on the Company website the ethical corporate management policies and the commitment by the board of directors and senior management on rigorous and thorough implementation of such policies, and shall carry out the policies in internal management and in commercial activities.

The Company shall compile documented information on the ethical management policy, statement, commitment, and implementation mentioned in the first and second paragraphs and retain said information properly.

Article 9 (Engaging in commercial activities under ethics)

The Company shall engage in commercial activities in a fair and transparent manner based on the principle of ethical management.

Prior to any commercial transactions, the Company shall take into consideration the legality of their agents, suppliers, clients or other trading counterparties, and whether any of them are involved in Unethical Conduct, and shall avoid any dealings with persons so involved

When entering into contracts with their agents. suppliers, clients, or other trading counterparties, the Company shall include in such contracts terms requiring compliance with ethical corporate management policy and that in the event the trading counterparties are involved in Unethical Conduct, the Company may at any time terminate or rescind the contracts.

Article 10 (Prohibition of offering and acceptance of bribery)

When conducting business, the Company and their directors, managers, employees, mandataries, and substantial controllers, may not directly or indirectly offer, promise to offer, request, or accept any improper benefits in whatever form to or from clients, agents, contractors, suppliers, public servants, or other stakeholders.

Article 11 (Prohibition of offering illegal political donations)

When directly or indirectly offering a donation to political parties, or organizations or individuals participating in political activities, the Company and its directors, managers, employees, mandataries, and Substantial Controllers shall comply with the Political Donations Act and the Company’s own relevant internal operational procedures, and shall not make such donations in exchange for commercial gains or business advantages.

Article 12 (Prohibition of improper charitable donation or sponsorship)

When making or offering donations and sponsorship, the Company and its directors, managers, employees, mandataries, and Substantial Controllers shall comply with relevant laws and regulations and internal operational procedures, and shall not surreptitiously engage in bribery.

Article 13 (Prohibition of unreasonable presents, hospitality or other improper benefits)

The Company and its directors, managers, employees, mandataries, and Substantial Controllers shall not directly or indirectly offer or accept any unreasonable presents, hospitality or other improper benefits to establish business relationship or influence commercial transactions.

Article 14 (Prohibition of infringement of intellectual property rights)

The Company and their directors, managers, employees, mandataries, and substantial controllers shall observe applicable laws and regulations, the Company's internal operational procedures, and contractual provisions concerning intellectual property, and may not use, disclose, dispose, or damage intellectual property or otherwise infringe intellectual property rights without the prior consent of the intellectual property rights holder.

Article 15 (Prohibition of unfair competition)

The Company shall engage in business activities in accordance with applicable competition laws and regulations, and may not fix prices, make rigged bids, establish output restrictions or quotas, or share or divide markets by allocating customers, suppliers, territories, or lines of commerce.

Article 16 (Prevent products or services from harming stakeholders)

In the course of research and development, procurement, make, provision, or sale of products and services, the Company and their directors, managers, employees, mandataries, and substantial controllers shall observe applicable laws and regulations and international standards to ensure the transparency of information about, and safety of, their products and services. They shall also adopt and publish a policy on the protection of the rights and interests of consumers or other stakeholders, and carry out the policy in their operations, with a view to preventing their products and services from directly or indirectly damaging the rights and interests, health, and safety of consumers or other stakeholders. Where there are sufficient facts to determine that the Company's products or services are likely to pose any hazard to the safety and health of consumers or other stakeholders, the Company shall, in principle, recall those products or suspend the services immediately.

Article 17 (Organization and responsibility)

The directors, managers, employees, mandataries, and Substantial Controllers of the Company shall exercise the due care of good administrators to urge the Company to prevent Unethical Conduct, always review the results of the preventive measures and continually make adjustments so as to ensure thorough implementation of its ethical corporate management policies.

To achieve sound ethical corporate management, the Company shall allocate resources and personnel, and assign Organization and Talent Development Department in assisting the Board of

Directors and the management to formulate, supervise, and implement ethical corporate management policies and guidelines for conduct, mainly in charge of the following matters, and report to the board of directors regularly (at least once a year):

1. Assisting in incorporating ethics and moral values into the Company's business strategy and adopting appropriate prevention measures against corruption and malfeasance to ensure ethical management in compliance with the requirements of laws and regulations.

2. Analyzing and assessing on a regular basis the risk of involvement in unethical conduct within the business scope, adopting accordingly programs to prevent unethical conduct, and setting out in each program the standard operating procedures and conduct guidelines with respect to the Company's operations and business.

3. Planning the internal organization, structure, and allocation of responsibilities and setting up check-and-balance mechanisms for mutual supervision of the business activities within the business scope which are possibly at a higher risk for unethical conduct.

4. Promoting and coordinating awareness and educational activities with respect to ethics policy.

5. Developing a whistle-blowing system and ensuring its operating effectiveness.

6. Assisting the board of directors and management in auditing and assessing whether the prevention measures taken for the purpose of implementing ethical management are effectively operating and preparing reports on the regular assessment of compliance with ethical management in operating procedures.

Article 18 (Legal compliance for business operation)

Directors, managers, employees, mandataries, and Substantial Controllers of the Company shall comply with laws and regulations and the prevention programs when conducting business.

Article 19 (Interest avoidance)

The Company shall adopt policies for preventing conflicts of interest to identify, monitor, and manage risks possibly resulting from unethical conduct, and shall also offer appropriate means for directors, managers, and other stakeholders attending or present at board meetings to voluntarily explain whether their interests would potentially conflict with those of the Company.

When a proposal at a given board of directors meeting concerns the personal interest of, or the interest of the juristic person represented by, any of the directors, managers, and other stakeholders attending or present at board meetings of the Company, the concerned person shall state the important aspects of the relationship of interest at the given board meeting. If his or her participation is likely to prejudice the interest of the Company, the concerned person may not participate in discussion of or voting on the proposal and shall recuse himself or herself from the discussion or the voting, and may not exercise voting rights as proxy for another director. The directors shall practice self-discipline and must not support one another in improper dealings.

The directors, managers, employees, mandataries, and Substantial Controllers shall not take advantage of their positions or influence in the Company to obtain improper benefits for themselves, their spouses, parents, children or any other persons.

Article 20 (Accounting and internal control)

The Company shall establish effective accounting systems and internal control systems for business activities which may be at a higher risk of being involved in Unethical Conduct, not have under-the-table accounts or maintain secret accounts, and conduct reviews from time to time so as to ensure that the design and enforcement of the systems will continue to be effective.

The internal audit unit of the Company shall, based on the results of assessment of the risk of involvement in unethical conduct, devise relevant audit plans including auditees, audit scope, audit items, audit frequency, etc., and examine accordingly the compliance with the guidelines for conduct. The internal audit unit may engage a certified public accountant to carry out the audit, and may engage professionals to assist if necessary.

The results of examination in the preceding paragraph shall be reported to senior management and the ethical management dedicated unit and put down in writing in the form of an audit report to be submitted to the board of directors.

Article 21 (Procedures and guidelines of conduct)

The Company shall establish “Guidelines for Conduct” in accordance with Article 6 hereof to guide directors, managers, employees, and substantial controllers on how to conduct business. The procedures and guidelines should at least contain the following matters:

1. Standards for determining whether improper benefits have been offered or accepted.
2. Procedures for offering legitimate political donations.
3. Procedures and the standard rates for offering charitable donations or sponsorship.
4. Rules for avoiding work-related conflicts of interests and how they should be reported and handled.
5. Rules for keeping confidential trade secrets and sensitive business information obtained in the ordinary course of business.
6. Regulations and procedures for dealing with suppliers, clients and business transaction counterparties suspected of Unethical Conduct.
7. Handling procedures for violations of these Principles.
8. Disciplinary measures on offenders.

Article 22 (Education training and review)

The chairperson, general manager, or senior management of the Company shall communicate the importance of corporate ethics to its directors, employees, and mandataries on a regular basis.

The Company shall periodically organize training and awareness programs for directors, managers, employees, mandataries, and Substantial Controllers, and invite the Company’s commercial transaction counterparties, so they understand the Company’s determination to implement ethical corporate management, the related policies, prevention programs and the consequences of committing Unethical Conduct.

The Company shall apply the policies of ethical corporate management when creating its employee performance appraisal system and human resource policies to establish a clear and effective reward and discipline system.

Article 23 (Whistleblowing system)

The Company shall adopt a concrete whistle-blowing system, and should be implemented in accordance with the principle of segregation of power for the investigation of violations of the Company’s employees and the guidelines for handling employee appeals. The whistle-blowing system shall include at least the following:

1. An independent mailbox or hotline, either internally established and publicly announced or provided by an independent external institution, to allow internal and external personnel of the Company to submit reports.
2. Dedicated personnel or unit appointed to handle the whistle-blowing system. Any tip involving a director or senior management shall be reported to the independent directors or the Audit Committee. Categories of reported misconduct shall be delineated and standard operating procedures for the investigation of each shall be adopted.
3. Follow-up measures to be adopted depending on the severity of the circumstances after investigations of cases reported are completed. Where necessary, a case shall be reported to the competent authority or referred to the judicial authority.

4. Documentation of case acceptance, investigation processes, investigation results, and relevant documents.

5. Confidentiality of the identity of whistle-blowers and the content of reported cases, and an undertaking regarding anonymous reporting.

6. Measures for protecting whistle-blowers from inappropriate disciplinary actions due to their whistle-blowing.

7. Whistle-blowing incentive measures.

When material misconduct or likelihood of material impairment to the Company comes to their awareness upon investigation, the dedicated personnel or unit handling the whistle-blowing system shall immediately prepare a report and notify the independent directors or the Audit Committee in written form.

Article 24 (Disciplinary and appeal system)

The Company shall adopt and publish a well-defined disciplinary and appeal system for handling violations of the ethical corporate management principles, and shall make immediate disclosure on the Company's internal website of the title and name of the violator, the date and details of the violation, and the actions taken in response.

Article 25 (Disclosure of information)

The Company shall collect quantitative data about the promotion of ethical corporate management and continuously analyze and assess the effectiveness of the promotion of ethical corporate management policy, and shall also disclose the measures taken for implementing ethical corporate management, the status of implementation, the foregoing quantitative data, and the effectiveness of promotion on the Company websites, annual reports, and prospectuses, and shall disclose its ethical corporate management best practice principles on the Market Observation Post System.

Article 26 (Review and revision of the ethical corporate management policies and measures)

The Company shall at all times monitor the development of relevant local and international regulations concerning ethical corporate management and encourage their directors, managers and employees to make suggestions, based on which the adopted ethical corporate management policies and measures taken will be reviewed and improved with a view to achieving better implementation of ethical corporate management.

Article 27 (Enforcement)

The Ethical Corporate Management Best Practice Principles of the Company shall be implemented after the board of directors grants the approval, and shall be sent to report at a shareholders' meeting. The same procedure shall be followed when the principles have been amended.

When the Company submits its ethical corporate management best practice principles to the board of directors for discussion pursuant to the preceding paragraph, the board of directors shall take into full consideration each independent director's opinions. Any objections or reservations of any independent director shall be recorded in the minutes of the board of directors meeting. An independent director that cannot attend the board meeting in person to express objections or reservations shall provide a written opinion before the board meeting, unless there is some legitimate reason to do otherwise, and the opinion shall be specified in the minutes of the board of directors meeting.

Exhibit 12.1

CERTIFICATION BY THE CHIEF EXECUTIVE OFFICER PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Chi-Mau Sheih, certify that:

1. I have reviewed this annual report on Form 20-F of Chunghwa Telecom Co., Ltd.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the company as of, and for, the periods presented in this report;

4. The company's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the company and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the company's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the company's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the company's internal control over financial reporting; and

5. The company's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the company's auditors and the audit committee of the company's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the company's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the company's internal control over financial reporting.

Date: April 15, 2022

By: /s/ CHI-MAU SHEIH

Name: **Chi-Mau Sheih**

Title: **Chairman and Chief Executive Officer**

Exhibit 12.2

CERTIFICATION BY THE CHIEF FINANCIAL OFFICER PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Yu-Shen Chen, certify that:

1. I have reviewed this annual report on Form 20-F of Chunghwa Telecom Co., Ltd.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the company as of, and for, the periods presented in this report;

4. The company's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the company and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the company's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the company's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the company's internal control over financial reporting; and

5. The company's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the company's auditors and the audit committee of the company's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the company's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the company's internal control over financial reporting.

Date: April 15, 2022

By: /s/ YU-SHEN CHEN

Name: **Yu-Shen Chen**
Title: **Chief Financial Officer**

Exhibit 13.1

CERTIFICATION BY THE CHIEF EXECUTIVE OFFICER PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report on Form 20-F of Chunghwa Telecom Co., Ltd. (the "Company") for the year ended December 31, 2021 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Chi-Mau Sheih, Chairman and Chief Executive Officer of the company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the company.

Date: April 15, 2022

By: /s/ CHI-MAU SHEIH
Name: Chi-Mau Shieh
Title: Chairman and Chief Executive Officer

Exhibit 13.2

CERTIFICATION BY THE CHIEF FINANCIAL OFFICER PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report on Form 20-F of Chunghwa Telecom Co., Ltd. (the “Company”) for the year ended December 31, 2021 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Yu-Shen Chen, Chief Financial Officer of the company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the company.

Date: April 15, 2022

By: /s/ YU-SHEN CHEN

Name: Yu-Shen Chen

Title: Chief Financial Officer