



Apacer

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ESG

Apacer Technology Inc.

2020 Annual Report

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N/A

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I. Letter to Shareholders

Dear Shareholders:

The year of 2020 has been an impactful and challenging year for the globe. The global economy has been on a roller coaster as a result of the COVID-19 outbreak, the lockdown policies of several countries in the beginning of the year. Fortunately, the demand on the market has progressively recovered since the forth quarter. However, with the sanction on Huawei and the United States presidential election, an impact that is not negligible on the supply and demand in the semiconductor industry has been caused. A seesaw battle between the soaring/dropping price of memory and the demand still influences the annual revenue of memory module suppliers.

As a new year starts, with respect to the corporate business, it will be the key point for Apacer, as a company in the semiconductor industry, to quickly take response actions, maintain stable business, obtain experience, adjust strategies and control risks in the changeable environment when confronting changes in the supply, demand and economy while promoting ESG (Environmental, Social and Governance) investing to which the international market pay more and more attention.

The consolidated operating revenue in FY 2020 was TWD 7.15 billion; the consolidated gross operating profit was TWD 1.13 billion; and the consolidated net profit after tax was TWD 290 million, and the earnings per share after tax was TWD 2.88. We briefly present the operating performance in FY 2020 and the operational plan for FY 2021 as follows:

1. Consolidated operating performance in FY 2020:

Unit: TWD 1,000

Item	2020	2019	Difference
Operating revenue	7,152,222	7,485,821	(333,599)
Gross operating profit	1,125,902	1,400,243	(274,341)
Net operating profit	345,419	483,595	(138,176)
Net non-operating income (expense)	25,250	(4,695)	29,945
Net profit after tax	290,460	376,629	(86,169)
Net profit attributable to shareholders of the parent company	290,469	376,642	(86,173)
Non-controlling interests	(9)	(13)	4
Earnings (Loss) per share after tax (in TWD)	2.88	3.73	(0.85)

2. Operating performance and research results in FY 2020:

In FY 2020, Apacer received several recognitions for the operating and brand performances. The summary thereof is as follows:

- (1) We have been ranked in the top 5% of the companies participating in the 6th Corporate Governance Evaluation for two consecutive years ahead of all industry peers.
- (2) Apacer has been invited to the Best Taiwan Global Brands evaluation and honored as one of the top 35 brands for four consecutive years.
- (3) Apacer's 2019 CSR Report won the "Golden Award" for electronic information manufacturers under the category of Corporate Sustainability Report in the Taiwan Corporate Sustainability Awards (TCSA). It was the 3rd consecutive year for which Apacer has been recognized by the jury.
- (4) Apacer received the Taiwan iSports certification from the Sports Administration.
- (5) The gaming brand, ZADAK, was recognized at the Taiwan Excellence Award.
- (6) Apacer has continued its leading position in the shipment volume of SSDs for industrial control worldwide.

55 patent applications have been in progress as of the end of 2020. We have received or filed a total of 241 patents and applications. In addition, to embrace several waves of technology, including 5G, IIoT, AIoT and Big Data, Apacer has introduced the DBS Cloud Edition (the cloud edition of Apacer's smart storage solution), the CoreSnapshot instant SSD backup and recovery technology, the smallest industrial-grade PCIe BGA SSDs in the world, and other products and technology. In the meantime, we have entered into a strategic collaboration with Advantech and Allxon to jointly create and integrate cloud platforms for customers, and enhance mutual and value-added benefits. In response to the demand for storage driven by the pandemic, Apacer also released the high-speed external portable SSDs and industrial-grade consumer NAS SSDs to meet various storage needs. For smart application, we have launched the AI optical inspection and intelligent epidemic prevention systems and released the smart IoT notification solution regarding the safety issue of elderly living alone together with DIGITIMES to create a safe space for them.

3. Operational plan for FY 2021:

(1) Operational guidelines

With "Improved Values and Value-added Services" as the main strategic core for the year and the digital storage as the core of our business, Apacer will continuously promote the CSR and ESG objectives of the Company's sustainable business, fulfill the core brand value of "Becoming Better Partners", achieve market segmentation and maintain our leading advantage in the field of digital storage.

(2) Operational objectives

Apacer will pay more attention on the development of our main business in this year to invest deeply in the key application field and develop the smart IoT market on a continuous basis by strengthening our core products and R&D technology. In addition, we will also keep track of market trends to bring value-added benefits for customers and partners and enhance operational performance.

(3) Core policies on production and sale

Owing to the impact of the pandemic in last year on the supply chain, it is relatively hard to timely grasp the changes to the global markets. However, Apacer looks at the global developments and changes in market demands and maintains close partnership with the suppliers in order to stabilize supplies and ensure customers' interests. Internally, we focus on intelligent operation, R&D technology, product development and precision marketing so as to improve brand visibility and build up brand image for the accumulation of brand values and competitive advantages.

(4) Development strategies

As the implementation of 5G applications, the IoT, AI, automation, edge computing, cloud storage applications will become more widespread and innovative. Apacer has progressively invested in the relevant fields and been dedicated to provide value-added services in order to build an IoT-integrated ecosystem through the connection and integration of the upstream and downstream partners.

Looking forward to 2021, Apacer will continue to uphold the philosophy of “Delivering on Our Promises, Constant Improvement and Mutually Beneficial” for “Becoming Better Partners”, initiate the three dimensions of ESG investing in line with the international trend, set sustainable operation as our ultimate goal, actively improve the operating benefits, and thereby achieve win-win outcomes with our customers and partners.

Chairman



General manager



Accounting Manager



II. Company Profile

1. Founding date
April 16, 1997

2. History

1997	April	We were founded in Taipei City as BizAnchor Service Network Inc., an enterprise re-invested by Acer Group and with TWD 10 million as initial capital. We were a professional manufacturer of memory modules.
	July	We moved to Xizhi Township, Taipei County, and we renamed ourselves Apacer Technology Inc.
	October	For the development of global logistics, we founded Apacer Memory America Inc. as our US subsidiary.
1998	January	The Longtan Factory was established.
	February	With the European market booming, we founded Apacer Technology B.V. as our European subsidiary.
1999	August	We received the ISO 9002 certification.
2000	July	We conducted an initial public offering.
	August	To expand business in the Japanese market, we founded Apacer Technology Corp. as our Japanese subsidiary.
2001	March	We invested in AQR Technology Inc. and acquired 100% of its shares.
	August	With approval from the Ministry of Economic Affairs (MOEA) through Letter Jing-(90) No. 90030399, we acquired Grand Scope Ltd. as our Hong Kong subsidiary.
	October	With approval from MOEA through Letter Jing-(90)- Tou-Shen-Er-Zi No. 90036342, we acquired Apacer Technology (BVI) Inc. as our subsidiary in the British Virgin Islands. To expand our business in the Chinese market, and with approval from the Ministry of Economic Affairs through Letter Jing-(90)-Tou-Shen-Er-Zi No. 90036342, Apacer Electronic (Shanghai) Co., Ltd was founded with re-investment from Apacer Technology (BVI) Inc.
2002	August	To expand our business into multimedia and digital storage sector, we acquired 100% of the shares of Pronology Services Inc.
2003	April	We released the Disc Steno CP100, the world's first Disc Steno portable CD recorder. Disc Steno CP100 operates on the basis of "stand-alone", a state-of-the-art concept. Through integration of the card-reading function and recording technology, it transfers digital images from memory cards to CDs and enables more diverse usage of such images.
	August	We received the ISO 9001:2000 certification.
2004	January	The Disc Steno CP200 portable CD recorder and the Audio Steno MS400 USB flash drive won the Taiwan Excellence Award. Our shares began to be traded as emerging stocks in the over-the-counter (OTC) market.

2005	April	The Longtan Factory received the ISO 14001:2004 certification. We passed the test of Sony's SS-00259 standards for environmental protection, and our memory modules for notebooks and desktops passed the test of the "Restriction of Hazardous Substances" (RoHS) directive. We took the lead in the industry to release FB-DIMM products that meet the demands of servers and workstations for high bandwidth, speed and capacity. Our embedded flash memory modules received RoHS certification. Share Steno, the world's first OTG USB device for storage of digital images, won the National Award of Excellence. We established the e-Flash Business Development Center to actively develop industrial flash products for the storage solutions of OS and AP platforms.
	May	
	June	
	November	
2006	April	Our FB-DIMM passed the test of the Intel® Platform Memory Organization, making us the first DRAM manufacturer in Asia to receive the certificate. FB-DIMMs compatible with Intel® server platforms were released, and we became Intel®'s enabling partner. We unveiled world's first 2.5 inch SATA RAID flash drive (SRFD) that greatly increases data reliability and security. Our FB-DIMM became the first product of its kind worldwide to pass the CMTL compatibility test. Our AH520, AA220, FB-DIMM, and DDR400 VLP ECC RDIMM 2GB won the Taiwan Excellence Award. Our AH520 won the G-Mark international design award in Japan. We became an official supplier of memory modules for the 2006 World Cyber Games (WCG) in Italy. Our Handy Steno became compatible with the latest ReadyBoost technology for Windows Vista.
	May	
	September	
	October	
	November	
2007	January	We became the only official manufacturer of memory modules for Microsoft Windows Vista. To expand business in the Indian market, we founded Apacer Technologies Pvt Ltd. as our Indian subsidiary. Our "A+ Project for Enhancing Global Logistics Values" was selected as a pilot project sponsored by MOEA. The Company became an official supplier of memory modules for the Taiwan Regional Qualifier of the 2007 WCG. The objective of our 10th anniversary was to make us one of the three largest brands of memory storage in the world. The Company's AU860 MP4 player and AH225 USB flash drive won the G-Mark international design award in Japan.
	March	
	May	
	June	
	September	
	November	
2008	February	We unveiled the ADM III SSD, with a speed three times faster than its predecessors to meet the application demand on storage speed. We unveiled the Aeolus DDR3-1800MHz/1600MHz memory modules, which adopt the world's first active fan/dual-layer heat sink designed for overclocking. We were selected for the "Coaching Project for International Brand Management" of the Bureau of Foreign Trade, MOEA. Our AH421 won the 2008 iF Product Design Award.
	March	
	April	

2008	May	Our Aeolus active overclocking memory modules won the Taiwan Excellence Award, Innovation Award from the PC World magazine in Greece, and the Editor's Choice award from PC Magazine in Russia. In cooperation with Diskeeper, the leading manufacturer of disk defragmentation tools, we introduced the SSD ⁺ <i>Optimizer</i> , the world's first SSD solution with disk defragmentation software.
	June	In cooperation with RTD, the founder of PC/104 Consortium, we developed the micro SATA Disk Chip (SDC) SSD designed for PC/104 platforms.
	September	Our memory module products won the NOVA Channel Award as the first choice of retailers.
	October	Our AH225 and AH421 USB flash drives won the Best Innovation Award from Tweak in Germany.
	November	Our HT203 USB flash drive won the Rexware Golden Award in France.
2009	March	By exclusively adopting the innovative stacking technology, we unveiled SAFD 254, the only high-capacity industrial SSD which supports a wide range of operating temperature.
	April	We established an office in Shenzhen, China.
	November	We became an official supplier of memory modules for the 2009 WCG Finals in Chengdu, China. We established the VA-Consumer Product Department which covers four product lines: digital storage, multimedia entertainment, digital sharing, digital peripherals.
2010	January	The design of the power supplies of the proprietary port of our SDM 7P/180D LP industrial SSD won the 18th Taiwan Excellence Award.
	March	Our SmartBadge, which integrates demands for business security and data storage, won the iF Product Design Award.
	September	Our SmartBadge won the G-Mark international design award in Japan.
	December	We became listed on the Taiwan Stock Exchange.
2011	January	Our SUFD industrial SSD, AS602 consumer SSD, and AH128/AH129 USB flash drives won the Taiwan Excellence Award.
	February	We unveiled ultra-high speed industrial CFast cards, with a groundbreaking transmission speed three times faster than those of conventional IDE interfaces.
	November	We unveiled the world's fastest UHS microSDXC 64GB memory card with high capacity.
	December	Our AC232 external hard drive won the 20th Taiwan Excellence Award.
2012	January	We unveiled the 8GB DDR3 1600 UDIMM with ECC memory module for servers. With high capacity and processor speed, the product module enables servers to run flawlessly at high speed (12800MB/s).
	April	We unveiled the mPDM (mini PCIe Disk Module) modular SSD, which has higher transmission speed and provides higher storage capacity for high-end applications including web storage and business servers.
	May	The Comapny unveiled the DDR3-1600 ECC RDIMM memory module designed for storage servers.
	July	We unveiled the AC232 USB 3.0 high-speed portable hard drive with a stylish ocean pattern. The product features an exclusive anti-slip/anti-shock design and a flowery pattern, and it protects valuable data.
	September	We unveiled more ultra-high speed industrial CFast cards with a further enhanced speed to expand our share in the market of high-performance computing.
	December	Our SDM4 7P/180D ultra-slim SSD and WiFun AF750 portable wireless storage device won the 21st Taiwan Excellence Award.

2013	January	We unveiled three models of the latest SATA 3.0 SSDs with high-speed transmission interfaces, able to meet the demands for cloud applications, huge data volumes and mobility.
	March	As the trend of mobility has kept moving forward, we adopted three strategies for market planning: organizational innovation, model innovation, management innovation.
	June	We became the world's no. 1 supplier of industrial SSDs.
	July	We established our operational headquarters in Tucheng to realize the plan of bringing the factory and head office together. The establishment successfully set a milestone for us in the process of fulfilling the objective of sustainable development.
	August	We took the lead in the industry to unveil the 22 Pin SATA 6Gb/s high-speed modular SSD, along with mobile peripherals to meet the demands for mobile applications.
	November December	We released the SSDWidget real-time monitoring software using cloud technology. We were the only industrial SSD manufacturer to win the 22nd Taiwan Excellence Award. The award-winning products: SSDWidget (the world's first cloud monitoring software), SFD 25A-M (the first ultra-slim SSD which is only 5mm-thin), CSD (a dual-drive SSD with groundbreaking and unique design).
2014	March	We unveiled our vision for business operations in 2014. We adopted H.O.R.S.E., the five operational strategies designed to provide more comprehensive user experience for business clients and end users, explore potential business opportunities in all aspects, and plan for the development of the global market.
	May	With rapid global growth of cloud applications and big data, we unveiled the SATA 3 high-capacity SFD 25H-M SSD, a whole new product with highly enhanced features.
	June	We continued to be ranked by Gartner as the world's no. 1 supplier of industrial SSDs in 2013.
	September	We participated in the Green Power Purchase Program launched by the government as we made commitments to green energy policies and the promotion of energy conservation and CO2 emission reduction.
	November	Chang Chia-kun, our President, was among the "Top 100 MVP Managers" selected by the magazine Manager Today. He also received the Outstanding IT Elite Award. These honors are highly respected in the IT industry.
	December	For the sixth consecutive year, we were honored with Taiwan Excellence Awards. Five products won awards at the 23rd edition of these Awards: UrKey Technology SSD (provides comprehensive data security and protection), Combo SDIMM (a hybrid SSD-DRAM memory module featuring innovative storage design), WP210 Apacer Power Speaker (a power speaker which breaks technological limits), AH450 USB3.0 (a USB flash drive with appearance of silver), AH175 (dual-functional OTG flash drive) + Apacer FileBridge mobile app (this combination provides integration of software and hardware).
2015	January	We and Phison Electronics Corp. jointly announced our entering into strategic cooperation through private placement. The aim is to reinforce our robust experiences and R&D capabilities in the fields of industrial SSDs and controllers through this mutual investment. We unveiled our vision for business operations in 2015. We launched the 3.0 Upgrade Plan, aiming to expand business operations and develop the global market by focusing on breakthroughs in four aspects: forming strategic niche alliances in the field of industrial control, following the trend of mobile devices, expanding business operations in eSports, and development of cloud integration.

2015	February	We entered into a co-branding partnership with Jimmy Liao, a famous picture book illustrator in Taiwan, in unveiling the Jimmy Limited Edition of the WP210 power speaker with wireless charging and the compact and adorable WS211 Bluetooth speaker.
	April	We unveiled the flagship Blade DDR4 overclocking memory module, a cross-generational, top-class DDR4 product which is compatible with the Intel Haswell-E processor and X99 chipset and boasts a clock rate of up to 3300 MHz, bringing unprecedented computing performance and energy-saving efficiency.
	May	We unveiled wholly new upgraded SSD solutions for industrial control, and offered high-speed, high-capacity SSD products of the PCIe and SATA 3 series.
	June	For the third consecutive year, we were ranked by the market research agency Gartner as the world's no. 1 supplier of industrial SSDs.
	July	Using the technologies of proprietary micro optics and spectrum measuring system integration, we developed lightweight and portable spectral luminance and color meters.
	October	We unveiled the high-capacity 16GB DDR3L 1600 SODIMM which passed the test of CMTL certification. Operating at a voltage of just 1.35V, the product shows impressive efficiency on a low-power and high-performance basis, becoming the world's only high-capacity memory product that has passed the compatibility test of Intel® NUC 5i5MYBE/5i3MYBE/5i3RYH platforms.
	December	For the 7th consecutive year, we were honored by the Taiwan Excellence Award. Five products won at these 24th Awards: NFC SSD (upgrades data security and protection with wireless communication technologies), CoreAnalyzer software (with unique and innovative SSD analyzing technology), NOX DDR4 SO-DIMM (a memory module with high stability and performance), AH650 (a USB fingerprint flash drive that secures the user's private data), AH157/AH116 (lightweight, portable mini-sized USB flash drives).
2016	January	We unveiled the USB 3.0 fingerprint flash drives which use exclusive biometric identification technology and are capable of 360° all-angle sensing and discrete management of public and private data. Soon after release, the product won the 2016 Taiwan Excellence Award and was listed as one of the Top 100 Innovative Products of the 2015 IT Month.
	March	We unveiled our vision for business operations in 2016. Through developing core storage technologies, we focused on vertical applications for industries. Following trends in the consumer market, we seek to develop an IT-enabled service ecosystem integrating the storage, reception, analysis, control and sharing of information. The aim is to take the lead in the development of the growing areas of cloud application and IoT.
	May	We unveiled the first ALLONE controller, featuring the AvataRAM innovative storage solution with low latency and long lifespan.
	June	For the fourth consecutive year, we were ranked by the market research agency Gartner as the world's no. 1 supplier of industrial SSDs. In addition, we ranked 9th on DRAmEXchange's survey of revenues of memory module manufacturers worldwide in 2015.
	August	We unveiled the AH190 dual-interface USB flash drive exclusively designed for Apple devices. The product passed the most stringent test of Apple MFi certification. We unveiled the UDM USB 3.0 1U modular SSD exclusively designed for 1U servers and with a height of just 22.4 mm. We unveiled the Z280 M.2 SSD which conformed to the newest NVMe 1.2 standards and was the world's first product of its kind to adopt the native PCIe Gen3 x4 interface specifications.

2016	October	We and Clevo Co. cooperated in developing the NOX DDR4 SO-DIMM heat-resistant memory with a clock rate of up to 3000 MHz. Performance was pushed to the limit with the aim to develop the world's best gaming laptops.
	November	In cooperation with the illustrator Crystal who is well-known in Taiwan, we unveiled several co-branded products including the AH333 USB flash drive and the AC233 portable hard drive. Our NOX DDR4 SO-DIMM was tested in combination with Gigabyte's BRIX ultra compact gaming computer. The test showed NOX DDR4 SO-DIMM, a product validated by real records, was the only laptop memory that could maintain stable operation when running at a clock rate of 3200 MHz.
	December	Victor Lin, our Vice President and CFO, won the 34th National Manager Excellence Award - Financial Manager. For the eighth consecutive year, we were honored with Taiwan Excellence Awards. Six products won in these 25th Awards: AS720 (an exclusive, proprietary dual-interface SSD), AS330 SSD in combination with the high-performance PANTHER DDR4 gaming PC memory module, AH180 (a USB 3.1 Type-C dual flash drive for mobile applications), AH159/AH118 (lightweight and super-mini USB 3.1 Gen 1.0/2.0 flash drives), AC830 (a military-grade shockproof portable hard drive), SDM7 7P/180D DP (an ultra compact industrial SSD).
2017	January	BLADE, COMMANDO and PANTHER DDR4 Gaming PC Memory passed the QVL verification of leading companies to provide total support of the latest Intel® 200 series motherboards.
	February	NVMe PCIe SSD was launched. It provides a transmission rate up to PCIe Gen3 x4 and supports the industry-leading NVMe (Non-Volatile Memory Express) technology to substantially improve IOPS low latency performance, and also break through the bottleneck of the AHCI standard to demonstrate the full capability of SSD.
	March	The first drop-resistant mobile hard disk AC730 of military specifications was launched. The armor made of aluminum alloy can bear a load of 1500kg with anti-drop capability of military specifications as well as IP68 waterproof and dust-resistance features. The internal suspension and shockproof functions with five defending capabilities are available.
	April	The integrated CAN bus communication module and GPS-based EFC-G/EFC-R series products with dual-board modules. With the support of the integrated software kit (SDK) for selectable car-borne information and communication network cloud to provide control centers with intelligent and complete vehicle solutions such as fleet management, vehicle safety monitoring, and unmanned vehicle monitoring. The durable microSDHC/XC memory cards were introduced to provide the best solution with an all-weather safety surveillance system. The first anti-vulcanization series memory in the world was launched for the environment exposed to sulfur. The product has been highly recognized and is patented in many countries. The brand-new anti-vulcanization memory can effectively solve the problem of vulcanized corrosion from polluted environments, improve the overall service life of the system, and meet the requirements for stable operation for a long period of time in a harsh environment. The first anti-vulcanization series memory in the world was launched for the environment exposed to sulfur. The product has been highly recognized and is patented in many countries. The brand-new anti-vulcanization memory can effectively solve the problem of vulcanized corrosion from polluted environments, improve the overall service life of the system, and meet the requirements for stable operation for a long period of time in a harsh environment.

2017	May	A celebration was held for our 20th anniversary. We have been rated by Gartner as the best industrial SSD supplier in the world for five consecutive years since 2012 , helping set a solid foundation for our leading position in the industrial market.
	August	We participated in the (Australasian Gaming Expo) in Sydney, Australia, and displayed a full range of storage solutions that we developed for gaming applications, including CF Card, CFast Card, SDM (SATA Disk Module), M.2 SSD, DRAM and other memory modules.
	September	The super gaming SSD - Apacer COMMANDO Series PT920 - was introduced to the market. The product uses the PCIe Gen 3 x4 high speed interface to ensure a reading/writing rate of 2500/1350 MB every second. The random write speed demonstrates excellent performance of 175,000 IOPs.
	October	The dedicated portable storage solution AH790 Rotary Disk for iPhone and iPad were launched. The product passes the Apple MFi certification to a maximum capacity of 64GB, and features rotary switching between Lightning and USB 3.1 Gen1 Type-A ports. We won the great honor of Taiwan Excellence Award for nine consecutive years. Six products of “innovative value” won in the 26th Taiwan Excellence Awards, including the PM110-25 SSD, with a PCIe interface, of military specifications, the SV250-7 Series of the new generation supported with the innovative Multi-PowerPath power supply technology, the DDR4 Memory Series for gaming competition and the PCIe SSD, the ASMini Pocket SSD as the first choice for businessmen, and the AC630, AC631 and AC632 portable HDs that passed the anti-drop certification of US military specifications.
	November	We worked with P714 Planet, a original illustration brand in Taiwan, to introduce three Apacer X P714 co-branded models - “Up in the Air”, “Escort” and “Support” - of AH336 USBs and AC233 USB 3.1 Gen 1 1TB portable HDs with “Dream Planet” as the concept of the creation. We won the “Silver Award” for the electronic information manufacturing industry in the Corporate Sustainability Report Category of the 2017 Taiwan Corporate Sustainability Awards (TCSA).
2018	February	We participated as an exhibitor in Embedded World 2018, the largest international trade fair for industrial computers held every year in Nuremberg, Germany.
	March	We demonstrated our rugged SSD technology with the release of the PANTHER DDR4 memory and SSD, whose excellent performance and tough appearance quickly drew the interest of modders and eSport players from countries around the world. We became the first manufacturer in the industry to begin mass production of the DDR4 2666 industrial memory module for servers of all series. The memory module can be supported by the latest Intel® Purley and AMD EPYC processors, riding on a wave of demands for new servers in the global market.
	April	We introduced the technical-grade wide-temperature identification and established the market specifications.
	May	During the COMPUTEX exhibition, we used “Technology Community with intelligent IoT” as the theme to display our latest technologies, products and software-hardware integration in six application fields across industrial IoT, transportation, national defense application, gaming and eSports and entertainments.
	June	We released the high rugged memory module XR-DIMM to build the highest reliability in the industry and was the first to introduced it into the military specification application.
	July	We launched the brand-new high specification V30/V10 microSDXC/SDHC memory card.

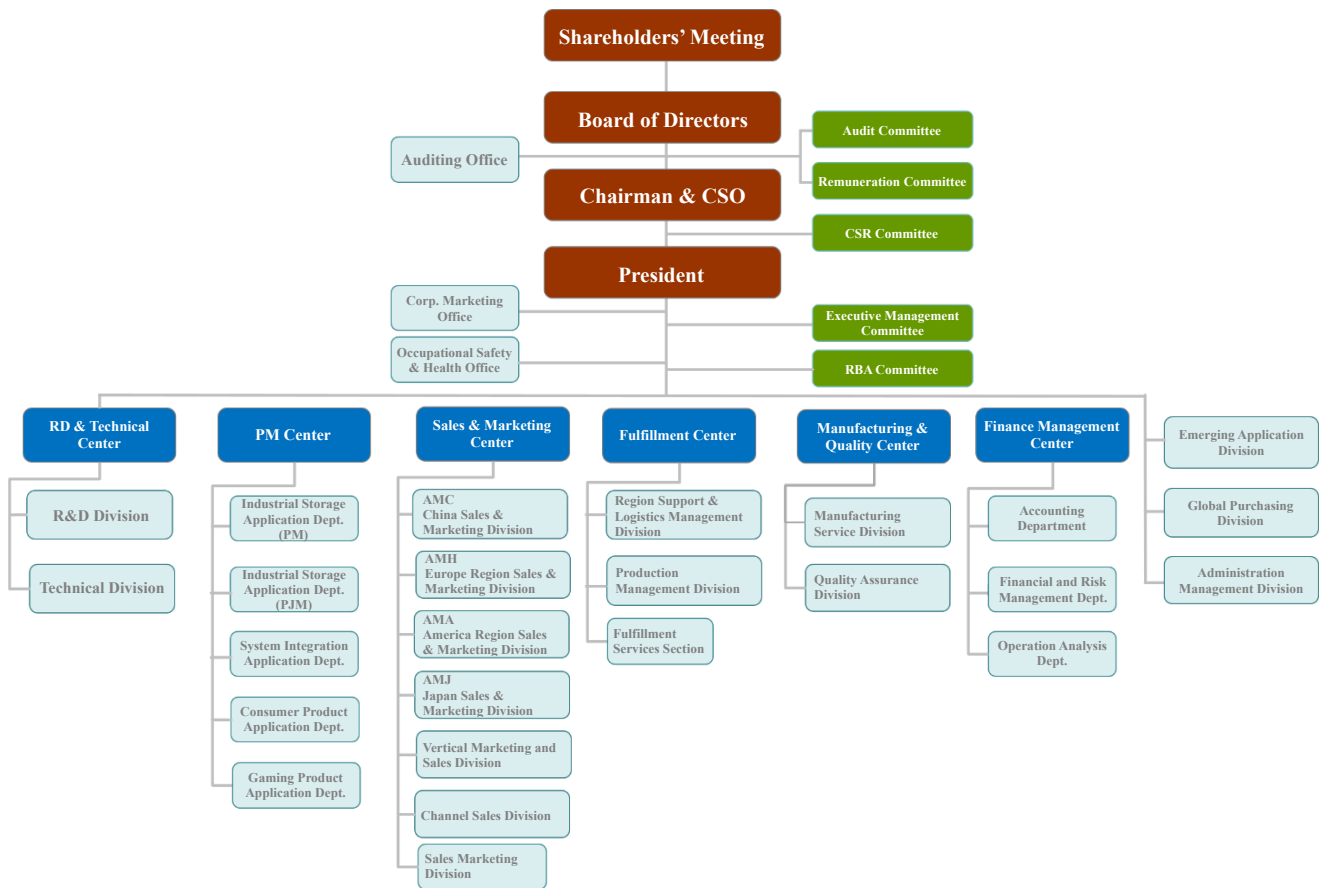
2018	August	By the great achievement in the active exploration of the optical inspection, we promoted the luminance inspection project for liquid crystal panels with high-end customization and wireless transmission support. This project also has a “depolarization ” patent to solve errors of the optical spectrometer and optimize the automated optical inspection (AOI) results. Numerous well known manufacturers of panels and industrial computer have introduced this project into their factory.
	October	With great results from the positive investment in the vertical application market, we participated in the Australasian Gaming Expo for two consecutive years to expand our share in the gaming storage market via our core technology.
	November	For the tenth consecutive year, we were honored by the Taiwan Excellence Awards for eight products that stood out this year, including industrial control, optics and consumer product applications. We also won the achievement award as the grand total of our awarded products has exceeded 50 products.
	December	To follow the burgeoning illumination inspection trend, Apacer attended the world’s largest Hong Kong International Lighting Fair and introduced the high customized solutions for measurement from the real-time illuminance sensing to the professional illuminance formula calibration. Appreciated by 435 professional judges of the most authoritative and representative Taiwan Corporate Sustainability Award, our 2017 corporate social responsibility report stood out among 148 competing enterprises and won the “Golden Award” in the electronic information manufacturing industry category. We participated in the InterBrand appraisal and ranked in the top-35 of Taiwan global brands and won the “Emerging Brands” award. We released the world’s fastest technical grade memory card CFexpress to meet the specifications of the latest CFA CFexpress1.0 and NVME. By adopting the XQD standard and high-speed PCIe Gen3x2 interface along with the advantages of high capacity, high efficiency and low latency, we continued to expand the market of high performance computing, AI and deep learning and intelligent image analysis.
2019	January	We worked with our IoT partners to carry out painless smart upgrades for long-term care wards. By using Line to control environmental monitoring equipment and utilizing robots to assist in ward rounds, we sought to build a system closest to the needs of care workers.
	February	At West 2019, we made our debut in the military equipment market with our advanced information security technology and rugged storage solutions. At 2019 Embedded World, we showcased our brand-new high-speed storage solutions which focused on AIoT/IoT core applications, bringing new momentum to our operations.
	March	As a start on smart city environmental monitoring, we participated in the Smart City Summit & Expo to promote our IoT solutions for environmental monitoring. We participated in the Japan IT Week in Tokyo, where we demonstrated our capabilities in industrial control.
	April	We released the industrial-grade DDR4 high-performance wide-temperature memory.
	May	We promoted the feature of instant upload of live photos for environmental monitoring, and the function of “event shot” was well-received by the market. We took part in the 5th COMPUTEX held at the Nangang Exhibition Center in Taipei, where we showcased our strategic plan under the title of “Smart IoT: Infinite Possibilities”.
	June	We were ranked in the top 5% of companies participating in the 5th Corporate Governance Evaluation, and we were invited to the ceremony.

2019	July	We released the AS2280Q4 M.2 PCIe Gen4x4 SSD.
	August	We participated in the Australasian Gaming Expo in Sydney for the third time, and we showed our R&D capabilities by being the first manufacturer to introduce the latest 3D NAND SLC-liteX technology.
	October	The XR-DIMM passed the RTCA DO-160G test for airborne equipment, becoming the first of its kind to be dual-certified globally.
	November	We became the first manufacturer to release the full series of the DDR4-3200 industrial-grade memory, which supports the latest Intel® Cascade Lake and AMD Rome processor platforms. For the third consecutive year, we were ranked in the top 35 of the Best Global Brands of Taiwan, and we received the “Emerging Brands” award. For the first time, we took part in the Asia Agri-Tech Expo, where we exhibited our smart environmental monitoring capability based on dual strategies for groundbreaking transformation. We were certified as an iSports corporation in 2019 due to our continued promotion of the “Sports Day” and encouragement of employees to do exercise. For the second consecutive year, we won the “Golden Award” for electronic information manufacturers under the category of Corporate Sustainability Report of the Taiwan Corporate Sustainability Awards (TCSA).
2020	January	We cooperated with Advantech in promoting industrial cloud services, our first investment in smart factory application.
	February	The mass production of the high-capacity GB DDR4 industrial-grade memory began. We cooperated with Allxon, our strategic partner, in cloud-monitoring of SSDs and investing in the smart IoT market.
		We participated in Embedded World, held in Nuremberg, Germany, and demonstrated our industrial cloud services.
	April	The anti-vulcanization DDR4 server memory with the highest level of protection was released.
	May	We have been ranked in the top 5% of companies participating in the Corporate Governance Evaluation for the second consecutive year, showing our excellent performance of CSR promotion. To upgrade the IoT information security, the CoreSecrity2 advanced technology for information security protection was launched.
	June	We were the first manufacturer to create the industrial-grade wide-temperature DDR4 server memory.
	July	We acquired the 16949 automotive certification and aimed at the supply chain of in-vehicle applications. To add a new powerful member to our high-speed SSDs, the world's smallest industrial-grade PCIe BGA SSD was released.
		We introduced the NAS SSD.
	August	We collaborated with Allxon to develop the technology of IoT smart equipment management. Apacer showcased the two core smart IoT systems, AI optical inspection and intelligent epidemic prevention systems, in the automation exhibition.
	September	We researched and developed the first military shock-resistant server memory, XR-LRDIMM, with our high-end customization capability. We organized the “Cloud-edge Integration” online exhibition.
	October	To facilitate the upgrade of national defense and transportation, we launched the rugged shock-resistant SODIMM memory. Apacer received the honor of the Taiwan Excellence Awards.

2020	November	We worked together with DIGITIMES to utilize the smart IoT to identify vital signs in order to ensure the safety of elderly living alone. We held an online product launch for our gaming brand, ZADAK. Apacer has been nominated for the Best Taiwan Global Brands for the third consecutive year, helping enhance our soft power. For the third consecutive year, we won the “Golden Award” for electronic information manufacturers under the category of Corporate Sustainability Report of the Taiwan Corporate Sustainability Awards (TCSA). Apacer once again received the RBA Silver Recognition. The latest AS722/AS721 USB 3.2 Gen2 USB-C external SSD was released. We became the first manufacturer to introduce the CoreSnapshot instant SSD backup and recovery technology.
	December	Apacer first participated in the photography exhibition in Taipei together with QNAP®. We cooperated with AOPEN to establish smart remote equipment management solutions.
2021	January	We were the first manufacturer to initiate the mass production of the DDR4-3200 wide-temperature memory module with the highest speed in the industry.
	February	The AC732 drop-resistant portable HD of military specifications was introduced.

III. Corporate Governance

1. Organizational system
 - (1) Organizational structure



(2) Tasks of the main divisions

Division	Tasks
Auditing Office	(1) Assess the defects of the internal control system and the efficiency of operations. (2) Provide advices for improvement to ensure the internal control system continues to be implemented effectively. (3) Assist the BoD and the management in fulfilling their responsibilities.
Occupational Safety & Health Office	(1) Education regarding occupational safety and health. (2) Impact analysis, supervision and advice regarding work safety. (3) Prevention, monitoring and control of unsafe conduct at work. (4) Planning, advice and supervision regarding work safety improvement programs. (5) Prevention and control of occupational accidents, and the planning, advising and supervision regarding the protection of employee health, safety and well-being.
Corp. Marketing Office	(1) Design and informative promotion of corporate image. (2) Planning and implementation regarding the promotion of CSR activities.
RD & Technical Center	(1) Formulate strategies regarding the direction of R&D for new technologies and products. (2) Research and development of software, firmware, hardware and institutional integration for product technologies. (3) R&D of our core technologies, and submission of patent applications. (4) Specialized technical services and certification of product technologies.
PM Center	(1) Market research, collection and analysis of market information, and formulation of strategies for product marketing. (2) Planning for new product design and coordinating with R&D units over formulation of R&D strategies. (3) Coordination with business units over inter-division resource integration to increase output. (4) Handling major customer complaints.
Sales & Marketing Center	(1) Market research, information collection, and formulation of strategies regarding the promotion of business in line with the annual operational objectives. (2) Maintenance of customer relations and development of new customers, channels and application areas. (3) Understanding new application areas and collection of customer demands in all channels and application areas. (4) Handling major customer complaints and coordination with the R&D unit in responding to customer product analysis reports. (5) Coordination with product units over the positioning/packaging of product solutions and promotion, planning and implementation of informative events.

Division	Tasks
Fulfillment Center	(1) Integration of global customer demands and simulation of material supplies and demands. (2) Production scheduling for global business orders, and planning and implementation for order delivery. (3) Providing global business supports and services. (4) Providing sales and operational information of products. (5) Management, warehousing and transportation of raw materials. (6) Overall management of global imports and exports. (7) Optimization of operational processes.
Manufacturing & Quality Center	(1) Manufacturing of our products. (2) Research and improvement regarding production engineering and technologies. (3) Inspection and testing of product quality. (4) Inspection, improvement and control of hazardous substances for products. (5) Analysis and improvement of production defects. (6) Product after-sales services. (7) Document management center.
Finance Management Center	(1) Establishment of procedures for accounting and tax matters and financial statements of the Company. (2) Control of the accounting and tax matters of subsidiaries. (3) Matters related to convening BoD meetings. (4) Control of our cash flow, and movement of funds (5) Announcement and disclosure of material information, and maintenance of investor relations (6) Reinvestment and risk control.
Emerging Application Division	(1) Market research, information collection, and formulation of strategies regarding the planning of market business in line with the annual operational objectives. (2) Develop business of smart application products and explore new customers. (3) Integration of all B2B business resources and determination of sales and marketing strategies. (4) Handling of major customer complaints and exploration of special channels for products. (5) Planning of distribution, production and priorities regarding domestic/foreign orders. (6) Collection of customer demands.
Global Purchasing Division	(1) Planning and management of the procurement of raw materials and components for products. (2) Bargaining and management regarding the contractors of externally procured products.

Division	Tasks
Administration Management Division	(1) Management and establishment of our information systems. (2) Establishment of database and system planning for data security/protection. (3) Assistance in consultation regarding the information technologies of the Company. (4) Matters related to legal affairs, patents and trademarks of the Company. (5) Matters related to the management of contracts and seals of the Company. (6) Planning and formulation of HR strategies and management systems for general and factory affairs of the Company. (7) Establishment of welfare resource systems. (8) Planning and implementation of shareholders' meetings, and shareholder services. (9) Establishment and implementation of management regulations.

2. Information about directors, supervisors, president, vice president, assistant managers, and supervisors of the branches and offices

(1) Directors and supervisors

April 1, 2021

Title	Nationality or country of registration	Name	Date of election	Gender	Term	Date of first election	Shares held at time of election		Current shares held		Current shares held by spouse or minor children		Shares held in the name of others		Educational background and experience	Concurrent posts in Apacer or other companies	Other supervisors, directors or supervisors in a spousal relationship or within the second degree of kinship		
							Number of shares	Shareholding ratio	Number of shares	Shareholding ratio	Number of shares	Shareholding ratio	Number of shares	Shareholding ratio			Title	Name	Relation
Chairman	Republic of China	Austin Chen	2018.5.30	Male	3 years	2001.04.30	1,525,633	1.50%	1,525,633	1.50%	450,268	0.44%	0	0.00%	Apacer Technology Inc., Chairman Acer Inc., Vice President M.B.A., Department of Management Science, National Chiao Tung University	Apacer Technology Inc., Chairman and CSO Apacer Technology (BVI) Inc. Director Darwin Precisions Corp., Independent Director JoiUp Technology Inc., Representative of Legal Person as Director OtO Photonics Inc., Representative of Legal Person as Director	None	None	None
Director	Republic of China	Teddy Lu	2018.5.30	Male	3 years	2008.09.02	5,699,906	5.60%	5,699,906	5.60%	0	0.00%	0	0.00%	Acer Inc., Operation and Investment Management Business Section, General Manager M.S. of Electrical Engineering and M.B.A., University of California B.S., Department of Electrophysics, National Chiao Tung University	Dragon Investment Fund Co., Ltd., Director's Representative Apacer Technology Inc., Director Cyber Power Systems, Inc., Director iD SoftCapital Inc., Director RDC Semiconductor Co., Ltd., Director Formosa21, Inc., Director Stans Foundation, Director JoiUp Technology Inc., Director EcoLumina Technologies Inc., Director YODN Lighting Corp., Chairman	None	None	None
Director	Republic of China	Chang Chia-Kun	2018.5.30	Male	3 years	2012.06.13	196,825	0.19%	196,825	0.19%	81,740	0.08%	0	0.00%	Apacer Technology Inc., President Apacer Memory America Inc., President Baruch College - CUNY M.B.A. NYU Polytechnic School of Engineering M.E.E.	Apacer Technology Inc., Director/President Apacer Technology B.V., Director Apacer Technology Japan Corp., Director Apacer Electronic (Shanghai) Co., Ltd. Representative of Legal Person as Director	None	None	None
Director	Republic of China	Haydn Hsieh	2018.5.30	Male	3 years	2015.6.15	0	0.00%	0	0.00%	0	0.00%	0	0.00%	Wistron Corp., Senior Vice President Acer Inc., Portable Computer Business Group, General Manager and Senior Vice President Entrepreneur Class, National Chengchi University Department of Electrical Engineering, Tatung University	Wistron NeWeb Corporation, Chairman and CEO AOPEN Inc., Representative of Legal Person as Director aEnrich Technology Corp., Director Raydium Semiconductor Corporation, Independent Director Apacer Technology Inc., Director	None	None	None
Director	Republic of China	George Huang	2018.5.30	Male	3 years	2018.5.30	1,207,041	1.19%	1,207,041	1.19%	0	0.00%	0	0.00%	Acer Inc., Chairman Acer Inc., CFO Acer Inc., Co-founder B.S., Department of Communications Engineering, National Chiao Tung University	Apacer Technology Inc., Director Les enphants Co. Ltd., Director Motech Industries Inc., Director PChome Online Inc., Independent Director BIONET Corp., Independent Director	None	None	None
Director	Republic of China	Phison Electronics Corp.	2018.5.30	N/A	3 years	2018.5.30	10,050,000	9.87%	10,050,000	9.87%	0	0.00%	0	0.00%	N/A	N/A	N/A	N/A	N/A
	Malaysia	Representative: Weng Wen-Jie		Male			0	0.00%	0	0.00%	0	0.00%	0	0.00%	Innolux Corporation, Senior Operating and Management Officer Department of Accounting, National Cheng	Phison Electronics Corp., Assistant Manager Apacer Technology Inc., Representative of Legal Person as Director	None	None	None

Title	Nationality or country of registration	Name	Date of election	Gender	Term	Date of first election	Shares held at time of election		Current shares held		Current shares held by spouse or minor children		Shares held in the name of others		Educational background and experience	Concurrent posts in Apacer or other companies	Other supervisors, directors or supervisors in a spousal relationship or within the second degree of kinship		
							Number of shares	Shareholding ratio	Number of shares	Shareholding ratio	Number of shares	Shareholding ratio	Number of shares	Shareholding ratio			Title	Name	Relation
															Kung University	Lian Xu Dong Investment Corp., Representative of Legal Person as Director			
Independent Director	Republic of China	Max Wu	2018.5.30	Male	3 years	2012.6.13	68,325	0.07%	68,325	0.07%	0	0.00%	0	0.00%	Acer Inc. Hua Nan Management Consulting Co., Chairman InveStar Capital, Inc., Partner Spring Foundation of NCTU, Chairman B.S., Department of Electronics Engineering, National Chiao Tung University	Birch Venture Capital, Inc., Chairman Novatek Microelectronics Corp., Director YODN Lighting Corp., Director Antec, Inc., Director Gigastone Corp., Independent Director Apacer Technology Inc., Independent Director Harvatek Corporation, Independent Director	None	None	None
Independent Director	Republic of China	Philip Peng	2018.5.30	Male	3 years	2018.5.30	527	0.00%	527	0.00%	0	0.00%	0	0.00%	Acer Inc., Senior vice President/CFO M.B.A., Department of Business Administration, National Chengchi University	AU Optronics Corp., Independent Director Apacer Technology Inc., Independent Director Wistron Corporation, Director Wistron NeWeb Corp., Director Wistron ITS Corp., Director ZIGONG ART SHARING CO., LTD., Independent Director SmartStar Technology Inc., Chairman Allxon Inc., Supervisor	None	None	None
Independent Director	Republic of China	Hsieh Hui-Chuan	2018.5.30	Female	3 years	2018.5.30	0	0.00%	0	0.00%	0	0.00%	0	0.00%	Co-operative Assets Management Co., Ltd., President China Development Asset Management Corp., President China Development Industrial Bank, Department of Investment, Assistant Manager Ph.D. in Finance, University of Houston	Apacer Technology Inc., Independent Director	None	None	None

(2) Major shareholders of the corporate shareholders:

April 5, 2020

Name of corporate shareholders	Major shareholders of the corporate shareholders
Phison Electronics Corp.	Investment account of KIOXIA Corporation in escrow at First Commercial Bank (10.06%) Investment account of Kingston Technology Corporation in escrow at CTBC Bank (3.73%) Investment account of employees' provident fund in escrow at HSBC Bank (Taiwan) Limited (3.69%) Pan Jian-Cheng (2.31%) Yang Jun-Yong (2.31%) Labor pension fund under the new system (2.17%) Mercuries Life Insurance Co., Ltd. (1.91%) Ouyang Zhi-Guang (1.73%) Investment account of Norges Bank in escrow at Citi Bank (1.70%) Labor pension fund under the old system (1.54%)

(3) Major shareholders of the corporate shareholders:

April 5, 2020

Name of corporate shareholders	Major shareholders of the corporate shareholders	Shareholding ratio
Investment account of KIOXIA Corporation in escrow at First Commercial Bank	Kioxia Holdings Corporaion	100%

(4) Information on supervisors and directors

Qualifications Name	Experience of more than 5 years and following professional qualification			Independence (Note)												Number of other public companies where the member also serves on a remuneration committee
	Lecturer or higher position at a public or private university/ college in the department of commerce, law, finance, accounting or any other fields related to our business	Judge, public prosecutor, attorney, certified public accountant, or any other professional or technical specialists who have passed a national examination and received a certificate in a profession necessary for our business	Work experience in commerce, law, finance, accounting or any other field necessary for our business	1	2	3	4	5	6	7	8	9	10	11	12	
Austin Chen			✓				✓	✓		✓	✓	✓	✓	✓		1
Teddy Lu			✓	✓		✓	✓	✓		✓	✓	✓	✓	✓		0
Chang Chia-Kun			✓			✓	✓	✓		✓	✓	✓	✓	✓		0
Haydn Hsieh			✓	✓	✓	✓	✓	✓			✓	✓	✓	✓		1
George Huang			✓	✓	✓		✓	✓		✓	✓	✓	✓	✓	✓	2
Phison Electronics Corp. Representative: Weng Wen-Jie			✓	✓	✓	✓	✓			✓	✓	✓	✓	✓		0
Max Wu			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	2
Philip Peng			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	1
Hsieh Hui-Chuan			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0

Note: A director or supervisor is required to mark a “✓” in the blank below the number of any of the following requirements which he/she has satisfied during the two years before being elected and during his/her term of office.

- (1) The director or supervisor is not an employee of the Company or any of its affiliates.
- (2) The director or supervisor is not a director or supervisor of the Company or any of its affiliates (except for an independent director of the Company, its parent or subsidiary, or any subsidiary of its parent appointed pursuant to the Company Act or local laws and regulations).
- (3) The director or supervisor is not a natural-person shareholder who holds shares, together with those held by his/her spouse or minor children or held in the name of another person, in an aggregate amount of at least 1% of the total shares issued by the Company or is one of the top-10 shareholders of the Company.
- (4) The director or supervisor is not a spouse, relative within the second degree of kinship or lineal relative within the third degree of kinship, of any manager under (1) or any of the persons under (2) and (3).
- (5) The director or supervisor is not a director, supervisor or employee of any corporate shareholder that directly holds at least 5% of the total shares issued by the Company, is one of the top-5 shareholders of the Company or has appointed a representative as a director or supervisor of the Company pursuant to Article 27, Paragraph 1 or 2 of the Company Act (except for an independent director of the Company, its parent or subsidiary, or any subsidiary of its parent appointed pursuant to the Company Act or local laws and regulations).
- (6) The director or supervisor is not a director, supervisor or employee of any other company where more than half of its directors or voting shares are controlled by the same person (except for an independent director of the Company, its parent or subsidiary, or any subsidiary of its parent appointed pursuant to the Company Act or local laws and regulations).

- (7) The director or supervisor is not a director, supervisor or employee of any other company or institution (except for an independent director of the Company, its parent or subsidiary, or any subsidiary of its parent appointed pursuant to the Company Act or local laws and regulations).
- (8) The director or supervisor is not a director, supervisor, manager or shareholder holding at least 5% of the shares of any company or institution which has engaged in financial or business dealings with the Company (except where the company or institution holds at least 20% and no more than 50% of the total shares issued by the Company and is an independent director of the Company, its parent or subsidiary, or any subsidiary of its parent appointed pursuant to the Company Act or local laws and regulations).
- (9) The director or supervisor is not an owner, partner, director, supervisor or manager, or a spouse thereof, of any professional, sole proprietorship, partnership, company or institution that engages in commercial, legal, financial and accounting services and which has conducted audit for the Company or any of its affiliates or has received a total amount of compensation not exceeding TWD 500,000 during the most recent two years, except where the director or supervisor is a member of any remuneration committee, public purchase review committee or special committee for mergers and acquisitions which performs its duties pursuant to the Securities and Exchange Act, Business Mergers And Acquisitions Act or other applicable laws and regulations.
- (10) The director or supervisor was or is not in a spousal relationship nor a relative within the second degree of kinship.
- (11) None of the circumstances under Article 30 of the Company Act applies to the director or supervisor.
- (12) The director or supervisor is not elected as a government agency or juristic person or a representative thereof under Article 27 of the Company Act.

(5) Information of the President, Vice President, Assistant Manager, and supervisors of departments and branches

April 1, 2021

Title	Nationality	Name	Gender	Start date of office	No. of shares held		Shares held by spouse or minor children		Shares held in the name of others		Educational background and experience	Concurrent posts in other companies	Managerial officers in a spousal relationship or within the second degree of kinship		
					Number of shares	Shareholding ratio	Number of shares	Shareholding ratio	Number of shares	Shareholding ratio			Title	Name	Relation
Chairman & CSO	Republic of China	Austin Chen	Male	2012.06.13	1,525,633	1.50%	450,268	0.44%	0	0.00%	Apacer Technology Inc., Chairman Acer Inc., Vice President M.B.A., Department of Management Science, National Chiao Tung University	Apacer Technology Inc., Chairman and CSO Apacer Technology (BVI) Inc. Director Darwin Precisions Corp., Independent Director JoiUp Technology Inc., Representative of Legal Person as Director OtO Photonics Inc., Representative of Legal Person as Director	None	None	None
President	Republic of China	Chang Chia-Kun	Male	2014.04.01	196,825	0.19%	81,740	0.08%	0	0.00%	Apacer Technology Inc., President Apacer Memory America Inc., President Baruch College, CUNY of M.B.A. NYU Polytechnic School of M.E.E.	Apacer Technology Inc., Director/President Apacer Technology B.V., Director Apacer Technology Japan Corp., Director Apacer Electronic (Shanghai) Co., Ltd, Representative of Legal Person as Director	None	None	None
Vice President	Republic of China	Luo Rong-Fa	Male	2020.07.01	0	0.00%	0	0.00%	0	0.00%	Apacer Technology Inc., Vice President Apacer Technology Inc., Special Assistant to the President's Office JoiUp Technology Inc., Chairman B.S., Department of Forestry and Nature Conservation, Chinese Culture University	Apacer Technology Japan Corp., Director	None	None	None
Vice President	Republic of China	Huang Mei-Hui	Female	2018.08.01	9,279	0.01%	0	0.00%	0	0.00%	Apacer Technology Inc., Vice President of the Sales & Marketing Center Apacer Technology Inc., Head of the Vertical Market Application BU Apacer Technology Inc., Head of the Asia-Pacific and Taiwan Sales & Marketing Division B.B.A., Department of Business Administration, Tunghai University	—	None	None	None
Vice President	Republic of China	Luo Xue-Ru	Female	2018.08.01	8,854	0.01%	1,869	0.00%	0	0.00%	Apacer Technology Inc., Vice President of the Fulfillment Center Apacer Technology Inc., Head of the Consumer Market Application BU Apacer Technology Inc., COO of the General Operational Resource Division EMBA, National Chengchi University	Grand Scope Ltd., Representative of Legal Person as Director	None	None	None

Title	Nationality	Name	Gender	Start date of office	No. of shares held		Shares held by spouse or minor children		Shares held in the name of others		Educational background and experience	Concurrent posts in other companies	Managerial officers in a spousal relationship or within the second degree of kinship		
					Number of shares	Shareholding ratio	Number of shares	Shareholding ratio	Number of shares	Shareholding ratio			Title	Name	Relation
CTO	Republic of China	Li Jun-Chang	Male	2020.07.01	67,324	0.07%	15,340	0.02%	0	0.00%	Apacer Technology Inc., CTO of the RD & Technical Center Apacer Technology Inc., Senior Head of the RD & Technical Center Apacer Technology Inc., Senior Manager of the R&D Division M.S., Department of Mechanical Engineering, National Taiwan University of Science and Technology	—	None	None	None
CFO	Republic of China	Lai Zi-Wen	Female	7.14.2013	0	0.00%	0	0.00%	0	0.00%	Apacer Technology Inc., CFO Apacer Technology Inc., Accounting / Financial Manager Taiwan Cement Co., Ltd., Project Leader Teapo Electronic Co., Ltd., Assistant Financial Manager M.B.A., Department of Business Administration, National Cheng Kung University	Apacer Technology Inc., CFO and Spokesperson Apacer Technologies Pvt. Ltd., Director Apacer Electronic (Shanghai) Co., Ltd, Representative of Legal Person as Director Shenzhen Qinjing Technology Co., Ltd., Representative of Legal Person as Director Grand Scope Ltd., Representative of Legal Person as Director	None	None	None
Senior Head	Republic of China	Yin Hua-Jun	Female	2020.07.01	43,210	0.04%	0	0.00%	0	0.00%	Apacer Technology Inc., Senior Head of the PM Center Apacer Technology Inc., Senior Manager of the Global Purchasing Division Funtwist Technology Inc., Purchasing Assistant Manager SANDISK TAIWAN LIMITED, Purchasing Assistant Manager FIU of Management Bachelor	—	None	None	None

(6) Remuneration for directors, supervisors, President and Vice President in the most recent year

A. Remuneration for general directors and independent directors

Unit: TWD

Title	Name	Remuneration								The total amount of A, B, C and D in net income after tax		Remuneration for part-time employees								The total amount of A, B, C, D, E, F and G in net income after tax (%)		Remuneration from reinvestment businesses other than subsidiaries
		Remuneration (A)		Retirement pension (B)		Director remuneration (C)		Business execution fee (D)				Salary, bonus and special allowance (E)		Retirement pension (F)		Employee remuneration (G)						
		Apacer	All companies in financial report	Apacer	All companies in financial report	Apacer	All companies in financial report	Apacer	All companies in financial report	Apacer	All companies in financial report	Apacer	All companies in financial report	Apacer	All companies in financial report	Apacer		All companies in financial report		Apacer	All companies in financial report	
																Cash dividend	Share dividend	Cash dividend	Share dividend			
Chairman	Austin Chen	5,000,000	5,000,000	-	-	5,598,814	5,598,814	580,000	580,000	3.85%	3.85%	17,000,000	17,000,000	108,000	108,000	3,880,000	-	3,880,000	-	11.07%	11.07%	-
Director	Chang Chia-Kun																					
Director	Teddy Lu																					
Director	Haydn Hsieh																					
Director	George Huang																					
Director	Phison																					
Independent Director	Max Wu																					
Independent Director	Philip Peng																					
Independent Director	Hsieh Hui-Chuan																					

Salary Range Table

Salary range for directors of Apacer	Name of director			
	The total amount of the first four remuneration items (A+B+C+D)		The total amount of the first seven remuneration items (A+B+C+D+E+F+G)	
	Apacer	All companies in financial report	Apacer	All companies in financial report
Less than 1,000,000 dollars				
1,000,000 dollars (incl.) ~ 2,000,000 dollars (not incl.)	Chang Chia-kun, Teddy Lu Haydn Hsieh, George Huang Phison, Max Wu, Philip Peng, Hsieh Hui-chuan	Chang Chia-kun, Teddy Lu Haydn Hsieh, George Huang Phison, Max Wu, Philip Peng, Hsieh Hui-chuan	Teddy Lu Haydn Hsieh, George Huang Phison, Max Wu, Philip Peng, Hsieh Hui-chuan	Teddy Lu Haydn Hsieh, George Huang Phison, Max Wu, Philip Peng, Hsieh Hui-chuan
2,000,000 dollars (incl.) ~ 3,500,000 dollars (not incl.)	Austin Chen	Austin Chen		
3,500,000 dollars (incl.) ~ 5,000,000 dollars (not incl.)				
5,000,000 dollars (incl.) ~ 10,000,000 dollars (not incl.)				
10,000,000 dollars (incl.) ~ 15,000,000 dollars (not incl.)			Austin Chen, Chang Chia-kun	Austin Chen, Chang Chia-kun
15,000,000 dollars (incl.) ~ 30,000,000 dollars (not incl.)				
30,000,000 dollars (incl.) ~ 50,000,000 dollars (not incl.)				
50,000,000 dollars (incl.) ~ 100,000,000 dollars (not incl.)				
More than 100,000,000 dollars				
Total	9 (Independent) Directors	9 (Independent) Directors	9 (Independent) Directors	9 (Independent) Directors

B. Remuneration for supervisors

Unit: TWD

Title	Name	Supervisor remuneration						The total amount of A, B and C in net income after tax (%)		Remuneration from reinvestment businesses other than subsidiaries
		Remuneration (A)		Remuneration (B)		Business execution fee (C)				
		Apacer	All companies in financial report	Apacer	All companies in financial report	Apacer	All companies in financial report	Apacer	All companies in financial report	
-	-	-	-	-	-	-	-	-	-	-

Salary Range Table

Salary range for supervisors of Apacer	Supervisor name	
	Total amount of the first three remuneration items (A+B+C)	
	Apacer	All companies in financial report
Less than 1,000,000 dollars	-	-
1,000,000 dollars (incl.) ~ 2,000,000 dollars (not incl.)	-	-
2,000,000 dollars (incl.) ~ 3,500,000 dollars (not incl.)	-	-
3,500,000 dollars (incl.) ~ 5,000,000 dollars (not incl.)	-	-
5,000,000 dollars (incl.) ~ 10,000,000 dollars (not incl.)	-	-
10,000,000 dollars (incl.) ~ 15,000,000 dollars (not incl.)	-	-
15,000,000 dollars (incl.) ~ 30,000,000 dollars (not incl.)	-	-
30,000,000 dollars (incl.) ~ 50,000,000 dollars (not incl.)	-	-
50,000,000 dollars (incl.) ~ 100,000,000 dollars (not incl.)	-	-
More than 100,000,000 dollars	-	-
Total	-	-

C. Remuneration for President and Vice President

Unit: TWD

Title	Name	Salary (A)		Retirement pension (B)		Bonus and special allowance (C)		Employee remuneration (D)				The total amount of A, B, C and D in net income after tax (%)		Remuneration from reinvestment businesses other than subsidiaries
		Apacer	All companies in financial report	Apacer	All companies in financial report	Apacer	All companies in financial report	Apacer		All companies in financial report		Apacer	All companies in financial report	
								Cash amount	Share amount	Cash amount	Share amount			
President	Chang Chia-Kun	12,893,000	12,893,000	477,000	477,000	12,394,000	12,394,000	4,130,000	-	4,130,000	-	10.29%	10.29%	-
Vice President	Victor Lin (Note 1)													
Vice President	Luo Rong-Fa (Note 2)													
Vice President	Huang Mei-Hui (Note 2)													
Vice President	Luo Xue-Ru (Note 2)													

Note 1: Victor Lin was discharged on May 31, 2020.

Note 2: Luo Rong-Fa, Huang Mei-Hui and Luo Xue-Ru were promoted to vice presidents on July 1, 2020.

Salary Range Table

Salary range for the President and Vice President of Apacer	President and Vice President name	
	Apacer	All companies in financial report
Less than 1,000,000 dollars	-	-
1,000,000 dollars (incl.) ~ 2,000,000 dollars (not incl.)	-	-
2,000,000 dollars (incl.) ~ 3,500,000 dollars (not incl.)	Victor Lin (Note 1), Luo Rong-Fa (Note 2)	Victor Lin (Note 1), Luo Rong-Fa (Note 2)
3,500,000 dollars (incl.) ~ 5,000,000 dollars (not incl.)	-	-
5,000,000 dollars (incl.) ~ 10,000,000 dollars (not incl.)	Huang Mei-Hui (Note 2), Luo Xue-Ru (Note 2)	Huang Mei-Hui (Note 2), Luo Xue-Ru (Note 2)
10,000,000 dollars (incl.) ~ 15,000,000 dollars (not incl.)	Chang Chia-Kun	Chang Chia-Kun
15,000,000 dollars (incl.) ~ 30,000,000 dollars (not incl.)	-	-
30,000,000 dollars (incl.) ~ 50,000,000 dollars (not incl.)	-	-
50,000,000 dollars (incl.) ~ 100,000,000 dollars (not incl.)	-	-
More than 100,000,000 dollars	-	-
Total	5 (Vice) Presidents	5 (Vice) Presidents

Note 1: Victor Lin was discharged on May 31, 2020.

Note 2: Luo Rong-Fa, Huang Mei-Hui and Luo Xue-Ru were promoted to vice presidents on July 1, 2020.

D. Names of the managers distributing employee remunerations and the distributing status

Unit: TWD

	Title	Name	Share amount	Cash amount	Total	The total amount in net income after tax (%)
General manager	Chairman and CSO	Austin Chen	0	7,310,000	7,310,000	2.52%
	President	Chang Chia-Kun				
	Vice President	Victor Lin (Note 1)				
	Vice President	Luo Rong-Fa (Note 2)				
	Vice President	Huang Mei-Hui (Note 2)				
	Vice President	Luo Xue-Ru (Note 2)				
	CTO	Li Jun-Chang (Note 3)				
	CFO	Lai Zi-Wen				
	Center Senior Head	Yin Hua-Jun (Note 4)				

Note 1: Victor Lin was discharged on May 31, 2020.

Note 2: Luo Rong-Fa, Huang Mei-Hui and Luo Xue-Ru were promoted to vice presidents on July 1, 2020.

Note 3: Li Jun-Chang was to the CTO on July 1, 2020.

Note 4: Yin Hua-Jun was appointed as a manager on July 1, 2020.

E. Comparison and analysis of the total remuneration as a percentage of net income stated in the financial report of Apacer or individual financial reports and paid by Apacer and all the companies in the consolidated report to each of Apacer's directors, supervisors, President, and Vice President in the most recent 2 fiscal years, and description of the policies, standards, and portfolios for payment of the remuneration, the procedures for determining the remuneration, and the association with the operation performance and future risk exposure.

Title	Ratio of total remuneration in 2020 to net income after tax	Ratio of total remuneration of all the companies in the consolidated statements in 2020 to net income after tax	The total amount of 2019 remuneration in net income after tax	The total amount of remuneration of all the companies in 2019 consolidated report in net income after tax
Director	3.85%	3.85%	3.39%	3.39%
President and Vice President	10.29%	10.29%	4.69%	4.69%

(A) Rules Governing the Payment of Remuneration to the Company's Directors and Managers

a. Director remuneration

The remuneration to the Company's directors is subject to Article 16-1 of the Company's Articles of Incorporation: The Board of Directors is authorized to determine the remuneration proposed by the Remuneration Committee for the director in consideration of the extent of their involvement in and the value of their contribution to the operations of the Company and the industry average in Taiwan and abroad regardless of whether the Company has profits or losses. Where there is any profit in a fiscal year, no more than 1.4% of the profit shall be appropriated as remuneration to directors. Where the Company has any accumulated loss, the remuneration must be appropriated from the balance after such accumulated loss has been covered. The criteria for allocation of the remuneration must be recommended by the Remuneration Committee to the Board of Directors for approval.

b. Manager remuneration

The remuneration to the Company's managers is subject to Article 20 of the Company's Articles of Incorporation: Where there is any profit in a fiscal year, 4% or more of the profit shall be appropriated as remuneration to employees. Where the Company has any accumulated loss, the remuneration must be appropriated from the balance after such accumulated loss has been covered. The employees' remuneration referred to in the previous paragraph may be distributed in the form of cash or stock. The employees eligible for the distribution may include the employees of the affiliated companies who meet the requirements specified by the Board of Directors.

(B) Rules Governing the Payment of Compensation of the Remuneration to the Company's Directors and Managers

a. Remuneration

When determining the remuneration to the Company's directors, not only are the Company's overall business performance, the future operating risks and development trends in the industry, and the industry average in Taiwan and abroad taken into account to provide reasonable remuneration, but also the director's involvement in and contribution to the Company's operations. Relevant performance evaluations and the reasonableness of the remuneration shall be reviewed by the Remuneration Committee and the Board of Directors, and the compensation system is also reviewed from time to time according to actual operations and relevant laws to ensure a balance with the Company's sustainable operation results.

b. Manager compensation

The compensation to the Company's managers includes a fixed salary (a base pay, additional pay, allowances), variable rewards (bonuses, remuneration, stocks) and benefits. The fixed salary is determined based on the educational background, work experience, job description and industry average; the variable rewards are decided according to the Company's business performance and the manager's performance and contribution.

The contents of the Company's performance indicators are mainly related to the performance of annual business targets, including the achievement rate, profit margin, growth rate or business results, and supplemented by weight adjustments. The performance indicators are established according to global development trends, internal and external market environments, and government regulations and policies every year. The Company conducts performance evaluations and interviews every six months to carry out necessary response and adjustment measures for the Company's relevant business activities to achieve the business targets. Managers' contributions to the Company's performance results shall be first assessed and reviewed by the Remuneration Committee and then reported to the Board of Directors for approval.

3. Corporate governance

(1) Operation status of the Board of Directors

The Board of Directors held 7 meetings in 2020. The presence and attendance of the directors are described below:

Title	Name	Actual number of persons present (attended)	Number of meetings attended by proxy	Actual attendance rate (%)	Remarks
Chairman	Austin Chen	7	0	100	
Director	Teddy Lu	7	0	100	
Director	Chang Chia-Kun	7	0	100	
Director	Haydn Hsieh	7	0	100	
Director	George Huang	7	0	100	
Director	Phison Electronics Corp. Representative: Weng Wen-Jie	4	3	57	
Independent Director	Max Wu	7	0	100	
Independent Director	Philip Peng	7	0	100	
Independent Director	Hsieh Hui-Chuan	5	0	71	

Other matters to be specified:

- Where any of the following circumstances occurs to any meeting of the Board of Directors, the date, term and proposal of the meeting as well as the opinions of all the independent directors and actions taken by the Company on the opinions shall be specified:
 - The matters referred to in Article 14-3 of the Securities and Exchange Act: are not applicable since the Company has established the Audit Committee.
 - In addition to the matters mentioned above, any resolution of the Board of Directors for which dissent or reservation expressed by any independent director, and such dissent or reservation is recorded in the minutes or a written statement: None.
- Where the implementation status of recusal bearing on the interest of a director is involved, the name of the director, proposal, reasons for the recusal, and participation in the voting shall be described:

Date	Meeting	Proposal	Resolution
2020.2.25	1st meeting in 2020	Proposal for distribution of the remuneration for employees and directors in FY 2019 was adopted	The proposal was approved by a resolution of the directors, excluding Austin Chen and Chang Chia-Kun, who did not participate in the discussion and voting due to personal interests, present at the meeting of the Board of Directors after consultation with the independent directors.
2020.4.16	3rd meeting in 2020	Proposal for adjustment of the salary for managers in FY 2020 was adopted	The proposal was approved by a resolution of the directors, excluding Austin Chen and Chang Chia-Kun, who did not participate in the discussion and voting due to personal interests, present at the meeting of the Board of Directors after consultation with the independent directors.

Date	Meeting	Proposal	Resolution
2020.8.6	5th meeting in 2020	Proposal of matters related to the issuance of employee restricted stock in FY 2020 was adopted	The proposal was approved by a resolution of the directors, excluding Chang Chia-Kun, who did not participate in the discussion and voting due to personal interests, present at the meeting of the Board of Directors after consultation with the independent directors.
2020.8.6	5th meeting in 2020	Proposal of the Company's "Directions for Senior Management's Remuneration and Benefits" was adopted	The proposal was approved by a resolution of the directors, excluding Austin Chen and Chang Chia-Kun, who did not participate in the discussion and voting due to personal interests, present at the meeting of the Board of Directors after consultation with the independent directors.
2020.12.17	7th meeting in 2020	Proposal for distribution of the performance bonus for managers in 2020 was adopted	The proposal was approved by a resolution of the directors, excluding Austin Chen and Chang Chia-Kun, who did not participate in the discussion and voting due to personal interests, present at the meeting of the Board of Directors after consultation with the independent directors.
2020.12.17	7th meeting in 2020	Proposal for distribution of the employee remuneration for managers in 2020	The proposal was approved by a resolution of the directors, excluding Austin Chen and Chang Chia-Kun, who did not participate in the discussion and voting due to personal interests, present at the meeting of the Board of Directors after consultation with the independent directors.

3. The Company resolved at the ninth meeting of the eighth Board of Directors held on 12.17, 2019 to establish the "Guidelines for Evaluating the Performance of the Board of Directors". The evaluation procedure is described as follows:

Interval of evaluation	Period of evaluation	Scope of evaluation	Method of evaluation	Items of evaluation
Annual	Evaluation of the performance of the Board of Directors from January 1 to December 31, 2020	Evaluation of the performance of the Board of Directors, (self or peer) evaluation of the performance of directors, and evaluation of the performance of functional committees	Self-evaluation of the Board of Directors, directors and functional committees	- Evaluation of the performance of the Board of Directors - Involvement in the Company's operation - Improvement of the quality of decision-making by the Board of Directors. - Composition and structure of the Board of Directors. - Election and continued education of directors. - Internal control. (Self- or peer) evaluation of the performance of directors - Understanding of the objectives and missions of the Company. - Knowledge of the responsibilities of directors. - Involvement in the Company's operation - Internal relationship management and communication.

				(5) Professional knowledge and continued education of directors. (6) Internal control. 3. Evaluation of the performance of functional committees (1) Involvement in the Company's operation (2) Knowledge of the responsibilities of functional committees. (3) Improvement of the quality of decision-making by functional committees. (4) Composition and election of the members of functional committees. (5) Internal control.
4. Evaluation of the goals (e.g. establishment of the Audit Committee, improvement of information transparency, etc.) and implementation with respect to enhancement of the function of the Board of Directors in the current and most recent year: (1) To enhance our corporate governance system, ensure its sound supervisory functions and strengthen its management capability, the Company officially adopted the audit committee system after the re-election of directors at the shareholders' meeting in May 2018. (2) In order to implement corporate governance and improve the functions of the Board of Directors, we perform an evaluation of the performance of the Board of Directors every year and include the functional committees into the scope of evaluation. In 2020, the performance evaluation was conducted by the board members themselves. (3) More information transparency: The Company is committed to transparent operations and pays attention to the rights and interests of its shareholders. On the Company's website, related information is provided in Chinese and English under "Investor Relations", "CSR" and "Corporate Governance". Important decisions of the Board of Directors are published regularly, and investor conferences are held on a periodical basis. (4) Director liability insurance: To protect the directors and managers from the risks they bear when conducting business, the Company purchases directors and managers' liability insurance for the directors and managers annually, and regularly reviews the insurance policies to ensure certain insurance limits and coverage requirements. In this regard, the Company regularly reports to the Board of Directors. (5) The Audit Committee and Remuneration Committee are formed by all the independent directors of the Company to assist the Board of Directors in performing its supervisory duties. The chairpersons of the committees report regularly to the Board of Directors regarding their operations. (6) Continuing education of directors: The Company encourages continuing education of the directors and regularly recommends courses for the directors to keep gaining new knowledge. The total education hours of the directors in 2020 were 60.				

(2) Operation status of the Audit Committee or participation of supervisors in the meeting of the Board of Directors

The Audit Committee held 5 meetings in 2020. The attendance of its members is described below:

Title	Name	Actual number of persons attended	Actual attendance rate (%)	Remarks
Chairperson	Max Wu	5	100	
Member	Philip Peng	5	100	
Member	Hsieh Hui-Chuan	4	80	

The annual work focuses of the Audit Committee:

- The Audit Committee operates mainly for the purpose of overseeing the following matters:
 - (1) Fair presentation of the Company's financial statements.
 - (2) Appointment (dismissal) of CPAs and evaluation of their independence.
 - (3) Effective implementation of the Company's internal control system.
 - (4) The Company's compliance with the relevant regulations and rules.
 - (5) Control of the Company's existing or potential risks.
- The matters to be reviewed by the Audit Committee mainly include:
 - (1) The internal control system and related policies and procedures.
 - (2) Audit of financial statements, and accounting policies and procedures.
 - (3) Acquisition or disposal of material assets, or derivative transactions, and related policies and procedures.
 - (4) Major loans of funds, endorsement or guarantees.
 - (5) Matters involving the personal interest of directors.
 - (6) Offering, issuance or private placement of equity securities.
 - (7) Appointment or dismissal of CPAs or evaluation of their independence and remuneration.
 - (8) Appointment/dismissal of the financial or accounting manager or chief internal auditor.
 - (9) Business reports and proposal for profit distribution or loss compensation.
 - (10) Other important matters specified by the Company or competent authorities.

Other matters to be specified:

- Where any of the following circumstances occur to the operation of the Audit Committee, the date, term and proposal of the Board of Directors meeting as well as the Audit Committee resolution and how the company manage the Committee's opinions shall be described:
 - (1) The matters referred to in Article 14-5 of the Securities and Exchange Act:

Date	Meeting	Proposal	Audit Committee resolution	The Company's action on the Committee's opinion
2020.2.25	1st meeting in 2020	The business report and self-prepared financial statements of FY 2019 were adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present
2020.2.25	1st meeting in 2020	Proposal to issue the "Internal Control System Declaration" of FY 2019 was adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present
2020.4.16	2nd meeting in 2020	Philip Tang and Grace Chen, the CPAs of KPMG Taiwan, were commissioned to act as the CPAs of the Company's financial statements, and a resolution concerning their remuneration was adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present
2020.4.16	2nd meeting in 2020	Proposal for issuance of employee restricted stock in FY 2020 was adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present
2020.4.16	2nd meeting in 2020	Proposal for amendment of the "Internal Control System" and "Rules for Implementation of the Internal Audit System" for "Other Management Control Cycles" was adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present
2020.8.6	3rd meeting in 2020	The quarterly consolidated financial statements of the second quarter of FY 2020 were adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present

2020.8.6	3rd meeting in 2020	Proposal for establishment of the “Procedure of Treasury Stock Buyback” and the “Other Management Control Systems - Procedure of Treasury Stock Buyback” for the internal control system was adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present
2020.11.5	4th meeting in 2020	The internal audit plan of FY 2021 was adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present
2020.12.17	5th meeting in 2020	Proposal for amendment of the “Internal Control System” and “Rules for Implementation of the Internal Audit System” for the “Sale and Collection Cycles” and “Procurement and Payment Cycles” was adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present

(2) In addition to the matters mentioned above, any resolution approved by more than two-thirds of all the directors but not approved by the Audit Committee: None.

2. Where the implementation status of recusal bearing on the interest of an independent director is involved, the name of the independent director, proposal, reasons for the recusal, and participation in the voting shall be described: None.

3. Communication of independent directors with the chief internal auditor and CPAs (including important matters, methods and results with respect to communication of the company finances and operation status):

(1) Communication of the independent directors with the chief internal auditor

Date	Audit Committee meeting	Communications with the chief internal auditor	Results
2020.2.25	1st meeting in 2020	• Review of the internal audit report	Acknowledged with no other suggestions.
		• Review of the Declaration on the Internal Control System	1. Adopted and submitted to the Board of Directors for a resolution. 2. Acknowledged with no other suggestions.
2020.4.16	2nd meeting in 2020	• Review of the internal audit report	Acknowledged with no other suggestions.
		• Review and amendment of the “Internal Control System” and “Rules for Implementation of the Internal Audit System” for “Other Management Control Cycles”	1. Adopted and submitted to the Board of Directors for a resolution. 2. Acknowledged with no other suggestions.
2020.8.6	3rd meeting in 2020	• Review of the internal audit report	Acknowledged with no other suggestions.
		• Review and establishment of the “Procedure of Treasury Stock Buyback” and the “Other Management Control Systems - Procedure of Treasury Stock Buyback” for the internal control system	1. Adopted and submitted to the Board of Directors for a resolution. 2. Acknowledged with no other suggestions.
2020.11.5	4th meeting in 2020	• Review of the internal audit report	Acknowledged with no other suggestions.
		• Review of the internal audit plan of FY 2021	1. Adopted and submitted to the Board of Directors for a resolution. 2. Acknowledged with no other suggestions.
2020.12.17	5th meeting in 2020	• Review of the internal audit report	Acknowledged with no other suggestions.
		• Review and amendment of the “Internal Control System” and “Rules for Implementation of the Internal Audit System” for the “Sale and Collection Cycles” and “Procurement and Payment Cycles”.	1. Adopted and submitted to the Board of Directors for a resolution. 2. Acknowledged with no other suggestions.

(2) Communication of the independent directors with the CPAs

Date	Audit Committee meeting	Communications with the CPAs	Results
2020.2.25	1st meeting in 2020	1. Responsibility of auditors for the audit of financial reports 2. Independence 3. Audit scope and method 4. Audit findings 5. Self-preparation of financial reports by the Company 6. Important updates in laws and regulations	Acknowledged with no other suggestions.
2020.11.5	4th meeting in 2020	1. Responsibility of the reviewer for review of the interim financial report 2. Independence 3. Review scope and method 4. Review findings 5. Annual audit plan 6. Competent authorities' concerns	Acknowledged with no other suggestions.

(3) Corporate governance and differences from the Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies and reasons:

Item	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies and reasons
	Yes	No	Summary	
1. Has your company established and disclosed its corporate governance best practice principles pursuant to the “Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies”?	V		We have established the “Corporate Governance Best Practice Principles” pursuant to the “Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies” and disclosed these on our website.	No difference
2. Shareholding structure and shareholder’s equity				
(1) Does your company have an internal procedure and act accordingly for handling shareholders’ suggestions, doubts, disputes, and lawsuits?	V		(1) To protect the interests of the shareholders, we have designated personnel to deal with suggestions, doubts and disputes of the shareholders. We may accept suggestions and we deal with disputes depending on the type of the problem, and act according to the procedure.	No difference
(2) Does your company have lists of the major shareholders who actually control the company and the persons who have ultimate control of the major shareholders?	V		(2) We have lists of the major shareholders who actually control the Company and the persons who control the major shareholders to ensure the stability of the business management rights.	

Item	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies and reasons
	Yes	No	Summary	
(3) Does your company have a firewall mechanism in place to control the risks between the company and its affiliates? (4) Does your company have internal regulations to prohibit insiders of the company from using undisclosed information in the market to trade securities?	V		(3) We have established the internal “Regulations Governing the Transactions among Related Parties, Specific Companies, and Group Enterprises”, “Subsidiary Management Regulations”, “Procedures for Endorsements/Guarantees”, “Procedures for Loaning Funds to Others”, and “Procedures for Acquisition or Disposal of Assets” to establish appropriate risk control mechanism and firewall. The auditors supervise the implementation on a regular basis. (4) We have established the internal control regulations of “Management Procedures for Handling Material Inside Information and Prevention of Insider Trading” and “Procedures for Ethical Management and Guidelines for Conduct” to prohibit insiders of the company from using information not open to the market to trade securities. Promotions are executed to the insiders and employees of the company.	
3. Responsibilities of the Board of Directors and its formation (1) Does your company have and implement a policy of diversification for the composition of the Board of Directors?	V		(1) Our “Corporate Governance Best Practice Principles” specifies a policy of diversification for the composition of our Board of Directors. The relevant principles are disclosed on our website: A. The members of our Board of Directors have diverse professional backgrounds and experience, which help us achieve the objectives of improving our business performance and the overall benefits of shareholder values. B. To ensure diverse formation of the Board of Directors, the members thereof consist of nine directors with rich experience in various professions, as well as three independent directors (accounting for 33.33%). The members come from professional backgrounds in business management, accounting, finance and engineering technology. With different professional backgrounds, they possess skills in accounting and financial analysis, business management, venture investment, engineering technology, leadership and decision-making that demonstrate diversity and complementarity. Such professional backgrounds and industrial experience have made it possible for us to effectively implement the above-mentioned strategies for management and future development.	No difference

Item	Description				Differences with the Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies and reasons																																																																																																										
	Yes	No	Summary																																																																																																												
			C. Since the Company puts great emphasis on the diversity of the Board of Directors, we require that the members thereof shall possess at least three different professional backgrounds and work experience in two different industries and that at least a female director shall be appointed to achieve the management objectives for diverse formation of the Board of Directors. A female independent director (accounting for 11.11% of all the directors) joined the Board of Directors in 2018, thereby achieving the goal of board members with diverse backgrounds/experience. D. Implementation of diversification policy for the composition of the Board of Directors:			No difference																																																																																																									
<table><tr><th rowspan="2">Director Name</th><th colspan="2">Basic qualifications</th><th rowspan="2">Professional background</th><th colspan="5">Industrial experience</th></tr><tr><th>Nationality</th><th>Gender</th><th>Accounting and financial analysis</th><th>Business management</th><th>Venture investment</th><th>Engineering technology</th><th>Leadership and decision-making skills</th></tr><tr><td>Austin Chen</td><td>Republic of China</td><td>Male</td><td>Management</td><td></td><td>✓</td><td></td><td>✓</td><td>✓</td></tr><tr><td>Teddy Lu</td><td>Republic of China</td><td>Male</td><td>Engineering, management</td><td></td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>Chang Chia-Kun</td><td>Republic of China</td><td>Male</td><td>Engineering, management</td><td></td><td>✓</td><td></td><td>✓</td><td>✓</td></tr><tr><td>Haydn Hsieh</td><td>Republic of China</td><td>Male</td><td>Engineering, management</td><td></td><td>✓</td><td></td><td>✓</td><td>✓</td></tr><tr><td>George Huang</td><td>Republic of China</td><td>Male</td><td>Engineering, finance</td><td>✓</td><td>✓</td><td></td><td>✓</td><td>✓</td></tr><tr><td>Phison Electronics Corp. Representative: Weng Wen-Jie</td><td>Malaysia</td><td>Male</td><td>Accounting</td><td>✓</td><td></td><td></td><td>✓</td><td>✓</td></tr><tr><td>Max Wu</td><td>Republic of China</td><td>Male</td><td>Engineering</td><td></td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>Philip Peng</td><td>Republic of China</td><td>Male</td><td>Management, finance</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>Hsieh Hui-Chuan</td><td>Republic of China</td><td>Female</td><td>Finance</td><td>✓</td><td>✓</td><td></td><td>✓</td><td>✓</td></tr></table>			Director Name	Basic qualifications						Professional background	Industrial experience					Nationality	Gender	Accounting and financial analysis	Business management	Venture investment	Engineering technology	Leadership and decision-making skills	Austin Chen	Republic of China	Male	Management		✓		✓	✓	Teddy Lu	Republic of China	Male	Engineering, management		✓	✓	✓	✓	Chang Chia-Kun	Republic of China	Male	Engineering, management		✓		✓	✓	Haydn Hsieh	Republic of China	Male	Engineering, management		✓		✓	✓	George Huang	Republic of China	Male	Engineering, finance	✓	✓		✓	✓	Phison Electronics Corp. Representative: Weng Wen-Jie	Malaysia	Male	Accounting	✓			✓	✓	Max Wu	Republic of China	Male	Engineering		✓	✓	✓	✓	Philip Peng	Republic of China	Male	Management, finance	✓	✓	✓	✓	✓	Hsieh Hui-Chuan	Republic of China	Female	Finance	✓	✓		✓	✓								
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Item	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	Summary	
(2) Does your company voluntarily establish other functional committees similar to the Remuneration Committee and Audit Committee set up pursuant to the relevant laws and regulations?		V	(2) In addition to the Remuneration Committee and the Audit Committee, we have established the "Articles of Association of Special Committee on Mergers and Acquisitions" as a basis for the establishment of a special Merger and Acquisition Committee in the future. We have also formed the Corporate Social Responsibility Committee to report its implementation and results to the Chairman and President on a regular basis.	Assessment of the necessity for additional functional committees with reference to the business operation status and scale in the future.
(3) Does your company have guidelines for evaluating the performance of the Board of Directors and conduct regular performance evaluation every year? Does your company submit the results of the performance evaluation to the Board of Directors? Are the results used as the basis for the remuneration and nomination for re-election of individual directors?	V		(3) To implement corporate governance, improve the functions of the Board of Directors, set performance goals and strengthen the operational efficiency of the Board, the Company resolved at the board meeting held on December 17, 2020 to formulate the "Guidelines for Evaluating the Performance of the Board of Directors" and include the evaluation for the performance of functional committees in the Guidelines. The performances of the Board of Directors and functional committees shall be evaluated for a period from January 1 to December 31 of the current year once a year in accordance with the requirements of the Guidelines, and the report of the evaluation results shall be completed by the end of the first quarter of the following year. In 2020, the achievement rates of the performance evaluations of the Board of Directors, Audit Committee and Remuneration Committee were higher than 90%, and the results thereof were reported at the board meeting held on February 24, 2021 and the meetings of functional committees.	No difference

Item	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies and reasons
	Yes	No	Summary	
(4) Does your company assess the independence of the CPAs on a regular basis?	V		(4) The Company's Audit Committee assesses the qualifications and independence of CPAs on a yearly basis and submits the results to board meetings for discussion. We assess CPAs for their independence based on the "Declaration of Independence" provided thereby every year and with reference to the Norm of Professional Ethics for Certified Public Accountant of the Republic of China No. 10. Important assessment items are listed below: A. There is no direct or material indirect financial interest or significant close business relationship between the CPAs and any member of the audit team. B. None of the CPAs and audit team members is currently, or was within the recent two years, a director, supervisor, or managerial office of the Company, or receives or received a fixed salary for performing routine work. C. None of the CPAs and audit team members has any inappropriate interest with the Company. D. The names of the CPAs are not used by others. E. None of the CPAs and audit team members holds any shares of the Company, engages in borrowing and lending of money, and is in a joint venture or profit sharing relationship. F. The audit team members are the spouses, direct relatives by blood, direct relatives by marriage, or collateral relative by blood within the second degree of kinship of the Company's directors, supervisors, responsible persons or managerial officers. G. No former partner acts as a director, supervisor, or managerial office of the Company or is in a position to exert significant influence on audit engagement within one year after he/she left his/her office. The replacement of our CPAs is conducted pursuant to relevant regulations.	No difference
4. Does your TWSE/TPEX-listed company designate competent corporate governance personnel in an appropriate number along with a chief corporate governance officer responsible for related matters (including but not limited to	V		We established the "CSR Committee" in 2015, which has a subordinate "Working Group on Corporate Governance" headed by the CFO. The Working Group on Corporate Governance is responsible for planning and executing corporate governance matters, providing information required for directors to perform their duties, assisting the directors to observe laws and regulations and handling matters related to the Board of Directors and shareholders' meetings in accordance with the laws. The implementation status of business in FY 2020 includes the following matters: 1. Regular arrangement of further education for directors and provision of information required for directors to perform their duties and related to the latest legal development relevant to operation of the Company to help directors observe laws and regulations.	No difference

Item	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies and reasons
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providing information required for directors and supervisors to perform their duties, assisting directors and supervisors in compliance, handling matters related to the Board of Directors and shareholders' meetings and preparing minutes of the Board of Directors and shareholders' meetings)?			2. Assisting with the meeting procedure of the Board of Directors and the shareholders and compliance matters of the resolutions. 3. Assisting in the communication between the independent directors, chief internal auditor and CPAs at Audit Committee meetings. 4. Maintaining investor relations. 5. Publishing important information related to the material resolutions of the Board of Directors and shareholders' meetings in accordance with the relevant laws. 6. Arranging for the "Ethical Corporate Management Implementation Unit" to report the implementation status and plans related to the promotion of ethical management in the current year at the board meeting on December 17, 2020 to ensure the fulfillment of the Ethical Corporate Management Best Practice Principles. 7. Arranging for the "CSR Committee" to report the implementation and results related to the Corporate Social Responsibility Best Practice Principles, the status of communication with stakeholders in the current year and the work plan for the following year at the board meeting on December 17, 2020 to ensure the fulfillment of the Corporate Social Responsibility Best Practice Principles. 8. Other matters referred to in the Articles of Incorporation or contracts	
5. Does your company establish channels for communication with stakeholders (including but not limited to shareholders, employees, customers, and suppliers), design special web pages for the stakeholders on the website, and appropriately respond to important CSR issues concerned about by the stakeholders?	V		We have set up appropriate channels for communication with upstream and downstream vendors, banks, investors, and other stakeholders. For investors, we set up a special shareholder service and investor relationship mailbox and designated personnel for dealing with related matters. We also disclose related information on our website; management-labor meetings, complaint systems, and internal information networks are set up for the employees; regular production and sales activities are held for vendors on a regular basis. The Company provides a stakeholder section and contact information on our website to properly respond to corporate social responsibilities and other relevant issues for which the stakeholder are concerned.	No difference

Item	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies and reasons
	Yes	No	Summary	
(3) Does your company publish and file its annual financial report within two months after the end of a fiscal year? Does your company publish and file the Q1, Q2 and Q3 financial reports and monthly operating performance before the required time limit?	V		(3) Our financial reports and monthly operating performance are published and filed within the required time limits in accordance with Article 36 of the Securities and Exchange Act. Our 2020 financial report was published and filed within two months after the end of the fiscal year, and our Q1, Q2 and Q3 financial reports and monthly operating performance were published and filed before the required time limit.	
8. Does your company have additional important information that is helpful to understand the operation of the corporate governance (including but not limited to the interests and care of employees, investor relationship, supplier relationship, rights of stakeholders, further education of directors and supervisors, and implementation of risk management policies and measurement criteria)?	V		(1) Interests and care of employees: In addition to formation of the Supervisory Committee of Labor Retirement Reserve and arrangement of labor insurance, national health insurance and group insurance, we have an Employee Welfare Committee to complete employee welfare measurements and ensure the retirement system. Existing welfare measures include marriage allowance, maternity allowance, funeral allowance, consolatory hospitalization bonus, birthday bonus, and subvention for the clubs and recreational activities of the employees. We have always paid attention to the rights and interest of our employees, and therefore, in addition to ensuring the compliance of our management systems with the relevant laws, all the regulations and implementation information related to corporate governance are published on the Company's website for our employees' reference. We guarantee to perform social responsibilities and protect our employees' rights and interests. In addition, we have become a member of the Responsible Business Alliance (RBA) and strictly followed related regulations to incorporate our concern for human rights in every dimension of our daily operation so as to fulfill the employer's duty of employee care.	No difference

Item	Description						Differences with the Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies and reasons																															
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			(2) Investor relationship: We have a spokesperson, a deputy spokesperson, and a designated unit for investor relations. The contact information of the unit is made public and investors can give feedback at any time. The communication between us and our investors is enhanced and the transparency of our financial status and cooperate governance is improved to create a better image of the Company. (3) Supplier relationship: The Company deals with our suppliers based on mutual trust and benefit in the hope to achieve growth and a win-win outcome together with them. (4) Rights of stakeholders: Stakeholders can communicate with us and give us advices. (5) Continuing education of directors:<table><thead><tr><th>Title</th><th>Name</th><th>Course date</th><th>Organizer</th><th>Course</th><th>Education hours</th><th>Does the course meet the requirements?</th></tr></thead><tbody><tr><td rowspan="2">Chairman</td><td rowspan="2">Austin Chen</td><td>2020/11/19</td><td>Taiwan Institute of Directors</td><td>Corporate Opportunities and Challenges Brought by the US-China Trade War</td><td>3</td><td>Yes</td></tr><tr><td>2020/03/10</td><td>Taiwan Corporate Governance Association</td><td>Response Strategies for Reformation of Companies</td><td>3</td><td>Yes</td></tr><tr><td rowspan="2">Director</td><td rowspan="2">Teddy Lu</td><td>2020/11/11</td><td>Taiwan Corporate Governance Association</td><td>Competition for Management Rights and Analysis of Relevant Cases</td><td>3</td><td>Yes</td></tr><tr><td>2020/08/12</td><td>Securities and Futures Institute</td><td>Does joining another company with the trade secrets misappropriated from the former company violate the Trade Secrets Act? “Corporate Laws - Trade Secrets”</td><td>3</td><td>Yes</td></tr></tbody></table>				Title	Name	Course date	Organizer	Course	Education hours	Does the course meet the requirements?	Chairman	Austin Chen	2020/11/19	Taiwan Institute of Directors	Corporate Opportunities and Challenges Brought by the US-China Trade War	3	Yes	2020/03/10	Taiwan Corporate Governance Association	Response Strategies for Reformation of Companies	3	Yes	Director	Teddy Lu	2020/11/11	Taiwan Corporate Governance Association	Competition for Management Rights and Analysis of Relevant Cases	3	Yes	2020/08/12	Securities and Futures Institute	Does joining another company with the trade secrets misappropriated from the former company violate the Trade Secrets Act? “Corporate Laws - Trade Secrets”	3	Yes	No difference
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	Yes	No	Summary							
			Title	Name	Course date	Organizer	Course	Education hours	Does the course meet the requirements?	
			Director	Chang Chia-Kun	2020/04/23	Taiwan Institute of Directors	2020 Seminar for Directors - How to Make Accurate Decisions for Upcoming Crises	3	Yes	
					2020/03/10	Taiwan Corporate Governance Association	Response Strategies for Reformation of Companies	3	Yes	
			Director	Haydn Hsieh	2020/09/18	Taiwan Corporate Governance Association	Analysis of Top 10 Global Crises	3	Yes	
					2020/09/18	Taiwan Corporate Governance Association	Development of the Latest Insider Trading Practice in Taiwan and Corporates' Prevention and Response Measures against Insider Trading	3	Yes	
					2020/07/29	Taiwan Institute of Directors	How Should Directors and Supervisors Make Sure the Company Properly Manages its Business Risks	3	Yes	
			Director	George Huang	2020/12/02	Taiwan Corporate Governance Association	Corporate Governance Blueprint Planning and Implementation of Sustainable Development Blueprint Independent Directors and Competition for Management Rights	3	Yes	
					2020/05/06	Taiwan Corporate Governance Association	Hostile Mergers and Corporate Governance	1.5	Yes	
					2020/03/18	Taiwan Corporate Governance Association	Corporate Sustainable Operation	1.5	Yes	

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			Title	Name	Course date	Organizer	Course	Education hours	Does the course meet the requirements?	
			Representative of legal person as director	Weng Wen-Jie	2020/10/14	Securities and Futures Institute	The Business Merger and Acquisition Process: A Discussion on the Human Resource and Mergers and Acquisitions Integration	3	Yes	
					2020/10/14	Securities and Futures Institute	Responsibility of Directors and Supervisors in Illegal Cases in the Securities Market	3	Yes	
			Independent Director	Max Wu	2020/03/26	Taiwan Corporate Governance Association	Analysis of Financial Contexts When Responding to Stressful Events - China-US Trade War and COVID-19 Pandemic as Examples	3	Yes	
					2020/03/26	Taiwan Corporate Governance Association	A New Concept of Tax as An Inheritance	3	Yes	
			Independent Director	Philip Peng	2020/09/18	Taiwan Corporate Governance Association	Analysis of Top 10 Global Crises	3	Yes	
					2020/09/18	Taiwan Corporate Governance Association	Development of the Latest Insider Trading Practice in Taiwan and Corporates' Prevention and Response Measures against Insider Trading	3	Yes	
					2020/05/06	Taiwan Corporate Governance Association	Hostile Mergers and Corporate Governance	1.5	Yes	
					2020/03/18	Taiwan Corporate Governance Association	Corporate Sustainable Operation	1.5	Yes	

Item	Description							Differences with the Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies and reasons				
	Yes	No	Summary									
			Title	Name	Course date	Organizer	Course	Education hours	Does the course meet the requirements?			
			Independent Director	Hsieh Hui-Chuan	2020/12/25	Securities and Futures Institute	Advanced Practice Conference - Review of Corporate Financial Statement Fraud Cases	3	Yes			
					2020/08/18	Taiwan Institute of Directors	2020 1st Continuing Education Course for Directors and Supervisors of Qisda Group - “Corporate Transformation in the Changing Era”	3	Yes			
			(6) Managers and their participation in continuing education and training related to corporate governance:									
			Title	Name	Course date	Organizer	Course	Education hours				
			Chairman and CSO	Austin Chen	2020/11/19	Taiwan Institute of Directors	Corporate Opportunities and Challenges Brought by the US-China Trade War	3				
					2020/03/10	Taiwan Corporate Governance Association	Response Strategies for Reformation of Companies	3				
			President	Chang Chia-Kun	2020/04/23	Taiwan Institute of Directors	2020 Seminar for Directors - How to Make Accurate Decisions for Upcoming Crises	3				
					2020/03/10	Taiwan Corporate Governance Association	Response Strategies for Reformation of Companies	3				
			CFO	Lai Zi-Wen	2020/03/26	Accounting Research and Development Foundation	Continuing Education Program for the Accounting Managers of Issuers, Securities Firms and Exchanges	12				
			(7) Implementation of risk management policies and risk assessment standards: In accordance with relevant regulations and operational needs, internal management systems have been established. We provide education and training to employees for the development of appropriate concepts. We also actively promote and implement all kinds of risk management standards to decrease financial and business risks. Our internal auditors regularly conduct reviews on the implementation of our risk management regulations, and defects are corrected or improved to ensure effective oversight of the risk management systems.									

Item	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies and reasons
	Yes	No	Summary	
			(8) Implementation of customer policies: We and our subsidiaries greatly value the opinions of customers. Business review meetings are held with the customers to understand their opinions and questions regarding products so that stable and good relations can be maintained with the aim to generate profits for the Company. (9) Liability insurance coverage for directors and supervisors & social responsibility: The Company has our directors and supervisors ensured by the director liability insurance every year and reported the amount covered, insurance scope and insurance rate at the board meeting held on February 24, 2021.	No difference
9. On the basis of the result of corporate governance evaluation released by TWSE's Corporate Governance Center in the most recent year, please describe the matters to which improvements have been made. Regarding the matters to which improvements have yet to be made, please list those which have been selected as priorities and the measures to be taken.	V		The improved items in 2020 are as follows: 1. We will submit regular reports regarding communications with the stakeholders to the Board of Directors. 2. The Board of Directors has adopted the Guidelines for Evaluating the Performance of the Board of Directors and completed the self-evaluations, with the results published on our website. 3. We will continue to strengthen corporate governance and establish and improve the regulations related thereto.	No difference

- (4) If your company has a remuneration committee, the composition, responsibilities and operation of the committee shall be disclosed:

A. Formation of the Remuneration Committee

The Company's Remuneration Committee consists of independent directors, and the information about the members are shown as follows:

Member type	Qualifications	Experience of more than 5 years and following professional qualification			Independence (Note)										Number of other public companies where the member also serves in a remuneration committee	Remarks
		Lecturer or higher position at a public or private university/ college in the department of commerce, law, finance, accounting or any other fields related to our business	Judge, public prosecutor, attorney, certified public accountant, or any other professional specialists who have passed a national examination and received a certificate in a profession necessary for our business	Work experience in commerce, law, finance, accounting or any other fields necessary for our business	1	2	3	4	5	6	7	8	9	10		
Independent Director	Max Wu			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	2	
Independent Director	Philip Peng			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	1	
Independent Director	Hsieh Hui-Chuan			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	2	

Note: A member is required to mark a "✓" in the blank below the number of any of the following requirements which he/she has satisfied during the two years before being elected and during his/her term of office.

- (1) The member is not an employee of the Company or any of its affiliates.
- (2) The member is not a director or supervisor of the Company or any of its affiliates (except for an independent director of the Company, its parent or subsidiary or any subsidiary of the same parent appointed pursuant to the Act or any local laws and regulations).
- (3) The director or supervisor is not a natural-person shareholder who holds shares, together with those held by his/her spouse or minor children or held in the name of another person, in an aggregate amount of at least 1% of the total shares issued by the Company or is one of the top-10 shareholders of the Company.
- (4) The director or supervisor is not a spouse, relative within the second degree of kinship or lineal relative within the third degree of kinship, of any manager under (1) or any of the persons under (2) and (3).
- (5) The director or supervisor is not a director, supervisor or employee of any corporate shareholder that directly holds at least 5% of the total shares issued by the Company, is one of the top-5 shareholders of the Company or has appointed a representative as a director or supervisor of the Company pursuant to Article 27, Paragraph 1 or 2 of the Company Act (except for an independent director of the Company, its parent or subsidiary, or any subsidiary of its parent appointed pursuant to the Company Act or local laws and regulations).
- (6) The director or supervisor is not a director, supervisor or employee of any other company where more than half of its directors or voting shares are controlled by the same person (except for an independent director of the Company, its parent or subsidiary, or any subsidiary of its parent appointed pursuant to the Company Act or local laws and regulations).
- (7) The director or supervisor is not a director, supervisor or employee of any other company or institution (except for an independent director of the Company, its parent or subsidiary, or any subsidiary of its parent appointed pursuant to the Company Act or local laws and regulations).

- (8) The director or supervisor is not a director, supervisor, manager or shareholder holding at least 5% of the shares of any company or institution which has engaged in financial or business dealings with the Company (except where the company or institution holds at least 20% and no more than 50% of the total shares issued by the Company and is an independent director of the Company, its parent or subsidiary, or any subsidiary of its parent appointed pursuant to the Company Act or local laws and regulations).
- (9) The director or supervisor is not an owner, partner, director, supervisor or manager, or a spouse thereof, of any professional, sole proprietorship, partnership, company or institution that engages in commercial, legal, financial and accounting services and which has conducted audit for the Company or any of its affiliates or has received a total amount of compensation not exceeding TWD 500,000 during the most recent two years, except where the director or supervisor is a member of any remuneration committee, public purchase review committee or special committee for mergers and acquisitions which performs its duties pursuant to the Securities and Exchange Act, Business Mergers And Acquisitions Act or other applicable laws and regulations.
- (10) None of the circumstances under Article 30 of the Company Act applies to the director or supervisor.

B. Duties of the Remuneration Committee

The main duties of the Remuneration Committee is to faithfully perform the following matters by exercising due diligence of a good administrator and submit its suggestions to the Board of Directors for discussion:

- (A) Establish and periodically review the Articles of Association of the Remuneration Committee, and submit correction suggestions.
- (B) Establish and periodically review the policy, system, standard and structure with respect to the long-term performance goals and remuneration for directors and managerial officers.
- (C) Periodically evaluate the achievement of the directors and managerial officers' performance goals and determine the contents and amount of their individual remuneration.

C. Information on the operation of the Remuneration Committee

- (A) Number of the members of the Remuneration Committee: Three.
- (B) The term of the current members: May 30, 2018 - May 29, 2021
- (C) The number of meetings held by the Remuneration Committee and the attendance of its members in the most recent FY are described below:

Title	Name	Number of meetings attended (B)	Number of meetings attended by proxy	Attendance rate (%) (B/A)	Remarks
Convener	Max Wu	5	0	100%	
Member	Philip Peng	5	0	100%	
Member	Hsieh Hui-Chuan	5	0	100%	
Other matters to be specified:					
1. If the Board of Directors does not adopt or revise the suggestions of the Remuneration Committee, the decision must indicate the date of Board of Directors meeting, term, contents of the proposal, Board of Directors resolution and how we handle the Committee's opinions (if the amount of remuneration adopted by the Board of Directors is higher than that suggested by the Committee, the differences and reasons must be indicated): None.					
2. In the event that any member of the Remuneration Committee has expressed dissent or reservation over the Committee's decisions, and that the dissent or reservation has been recorded or delivered in writing, the decision shall indicate the date of the Committee's meeting, term, contents of the proposal, opinions of all the members, and how the opinions of a member is handled: None.					

(D) The proposals discussed and resolutions by the Remuneration Committee in the most recent year are as follows:

Date	Meeting	Remuneration Committee Proposal	Remuneration Committee Resolution	The Company's action on the Committee's opinion
2020/02/25	1st meeting in 2020	Proposal for distribution of the remuneration for employees and directors in FY 2019	Approved by all of the Committee members present	Approved by all of the directors present
2020/04/16	2nd meeting in 2020	Proposal for transfer of the Company's managers	Approved by all of the Committee members present	Approved by all of the directors present
2020/04/16	2nd meeting in 2020	Proposal for adjustment of the salary for managers in FY 2020	Approved by all of the Committee members present	The proposal was approved by a resolution of the directors present, excluding the Chairman and CSO Austin Chen and the President Chang Chia-Kun, who did not participate in the discussion and voting due to personal interests.
2020/06/17	3rd meeting in 2020	Proposal for transfer of the Company's managers	Approved by all of the Committee members present	Approved by all of the directors present
2020/08/06	4th meeting in 2020	Proposal for amendment of the "Directions for Senior Management's Remuneration and Benefits"	Approved by all of the Committee members present	Approved by all of the directors present
2020/08/06	4th meeting in 2020	Proposal for amendment of the "Regulations Governing Performance Bonuses for Employees"	Approved by all of the Committee members present	Approved by all of the directors present
2020/08/06	4th meeting in 2020	Proposal of matters related to the issuance of employee restricted stock in FY 2020	Approved by all of the Committee members present	Approved by all of the directors present
2020/12/17	5th meeting in 2020	Proposal for distribution of the performance bonus for managers in FY 2020	Approved by all of the Committee members present	The proposal was approved by a resolution of the directors present, excluding the Chairman and CSO Austin Chen and the President Chang Chia-Kun, who did not participate in the discussion and voting due to personal interests.
2020/12/17	5th meeting in 2020	Proposal for distribution of the employee remuneration for managers in FY 2020	Approved by all of the Committee members present	The proposal was approved by a resolution of the directors present, excluding the Chairman and CSO Austin Chen and the President Chang Chia-Kun, who did not participate in the discussion and voting due to personal interests.
2020/12/17	5th meeting in 2020	Work plan for the Remuneration Committee in 2021	Approved by all of the Committee members present	(Omitted)

(5) Differences with the Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies and reasons:

Item for evaluation	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies and reasons
	Yes	No	Summary	
1. Does your company conduct assessment on the environmental, social and corporate governance risks related to the operations of the company based on the materiality principle? Does your company have a risk management policy or strategy?	V		We have conducted assessment on the risks of the environmental, social and corporate governance issues related to our operations based on the materiality principle, and we have formulated relevant management policies including the internal audit system, whistleblowing system, climate change risk management and operating risk management. We have set up a corresponding organizational structure to perform regular review and reduce the likelihood of risk occurrence.	We are in compliance with the Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies.
2. Does your company have a special unit or designate an existing unit for the task of CSR promotion? Does the Board of Directors of your company authorize the management to handle relevant matters and report to the Board?	V		(1) We have established the CSR Committee tasked with proposing and implementing CSR policies, systems or management guidelines and specific implementation plans. Our Chairman and President act respectively as the head and executive secretary of the Committee. The Committee has five working groups of “Corporate Governance”, “Employee Care”, “Customer & Supplier Care”, “Environmental Care” and “Community Care,” with the managers of the relevant departments acting as the coordinators of the working groups. The personnel from the Purchasing, PM, RD and Sales Units were additionally assigned to those groups in 2020. The Corp. MKT Office is designated as the Committee’s secretariat to communicate and coordinate with different departments and hold regular review meetings to follow up on the progress of the working groups and report their operation to our senior management (quarterly) and the Board of Directors (annually).	We are in compliance with the Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies.

Item for evaluation	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies and reasons
	Yes	No	Summary	
			The results of implementation in 2020: A. Corporate Governance: We have been ranked in the top 5% of companies participating in the 5th Corporate Governance Evaluation for the second consecutive year B. Employee Care: We have participated in the program of corporate employment of sports advisors under the Sports Administration, Ministry of Education for the second consecutive year. On September 12, 2020, we held the “Family Day” event to enhance the leisure quality of our employees and create a friendly workplace. C. Customer & Supplier Care: We held the annual supplier conference on August 21, 2020, and for the second consecutive year, we were awarded the RBA Silver Recognition. D. Community Care: We continued to sponsor the development of traditional art education in the local schools of Tainan Municipal Daguang Elementary School, with a total of TWD 0.15 million. The 2019 CSR Report has consecutively won the “Golden Award” for electronic information manufacturers under the Corporate Sustainability Report Category of the Taiwan Corporate Sustainability Awards (TCSA). E. Apacer has been nominated for the Best Taiwan Global Brands for the third consecutive year	

Item for evaluation	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies and reasons
	Yes	No	Summary	
3. Environmental issues				
(1) Does your company establish environmental management systems suitable for your industrial characteristics?	V		(1) We have established an environmental management system which received the ISO 14001 certification in 2005 and passed the audit in 2017. On 4/22/2020, the system passed the ISO14001:2015 external verification, and the effective period of the updated version of the certification is from 4/30/2020~4/29/2023. We regularly conduct internal audits and management reviews to ensure the operations are in compliance with relevant environmental regulations and international standards. The aim is to achieve environmental sustainability.	We are in compliance with the Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies.
(2) Does your company put efforts into enhancing the efficiency of resource usage and use recycled materials which have a low impact on the environmental load?	V		(2) We have put effort into improving the sources and enhancing the efficiency of resource usage, in order to achieve the objectives of waste reduction and lower the environmental impact.	
(3) Does your company assess the current and future risks and opportunities which climate change potentially brings to the company and take measures in response to climate-related issues?	V		(3) We listed natural disasters as an important risk assessment aspect and established a business operation maintenance plan to fully assess the risk of business interruptions due to natural disasters. We also established backup steps and principles to increase response efficiency and decrease possible losses in the case of emergencies.	
(4) Does your company make statistics of its greenhouse gas emissions, water consumption and total waste weight during the previous two years and have policies for energy saving and carbon	V		(4) We regularly maintain the greenhouse gas inventory, make statistics of water consumption and total waste weight (which are disclosed in the annual CSR report), and strictly implement measures for energy saving and carbon reduction. We use power-saving lights with high efficiency, replace energy-consuming office automation equipment in the production line, introduce compact computers	

Item for evaluation	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies and reasons
	Yes	No	Summary	
reduction, reduction of greenhouse gas emissions, reduction of water consumption or management of other waste?			which are low energy-consuming, install water-cooled air conditioners in all office space, and set air conditioners to automatically shut down during non-office hours. With these measures, we seek to reduce energy waste and usage. We also have formulated short-term, medium-term and long-term strategies for energy saving, carbon reduction and advanced process in order to make contribution to the environment on a continuous basis.	
4. Social issues				
(1) Does Apacer have management policies and procedures in accordance with relevant regulations and international human rights conventions?	V		(1) We are in continuous compliance with the “Labor Standards Act” and have never illegally employed any worker under the age of 16. Also, we prohibit forced labor and do not allow any minor to perform dangerous work. In our supply chain management, every contractor has been asked to prohibit child labor in accordance with the regulations of the Responsible Business Alliance (RBA) and follow the labor laws, worker safety regulations and relevant labor rules of different regions. Due to wide-scale changes of labor law in recent years, we have regularly reviewed all of the systems and regulations and revised relevant provisions in accordance with the latest laws. Also, the related work rules have been published on the internal website for employees to read at any time.	We are in compliance with the Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies.
(2) Does your company establish and implement reasonable employee benefit measures (including remuneration, leave and other benefits)? Is the operating performance or results properly reflected in the remuneration for employees?	V		(2) We provide our employees with the benefits they are entitled to in accordance with the Labor Standards Act. We also provide benefits that are better than what the Labor Standards Act requires, such as a number of leave days higher than that required by law, and support and encouragement for childbearing. Moreover, our operating performance is properly reflected in the remuneration for employees, and we allocate a certain proportion of our profit for the employees on an annual basis depending on the operating conditions.	

Item for evaluation	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies and reasons
	Yes	No	Summary	
(3) Does your company provide a safe and healthy work environment to its employees and provide them with safety and health education?	V		(3) We provide a safe and healthy work environment, and in 2019, we switched the OHSAS 18001 occupational safety and health system certification to the ISO 45001 certification and passed it. In addition, we conduct annual health examinations, and all new and current employees must receive safety and health training.	
(4) Does your company have effective programs for the development and training of employees' career skills?	V		(4) In 2014, we began to comprehensively implement HR operations with position and competency as the core concerns. Education and training courses have been designed for employees in different positions to enhance their competencies. Since 2015, we have implemented the "Directions on Talent Supply Chain Management for Essential Positions" in all aspects and have continued to do so with the expectation that the potential of employees can be effectively increased.	
(5) With respect to customer health and safety, customer privacy, marketing and labeling of products and services, does your company conform to the relevant regulations and international standards and establish the relevant consumer rights protection policies and complaint procedures?	V		(5) The Company ensures the quality of its products and services are in accordance with government regulations and industrial standards. Regarding the marketing, labeling and customer privacy for products and services, we follow the relevant regulations and international standards and strictly prohibit deceit, misguidance, fraud or any other act that damages the trust or rights of customers.	
(6) Does your company have a supplier management policy that requires suppliers to comply with regulations concerning environmental protection,	V		(6) In accordance with the standards of the Responsible Business Alliance (RBA), our component specifications and procurement procedures are all in compliance with standard written or fair contracts so that suppliers can focus on ethical management and offer the best quality and reasonable prices. Through influence	

Item for evaluation	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies and reasons
	Yes	No	Summary	
occupational safety and health or labor rights? What is the status of its implementation?			on suppliers and cooperative relationships, we promote certain issues in its upstream supply chain, including RoHS, process and quality control, workers' rights, health and safety, and prohibition of child labor. We also have communication channels in place with suppliers to ensure they also follow the ERBA policies to reduce risks of non-conformity with relevant regulations. This shows that we do put emphasis on CSR.	
5. Does your company use internationally accepted standards or guidelines for preparation of reports as reference in preparing the CSR report and other reports disclosing non-financial information of the company? Do the aforementioned reports receive assurance or guarantee opinions from any third-party verifying agency?	V		We adopt the GRI Standards published by the Global Reporting Initiative for sustainability reporting, and we prepare our reports based on its Core options within this internationally accepted reporting framework. The reports fully disclose the economic, environmental and social issues which our stakeholders are concerned with. To ensure transparency and credibility of the information disclosed, the independent and credible BSI (British Standards Institution) has been commissioned to provide assurance to the reports in accordance with the Type 1, moderate assurance standard of the AA1000 Assurance Standard (2008) and the Core options of the GRI Standards.	We are in compliance with the Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies.
6. In the event the company has established its own CSR principles in accordance with the Corporate Social Responsibility Best Practice Principles for TWSE/GTSM Listed Companies, please describe the differences between the actual implementation of CSR and the company's own CSR principles: The actual implementation of CSR in Apacer has been completely in line with our "CSR Best Practice Principles", and there have been no differences.				
7. Other important information helpful for understanding the actual implementation of CSR: For detailed information, please see our annual CSR reports on our website: https://www.apacer.com/zh/Csr/Achievement				
8. If your company's CSR reports have been verified by any relevant verifying agency, please describe in detail: Our 2019 CSR report has been certified by the British Standards Institution (BSI). However, as of the date on which the annual report was printed, our 2020 CSR report was still in the review process of the BSI. In addition, we have implemented an ISO 14001 environmental management system to reduce the consumption of resources and also received validation under the OHSAS 45001				

Item for evaluation	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	Summary	
occupational safety and health system to provide a healthy and safe work environment. Regarding quality control, we have received the certifications of ISO 9001 quality management system and IECQ QC 080000 hazardous substances process management system. We have not only ensured product quality but also implemented green production processes and followed the international RoHS standards.				

(6) Implementation of corporate ethical management and differences with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies and reasons

Item for evaluation	Description			Differences with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies and reasons
	Yes	No	Summary	
1. Development of ethical management policies and programs (1) Does your company establish ethical management policies adopted by the Board of Directors? Does your company clearly specify, in its regulations and external documents, the ethical management policies and practice and the commitment of the Board of Directors and the	V		(1) The Company has established “Ethical Corporate Management Policies” which were adopted at the board meeting on November 5, 2020. To implement ethical management, the Board of Directors and senior management have designated the HR units to carry out the ethical management policies and preventive programs. This has been included in the routine audit, and reports are regularly submitted by the units to the Board of Directors annually and published on our internal website for employees to read. So far we have not found any material violation.	In compliance with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies.

Item for evaluation	Description			Differences with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies and reasons
	Yes	No	Summary	
management to rigorous and thorough implementation of those policies?				
(2) Does your company establish a risk assessment mechanism against unethical conduct to analyze and assess, on a regular basis, business activities within its business scope which are at a higher risk of involving unethical conduct, and accordingly establish programs to prevent unethical conduct? Do such programs include at least measures to prevent the acts specified under Article 7, Paragraph 2 of the “Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies”?	V		(2) We have established the “Procedures for Ethical Management and Guidelines for Conduct” and “Whistleblowing System” to regulate unethical conduct and preventive measures. It is stipulated in our “Work Rules” that in the event of conclusive evidence showing any employee has “engaged in jobbery, embezzlement of public funds, or acceptance of bribes/commissions” or “concurrently conducted any external business that is in conflict with our operations and affects our interests, with the circumstances deemed grave”, the employee must be dismissed. We promote these rules during regular education and training sessions to ensure the employees understand the regulations they are required to follow during work. All contracts between Apacer and its suppliers include clauses on ethical management. We have established effective systems for accounting and internal control. Auditors regularly examine the extent of compliance with these systems in order to effectively prevent unethical conduct.	In compliance with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies.
(3) Does your company specify, in the programs for prevention of unethical conduct, the operational procedures,	V		(3) We have “Procedures for Ethical Management and Guidelines for Conduct” and “Whistleblowing System” which are implemented by the implementing units and audited by the auditing units. The relevant regulations can be reviewed and	In compliance with the Ethical Corporate Management Best Practice Principles for

Item for evaluation	Description			Differences with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies and reasons
	Yes	No	Summary	
code of conduct, punishment for violations and complaint systems? Have such programs been implemented and regularly reviewed and revised?			revised from time to time if required.	TWSE/GTSM Listed Companies.
2. Implementation of ethical management				
(1) Does your company assess the past records of the counterparties regarding ethics? Do contracts between the company and the counterparties include clear clauses governing ethical conduct?	V		(1) All contracts between Apacer and its suppliers include clauses on ethical management.	In compliance with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies.
(2) Does your company have a special unit as subordinate to the Board of Directors for the implementation of corporate ethical management? Does the unit regularly report (at least annually) to the Board of Directors regarding the ethical management policies and unethical conduct	V		(2) According to our “Procedures for Ethical Management and Guidelines for Conduct”, the HR units are designated as the units responsible for the implementation of corporate ethical management. The units coordinate with each department in implementing ethical management within the scope of the department’s functions and carrying out related matters in accordance with the “Procedures for Ethical Management and Guidelines for Conduct”. The units attend the Board of Directors meeting on an annual basis to present reports regarding the implementation of ethical management.	

Item for evaluation	Description			Differences with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies and reasons
	Yes	No	Summary	
prevention programs and the supervision and implementation thereof?			The reports presented to the Board of Directors regarding the implementation in 2020 are as follows: The “Ethical Corporate Management Policies” were established and then adopted at the board meeting held on November 5, 2020. According to Article 5 of the “Procedures for Ethical Management and Guidelines for Conduct”, the following items related to ethical management were reported at the board meeting on December 17, 2020: ● Incorporation of ethical management values into the Company's business strategy ● Regular analysis of unethical conduct risks ● Check-and-balance mechanisms for supervision of activities with higher unethical conduct risks ● Promotion and training with respect to ethical management policies ● Planning of a whistle-blowing system ● Assistance for the Board of Directors and management in the audit and assessment of preventive measure effectiveness ● Declaration of compliance with ethical management	
(3) Does your company have policies against conflicts of interest and provide proper channels through	V		(3) In the case of a conflict of interest in business, the relevant person notifies his/her manager and recuses himself/herself in accordance with the employment contract to prevent any conflict of interest. The circumstances and standards of	In compliance with the Ethical Corporate Management Best

Item for evaluation	Description			Differences with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies and reasons
	Yes	No	Summary	
which explanations may be given? Has the company implemented them? (4) Does your company establish effective systems for accounting and internal control to ensure the implementation of ethical management? Do the company's internal auditing units formulate relevant audit plans based on the results of assessment on the risks of unethical conduct and accordingly audit the compliance with the unethical conduct prevention programs? Or are audits conducted by commissioned CPAs?	V		conflicts of interest are clearly specified in our Code of Ethical Conduct. Personnel are required to recuse themselves and, in the event that they have learned or are facing similar circumstances, to report to their immediate superiors, managers of the HR unit, or the Board of Directors in an adequate manner. So far, we have not found any material violation. (4) In accordance with the competent authority's regulatory updates, letters and directives, we have revised our internal control and accounting systems on a regular or if needed ad hoc basis to meet operational requirements. The internal auditing units conduct assessment based on the risks of the main operating processes and design the annual audit plans. The auditors conduct audits pursuant to the plans in order to verify the status of implementation of the system and the control of defects (or risks).	Practice Principles for TWSE/GTSM Listed Companies.

Item for evaluation	Description			Differences with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies and reasons
	Yes	No	Summary	
(5) Does your company regularly hold internal and external education and training sessions regarding ethical management?	V		(5) Our regulations governing ethical management have been included as part of the internal education and training for employees. In July 2020, we organized internal ethical management training sessions (including labor, health and safety, environmental health, ethical standards, management systems and other RBA-related issues), which were attended by a total of 500 persons. We also demonstrated the importance of ethical management (which was included in our introduction to the RBA operation promoted by the Company) to the suppliers in the supplier conference externally held in August 2020.	
3. Functioning of the whistleblowing system				
(1) Does your company have concrete systems for whistleblowing and rewards? Does your company have convenient channels in place for whistleblowing and has it appointed appropriate personnel to deal with the persons who are the subject of whistleblowing?	V		(1) We have the “Whistleblowing System”, which clearly states whistleblowing and reward systems and stipulates that the managers of the auditing and HR units are designated as the persons responsible for these matters.	In compliance with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies.
(2) Does your company establish standard operating procedures for investigation of matters reported by	V		(2) The “Whistleblowing System” includes relevant operating procedures, follow-up measures for defect improvement and mechanisms for confidentiality.	In compliance with the Ethical Corporate Management Best

Item for evaluation	Description			Differences with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies and reasons
	Yes	No	Summary	
whistleblowers, measures to be taken following the conclusion of investigation and relevant mechanisms for confidentiality? (3) Does your company take any measures to protect whistleblowers from improper treatment as a result of their whistleblowing?	V		(3) The “Whistleblowing System” includes a clear list of whistleblower protection measures to prevent whistleblowers from being treated improperly as a result of whistleblowing. Any whistleblowing report is processed in accordance with the rules governing the system.	Practice Principles for TWSE/GTSM Listed Companies.
4. Strengthening disclosure of information Does your company disclose the contents of its ethical management principles and outcome of implementation on its website and the Market Observation Post System?	V		We have disclosed the “Ethical Corporate Management Best Practice Principles”, “Procedures for Ethical Management and Guidelines for Conduct” and “Whistleblowing System” on our website, and we monitor the development of domestic and international regulations concerning ethical management. Moreover, we encourage our directors, supervisors, managers, and employees to make suggestions and thereby review and improve the Company's Ethical Management Best Practice Principles with the aim to achieve better outcomes of ethical management.	In compliance with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies.
5. In the event your company has established its own ethical management best practice principles in accordance with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies, please describe the differences between the implementation of ethical management and the company’s own ethical management best practice principles: None.				
6. Other important information helpful for understanding the implementation of your company’s ethical management: (such as review and amendment of the company’s own ethical management best practice principles)				

Item for evaluation	Description			Differences with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies and reasons
	Yes	No	Summary	
(1) The Company continued to revise our “Ethical Corporate Management Best Practice Principles” and “Procedures for Ethical Management and Guidelines for Conduct” according to the updated government regulations and reported them to the shareholders’ meeting in 2020 to achieve the goal of corporate governance and ethical management. Besides, we hold a supplier conference annually to clarify our policy of corporate ethical management to our suppliers and get their commitment to it.				
(2) As of the board meeting held on December 17, 2020, we have not received any report regarding violation of the relevant codes and conduct guidelines.				

- (7) If your company has established corporate governance best practice principles and relevant regulations, the ways through which they can be searched for must be disclosed:

For our Corporate Governance Best Practice Principles and relevant regulations, please visit our website (<http://www.apacer.com/>)

- (8) Other important information helpful for increasing understanding of your company's corporate governance may be disclosed along with the above information:

A. As our business scale grows and the need for control and management of foreign subsidiaries arises, we have continued to review and establish relevant regulations, procedures and internal implementation rules to enhance operational performance and strengthen risk control, with the aim to achieve better implementation of corporate governance. In recent years, following the establishment or amendment of relevant laws and standards by the competent authority in charge of securities, and taking into account practical business needs, Apacer has established the following regulations:

- “Articles of Incorporation”,
- “Rules of Procedure for Shareholders’ Meetings”,
- “Director Election Regulations”,
- “Rules of Procedure for Board of Directors Meeting”,
- “Procedures for Acquisition or Disposal of Assets”,
- “Procedures for Endorsements/Guarantees”,
- “Procedures for Loaning Funds to Others”,
- “Regulations on Engaging in Commercial Foreign Exchange Risk Management Related Financial Products”,
- “Regulations Governing the Transactions among Related Parties, Specific Companies, and Group Enterprises”.

The following implementation rules have also been established as basis of all internal operations:

- “Rules Governing the Scope of Responsibilities of Independent Directors”,
- “Regulations Governing the Management of Financial and Non-financial Information”,
- “Regulations Governing the Management of Liabilities, Commitments and Contingencies”,
- “Code of Ethical Conduct”,
- “Ethical Corporate Management Best Practice Principles”,
- “Procedures for Ethical Management and Guidelines for Conduct”,
- “Management Procedures for Handling Material Insider Information and Prevention of Insider Trading”,
- “Subsidiary Management Regulations”,

- “Corporate Governance Best Practice Principles”,
- “CSR Best Practice Principles”,
- “Rules Governing the Whistleblowing System”,
- “Regulations Governing the Management of Seals”.

Internally, we notify all employees of the latest regulations and rules through announcement and publishes them on the internal website. They are simultaneously posted on our official website and can be searched for. The training of new employees also includes courses for the promotion of these regulations and rules.

B. Apacer’s personnel responsible for financial information transparency have received certificates designated by the competent authority, as follows:

Certificate	No. of person(s)	
	Internal audit	Financial accounting
Certified Public Accountant (CPA) of the Republic of China (Taiwan)	1	0
Certified Internal Auditor (CIA)	2	0

- (9) The status of the implementation of internal control systems shall include the disclosure of the following matter(s):

A. Declaration on the Internal Control System

Apacer Technology Inc.

Declaration on the Internal Control System

Date: February 24, 2021

Based on the result of self-inspection of Apacer's internal control system in 2020, we hereby declare the following:

1. We acknowledge that the Board of Directors and managers are responsible for the establishment, implementation and maintenance of the internal control system. We have established such a system, with the aim to provide reasonable assurance concerning the effectiveness and efficiency of operations (including profits, performance and protection of asset safety), reliability of financial reporting, and compliance with relevant regulations.
2. Any internal control system has its inherent limitations. No matter how well an internal control system is designed, it can only provide reasonable assurance regarding the achievement of the above three objectives. Moreover, the effectiveness of an internal control system may be altered as a result of changes in the environment and circumstances. Our internal control system however includes a self-monitoring mechanism. Once a defect has been identified, corrective actions are immediately taken.
3. We determine the effectiveness of the design and implementation of our internal control system by using the items specified in the Regulations Governing Establishment of Internal Control Systems by Public Companies (hereinafter "the Regulations"). The aforementioned items in "the Regulations" divide an internal control system into five components based on the processes of management and control: 1. control environment, 2. risk assessment, 3. control activities, 4. information and communication, and 5. monitoring. Each component includes several elements. Please see the Regulations for the aforementioned items.
4. We have used the aforementioned items to examine the effectiveness of the design and implementation of our internal control system.
5. Based on the result of the examination, we determined that, until December 31, 2020, the design and implementation of our internal control system (including supervision and management of subsidiaries) have worked well regarding the effectiveness and efficiency of operations, reliability of financial reporting and compliance with relevant regulations, providing reasonable assurance that the above objectives have been achieved.
6. This Declaration is to be part of the main contents of our annual reports and prospectuses, and released to the public. In the event that the above public content includes false information or concealed certain information, the legal responsibilities under Articles 20, 32, 171 and 174 of the Securities and Exchange Act will be invoked.
7. This Declaration was adopted by the Board of Directors meeting on February 24, 2021. All nine directors present approved the content of this Declaration, and none of them expressed dissent. This information is declared as an addition.

Apacer Technology Inc.

Chairman: Austin Chen

signature

President: Chang Chia-Kun

signature

- B. If review of the internal control system has been conducted by entrusted CPAs, the CPAs' review report must be disclosed: None.

- (10) During the most recent FY as of the date on which the annual report was printed, did the company or its internal personnel receive punishment in accordance with the law? Did the company's internal personnel receive punishment for violating the requirements of the internal control system? Please describe any defect found during the same period and its status of improvement: None.
- (11) Important resolutions of the Shareholders' Meeting and BoD meetings during the most recent FY as of the date on which the annual report was printed:

A. Important resolutions of the Shareholders' Meeting

Date of meeting	Meeting resolutions	Status of implementation
2020.5.28	Proposal to ratify the business report and financial statements of FY 2019 was adopted	The proposal was adopted without revision.
	Proposal to ratify the profit distribution in FY 2019 was adopted	The proposal was adopted without revision. July 4, 2020 was set as the record date, and July 27, 2020 was set as the pay date. (The distributed amount of cash dividend was TWD 2.55 per share)
	Proposal for amendment of the "Articles of Incorporation" was adopted	The proposal was adopted without revision. The amendments to the Articles of Incorporation were approved by the MOEA for registration on June 17, 2020.
	Proposal for repeal and re-establishment of the "Rules of Procedure for Shareholders' Meeting" was adopted	The proposal was adopted without revision.
	Proposal for issuance of employee restricted stock in FY 2020 was adopted	The proposal was adopted without revision. The issuance was approved and became effective under the Letter Jin-Guan-Zheng-Fa-Zi No.1090348670 dated June 7, 2020 issued by the Financial Supervisory Commission.

B. Important resolutions of the Board of Directors

Term of the Board of Directors	Time	Proposal
1st meeting in 2020	2020.2.25	(1) Proposal for distribution of the remuneration for employees and directors in FY 2019 was adopted. (2) The business report and self-prepared financial statements of FY 2019 were adopted. (3) Proposal for distribution of the profit of FY 2019 was adopted. (4) Proposal to issue the "Internal Control System Declaration" of FY 2019 was adopted. (5) Proposal for amendment of the "Articles of Incorporation" was adopted. (6) Proposal for repeal and re-establishment of the "Rules of Procedure for Shareholders' Meeting" was adopted. (7) Proposal to convene the regular Shareholders' Meeting in FY 2020 was adopted.
2nd meeting in 2020	2020.3.25	(1) Proposal for amendment of the "Regulations Governing the Transfer of the Company's Shares Acquired from Buybacks to Employees" was adopted. (2) Proposal to perform the 1st buyback of the Company's treasury stocks in FY 2020 was adopted.

Term of the Board of Directors	Time	Proposal
3rd meeting in 2020	2020.4.16	(1) Proposal for transfer of the Company's managers was adopted. (2) Proposal for adjustment of the salary for managers in FY 2020 was adopted. (3) Proposal for assessment on the independence of the CPAs of the Company's financial statements was adopted. (4) Philip Tang and Grace Chen, the CPAs of KPMG Taiwan, were commissioned to act as the CPAs of the Company's financial statements, and a resolution concerning their remuneration was adopted. (5) Proposal for issuance of employee restricted stock in FY 2020 was adopted. (6) Proposal for amendment of the "Regulations Governing the Transfer of the Company's Shares Acquired from Buybacks to Employees" was adopted. (7) Proposal for amendment of the "Articles of Incorporation" was adopted. (8) Proposal for amendment of the "Rules of Procedure for Board of Directors Meeting" was adopted. (9) Proposal for amendment of the "Procedures for Ethical Management and Guidelines for Conduct" was adopted. (10) Proposal for amendment of the "CSR Best Practice Principles" was adopted. (11) Proposal for amendment of the "Internal Control System" and "Rules for Implementation of the Internal Audit System" for "Other Management Control Cycles" was adopted. (12) Proposal of reasons for convening the regular Shareholders' Meeting in FY 2020 was adopted.
4th meeting in 2020	2020.6.17	(1) Proposal for transfer of the Company's managers was adopted. (2) Proposal for amendment of the "Rules Governing the Issuance of Restricted Stock Award Shares for Employees in 2020" was adopted.
5th meeting in 2020	2020.8.6	(1) The quarterly consolidated financial statements for the second quarter of FY 2020 was adopted. (2) Proposal for establishment of the "Procedure of Treasury Stock Buyback" and the "Other Management Control Systems - Procedure of Treasury Stock Buyback" for the internal control system was adopted. (3) Proposal for amendment of the "Rules Governing the Issuance of Restricted Stock Award Shares for Employees in 2020" was adopted. (4) Proposal of matters related to the issuance of employee restricted stock in FY 2020 was adopted. (5) Proposal for amendment of the "Directions for Senior Management's Remuneration and Benefits" was adopted. (6) Proposal for amendment of the "Regulations Governing Performance Bonuses for Employees" was adopted. (7) Proposal for amendment of the "Articles of Association of the Audit Committee" was adopted. (8) Proposal for amendment of the "Rules Governing the Scope of Responsibilities of Independent Directors" was adopted. (9) Proposal for amendment of the "Corporate Governance Best Practice Principles" was adopted. (10) Proposal for amendment of the "Guidelines for Evaluating the Performance of the Board of Directors" was adopted.

Term of the Board of Directors	Time	Proposal
6th meeting in 2020	2020.11.5	(1) Proposal for amendment of the “Articles of Incorporation” submitted for discussion was adopted. (2) Proposal for amendment of the “Articles of Association of Special Committee on Mergers and Acquisitions” was adopted. (3) Proposal for establishment of the “Ethical Corporate Management Policies” was adopted. (4) The internal audit plan of FY 2021 was adopted. (5) Proposal for amendment of the “Code of Ethical Conduct” was adopted.
7th meeting in 2020	2020.12.17	(1) The strategic development and operational plans of FY 2021 were adopted. (2) Proposal for distribution of the performance bonus for managers in FY 2020 was adopted. (3) Proposal for distribution of the employee remuneration for managers in FY 2020 was adopted. (4) Proposal to apply for extending contracts with financial institutions concerning the credit line and transaction limit for financial products in FY 2021 was adopted. (5) Proposal for amendment of the “Internal Control System” and “Rules for Implementation of the Internal Audit System” for the “Sale and Collection Cycles” and “Procurement and Payment Cycles” was adopted.
1st meeting in 2021	2021.02.24	(1) Proposal for distribution of the remuneration for employees and directors in FY 2020 was adopted. (2) The business report and self-prepared financial statements of FY 2020 were adopted. (3) Proposal for distribution of the profit of FY 2020 was adopted. (4) Proposal to issue the “Internal Control System Declaration” of FY 2020 was adopted. (5) Proposal for amendment of the “Internal Control System” and “Rules for Implementation of the Internal Audit System” for the “Sale and Collection Cycles” was adopted. (6) Proposal for amendment of the “Rules of Procedure for Shareholders’ Meeting” was adopted. (7) Proposal to hold a new election of the directors due to expiration of the current term was adopted. (8) The list of candidates nominated for directors (including independent directors) after discussion was adopted. (9) Proposal to exempt newly elected directors and their representatives from non-compete restrictions was adopted. (10) Proposal to convene the regular Shareholders’ Meeting in FY 2021 was adopted.
2nd meeting in 2021	2021.04.15	(1) Philip Tang and Steven Shih, the CPAs of KPMG Taiwan, were commissioned to act as the CPAs of the Company’s financial statements, proposal for assessment on the independence of the CPAs of the Company’s financial statements, and a resolution concerning their remuneration was adopted. (2) The quarterly consolidated financial statements for the first quarter of FY 2021 was adopted.

- (12) In the event that any director or supervisor expressed a dissenting opinion regarding any of the important resolutions adopted by the BoD during the most recent FY as of the date on which the annual report was printed, and that the opinion was recorded or delivered in writing, please describe its main content: None.
- (13) The resignation or dismissal of the Company's Chairman, President, accounting manager(s), financial manager(s), chief internal auditor (s) and R&D manager(s) during the most recent FY as of the date on which the annual report was printed is summarized as follows:

Title	Name	Date of inauguration	Date of dismissal	Reasons for resignation or dismissal
Vice President	Victor Lin	04.03.2006	05.31.2020	Resignation due to his personal career planning

4. Information on CPA's professional fees

Unit: TWD 1,000

Accounting firm	Type of service	Name of CPA	Professional fee	Does the audit period cover the whole FY?	
				Yes	No
KPMG Taiwan	Audit service	Philip Tang	3,435	V	
		Grace Chen			
	Non-audit service	Willis Yeh	700 (Note)		
		Philip Tang			

Note: All the non-audit services are services for transfer pricing reports and the review of employee restricted stock.

- (1) In the event the amount of non-audit professional fees paid to a CPA, the CPA's firm and any of its affiliates is at least 25% of that of audit professional fees, the amounts of audit and non-audit professional fees and the contents of non-audit service must be disclosed: N/A
- (2) In the event that the accounting firm has been changed and that the amount of audit professional fees paid during the FY when the change occurs is lower than that paid during the previous FY, the amounts before and after the change and the reasons must be disclosed: N/A
- (3) In the event the amount of audit professional fees is reduced by at least 10% in comparison with the previous FY, the amount, percentage and reasons of the reduction must be disclosed: N/A.

5. Information on change of CPAs (If the company changed the CPAs during the most recent two FYs and their subsequent periods, the following information must be disclosed)

(1) On the predecessor CPAs:

Date of change	April 15, 2021		
Reasons and description of change	In line with the needs for adjusting the positions of the CPAs at KPMG Taiwan, and starting from Q1 of FY 2021, the original CPA team consisting of Philip Tang and Grace Chen was replaced by the team consisting of Philip Tang and Steven Shih.		
The commissioner or CPA terminates or declines the commission	Parties Circumstance	CPA	Commissioner
	Commission was terminated on his/her initiative	V	
	(Extension of) Commission was declined		
Opinions and reasons for audit reports issued during the most recent two years, excluding those issued without reservations	None		
Any differences in opinions with the issuers?	Yes		Accounting principles or practice
			Disclosure of financial reports
			Scope or steps of audits
			Other
	None	V	
	Description		
Other matters for disclosure	None		

(2) On the successor CPAs:

Accounting firm	KPMG Taiwan
Name of CPA	Philip Tang, Steven Shih
Date of commissioning	April 15, 2021
Matters regarding which the successor CPAs were consulted, and which were related to the accounting treatment or accounting principles of specific transactions; matters regarding which the successor CPAs were consulted, and which were related to the opinions that might be issued on financial reports; results of these matters	None
Written opinions of the successor CPAs on matters regarding which the predecessor CPAs have expressed dissenting opinions	None

- (3) Letters of reply from the predecessor CPAs:N/A
6. The company's chairman, president, or financial/accounting manager served in the CPAs' firm(s) or any affiliate during the most recent year: None.
7. Change of shares transferred and pledged for directors, supervisors, managers and any shareholder holding more than 10% of the company's shares during the most recent FY as of the date on which the annual report was printed

(1) Change of shares for directors, supervisors, managers and major shareholders

Unit: Share

Title	Name	2020		2021, as of April 1	
		No. of increase (decrease) of shares held	No. of increase (decrease) of shares pledged	No. of increase (decrease) of shares held	No. of increase (decrease) of shares pledged
Chairman & CSO	Austin Chen	-	-	-	-
Director	Teddy Lu	-	-	-	-
Director and concurrent President	Chang Chia-Kun	-	-	-	-
Director	Haydn Hsieh	-	-	-	-
Director	George Huang	-	-	-	-
Independent Director	Max Wu	-	-	-	-
Independent Director	Philip Peng	-	-	-	-
Independent Director	Hsieh Hui-Chuan	-	-	-	-
Vice President	Victor Lin	-	-	-	-
Vice President	Luo Rong-Fa				
Vice President	Huang Mei-Hui				
Vice President	Luo Xue-Ru				
Vice President	Li Jun-Chang				
CFO	Lai Zi-wen	-	-	-	-
Center Senior Head	Yin Hua-Jun	-	-	-	-

(2) Information on share transfer: None.

(3) Information on share pledge: None.

8. Information on the top-10 shareholders who are related parties to each other, in a spousal relationship or within the second degree of kinship:

April 1, 2021 Unit: Share; %

TOP 10 SHAREHOLDERS	NO. OF SHARES HELD		SHARES HELD BY SPOUSE OR MINOR CHILDREN		SHARES HELD IN THE NAME OF OTHERS		THE TITLE OR NAME AND RELATION IN CASE OF THE TOP 10 SHAREHOLDERS WHO ARE RELATED PARTIES TO EACH OTHER, IN A SPOUSAL RELATIONSHIP OR WITHIN THE SECOND DEGREE OF KINSHIP		REMARKS
	Number of shares	Shareholding ratio	Number of shares	Shareholding ratio	Number of shares	Shareholding ratio	Title (or name)	Relation	
Phison Electronics Corp.	10,050,000	9.87%	-	-	-	-	-	-	-
Teddy Lu	5,699,906	5.60%	-	-	-	-	-	-	-
Austin Chen	1,525,633	1.50%	450,268	0.44%	-	-	-	-	-
George Huang	1,207,041	1.19%	-	-	-	-	-	-	-
Masa Chang	1,010,000	0.99%	-	-	-	-	-	-	-
Apacer Technology Inc. Accounts in escrow at Taipei Fubon	926,539	0.91%	-	-	-	-	-	-	-
Yang Jun-Yong	580,699	0.57%	-	-	-	-	-	-	-
Bank of Taiwan Safeguards LSV Emerging Markets Small Business Fund Account	494,000	0.49%	-	-	-	-	-	-	-
Chen Su-Xia	450,268	0.44%	-	-	-	-	-	-	-
Wu Xue-Mou	450,000	0.44%	-	-	-	-	-	-	-

9. Shares held by the Company and the directors, supervisors, managerial officers, and business that the Company directly or indirectly controls in the same invested business and their shareholding ratio

April 30, 2021 Unit: Share; %

Invested business	Company's investment		Investments of directors, supervisors, managers and directly or indirectly controlled business		Total investment	
	Number of shares	Shareholding ratio	Number of shares	Shareholding ratio	Number of shares	Shareholding ratio
Apacer Memory America Inc.	20,000	100%	-	-	20,000	100%
Apacer Technology B.V.	79,513	100%	-	-	79,513	100%
Apacer Technology Japan Corp.	200	100%	-	-	200	100%
Apacer Technology (BVI) Inc.	2,635,775	100%	-	-	2,635,775	100%
Kingdom Corporation Limited	5,000,000	100%	-	-	5,000,000	100%
Apacer Technologies Private Limited	28,799	99.65%	100	0.35%	28,899	100%
Apacer Electronics (Shanghai) Co., Ltd.	Note 1	100%	-	-	Note 1	100%
Shenzhen Qinjing Technology Co., Ltd.	Note 2	99%	-	-	Note 2	99%
JoiUp Technology Inc.	750,000	12.86%	-	-	750,000	12.86%

Note 1: Amount of contribution USD 500,000.

Note 2: Amount of contribution RMB 4,985,714.

IV. Financing

1. Capital and share

(1) Sources of capital stock

A. Capital formation

As of April 30, 2021
Unit: Share/1,000s of TWD

M/Y	price (dollar)	Authorized capital stock		Paid-in capital stock		Remarks		
		Number of shares	Amount	Number of shares	Amount	Capital sources	Property other than cash as substitute for share price	Approval date and document no.
1/2021	10	200,000,000	2,000,000	101,824,346	1,018,243	Note	None	None

Note: We issue employee restricted stock in 2021.

B. Type of shares

Unit: Share

Type	Authorized capital stock			Remarks
	Outstanding shares	Unissued shares	Total	
Common stock	101,824,346 (issued)	98,175,654	200,000,000	

C. Information on general declaration systems: None

(2) Structure of shareholders

April 1, 2021

Structure Number	Government agency	Financial institution	Other corporate bodies	Individual	Foreign institutions and foreign persons	Total
Shareholders (persons)	0	0	204	39,030	77	39,311
Shares held (share)	0	0	12,381,828	85,127,262	4,315,256	101,824,346
Shareholding ratio (%)	0.00%	0.00%	12.16%	83.60%	4.24%	100%

(3) Ownership distribution

April 1, 2021

Share	Shareholders	Shares held (share)	Shareholding ratio (%)
1 to 999	23,582	1,012,792	0.99%
1,000 to 5,000	12,868	25,585,476	25.13%
5,001 to 10,000	1,665	13,414,039	13.17%
10,001 to 15,000	383	4,878,467	4.79%
15,001 to 20,000	282	5,262,786	5.17%
20,001 to 30,000	188	4,789,725	4.70%
30,001 to 40,000	85	3,043,082	2.99%
40,001 to 50,000	86	4,010,628	3.94%
50,001 to 100,000	108	7,676,765	7.54%
100,001 to 200,000	41	5,835,855	5.73%
200,001 to 400,000	12	3,500,645	3.44%
400,001 to 600,000	5	2,394,967	2.35%
600,001 to 800,000	0	0	0.00%
800,001 to 1,000,000	1	926,539	0.91%
1,000,001 or more	5	19,492,580	19.14%
Total	39,311	101,824,346	100.00%

(4) Major shareholders

April 1, 2021

Major shareholder	Share	Shares held (share)	Shareholding ratio (%)
Phison Electronics Corp.		10,050,000	9.87%
Teddy Lu		5,699,906	5.60%
Austin Chen		1,525,633	1.50%
George Huang		1,207,041	1.19%
Masa Chang		1,010,000	0.99%
Apacer Technology Inc. Accounts in escrow at Taipei Fubon		926,539	0.91%
Yang Jun-Yong		580,699	0.57%
Bank of Taiwan Safeguards LSV Emerging Markets Small Business Fund Account		494,000	0.49%
Chen Su-Xia		450,268	0.44%
Wu Xue-Mou		450,000	0.44%

- (5) Information on the market price, net value, earnings, and dividend per share in the recent two years

Unit: TWD/1,000 shares

Item \ Year		2019	2020	2021, as of March 31
Market price per share (Note 1)	Maximum	43.85	54.40	44.60
	Minimum	27.75	30.20	37.20
	Average	33.27	41.18	40.62
Net value per share	Before allocation	27.81	27.85	29.07
	After allocation	25.26	(Note 2)	-
Earnings per share	Weighted average shares	100,898	100,898	100,898
	EPS (before adjustment)	3.73	2.88	1.23
	EPS (after adjustment)	3.73	(Note 2)	-
DPS	Cash dividend	2.55	(Note 2)	-
	Stock grants	-	-	-
		-	-	-
	Accumulated unpaid dividend	-	-	-
ROI analysis	PE (Note 3)	8.92	(Note 2)	-
	PD (Note 4)	13.05	(Note 2)	-
	Cash dividend yield % (Note 5)	7.66	(Note 2)	-

Note 1: Source: TWSE website

Note 2: To be approved at the 2021 regular shareholders' meeting.

Note 3: PE = Average closing price per share of the current year / EPS

Note 4: PD = Average closing price per share of the current year / cash dividend per share

Note 5: Cash dividend yield = (Cash dividend per share / average closing price per share of the current year) X 100%.

- (6) Dividend policy and implementation status

A. Apacer's dividend policy

Our earnings, if any, shown on the final annual account are distributed as follows:

- (A) Pay taxes.
- (B) Make up losses of previous years.
- (C) Appropriate 10% as legal earnings reserve, except when the legal reserve of the Company has already reached the total capital.
- (D) Provide or reserve as a special earnings reserve pursuant to laws and regulations.
- (E) If there is any surplus left, a provision of retained earnings is made depending on the long-term development plans and the stability of the financial structure of the Company. The Board of Directors then discusses the distribution of the surplus left in the current year in combination with the unpaid earnings of the previous years, and reports to the shareholders' meeting for approval.

The dividend policy of the Company must be established in consideration of the overall environment of the industry, development phase, demand for funds and financial supports in the future, and relevant plans. Earnings to be distributed may be paid using cash or stocks. The payment ratio is about 60%~90% of the earnings after tax if there are no important investment plans or any special circumstances. The cash dividend must not be less than 10% of the total amount of the dividend.

B. Dividend distribution proposed at the current shareholders' meeting:

The distribution of earnings in 2020 was approved by the Board of Directors on February 24, 2021. A cash dividend of TWD 205,685,179 will be distributed to the shareholders.

- (7) The influence of the stock grants proposed at the current shareholders' meeting on the operation performance and EPS of the Company:

Unit: TWD

Item		Year	2021 (Estimated)
Initial paid-in capital			1,008,978,070
Dividend distribution	Cash dividend per share (dollar) (Note 1)		2.02
	Allotment per share in surplus to capital increase (Note 1)		-
	Allotment per share in additional paid-in capital (Note 1)		-
Changes in operation performance	Operating income		N/A (Note 2)
	Operating profit increase (decrease) compared to same period last year		
	Net income after tax		
	Net income after tax increase (decrease) compared to same period last year		
	Earnings per share		
	EPS increase (decrease) compared to same period last year		
Pro forma EPS and PE	Annual average ROI (annual average PE ratio)	Pro forma EPS	N/A (Note 2)
		Pro forma annual average ROI	
	All cash dividends in case of earnings to capital increase	Pro forma EPS	
		Pro forma annual average ROI	
	If no additional paid-in capital to capital increase	Pro forma EPS	
		Pro forma annual average ROI	
	If no additional paid-in capital and all cash dividends in case of earnings to capital increase	Pro forma EPS	
		Pro forma annual average ROI	

Note 1: Allotment in 2021 is an estimate based on the resolution at the Board of Directors meeting on February 24, 2021. It will be handled pursuant to relevant regulations after being approved at the 2021 regular shareholders' meeting.

Note 2: The Company is not required to make the 2021 financial prediction information public according to the "Regulations Governing the Publication of Financial Forecasts of Public Companies".

(8) Remunerations for employees and directors

A. Percentage or scope of the remuneration for employees and directors according to the Articles of Incorporation:

Where there is profit in any fiscal year, 4% or more of the profit must be appropriated as remuneration for employees. Where the Company has any accumulated loss, the remuneration must be appropriated from the balance after such accumulated loss has been covered. The employees' remuneration referred to in the previous paragraph may be distributed in the form of cash or stock. The employees eligible for the distribution may include the employees of the affiliated companies who meet the requirements specified by the Board of Directors.

The Board of Directors is authorized to determine the remuneration recommended by the Remuneration Committee for any director with reference to the extent of his/her involvement in and value of his/her contribution to the operation of the Company and the standards of the industry in Taiwan and overseas regardless of the Company's profits or losses. Where there is profit in any fiscal year, not more than 1.4% of the profit shall be appropriated as remuneration for directors. Where the Company has any accumulated loss, the remuneration must be appropriated from the balance after such accumulated loss has been covered. The criteria for allocation of the remuneration must be recommended by the Remuneration Committee to the Board of Directors for approval. The procedures for determining remuneration are evaluated in accordance with the "Regulations Governing the Distribution of Remuneration for Directors".

B. The current estimation base of remuneration for employees and directors, calculation base for distribution of dividends, and methods for handling the difference between actually distributed and estimated amounts:

The amounts of the remuneration to the Company's employees and directors are estimated by multiplying the Company's net profit before tax of the current period

prior to the deduction of the remuneration to the employees and directors with the respective percentages to be adopted by the Company for distribution of the remuneration.

The remuneration is stated as the operating expenses of the current period. The difference, if any, between the actually distributed and estimated amounts is recognized as the loss/profit of the next year.

C. Information on the distribution of the remuneration to employees and directors in 2020 approved by the Board of Directors

Unit: TWD

Disclosed Information	Amount
Dividends to be distributed to employees - Cash	\$33,993,000
Dividends to be distributed to employees - Stock	-
Remuneration to be distributed to directors	\$5,598,814
Number of shares to be distributed to employees as dividends and the percentage it occupies in surplus to capital increase	None
Imputation after proposed distribution of dividends to employees and remunerations to directors	2.88 (basic) 2.85(diluted)
Earnings per share	

Note: Information related to the distribution of profit in 2020 can be accessed through the Market Observation Post System.

D. Actual distribution of the remuneration to employees and directors in 2019:

Distribution of the remuneration to employees and directors in 2019 was adopted at the shareholders' meeting on May 28, 2020. The approved distribution was not different from the estimate in 2019. The details are described below:

Unit: TWD

Profit Distribution for FY 2019	Actual distribution	Book estimation	Difference
Dividends distributed to employees - Cash	49,120,000	49,120,000	-
Dividends distributed to employees - Stock	-		
Remuneration distributed to directors and supervisors	7,323,409	7,323,409	-

E. Names of the top-10 employees receiving the highest remuneration from the profit of 2019 and the distribution:

Unit: TWD

Title	Name	Share amount	Cash amount	Total	The total amount in net income after tax (%)
Chairman and CSO	Austin Chen	-	11,420,000	11,420,000	3.93%
President	Chang Chia-Kun				
Vice President	Victor Lin (Note 1)				
Vice President	Luo Rong-Fa (Note 2)				
Vice President	Huang Mei-Hui (Note 2)				
Vice President	Luo Xue-Ru (Note 2)				
CTO	Li Jun-Chang (Note 3)				
CFO	Lai Zi-Wen				
Center Senior Head	Yin Hua-Jun (Note 4)				
Senior manager	Xu Yu-Jun				

Note 1: Victor Lin was discharged on May 31, 2020.

Note 2: Luo Rong-Fa, Huang Mei-Hui and Luo Xue-Ru were promoted to vice presidents on July 1, 2020.

Note 3: Li Jun-Chang was to the CTO on July 1, 2020.

Note 4: Yin Hua-Jun was appointed as a manager on July 1, 2020.

(9) Status of stock buyback by the Company: None.

2. Status of corporate bonds

N/A

3. Status of preferred stock

N/A

4. Status of overseas depositary receipts

N/A

5. Status of employee stock option certificates

(1) Status of the employee stock option certificates that have not fallen due and their effect on shareholders' equity must be disclosed as of the date on which the annual report was printed: None.

(2) Status of employee stock option certificates acquired by management team and top-10 employees, acquisition and subscription as of the date on which the annual report was printed: None.

6. Status of employee restricted stock

- (1) Status of the employee restricted stock that has not met all the conditions and its effect on shareholders' equity must be disclosed as of the date on which the annual report was printed:

April 30, 2021

Type of employee restricted stock (Note 1)	1st issuance of employee restricted stock in 2021
Effective date	July 7, 2020
Issuance date (Note 2)	January 6, 2021
Number of issued employee restricted shares	926,539 shares
Issue price	TWD \$0 (Issuance as a bonus)
Ratio of number of issued employee restricted shares to Ratio of total issued shares	0.9%
Vesting conditions of employee restricted stock	Fulfillment of both the performance and service conditions: 1. Company performance The most recent year before expiry of the first vesting period of the Company will be based on the consolidated financial statements audited and certified by the CPAs. The Company's earnings per share (EPS) shall meet any of the following conditions: (1) Where the EPS in 2020 is more than or equal to that in 2019, the maximum amount of distributable employee restricted stock is limited to 100% of the shares issued under Article 2 of the Rules. (2) Where the EPS in 2020 is less than that in 2019 and is more than or equal to 75% of that in 2019, the minimum amount of distributable employee restricted stock is 75% of the shares issued under Article 2 of the Rules, and is calculated based on the rate of achievement of the company performance. For example, if the rate of achievement of the company performance is 90%, the amount of distributable shares is 90% of the shares issued under the said Article 2. (3) Where the EPS in 2020 is less than 75% of that in 2019, the vesting conditions is deemed not fulfilled. 2. Employee performance The personal and job performance of any employee who has been granted restricted stock award shares shall fulfill the personal performance criteria set by the Company during the period until expiry of the vesting period. Failure to fulfill the personal performance criteria will be deemed as non-fulfillment of the vesting conditions. 3. Years of service After achievement of the company and employee performance, the maximum percentages of shares that may vest in series for the year based on the conditions of employee service are as follows: (1) For any full-time employee who has provided service for at least one year following the date of allotment and remains on the job, and has not violated the employment contract, work rules or requirements of the Company, the calculation is based on 50% of the number of distributable shares. (2) For any full-time employee who has provided service for at least two years following the date of allotment and remains on the job, and has not violated the employment contract, work

	rules or requirements of the Company, the calculation is based on 50% of the number of distributable shares.
Restricted rights of employee restricted stock	Restriction on the rights of shares before fulfillment of the vesting conditions 1. Before fulfillment of the vesting conditions, a holder of the employee restricted stock is entitled to participate in stock dividends, dividends and cash capital increase. 2. Before fulfillment of the vesting conditions, the employee restricted stock shall not be disposed through sale, pledge, transfer, giving to others as gifts, setting or through any other ways. 3. Before fulfillment of the vesting conditions, a custodian is commissioned to present, propose, make statements, exercise voting rights and other matters related to shareholders' equity at the Company's shareholders' meetings on behalf of employees.
Custody of employee restricted stock	The employee restricted stock shall be immediately consigned to the custodian designate by the Company for custody upon the issuance. The Company or the representative assigned thereby shall sign the reverent trust contracts with the custodian on behalf of the employees to allow the custodian to act for them in handling the relevant trust affairs discretionarily. Before fulfillment of the vesting conditions, the employees shall not ask the custodian to return the employee restricted stock with any reasons or through any ways.
Handling procedure for employees' non-fulfillment of the vesting conditions after allotment or subscription of employee restricted shares	1. Handling procedure for employees' non-fulfillment of the vesting conditions If any employee, after having been granted employee restricted shares, has failed to fulfill the vesting conditions, his/her shares are recovered and canceled by the Company without compensation. 2. If any employee voluntarily resigns, is involuntarily unemployed, retires, or voluntarily asks for transfer to any affiliated company, the Company shall recover and cancel the shares granted that are not yet fully entitled to be received without compensation. 3. If any employee is approved for leave without pay, the employee can be entitled to the shares granted that are not yet fully entitled to be received when he/she goes back to the original post. However, the distributable shares of the year in which the employee goes back to his/her original post shall be calculated based on the percentage of his/her service period. 4. In case of any employee's disability or death caused by occupational disasters, or his/her death, the shares that are not yet fully entitled to be received are handled as follows: (1) If the employee is disabled due to an occupational disaster and thus is unable to provide service, all the vesting conditions for the shares granted that are not yet fully entitled to be received are deemed to be fulfilled on the effective date of the employee's separation from service. However, it is still subject to the restriction of vesting conditions in Article 4 of the Rules in the current year. - If the employee dies due to an occupational disaster or due to any other reasons, all the vesting conditions for the shares granted that are not yet fully entitled to be received are deemed to be fulfilled on the date of the employee's death. His/her heir shall complete necessary legal procedures and provide relevant supporting documents to apply for receiving the shares or disposed equities inherited thereby. However, it is still subject to the restriction of vesting conditions in Article 4 of the Rules in the current year.

Number of recovered or purchased employee restricted shares	0 shares
Number of employee restricted shares from which the restriction has been removed	0 shares
Number of employee restricted shares from which the restriction has not been removed	926,539 shares
Ratio of number of employee restricted shares from which the restriction has not been removed to the total issued shares (%)	100%
Effect on shareholders' equity	There is unlikely to be any material impact to the current shareholders' equity.

(2) Status of the employee restricted stock acquired by managers and top-10 employees and the acquisition as of the date on which the annual report was printed:

	Title	Name	Number of acquired employee restricted shares	Ratio of number of acquired employee restricted shares to the total issued shares	Restriction on rights has been removed				Restriction on rights has not been removed			
					Number of shares from which the restriction has been removed	Issue price	Issue amount	Ratio of number of shares from which the restriction has been removed to the total issued shares	Number of shares from which the restriction has not been removed	Issue price	Issue amount	Ratio of number of shares from which the restriction has not been removed to the total issued shares
Manager	President	Chang Chia-Kun	579,088	0.6%	0	0	0	0%	579,088	0	0	0.6%
	Vice President	Luo Rong-Fa										
	Vice President	Huang Mei-Hui										
	Vice President	Luo Xue-Ru										
	CTO	Li Jun-Chang										
	CFO	Lai Zi-Wen										
	Senior Head	Yin Hua-Jun										
Employee	Senior Head	Xie Zheng-Zhong	100,376	0.1%	0	0	0	0%	100,376	0	0	0.1%
	Deputy Head	Lin Zhi-Liang										
	Deputy Head	Huang Jian-Zhong										

7. Status of new share issuance in connection with mergers and acquisitions: N/A.
8. Implementation status of financing plans: N/A.

V. Overview of business operation

1. Business activities

(1) Business scope

A. Major business

- (A) Memory module
- (B) Flash memory
- (C) Others

B. Operating proportion

Unit: TWD 1,000

Product	2020	
	Sales amount	Sales percentage
Flash memory	4,153,925	58.08%
Memory module	2,990,854	41.82%
Other	7,443	0.10%
Total	7,152,222	100.00%

C. Current product categories

- (A) The RAM module covers the desktop, laptop and overclocking memory modules.
- (B) Special memory modules for IPCs, servers, printers, network products, and routers.
- (C) USB Disk Module (UDM)
- (D) Industrial USB2.0 & USB3.1 flash drives
- (E) PCIe / SATA/ATA Disk Module (M.2 /SDM / mSATA /ADM)
- (F) SATA/ATA Disk Chip (SDC/ADC)
- (G) SATA3.0 2.5"/1.8" SSD
- (H) CorePower™ SSD: Abnormal power failure protection SSD
- (I) SLC-lite product line
- (J) SSDWidget real-time monitoring hardware
- (K) Anti-vulcanization SSD (solid-state drive)
- (L) PCIe CFx Card/Industrial CF Card/CFast Card/Embedded SD, microSD Card
- (M) Sdhc / Sdxc Uhs-I/U1 Card, high speed U3 V30 SDHC/SDXC Card
- (N) MicroSDHC Card, microSDHC UHS-I U1 Card, high speed UHS-I U3 V30 A1 microSDHC / SDXCUSB3.2 Gen 1 Type-C Portable Flash Drive

- (O) Apple certificated Lightning dual-purpose USB
- (P) USB3.1 fingerprint protection USB
- (Q) USB 2.0 & USB 3.2 Gen 1 USB
- (R) 2.5" SATAIII, mSATA, M.2 and PCIe interface SSD
- (S) External SSD
- (T) USB2.0 & USB3.1 Card Reader
- (U) USB 3.2 Gen 1 Portable Hard Drive
- (V) USB 3.2 Gen 1 Drop-resistant Portable Hard Drive of Military Specifications
- (W) USB 2.0 & USB 3.1 Type-C charging cable
- (X) Military PCIe U.2 SSD
- (Y) Enterprise SATA3.0/PCIe 2.5" SSD
- (Z) Spectroradiometer
(AL100/AL100W/AL110/AL210/AL200/AL250/AL250V)
- (AA) USB3.0 SSD Module
- (BB) Anti-vulcanization DDR4 Module
(Server DIMM / Ultra DIMM / Rugged SODIMM)
- (CC) Irradiance Meter (Ai201/Ai101/Ai111/Ai001/CS01/CS02/ALE01/ACR01)
- (DD) CUBE colorimeter
- (EE) IIoT solution
(AI+AOI system, smart factory central monitoring system, smart active disaster prevention system, the design, development and building of automated production lines)
- (FF) Smart IoT safety monitoring system
(Smart environmental safety monitoring system for homes/institutions, LINE AI smart service management system, attendance and accounting management system for long-term care/day care centers, smart thermal/physiological/fall detection systems, the consulting service for long-term care plan 2.0 subsidies)
- (GG) Rugged DDR4 XR-DIMM Module
- (HH) High speed DDR4 2666 wide-temperature memory module
- (II) 32-Bits DDR4 SODIMM Module
- (JJ) DDR4 2933/3200 memory module
- (KK) High speed DDR4 2933/3200 wide-temperature memory module
- (LL) DDR4 32GB UDIMM/SODIMM ECC DIMM ECC SODIMM memory module
- (MM) Rugged DDR4 XR-LRDIMM Module
- (NN) Flicker (stroboscope)

D. New products to be developed

- (A) DDR5 UDIMM/SODIMM ECC DIMM ECC SODIMM memory module
- (B) DDR5 REG DIMM server memory module
- (C) Bullet-Proof Mini SSD External
- (D) SDHC/SDXC UHS-II Card
- (E) MicroSDHC/SDXC UHS-I U3 V30 A2 Card
- (F) SED (Self-Encrypting Drives) SSD: Encrypted SSD
- (G) Storage SSDs used by servers: PCIe U.2 SSD/BGA SSD/M.3 module/EDSFF module
- (H) Edge Computing Server
- (I) Air-cooled chassis
- (J) AIO 120/360mm
- (K) 240/360 cold type
- (L) PCIe SSD RGB
- (M) DDR4 4133MHz SO-DIMM designed for gaming notebooks
- (N) AR smart navigation management system
- (O) All-in-one light meter (commercial lighting, visual lighting horticultural lighting, agricultural lighting)
- (P) UV optical testing device
- (Q) Fall detection mmWave sensor

(2) Overview of the industry

A. Status quo and development of the industry

Our major business includes manufacture and sale of DRAM modules and NAND flash products.

In the process of the memory modules, DRAM (Dynamic Random Access Memory) is bound onto a PCB according to a layout design. The PCB is then embedded in a motherboard for connection with other compatible functions to increase the processing speed and memory capacity of the computer. Regarding the cost structure, the price of DRAM occupies 80%-90% of the product on average (calculation based on 8GB PC standard module). Hence, the fluctuation of the DRAM market is in close relationship with the prosperity and recession of the memory module industry. The development trend of the DRAM market is the first factor to be understood for analyzing the status quo and feature of the memory module industry.

The flash memory is used in digital products for storage of information. Thanks to the non-volatile semi-conductor technology, flash memory can be used as a storage media for the information that needs permanent retention and amendment. For example, the programed instruction storage of the Set-top-box and EDRs as well as the applications for the storage of mass data for the digital cameras, smart phones, PC applications, SSDs, POSs and IoT applications are all in close relation with the flash memory.

Hence, the development trends in the DRAM and flash memory industries have an interlocking relationship with our main products of memory modules. The DRAM and memory module markets as well as the status quo of the flash memory industry are described below.

(A) Overview of the DRAM market

a. Market size

As a report by Gartner, a market survey institution, points out, the income of the global semiconductor industry grew by 7.3% to USD 449.8 billion last year, reversing the dropping trend of 2019. As Gartner analyzed, an adverse effect of the pandemic on the entire terminal equipment market was expected at the beginning of the previous year. However, the actual effect was slight. Though the reduced expenses of companies and consumers affected the automobile and other industries, the demands stimulated by work and learning from home as well as entertainment and online consumption as a result of lockdowns were favorable to these industries. As the report points out, there was a strong demand for servers in 2020. More than 65% of the customers came from the hyperscale field. In the first half of the year, many customers had urgent needs to increase capacity to meet the additional requirements brought about by lockdowns. The strong demands of companies and consumers for PCs resulted in a strong growth for CPUs and other components. As for the brands, Intel (INTC.US) was the semiconductor company with the highest revenue in 2020. The company enjoyed an annual growth rate of 3.7% and a revenue of USD 70.244 billion, primarily resulting from the business growth of its core customers and CPU products. Though market demand for smartphones slowed down, the strong sale of 5G phones stimulated the growth of the semiconductor industry, Qualcomm (QCOM.US), MediaTek (MDTKF.US), and other leading companies had a strong growth in the previous year. It is believed that the growth in the 5G area offset the shrinkage of system components. More importantly, memory products had the best performance in the 2020. Thanks to the increased demand for servers and PCs needed for work and learning from home, the revenue of the global memory industry increased to USD 13.5 billion, contributing 44% to the growth rate of the semiconductor industry.

2020 Rank	2019 Rank	Vendor	2020 Revenue	2020 Market Share (%)	2019 Revenue	2019-2020 Growth (%)
1	1	Intel	70,244	15.6	67,754	3.7
2	2	Samsung Electronics	56,197	12.5	52,191	7.7
3	3	SK hynix	25,271	5.6	22,297	13.3
4	4	Micron Technology	22,098	4.9	20,254	9.1
5	6	Qualcomm	17,906	4.0	13,613	31.5
6	5	Broadcom	15,695	3.5	15,322	2.4
7	7	Texas Instruments	13,074	2.9	13,364	-2.2
8	13	MediaTek	11,008	2.4	7,959	38.3
9	14	KIOXIA	10,208	2.3	7,827	30.4
10	16	Nvidia	10,095	2.2	7,331	37.7
		Others (outside top 10)	198,042	44.0	191,236	3.6
		Total Market	449,838	100.0	419,148	7.3

Source: Gartner (January 2021)

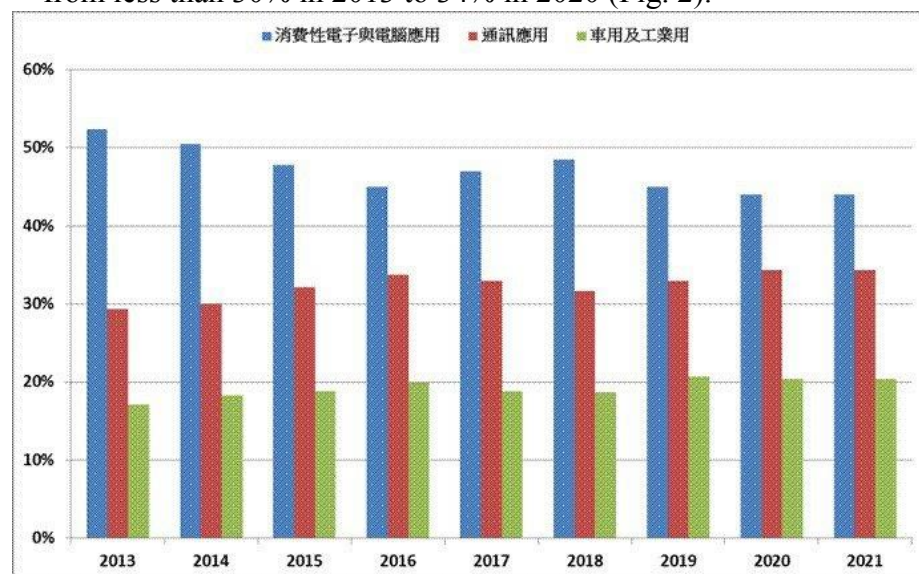
Fig. 1 The Top-10 global semiconductor suppliers in 2020

One of the reasons for the growth of the semiconductor industry in 2020 was the substantial decline in 2019. After the rapid development in 2017 and 2018, the semiconductor industry experienced a negative growth rate of 12% in 2019 due to the price collapse of memory, slow deployment of global 5G facilities, weak demand for new smartphones, and other factors. Consequently, the market scale returned to the level of 2017. In other words, the performance of the semiconductor industry would be even less satisfactory without the low base period effect of last year.

Another major reason for the growth was the pull-in effect due to the ban of the US government against Huawei. Since May last year, the US government has taken a series of actions to cut the production system of Huawei, including disallowing American companies to supply goods to Huawei and prohibiting foreign companies from using technology originating in the USA to trade with Huawei. Consequently, all the suppliers outside China could not trade with Huawei after

September 2020 without the special permission of the US government. In response to the ban, Huawei placed big orders with the supplier chain to reserve key components needed for its operations, and this indirectly facilitated the prosperity of the semiconductor industry in 2020.

As for the perspective in 2021, the senior industry analyst MIC found that 5G applications and High Performance Computing (HPC) will be the two major factors driving the ongoing growth of the semiconductor industry. In fact, the changes to the structure of the market for applications over the past 5 years have revealed that the semiconductor industry was gradually developing toward an area beyond the applications in computers, communications, and electronic consumables. According to MIC's statistics, applications in electronic consumables and computers occupied up to 52.4% of the market for semiconductor applications in 2013. There has been a downward trend since then and only an estimated share of 44% is left in 2020 and 2021. Meanwhile, the market applications of semiconductors in the areas of communications, vehicles and industry were growing every year and especially the share of communication applications soared dramatically from less than 30% in 2013 to 34% in 2020 (Fig. 2).



Source: MIC, Institute for Information Industry

Fig. 2 2013–2021 changes in the global market share of semiconductor applications (Estimated values for 2020 and 2021)

As Terry Tsao, the Global Chief Marketing Officer and President of SEMI Taiwan, said, the compound annual growth rate of the global semiconductor revenue from 2020 to 2025 will be about 5%. Computing and communication will be the largest semiconductor markets and electric vehicle and industrial applications will have great potential for growth.

As for product categories, logic chips and memory will be the best sellers on the global semiconductor market. According to the latest data made public by the Semiconductor Industry Association (SIA), the sales amount of logic chips in the middle of the year 2020 was about USD 117.5 billion and the sales amount of memory was about USD 117.3 billion. Compared to 2019, the sales amount of logic chips grew by 10.3% while the sales amount of memory grew by 10.2%. Among memory, NAND Flash had the highest sales amount and enjoyed a growth rate of 23.1% or USD 49.5 billion in 2020. The sales amount of MCU products grew by 4.8% or USD 69.6 billion in 2020. Aggregately, the sales amount of all the products other than memory grew by 5.2% and hit a historical high.

As for the operating revenue of DRAM products, the increase in shipments by Samsung and SK Hynix in 2020 Q4 offset the decrease in quoted price, and their operating revenue increased by 2.2% and 5.6%, respectively. Micron sustained a decline in shipments and its operating revenue dropped by 7.2%, leading to a fall in the market share in 2020 Q4. Samsung had the highest market share with 41.9% followed by SK Hynix with a market share of 29.6% and Micron with a market share of 23.1% (Fig. 3).

Unit: Millions of US\$

Ranking	Company	Revenue			Market Share	
		4Q20	3Q20	QoQ (%)	4Q20	3Q20
1	Samsung	7,371	7,214	2.20%	41.90%	41.30%
2	SK Hynix	5,202	4,928	5.60%	29.60%	28.20%
3	Micron	4,056	4,371	-7.20%	23.10%	25.00%
4	Nanya	519	522	-0.70%	3.00%	3.00%
5	Winbond	157	156	0.80%	0.90%	0.90%
6	Powerchip	56	57	-1.70%	0.30%	0.30%
	Others	223	208	6.90%	1.30%	1.20%
Total		17,584	17,457	0.70%	100.00%	100.00%

Note 1: 3Q20 - USD 1 = KOW 1,188; USD 1 = TWD 29.3

Note 2: 4Q20 - USD 1 = KOW 1,118; USD 1 = TWD 28.5

Source: TrendForce Corp., February 2021

Fig. 3 2020 Q4 DRAM brand ranking by operation revenue

b. Development of products

DRAM is an assistant of the processor chip, and is a temporary storage location for data that the processor is processing. It is mainly used in electronic products. DRAM is classified into different categories including Commodity DRAM, Server DRAM, Specialty DRAM and Mobile DRAM.

Commodity DRAM is the standard DRAM with PC related products as the major applications, such as DTs and NBs. Some low-end tablet PCs also use Commodity DRAM for price considerations.

Server DRAM, usually used in servers, has benefited from demands for cloud computing, big data and IoT. The demand for servers or DRAM in standalone servers is growing year by year. Data center and server application are the key markets where DRAM suppliers will actively make current and future investments. Driven by the simultaneous bit growth in shipment and DRAM in standalone servers, server application is expected to become the largest segment of global DRAM shipment by 2023, surpassing mobile devices.

Specialty DRAM is a special niche product and has the widest application range especially in the electronic consumer goods including smart TVs, digital set-top boxes, game consoles, and smart speakers. In-vehicle and industrial wide-temperature memories are also the application territories of Specialty DRAM. As the technologies and equipment for IoT gradually mature, the demand for niche memory products with a small capacity will continue to increase.

Mobile DRAM is a mobile application primarily used in mobile device products. Most of the Mobile DRAM series use LPDDR3 and LPDDR4 to meet the low power requirements of mobile device products. Smart phones and middle to high end tablets are the major applications of the Mobile DRAM. Some notebooks use this memory to meet their low power requirements. Most of the Apple MacBook series use Mobile DRAM instead of Commodity DRAM.

Mobile devices have played a role that drives the growth of the global semiconductor market in recent years, and their built-in functions have become more diversified. In addition, many brands of smartphones have emphasized the performance of the multi-camera function, therefore increasing the demand for low-power features. As a result, Mobile DRAM used in mobile devices has seen its demand rise greatly, and it, along with Server DRAM, have become the two mainstream products for DRAM application.

In 2021, 5G communication will remain an area of application worthy of attention. Under the 5G architecture, in addition to communication equipment and hand-held devices, smart cars, smart homes, smart cities and other omnipresent smart devices can benefit from the more widespread and denser connection services provided by a 5G network. Edge computing is to add a computing layer between the traditional cloud and the terminal equipment to assist with the capture, filtration and collection of data and facilitate real-time analysis. It can also respond immediately to the device to omit the complicate procedure of uploading all the data to the cloud and thereby decrease the latency and storage cost for data transmission. Aside from complementing 5G technology, it enables data processing to be completed first at the end points through AI learning and computing to provide a better consumer experience. The impact of the edge computing technology on the industry includes a significant rise of the demand for devices such as “small servers” and “small data centers”. The overall demand for servers is expected to grow greatly. In 2020 and 2021, the COVID-19 pandemic has boosted the stay-at-home economy and expanded the demand of data centers for memory solutions. During the next 2-3 years, server memory is going to surpass mobile memory and stand to become the mainstream product for supply and demand.

c. Overview of major DRAM suppliers

(a) Prices dropped in 2020 Q4 and the profitability of DRAM manufacturers was affected

In terms of profit, the price of the DRAM dropped by 5–10% in 2020 Q3 and, thus, the profitability of all the DRAM manufacturers was affected. The operating profit margin of Samsung dropped from 41% to 36%, SK Hynix’s operation profit margin dropped from 29% in the previous quarter to 26%, and Micron sustained a shrinkage from 25% to 21%. The cost optimization of these manufacturers was not enough to offset the drop of the price in the affected quarter. However, the rebound of the price in 2021 Q1 may be helpful for the manufacturers to get out of the trouble (Fig. 4).

Company	1Q19	2Q19	3Q19	4Q19	1Q20	2Q20	3Q20	4Q20
Samsung	48%	41%	33%	36%	32%	41%	41%	36%
SK Hynix	44%	28%	24%	19%	26%	35%	29%	26%
Micron	45%	34%	24%	20%	16%	21%	25%	21%
Nanya	27%	23%	15%	11%	13%	20%	14%	8.8%

Source: TrendForce Corp., February 2021 (compiled by Apacer)

Fig. 4 Operating profit margins of DRAM manufacturers

(b) Manufacturers maintain deliberate capacity plans in 2021

From the viewpoint of production capacity and technical capability, Samsung transferred some of its line 13 capacity from DRAM to CIS products in 2020 Q4 according to its original plan and increased the DRAM production volume of the Pyeongtaek Plant 2 (P2L) to 30K. While offsetting the drop of the line 13 production, Samsung increased the proportion of the 1Znm process. However, since COVID-19 brought about an uncertain aggregate demand, Samsung did not actively expand P2L in 2021 and only maintained the program of 60-70K at the end of the year without attempting to increase the capacity of P2L to full load.

SK Hynix continued to transfer its M10 DRAM capacity to CIS products in 2020. However, the transfer slowed down in light of the improvement of the DRAM market situation in 2021. The new M16 plant will be launched for production in 2021 Q2, but the increase will not be significant in the whole year. The increase in DRAM bits in 2020 was primarily a result of the increase in the proportion of the 1Ynm and 1Znm processes.

Increase of the production volume and output of the 1Znm process was the focus of Micron in 2020. The cost advantage of the 1Znm process made it the core of the company. As for the total capacity, production volume was similar to that of the previous year because no new plant was planned.

(c) DRAM plant process transition schedule

For process technology, Samsung still focused on the transit from 1Xnm to 1Znm or even to the 1 alpha nm of the next generation. The proportion of 1Znm was in line with the increase in production of P2L. It will be increased to about 30% at the end of 2021. The 1 alpha nm will be put into production in a small quantity in the second half of 2021. P1L will play a key role in the production and the EUV machine will be officially introduced (only partially introduced for 1Znm).

In process planning, SK Hynix had an extremely stable yield rate of the 1Ynm process one year after its introduction and mass production. Hence, SK Hynix was more active in planning the transition to the advanced 1Ynm and 1Znm processes. Both processes in aggregate occupied about 40% at the end of 2020 and 70% is planned to be achieved at the end of 2021. In addition, the 1 alpha nm process will be put into production in a small quantity at the end of 2021. It will be the first process for which SK Hynix introduces the EUV machine.

As the R&D of the most advanced 1Znm and 1 alpha nm processes progresses smoothly, Micron Technology Taiwan is gradually transitioning 1Xnm to 1 alpha nm. The 1Ynm process occupies 30% of the production capacity. Micron Memory Taiwan has chosen to ignore 1Ynm and transitions to the 1Znm process directly from 1Xnm and trial production in a small quantity with the 1 alpha nm process has begun, and capacity is planned to increase gradually in 2021. Part of the wafers was impaired during transition to the 1Ynm process due to the limited space of the plant in Hiroshima, Japan. The office next to the plant in Hiroshima is currently used as an extension to ensure the plant can maintain a capacity of more than 100K after transition to the advanced process.

The PSMC 25nm process has been introduced to mass production. However, since DDR4 4Gb products have basically already failed, the proportion of this process increases slowly, and the focus is mainly on DDR3 4Gb products.

Nanya is carrying out R&D its own 1Anm and 1Bnm processes simultaneously in the hope to provide 1Anm samples at the end of 2021 and put it in mass production in the first half of 2022 with LPDDR4 as the focus in the initial phase. 1Bnm is expected to be put into trial production at the end of 2021. As for 20nm, Nanya is dedicated to the application of DDR4 8Gb in servers. In consideration of the strong demand for DDR3, Nanya will transfer part of the 30nm and 20nm DDR4 capacity back to support DDR3 production. LPDDR3 and LPDDR4 4Gb/8Gb were also introduced to the production line one after another to increase product diversity.

Company	Current Generation	Under Transition	Next Generation	Ready Schedule
Samsung	1Ynm	1Znm	1anm	2021Q1
SK Hynix	1Ynm	1Znm	1anm	2021H1
Micron	1Xnm/1Ynm	1Znm	1anm	2021Q2
Nanya	20nm	1Anm	1Bnm	2021Q4
Changxin		1Xnm	1Ynm	2021Q1

Source: Compiled by Apacer in 2021

Fig. 5 Evolution of the DRAM process

According to product specifications, the majority of Intel/AMD chip sets in servers, desktop computers, and notebooks in 2021 support DDR4 architecture. As AI-related issues are discussed more widely in recent years, the demand for high-speed computing (HPC) has kept rising and moved toward the development of edge computing to drive the growing long-term demand of the server market. The DDR5 memory of the next generation has emerged thanks to the potential demand for high-capacity server DRAM modules driven by data centers and the demand for memory with higher transmission speeds to support the higher transmission throughput. DDR5 products were officially standardized after JEDEC announced the DDR5 SDRAM standard in July 2020. Intel and AMD will introduce a DDR5 supporting processor platform in the second half of 2021. The three leading DRAM manufacturers will start the transition to DDR5 in Q2 and mass production is expected in the second half of the year.

(d) Supply-demand development of the industry

Samsung, SK Hynix and Micron occupy about 95% of the global DRAM capacity. They have decreased capital expenditure since 2018, leading to process scaling to increase the growth rate of global DRAM bits. The growth rate of bits resulting from 10nm process scaling is much less than the 30nm or 20nm scaling benefits in the past. The demand for DRAM products went down dramatically due to COVID-19 in 2020. The rebound of the demand expected by market survey institutions did not appear until the end of 2020. Since the impact of the COVID-19 on the overall market demand in 2021 is uncertain, DRAM manufacturers are conservative in the planning of the capacity in 2021 and deliberate in the expansion of the plants. As expected by inSpectrum, DRAM bits will have a growth rate of 16% in 2021 and demand will increase by 17.8%.

The rise of mass-production manufacturers in the DRAM industry of China is an issue receiving common attention from the memory market and industry. China-based memory manufacturers initially planned to start production in 2019 to drive the semiconductor industry in China. However, the schedule of the development in China was affected substantially by the technology bans of the US government and the slump of the global

semiconductor market. CXMT, a memory manufacturer in Hefei, did not make shipments until 2020 Q3 and Q4. Though not adopted by PC OEM customers, its products have entered the supply chain in China and are well-circulated on the spot market. CXMT proactively introduced its Mobile DDR4 products to the local smartphone industry, have passed the certification of some local manufacturers. 2020 was the first year CXMT officially sold its products.

(B) Current status of the flash memory market

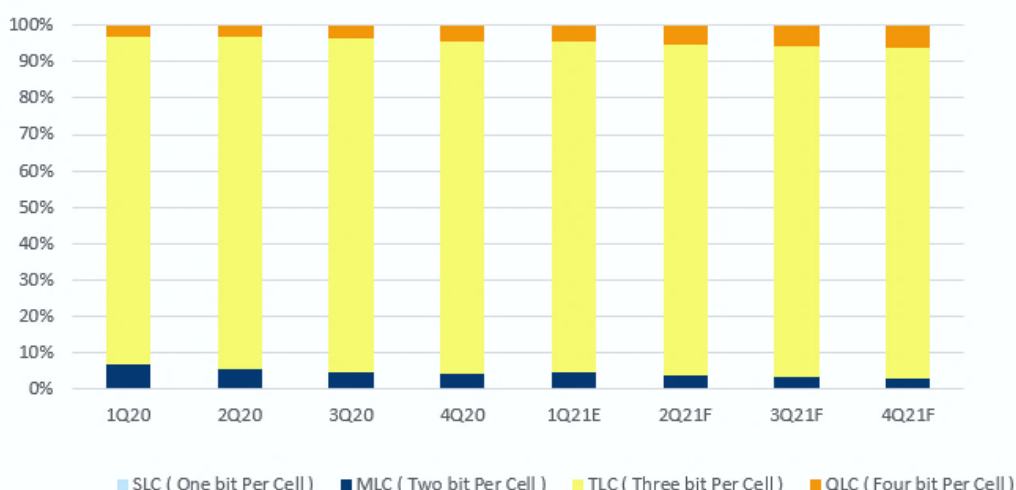
a. Market size

The global digital transformation of the market was sped up by COVID-19 in 2020. As IC Insights has pointed out, the strong demand for data center servers pushed up the average sales price of NAND Flash products in 2020 Q1. Though market demand slowed down afterwards, the ban of the US Department of Commerce against Huawei in Q3 drove Huawei to purchase more products for replenishment prior to the effective date of the ban on September 15. Then, in a struggle for the market share left by Huawei, Chinese smartphone brand manufacturers stepped up their actions dramatically to stock up components. Under these circumstances, the NAND Flash market is expected to grow by 25% and the global NAND Flash market scale in 2020 is expected to be USD 55 billion. The COVID-19 pandemic has boosted the stay-at-home economy. The demand for notebooks, Chromebooks, tablets and other similar products will continue in 2021 due to distance learning of different levels of education and work from home in different enterprises. Owing to the abundant market demand for laptops, Chromebooks and tablets, and the improvement of smartphone technology and the development of 5G technology in 2021, the sales amount of the NAND Flash products will continue to grow by 17% and a global NAND Flash market scale of about USD 64 billion is expected in 2021.

As for the supply, in 2021 the output of 3D NAND wafer production will be about 95% and the supply of 2D NAND Flash products will drop to 5%. In 2021, the equivalent production of the 12" wafer will grow by 1.8% in Q1 and by 1.9% in Q2. In 2021, the TLC architecture will still be the key factor on the market with a proportion of more than 90%. Mass production of QLC is still limited, so an output proportion of 6.4% is expected in Q4.

The 92/96-layer technology will be the core for the NAND Flash process in 2021 with a proportion of more than 50% in 1Q21. Then, the proportion will drop to about 40% in 4Q21 depending on the transition to the 1XX-layer products. The proportion of the 1XX-layer process will increase quarter by quarter to more than 30% at the end of 2021. The output by bit in 2020 was 409,885M (8Gb equiv.) with a growth rate of 31% in comparison with 2019. A growth rate of about 36% to 558,744M (8Gb equiv.) is expected in 2021.

For product structure, SLC applications focus on demandable embedded SSDs of for servers and industrial control and MCP high-performance applications of smart mobile devices, network communications products, set-top boxes, smart speakers and vehicle devices. Market demand is relatively stable. Kioxia, Micron, and Macronix, a Taiwan-based manufacturer, are providers of SLC. Due to a significant rise in 3D production, the proportion of the global SLC in the bit production of the NAND Flash dropped to merely 0.1%, while MLC accounted for around 4%. As the proportion of 3D NAND Flash production increases, the percentage of TLC production reached about 92% at the end of 2020, and it is expected to account for about 91% in 2021. QLC products can only support limited areas of application. Despite the attractiveness of high-capacity products in data centers, they are currently not attractive to customers due to the durability and price. Therefore, growth in their proportion will be limited, with overall production in 2021 expected to be within 6% (see Fig. 6). The more advanced PLC (Penta_Level Cell) remains in the theoretical phase. No commercialized products are expected before 2025.



Source: TrendForce Corp., February 2021

Fig. 6 Global NAND Flash production analysis by product structure

According to the operating revenue of NAND Flash manufacturers in 4Q 2020:

Benefiting from the proactive purchase for replenishment by smartphone manufacturers in China to win market share and the strong demand for notebooks, order demands were higher than expected. Samsung's shipments of its NAND Flash bit products increased by 7–9%. However, operating revenue declined by 2.0% to USD 4.713 billion compared to the previous quarter. The main reason was that enterprise customers were depleting their stocks and that the purchase power of the data centers was not strong in 4Q 2020, leading to a glut on the market. Samsung had a market share from 7% to 33.3% and kept its leading status in the market.

After Huawei's stocking up in Q3, bit shipments of Kioxia at the mobile end were not made up by the orders of other brand manufacturers in Q4. The overall demand for enterprise SSD products was low. However, the overall bit shipment saw a slight growth thanks to the demand for notebooks and game consoles. Since supply continued to exceed market demand in Q4, the average unit price dropped by 8–10%. The operating revenue in 4Q 2020 was USD 2.749 billion, a drop of 11.4% compared to the previous quarter, and ranked second.

According to Western Digital (WDC), since server customers were depleting their stocks in 4Q 2020, contract prices dropped by 9%. However, increased sales at the channel end and a 7% increase of the overall bit shipments of client SSD products thanks to the increased demand for notebooks offset the adverse effect of the prices. The operating revenue was USD 2.034 billion, representing a decline of 2.1% compared to the last quarter.

Micron had an increase of about 17–20% in bit shipments in 4Q20 thanks to the continued strong purchasing power of smartphone customers and increased demand of PC OEM customers for QLC SSD products. The average unit price dropped by about 10% due to weak market demand. The operating revenue for NAND in Q4 was USD 1.574 billion, an increase of 2.9% compared to Q3.

Intel sustained a 25% decline in bit shipments because data center and enterprise customers were depleting their stocks in Q3. The purchasing power of customers rebounded slightly in Q4 primarily, and it was mainly because of the increased demand from PC OEM customers that bit shipments in Q4 increased by about 25% compared to Q3. However, the average unit price dropped by about 20% due to the glut on the market. The operating revenue of Intel in the NAND field was USD 1.208 billion in 4Q20, representing a growth rate of about 4.8%. (Fig. 7).

Work from home and distance learning during the COVID-19 pandemic drove high shipments of notebooks, Chromebooks and tablets. 5G smartphones sold well and the demand for NAND Flash products facilitated depletion of stocks at terminals and channels. Manufacturers are actively engaged in transitioning to the 3D NAND process and the supply of wafers will be reduced during the conversion. More severe, there is a shortage in the supply of SSD control chips as a result of insufficient capacities of the foundries and rising price of packaging substrates. This might affect the overall supply of SSDs. Customers purchased proactively to avoid shortage of SSDs and ensure shipment of their products. Data center and enterprise customers started the purchase for restocking again after inventory levels were lowered. A rebound of NAND Flash contract prices is expected. It will rise to a percentage of at least 5% from 2Q 2021.

Unit: Millions of US\$

Company	Revenue		Market Share (%)	
	2020Q4	QoQ (%)	2020Q4	2020Q3
Samsung	4,712.90	-2.00%	33.30%	31.40%
Kioxia	2,749.00	-11.40%	19.40%	17.20%
WDC	2,034.00	-2.10%	14.40%	15.50%
SK Hynix	1,638.80	-0.20%	11.60%	11.70%
Micron	1,574.00	2.90%	11.10%	11.50%
Intel	1,208.00	4.80%	8.50%	11.50%
Others	250.8	25.90%	1.80%	1.20%
Total	14,167.50	-2.40%	100%	100%

Note 1: 2020 Q3 - USD 1 = KOW 1,187.7; USD 1 = JPY 106.1

Note 2: 2020 Q4 - USD 1 = KOW 1,118.0; USD 1 = JPY 104.5

Note 3: Kioxia has incorporated the operating revenue of the acquired Solid State Storage (the former SSD department of LITEON) since 2020 Q3. Hence, the growth of its operating revenue was better than the previous sales performance.

Source: TrendForce Corp., February 2021

Fig. 7 2020 Q4 global NAND Flash brand manufacturers ranking by operating revenue

b. Development of products

Flash memory is generally used in ordinary consumer electronics such as smartphones, tablets, flash drives, memory cards and SSDs. As the process technology of NAND Flash continues evolving and the unit capacity cost keeps declining, its use has become widespread in smartphones, embedded devices and industrial control applications. In recent years, demand for SSDs

used in big data storage and notebooks has gone up, and the use of 5G communication technologies and smart devices has grown fast. Furthermore, applications of and demand for data storage has greatly increased in smart homes, smart appliances, smart speakers, in-vehicle recorders, vehicle navigation systems, smart wearable devices, drones, automated ordering systems, self-checkout systems, reality technologies (VR/AR/SR/MR), future AI, big data, edge computing and cloud storage.

Smartphones: Global shipment volume of smartphones was 1.288 billion pieces in 2020 (Fig. 8) with a decline of 5.7% in comparison with 2019. After the global smartphone industry sustained a decline of 20% for two consecutive quarters as a result of the COVID-19 pandemic in the first half of 2020, a rebound happened in Q3 with a sales volume of up to 366 million pieces. A growth rate of 8.1% in Q4 was primarily because (1) brand manufactures of smartphones in China were competing to seize the market share left by Huawei after the ban of the US Department of Commerce against it came into effect; (2) the production of the new Apple smartphone increased. The total number of smartphones was 364 million with a growth of 25% over the same quarter in 2019. A sign showing the recovery of the sales volume appeared; (3) a number of 5G smartphone models were introduced on the market which drove sales in Q3. Loosening the coronavirus restrictions in some regions also facilitated the improvement of the sales volume.

Ranking	Brand	Market share		
		2019	2020	2021 (estimated)
1	Samsung	21.53%	20.50%	20.16%
2	Apple	14.73%	16.44%	17.89%
3	Huawei	17.61%	15.02%	5.75%
4	Xiaomi	9.18%	11.62%	14.30%
5	OPPO	10.10%	10.97%	14.06%
6	BBK (Vivo)	8.04%	8.80%	11.25%
	Others	18.81%	16.64%	16.59%
Total production		1,367 million pieces	1,288 million pieces	1,409 million pieces

Source: InSpectrum (February 2021, with the ranking based on the sales results in 2020)

Fig. 8 2019–2021 production ranking of global smartphones by brand

Apple had an outstanding performance in 2020 that went beyond the initial anticipation and was totally different from the low performance of Apple smartphones on the market in previous years. The price-competitive iPhone 11 Series and iPhone SE as well as the iPhone 12 Series announced and introduced on the market in October 2020 experienced a positive market response. The shipment volume of Apple smartphones was 204 million pieces in 2020 with a growth rate of 4.6% compared to the 195 million pieces in 2019. Apple regained its second place in the global smartphone market share in 2020.

The shipment volume of Samsung's smartphones was 257 million pieces, representing a decline of 12.8% in comparison with the 294 million pieces in 2019. The shipment volume of Samsung's smartphones in 2020 was lowest since 2013. The shipment volume of Samsung's smartphones dropped dramatically due to COVID-19. The shipment volume in 2020 Q4 was 62.2 million pieces with a decline of 11.1% in comparison with the 70 million pieces in 2019. Huawei might have surpassed Samsung in 2020 and become the new leading company with the highest global smartphone market share if there were no coercive sanctions imposed by the US government against Huawei.

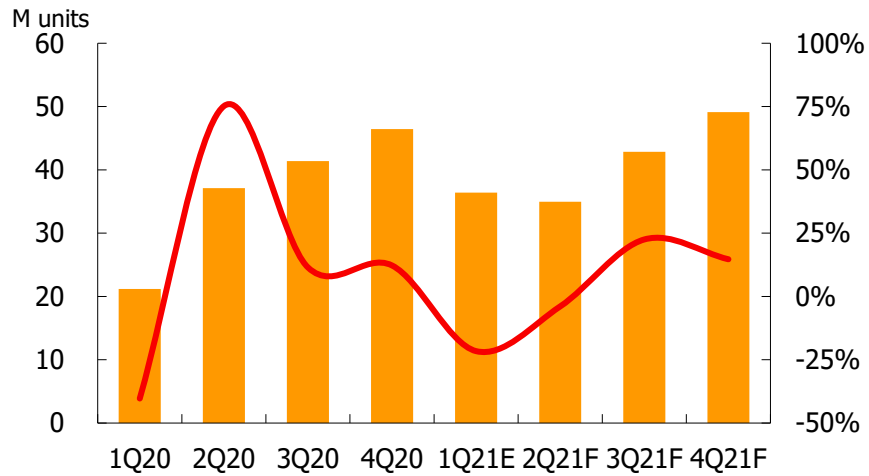
With the ban of the US government, Huawei has become unable to commission foundries to fabricate ICs since September 15, 2020. None of the semiconductor foundries were allowed to deliver goods to Huawei without the permission of the US Department of Commerce. Under these circumstances, Huawei can only rely on the stocks that it had replenished to support the production of smartphones in Q4. Huawei only shipped 32 million smartphones in 2020 Q4, representing a significant decline of 38.3% in comparison with the 51.9 million pieces in Q3. Compared with the shipment volume of 56 million pieces in 2019 Q4, the annual growth rate dropped by 42.9%. Though the shipment volume of smartphones in Q4 was much less in comparison with the performance in previous years due to political interference, Huawei had a total shipment volume of up to 189 million smartphones in 2020. Though Huawei won the third place on the global market with this shipment volume, it experienced a decline of 21.6% in comparison with the 241 million pieces in 2019.

Xiaomi ranked fourth on the global smartphone market. It had a shipment volume of 148 million pieces in 2020 with a significant growth rate of 19.6% compared to the 124 million pieces in 2019. Xiaomi experienced growth despite the impact of COVID-19 mainly thanks to the market left by Huawei. In addition to Xiaomi, OPPO and vivo, two other leading Chinese smartphone companies, eyed the smartphone market of Huawei after it was forced to draw back, and they proactively stocked up for the struggle over market share. The overseas market contributed a lot to the success of Xiaomi. Due to its price-performance ratio, Xiaomi performed well in India, Southeast Asia, and other emerging markets. However, the strained relationship between China and India in recent years has had an adverse effect on Xiaomi in developing the Indian market. Hence, Xiaomi has started developing markets in Europe, Southeast Asia, Central and South America to reduce its dependence on the Indian market. In recent years, Xiaomi has made full effort to create ecosystems in the fields of smart homes and personal smart devices. This action is very helpful for strengthening its share of the smartphone market.

Vivo was ranked after Xiaomi. It shipped 108 million smartphones in 2020, representing a growth rate of 2.5% in comparison with the 105 million pieces in 2019. Vivo ranked fifth for the global market share of smartphones. OPPO developed from the same origin. It previously had a market share somewhat higher than vivo. Both companies have in recent years competed fiercely for the ranking on the global market. OPPO shipped 105 million smartphones in 2020, representing a decline of 5% in comparison with the 111 million pieces in 2019. The market share of OPPO fell behind vivo and ranked sixth on the global market. OPPO ranked behind vivo by only a narrow margin in 2020. However, it hired senior engineers from MediaTek, HiSilicon and other companies in recent years to form an IC design team and develop its own APs for smartphones. It seems that OPPO is following the successful example of Huawei on the smartphone market. Each of the Top 6 smartphone manufacturers had a shipment volume of more than 100 million pieces every year and plays a key role on the market and in the supply chain. The strategies of these companies have significant effect on trends of the global smartphone market.

Smartphone capacity is usually 64GB, 128GB or 256GB. UFS contract price will not drop in 2021. The proportion of the 128GB capacity is nearly 40%. Except for the continuous transfer to 256GB for some models, capacity improvement speed has slowed down. It is expected that higher capacity such as 512 GB or 1TB will be adopted after the market price drops to a certain extent.

Tablets: According to the latest data published by IDC, people need affordable basic computing functions and screens for work from home, distance learning and leisure during the COVID-19 pandemic. This drives the development of the tablet market. In particular, consumers increased their expenses on technology products during the pandemic and spent less on meals in restaurants, entertainment and travel due to pandemic prevention and lockdown measures. The global sales volume of tablets grew by 13.6% to 164.1 million pieces. Apple sold 53.2 million iPads in 2020 with an annual growth rate of 6.7%, a market share of 32.5% and the first place globally. In 2020, Samsung sold 31.3 million tablets on the global market with a market share of 19.1% and a growth rate of 44.4% in comparison with 2019. Huawei ranked third. With the impact of the trade war, it sold 13.34 million tablets in the whole year and had a growth rate of 32% in comparison with 2019. However, it will be more difficult for Huawei to experience growing shipments because the ban of the US government may not be revoked within a short period of time, and the new HONOR products may occupy a share of the market. Amazon saw a growth rate of 29% to a shipment volume of 13.78 million tablets in 2020 thanks to a strong demand for electronic consumables on the domestic market. A small increase to a total of 14.27 million tablets is expected in 2021. Ranked fifth in 2020, Lenovo had an outstanding performance and doubled its shipment volume of tablets to 12.2 million pieces. In 2021, Lenovo will aim to grab more of the market share left by Huawei. According to a market survey institution, Lenovo will have a shipment volume of 15 million tablets in 2021. It has the potential to surpass Huawei and Amazon and become the number three brand on the global market. As for the capacity of tablets, 32/64GB was commonly used in white-box and entry to mid-level products. Affordable tablet models were the mainstream for distance learning and only some flagship models used 256GB/512GB. Overall, the specifications of tablets fell behind smartphones by one to two generations. Improvement of the capacity is expected continue progressing slowly (Fig. 9).



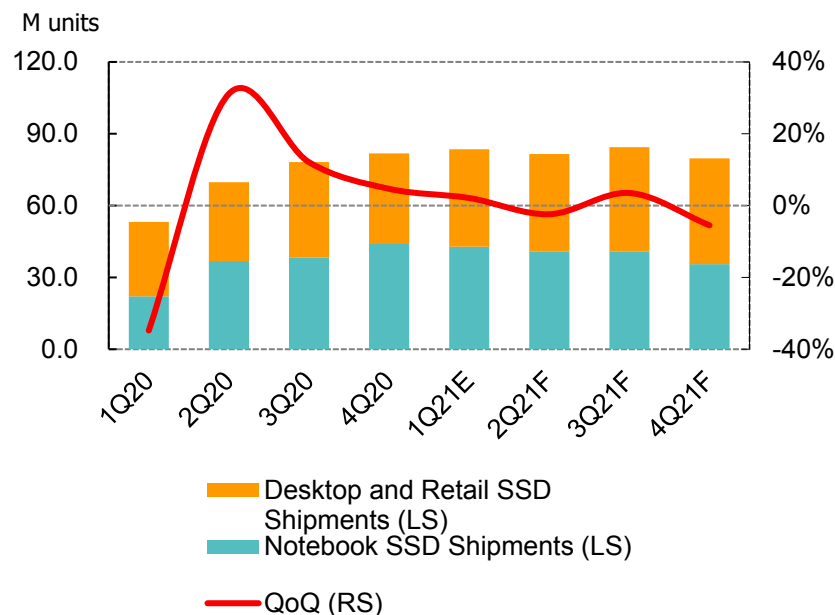
Source: TrendForce Corp., February 2021

Fig. 9 2019–2021F global tablet shipment volume

Solid-state drives: In the client SSD area (Fig. 10), SSD manufacturers have started to manufacture 128L TLC SSD products. Micron plans to present 176L TLC SSDs for customer's certification in 2Q21. TLC SSDs remain the focus of enterprise SSDs and gaming notebooks. The proportion of the TLC shipment volume is expected to exceed 90% in 2021. As for QLC SSDs, the Intel 144L will be put into mass production in 2Q21. Micron will focus on 96L and will not introduce the 176L QLC to the market until 2022. YMTC, WD and Kioxia are expected to roll out their own QLC products in the second half of 2021, and Samsung may launch its QLC PC OEM products in 2022. As anticipated by TrendForce, the shipment volume of QLC PC OEM products may exceed about 17% at the end of 2023 (about 5% in 2020). As for 3D Xpoint, its market share is going down because Intel has changed its focus to servers and has stopped supplying to PC OEM customers. It is expected to disappear from the PC OEM SSD market after 2022.

For client SSD interfaces, PCIe SSDs occupied more than 80% of the shipment volume to PC OEM customers in 2020. As Intel presented platforms supporting PCIe G4, the market share of PCIe is expected to grow. The shipment volume of retail SSD PCIe interfaces has started to grow in proportion, and is expected to exceed 30% in 2021. Suppliers have developed pricing strategies to narrow the price difference between PCIe G4 and G3. With the positive pricing strategies and greater availability of supporting platforms, TrendForce anticipates a rapid increase of PCIe penetration to a percentage of more than 80% in 2024. The 2D MLC SSD target niche markets, and most SSD manufacturers have stopped producing or selling the 2D MLC SSD since the NAND Flash manufacturers have gradually reduced

the output of MLC. It will be used mainly in industrial products and in-vehicle applications.



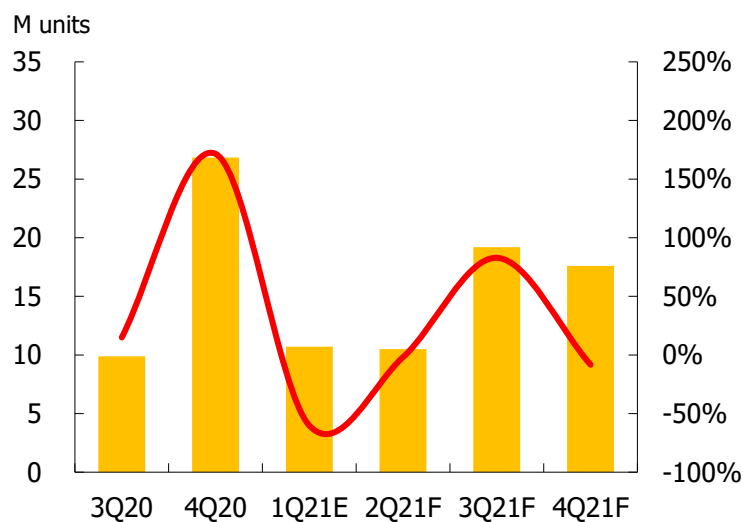
Source: TrendForce Corp., February 2021

Fig. 10 2020–2021F global client SSD shipment volume

Since the global market remains affected by COVID-19 and vaccination does not seem to slow down the increase of confirmed cases, the demand for notebooks and SSDs remains strong. As there is a shortage in the supply of SSD control chips and lead time is postponed as a result of the insufficient capacity of foundries and shortage in the supply of packaging substrate materials, PC OEM customers are proactively making purchases to avoid a shortage of SSDs and ensure shipment of their products. Under these circumstances, SSD manufacturers are not willing to reduce the price and the price of client SSD products is ready to rise at any time.

Benefiting from the COVID-19, products like Chromebooks and tablet-like NBs (such as Surface Pro, 2-in-1 NBs) experience explosive growth on the educational market. Currently, most of the PC OEM customers have replaced SSD with eMMC because the price of eMMC products is more attractive than SSDs in terms of their price-performance ratio on the 32/64GB market. To prevent eMMC from eroding the PC territory, SSD suppliers (Samsung, Kioxia and SK Hynix) have rolled out their BGA SSD or UFS products. What drives the demand for Chromebooks is the tender products on the education market. eMMC is still the main storage solution in consideration of the cost and the adoption rate of BGA SSD or UFS is not expected to increase within a short period of time.

The brand-new Sony PS5 and Microsoft Xbox game consoles were introduced to the market in the second half of 2020. Home consoles experienced a prosperous tide during the high season of electronic consumables in 2020 Q4 (Fig. 11). Both leading manufacturers used the latest PCIe Gen4 SSD and Intel announced its new platform supporting PCIe Gen4 products to facilitate a takeoff of the application market. Sony has announced the launch of the new PlayStation 5 (PS5) M.2 NVMe SSD slot in the summer of 2021, allowing players to expand their storage capacity. As the PS5 is selling well worldwide, this action may drive the SSD business forward. Though the Sony PS5 has a built-in 825GB SSD to provide internal storage space, professional players easily run out of space. As a single game can take up hundreds of GBs of space more storage capacity is needed, so enabling the expansion of SSDs is very meaningful to many players.

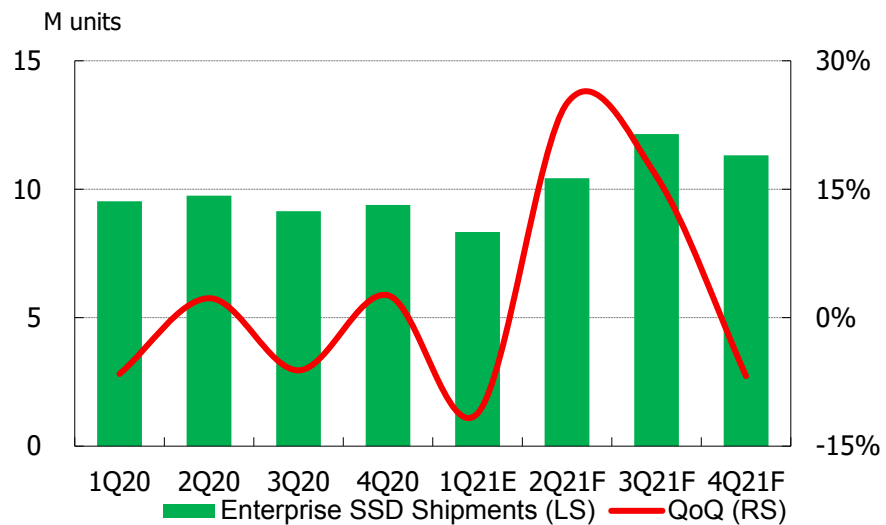


Source: TrendForce Corp., February 2021

Fig. 11 2H'2020–2021F global game console shipment volume

The application of the enterprise SSDs (generally meaning SSDs installed in servers) has continued to grow steadily. As demand for equipment related to cloud computing, cloud storage, e-commerce, high-speed video streaming, live webcasting, AI, 5G and edge computing keeps expanding, every supplier has sped up the R&D of enterprise SSD products to enter the next process level. In addition to Samsung and Intel who started shipping 128L/144L TLC SSDs in 2020 Q1, WD, SK Hynix, Kioxia and Micron have acquired the 96L certificate from their customers and started shipping. As for QLC SSDs, Micron focused on 64L while Intel sped up the transition to the 144L process. The products are expected to pass certification in 2020 Q2 and shipments will start then. However, QLC SSDs are currently

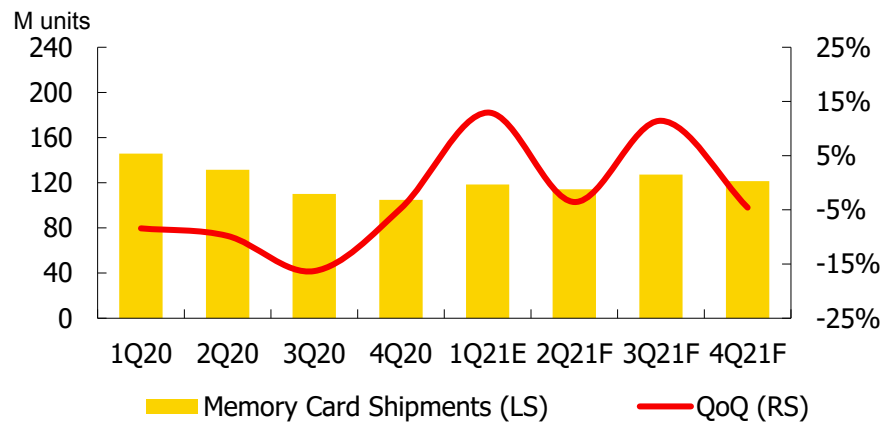
only used by the customers in North America and brand server manufacturers are not widely using QLC SSD products yet, so the growth of the market share is limited. A small increase of the QLC market share from 5.2% in the previous year to 7.5% in 2021 is expected. As for enterprise interfaces, both the shipment volume and the bit capacity of PCIe interfaces exceeded 50% and became the mainstream on the market in 2020. In particular, the penetration of PCIe interfaces will increase in 2021 as Intel launches platforms supporting PCIe G4. Data center customers used more PCIe G4 supporting platforms in the second half of the year. This will further increase the shipment proportion of PCIe G4. Furthermore, brand server manufacturers purchased more PCIe products and used them for storage servers in consideration of the price-performance ratio. PCIe SSDs are expected to have a market share of nearly 70% in 2021. Intel's Eagle Stream, the PCIe G5 supporting platform of the next generation, is expected to go into mass production in 2022. Suppliers have started the R&D of related products. The earliest shipment may begin in the second half of 2022. As for capacity, 4TB will be the mainstream for data center PCIe SSDs and the new work style in 2021 will require more storage capacity. The shipment proportion of 8TB products will increase gradually. 2TB remains the mainstream for server PCIe SSDs. The average PCIe capacity is expected to reach 3TB in 2021. SAS is currently the mainstream storage interface for brand server manufacturers and the average capacity is expected to reach 3.6TB. The capacity of SATA is generally less than 1TB. It is not easy to increase the SATA capacity, which may be further reduced in the long run, because brand manufactures adopt PCIe or SAS to meet their demand for large storage capacity. Generally, the average capacity of enterprise SSDs is expected to be 2,541GB in 2021 with a growth rate of 26% compared to the previous year. Since there is a shortage of control chips, prices may stop dropping and remain stable from 2021 Q2.



Source: TrendForce Corp., February 2021

Fig. 12 2020-2021F global enterprise SSD shipment volume

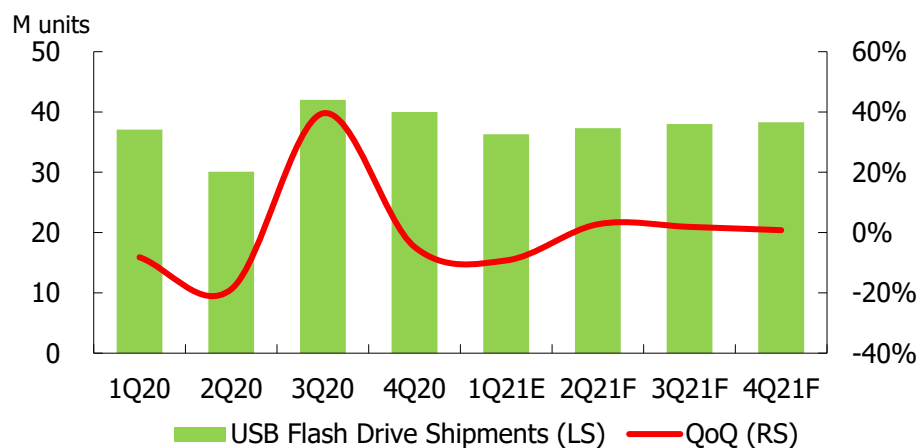
Memory cards: The memory card market relies on the demand from non-Apple cellular phones. The shipment volume of feature phones declined by 25% in 2020 with a total of 400 million pieces, leading to a shipment volume of 492 million memory cards (Fig. 13) with a drop of 23% in comparison with 2019. The shipment volume of memory cards is expected to decline every year due to the emerging cloud services and the dropping shipment volume of feature phones, and the shipment volume for 2021 is expected to decline by 2%. The sales of the memory cards will fall as a result. As high-end video camera and camera manufacturers pursue higher resolutions, leading manufacturers roll out advanced SD cards to win larger market shares on an ongoing basis to improve the profitability of memory card product lines. The SD Association announced the SD8.0 specifications in 2020. With the help of PCIe 4.0 technology, SD Express memory cards using the SD 8.0 specifications can demonstrate a transmission speed of up to 4Gb/s to meet the requirements of more advanced applications. Commercialization of the product is expected to be realized in or after 2022.



Source: TrendForce Corp., February 2021

Fig. 13 2020–2021F global memory cards shipment volume

Flash drives: The name of USB 3.1 Gen 1 was changed to USB 3.2 Gen 1 in 2020. Because the shipment volume was affected by COVID-19 and the disposable incomes of consumers were reduced, the shipment proportion of USB 3.2 had difficulty increasing due to the model's unit price being higher than that of USB 2.0. A total of 149 million flash drives was shipped in 2020. The total shipment volume in 2021 is expected to be the same (Fig. 14). The penetration of USB 3.2 Gen 1 products was 22% in 2020 and close to the penetration in 2019. As foundries are experiencing tight capacities, module manufacturers may have the chance to increase the shipment proportion of USB 3.2 in 2021 in order to increase unit prices and deplete NAND capacity. TrendForce anticipates a significant growth rate of up to 30% in the proportion of shipment in 2021. As for the flash drives (USB 3.2 Gen 2/Gen 2x2) of the next generation, manufacturers have rolled out new products and their penetration is expected to reach 4% in 2021.



Source: TrendForce Corp., February 2021

Fig. 14 2020–2021F global flash drive shipment volume

Vehicle market: A total of 78.03 million vehicles were sold worldwide in 2020 with a decline of 13% compared to the same period last year. The Chinese market occupied 32%. The global automobile market remained depressed in 2020 due to the influence of COVID-19, but the sales volume in some regions rebounded. The global sales volume of vehicles dropped by 25% in Q1 and 29% in Q2. Market demand recovered rapidly in Q3, but dropped by 2% compared to the same period last year, and there was a growth rate of 2% in Q4. The global market scale of electric vehicles is expanding continuously in response to national carbon reduction plans worldwide. The market of battery electric vehicles is growing rapidly. Not only did the highly marketable Tesla series new energy vehicles (NEV) (including battery and plug-in hybrid electric vehicles) demonstrate strong sales in the last two months of 2020, many models created new historical records. According to TrendForce, a total of 2.9 million new energy vehicles were sold worldwide in 2020 with an annual growth rate of 43%. A sales volume of up to 3.9 million NEVs is expected in 2021 with a growth rate of 34.4%. However, since the shortage of ICs for vehicles may have substantial effect on the production, the sales status of electric vehicles remains uncertain. Many countries request that vehicles be equipped with the Advanced Driver Assistance System (ADAS) and more compulsory devices are required to be mounted. For example, the US government announced that starting in September 2022, all the new vehicles must be equipped with the automatic emergency braking (AEB) system. The Korean government has since 2019 required that AEB and LDWS (Lane Departure Warning System) must be equipped. The European Parliament announced in a press release in February 2019 that all the vehicles in Europe (private cars, commercial cars, trucks and buses) must be equipped with ADAS in the future to provide pedestrians, bike riders, and other vulnerable road users (VURs) with more protection. It is believed that this norm will facilitate the standardization of related safety warning and ADAS systems for new vehicles. 11 safety systems must be equipped after 2021 including Driver Fatigue Detection System, Driver Distraction Detection System, Emergency Signal System, Automatic Speed Control System, and Lane Keeping Assist System According to a survey by IHS, the number of self-driving cars will grow at a pace of 63% between 2020 and 2040, and in-vehicle storage products and technologies have brought higher requirements. Self-driving has redefined storage demand, and suppliers of storage solutions are faced with new challenges in storage capacity, speed and safety. Regarding storage capacity (Fig. 15), the demand

of self-driving for storage capacity is quickly rising. The levels of self-driving are divided into: L1 (driver assistance), L2 (partially automated), L3 (conditionally automated) and L5 (fully automated). Different self-driving levels require different capacities for internal DRAM storage. At the same time, the demand of L5 self-driving for NAND will reach 1TB in 2025. Self-driving has enhanced requirements for bandwidth. L1-L3 require the eMMC, while L3-L4 require the UFS/PCIe. Its technical requirements are apparently higher.

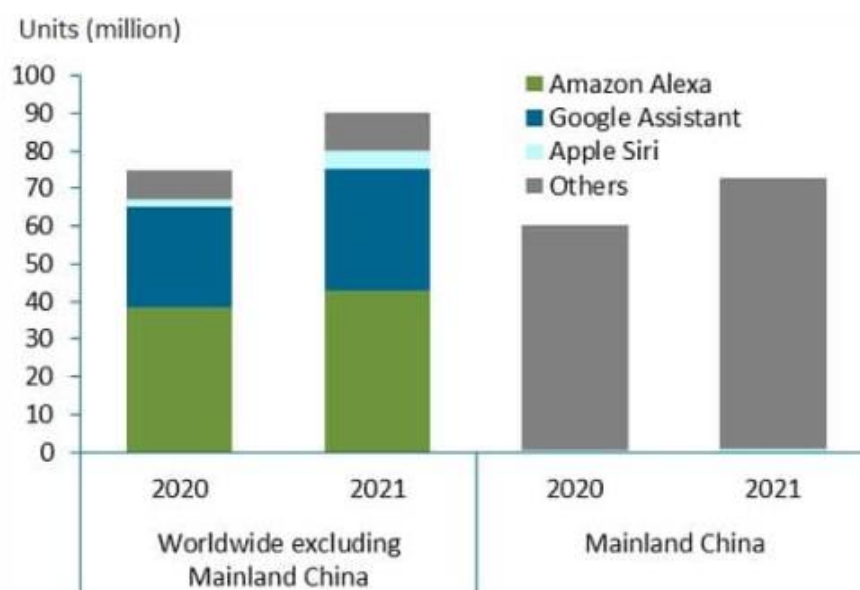
智能車	2017		2020	
	DRAM	Flash	DRAM	Flash
導航娛樂系統	1/2GB DDR3	16/32GB eMMC	8GB LPDDR4	64/128GB UFS/PCIe SSD
ADAS駕駛輔助系統	4/8GB LPDDR3/4	512Mb NOR Flash	22GB LPDDR4	64/128GB UFS/PCIe SSD
儀表系統	1GB DDR3	512Gb SLC Flash	2GB LPDDR4	8GB eMMC
Total	8GB	25GB	32GB	200GB

Source: China Flash Market

Fig. 15 Demand of the automobile market for memory in 2020

Smart speakers: According to Strategy Analytics, the COVID-19 pandemic affected most markets, but the sales of smart speakers on the global market hit a historical high with more than 150 million sets in 2020. Apple, Amazon, Google, and Alibaba launched new models in the important Christmas shopping season and brought the tough year of 2020 a happy ending. Benefiting from the delay of Prime Day and the strong seasonal demand, the sales volume of Amazon's Echo smart speakers grew in Q4 after dropping for two consecutive quarters. Amazon was ranked No. 1 in Q4 with a market share of 28.3%. Google ranked second with a market share of 22.6%, but the shipment volume dropped in comparison with the same period in 2019. Baidu and Alibaba had outstanding performances in 2020 and experienced double-digit growth rates. Apple also had outstanding performance. After launching the HomePod Mini at a price of USD 99 in November, Apple experienced an annual growth rate of 74% in the shipment volume on the global smart speaker market share in Q4. It hit a historical high with a market share of 7.8%, higher than its market share of 4.7% in 2019. The smart speaker market had good performance in Q4 though there were many obstacles in 2020. The delay of the Prime Day event drove the growth in the demand at the end of 2020. The marketability would be better but for shortage of components. Since the shortage of electronic components remains, tight material inventory is expected at the beginning of 2021. If the manufacturers of smart speakers can overcome the problem, sales of smart

speakers will have an outstanding performance in 2021 following the continuous recovery in China and the low penetration of smart speakers in European, Asian and Latin American markets. The shipment volume is expected to reach up to 21% or 180 million sets (Fig. 16). Entry-level smart speakers are equipped with small-capacity 1GB/2GB DDR3 and 1GB/4GB SLC NAND Flash. Smart speakers with middle and high prices are equipped with 4Gb/8Gb DDR3L and 4GB MLC/8GB eMMC. The memory capacity used for smart speakers is different from that of smartphones and tablets that have high capacities of 64GB, 128GB and even 256GB, 512GB or 1TB and can quickly consume large portions of the production capacity of memory. However, with the constant development of IoT, cloud applications and artificial intelligence technologies, smart speakers will be the core equipment of a smart home. The integration of smart speakers with screens can realize more applications in different scenarios. Smart speakers with screens are mostly equipped with low-power 1GB/2GB LPDDR3 and 4GB/8GB eMMC. The growth of smart speakers with screens is faster than that of ordinary smart speakers.



Source: Canalys, October 2020

Fig. 16 2020–2021F global smart speaker shipment volume

c. Main flash memory suppliers' status

(a) Process transfer schedule of flash memory

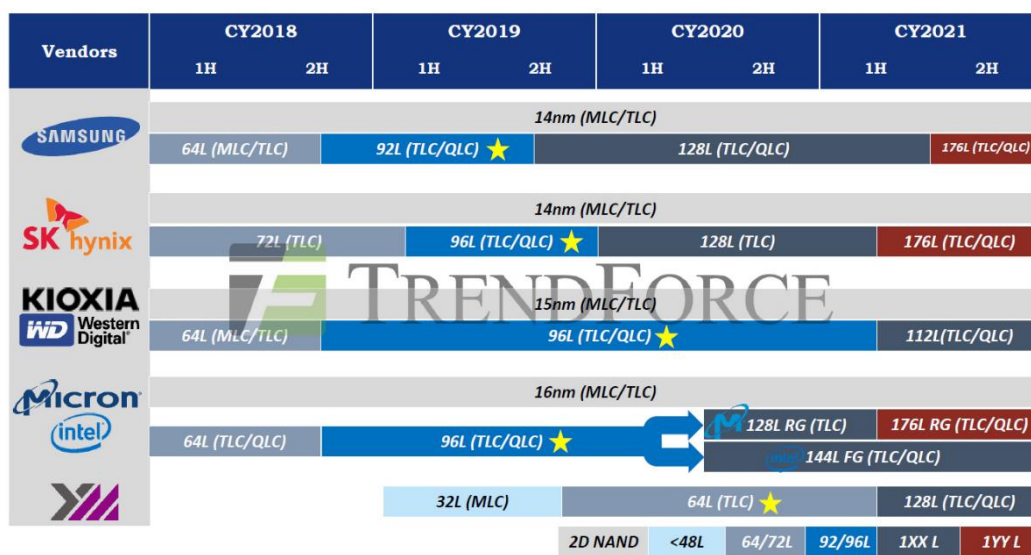
2D models will be stuck at 14–15 nanometers. Due to the difficulty in miniaturizing the subsequent production process, manufacturers will not continue 2D model miniaturization. Manufacturers prioritized upgrading their production process techniques and accelerating mass production of 3D NAND. 92/96L is the focus in 2020 and 2021 and a proportion of more than 50% is expected in 2021 Q1. It will drop quarter by quarter to about 40% in 2021 Q4.

As for 1XX-layer products, suppliers have their own development schedules and strategies. The transit is slow and the proportion is expected to reach more than 30% at the end of 2021.

- i. Samsung had a proportion of about 25%–30% in the 128L (V6) field in 2021 Q1 and 40% is expected at the end of 2021. 92L remains the focus in 2021. However, it will drop to less than 40% at the end of the year.
- ii. Kioxia/WD 112L(BiCS5) products will go into mass production in the second half of 2021 with the goal to reach up to 20% at the end of the year. 96L(BiCS4) remains the focus in the first half of the year and a proportion of more than 60% will be maintained for the entire year.
- iii. SK Hynix 96L will have a shipment proportion of more than 50% in the first half of 2021, after which they will focus on 128L. The 128L product line is expected to have a proportion of more than 35% in 2021 Q4. 176L will be put into mass production in 2021 with a proportion of more than 5% at the end of the year.
- iv. Micron mainly supplies 96L and will transit to 176L afterwards. 96L had a proportion of 55% in 2020 Q4. It will drop quarter by quarter to 40% at the end of 2021. 176L will be put into mass production in 2021 Q2 with a proportion close to 30% at the end of the year.
- v. Intel will transit from 144L to 64L directly. It prefers QLC though TLC has been planned. The output of 64L will drop to about 20% in 2021 Q4 and the output of 144L will increase quarter by quarter to 65% at the end of the year.

- vi. Though 64L is currently the focus, YMTC will have 128L output in 2021 Q2 and increase its proportion to 48% in 2021 Q4.

(For detailed description of the 2D/3D product technologies of manufacturers, see Fig. 17).



Source: TrendForce Corp., February 2021

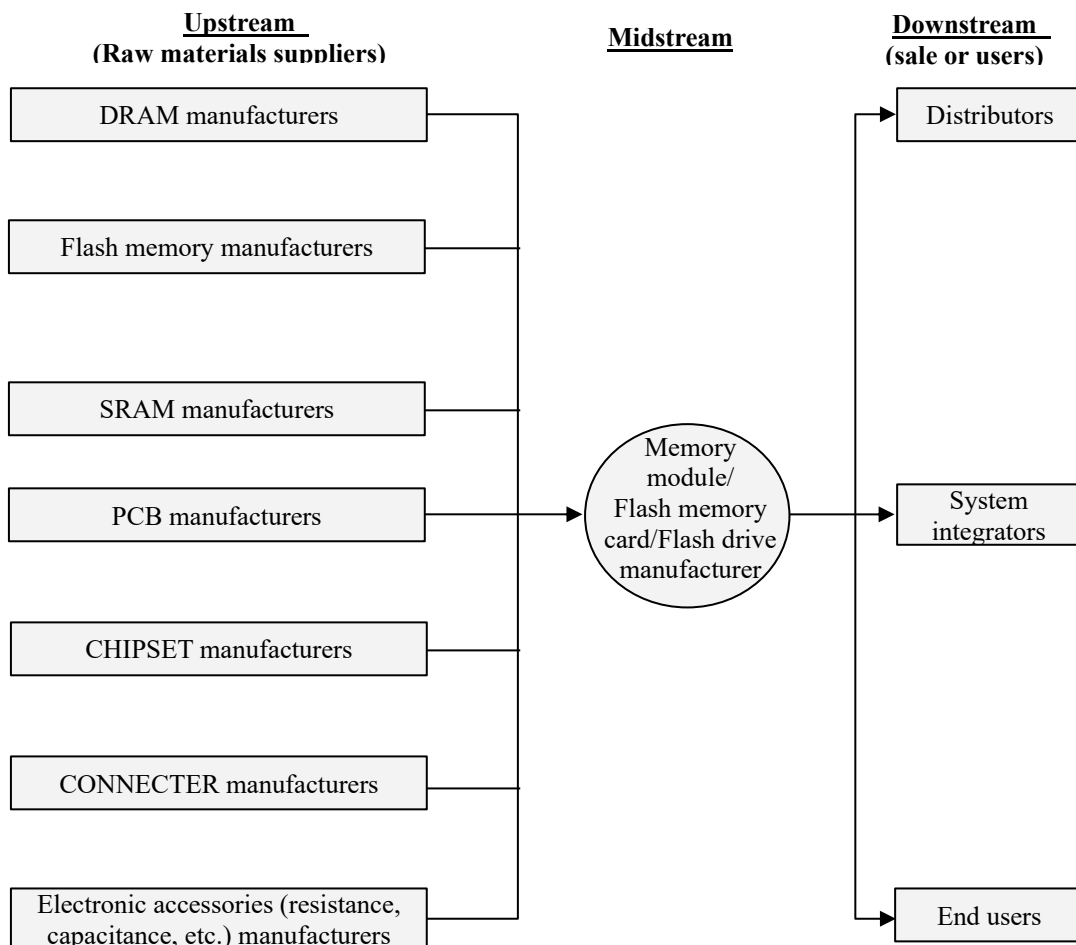
Fig. 17 NAND Flash 2D/3D products technologies of manufacturers

(b) Industry supply and demand development

The operating revenue of the NAND Flash industry in 2020 Q4 was USD 14.1 billion with a quarterly reduction of 2.9%. The bit shipment volume grew by nearly 9% and roughly offset the adverse effect of the reduced average unit price by 9% and changes in the exchange rates. In 2021 Q1, bit output will grow significantly because Samsung and YMTC are increasing their production capacity and suppliers are transiting to processes with more layers. As for capacity, Samsung started to build a 3D NAND production line at Pyeongtaek Plant 2; as for products, the supply currently consists mainly of V5(92L), but the proportion of V6 (128L) will increase significantly in 2021. It will be more widely applied in SSD and UFS products. Regarding the capacity of Kioxia/WD, in addition to the slow expansion of the Fab K1, the construction of Yokkaichi Fab 7 will commence in Q1. According to the plan, and the Kitakami Fab K2 is expected in 2022 to produce BiCS6 or more advanced products in terms of the layers. As for products, increase in bits will be achieved by transitioning to a more advanced generation. 96L BiCS4 is currently the focus, and the proportion of

112L BiCS5 product shipments will clearly increase this year. As for the process of SK Hynix's acquisition of Intel foundry in Dalian, the ownership of the Dalian plant and the Intel SSD technology will be transferred at the end of the year as planned. The difference between supply and demand narrowed more than expected thanks to the additional orders from PC OEM customers in Q1. This and the recovery of the demand of the data center customers in Q2 brought about a positive trend in market negotiations. The range of the price drop has started to narrow earlier than expected. A growing trend is expected after Q2. Insufficient production of SSD control chips will drive a stronger purchase in 2021 and lead to a tension between supply and demand.

B. The relationship between up, middle and downstream in the industry



C. The development trend of each product

(A) the development trend of memory modules

Memory modules are mainly used in PCs, servers and mobile devices. Due to the new techniques and process, the function of DRAM upgrades rapidly. Its development mainly follows the following trends:

a. High capacity:

With CPU functions strengthened, the memory format is mainly DDR4, and will gradually go into DDR5 in 2021. At the same time, the capacity of DDR4 will transition from 8Gbit to 16Gbit. The capacity of DDR4 RAM modules gradually transits from 8GB to 16GB because of the product specification upgrade and market demand for 32GB emerges. DDR5 UDIMM may even be upgraded to 128GB. The main specification of the memory used in servers has also gone from DDR4 32GB and 64GB to 128GB. More memory is used as a result of the increased penetration of 5G smartphones. The DRAM capacity of many models has increased from 6GB to 8GB.

b. Low power consumption and low voltage:

Following the trend of light, thin, short and small system products, product development will be geared toward low power consumption and voltage; and with voltage and power consumption for operating system products decreasing, RAM module products are shifting from DDR3 1.5/1.35V to DDR4 1.2V, while DDR5 only need 1.1V.

c. Hight speed:

In coordination with the speed growth of CPU, the processing speed advance of DRAM has become very important. In 2020, the main specification of DDR4 RAM modules was 2666MHz for PC DRAM. It will gradually shift to 3200MHz in the second half of 2021.

	DDR5	LPDDR5	DDR4	DDR3
單顆最大密度	64 Gbit	32 Gbit	16 Gbit	4 Gbit
最大 UDIMM 容量	128 GB	N/A	32 GB	8 GB
最大傳輸率(速度)	6.4 Gbps	6.4Gbps	3.2 Gbps	1.6 Gbps
記憶體通道數	2	1	1	1
位元寬度 (非 ECC)	64-bits (2x32)	16-bits	64-bits	64-bits
每 Group 的 Bank 數	4	16	4	8
Bank 的 Group 數	8/4	4	4/2	1
爆發長度	BL16	BL16	BL8	BL8
電壓 (Vdd)	1.1V	1.05V	1.2V	1.5V
電壓 (Vddq)	1.1V	0.5V	1.2V	1.5V

Fig. 18 Comparison of DDR specifications

(B) the development trend of flash memory

- a. The main growth momentum came from the increasing storage capacity of smartphones and SSDs. Due to the drop of NAND Flash prices in 2020, the capacity of mobile phone memory and SSDs has increased. For enterprise SSD applications, the average capacity has increased following the high growth in cloud computing and the rise of IoT. According to the market intelligence provider TrendForce, the overall bit demand in 2021 is expected to reach 556,932MGB with an annual growth rate of 37%.
- b. After years of decline in the global smartphone market, China is very active in its intention to promote 5G and base stations are being deployed worldwide. Therefore, the global shipment of smartphones in 2021 is estimated to be 1.4 billion, and the shipment volume of 5G smartphones on the global market is likely to reach 540 million pieces with a proportion of 38%.
- c. Taken all together, the biggest demand in NAND Flash servers, such as the promotion of the capacity of smart phones, tablet PCs and SSD. The IoT trend is leading a rapid growth of intelligent devices, and with increasing demands and applications for data storage for smart robots, smart appliances, smart speakers, and wearable devices, Internet of Cars, vehicle navigation systems, smart wearable devices, drones, big data computing, edge computing, and future AI devices, the growth of NAND Flash applications is something to look forward to.

D. Market supply and demand status and future growth

(A) Market supply and demand status and growth of DRAM in the future

- a. Supply and demand status:
- b. In 2020, the biggest factor affecting DRAM market conditions was COVID-19, which has disrupted the industrial chain and restricted the free movement of people, resulting in a decline of the macro economy. Many industries (e.g., tourist and catering sectors) are facing serious challenges. Working from home, online conferences, etc. have become normal for control of the pandemic. It has facilitated the development of digitization at the national and corporate level and has driven an increase in the demand for notebooks, tablets, data center servers, and other electronic devices. The shipment volume of game consoles and audio and video streaming devices has risen steadily, and a “stay-at-home economy” has emerged as a result.

- c. Though vaccines are being released one after another in 2021 to slow the spread of the virus, consumers have adapted themselves to working at a distance. For example, an “online economy” business model is taking shape in the USA. It enables white-collar workers to work using telecommute mechanisms. This will officially become a drive for economic recovery in the USA after 2021. For example, GAFAM (Google, Amazon, Facebook, Apple and Microsoft) have proactively build this structure. The global economic model is also developing in response to the continuing trend of “working from home”. It is expected that after the pandemic is mitigated, the demand for cellular phones will recover and the penetration of 5G smartphones will increase, and that demand will grow by 17.8% accordingly.

(3) Techniques and research development status

- A. The R&D expenses in the recent years and as of the date on which the annual report is printed

Unit: TWD 1,000

Year	2019	2020	As of March 31, 2021
R&D expenses	117,884	122,801	30,042

B. R&D status of Apacer

Devoted to applications of memory and storage technologies, Apacer’s memory module and SSD technologies and products cover applications in the consumer, commercial and industrial markets. We are accumulating storage technologies and capabilities and developing a deep understanding of the demand for memory storage applications, and we continue to invest resources in the R&D of hardware, software, firmware and institutions. In particular, we are innovating SSD storage modules for industrial applications. Moreover, based on our knowledge of the firmware and structure of SSD storage, we can swiftly provide customized storage solutions to meet the special requirements of customers. Based on the development of core storage technologies, we improve product stability and reliability and help customers solve difficult storage problems. Based on trends in the development of storage interfaces, we are actively devoted to developing PCIe (PCI Express) SSD storage technology to meet the requirements for the transmission interfaces of the next generation.

Policies for developing new technologies and products include memory and SSD application integration and innovation. With these, we actively satisfy our costumers' needs and provide them with thorough solutions. We have developed and released optical inspection devices and services for industrial IoT (IIoT) systems, proactively established the IIoT and intelligent IoT platforms, and promoted these to relevant industrial application fields.

In addition to designing and developing formats with higher compatibilities to fit various usage needs, we are also devoted to developing strategies for mobile SSD storage and the development of products related to mobile digital storage applications. We brought out many kinds of high-speed USB 3.2 flash drives, external hard drives, and multi-purpose flash drives. This year, we invested R&D resources in the gaming market to carry out development on many products, including FRAM, RAM modules that have LED lighting functions and ultra-high-speed transmission SSDs, etc. We also continued to develop multiple integration technologies for gaming computers.

As for R&D, we have been granted 187 approved patents for our products in Taiwan and other countries. 62 patent applications are currently pending.

C. R&D outcomes

Year	R&D outcomes
2020	1. Apacer worked together with Advantech, a leading company in the industrial computer industry, to integrate our Double-barreled smart storage solution with Advantech's WISE-PaaS/DeviceOn IoT device maintenance and management platform in order to help customers upload their crucial data to the cloud for real-time custody, thereby improving the overall system operational performance. In response to the requirements for the smart factory application, including common situations in factories where SSDs or systems corrupt due to unstable or unusual power supply or where production lines fail to be launched, the WISE-PaaS/DeviceOn platform incorporated with our DBS Cloud Edition is able to provide 24-hour SSD real-time and dynamic data transmission and save records in case of any unplanned power outage. Moreover, the platform can timely keep track of and monitor the operation of storage devices and give a prior warning through Line, WeChat, email or SMS before any abnormality occurs from the perspective of a smart factory information room to reduce accidental failure events and substantially cut down personnel or system maintenance costs. 2. We have grasped the opportunity of the increasing demands for remote and mass data storage in the 5G IoT era and launched the SSD designed for network-attached storage (NAS) combining several advantages of high durability, high efficiency, high reliability and noise free. The SSD is particularly suitable for small and medium enterprises and media workers. Apacer adopts the highly durable NAND Flash with a service life three times longer than regular SSDs for the NAS system working 24/7 to provide outstanding reliability and address the issue of users' frequent replacement of SSDs. 3. Since we have actively invested in the global 5G application market, we had the high-capacity 32GB DDR4 industrial-grade memory enter into mass production, adopted the latest 1x nm 16Gb A-die DDR4 DRAM Chip of Samsung and introduced the high-end worldwide vCPE router. 5G large bandwidth, high-speed transmission, low delay and the Internet connection of multiple devices have driven the demands for mass data and high-speed process, and therefore, the specifications of memory modules have been oriented to have high capacity and high efficiency. High-capacity memory modules can facilitate the performance when processing and calculating real-time data, lower the network load and cut down the load time. 4. In response to the IoT and Industry 4.0 trends, Apacer cooperated with industrial IoT leading

Year	R&D outcomes
	companies to improve and integrate the network connection applications of industrial computer devices through the SSD software/firmware development technology of the R&D team and to provide a comprehensive edge-to-cloud service so as to enable data storage, transmission and system control to become more stable and assist companies in enhancing their operational performance and strengthening their core competitive advantages. We allied ourselves with Allxon for development of the same technology to improve the IoT device maintenance management platform of Allxon Device Management (ADM), introduce the monitoring model of our SV250 industrial cloud IoT SSD series, and develop the DBS Cloud Edition smart monitoring solution for cloud storage. With this solution, real-time information review through the Dashboard and convenient remote device management can be realized easily. Also, monitoring personnel and system maintenance costs can be cut down effectively, and the operational efficiency of systems is able to be improved. The smart monitoring center can control the operation of storage devices on a timely basis, including the useful life, temperature of SSDs and the temperature of the environment in which the SSDs operate. Moreover, a prior warning function is equipped to give prior warnings through apps, instant messaging software, email or SMS upon occurrence of any abnormality in order to reduce accidental failure events. 5. Apacer's 3D NAND PCIe SSD features our CoreGlacier™ exclusive cooling technology that can quickly cool the temperature of NAND Flash and maintain it below the set temperature to ensure the complete protection of data and the reliable operation of the SSD. 6. We offer various high-efficiency storage solutions such as the 3D NAND SLC-liteX technology which provides up to 30,000 times of P/E cycles, the CFexpress industrial-grade memory card, and the DDR4-2933/3200 memory for all series, in which high quality OEM DRAM chips are installed. They are compatible with Intel Cascade Lake, AMD Rome and other advanced server platforms. 7. The global trend of AIoT smart applications help us deeply invest in the increasingly diversified industrial applications and achieve great performance in the in-vehicle application industry. Our SSD storage solution designed for the market of in-vehicle applications features the S.M.A.R.T. self-monitoring system incorporated with the health status indicators of SSDs, can operate in extreme environments with industrial-grade wide-temperature and is equipped with data security protection, including write protection and quick erase functions, to meet the requirement of the in-vehicle application industry for stability and effective design. The product is applicable to vehicle dashboard cameras / DVR camera systems, in-vehicle infotainment (IVI) systems and GPS devices. Our products has passed the IATF 16949 automotive system certification. 8. Apacer released the anti-vulcanization server memory with the highest level of protection through the anti-vulcanization technology and thereby successfully separated the server memory from OEM standard products to fill the market gap of anti-vulcanization server memory and expand the business opportunities of data centers. In recent years, hyperscale data centers have not only strictly implemented the environmental control management and regulated that the indoor air quality must meet the highest level of 71.04-2013 G1 standards defined by the International Society of Automation (ISA), but also required that relevant information devices shall be designed to resist a certain level of corrosion to ensure the best working conditions for servers. Having observed the demand, Apacer offered a value-added option by introducing the anti-vulcanization server memory of the highest specification that is different from OEM standard server memory to actively compete for market shares. During those years of initiating our anti-vulcanization strategies, we have acquired patents on our anti-vulcanization memory modules in America and China that are the top 2 data center markets in the world. These patents will become our powerful weapons for expanding our business in the global data center markets. The memory is constructed with top-quality OEM DRAM chips and anti-vulcanization passive components, and its plating thickness of gold fingers reaches 30u, making the memory become the server memory with the highest level of protection. Its DDR4 maximum data transfer rate is 3200 Mt/s. In addition, we offer the memory with capacity ranging from 4GB~32GB and the VLP model to meet the demands for the applications of data centers, edge computing and networking equipment. 9. Since Apacer has focused on the demand of this generation for mass data storage, high efficiency and high stability in the media markets, our CFexpress memory card is small and lightweight and features extremely high durability. The high-speed PCIe Gen3x2 interface

Year	R&D outcomes
	is adopted, and its advantages of super high-efficiency and extra low-delay allow it to achieve a maximum sequential read speed of 1,770 MB/s and a maximum sequential write speed of 1,270 MB/s to satisfy the requirement for the high speed access of video cameras and cameras in the next generation. The memory card supports high bit-rate 4K/8K* recording to display a higher level of picture resolution and improve the post-production latitude. In addition, the CFexpress memory card can overcome the difficulty of recording in harsh environments such as mountains and deserts with wide temperature variations thanks to the wide-temperature technology. Also, the memory card passed the MIL-STD- 202G US military drop certification and the MIL-STD-810G US military shock-resistant certification. Apacer has built up the business with industrial-grade technology and put a great focus on image processing and high-speed computing to actively test the compatibility with the premium cameras of well-know brands in the photography industry, helping substantially enhance their working efficiency and productivity. Therefore, Apacer has become the professionals' choice in the field. 10. Our NAS SSD is equipped with the 3D NAND flash memory designed for the NAS. This flash memory is able to improve the efficiency and response speed of the NAS system and thereby upgrade the working efficiency. The NAS SSD's advantages of high durability, low delay and high speed access allow it to support the editing of 4K and other high-resolution images, improve storage efficiency for filmmakers and create a safe and reliable web storage environment. Filmmakers and professional photographers can also work without hearing noise. There are two specifications of NAS SSDs, 2.5-inch SSDs and M.2 2280 SSDs (SATA III & PCIe). Its cache function is able to make the best configuration regarding performance and storage space. Moreover, we also offer NAS SSDs with high capacity of 2TB to meet any storage needs. 11. With respect to national defense project, Apacer successfully researched and developed the world's first military shock-resistant server memory — XR-LRDIMM. We substantially reinforced the reliability of shock and impact resistance for the server memory through our capability of high-end customization and rich industrial experience. Apacer's XR-LRDIMM (Extreme Rugged Load-Reduced DIMM) is currently the only rugged server memory module with both shock and impact resistance on the market. We developed XR-LRDIMM as load-reduced server memory. Therefore, XR-LRDIMM serving as a niche industrial memory product is able to provide great shock resistance, high stability and durability to server systems suffering from malfunctions, loss of data, or failure of parts and components as a result of shock. Unlike the goldfinger connector interface of standard memory modules, the board-to-board connector of our XR-LRDIMM connects to the motherboard socket through the 3*100-pin connector featuring high stability and is fixed with two mounting holes to be firmly connected with the motherboard layer by layer so as to provide stable high-speed signal transmission quality. Through this product, we offer an incomparable value-added rugged service for vertical application markets requiring high impact and shock resistance, such as military devices, and national defense, aerospace and in-vehicle systems. In addition, multiple protective technologies such as anti-sulfuration, underfill, conformal coating technologies are adopted for our XR-LRDIMM. We have demonstrated our capability of high-end customization through the server memory solution offering the highest reliability to take a leading position in innovative development of the this industry. 12. Apacer introduced the smallest industrial-grade PCIe BGA SSD in the world serving as a new powerful member of our high-speed PCIe SSD series. As 5G high-speed networking applications and smart terminal devices tend towards miniaturization, we utilized the 3D TLC NAND flash memory, and professional 3D stacking and BGA chip packaging technologies to create the world's smallest and fastest industrial-grade PCIe BGA SSD having excellent performance, extremely low delay and high stability. In consideration of different demands for embedded industrial applications, the PCIe Gen3x4 interface of the SSD can achieve the world's highest theoretical speed of 4Gb/s, and the smallest size specification of the Gen3x2 version is 11.5x13mm. The COB process is performed directly on the motherboard through the SMT technology or via an M.2 interface. The PCIe 3D NAND solution with excellent performance and industrial-grade wide temperature becomes the best option for 5G high speed and advanced product applications and satisfies the demands for industrial IoT, cloud computing, server, networking and national defense applications, peripheral devices of gaming machines, and high-performance computing in vertical markets. OEM chips with

Year	R&D outcomes
	industrial-grade wide temperature of -40°C~85°C are adopted, which conforms to the NVMe 1.3 SSD standard. These chips allow the SSD to achieve a transmission performance 3 times better than SATA SSDs. Apacer's PV920-uSSD 16x20mm adopts the PCIe Gen3x4 interface integrated with the multi-channel high speed flash memory and thereby becomes the world's fastest and smallest SSD in a single BGA. The SSD comes into being through a combination of 5G high speed and smart miniaturization applications, and thus it not only is lightweight and small, but also has excellent high-speed performance, extremely low delay, low power consumption, shock resistance, high stability and reliability. 13. Our PCIe BGA SSD utilizes multiple software, hardware and firmware technologies to realize a complete data protection mechanism. For example, the end-to end data protection technology is adopted to timely detect and correct wrong data to ensure the integrity and correctness of data transmission between the host and the NAND storage area, greatly improving data reliability. To maintain the security of data transmission, the SSD supports the TCG Opal 2.0 standards and uses the AES 256 encryption to provide a complete encryption protection service for data in the drive. In addition, for overheating issues that may be caused by PCIe high speed processing to systems, the smart thermal throttling firmware technology is used to effectively drive the thermal throttling mechanism to ensure the stability and integrity of writing when the system is in high-temperature environments. Apacer's PCIe BGA SSD is equipped with DRAM less controller chips for which the HMB technology is adopted, thereby fully demonstrating the impressive performance and high C/P ratio of this high-speed PCIe SSD solution. 14. We released the AS722/AS721 external SSD combining several advantages of high speed, drop resistance, light weight, high capacity, etc.. Moreover, with the latest USB 3.2 Gen 2 interface equipped, the AS722 and AS721 SSDs can reach a maximum read-write speed of 1000/900 MB/s and 530/500 Mb/s, respectively, reducing the data transmission time substantially. The AS722 and AS721 SSDs passed the harsh US military drop certification with their special shock-resistant structure for effectively reducing external forces and extending the useful life. Reversible USB-C ports supporting PnP are mounted on the AS722/AS721 SSD. With its simple and lightweight design, users are allowed to enjoy high-speed transmission at anytime and anywhere. 15. The MOAB II Elite flagship water cooled PC case introduced by our innovative gaming brand, ZADAK, is equipped with a magnalium water distribution plate to incorporate the water-cooling hose and tank into the case. Moreover, its module design not only acquired the invention patent in Taiwan (I700981) and but also received the recognition from the 2021 Taiwan Excellence Awards. 16. Our innovative gaming brand, ZADAK, released its new force, SPARK RGB SSD adopting the PCIe Gen3x4 high-speed interface and conforming to the NVMe 1.3 standards. Its sophisticated sandblasted surface and detailed diamond cutting design meet the requirements of players for personalized packages. Furthermore, ZADAK developed its own SSD widgets to provide SSD basic information, S.M.A.R.T. Tests and performance tests, enabling players to keep track of the useful life of SSDs and take full advantage of their performance. 17. ZADAK, Apacer's innovative gaming brand, unveiled the ZADAK TWIST DDR4 overclocking gaming memory equipped with a high-quality magnalium heat sink as well as a simple but sophisticated design. A low profile design supporting clock speeds ranging from 2666MHz to 4133MHz is utilized. The ZADAK TWIST DDR4 memory is designed with high performance and wide compatibility and supports Intel XMP 2.0 for easier overclocking. Also, its magnalium cooling device shows outstanding cooling performance. The DDR4 memory in the TWIST series realizes a maximum of 32GB capacity in a single slot and possesses excellent stability. 18. Apacer has persistently focused on the development of SSD application technology in the industrial market. We researched and developed the NPLink SSD with a flexible circuit for the latest PCIe interface. Storage devices can be connected with connectors through the flexible circuit for which the technology of multi-degree adjustment for connection is adopted. The PCIe Gen 3x4 NPLink SSD with the flexible circuit has a maximum of 1TB storage capacity, and all products in the series are equipped with 3D TLC allowing the read speed and write speed to reach a maximum of 3200MB/s and 27000MB/s respectively, bringing advantages of high capacity, high speed and high stability. What's more, we tried to utilize iron plates and the case to control the angle to which storage devices need to be bent.

Year	R&D outcomes
	With this design, the devices do not have to be put straight or horizontally in the host. The design is compatible with miniaturized platforms or portable devices and can realize easy multi-degree flexible plug-in installation without long external connecting wires. We have also met the demand for different embedded industrial applications such as industrial portable computers, networking applications, gaming machines and other demands in the miniaturization market. 19. Apacer has invested in the industrial application market for many years, possessed customization experience and technology and has been familiar with this market environment. If devices are applied in highly polluting environments, or areas with high concentration of sulfur gases such as SO₂, H₂S. These gases can easily corrode electronic devices, including military equipment, in-vehicle products, mining and outdoor electronic products, reduce the useful life of relevant electronic materials, and thereby increase the risk of electronic device failure. Therefore, we took the lead to release our anti-sulfuration SSD equipped with a interface supported by the SATA(SV250) and PCIe(PV220) series. The SSD passed strict lab tests and acquired qualified reports (conforming to the GS level of the ANSI/ISA 71.04 air quality standard). Those tests include the mix flowing-gas (MFG) test and flower of sulfur (FoS) test. This product is the best storage solution for working in harsh industrial environments. 20. We have committed ourselves to the gambling application market to understand the demand and actively carry out development works so as to meet customers' requirements for the advanced image processing applications, data protection and encryption of high-performance storage products. The CFexpress Type B was introduced by Apacer with our complete technologies and product lines. The product provides the HW write protect function that can effectively prevent data from modification. More importantly, its data encryption technology including our Signed Firmware, a digital signature encryption firmware technology, protects the data from being cracked by hackers and greatly improves the security. Therefore, the CFexpress Type B is the best solution featuring both high performance and data protection for customers. 21. Apacer offered a series of solutions for new optical inspection, namely (1.) the AL250 spectroradiometer constituted of a CMOS image sensor and a 32-bit RISC microcontroller, forming a compact optical structure allowing its dimension to be reduced; (2.) the Ai201 agricultural spectrum-based photometer that is a rugged-typed spectral irradiance inspection system which supports IP64 and can work in harsh environments; (3.) the Ai301 4-in-1 spectrum-based stroboscopic photometer supporting 4 inspecting modes, featuring the most complete stroboscopic inspection in the industry and widely applied to different industrial photometry and stroboscopic inspection demands, making it become the first multimode wireless transmission photometer in the industry. 22. Our exclusive patented CoreSnapshot firmware technology can back up and restore the data of a whole SSD in one second. The CoreSnapshot adopts unique disk snapshot technology that is able to back up the data written while not affecting the system operation. When any data error or damage occurs in corporate devices, backup data can be used to instantly restore the operation within a second simply through software or hardware. If industrial computer devices detect an unexpected BSOD crash, the CoreSnapshot is triggered in a second to restore the system operation. This function can immediately solve several emergency situations such as unexpected shutdowns of production lines in automated factories, ATM errors, ransomware hacker attacks, blue screens on digital billboard screens, POS system or KIOSK crashes, etc. to avoid major operational losses caused by those crashes or shutdowns. 23. Our Signed Firmware technology is designed for assisting in secure firmware updates to ensure that the firmware preloaded by the system is secure. This technology is reliable and easy-to-use. Therefore, before performing firmware updates, the Signed Firmware technology can be used to run system verification procedures so as to strengthen and protect the overall working performance of storage disks.

(4) Long-term and short-term business development plans

A. Short-term business development plan

The Company sets “Becoming the Leading Information Service Integrator with Digital Storage” as the vision to actively encourage our employees to realize the core brand value of “Becoming Better Partners”, namely “Delivering on Our Promises, Constant Improvement and Mutually Beneficial” so as to build a corporate culture producing long-term competitive momentum. Therefore, “Improved Values and Value-added Services” is set as the core of Apacer's 2021 brand development to not only offer products but also create service values. Also, we will be dedicated to the development and integration of the supply chain and to the collaboration with all stakeholders to maximize benefits.

In consideration of the trend in the development of 5G, cloud integration, IoT and AI, we actively develop digital storage products and technology combining the cloud and the IIOT while deploying consumer products and expanding our business in the field of smart application services. Our corporate strategies are planned as follows:

(A) Focus on key field applications, improve value-added product services and develop target customers

In addition to existing industrial application markets, Apacer will put more focuses on web communication, medical health and rugged application markets in view of relevant demands driven by the transformation of work and life due to the pandemic. Moreover, we continue to promote cloud/value-added technologies and services such as the DBS Cloud Edition solution (the cloud edition of the smart storage solution of Double-Barreled Solution) and the CoreSnapshot instant SSD backup and recovery technology. Through the cooperation with our strategic partners including Advantech and Allxon, a series of services integrated with an industrial cloud platform can be provided to customers.

(B) Promote gaming products and enhance consumers' brand recognition

As esports has been very much in vogue due to the pandemic, Apacer adopts the dual brand strategy to satisfy the requirements in various markets. ZADAK positions itself as a high-end gaming brand featuring a strong design style. The positioning of its products such as patented water distribution plate designs, housings, water-cooling fans and memory is set apart from that of Apacer's gaming products. ZADAK currently sells its products in Taiwan, the United States, Australia, South East Asia, the United Kingdom, China and Canada. For consumer products such as portable storage products or memory, ZADAK actively develops new product specifications for the next generation to meet data storage requirements.

(C) Integrate smart applications and connect to the smart IoT supply chain

We have developed IoT technologies that integrate software and hardware systems. We have applied the smart IoT integration technologies in fields like factories, animal husbandry and agriculture with mainly customized demands. We help design smart environmental control field solutions most suitable for customers and shorten the time of smart IoT development for business owners. Through enhancement of the capabilities in field control and response, we seek to reduce the operating cost and provide quality value-added services. Under the wave of population aging, future demand for smart long-term care is going to be very high. We have introduced integration services for environmental control systems that use communication software with monitoring equipment, as well as the function of “event shot”. Through optimization of the long-term care monitoring environment, we hope to provide solutions to the pain points of businesses in cost and equipment integration for upgrade of smart long-term care.

B. Long-term business development plan

In response to international trends and competent authorities’ requirements in recent years, companies must invest in three major dimensions of environment, society and governance on a continuous basis and fully disclose the relevant information. However, since Apacer has promoted our corporate social responsibility (CSR) over a long period of time, our business strategies have included the implementation of the ESG dimensions, highlighting that we have the foresight to take a leading position in this trend. In addition, the technologies of 5G, big data, IoT, etc. facilitating the speed of transmission from endpoint devices to cloud platforms in the upcoming post-pandemic era correlate closely with Apacer’s deeply developed core business - digital storage. The main focuses of our long-term development plan are described as follows:

(A) Invest in ESG and fulfill our corporate social responsibility (CSR)

Companies promote CSR to not only fulfill their corporate social responsibilities, but also facilitate positive development of the brand and long-term operation. Therefore, Apacer formed the CSR Committee in 2014 for performing CSR works. More and more attention has been paid to the ESG issue recently. With respect to ESG, companies are required to review corporate strategies and implementation results from the environmental, social and governance perspectives within the scope of CSR. We have gained years of experience and received multiple awards and certificates such as a recognition of consecutively being ranked in the top 5% of companies participating in corporate governance evaluations, the Golden Award of Corporate Sustainability Report in TCSA, and the iSports certification. Apacer will continue to invest in ESG and actively communicate with external stakeholders about relevant issues in addition to requiring internal

implementation of related measures, thereby improving our brand image and achieving the goal of sustainable operation through fulfillment of our CSR.

- (B) Actively building up R&D momentum and strengthening our professional technology

Apacer upgraded the R&D Division to the RD & Technical Center in 2020. Through prediction of technology development orientation by trend researches, we formulate short-to-long-term R&D plans and goals while actively recruiting talent in digital storage and IoT integration fields to reinforce our R&D capability. Moreover, we also encourage development and commercialization of patents by researching and developing innovative mechanisms to convert these actions into competitive momentum.

- (C) Draw up marketing strategies

As the pandemic has accelerated the digital transformation and the development of online-merge-offline (OMO), Apacer will make use of marketing tools and focus on “Precision Marketing” to create globally consistent information to be communicated to the right target/potential customers. The information covers four key dimensions of social brand communication, identification of customer needs, satisfaction of customer requirements and brand value accumulation. The communication is made through integrated virtual and real channels, such as media exposure, channel activities, conferences, exhibitions, social activities, etc. to transform the marketing effectiveness into the momentum of our business and thereby create benefits on the brand.

- (D) Plan digital transformation and maximize the benefit of integrated data analysis

Apacer initiated a digital transformation project in 2017 to introduce the MES system for enhancing manufacturing management and the CRM to accurately predict business opportunities. In 2018, ERP, BPM and BI systems were adopted to improve the operating benefits. We have established an outsourcing platform, supplier information platform, eRMA after-sales service management and operating information platform for strengthening the management of supply chain by 2020, and is expected to promote the WMS system to reinforce our logistics management in 2021. We hope to move towards the goal of “AI operation” through digital transformation and to create more benefits for our customers, partners and employees by collecting and analyzing data and improving corporate business performance.

- (E) Increase talent retention rate and establish talent supply chain systems

Talent is one of the key properties for corporate operation. Apacer has a talent supply chain system in place to train our employees to become required talent. We have performed a comprehensive review for the system since 2020. With position and competency as the core concerns, we provide training in line with our organizational strategies and objectives. The Training Academy is expected to be launched in 2021. We design different learning maps for

sales marketing, products and R&D and use various assessment and testing tools to assist in talent positioning and building our talent database for the purpose of reserving high-potential talents for our medium- to long-term objectives.

2. Market and production and sales status

(1) Market analysis

A. Sales region for major products

Unit: TWD 1,000

Year Region		2019		2020	
		Sales amount	%	Sales amount	%
Domestic sales		1,447,009	19.33%	1,338,231	18.71%
International	America	1,244,114	16.62%	1,134,848	15.87%
	Europe	1,450,560	19.38%	1,776,997	24.85%
	Asia	3,243,616	43.33%	2,837,645	39.68%
	Other	100,522	1.34%	64,501	0.90%
	Subtotal	6,038,812	80.67%	5,813,991	81.29%
Total		7,485,821	100.00%	7,152,222	100.00%

B. Market share

The Company engages in the production and sales of memory modules and flash memory products. There are many companies engaging in these products. Due to the fact that the production scales of these companies are different, there are no professional and comprehensive industry ranking statistics. Apart from us, domestic companies engaging in the production and sales of DRAM products with a certain scale include ADATA, Transcend, Team Group, Silicon Power, and Innodisk. The revenues and market shares of the Company and aforementioned companies are listed in the following table. The ratio of operating revenues of the Company to the operating revenues of the aforementioned companies in 2020 is 10.24%.

Unit: TWD 1,000

Name of Company	Net Operating Revenues	Market Share
Apacer	7,152,222	10.24%
ADATA	32,227,330	46.14%
Transcend	11,446,696	16.39%
Team Group	7,501,914	10.74%
Silicon Power	4,370,095	6.26%
Innodisk	7,152,015	10.24%
Total	69,850,272	100.00%

Source: All companies' 2020 consolidated or individual financial reports that have been certified by CPAs

C. Market supply and demand status and growth in the future

(1) Market supply and demand status and growth of DRAM in the future

(A) Supply and demand status:

In 2020, the biggest factor affecting DRAM market conditions was COVID-19, which has disrupted the industrial chain and restricted the free movement of people, resulting in a decline of the macro economy. Many industries (e.g., tourist and catering sectors) are facing serious challenges. Working from home, online conference, etc. have become normal for control of the pandemic. It facilitates development of digitization at the national and corporate level and drives increased demand for notebooks, tablets, data center servers, and other electronic devices. The shipment volume of game consoles and audio and video stream devices rises steadily, and the “stay-at-home economy” emerges as a result.

Though vaccines are being released one after another in 2021 to slow the spread of the virus, consumers have adapted themselves to working at a distance. For example, an “online economy” business model is taking shape in the USA. It enables white-collar workers to work using telecommute mechanisms. This will officially become a drive for economic recovery in the USA after 2021. For example, GAFAM (Google, Amazon, Facebook, Apple and Microsoft) have proactively build this structure. The global economic model also develops in response to the trend of “working from home continuously”. Recovery of the demand for cellular phones and increased penetration of 5G smart phones after the pandemic is mitigated are expected, and the demand will grow by 17.8% accordingly.

(B) Growth potential of DRAM in the future

Looking forward to 2021, the demand for PC, mobile, graphics and consumer DRAM grows stably in the first quarter. Due to the situation that a part of server DRAM manufacturers stuck up with their products once again after two quarters of inventory adjustment and Micron’s fuse blowing incident in early December 2020, the price of DRAM products has risen since the first quarter in this year.

For the prospect in 2021, the key force driving the DRAM output value will still be servers and smart phones. The demand for server DRAM is driven by the application of data centers and the demand of Google, Amazon, Microsoft and Facebook for social media platforms, cloud services and online commerce platforms in particular. In addition, Intel and AMD will stock up with a large number of their new server CPU platforms in the first half of 2021, which will drive the replacement of servers and achieve a increase of 5.4% in the server shipment in 2021 (Fig. 19). 5G will become the key technology that drives the demand in the memory market in 2021, including the growing server demand before the completion of 5G and its infrastructure and more new demands resulting from the implementation of 5G, such as edge computing and IoT/IoV. 5G, data centers and edge computing will become the main driving force of the increasing demand for server DRAM.

To compete for the market shares left by the absent of Huawei and the market demand recovered due to the pandemic that is expected to be mitigated, most smart phone manufacturers increase their demands. It is projected that a 9% of YoY growth will be made in 2021. In the meantime, the penetration of 5G smart phones will increase, and the penetration rate of 5G smart phones in the China market is estimated to achieve 85%.

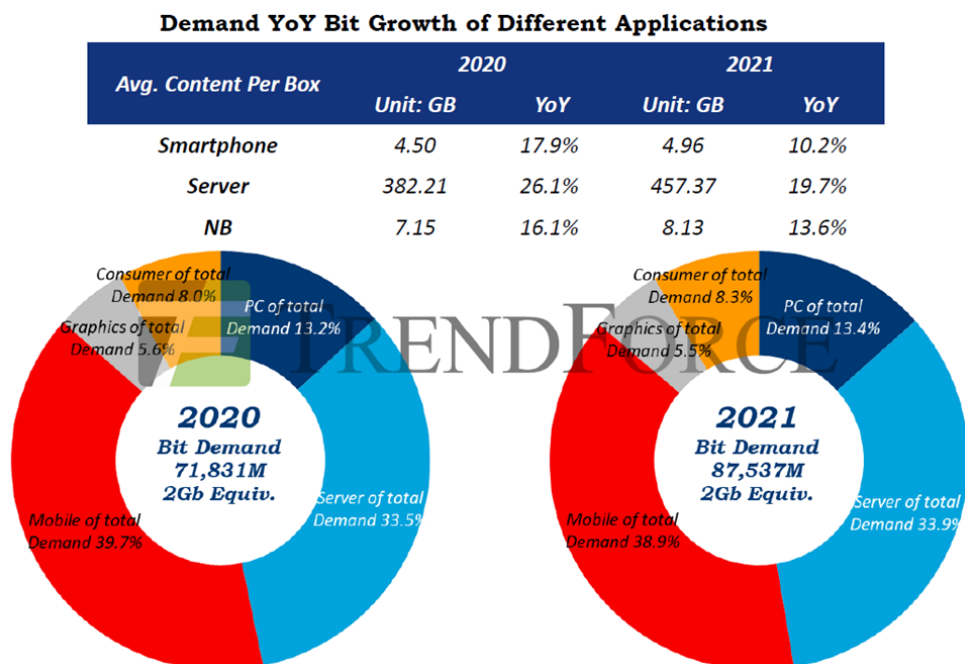
It is worth mentioned that up to 11.15 million of Chromebook laptops were sold worldwide in the fourth quarter in 2020. The worsening pandemic increased, instead of reducing, the purchase of Chromebook laptops of the educational markets in the US and Europe. It is expected that the shipment of Chromebook laptops will decrease by 15% QoQ in the first quarter in 2021. However, the shipment will increase by over two and a half times YoY. Nevertheless, as the capacity of Chromebook laptops' DRAM is mainly 4GB, the contribution of the laptops to the DRAM output value is less than that of the servers even though an estimated YoY 16.1% increase in the shipment of laptops is higher than a YoY 5.4% increase in that of servers.

Regarding memory capacity, smart phones and servers are expected to see double-digit growth at the rates of 10.2% and 19.7% respectively in 2021. The two types of application account for about 76% of the demand for memory (Fig. 19). This is why DRAM manufacturers have increased the percentages of mobile and server DRAM in production year by year (Fig. 20).

(Unit:M)		4Q20	1Q21E	2Q21F	3Q21F	4Q21F	2020	2021F
Server (~30% of DRAM consumption; ~22% for NAND Flash)	Shipment	3.3	2.9	3.5	3.8	3.5	12.9	13.6
	QoQ	4.5%	-13.7%	21.1%	8.3%	-7.2%	3.5%	5.4%
	YoY	-0.4%	-5.9%	3.9%	18.3%	5.1%		
	Percentage		46.6%		53.4%			
Smartphone (~40% of total memory consumption)	Production	363.6	341.8	323.6	338.6	362.9	1,253.4	1,366.8
	QoQ	8.1%	-6.0%	-5.3%	4.6%	7.2%	-10.5%	9.0%
	YoY	-2.4%	24.8%	15.7%	0.7%	-0.2%		
	Percentage		48.7%		51.3%			
NB (~13% of DRAM consumption; ~25% for NAND Flash)	Shipment	61.3	59.8	62.1	58.6	53.3	201.3	233.8
	QoQ	9.6%	-2.3%	3.7%	-5.6%	-9.1%	22.1%	16.1%
	YoY	43.2%	94.4%	16.4%	4.8%	-13.1%		
	Percentage		52.2%		47.8%			

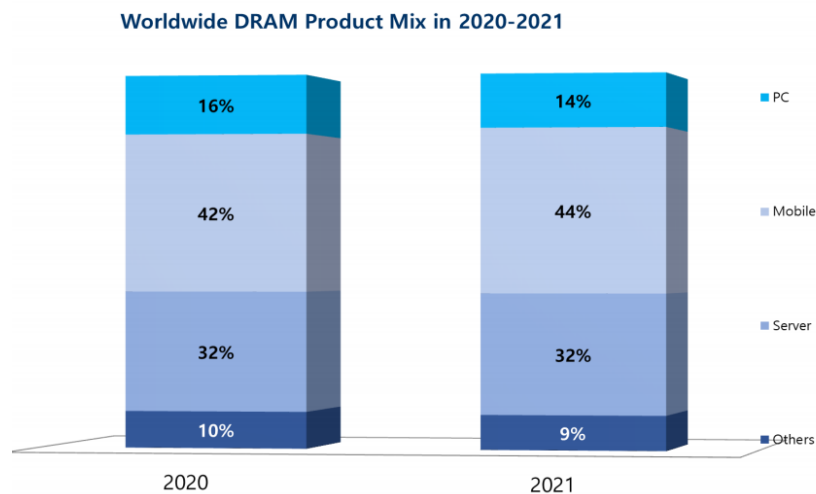
Source: DRAmEXchange, March 2021

Fig. 19 Analysis of estimated shipment growth of DRAM end product based on the application



Source: DRAmEXchange, March 2021

Fig. 20 Analysis of estimated DRAM capacity growth based on the application



Source: inSpectrum, February 2021

Fig. 21 WW DRAM output comparison between 2020 and 2021

(2) Market supply and demand status and growth of NAND flash in the future

(A) Supply and demand status:

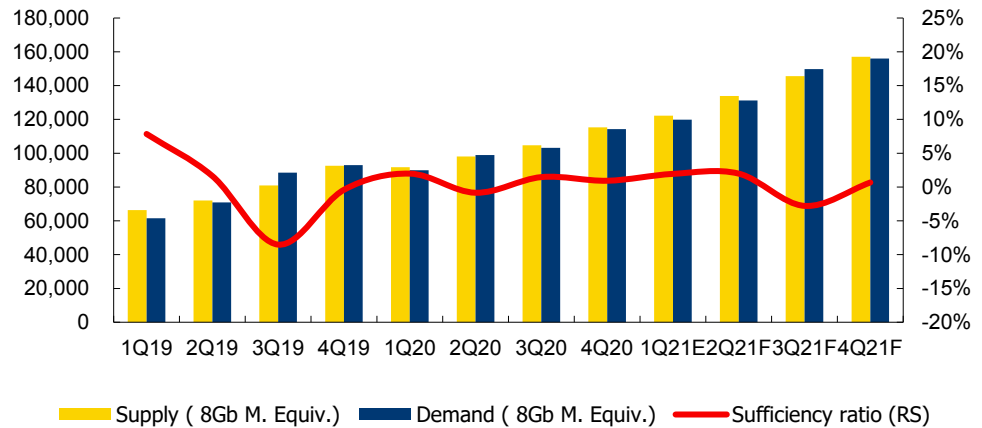
The shipment of enterprise and client SSDs will remain at a high level in 2021, and the growth of demand will be eventually higher than the growth of supply (Fig. 22). Though there are 7 NAND Flash manufacturers, demand will be more prosperous in 2021. The insufficient supply of control chips will contribute to the balance of the market and may even lead to shortages. In particular, the fact that the output proportion of the out-of-date SLC and MLC products has declined quarter by quarter may lead to a short supply and arouse panic among customers if a significant increase in demand occurs.

(B) The growth potential for NAND FLASH application in the future

Growth of SSD shipments is highly expected in 2021 (Fig. 23). It is estimated that more than 80% of the notebooks were equipped with an SSD in 2020. In addition, in response to the massive storage demand from data centers, NAND flash firms also strive to develop new technology and new production processes for NAND flash memory in order to increase the storage capacity per unit. As we approach an era where the density of a single chip may reach the terabyte (TB) level, manufacturers will continue to compete over the development of 3D NAND flash memory.

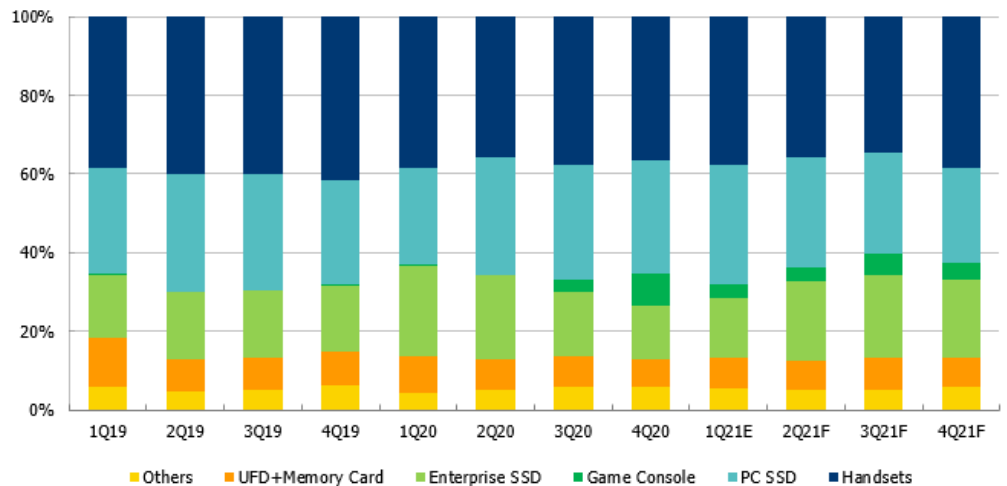
Unit: 8Gb M. Equiv.

Sufficiency Ratio



Source: TrendForce Corp., February 2021

Fig. 22 2019–2021 NAND FLASH sufficiency



Source: TrendForce Corp., February 2021

Fig. 23 2019–2021 NAND Flash demand analysis by application

As the volume of functional cell phones continues to decrease and many smartphone manufacturers introduce 5G model to the market, the global smartphone shipment volume in 2021 is expected to be around 1.4 billion, shipments will see a growth. Demands like live webcasting, video streaming, photographing and mobile games with the reduction of the average sales price will increase the average carrying capacity of NAND flash in order to provide more convenient functions, such as more fluent video processing, to mobile phone users. 5G is one of the focuses in 2021.

The penetration and differentiation of 5G smartphones will be sped up. There will be 539 million of 5G smartphones with a penetration rate close to 39%. Market expansion drives the diversification of products to meet the requirements for high-speed streaming with large screens. Many brand manufacturers are encouraged to roll out foldable models and design their rollable concept screens in the hope to provide a final solution. OTT (over-the-top) products demonstrate their ongoing impact on traditional STB (set-top box) products. It is changing the TV viewing behavior of consumers in the USA. As for the leading OTT companies, the accumulated number of their customers occupies 50% of the total number of pay-TV customers. The number of customers of Netflix and Disney+, two leading companies in the OTT field, exceeds the total number of telecom, satellite, and cable TV customers. This trend will continue in 2021 and traditional STB manufacturers must adapt their product lines in response. OTT clients can view streams using networking devices such as PCs, notebooks, tablets, smartphones, game consoles, and TVs, driving consumer demand for networking devices and bringing about more demands for cloud computing and storage resources. Many telecom operators have started to employ edge computing. They operate deeply in the hybrid cloud area by combining 5G and edge computing to provide innovative services on the basis of optimized network quality, security, and cost conditions, and these may encourage the establishment of small and medium regional data centers. The scale of the edge computing market is expected to grow by 180% to an amount of USD 28 billion in 2021. Due to the pandemic, to avoid infection and solve labor shortage problems, many chain stores, supermarkets, restaurants and retail stores have started using automated ordering and self-checkout systems. These unmanned machines may be used as a substitution for traditional cashiers and POS systems or work with them simultaneously. Smart self-checkout and computer vision supported self-checkout services will be a development trend in the future, and the demand for related storage solutions and cloud data will increase and never decrease.

D. Competition niches

(A) Robust technology and industrial experience to rapidly satisfy external demands

Having developed storage technology for a long time and having accumulated many years of experience, Apacer capable of rapidly responding to market developments and meeting customer requirements. We provide optimal product or technology solutions by integrating software,

hardware and firmware, and continuously create more value-added benefits for customers. We have increased our product lines in recent years and developed applications with high gross profits on an ongoing basis. Our product lines are stretched across the areas of e-sports, cloud platforms, IIoT and intelligent IoT. In addition to smart long-term care and optical inspection products and technologies, we are dedicated to developing new fields. Product lines in industrial control, consumption and intelligent application areas are developed simultaneously. Adjustments are made in a timely manner to ensure stable profitability and improve the long-term competitive strength of the Company.

- (B) Global channels in conjunction with local marketing strategies to accumulate brand value

We have deployed a global channel network for more than 20 years and marketed our own brand “Apacer” around the world. We have subsidiaries in the US, the Netherlands, China, Japan and India to develop local markets, provide timely services for localized demand and reduce the time and maintenance cost for distance communication. We propose local marketing requirements through our subsidiaries and develop global customers by participating in important international exhibitions such as COMPUTEX, Embedded World, G2E and Smart City Summit & Expo, and participating in or organizing forums, seminars and other events. To seek opportunities for exposure of our brand, accumulation of brand value, and converting of these actions to the momentum for promoting business, we have actively participated in international awards including the Taiwan Excellence Awards and the evaluation for the Best Global Brands of Taiwan.

- (C) Ongoing development of patented products to build a firewall of competitive strength

We formed a patent development committee in 2017 and set up a patent review team for the review of internal inventions and patents. We also established patent incentive regulations to encourage commercialization of patents. As at the end of 2020, we had 186 effective patents and 55 pending patents. The patents were mainly in Taiwan, the USA and China. More patents and being accumulated.

- (D) Diversified products meeting customized requirements in a timely manner

The RAM module industry features high demand for customization. Development is usually made to meet the demand in a special area or for a specific application. Partnership is not established without long-term testing and confirmation; however, the relation of both parties is not altered easily

once it is established. This is a model with high stickiness. Apacer has managed customer relations for many years and meets the requirements of customers rapidly with our extensive experience in products and technologies. We also provide technical support and ensure that customers receive complete purchase and after-sales services.

- (E) Planning of sustainable supply chains to ensure product quality and legal compliance

The price of the memory products is easily affected by fluctuation of the market and the supply chain may be altered as a result. In consideration of the COVID-19 pandemic that impacted the global supply chain at the beginning of 2020 and the external investment trends that demonstrated special requirements for a green supply chain, how to stabilize the supply sources of raw materials, ensure legal compliance at the supply end, take action to support requirements for environmental friendliness, and provide customers with products of competitiveness are crucial for the long-term operation of companies. Apacer has a supply chain management system, maintains good relationships with domestic and overseas suppliers, ensures legal compliance at the supply end through the RBA (Responsible Business Alliance Code of Conduct) and CSR committee, meets the requirements of for a green supply, and protects the basis of profitability for the customer and the Company.

- (F) Quality control in conformity with international standards to ensure shipment quality

We have strict quality requirements. Apart from passing international quality management certifications, including ISO 9001, ISO 14001, OHSAS 45001 and IECQ QC 080000, we enhance our process management and replace equipment to meet the requirements of RoHS and other EU directives related to the environment. Our ultimate goal is zero-defect quality.

- (G) Planning of complete service processes to solve problems for customers

Apacer has complete service processes and communication channels and set up many subsidiaries around the world. In addition to contact with the business department, assistance can be provided directly through the eRMA system. Our internal professional technical teams can provide customers with efficient and instant technical services without territorial restrictions.

- (H) Implementation of good partnerships as core brand value and pursuit of sustainable business operations

We are dedicated to implementing our core value of “Delivering on Our Promises, Constant Improvement and Mutually Beneficial” and cultivating a corporate culture of “Becoming Better Partners” through internal dissemination and encouragement. We work with customers to provide value-added services in different areas. To implement sound management policies and pursue long-term sustainable development, we set up a CSR committee focusing on sustainability issues such as environmental friendliness, employee care, contribution to local communities, corporate governance, customers, and suppliers. By doing so, we have received positive appraisal and won awards and certifications from external institutions. We will continuously implement ESG investing in line with international development trends and march toward the goal of sustainability.

E. Favorable and unfavorable factors of development and countermeasures

(A) Favorable factors

- a. Service attitude and product quality recognized by customers

As a company established for more than 20 years, Apacer serves every customer based on a policy of “Access the Best”. For the RAM module industry that features high demand for customization, product quality and service attitude are essential to win the recognition of customers and acquire opportunities for cooperation. We continue investing in obtaining international standard certifications. We have passed and continue to renew the ISO 9001 and ISO 14001 quality certifications, and we have introduced new automatic production equipment and high-performance inspection equipment. In the production process, we also strictly implement gateway inspections to properly control production quality and yield. Therefore, our products are highly competitive on the international market.

- b. R&D and patent development capabilities

R&D talents and investment of funds are key operational indicators of a company. We pursue forward-looking strategies and hire talents and make product development plans in a proactive manner, and encourage the output of effective patents and their commercialization. We budget R&D funds every year and set R&D goals in the hope to provide customers with unanticipated products or technologies and create market benefits for all the stakeholders.

c. Upgrade of products and high demand

The development of technology and processes has become more stable in recent years. Existing high-end products are adapted to the prices of raw material, and thresholds for integration in customers' systems are lowered. The pandemic has driven a change in consumption and working modes, and especially the demand for distance or cloud services has been helpful for upgrading specifications and creating opportunities.

d. Proactive deployment in response to development trends

5G has started its development in 2020 and related cloud storage, IoT, IIoT, AI, and big data technologies have developed more rapidly as a result of the pandemic and driven the demand for the applications of smart medical services, smart factories, and smart IoT. With the robust niche in the storage area, we have established a strong technical foundation and accumulated extensive customer service experiences. We can deploy early and respond proactively to market demands and the above trends in the development of technologies. Potential opportunities are already being exploited.

e. Globalized marketing strategies and channels

We have globally marketed our “Apacer” brand since our establishment. With the head office in Taiwan, we have established subsidiaries at important overseas locations. By doing so, we can deeply operate on local markets, meet the demands of the global market, and respond to the requirements of local customers rapidly. We provide optimum customer services while reducing distance selling and potential carbon emission costs to meet the requirements for environmental friendliness and carbon reduction of the supply chain.

f. Sustainable partnership for mutual progress and benefits

The prices of the main raw materials for memory modules are susceptible to fluctuations caused by the external environment. Hence, our major suppliers for DRAM chips are from major DRAM suppliers around the world. We have diversified our procurement sources for flash memory chips and strategically adjusted the inventory level in order to prevent losses caused by market fluctuations. Our company and its supply chain have collaborated for a long time and have developed good partnerships, which means that we enjoy stable supply sources and prices.

Owing to our strategic alliance with Phison Electronics through private placement in 2017, the competitive advantages and resources from both parties have become integrated. While making our product lines more complete, we also expanded our operation scale and offer our customers more diverse customized solutions. Currently, we focus on further developing customized industrial control SSD storage devices, continue to expand our differentiation advantages, and drive the integration of our companies, jointly expand cross-border niche markets, increase the competitiveness of both parties in the global market, and create a sustainable partnership for mutual progress and benefits.

(B) Unfavorable factors and countermeasures

- a. Big price fluctuations of main raw materials affect the stability of profits

Regarding the product cost, the key raw materials DRAM and flash chips that account for high product cost ratio and has rapid price fluctuations, are a important factor affecting profits. Therefore, we have planned the following countermeasures:

- a. We will obtain timely market information through multiple channels, enhance our sensitivity and assessment of pricing trends in the marketplace, and improve our capabilities to respond to the risks of price decreases and fluctuations.
 - b. By analyzing the data from the global marketing posts and enhancing our inventory management and estimated sales, we increase the production and shipping speed in order to lower our price fluctuation risks.
- b. Short life cycle of products causing intense price competition

Due to the shortening product life cycles , manufacturers accelerate their development and production cycles in response to market demand, which also causes intense price competition. In this context, it is not easy to control inventories manage product development to respond timely enough to changes in the market which has led to excess inventory or changes in the raw material prices. Our countermeasures are as follows:

We intensively monitor market trends and demand via our overseas marketing channels and provide localized demand as a reference for the R&D team to make designs. We also continuously develop products and services with high added value, gross profit and quality. We invest in digital transformation and, through the complete

introduction of systems, optimize our plant production management, quality control and inventory level management to reduce manufacturing costs and make our brands competitive internationally.

c. Exchange rate fluctuation risks

Owing to the high export dependence of our Company, exchange rate fluctuations have a certain impact on our profits. Therefore, we plan the following countermeasures:

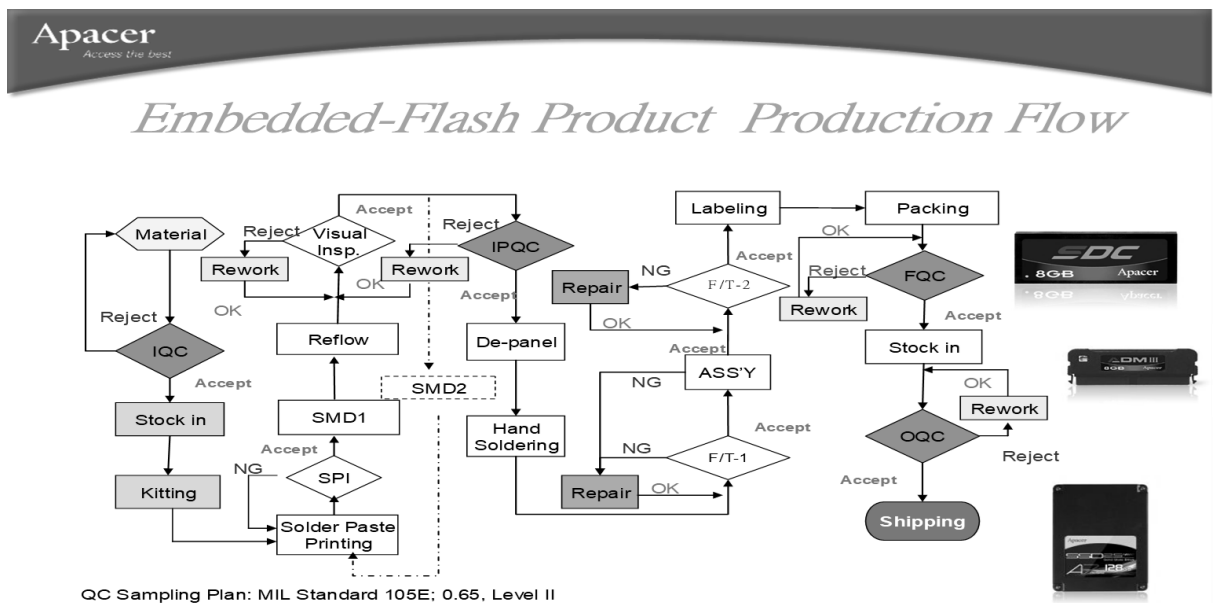
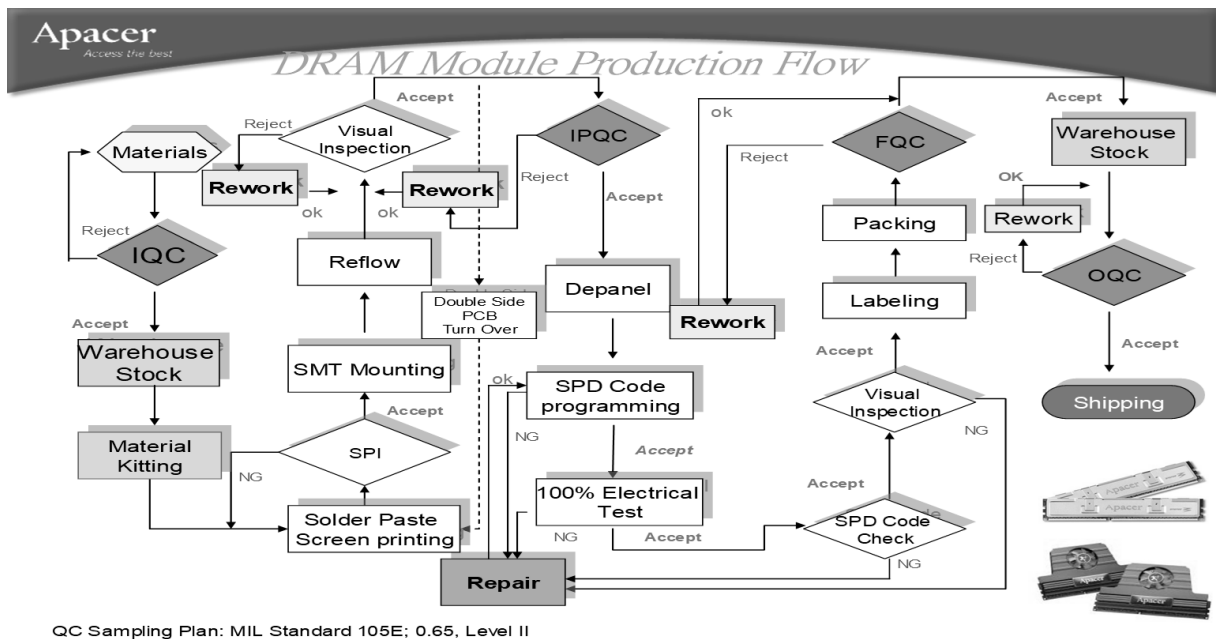
Our company keeps close and stable relationship with banks to effectively grasp the status of exchange rate fluctuations in time. We also assign personnel to collect exchange rate fluctuation information and prepare research report in order to control the timeliness of exchange rate fluctuation and adjust our foreign currency asset and liability positions. We also use financial instruments to effectively respond to impacts caused by exchange rate fluctuations.

(2) Important uses and production processes of our main products

A. Important uses of the main products

Main products	Main uses
Memory module	Memory modules are various types of DRAMs printed on a circuit board via a circuit design, which are embedded in computer main boards and which are compatible with the computer functions, to expand the data processing capacity of the computer and accelerate data processing. They are mainly used in personal computer systems and consumer electronics, For example: personal computers, notebook computers, servers, and workstations.
Flash memory	(1) Applied as information storage in portable digital products. Flash memory is the product of nonvolatile semiconductor technology and a modifiable storage medium that can be used permanently. Thanks to its small size, large capacity, easy portability, and high reliability, it is used in SSDs, mobile phones and tablets. (2) Applied in embedded systems to replace traditional hard disks in industrial applications such as Thin Clients, medical devices, POS machines, surveillance systems, or military equipment. Consumer applications such as set-top boxes, game consoles, satellite navigation systems, etc.

B. Production processes



(3) Main raw material supply

Product name	Main raw material	Major suppliers	Supply situation
Memory modules, flash memory and related products	DRAM, Flash	Samsung, Phison Electronics Corp., World Peace International Group, among others	Normal

(4) List of major suppliers and customers

A. List of suppliers accounting for more than 10% of total procurement in either of the last two years:

Unit: TWD 1,000

2019				2020				2021, as of March 31			
Title	Amount	Annual net procurement ratio (%)	Relationship with the issuer	Title	Amount	Annual net procurement ratio (%)	Relationship with the issuer	Title	Amount	Annual net procurement ratio (%)	Relationship with the issuer
A	1,355,143	23.63	None	B	1,071,379	19.59	None	A	649,398	24.32	None
B	1,085,531	18.93	None	A	822,233	15.03	None	B	416,917	15.62	None
C	875,960	15.28	None	C	719,696	13.16	None	C	184,974	6.93	None
Other	2,417,913	42.16		Other	2,857,035	52.22		Other	1,418,530	53.13	
Net procurement amount	5,733,679	100.00		Net procurement amount	5,470,343	100.00		Net procurement amount	2,669,819	100.00	

B. List of customers accounting for more than 10% of total procurement in either of the last two years: None.

(5) Production value over the last two years

Unit: 1,000 pieces; TWD 1,000

Production value Major products	Year	2019			2020		
		Production capacity	Production volume	Production value	Production capacity	Production volume	Production value
Memory module		(Note 1)	4,148	2,380,739	(Note 3)	3,567	2,380,414
Flash memory		(Note 2)	8,999	2,660,394	(Note 4)	6,666	1,942,600
Total		4,800	13,147	5,041,133	4,340	10,233	4,232,014

Note 1: Nearly 47% of the production volume of this product is outsourced.

Note 2: Nearly 69% of the production volume of this product is outsourced.

Note 3: Nearly 43% of the production volume of this product is outsourced.

Note 4: Nearly 74% of the production volume of this product is outsourced.

(6) Sales value over the last two years

Unit: 1,000 pieces; TWD 1,000

Sales value Major products	Year	2019				2020			
		Domestic sales		International sales		Domestic sales		International sales	
		Amount	Value	Amount	Value	Amount	Value	Amount	Value
Flash memory		3,257	631,955	8,779	3,959,617	2,715	547,370	9,982	3,606,555
Memory module		1,519	811,517	2,590	2,076,086	2,248	788,202	8,115	2,202,652
Other		4	3,537	1	3,109	185	2,659	1	4,784
Total		4,780	1,447,009	11,370	6,038,812	5,148	1,338,231	18,098	5,813,991

3. Personnel information over the last two years

(1) Talent cultivation and career development

In response to the rapidly changing environment in and around our industry, our company provides education and training to its staff to develop the competencies needed to achieve our organizational goals and business strategies, to enhance their professional capabilities, and to boost their knowledge and energy, in order to respond to the challenges in our work. We deploy a range of hard skills and soft skills training for various positions and roles of our staff members in alignment with the organization's goals and strategies. Besides inviting external instructors and outstanding internal managers to teach, discuss, hold experience camps and share their experiences, we also regularly upgrade and assess the skill sets of our technicians. In addition, our staff is also encouraged to participate in public training courses organized by external professional organizations as another enriching avenue for continuous learning. In 2020, the total number of training hours for personnel was 9,647 hours.

- (2) Number of employees, average years with our company, average age, and degree distribution ratio

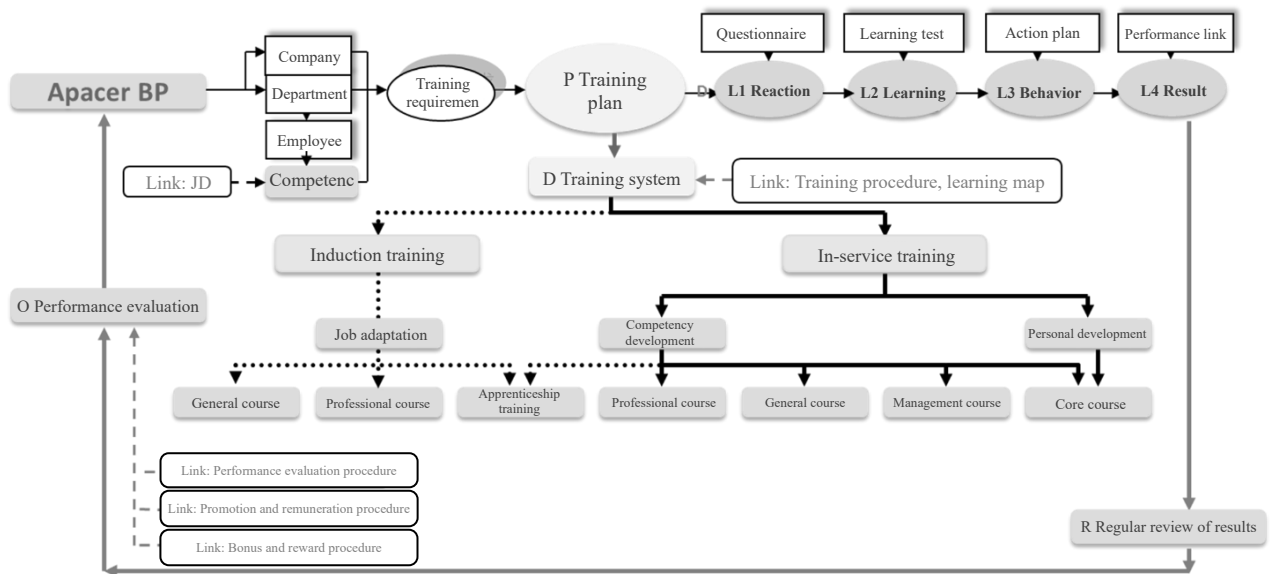
Year		2019	2020	2021, as of March 31
Number of employees	Direct personnel	178	146	140
	Indirect personnel	326	325	326
	Total	504	471	466
Average age		38.1	39.1	39.4
Average years with our company		6.5	7.4	7.5
Distribution of degrees	Doctoral degree	1	1	1
	Master's degree	97	99	99
	College	302	291	287
	Senior high school	96	75	75
	Below senior high school	8	5	4

Note: The numbers indicated in the table above are those of Taiwan.

- (3) Training structure and efficacy

A. Training structure

The Company uses an educational training blueprint for the training structure. After the establishment of the Apacer Academy, the training courses have since 2020 been updated and linked to learning maps, which have been completed for 2 institutes and 7 departments including the R&D and Technology Institute and the Product and Project Management Institute. Learning maps for all institutes and departments are expected to be established in 2021 and linked to KPIs to meet the requirements of each institute. The “induction training” and “in-service training” courses will be designed accordingly and reviews of the training results will be conducted on a regular basis. These results will be linked directly to personal performance, bonus, and remuneration in the hope to systematically improve the competency and development of employees and increase their learning effectiveness and willingness.



B. Training course

Employees are the source of growth and competitive strength of the Company. We provide various educational training courses to improve the professional capabilities of employees and meet the challenges of the industry's rapidly changing external environment.

To design courses that can meet the requirements more effectively, the Department of Human Resources and Administrative Service will interview the heads and employees of the departments and conduct satisfaction surveys after the courses. During the annual training survey, the department heads may put forward educational training requirements with regard to the learning map of each institute of the Apacer Academy to help employees achieve the business and development goals of the Company and ensure meeting the competency and learning requirements more effectively.

The education training courses can be classified into induction training, general employee training, talent training (including management training), RBA and ethical management training, and CRS training. In addition to external instructors, the Company invites internal professional employees to act as instructors to pass on their experience.

New staff training	The training focuses on the Company's business direction, development vision, environmental policy, management system, corporate rules, and operational processes of the relevant systems, and it allows new employees to identify with the core values of the Company
General training	The Company arranges general and professional training courses for employees. The general training covers problem analysis and solving and presentational communication skills. We also organize labor safety and health training and fire safety training in accordance with laws
Talent training (including management training)	We identify employees with potential and provide current/new managers with talent/management training. Our management team is assigned to give lectures that combine a core of competency with actual and future development needs to perform project management and plan and improve work flows
External training	External professional training is arranged for our employees in order to meet the requirements related to strategic development, competency, KPI, and laws and regulations
Training on RBA and ethical management	On the basis of RBA and ethical management regulations, the Company has established an RBA and ethical management system for current employees
CSR training	We conduct CSR awareness training for employees to jointly discuss the importance of CSR and propose CSR projects

C. Training efficacy

Due to attack of the COVID-19 all over the world, the educational training in the first half of the year was mostly provided online or in small groups. Normal physical courses were held in the second half of the year when the pandemic was mitigated in Taiwan. The total number of participants, hours and costs dropped slightly in comparison with the previous year.

The 2020 education and training results are as follows:

Course type	Number of participants	Number of hours	Total cost (TWD)
Induction training	212	622	1,194,792
General training	2,498	6,549	
Talent training (including management training)	348	1,338	
External training	85	589	
Training on RBA and ethical management	500	500	
CSR training	34	51	
Total	3,677	9,649	

(4) Diversified learning and development

Every employee can enhance their professional capabilities through various channels. Inside in the Company there is on-the-job training, job coaching, job transfer, seminars, online learning, reading clubs, etc. Outside the Company they can participate in study activities of professional organizations, short-term training courses of well-known domestic and foreign universities and training institutes, etc.

(5) Corporate Social Responsibility Report

We continuously strive, through its mission, philosophy, beliefs, employees' value judgments and codes of conduct, to integrate internal and external resources of the Company and practices energy-saving, environmental-friendly and healthy living. We pursue sustainability and profitability, while also fulfilling our social responsibility.

(6) Employee Code of Conduct and Code of Ethics

In its system of rules, we clearly set forth the rights and obligations of employer and employees in order to build a management system, improve organizational functions, and improve work efficiency. We have norms to regulate employees' professional conduct in the work place and deepen their ethics through internal announcements and training.

A. Implementation of hierarchical management

We have adopted a "Decision making authority table", "Principles for managerial titles and grades at all levels of the organization" and "Grade/title system list", which set forth the rules and specifications of jobs across the Company in order to clarify the various levels, ensure smooth operations, and offer employees a career development blueprint.

B. Compliance with government laws and regulations

We strictly abide by all government laws and decrees as well as regulations formulated by the competent authorities. In addition to safeguarding employees' rights and interests, these also regulate employees' behavior and professional ethics.

C. Employees' code of conduct

(A) Avoidance of Conflict of Interest: According to the Company's "Integrity Code of Conduct" and "Integrity Management Procedures and Behavior Guidelines", employees are strictly required to avoid actual or potential interference from personal interests with the Company's overall interests. In addition, a report is presented to the Board of Directors regarding the implementation of ethical management.

In 2020, we organized ethical management training sessions (including labor, health and safety, environmental health, ethical standards, management systems and other RBA-related issues), which were attended by 498 persons.

(B) In accordance with the norms of the "Internal Important Information Handling Operation Procedures", we regularly remind and require our employees to abide by these codes of conduct. The legal, audit, finance, information, and administrative departments also remind their staff from time to time of the key points of these behaviors, including norms relating to intellectual property rights protection and information security.

(C) The "Work Rules" set forth clear norms for employees' conduct and codes, along with sanctions that may include termination of the employment relationship in serious cases such as:

- a. Where the employee misrepresents any fact at the time of signing of a labor contract and thus caused the Company to suffer damage or fear thereof.
- b. Where a worker commits a violent act against or grossly insults the Company's responsible person, his /her family member, a manager at any level, or a fellow employee.
- c. Where the employee has been sentenced to temporary imprisonment, and is not granted a suspended sentence or permitted to commute the sentence to payment of a fine.
- d. Where the employee deliberately damages or abuses any machinery, tool, raw materials, product, or other property of the Company, or deliberately discloses any technical or operational confidential information of the Company thereby causing serious damage to the Company.
- e. Where the employee is, without good cause, absent from work for three consecutive days, or for a total six days in any month.
- f. Where the employee engages in corruption or misappropriation of public funds, or accepts bribes or commissions.
- g. Where the employee runs other business outside the Company which affects the Company's interests and business conflicts in a serious way.
- h. Where the employee refuses to follow reasonable instructions and neglect their duties, resulting in damage to the Company; this must be specific and serious.
- i. Where the employee slanders the Company, instigates an illegal slow-down or illegal strikes, with specific evidence.
- j. Where the employee forges the signature of their supervisor or abuses their supervisor's stamp.
- k. Where the employee threatens the supervisor or destroys or alters a company file.
- l. Where the employee steals or gambles anywhere within the premises of the Company that affects the order of work; with specific evidence after investigation.
- m. Where the employee violates a national statute and thus affects the performance of a labor contract, or breaches the labor contract in a serious way.

- n. Where the employee brings banned items such as guns, ammunition, or knives into the workplace without good reason.

D. Protecting and using company assets properly

Our employees are responsible for protecting the Company's assets and ensuring that they can be legally and effectively used. If they wish to use the services, equipment, facilities, items, or other resources of the Company for other than business, they must obtain permission beforehand. The use and management of our assets are controlled through a clear system.

E. Responsibility for confidentiality

We attach great importance to protecting confidentiality and intellectual property rights. Our employees are required to sign an "Employment /Confidentiality Agreement" and "Confidentiality Rules" at the time of joining the Company. Their content covers the confidentiality obligations of the Company, the ownership of intellectual property rights during employment and after resignation, and other related regulations. Secrets regarding business or technology must not be disclosed; one must not read documents, letters, emails, design drawings, etc. that are not related to one's job.

F. Gender equality and the prevention of sexual harassment

In accordance with the law, we have included norms on gender equality in the Company's "Work Rules" and have formulated the "Regulation on the Reporting and Punishment of Sexual Harassment in the Workplace" and "Regulations on Prevention, Reporting and Investigation of Sexual Harassment", which provide detailed behavioral standards and reporting channels and processes for employees to follow.

4. Environmental protection expenditure

- (1) During last year and this year to date, the total amount of losses (including compensation paid) and penalties. We also disclose future countermeasures (including improvement measures) and potential expenditures (including estimated amounts for potential losses, penalties, and compensations paid for future countermeasures; if difficult to estimate, describe the matters that are difficult to estimate): None.
- (2) Greenhouse gas emissions and reductions

Apacer Technology took greenhouse gas inventories in 2013 and set 2012 as the base year for inspections going forward. In the same year, we were verified by Bureau Veritas Taiwan (B.V.) and obtained a statement of reasonable assurance level. Apacer Technology annually checks its greenhouse gas emissions of the previous year. The boundary of the inventory is the direct and indirect greenhouse gas emissions of all our plant sites in Taiwan.

In 2020, our total greenhouse gas emissions were 2,101.545 metric tons CO₂-e/year. This was a reduction of 33.0091 metric tons CO₂-e/year compared to 2019. The main reason for the reduction was the reduced use of the diesel-fueled AT fork lift trucks and, thus, emissions were reduced by about 53 metric tons Co₂-e/year. However, the total consumption of the externally purchased electricity with respect to the operational boundary increased by 123,278.97 kWh. In particular, the utilization of the R&D test equipment and MIS computer room installed on the 5th floor of the plant had increased compared to the previous year, and the consumption of the electricity increased by 74,447.64 kWh as a result. The increase of the power consumption on this floor was highest in the plant.

The Company's indirect greenhouse gas emissions (externally purchased electricity) occupy more than 99% of the total emissions every year. Though the consumption of electricity increased compared to 2019, the total emissions were less than 2019 because the 2019 electricity emission coefficient of 0.509 was used for the calculation. Our average greenhouse gas emissions from 2013 to 2020 were 1,887.1761 metric tons CO₂-e/year, which was 0.048% higher than the 2012 base year (1,800.715 metric tons CO₂-e/year). Our analysis of the reasons for this can be summarized as follows:

- A. In 2016, we added a sixth floor to our office area, which led to increased emissions.
- B. In 2019, we added a 7th floor to our office area, which led to increased emissions.
- C. In recent years, the electricity emission coefficient announced by the Bureau of Energy has increased every year (0.518 CO₂-e/degree in 2017 to 0.554CO₂-e/degree in 2017). This multiplication resulted in the increased emissions figures.
- D. Increases in capacity utilization and turnover have led to increased emissions.

Year	2019	2020
Direct greenhouse gas emissions	9.107 metric tons CO ₂ -e/year	9.054 metric tons CO ₂ -e/year
Indirect greenhouse gas emissions	2,125.4771 metric tons CO ₂ -e/year	2,092.491 metric tons CO ₂ -e/year
Total greenhouse gas emissions	2,134.5541 metric tons CO ₂ -e/year	2,101.545 metric tons CO ₂ -e/year

(3) Energy conservation and carbon emission reduction awards

As we support green energy and environmental protection, Apacer Technology is always focused on strengthening energy efficiency within the Company and reducing unnecessary energy consumption. We also stimulate our employees to reduce energy use, carbon emissions, and greenhouse gas emissions. In 2014, Apacer

was awarded the Energy Conservation and Carbon Reduction Action Mark by the Environmental Protection Agency. In 2015, we participated in the “Clean Energy Conservation and Carbon Reduction Production Plan” of the New Taipei City Government. Our new technologies, techniques, and resources help control the use of energy and resources, raise energy efficiency and improve our competitiveness on our path toward greater corporate sustainability. In recognition of Apacer’s efforts and achievements in energy conservation and carbon reduction, the New Taipei City Government presented us with a Certificate of Appreciation during the announcement of the outcomes of the 2015 Clean Energy Conservation and Carbon Reduction Production Coaching Program.

(4) Green product management

In response to the European Union’s RoHS Directive, REACH, and customer requirements, we have made all processes lead-free as of 2007, and since 2011 have gradually made them halogen-free in line with the environmental trend of green products. The RoHS Directive has been fully incorporated into our production processes and material management, which comply with the EU’s REACH regulation. We also use these regulations in our audits of component suppliers whom we require to provide us with their environmental protection commitments and RoHS test reports. In July 2007, we passed the IECQ QC080000 management system audit carried out by a third-party certification company. Under this system, we completely control the management of prohibited hazardous substances from product to manufacturing process.

We also promise that products delivered to our customers will never use metals from conflict mining areas, in accordance with the DRC Conflict-Free norms.

Our products comply with international standards, and our response measures have not significantly impacted our financial performance.

In response to the European Union’s RoHS Directive, we will implement the extended directive (EU)/2015/863 to add four plasticizer hazardous substances (BBP/DBP/DEHP/DIBP) in July 22, 2019. We have introduced it into the supplier management two years earlier in July 1, 2018, ahead of all industry peers. We also required our suppliers to provide qualified test reports of a third-party laboratory to show compliance with the latest RoHS standards. We provide products and services free from hazardous substance for the customers and the consumers.

(5) Industrial waste

To effectively clean out waste and protect the environment from waste pollution, we consider reduction of the waste generated as essential. We also properly sort and recycle wastes and send them to external agencies for disposal. Ordinary and hazardous industrial wastes are sent externally to qualified cleaning and disposal

agencies to be disposed of. If required, on-site audits will be conducted by the responsible departments to ensure the appropriateness and legality of wastes and fulfill our corporate responsibility for waste management.

Year	2019	2020
Industrial waste	31.473 tons	24.821 tons
Recyclable waste	16.4954 tons	18.8839 tons
Total	47.9684 tons	43.7049 tons

(6) Water consumption

We set great store by energy conservation and environmental protection. We have integrated such concepts with our daily operations to lessen environmental impact and, at the same time, make our employees behave in an eco-friendly way. Domestic water constitutes most of our water consumption. To save energy and reduce carbon and power consumption, we replaced the air-cooled air conditioners with water-cooled units in 2020, leading to more water consumption than in 2019. To prevent the waste of water resources, all the faucets of our washbasins have been mounted with water-saving devices to reduce the use of domestic water. We have also put up posters promoting water saving. We have designated personnel responsible for inspecting the water equipment, and any failure discovered will be timely fixed to save water and avoid waste.

Year	2019	2020
Water consumption	5,360 kiloliters	5,795 kiloliters

5. Labor-capital relations

(1) Below is a list of our company's employee welfare measures and education, training, retirement systems, with descriptions of their implementation status within as well as agreements between management and labor and the status of employees' rights and interests:

A. Staff welfare measures, education, training and implementation

(A) Employee welfare measures

Apacer has introduced the "A+ EAPs Employee Assistance Program", which won the Work-Life Balance Award from the Ministry of Labor.

a. A+ work

(a) Flexible working hours

To provide care for the employees' families, we have a system of flexible working hours that allows employees not in production lines to freely adjust their working hours based on the conditions of their families.

(b) Three meals a day

For the employees' eating needs, we offer a meal allowance and have contracted quality vendors to provide nutritious, healthy and diverse meals. In addition, to give employees more choices for their diets, employees eating designated meals are entitled to a 50% subsidy for three meals a day.

(c) Weekly massage

To relieve employees' stress, we have contracted physically-handicapped, professional masseurs or masseuses to provide massage service twice a week.

b. A+ family

(a) Lactation rooms

For the needs of breastfeeding mothers, we have built lovely and comfortable lactation rooms that won the Award for Excellent Breastfeeding and Nursing Rooms from the Department of Health, Taipei City Government.

(b) Maternity allowance

To encourage employees to have children, any employee who has worked at Apacer for at least one year and has given birth to any child at Apacer is entitled to a maternity allowance of TWD 36,000 for each child.

c. A+ health

(a) Annual health examination

To strictly look after the health of employees, we provide annual health examination to our employees for free.

We have built a medical room with professional nurses to follow up on employees who have abnormal health conditions.

We also arrange for such employees to visit in-plant doctors who will provide health consultation services.

(b) Fitness area

To help employees cultivate a good habit of doing exercise from time to time, we have established fitness areas of spinning bikes and aerobic exercises for clubs and employees.

d. Workplace of sports

To help employees cultivate the good habit of doing exercise in the long term, we have created a “Let’s Exercise” group and held sports competition events to encourage the active participation of our employees. The Company has acquired the Exercise Enterprise Certificate from the Sports Administration, Ministry of Education, for two consecutive years.

e. Large-scale events

To provide more activities for our employees to relieve their stress, in addition to the events organized by the Employee Welfare Committee for Dragon Boat Festival, Mid-Autumn Festival and company trips, spring parties and Family Day events have also been held.

f. Group insurance

To provide more complete guarantees for our employees in addition to the statutory labor insurance and health insurance for employees, we have taken out group insurance for our employees and their families, including injury insurance, hospital treatment insurance, and cancer health insurance.

(B) Employee education system

In addition to the training courses, we also offer diversified learning management to stimulate peer learning and knowledge sharing. This includes the following items:

- a. Our Intranet offers dedicated areas for articles, good books, and experience sharing.
- b. An incentive system for promoting reading clubs and other learning activities.
- c. Our library provides a variety of books and magazines for employees to read.

(C) Employee training

In order to achieve our vision of “Becoming the Leading Information Service Integrator for Digital Storage” we work to enhance our employees’ and the Company’s core culture values of “Delivering on Our Promises, Constant Improvement and Mutually Beneficial”. Our education and training develops core competences in our staff to enhance their competitiveness in the workplace. These courses consist of the following four types:

- a. Core courses: These courses on our corporate culture and corporate strategy cultivate our advantages as a leading organization and our abilities to maintain core technology.
- b. Management courses: These develop management capabilities needed by managers at all levels.
- c. Specialist courses: These cultivate the specialized skills necessary for our staff to perform their jobs.
- d. General courses: These cultivate common knowledge among our employees such as new staff induction training, labor safety training, responsible business alliance training, etc.

B. Retirement system

For the stability of our employees' life in retirement, and in order to improve their working morale during employment, we have established the “Regulations Governing Employment, Separation and Retirement” and provided a preferential retirement system in accordance with law. Pursuant to the Labor Standards Act, we have established the “Workers’ Pension Reserve Fund Supervision and Management Committee”, and we have allocated pension reserve funds in accordance with the “Regulations for the Allocation and Management of the Workers’ Retirement Reserve Funds” and actuarial reports. The funds are saved in a designated account at the Central Trust of China to protect the rights and interests of employees. Starting from July 2005, in response to the government's new pension system, 6% of the income of the employees who have chosen the new pension system will be transferred to their personal pension accounts as required by law.

The following requirements are applicable to the Company in accordance with the Labor Standards Act and as approved by the Ministry of Labor:

(A) Voluntary retirement

Any employee to whom any of the following circumstances applies may apply for voluntary retirement:

- a. The employee has worked at the Company for at least 15 years, and is aged 55 or older.
- b. The employee has worked at the Company for at least 25 years.
- c. The employee has worked at the Company for at least 10 years, and is aged 60 or older.
- d. If the number of years of service of the employee plus his/her age is over 65, he/she may apply for early preferential retirement, subject to approval by the President.

(B) Mandatory retirement

The Company may not force any employee to retire unless any of the following circumstances applies to the employee:

- a. The employee is aged 65 or older.
- b. The employee is physically or mentally disabled to the extent of being unable to work.

If any employee performs any work of a special nature that is dangerous or requires heavy physical labor, the Company may, in accordance with Article 54, Paragraph 2 of the Labor Standards Act, apply on his/her behalf to the central competent authority for adjustment of the age under Sub-paragraph 1 of the preceding Paragraph. The adjusted age may not be below 55.

(C) Standards for pension payment

- a. With regard to any employee to whom the old pension system under the Labor Standards Act applies, or any employee who has chosen the new pension system under the Labor Pension Act and retained his/her seniority under the old system, the Company will make pension payment to the employee in accordance with the following standards:

- (a) Two bases will be given for each year of service of the employee.

Where the number of years of service is over 15, one base will be given for each year. The total number of bases may not exceed 45. Any period less than six months will be counted as six months, and any period of or more than six months will be counted as one year.

- (b) If any employee has become insane or physically disabled as a result of performing his/her duties, he/she will receive an additional 20% payment of pension under the preceding paragraph. The pension base means the average monthly wage at the time of approval for retirement.

- b. For any employee to whom the new pension system under the Labor Pension Act applies, the Company has allocated 6% of his/her wage on a monthly basis to his/her personal pension account.

(D) Pension payment

Pension payable by the Company to any employee under the old system will be paid within 30 days from the date of retirement of the employee. Pension under the new system will be paid in accordance with the requirements of the Bureau of Labor Insurance.

C. Agreements between labor and management

By emphasizing the harmony of labor and capital and paying attention to the welfare of employees, the labor-capital relations of the Company are good. There were no labor disputes in 2020.

D. Employee rights

We invest in labor relations from a perspective of co-existence and co-prosperity. Therefore, we set much store with employees' opinions. Employees may communicate through formal and informal channels at any time to give feedback on issues in their lives and at work. Two-way communication enables the Company and its employees to understand and support each other, build consensus, and create success.

(A) Management-labor conferences:

We regularly hold management labor conferences, where representatives from the employer and employees participate in two-way communication on our company's systems and employees' issues regarding company rules, the work environment, and safety and health. This negotiation model helps both parties to strengthen mutual trust and provides valuable input to the management.

(B) Employee Welfare Committee:

The Employee Welfare Committee consists of members selected from among employees who are passionate about public welfare and are good communicators. Therefore, the committee's meetings offer management and labor insights into welfare measures of the Company.

(2) Protection measures for the working environment and employees' personal safety

A. Specific measures for safety and health management

(A) Periodic review of the safety and health management system

The periodic review mechanisms of ISO 14001 ensure that all work processes are in line with international requirements.

(B) Evaluating risks and countermeasures

We periodically review each unit for unacceptable risks and non-compliance with regulations, after which we formulate safety and health management plans and risk control measures, and submit these outcomes results to the Safety and Health Committee for review.

(C) Movement toward zero accidents

We implement a self-management plan for safety and health as well as a safety and health education and training plan to achieve the target of only one occupational accident every year.

(D) Evaluation of the work environment

According to the “Implementation Rules for the Measurement of Labor Environments”, the committee must regularly have their company’s operating environment assessed by a qualified operating environment evaluation agency to determine whether the measurement result meet the statutory requirements. Any anomaly in the measurement results must be improved to ensure employee health.

(E) Health care and management

In accordance with the “Labor Health Protection Rules”, health inspections for general operations and for hazardous operations are carried out separately. The inspection items include chest X-ray, blood pressure, electrocardiogram, urine, blood, and biochemistry serum assays. Special inspections are conducted for special hazards at work such as free radiation, organic solvents, and the like, and implementations are carried out at different levels. With regard to hypertension, hyperlipidemia, abnormal blood glucose, abnormal body mass, and other metabolic syndromes. Our resident nurses use the “Personnel Risk Assessment Table” to assist people to mind their health status and to grow healthy living habits. In addition, external experts are regularly invited to share new and correct health knowledge through seminars to promote preventive care among employees.

We have a “Workplace Health Promotion Program” to create a relaxed and healthy workplace culture so that employees can build and enjoy a work environment that is happy for the body and mind. It not only reduces leave taken, staff turnover, and medical expenses, but also can bring down the incidence and cost of physical and mental health issues caused by injury and chronic diseases - a win-win result.

B. Implement operational safety control

- (A) In line with the requirements of safety and health regulations and the outcomes of our safety and health risk assessments, we have strict operations control and work permits for operations such as work at elevated height, with open fire, free radiation equipment, etc., and staff must follow these.
- (B) All machinery and equipment are legally qualified through regular inspections. Operators have professional licenses and regularly follow on-the-job training.
- (C) All incidents (with or without injury and including false alarms) are reported and given follow-up to eliminate potential hazards. In addition, equipment with moving parts, potentially dangerous process points, and protective devices are physically inspected and improvement plans formulated and implemented, to prevent injury.

(D) Roaming inspectors in the plant compound inspect activities and environments along their routes, and also assist with support or rescue in the event of traffic accidents, emergencies, or major drills.

(E) To ensure that operators are not exposed to radiation hazards, periodic inspections of equipment are carried out. Also staff are required to wear anti-radiation gear and participate in radiation work health inspections. Based on the readings of radiation meters and medical check-ups. Radiation doses and employees' health conditions are monitored to prevent equipment anomalies causing radiation damage to our staff.

- (3) List the total amount of losses due to labor disputes During last year and this year to date. Also disclose estimated amounts and countermeasures for current and potential future events (if difficult to estimate, describe the matters that are difficult to estimate): Our company has harmonious labor relationships and has not suffered any losses due to labor disputes. Such losses are not expected to occur in the future.

6. Important contracts

Nature of contract	Parties	Contract date	Main content	Restrictive clauses
System installation contract	AUO Envirotech Inc.	2020/11/12~2022/08/31	Installation and licensing of warehouse management system	None
Software license contract	Omni System Integration, Inc.	2020/03/09~2022/03/31	Procurement and licensing of software	None
Insurance contract	Fubon Property and Casualty Insurance Co., Ltd.	2020/07/01~2021/07/01	Commercial fire insurance	None
Insurance contract	South China Insurance Co., Ltd.	2021/01/01~2021/12/31	Cargo insurance	None
Insurance contract	Hotai Insurance Co., Ltd.	2021/01/01~2021/12/31	Product liability insurance and public accident liability insurance	None
Insurance contract	Fubon Property and Casualty Insurance Co., Ltd.	2021/01/01~2021/12/31	Directors and Managers Liability Insurance	None

VI. Financial overview

1. Condensed balance sheet and comprehensive income statement over the past five years

(1) Condensed balance sheet and consolidated income statement information - IFRS

A. Condensed balance sheet (consolidated financial statement)

Unit: TWD 1,000

Year Item		Financial information of the last five years (Note 1)					Financial information of 2021, as of March 31 (Note 1)
		2016	2017	2018	2019	2020	
Current assets		2,856,713	3,589,477	3,175,676	3,158,606	2,959,170	4,025,379
Long-term investments		17,984	19,197	45,821	41,944	37,761	25,709
Real estate, plant and equipment		902,951	899,387	887,458	876,060	871,958	870,544
Right-of-use assets.		-	-	-	35,110	28,684	27,017
Intangible assets		11,123	24,363	66,280	62,278	53,225	50,897
Other assets		51,758	100,381	100,284	103,146	100,301	101,071
Total assets		3,840,529	4,632,805	4,275,519	4,277,194	4,051,099	5,100,617
Current liabilities	Before allocation	1,372,374	2,010,340	1,538,233	1,421,922	1,191,101	2,109,965
	After allocation	1,614,529	2,272,674	1,790,478	1,679,211	(Note 2)	(Note 2)
Non-current liabilities		39,620	54,325	41,830	48,876	50,316	57,630
Total liabilities	Before allocation	1,411,994	2,064,665	1,580,063	1,470,798	1,241,417	2,167,595
	After allocation	1,654,149	2,326,999	1,832,308	1,728,087	(Note 2)	(Note 2)
Equity attributed to stockholders of the company							
Share capital		1,008,978	1,008,978	1,008,978	1,008,978	1,008,978	1,018,243
Capital reserve		359,203	358,225	359,910	359,910	361,519	388,018
Retained earnings	Before allocation	1,086,882	1,250,073	1,393,935	1,515,937	1,548,000	1,672,242
	After allocation	844,727	987,739	1,141,690	1,258,648	(Note 2)	(Note 2)
Other equities		(30,971)	(49,321)	(67,540)	(78,579)	(108,958)	(145,624)
Treasury shares		-	-	-	-	-	-
Total equity of stockholders of the parent company	Before allocation	2,424,092	2,567,955	2,695,283	2,806,246	2,809,539	2,932,879
	After allocation	2,181,937	2,305,621	2,443,038	2,548,957	(Note 2)	(Note 2)
Non-controlling interests		4,443	185	173	150	143	143
Total equity	Before allocation	2,428,535	2,568,140	2,695,456	2,806,396	2,809,682	2,933,022
	After allocation	2,186,380	2,305,806	2,443,211	2,549,107	(Note 2)	(Note 2)

Note 1: The financial information in the above table has been examined/reviewed by our accountants.

The information can be referenced from public resources.

Note 2: The shareholders' meeting has not passed a resolution on the surplus distribution of 2020.

B. Condensed Consolidated Profit and Loss Statement (Consolidated Financial Statement)

Unit: TWD 1,000

Year Item	Financial analysis of the last five years (Note 1)					Financial information of 2021, as of March 31 (Note 1)
	2016	2017	2018	2019	2020	
Operating revenue	6,822,226	10,043,476	9,441,618	7,485,821	7,152,222	2,098,880
Gross operating profit	1,156,300	1,298,790	1,309,289	1,400,243	1,125,902	363,235
Operating income	406,303	474,842	437,883	483,595	345,419	150,787
Non-operating income and expenses	18,906	(1,802)	623	(4,695)	25,250	6,479
Net profit before tax	425,209	473,040	438,506	478,900	370,669	157,266
Net profit of continuing operations for the period	349,291	404,957	358,830	376,629	290,460	124,240
Losses from suspended operations	-	-	-	-	-	-
Net profit for the current period	349,291	404,957	358,830	376,629	290,460	124,240
Other comprehensive income for the period (net income after taxes)	(10,001)	(18,169)	16,826	(12,883)	(31,494)	(7,606)
Total consolidated income for the current period	339,290	386,788	375,656	363,746	258,966	116,634
Net profit for the period attributed to owners of the parent	349,467	405,418	358,839	376,642	290,469	124,242
Net profit for the period attributed to non-controlling interests	(176)	(461)	(9)	(13)	(9)	(2)
Total comprehensive income attributed to owners of the parent	339,695	386,996	375,668	363,769	258,973	116,634
Total comprehensive income attributed to non-controlling interests	(405)	(208)	(12)	(23)	(7)	-
Earnings per share (TWD)	2.74	4.02	3.56	3.73	2.88	1.23

Note 1: The financial information in the above table has been examined/reviewed by our accountants.

The information can be referenced from public resources.

(2) Condensed balance sheet and consolidated income statement information - IFRS

A. Condensed balance sheet (individual financial statement)

Unit: TWD 1,000

Year Item		Financial information of the last five years (Note 1)				
		2016	2017	2018	2019	2020
Current assets		2,543,801	3,260,681	2,843,922	2,821,478	2,590,942
Long-term investments		266,142	280,722	342,034	356,840	385,715
Real estate, plant and equipment		899,431	896,601	883,660	872,214	868,620
Right-of-use assets.		-	-	-	14,012	14,889
Intangible assets		10,868	24,158	66,024	62,130	53,099
Other assets		45,783	92,825	92,823	89,473	91,362
Total assets		3,766,025	4,554,987	4,228,463	4,216,147	4,004,627
Current liabilities	Before allocation	1,302,313	1,962,467	1,506,707	1,369,607	1,156,402
	After allocation	1,544,468	2,224,801	1,758,952	1,626,896	(Note 2)
Non-current liabilities		39,620	24,565	26,473	40,294	38,686
Total liabilities	Before allocation	1,341,933	1,987,032	1,533,180	1,409,901	1,195,088
	After allocation	1,584,088	2,249,366	1,785,425	1,667,190	(Note 2)
Share capital		1,008,978	1,008,978	1,008,978	1,008,978	1,008,978
Capital reserve		359,203	358,225	359,910	359,910	361,519
Retained earnings	Before allocation	1,086,882	1,250,073	1,393,935	1,515,937	1,548,000
	After allocation	844,727	987,739	1,141,690	1,258,648	(Note 2)
Other equities		(30,971)	(49,321)	(67,540)	(78,579)	(108,958)
Treasury shares		-	-	-	-	-
Total owner equity of the parent company	Before allocation	2,424,092	2,567,955	2,695,283	2,806,246	2,809,539
	After allocation	2,181,937	2,305,621	2,443,038	2,548,957	(Note 2)
Non-controlling interests		-	-	-	-	-
Total equity	Before allocation	2,424,092	2,567,955	2,695,283	2,806,246	2,809,539
	After allocation	2,181,937	2,305,621	2,443,038	2,548,957	(Note 2)

Note 1: The financial information in the above table has been examined/reviewed by our accountants. The information can be referenced from public resources.

Note 2: The shareholders' meeting has not passed a resolution on the surplus distribution of 2020.

B. Condensed consolidated income statement (individual financial statement)

Unit: TWD 1,000

Year Item	Financial information of the last five years (Note 1)				
	2016	2017	2018	2019	2020
Operating revenue	6,567,983	9,844,821	9,064,195	7,151,398	6,890,658
Gross operating profit	895,449	1,028,072	1,062,262	1,105,823	897,595
Operating income	361,037	425,915	416,470	440,924	306,112
Non-operating income and expenses	48,471	31,430	22,044	25,733	54,212
Net profit before tax	409,508	457,345	438,514	466,657	360,324
Net profit of continuing operations for the period	349,467	405,418	358,839	376,642	290,469
Losses from suspended operations	-	-	-	-	-
Net profit for the current period	349,467	405,418	358,839	376,642	290,469
Other comprehensive income for the period (net income after taxes)	(9,772)	(18,422)	16,829	(12,873)	(31,496)
Total consolidated income for the current period	339,695	386,996	375,668	363,769	258,973
Earnings per share (TWD)	2.74	4.02	3.56	3.73	2.88

Note 1: The financial information in the above table has been examined/reviewed by our accountants. The information can be referenced from public resources.

(3) Accountants' names and review opinions over the last five years

Accountants' names that have reviewed and given their opinions over the last five years:

Year	Signing accountant name	Audit Opinions
2016	Grace Chen, Wu Lin	Unqualified opinion
2017	Philip Tang, Grace Chen	Unqualified opinion
2018	Philip Tang, Grace Chen	Unqualified opinion
2019	Philip Tang, Grace Chen	Unqualified opinion
2020	Philip Tang, Grace Chen	Unqualified opinion

2. Financial analysis of the last five years

(1) Financial Analysis - Adoption of International Financial Reporting Standards (merged)

Item	Year	Financial analysis of the last five years (Note 1)					Financial information of 2021, as of March 31 (Note 1)
		2016	2017	2018	2019	2020	
Financial structure	Debt to assets ratio (%)	36.76	44.57	36.96	34.39	30.64	42.50
	Long-term capital to real estate, plant and equipment ratio Plant, and equipment ratio (%)	273.34	291.58	308.44	325.92	328.00	343.54
Repayment ability	Current ratio (%)	208.15	178.55	206.45	222.14	248.44	190.78
	Quick ratio (%)	114.36	97.80	127.48	154.75	180.22	97.99
	Interest protection ratio	666.43	46.61	58.28	95.16	124.39	291.16
Operational capacity	Receivables turnover ratio (times)	7.77	8.80	7.65	7.20	8.25	8.51
	Average collection turnover	47	41	48	51	44	43
	Inventory turnover rate (times)	5.75	6.05	5.81	5.72	6.95	5.07
	Payable turnover (times)	7.67	9.00	7.95	6.48	7.36	7.36
	Average inventory turnover rate	63	60	63	64	53	72
	Real estate, plant and equipment Turnover rate (times)	7.61	11.14	10.57	8.49	8.18	9.64
	Total asset turnover rate (times)	1.76	2.37	2.12	1.75	1.72	1.83
Profitability	Return on assets (%)	9.04	9.76	8.19	8.9	7.03	2.72
	Return on equity (%)	13.17	16.21	13.63	13.69	10.34	4.33
	Net profit before tax to paid-in capital Ratio (%)	42.14	46.88	43.46	47.46	36.74	15.44
	Net profit margin (%)	5.12	4.03	3.80	5.03	4.06	5.92
	Earnings per share (TWD)	2.74	4.02	3.56	3.73	2.88	1.23
Cash flow	Cash flow ratio (%)	9.97	1.95	53.94	63.33	28.31	(42.08)
	Cash flow adequacy ratio (%)	57.37	44.84	69.54	98.58	94.42	33.99
	Cash reinvestment ratio (%)	(2.01)	(7.23)	19.53	21.42	2.60	(27.60)
Leverage	Operational leverage	7.32	9.34	9.39	7.36	9.70	5.23
	Financial leverage	1.00	1.02	1.02	1.01	1.01	1.00

Increases or decreases of more than 20% in the financial ratio over the past two years are explained below:

1. Repayment ability:

The increase in the “interest protection ratio” was due to decrease in interest expenses as a result of increase in bank borrowings.

2. Operational capacity:

The increase in the “inventory turnover” was due to decrease in the average inventory level.

3. Profitability:

The decrease in the “return on assets”, “return on equity”, “net profit before tax to paid-in capital ratio” and “earnings per share” was a result of the decrease in profit due to the impact of the pandemic on the global economic environment and the appreciation of TWD.

4. Cash flow:

The decrease in the “cash flow ratio” and “cash reinvestment ratio” was due to the decrease in profit which led to a decrease in cash inflow from operating activities.

5. Leverage:

The increase in the “operational leverage” was due to the decrease in operating income.

Note 1: The financial information in the above table has been examined/reviewed by our accountants. The information can be referenced from public resources.

A. Financial structure:

- (A) Debt to assets ratio = Total liabilities / Total assets
- (B) Long-term capital to real estate, plant and equipment ratio = (Total equity + Non-current liabilities) / Net value of real estate, plant and equipment

B. Debt paying ability:

- (A) Current ratio = Current assets / Current liabilities
- (B) Quick ratio = (Current assets - Inventory - Prepaid expenses) / Current liabilities
- (C) Interest protection ratio = Net income before tax and interest expense/interest expense of the current period

C. Operational capacity:

- (A) Receivables turnover rate (including accounts receivable and bills arising from operations) = Net sales / average receivables for each period (including accounts receivable and bills arising from operations)
- (B) Average collection turnover = 365/ Receivables turnover ratio
- (C) Inventory turnover rate = Cost of goods sold / Average inventory value
- (D) Payables turnover rate (including accounts payable and bills arising from operations) = Cost of goods sold / Average payables for each period (including accounts payable and bills arising from business operations)
- (E) Average inventory turnover rate = 365 / Inventory turnover rate
- (F) Turnover of real estate, plant and equipment = Net sales / Average net value of real estate, plant and equipment
- (G) Total asset turnover rate = Net sales / Gross average assets

D. Profitability:

- (A) Return on assets = (Profits or losses after tax + interest expenses × (1 - tax rate)) / Average total assets
- (B) Return on equity = Profits or losses after tax / Average total equity
- (C) Net profit margin = Profits or losses after tax / Net sales
- (D) Earnings per share = (Income attributed to stockholders of the company - Special shares dividends) / Weighted average of issued shares

E. Cash flow:

- (A) Cash flow ratio = Net cash flow from operating activities / Current liabilities
- (B) Net cash flow adequacy ratio = Net cash flow from operating activities over the last five years / (Capital expenditure + Inventory increase + Cash dividend) over the last five years
- (C) Cash reinvestment ratio = (Net cash flow from operating activities - Cash dividends) / (Gross value of real estate, plant and equipment + Long-term investments + Other non-current assets + Working capital)

F. Leverage:

(A) Operational leverage = (Net operating income - Variable operating costs and expenses) / Operating profits

(B) Financial Leverage = Operating income / (Operating income - Interest expenses)

(2) Financial Analysis – Based on International Financial Reporting Standards (Individual)

Year Item		Financial information of the last five years (Note 1)				
		2016	2017	2018	2019	2020
Financial structure	Debt to assets ratio (%)	35.63	43.62	36.26	33.44	29.84
	Long-term capital to real estate, plant and equipment ratio (%)	269.51	289.15	308.01	326.36	327.90
Repayment ability	Current ratio (%)	195.33	166.15	188.75	206.01	224.05
	Quick ratio (%)	98.59	92.04	113.02	138.63	156.31
	Interest protection ratio	635.90	45.12	58.32	102.45	135.50
Operational capacity	Receivables turnover ratio (times)	8.51	8.87	7.56	7.40	8.23
	Average collection turnover	43	41	48	49	44
	Inventory turnover rate (times)	5.88	6.52	6.22	5.91	7.11
	Payable turnover (times)	7.69	9.08	7.85	6.44	7.36
	Average inventory turnover rate	62	56	59	62	51
	Real estate, plant and equipment turnover (times)	7.36	10.96	10.18	8.15	7.92
	Total asset turnover rate (times)	1.73	2.37	2.06	1.69	1.68
Profitability	Return on assets (%)	9.20	9.95	8.31	9.01	7.12
	Return on equity (%)	13.19	16.24	13.64	13.69	10.34
	Ratio of net profit before tax to paid-in capital (%)	40.59	45.33	43.46	46.25	35.71
	Net profit margin (%)	5.32	4.12	3.96	5.27	4.22
	Earnings per share (TWD)	2.74	4.02	3.56	3.73	2.88
Cash flow	Cash flow ratio (%)	8.84	0.46	59.09	53.18	24.52
	Cash flow adequacy ratio (%)	61.06	49.30	80.49	100.63	91.17
	Cash reinvestment ratio (%)	(2.84)	(8.42)	21.81	15.72	0.86
Leverage	Operational leverage	7.78	10.10	9.77	7.93	10.72
	Financial leverage	1.00	1.02	1.02	1.01	1.01
Increases or decreases of more than 20% in the financial ratio over the past two years are explained below: 1. Repayment ability: The increase in the “interest protection ratio” was due to decrease in interest expenses as a result of increase in bank borrowings. 2. Operational capacity: The increase in the “inventory turnover” was due to decrease in the average inventory level.						

3. Profitability:

The decrease in the “return on assets”, “return on equity”, “net profit before tax to paid-in capital ratio”, “net profit margin” and “earnings per share” was a result of the decrease in profit due to impact of the pandemic on the global economic environment and the appreciation of TWD.

4. Cash flow:

The decrease in the “cash flow ratio” and “cash reinvestment ratio” was due to the decrease in profit which led to a decrease in cash inflow from operating activities.

5. Leverage:

The increase in the “operational leverage” was due to the decrease in operating income.

Note 1: The financial information in the above table has been examined/reviewed by our accountants. The information can be referenced from public resources.

A. Financial structure:

(A) Debt to assets ratio = Total liabilities / Total assets

(B) Long-term capital to real estate, plant and equipment ratio = (Total equity + Non-current liabilities) / Net value of real estate, plant and equipment

B. Debt paying ability:

(A) Current ratio = Current assets / Current liabilities

(B) Quick ratio = (Current assets - Inventory - Prepaid expenses) / Current liabilities

(C) Interest protection ratio = Net income before tax and interest expense/interest expense of the current period

C. Operational capacity:

(A) Receivables turnover rate (including accounts receivable and bills arising from operations) = Net sales / average receivables for each period (including accounts receivable and bills arising from operations)

(B) Average collection turnover = 365/ Receivables turnover ratio

(C) Inventory turnover rate = Cost of goods sold / Average inventory value

(D) Payables turnover rate (including accounts payable and bills arising from operations) = Cost of goods sold / Average payables for each period (including accounts payable and bills arising from business operations)

(E) Average inventory turnover rate = 365 / Inventory turnover rate

(F) Turnover of real estate, plant and equipment = Net sales / Average net value of real estate, plant and equipment

(G) Total asset turnover rate = Net sales / Gross average assets

D. Profitability:

(A) Return on assets = (Profits or losses after tax + interest expenses × (1 - tax rate)) / Average total assets

(B) Return on equity = Profits or losses after tax / Average total equity

(C) Net profit margin = Profits or losses after tax / Net sales

(D) Earnings per share = (Income attributed to stockholders of the company - Special shares dividends) / Weighted average of issued shares

E. Cash flow:

(A) Cash flow ratio = Net cash flow from operating activities / Current liabilities

(B) Net cash flow adequacy ratio = Net cash flow from operating activities over the last five years / (Capital expenditure + Inventory increase + Cash dividend) over the last five years

(C) Cash reinvestment ratio = (Net cash flow from operating activities - Cash dividends) / (Gross value of real estate, plant and equipment + Long-term investments + Other non-current assets + Working capital)

F. Leverage:

(A) Operational leverage = (Net operating income - Variable operating costs and expenses) / Operating profits

(B) Financial Leverage = Operating income / (Operating income - Interest expenses)

3. Auditor's review report of the most recent annual financial report

Audit Committee's Review Report

The Board of Directors drafted the business report, financial statements and proposal on profit distribution for FY 2020. An audit report for the financial statements was prepared jointly by Philip Tang and Grace Chen, certified public accountants (CPAs) of KPMG Taiwan. The review of the business report, financial statements and proposal on profit distribution above did not find any inconsistencies. The review report is thus presented for further examination pursuant to Article 14-4 of the Securities and Exchange Act and Article 219 of the Company Act.

To

2021 Shareholders' Meeting of Apacer Technology Inc.

Audit Committee Convener: Wu Guang-yi



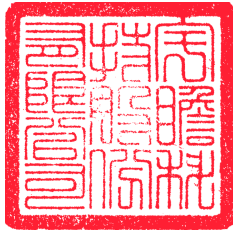
February 24, 2021

4. Financial report of the most recent year
 - (1) Consolidated financial report

Representation Letter

The entities that are required to be included in the combined financial statements of Apacer Technology Inc. as of and for the year ended December 31, 2020 under the Criteria Governing the Preparation of Affiliation Reports, Consolidated Business Reports, and Consolidated Financial Statements of Affiliated Enterprises are the same as those included in the consolidated financial statements prepared in conformity with International Financial Reporting Standards No. 10 “Consolidated Financial Statements” endorsed by the Financial Supervisory Commission. In addition, the information required to be disclosed in the combined financial statements is included in the consolidated financial statements. Consequently, Apacer Technology Inc. and Subsidiaries do not prepare a separate set of combined financial statements.

Hereby declare



Apacer Technology Inc.
I-Shih Chen
Chairman
February 24, 2021



Independent Auditors' Report

The Board of Directors of Apacer Technology Inc.:

Opinion

We have audited the consolidated financial statements of Apacer Technology Inc. and its subsidiaries (the "Group"), which comprise the consolidated balance sheets as of December 31, 2020 and 2019, and the consolidated statements of comprehensive income, changes in equity and cash flows for the years then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Group as of December 31, 2020 and 2019, and its consolidated financial performance and its consolidated cash flows for the years then ended in accordance with the Regulations Governing the Preparation of Financial Reports by Securities Issuers and with the International Financial Reporting Standards, International Accounting Standards, interpretations as well as related guidance endorsed and issued into effect by the Financial Supervisory Commission of the Republic of China.

Basis for Opinion

We conducted our audits in accordance with the Regulations Governing Auditing and Certification of Financial Statements by Certified Public Accountants and the auditing standards generally accepted in the Republic of China. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Consolidated Financial Statements section of our report. We are independent of the Group in accordance with the Certified Public Accountants Code of Professional Ethics in Republic of China (the "Code"), and we have fulfilled our other ethical responsibilities in accordance with the Code. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis of our opinion.

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements of the current period. These matters were addressed in the context of our audit of consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Key audit matters for the Group's consolidated financial statements for the year ended December 31, 2020 are stated as follows:

1. Revenue recognition

Please refer to notes 4(o) and 6(r) for the accounting policy on "Revenue recognition" and "Revenue from contracts with customers" for the related disclosures, respectively, of the notes to consolidated financial statements.

Description of key audit matter:

The Group engages primarily in the manufacturing and sales of memory modules and flash memory products, with product diversification and marketing channels spread globally. The Group recognizes its revenue depending on the various trade terms in each individual sale transaction and the transfer of control of the goods, which are considered to be complex in determining the timing of revenue recognition. Consequently, the revenue recognition has been identified as one of the key audit matters.

How the matter was addressed in our audit:

In relation to the key audit matters above, our principal audit procedures included understanding and testing the design and operating effectiveness of the Group's internal controls over revenue recognition; assessing whether the accounting policy of the timing of revenue recognition is appropriate through understanding the main types of revenues of the Group, and reviewing the sales contracts and the related trade terms with customers; assessing whether the accounting treatment of revenue recognition is appropriate through performing a sample test of the original documents of sales transaction; performing a sample test of sales transactions that took place before and after the balance sheet date, and reviewing the related documents to understand and analyze the reason for any identified sales returns and allowances that took place after the balance sheet date, to assess whether the revenue is recognized within the proper period.

2. Valuation of inventories

Please refer to notes 4(h), 5 and 6(e) for the inventory accounting policy, "Critical accounting judgments and key sources of estimation uncertainty" for estimation uncertainty of inventory valuation, and "Inventories" for the related disclosures, respectively, of the notes to consolidated financial statements.

Description of key audit matter:

The Group's inventories are measured at the lower of cost and net realizable value. Management is required to make judgments and estimates in determining the net realizable value of inventories on the reporting date. The market prices of the Group's main raw materials, constituting the majority amount of product cost, fluctuate rapidly and the life cycle of certain products of the Group are short, which could possibly result in a price decline and obsolescence of inventories, wherein the inventories cost may exceed its net realizable value, as the Group fails to timely respond to market changes. Therefore, the valuation of inventories has been identified as one of the key audit matters.

How the matter was addressed in our audit:

In relation to the key audit matters above, our principal audit procedures included obtaining and understanding the Group's accounting policy of valuation of inventories, performing a retrospective test to understand the reasonableness of estimations of allowance for inventory valuation loss with reference to actual write-off of inventories in a subsequent period, and evaluating the reasonableness of the accounting policy of valuation of inventories; as well as performing a sample test of the estimated selling price provided by Management to assess the reasonableness of the net realizable value and allowance for inventory valuation loss.

Other Matter

Apacer Technology Inc. has additionally prepared its parent-company-only financial statements as of and for the years ended December 31, 2020 and 2019, on which we have issued an unmodified audit opinion.

Responsibilities of Management and Those Charged with Governance for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with the Regulations Governing the Preparation of Financial Reports by Securities Issuers and International Financial Reporting Standards, International Accounting Standards, interpretation as well as related guidance endorsed by the Financial Supervisory Commission of the Republic of China, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

Those charged with governance (including members of the Audit Committee) are responsible for overseeing the Group's financial reporting process.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the auditing standards generally accepted in the Republic of China will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with auditing standards generally accepted in the Republic of China, we exercised professional judgment and maintained professional skepticism throughout the audit. We also:

1. Identified and assessed the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, designed and performed audit procedures responsive to those risks, and obtained audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
2. Obtained an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control.
3. Evaluated the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
4. Concluded on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.
5. Evaluated the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

6. Obtained sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the Group audit. We remained solely responsible for our audit opinion.

We communicated with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identified during our audit.

We also provided those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, we determined those matters that were of most significance in the audit of the consolidated financial statements for the year ended December 31, 2020 and are therefore the key audit matters. We described these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determined that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

The engagement partners on the audit resulting in this independent auditors' audit report are Tzu-Chieh Tang and Mei-Yen Chen.

KPMG

Taipei, Taiwan (Republic of China)
February 24, 2021

Notes to Readers

The accompanying consolidated financial statements are intended only to present the consolidated financial position, financial performance and cash flows in accordance with the accounting principles and practices generally accepted in the Republic of China and not those of any other jurisdictions. The standards, procedures and practices to audit such consolidated financial statements are those generally accepted and applied in the Republic of China.

The independent auditors' audit report and the accompanying consolidated financial statements are the English translation of the Chinese version prepared and used in the Republic of China. If there is any conflict between, or any difference in the interpretation of the English and Chinese language independent auditors' audit report and consolidated financial statements, the Chinese version shall prevail.

(English Translation of Consolidated Financial Statements Originally Issued in Chinese)
APACER TECHNOLOGY INC. AND SUBSIDIARIES

Consolidated Balance Sheets

December 31, 2020 and 2019

(Expressed in Thousands of New Taiwan Dollars)

		December 31, 2020		December 31, 2019				December 31, 2020		December 31, 2019	
Assets		Amount	%	Amount	%	Liabilities and Equity		Amount	%	Amount	%
Current assets:						Current liabilities:					
1100	Cash and cash equivalents (note 6(a))	\$ 617,616	15	696,497	16	2100	Short-term borrowings (note 6(j))	\$ 98,350	3	74,950	2
1110	Financial assets at fair value through profit or loss—current (note 6(b))	49,354	1	139,604	3	2120	Financial liabilities at fair value through profit or loss—current (note 6(b))	168	-	124	-
1170	Notes and accounts receivable, net (notes 6(d) and (r))	828,611	20	903,641	21	2170	Notes and accounts payable	467,027	12	743,450	18
1180	Accounts receivable from related parties (notes 6(d), (r) and 7)	799	-	532	-	2180	Accounts payable to related parties (note 7)	243,948	6	182,615	4
1310	Inventories (note 6(e))	797,769	20	935,783	22	2200	Other payables (notes 6(s) and 7)	244,864	6	306,785	7
1476	Other financial assets—current (note 6(a))	609,619	15	409,700	10	2230	Current income tax liabilities	75,102	2	54,382	1
1479	Other current assets	55,402	2	72,849	2	2250	Provisions—current (note 6(l))	7,344	-	11,685	-
Total current assets		2,959,170	73	3,158,606	74	2280	Lease liabilities—current (note 6(k))	13,659	-	15,674	-
Non-current assets:						2300	Other current liabilities (note 6(r))	40,639	1	32,257	1
1517	Financial assets at fair value through other comprehensive income—non-current (note 6(c))	36,421	1	41,994	1	Total current liabilities					
1550	Investments accounted for using equity method (note 6(f))	1,340	-	-	-	1,191,101301,421,92233					
1600	Property, plant and equipment (note 6(g))	871,958	22	876,060	21	Non-current liabilities:					
1755	Right-of-use assets (note 6(h))	28,684	1	35,110	1	2570	Deferred income tax liabilities (note 6(n))	-	-	1,779	-
1780	Intangible assets (note 6(i))	53,225	1	62,278	1	2580	Lease liabilities—non-current (note 6(k))	15,440	-	19,229	-
1840	Deferred income tax assets (note 6(n))	93,731	2	96,128	2	2640	Net defined benefit liabilities (note 6(m))	29,256	1	27,868	1
1980	Other financial assets—non-current	6,048	-	6,895	-	2645	Guarantee deposits	5,620	-	-	-
1990	Other non-current assets	522	-	123	-	Total non-current liabilities					
Total non-current assets		1,091,929	27	1,118,588	26	50,316148,8761					
						Total liabilities					
						1,241,417311,470,79834					
						Equity attributable to shareholders of the Company (note 6(o)):					
						3100	Common stock	1,008,978	25	1,008,978	24
						3200	Capital surplus	361,519	9	359,910	8
						3300	Retained earnings	1,548,000	38	1,515,937	36
						3400	Other equity	(108,958)	(3)	(78,579)	(2)
						Total equity attributable to shareholders of the Company					
						2,809,539692,806,24666					
						36XX	Non-controlling interests	143	-	150	-
						Total equity					
						2,809,682692,806,39666					
Total assets		\$ 4,051,099	100	4,277,194	100	Total liabilities and equity		\$ 4,051,099	100	4,277,194	100

(English Translation of Consolidated Financial Statements Originally Issued in Chinese)

APACER TECHNOLOGY INC. AND SUBSIDIARIES

Consolidated Statements of Comprehensive Income

For the years ended December 31, 2020 and 2019

(Expressed in Thousands of New Taiwan Dollars, Except for Earnings Per Share)

		2020		2019	
		Amount	%	Amount	%
4000	Revenue (notes 6(r), 7 and 14)	7,152,222	100	7,485,821	100
5000	Cost of revenue (notes 6(e), (g), (i), (l), (m), 7 and 12)	\$ (6,026,320)	(84)	(6,085,578)	(81)
5900	Gross profit	<u>1,125,902</u>	<u>16</u>	<u>1,400,243</u>	<u>19</u>
6000	Operating expenses (notes 6(d), (g), (h), (i), (k), (m), (s), 7 and 12):				
6100	Selling expenses	(472,471)	(7)	(560,260)	(8)
6200	Administrative expenses	(182,364)	(2)	(216,912)	(3)
6300	Research and development expenses	(122,801)	(2)	(117,884)	(2)
6450	Expected credit losses	(2,847)	-	(21,592)	-
6000	Total operating expenses	<u>(780,483)</u>	<u>(11)</u>	<u>(916,648)</u>	<u>(13)</u>
6900	Operating income	<u>345,419</u>	<u>5</u>	<u>483,595</u>	<u>6</u>
7000	Non-operating income and loss (notes 6(f), (k), and (t)):				
7100	Interest income	4,740	-	5,376	-
7020	Other gains and losses — net	23,783	-	(4,101)	-
7050	Finance costs	(3,004)	-	(5,086)	-
7770	Share of losses of associates	(269)	-	(884)	-
	Total non-operating income and loss	<u>25,250</u>	<u>-</u>	<u>(4,695)</u>	<u>-</u>
7900	Income before income tax	<u>370,669</u>	<u>5</u>	<u>478,900</u>	<u>6</u>
7950	Less: income tax expenses (note 6(n))	<u>(80,209)</u>	<u>(1)</u>	<u>(102,271)</u>	<u>(1)</u>
	Net income	<u>290,460</u>	<u>4</u>	<u>376,629</u>	<u>5</u>
	Other comprehensive income (notes 6(m), (n), (o) and (u)):				
8310	Items that will not be reclassified subsequently to profit or loss:				
8311	Remeasurements of defined benefit plans	(1,397)	-	(2,292)	-
8316	Unrealized losses from investments in equity instruments measured at fair value through other comprehensive income	(11,629)	-	(2,943)	-
8349	Less: income tax related to items that will not be reclassified subsequently to profit or loss	<u>280</u>	<u>-</u>	<u>458</u>	<u>-</u>
		<u>(12,746)</u>	<u>-</u>	<u>(4,777)</u>	<u>-</u>
8360	Items that may be reclassified subsequently to profit or loss:				
8361	Exchange differences on translation of foreign operations	(18,748)	-	(8,106)	-
8399	Less: income tax related to items that may be reclassified subsequently to profit or loss	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
		<u>(18,748)</u>	<u>-</u>	<u>(8,106)</u>	<u>-</u>
	Other comprehensive income for the year, net of income tax	<u>(31,494)</u>	<u>-</u>	<u>(12,883)</u>	<u>-</u>
8500	Total comprehensive income for the year	<u>\$ 258,966</u>	<u>4</u>	<u>363,746</u>	<u>5</u>
8600	Net income attributable to:				
8610	Shareholders of the Company	\$ 290,469	4	376,642	5
8620	Non-controlling interests	(9)	-	(13)	-
		<u>\$ 290,460</u>	<u>4</u>	<u>376,629</u>	<u>5</u>
8700	Total comprehensive income attributable to:				
8710	Shareholders of the Company	\$ 258,973	4	363,769	5
8720	Non-controlling interests	(7)	-	(23)	-
		<u>\$ 258,966</u>	<u>4</u>	<u>363,746</u>	<u>5</u>
	Earnings per share (in New Taiwan dollars) (note 6(q)) :				
9750	Basic earnings per share	\$ 2.88		3.73	
9850	Diluted earnings per share	\$ 2.85		3.68	

See accompanying notes to the consolidated financial statements.

(English Translation of Consolidated Financial Statements Originally Issued in Chinese)

APACER TECHNOLOGY INC. AND SUBSIDIARIES

Consolidated Statements of Changes in Equity

For the years ended December 31, 2020 and 2019

(Expressed in Thousands of New Taiwan Dollars)

	Attributable to shareholders of the Company											
	Retained earnings						Total other equity					
	Common stock	Capital surplus	Legal reserve	Special reserve	Unappropriated earnings	Total	Exchange differences on translation of foreign operations	Unrealized losses on	Total	Total equity of the Company	Non-controlling interests	Total equity
								financial assets measured at fair value through other comprehensive income				
Balance at January 1, 2019	\$ 1,008,978	359,910	308,232	49,321	1,036,382	1,393,935	(41,061)	(26,479)	(67,540)	2,695,283	173	2,695,456
Effects of retrospective application	-	-	-	-	(561)	(561)	-	-	-	(561)	-	(561)
Balance at January 1, 2019 after adjustments	1,008,978	359,910	308,232	49,321	1,035,821	1,393,374	(41,061)	(26,479)	(67,540)	2,694,722	173	2,694,895
Appropriation of earnings:												
Legal reserve	-	-	35,884	-	(35,884)	-	-	-	-	-	-	-
Special reserve	-	-	-	18,219	(18,219)	-	-	-	-	-	-	-
Cash dividends distributed to shareholders	-	-	-	-	(252,245)	(252,245)	-	-	-	(252,245)	-	(252,245)
Net income in 2019	-	-	-	-	376,642	376,642	-	-	-	376,642	(13)	376,629
Other comprehensive income in 2019	-	-	-	-	(1,834)	(1,834)	(8,098)	(2,941)	(11,039)	(12,873)	(10)	(12,883)
Total comprehensive income in 2019	-	-	-	-	374,808	374,808	(8,098)	(2,941)	(11,039)	363,769	(23)	363,746
Balance at December 31, 2019	1,008,978	359,910	344,116	67,540	1,104,281	1,515,937	(49,159)	(29,420)	(78,579)	2,806,246	150	2,806,396
Appropriation of earnings:												
Legal reserve	-	-	37,664	-	(37,664)	-	-	-	-	-	-	-
Special reserve	-	-	-	11,039	(11,039)	-	-	-	-	-	-	-
Cash dividends distributed to shareholders	-	-	-	-	(257,289)	(257,289)	-	-	-	(257,289)	-	(257,289)
Net income in 2020	-	-	-	-	290,469	290,469	-	-	-	290,469	(9)	290,460
Other comprehensive income in 2020	-	-	-	-	(1,117)	(1,117)	(18,749)	(11,630)	(30,379)	(31,496)	2	(31,494)
Total comprehensive income in 2020	-	-	-	-	289,352	289,352	(18,749)	(11,630)	(30,379)	258,973	(7)	258,966
Changes in equity of associates accounted for using equity method	-	1,609	-	-	-	-	-	-	-	1,609	-	1,609
Balance at December 31, 2020	\$ 1,008,978	361,519	381,780	78,579	1,087,641	1,548,000	(67,908)	(41,050)	(108,958)	2,809,539	143	2,809,682

See accompanying notes to the consolidated financial statements.

(English Translation of Consolidated Financial Statements Originally Issued in Chinese)

APACER TECHNOLOGY INC. AND SUBSIDIARIES

Consolidated Statements of Cash Flows

For the years ended December 31, 2020 and 2019

(Expressed in Thousands of New Taiwan Dollars)

	<u>2020</u>	<u>2019</u>
Cash flows from operating activities:		
Income before income tax	\$ 370,669	478,900
Adjustments:		
Depreciation	54,801	60,722
Amortization	13,401	12,009
Expected credit loss	2,847	21,592
Interest expense	3,004	5,086
Interest income	(4,740)	(5,376)
Share of losses of associates	269	884
Loss on disposal of property, plant and equipment	127	416
Subtotal	<u>69,709</u>	<u>95,333</u>
Changes in operating assets and liabilities:		
Changes in operating assets:		
Financial assets at fair value through profit or loss	(754)	(250)
Notes and accounts receivable	72,183	248,873
Accounts receivable from related parties	(267)	507
Inventories	138,014	258,102
Other current assets	<u>17,472</u>	<u>(5,984)</u>
Net changes in operating assets	<u>226,648</u>	<u>501,248</u>
Changes in operating liabilities:		
Financial liabilities at fair value through profit or loss	44	(165)
Notes and accounts payable	(276,423)	(76,558)
Accounts payable to related parties	61,333	49,860
Other payables	(61,852)	(34,537)
Provisions	(4,341)	(940)
Other current liabilities	8,382	(4,637)
Net defined benefit liabilities	<u>(9)</u>	<u>6</u>
Net changes in operating liabilities	<u>(272,866)</u>	<u>(66,971)</u>
Total changes in operating assets and liabilities	<u>(46,218)</u>	<u>434,277</u>
Total adjustments	<u>23,491</u>	<u>529,610</u>
Cash provided by operations	394,160	1,008,510
Interest received	4,715	5,185
Interest paid	(3,073)	(5,015)
Income taxes paid	<u>(58,591)</u>	<u>(108,113)</u>
Net cash provided by operating activities	<u>337,211</u>	<u>900,567</u>

See accompanying notes to the consolidated financial statements.

(English Translation of Consolidated Financial Statements Originally Issued in Chinese)

APACER TECHNOLOGY INC. AND SUBSIDIARIES

Consolidated Statements of Cash Flows (Continued)

For the years ended December 31, 2020 and 2019

(Expressed in Thousands of New Taiwan Dollars)

	<u>2020</u>	<u>2019</u>
Cash flows from investing activities:		
Acquisition of financial assets at fair value through profit or loss	(275,000)	(138,900)
Proceeds from disposal of financial assets at fair value through profit or loss	366,004	-
Acquisition of financial assets at fair value through other comprehensive income	(6,071)	-
Acquisition of property, plant and equipment	(32,812)	(27,220)
Acquisition of intangible assets	(1,277)	(4,141)
Increase in other financial assets—current	(199,919)	(409,700)
Decrease in other financial assets—non-current	847	167
Increase in other non-current assets	<u>(3,296)</u>	<u>(3,651)</u>
Net cash used in investing activities	<u>(151,524)</u>	<u>(583,445)</u>
Cash flows from financing activities:		
Increase (decrease) in short-term loans	23,400	(63,268)
Increase (decrease) in guarantee deposits	5,620	(15,357)
Payment of lease liabilities	(20,528)	(22,657)
Cash dividends distributed to shareholders	<u>(257,289)</u>	<u>(252,245)</u>
Net cash used in financing activities	<u>(248,797)</u>	<u>(353,527)</u>
Effect of foreign exchange rate changes	<u>(15,771)</u>	<u>(8,659)</u>
Net decrease in cash and cash equivalents	<u>(78,881)</u>	<u>(45,064)</u>
Cash and cash equivalents at beginning of year	<u>696,497</u>	<u>741,561</u>
Cash and cash equivalents at end of year	<u><u>\$ 617,616</u></u>	<u><u>696,497</u></u>

See accompanying notes to the consolidated financial statements.

(English Translation of Consolidated Financial Statements Originally Issued in Chinese)

APACER TECHNOLOGY INC. AND SUBSIDIARIES

Notes to the Consolidated Financial Statements

For the years ended December 31, 2020 and 2019

(Expressed in Thousands of New Taiwan Dollars, Unless Otherwise Specified)

1. Organization and business

Apacer Technology Inc. (the “Company”) was incorporated on April 16, 1997 as a company limited by shares under the laws of the Republic of China (“R.O.C.”) and registered under the Ministry of Economic Affairs, R.O.C. The address of the Company’s registered office is 1F, No.32, Zhongcheng Rd., Tucheng Dist., New Taipei City, Taiwan. The Company and its subsidiaries (collectively the “Group”) are engaged in the research and development, design, manufacturing, processing, maintenance and sales of memory modules, flash memory cards and consumer electronic products.

2. Authorization of the consolidated financial statements

These consolidated financial statements were authorized for issuance by the Board of Directors on February 24, 2021.

3. Application of new, revised or amended accounting standards and interpretations:

- (a) The impact of the International Financial Reporting Standards (“IFRSs”) endorsed by the Financial Supervisory Commission, R.O.C. (“FSC”) which have already been adopted.

The Group has initially adopted the following new amendments, which do not have a significant impact on its consolidated financial statements, from January 1, 2020:

- Amendments to IFRS 3 “Definition of a Business”
- Amendments to IFRS 9, IAS39 and IFRS7 “Interest Rate Benchmark Reform”
- Amendments to IAS 1 and IAS 8 “Definition of Material”
- Amendments to IFRS 16 “COVID-19-Related Rent Concessions”

- (b) The impact of IFRS endorsed by the FSC but not yet effective

The Group assesses that the adoption of the following new amendments, effective for annual period beginning on January 1, 2021, would not have a significant impact on its consolidated financial statements:

- Amendments to IFRS 4 “Extension of the Temporary Exemption from Applying IFRS 9”
- Amendments to IFRS 9, IAS39, IFRS7, IFRS 4 and IFRS 16 “Interest Rate Benchmark Reform—Phase 2”

APACER TECHNOLOGY INC. AND SUBSIDIARIES
Notes to the Consolidated Financial Statements

- (c) The impact of IFRS issued by IASB but not yet endorsed by the FSC

The following new and amended standards, which may be relevant to the Group, have been issued by the International Accounting Standards Board (IASB), but have yet to be endorsed by the FSC:

Standards or Interpretations	Content of amendment	Effective date per IASB
Amendments to IAS 1 “Classification of Liabilities as Current or Non-current”	The amendments aim to promote consistency in applying the requirements by helping companies determine whether, in the balance sheet, debt and other liabilities with an uncertain settlement date should be classified as current (due or potentially due to be settled within one year) or non-current. The amendments include clarifying the classification requirements for debt a company might settle by converting it into equity.	January 1, 2023
Amendments to IAS 37 “Onerous Contracts—Cost of Fulfilling a Contract”	The amendments clarify that the ‘costs of fulfilling a contract’ comprises the costs that relate directly to the contract as follows: • the incremental costs – e.g. direct labor and materials; and • an allocation of other direct costs – e.g. an allocation of the depreciation charge for an item of property, plant and equipment used in fulfilling the contract.	January 1, 2022

The Group is evaluating the impact of its initial adoption of the abovementioned standards or interpretations on its consolidated financial position and consolidated financial performance. The results thereof will be disclosed when the Group completes its evaluation.

The Group does not expect the following other new and amended standards, which have yet to be endorsed by the FSC, to have a significant impact on its consolidated financial statements:

- Amendments to IFRS 10 and IAS 28 “Sale or Contribution of Assets Between an Investor and Its Associate or Joint Venture”
- IFRS 17 “Insurance Contracts” and amendments to IFRS 17 “Insurance Contracts”
- Amendments to IAS 16 “Property, Plant and Equipment—Proceeds before Intended Use”
- Annual Improvements to IFRS Standards 2018-2020
- Amendments to IFRS 3 “Reference to the Conceptual Framework”

APACER TECHNOLOGY INC. AND SUBSIDIARIES
Notes to the Consolidated Financial Statements

4. Summary of significant accounting policies:

The significant accounting policies presented in the consolidated financial statements are summarised as follows. The following accounting policies were applied consistently throughout the periods presented in these financial statements.

(a) Statement of compliance

The Group's accompanying consolidated financial statements have been prepared in accordance with the Regulations Governing the Preparation of Financial Reports by Securities Issuers (the "Regulations") and the IFRSs, IASs, IFRIC Interpretations, and SIC Interpretations endorsed and issued into effect by the FSC (collectively as "Taiwan-IFRSs").

(b) Basis of preparation

(i) Basis of measurement

The accompanying consolidated financial statements have been prepared on a historical cost basis except for the following items in the balance sheets:

- 1) Financial instruments measured at fair value through profit or loss (including derivative financial instruments);
- 2) Financial assets at fair value through other comprehensive income; and
- 3) Defined benefit liabilities are recognized as the present value of the defined benefit obligation less fair value of the plan assets and the effect of the asset ceiling mentioned in note 4(p).

(ii) Functional and presentation currency

The functional currency of each Group entity is determined based on the primary economic environment in which the entity operates. The Group's consolidated financial statements are presented in New Taiwan dollars, which is the Company's functional currency. Except when otherwise indicated, all financial information presented in New Taiwan dollars has been rounded to the nearest thousand.

(c) Basis of consolidation

(i) Principles of preparation of consolidated financial statements

The accompanying consolidated financial statements incorporate the financial statements of the Company and its controlled entities (the subsidiaries). The Company controls an investee when it is exposed, or has rights, to variable return from its involvement with the investee and has the ability to affect those returns through its power over the investee.

APACER TECHNOLOGY INC. AND SUBSIDIARIES

Notes to the Consolidated Financial Statements

The financial statements of the subsidiaries are included in the consolidated financial statements from the date that control commences until the date that control ceases. Intra-group balances and transactions, and any unrealized profit and loss arising from intra-group transactions are eliminated in preparing the consolidated financial statements. Total comprehensive income of subsidiaries is attributed to the shareholders of the Company and to the non-controlling interests even if this results in the non-controlling interests having a deficit balance.

When necessary, financial statements of subsidiaries are adjusted to align their accounting policies with those adopted by the Company.

Changes in the Group's ownership interest in a subsidiary that do not result in a loss of control are accounted for as equity transactions. The difference between the adjustment of the non-controlling interest and the fair value of the payment or receipt is recognized as equity and belongs to the Company.

(ii) List of subsidiaries in the consolidated financial statements

The subsidiaries included in the consolidated financial statements were as follows:

Name of Investor	Name of Investee	Main Business and Products	Percentage of Ownership	
			December 31, 2020	December 31, 2019
The Company	Apacer Memory America Inc. (AMA)	Sales of memory modules, flash memory cards and consumer electronic products	100.00 %	100.00 %
The Company	Apacer Technology B.V. (AMH)	Sales of memory modules, flash memory cards and consumer electronic products	100.00 %	100.00 %
The Company	Apacer Technology Japan Corp. (AMJ)	Sales of memory modules, flash memory cards and consumer electronic products	100.00 %	100.00 %
The Company	Kingdom Corp. Limited (AMK)	Sales of memory modules, flash memory cards and consumer electronic products	100.00 %	100.00 %
The Company /ACYB	Apacer Technologies Private Limited (ATPL)	Sales of memory modules, flash memory cards and consumer electronic products	100.00 %	100.00 %
The Company	Apacer Technology (BVI) Inc. (ACYB)	Investment holding activity	100.00 %	100.00 %
ACYB	Apacer Electronic (Shanghai) Co., Ltd. (AMC)	Sales of memory modules, flash memory cards and consumer electronic products	100.00 %	100.00 %
AMK	Shenzhen Kylinesports Technology Co. (AMS)	Sales of gaming products and consumer electronic products	99.00 %	99.00 %

(iii) List of subsidiaries which are not included in the consolidated financial statements: None.

APACER TECHNOLOGY INC. AND SUBSIDIARIES
Notes to the Consolidated Financial Statements

(d) Foreign currency

(i) Foreign currency transactions

Foreign currency transactions are translated into the functional currency using the exchange rates prevailing at the dates of the transactions. At the end of each subsequent reporting period, monetary items denominated in foreign currencies are translated into the functional currencies using the exchange rate at that date. Non-monetary items denominated in foreign currencies that are measured at fair value are translated into the functional currencies using the exchange rate at the date that the fair value was determined. Non-monetary items denominated in foreign currencies that are measured based on historical cost are translated using the exchange rate at the date of the transaction.

Exchange differences are generally recognized in profit or loss, except for those differences relating to equity investments designated as at fair value through other comprehensive income, which are recognized in other comprehensive income.

(ii) Foreign operations

The assets and liabilities of foreign operations, including goodwill and fair value adjustments arising from acquisition, are translated into the presentation currency of the Group's consolidated financial statements at the exchange rates at the reporting date. The income and expenses of foreign operations are translated into the presentation currency of the Group's consolidated financial statements at the average exchange rates for the period. All resulting exchange differences are recognized in other comprehensive income.

On the disposal of a foreign operation which involves a loss of control over a subsidiary or a loss of significant influence over an associate that includes a foreign operation, all of the exchange differences accumulated in equity in respect of that operation attributable to the shareholders of the Group are entirely reclassified to profit or loss. In the case of a partial disposal that does not result in the Group losing control over a subsidiary, the proportionate share of accumulated exchange differences is reclassified to non-controlling interests. For a partial disposal of the Group's ownership interest in an associate, the proportionate share of the accumulated exchange differences in equity is reclassified to profit or loss.

When the settlement of a monetary receivable from or payable to a foreign operation is neither planned nor likely to occur in the foreseeable future, the monetary item is, in substance, a part of net investment in that foreign operation, and the related foreign exchange gains and losses thereon are recognized as other comprehensive income.

(e) Classification of current and non-current assets and liabilities

An asset is classified as current when one of following criteria is met; all other assets are classified as non-current assets.

- (i) It is expected to be realized, or sold or consumed in the normal operating cycle;
- (ii) It is held primarily for the purpose of trading;
- (iii) It is expected to be realized within twelve months after the end of the reporting period ("the reporting date"); or

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- (iv) The asset is cash or a cash equivalent unless the asset is restricted from being exchanged or used to settle a liability for at least twelve months after the reporting date.

A liability is classified as current when one of following criteria is met; all other liabilities are classified as non-current liabilities:

- (i) It is expected to be settled in the normal operating cycle;
- (ii) It is held primarily for the purpose of trading;
- (iii) It is due to be settled within twelve months after the reporting date; or
- (iv) The Group does not have an unconditional right to defer settlement of the liability for at least twelve months after the reporting date.

(f) Cash and cash equivalents

Cash consists of cash on hand, checking deposits, and demand deposits. Cash equivalents consist of short-term and highly liquid investments that are readily convertible to known amounts of cash and are subject to an insignificant risk of changes in value. Time deposits that meet the aforesaid criteria and are held for meeting short-term cash commitments instead of holding for investing and other purposes are also classified as cash equivalents.

(g) Financial instruments

Accounts receivables and debt securities issued are initially recognized when they are originated. All other financial assets and financial liabilities are initially recognized when the Group becomes a party to the contractual provisions of the instrument. A financial asset (unless it is an accounts receivable without a significant financing component) or financial liability is initially measured at fair value plus, for an item not at fair value through profit or loss (FVTPL), transaction costs that are directly attributable to its acquisition or issue. An accounts receivable without a significant financing component is initially measured at the transaction price.

(i) Financial assets

On initial recognition, financial assets are classified into the following categories: measured at amortized cost, fair value through other comprehensive income (FVOCI) and fair value through profit or loss (FVTPL). Regular way purchases or sales of financial assets are recognized or derecognized on a trade-date basis.

The Group shall reclassify all affected financial assets only when it changes its business model for managing its financial assets, in which case all affected financial assets are reclassified on the first day of the first reporting period following the change in the business model.

1) Financial assets measured at amortized cost

A financial asset is measured at amortized cost if it meets both of the following conditions and is not designated as at FVTPL:

- it is held within a business model whose objective is to hold assets to collect contractual cash flows; and

APACER TECHNOLOGY INC. AND SUBSIDIARIES

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- its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

These assets are subsequently measured at amortized cost, which is the amount at which the financial asset is measured at initial recognition, plus/minus, the cumulative amortization using the effective interest method, adjusted for any loss allowance. Interest income, foreign exchange gains and losses, as well as impairment, are recognized in profit or loss. Any gain or loss on derecognition is recognized in profit or loss.

- 2) Financial assets at fair value through other comprehensive income (Financial assets at "FVOCI")

A debt investment is measured at FVOCI if it meets both of the following conditions and is not designated as at FVTPL:

- it is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets; and
- its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

On initial recognition of an equity investment that is not held for trading, the Group may irrevocably elect to present subsequent changes in the investment's fair value in other comprehensive income. This election is made on an instrument-by-instrument basis.

Debt investments at FVOCI are subsequently measured at fair value. Interest income calculated using the effective interest method, foreign exchange gains and losses and impairment are recognized in profit or loss. Other net gains and losses are recognized in other comprehensive income. On derecognition, gains and losses accumulated in other comprehensive income are reclassified to profit or loss.

Equity investments at FVOCI are subsequently measured at fair value. Dividends are recognized as income in profit or loss unless the dividend clearly represents a recovery of part of the cost of the investment. Other net gains and losses are recognized in other comprehensive income. On derecognition, gains and losses accumulated in other comprehensive income are reclassified to retained earnings instead of profit or loss.

Dividend income derived from equity investments is recognized in profit or loss on the date on which the Group's right to receive payment is established, which in the case of quoted securities is normally the ex-dividend date.

- 3) Financial assets at fair value through profit or loss (Financial assets at "FVTPL")

All financial assets not classified as amortized cost or FVOCI described as above are measured at FVTPL, including derivative financial assets. On initial recognition, the Group may irrevocably designate a financial asset, which meets the requirements to be measured at amortized cost or at FVOCI, as at FVTPL if doing so eliminates or significantly reduces an accounting mismatch that would otherwise arise.

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These assets are subsequently measured at fair value. Net gains and losses, including any interest or dividend income, are recognized in profit or loss.

4) Assessment whether contractual cash flows are solely payments of principal and interest

For the purposes of this assessment, ‘principal’ is defined as the fair value of the financial assets on initial recognition. ‘Interest’ is defined as consideration for the time value of money and for the credit risk associated with the principal amount outstanding during a particular period of time and for other basic lending risks and costs, as well as a profit margin.

In assessing whether the contractual cash flows are solely payments of principal and interest, the Group considers the contractual terms of the instrument. This includes assessing whether the financial asset contains a contractual term that could change the timing or amount of contractual cash flows such that it would not meet this condition. In making this assessment, the Group considers:

- contingent events that would change the amount or timing of cash flows;
- terms that may adjust the contractual coupon rate, including variable rate features;
- prepayment and extension features; and
- terms that limit the Group’s claim to cash flows from specified assets (e.g. non-recourse features)

5) Impairment of financial assets

The Group recognizes loss allowances for expected credit losses on financial assets measured at amortized cost (including cash and cash equivalents, notes and accounts receivable and other financial assets).

The Group measures loss allowances at an amount equal to lifetime expected credit loss (ECL), except for the following which are measured as 12-month ECL:

- bank balances for which credit risk (i.e. the risk of default occurring over the expected life of the financial instrument) has not increased significantly since initial recognition.

Loss allowance for accounts receivables are always measured at an amount equal to lifetime ECL.

Lifetime ECLs are the ECLs that result from all possible default events over the expected life of a financial instrument. 12-month ECLs are the portion of ECLs that result from default events that are possible within the 12 month after the reporting date (or a shorter period if the expected life of the instrument is less than 12 months).

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The maximum period considered when estimating ECLs is the maximum contractual period over which the Group is exposed to credit risk.

When determining whether the credit risk of a financial asset has increased significantly since initial recognition and when estimating ECL, the Group considers reasonable and supportable information that is relevant and available without undue cost or effort. This includes both quantitative and qualitative information and analysis based on the Group's historical experience and informed credit assessment as well as forward-looking information.

ECLs are probability-weighted estimate of credit losses. Credit losses are measured as the present value of all cash shortfalls (i.e. the difference between the cash flows due to the Group in accordance with the contract and the cash flows that the Group expects to receive). ECLs are discounted at the effective interest rate of the financial asset.

Loss allowances for financial assets measured at amortized cost are deducted from the gross carrying amount of the assets.

The gross carrying amount of a financial asset is written off, either partially or in full, to the extent that there is no realistic prospect of recovery. The Group individually makes an assessment with respect to the timing and amount of write-off based on whether there is a reasonable expectation of recovery. The Group expects no significant recovery from the amount written off. However, financial assets that are written off could still be subject to enforcement activities in order to comply with the Group's procedures for recovery of amounts due.

6) Derecognition of financial assets

The Group derecognizes a financial assets when the contractual rights to the cash flows from the financial assets expire, or it transfers the rights to receive the contractual cash flows in a transaction in which substantially all of the risks and rewards of ownership of the financial assets are transferred or in which the Group neither transfers nor retains substantially all of the risks and rewards of ownership and it does not retain control of the financial assets.

The Group enters into transactions whereby it transfers assets recognized in its statement of balance sheet, but retains either all or substantially all of the risks and rewards of the transferred assets. In these cases, the transferred assets are not derecognized.

(ii) Financial liabilities

1) Financial liabilities

Financial liabilities are classified as measured at amortized cost or FVTPL. A financial liability is classified as at FVTPL if it is classified as held-for-trading, it is a derivative or it is designated as such on initial recognition. Financial liabilities at FVTPL are measured at fair value and net gains and losses, including any interest expense, are recognized in profit or loss.

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Financial liabilities measured at amortized cost are subsequently measured at amortized cost using the effective interest method. Interest expense and foreign exchange gains and losses are recognized in profit or loss. Any gain or loss on derecognition is also recognized in profit or loss.

2) Derecognition of financial liabilities

The Group derecognizes a financial liability when its contractual obligation has been fulfilled or cancelled, or has expired. The Group also derecognizes a financial liability when its terms are modified and the cash flows of the modified liability are substantially different, in which case a new financial liability based on the modified terms is recognized at fair value.

The difference between the carrying amount of a financial liability derecognized and the consideration paid (including any non-cash assets transferred or liabilities assumed) is recognized in profit or loss.

3) Offsetting of financial assets and liabilities

Financial assets and liabilities are offset and the net amount presented in the statement of balance sheet when, and only when, the Group currently has a legally enforceable right to set off the amounts and it intends either to settle them on a net basis or to realize the asset and settle the liability simultaneously.

(iii) Derivative financial instruments

Derivative financial instruments such as foreign currency forward contracts are held to hedge the Group's foreign currency exposures. Derivatives are recognized initially at fair value, and attributable transaction costs are recognized in profit or loss as incurred. Subsequent to initial recognition, derivatives are measured at fair value, and changes therein are recognized in profit or loss. If the valuation of a derivative instrument results in a positive fair value, it is classified as a financial asset; otherwise, it is classified as a financial liability.

(h) Inventories

Inventories are measured at the lower of cost and net realizable value. The cost of inventories is calculated based on the weighted-average method and includes expenditure incurred in acquiring the inventories, production or conversion costs, and other costs incurred in bringing them to the location and condition ready for sale. Fixed manufacturing overhead is allocated to finished products and work in process based on the higher of normal capacity or actual capacity; variable manufacturing overhead is allocated based on the actual capacity of machinery and equipment. Net realizable value represents the estimated selling price in the ordinary course of business, less all estimated costs of completion and necessary selling expenses.

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(i) Investment in associates

Associates are those entities in which the Group has significant influence, but not control or joint venture, over the financial and operating policies.

Investments in associates are accounted for using the equity method and are recognized initially at cost, plus, any transaction costs. The carrying amount of the investment in associates includes goodwill identified on acquisition, net of any accumulated impairment losses. When necessary, the entire carrying amount of the investment (including goodwill) will be tested for impairment as a single asset by comparing its recoverable amount with its carrying amount. 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.

The Group's financial statements include the Group's share of the profit or loss and other comprehensive income of those associates, after adjustments to align their accounting policies with those of the Group, from the date on which significant influence commences until the date on which significant influence ceases. When changes in an associate's equity are not recognized in profit or loss or other comprehensive income of the associate, and such changes do not affect the Group's ownership percentage of the associate, the Group recognizes the change in ownership interests of its associate as "capital surplus" in proportion to its ownership.

Gains and losses resulting from transactions between the Group and an associate are recognized only to the extent of unrelated Group's interests in the associate.

When the Group's share of losses in an associate equals or exceeds its interest in the associate, the recognition of further losses is discontinued. Additional losses are provided for, and a liability is recognized, only to the extent that the Group has incurred legal or constructive obligations or made payments on behalf of the associate.

When an associate issues new shares and the Group does not subscribe to the new shares in proportion to its original ownership percentage, the Group's interest in the associate's net assets will be changed. The change in the equity interest is adjusted through the capital surplus and investment accounts. If the Group's capital surplus is insufficient to offset the adjustment to investment accounts, the difference is charged as a reduction of retained earnings. If the Group's interest in an associate is reduced due to the additional subscription to the shares of associate by other investors, the proportionate amount of the gains or losses previously recognized in other comprehensive income in relation to that associate shall be reclassified to profit or loss on the same basis as would be required if the associate had directly disposed of the related assets or liabilities.

(j) Property, plant and equipment

(i) Recognition and measurement

Items of property, plant and equipment are measured at cost, which includes capitalized borrowing costs, less accumulated depreciation and accumulated impairment losses.

If significant parts of an item of property, plant and equipment have different useful lives, they are accounted for as separate items (major components) of property, plant and equipment.

Any gain or loss on disposal of an item of property, plant and equipment is recognized in profit or loss.

APACER TECHNOLOGY INC. AND SUBSIDIARIES
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(ii) Subsequent expenditure

Subsequent expenditure is capitalized only if it is probable that future economic benefits associated with the expenditure will flow to the Group.

(iii) Depreciation

Depreciation is calculated on the cost of an asset less its residual value and is recognized in profit or loss on a straight-line basis over the estimated useful lives of each component of an item of property, plant and equipment. Land is not depreciated.

The estimated useful lives for property, plant and equipment are as follows: buildings and improvements: 4 to 47 years; machinery and equipment: 2 to 11 years; and other equipment: 3 to 15 years.

Depreciation methods, useful lives, and residual values are reviewed at each reporting date, with the effect of any changes in estimate accounted for on a prospective basis.

(k) Leases

(i) Identifying a lease

At inception of a contract, the Group assesses whether a contract is, or contains, a lease. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration. To assess whether a contract conveys the right to control the use of an identified asset, the Group assesses whether:

- 1) the contract involves the use of an identified asset – this may be specified explicitly or implicitly, and should be physically distinct or represent substantially all of the capacity of a physically distinct asset. If the supplier has a substantive substitution right, then the asset is not identified; and
- 2) the Group has the right to obtain substantially all of the economic benefits from use of the asset throughout the period of use; and
- 3) the Group has the right to direct the use of the asset if either:
 - The Group has the right to direct the use of the asset when it has the decision-making rights that are most relevant to change how and for what purpose the asset is used; or
 - In rare cases where the decision about how and for what purpose the asset is predetermined; and
 - the Group has the right to operate the asset and the providers do not have the right to vary; or
 - the Group designed the asset in a way that predetermines how and for what purpose it will be used.

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(ii) As a lessee

The Group recognizes a right-of-use asset and a lease liability at the lease commencement date. The right-of-use asset is initially measured at cost, which comprises the initial amount of the lease liability adjusted for any lease payments made at or before the commencement date, plus any initial direct costs incurred and an estimate of costs to dismantle and remove the underlying asset or to restore the underlying asset or the site on which it is located, less any lease incentives received.

The right-of-use asset is subsequently depreciated using the straight-line method from the commencement date to the earlier of the end of the useful life of the right-of-use asset or the end of the lease term. In addition, the right-of-use asset is periodically reduced by impairment losses, if any, and adjusted for certain remeasurements of the lease liability.

The lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date, discounted using the interest rate implicit in the lease or, if that rate cannot be reliably determined, the Group's incremental borrowing rate. Generally, the Group uses its incremental borrowing rate as the discount rate.

Lease payments included in the measurement of the lease liability comprise the following:

- fixed payments, including in-substance fixed payments;
- variable lease payments that depend on an index or a rate, initially measured using the index or rate as at the commencement date.

The lease liability is measured at amortized cost using the effective interest method. It is remeasured when:

- there is a change in future lease payments arising from the change in an index or rate; or
- there is a change of its assessment on whether it will exercise an extension or termination option; or
- there is any lease modifications in lease subject, scope of the lease or other terms.

When the lease liability is remeasured, other than lease modifications, a corresponding adjustment is made to the carrying amount of the right-of-use asset, or in profit and loss if the carrying amount of the right-of-use asset has been reduced to zero.

When the lease liability is remeasured to reflect the partial or full termination of the lease for lease modifications that decrease the scope of the lease, the Group accounts for the remeasurement of the lease liability by decreasing the carrying amount of the right-of-use asset to reflect the partial or full termination of the lease, and recognize the difference in profit or loss relating to the partial or full termination of the lease.

The Group presents right-of-use assets that do not meet the definition of investment properties, and lease liabilities as a separate line item respectively in the consolidated balance sheets.

APACER TECHNOLOGY INC. AND SUBSIDIARIES

Notes to the Consolidated Financial Statements

The Group has elected not to recognize right-of-use assets and lease liabilities for short-term leases of office equipments. The Group recognizes the lease payments associated with these leases as an expense on a straight-line basis over the lease term.

(l) Intangible assets

The Group's intangible assets are carried at cost less accumulated amortization and accumulated impairment losses. Amortization is recognized in profit or loss using the straight-line method over the following estimated useful lives: acquired computer software: 2 to 10 years; royalties for the use of patents: 13 to 20 years.

Amortization methods, useful lives and residual values are reviewed at each reporting date and adjusted if appropriate.

(m) Impairment of non-financial assets

Non-financial assets other than inventories, deferred income tax assets, and assets arising from employee benefits are reviewed for impairment at each reporting date to determine whether there is any indication of impairment. When there exists an indication of impairment for an asset, the recoverable amount of the asset is estimated. If the recoverable amount of an individual asset cannot be determined, the Group estimates the recoverable amount of the cash-generating units ("CGU") to which the asset has been allocated.

The recoverable amount for an individual asset or a CGU is the higher of its fair value less costs to sell or its value in use. When the recoverable amount of an asset or a CGU is less than its carrying amount, the carrying amount of the asset or CGU is reduced to its recoverable amount, and an impairment loss is recognized in profit or loss immediately.

The Group assesses at each reporting date whether there is any evidence that an impairment loss recognized in prior periods for an asset other than goodwill may no longer exist or may have decreased. If so, an impairment loss recognized in prior periods for an asset other than goodwill is reversed, and the carrying amount of the asset or CGU is increased to its revised estimate of recoverable amount. The increased carrying amount shall not exceed the carrying amount (net of amortization or depreciation) that would have been determined had no impairment loss been recognized in prior years.

(n) Provisions

Provisions are recognized when the Group has a present obligation (legal or constructive) as a result of a past event, it is probable that the Group will be required to settle the obligation, and a reliable estimate can be made of the amount of the obligation.

(i) Warranties

A provision for warranties is recognized when the underlying products or services are sold. This provision reflects the historical warranty claim rate and the weighting of all possible outcomes against their associated probabilities.

APACER TECHNOLOGY INC. AND SUBSIDIARIES
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(ii) Sales return and allowances provision

A provision for sales returns and allowances is recognized when the underlying products are sold. This provision is estimated based on historical sales return and allowances data.

(o) Revenue recognition

Revenue is measured based on the consideration to which the Group expects to be entitled in exchange for transferring goods to a customer. The Group recognizes revenue when it satisfies a performance obligation by transferring control of a good to a customer.

(i) Sale of goods

The Group recognizes revenue when control of the goods has been transferred to the customer, being when the goods have been delivered to the customer, and there is no unfulfilled obligation that could affect the customer's acceptance of the goods. Delivery occurs when the customer has accepted the goods in accordance with the terms of sales, the risks of obsolescence and loss have been transferred to the customer, and the Group has objective evidence that all criteria for acceptance have been satisfied.

A receivable is recognized when the goods are delivered as this is the point in time that the Group has a right to an amount of consideration that is unconditional.

(ii) Financing components

The Group does not expect that the period between the transfer of the promised goods to the customer and payment by the customer exceeds one year. As a consequence, the Group does not adjust any of the transaction prices for the time value of money.

(p) Employee benefits

(i) Defined contribution plans

Obligations for contributions to defined contribution pension plans are expensed during the year in which employees render services.

(ii) Defined benefit plans

The Group's net obligation in respect of defined benefit plans is calculated separately for each plan by estimating the amount of future benefit that employees have earned in the current and prior periods, discounting that amount and deducting the fair value of any plan assets. The discount rate for calculating the present value of the defined benefit obligation refers to the interest rate of high-quality government bonds that are denominated in the currency in which the benefits will be paid, and that have terms to maturity approximating the term of the related pension obligation. The defined benefit obligation is calculated annually by qualified actuaries using the projected unit credit method.

When the benefits of a plan are improved, the expense related to the increased obligations resulting from the services rendered by employees in the past years are recognized in profit or loss immediately.

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The remeasurements of the net defined benefit liability (asset) comprise (i) actuarial gains and losses; (ii) return on plan assets, excluding amounts included in net interest on the net defined benefit liability (asset); and (iii) any change in the effect of the asset ceiling, excluding amounts included in net interest on the net defined benefit liability (asset). The remeasurements of the net defined benefit liabilities (asset) are recognized in other comprehensive income and then transferred to retained earnings.

The Group recognizes gains or losses on the curtailment or settlement of a defined benefit plan when the curtailment or settlement occurs. The gain or loss on curtailment or settlement comprises any resulting change in the fair value of plan assets and any change in the present value of the defined benefit obligation.

(iii) Short-term employee benefits

Short-term employee benefit obligations are measured on an undiscounted basis and are expensed during the period in which employees render services. A liability is recognized for the amount expected to be paid under short-term cash bonus or profit-sharing plans if the Group has a present legal or constructive obligation to make such payments as a result of past service provided by the employees, and the obligation can be estimated reliably.

(q) Income taxes

Income taxes comprise current taxes and deferred taxes. Current and deferred taxes are recognized in profit or loss unless they relate to items recognized directly in equity or other comprehensive income.

Current taxes comprise the expected tax payables or receivables on the taxable profits (losses) for the year and any adjustment to the tax payable or receivable in respect of previous years. The amount of current tax payables or receivables are the best estimate of the tax amount expected to be paid or received that reflects uncertainty related to income taxes, if any. It is measured using tax rates enacted or substantively enacted at the reporting date.

Deferred income taxes are recognized in respect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. Deferred taxes are not recognized for:

- (i) Temporary differences on the initial recognition of assets or liabilities in a transaction that is not a business combination and that affects neither accounting nor taxable profit (losses) at the time of transaction;
- (ii) Temporary differences related to investments in subsidiaries and associates to the extent that the Group is able to control the timing of the reversal of the temporary differences and it is probable that they will not reverse in the foreseeable future; and
- (iii) Taxable temporary differences arising on the initial recognition of goodwill.

Deferred taxes are measured at tax rates that are expected to be applied to temporary differences when they reverse, using tax rates enacted or substantively enacted at the reporting date, and reflect uncertainty related to income taxes, if any.

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Deferred tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets against current tax liabilities and when the deferred tax assets and liabilities relate to income taxes levied by the same tax authority on either the same taxable entity or different taxable entities where there is an intention to settle the balances on a net basis.

Deferred tax assets are recognized for unused tax losses, tax credits, and deductible temporary differences to the extent that it is probable that future taxable profits will be available against which they can be utilized. Deferred tax assets are reviewed at each reporting date and reduced to the extent that it is no longer probable that the related tax benefit will be realized; such reductions are reversed when the probability of future taxable profits improves.

(r) Earnings per share (“EPS”)

The basic and diluted EPS attributable to shareholders of the Company are disclosed in the consolidated financial statements. Basic EPS is calculated by dividing net income attributable to shareholders of the Company by the weighted-average number of common shares outstanding during the year. Diluted EPS is calculated as the net income attributable to shareholders of the Company divided by the weighted-average number of common shares outstanding during the year after adjustment for the effects of all potentially dilutive common shares such as employee compensation.

(s) Operating segments

An operating segment is a component of the Group that engages in business activities from which it may earn revenues and incur expenses (including revenues and expenses relating to transactions with other components of the Group). Operating results of the operating segment are regularly reviewed by the Group’s chief operating decision maker to make decisions on the allocation of resources to the segment and to assess its performance for which discrete financial information is available.

5. Critical accounting judgments and key sources of estimation uncertainty

The preparation of the consolidated financial statements in conformity with the Regulations and Taiwan-IFRSs requires management to make judgments, estimates, and assumptions that affect the application of the accounting policies and the reported amount of assets, liabilities, income and expenses. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimates are revised and the future periods affected.

Information about assumptions and estimation uncertainties that have a significant risk of resulting in a material adjustment to the carrying amounts of assets and liabilities within the next financial year is as follows. Those assumptions and estimation have been updated to reflect the impact of COVID-19 pandemic:

Inventories are measured at the lower of cost or net realizable value. The Group estimates the net realizable value of inventory, taking into account obsolescence and unmarketable items at the reporting date, and then writes down the cost of inventories to net realizable value. The net realizable value of the inventory is mainly determined based on assumptions of future demand within a specific time horizon, which could result in significant adjustments. Refer to note 6(e) for more details of the valuation of inventories.

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Notes to the Consolidated Financial Statements

6. Significant account disclosures

(a) Cash and cash equivalents

	December 31, 2020	December 31, 2019
Cash on hand	\$ 53	61
Demand deposits	496,308	506,852
Time deposits with original maturities less than three months	<u>121,255</u>	<u>189,584</u>
	<u>\$ 617,616</u>	<u>696,497</u>

As of December 31, 2020 and 2019, the time deposits with original maturities of more than three months amounted to \$609,619 and \$409,700, respectively, which were classified as other financial assets — current.

(b) Financial assets and liabilities at fair value through profit or loss — current

	December 31, 2020	December 31, 2019
Financial assets mandatorily at fair value through profit or loss — current:		
Foreign currency forward contracts	\$ 233	77
Open-ended mutual funds	<u>49,121</u>	<u>139,527</u>
	<u>\$ 49,354</u>	<u>139,604</u>
	December 31, 2020	December 31, 2019
Financial liabilities held for trading — current:		
Foreign currency forward contracts	<u>\$ (168)</u>	<u>(124)</u>

Refer to note 6(t) for the detail of the changes in fair value recognized in profit or loss.

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Notes to the Consolidated Financial Statements

The Group entered into derivative contracts to manage foreign currency exchange risk resulting from its operating activities. As of December 31, 2020 and 2019, the derivative financial instruments that did not conform to the criteria for hedge accounting consisted of the following:

December 31, 2020					
Financial assets— foreign currency forward contracts	Contract amount (in thousands)		Fair value	Currency (Sell / Buy)	Maturity period
	JPY	18,900	\$ 31	JPY / TWD	2021/01/29~2021/02/26
	CNY	7,960	81	CNY / TWD	2021/01/29~2021/02/26
	USD	5,000	121	USD / TWD	2021/01/08~2021/01/22
			\$ 233		
December 31, 2019					
Financial assets— foreign currency forward contracts	Contract amount (in thousands)		Fair value	Currency (Sell / Buy)	Maturity period
	JPY	18,200	\$ 46	JPY / TWD	2020/01/30
	CNY	6,010	31	CNY / TWD	2020/01/30~2020/02/27
			\$ 77		
	December 31, 2020				
Financial liabilities— foreign currency forward contracts	Contract amount (in thousands)		Fair value	Currency (Sell / Buy)	Maturity period
	JPY	14,000	\$ (16)	JPY / TWD	2021/02/26
	CNY	6,460	(152)	CNY / TWD	2021/01/29~2020/02/26
			\$ (168)		

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December 31, 2019					
	Contract amount		Fair value	Currency	Maturity period
	(in thousands)			(Sell / Buy)	
Financial liabilities – foreign currency forward contracts	JPY	23,500	\$ (38)	JPY / TWD	2020/01/30 ~ 2020/02/27
	CNY	4,260	(86)	CNY / TWD	2020/01/30 ~ 2020/02/27
			<u><u>\$ (124)</u></u>		

(c) Financial assets at fair value through other comprehensive income – non-current

	December 31, 2020	December 31, 2019
Equity investments at fair value through other comprehensive income:		
Domestic unlisted stocks	\$ 36,110	41,748
Foreign unlisted stocks	<u>311</u>	<u>246</u>
	<u><u>\$ 36,421</u></u>	<u><u>41,994</u></u>

The Group designated the abovementioned investments as at fair value through other comprehensive income because these equity investments represent those investments that the Group intends to hold for long-term strategic purposes.

No strategic investments were disposed for the years ended December 31, 2020 and 2019, and there were no transfers of any cumulative gain or loss within equity relating to these investments.

(d) Notes and accounts receivable

	December 31, 2020	December 31, 2019
Notes and accounts receivable	\$ 836,904	928,793
Accounts receivable from related parties	<u>799</u>	<u>532</u>
	837,703	929,325
Less: loss allowance	<u>(8,293)</u>	<u>(25,152)</u>
	<u><u>\$ 829,410</u></u>	<u><u>904,173</u></u>

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As of December 31, 2020 and 2019, aside from recognizing impairment loss for credit-impaired accounts receivable amounting to \$80 and \$20,024, respectively, for notes and accounts receivable with gross carrying amounts of \$80 and \$20,024, respectively, as there was objective evidence indicating that, under reasonable expectation, they would not be recovered in total. The Group applies the simplified approach to measure its expected credit losses, i.e. the use of lifetime expected loss provision for all receivables (including related parties), as well as the incorporated forward-looking information. The loss allowance provision were determined as follows:

	December 31, 2020		
	Gross carrying amount	Weighted- average loss rate	Loss allowance provision
Current	\$ 786,644	0.01%	79
Past due 1-90 days	43,739	2.1515%	941
Past due 91-180 days	4,877	99.0457%	4,830
Past due over 181 days	2,363	100%	2,363
	\$ 837,623		8,213

	December 31, 2019		
	Gross carrying amount	Weighted- average loss rate	Loss allowance provision
Current	\$ 796,531	0.058%	464
Past due 1-90 days	110,248	1.944%	2,143
Past due 91-180 days	4	75%	3
Past due over 181 days	2,518	100%	2,518
	\$ 909,301		5,128

Movements of the loss allowance for notes and accounts receivable (including related parties) were as follows:

	2020	2019
Balance at January 1	\$ 25,152	4,270
Impairment loss recognized	2,847	21,592
Write-off	(19,697)	(710)
Effect of exchange rate change	(9)	-
Balance at December 31	\$ 8,293	25,152

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(e) Inventories

	December 31, 2020	December 31, 2019
Raw materials	\$ 313,281	424,968
Work in process	130,281	44,603
Finished goods	304,468	455,850
Inventories in transit	49,739	10,362
	<u>\$ 797,769</u>	<u>935,783</u>

For the years ended December 31, 2020 and 2019, the amounts of inventories recognized as cost of revenue were as follows:

	2020	2019
Cost of inventories sold	\$ 6,005,807	6,082,389
Write-downs of inventories	20,513	3,189
	<u>\$ 6,026,320</u>	<u>6,085,578</u>

The above write-downs of inventories to net realizable value were included in cost of revenue.

(f) Investments accounted for using equity method

(i) Investments in associates

	December 31, 2020		December 31, 2019	
Name of Associates	Percentage of voting rights	Carrying amount	Percentage of voting rights	Carrying amount
JoiUp Technology Inc.	12.86 %	\$ <u>1,340</u>	16.15 %	<u>-</u>

Aggregate financial information of associates that were not individually material was summarized as follows. The financial information was included in the Group's consolidated financial statement.

	December 31, 2020	December 31, 2019
The aggregate carrying amount of associates that were not individually material	<u>\$ 1,340</u>	<u>-</u>
	<u>2020</u>	<u>2019</u>
Attributable to the Group:		
Net loss	\$ (269)	(884)
Other comprehensive income	-	-
Total comprehensive income	<u>\$ (269)</u>	<u>(884)</u>

APACER TECHNOLOGY INC. AND SUBSIDIARIES
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(g) Property, plant and equipment

	<u>Land</u>	<u>Buildings</u>	<u>Machinery and equipment</u>	<u>Other equipment</u>	<u>Equipment to be inspected and construction in progress</u>	<u>Total</u>
Cost:						
Balance at January 1, 2020	\$ 556,498	299,139	183,022	105,223	715	1,144,597
Additions	-	1,834	4,976	11,608	14,394	32,812
Disposals	-	(229)	(7,137)	(465)	-	(7,831)
Other reclassification and effect of exchange rate changes (Note)	-	2,218	3,104	(411)	(5,531)	(620)
Balance at December 31, 2020	<u>\$ 556,498</u>	<u>302,962</u>	<u>183,965</u>	<u>115,955</u>	<u>9,578</u>	<u>1,168,958</u>
Balance at January 1, 2019	\$ 556,498	277,083	175,956	101,466	10,547	1,121,550
Additions	-	8,894	4,762	5,216	8,348	27,220
Disposals	-	-	(2,475)	(1,295)	-	(3,770)
Other reclassification and effect of exchange rate changes (Note)	-	13,162	4,779	(164)	(18,180)	(403)
Balance at December 31, 2019	<u>\$ 556,498</u>	<u>299,139</u>	<u>183,022</u>	<u>105,223</u>	<u>715</u>	<u>1,144,597</u>
Accumulated depreciation:						
Balance at January 1, 2020	\$ -	42,998	139,479	86,060	-	268,537
Depreciation	-	10,944	16,681	9,042	-	36,667
Disposals	-	(127)	(7,137)	(440)	-	(7,704)
Other reclassification and effect of exchange rate changes (Note)	-	(2)	(31)	(467)	-	(500)
Balance at December 31, 2020	<u>\$ -</u>	<u>53,813</u>	<u>148,992</u>	<u>94,195</u>	<u>-</u>	<u>297,000</u>
Balance at January 1, 2019	\$ -	34,632	123,010	76,450	-	234,092
Depreciation	-	8,368	18,956	10,774	-	38,098
Disposals	-	-	(2,475)	(879)	-	(3,354)
Other reclassification and effect of exchange rate changes (Note)	-	(2)	(12)	(285)	-	(299)
Balance at December 31, 2019	<u>\$ -</u>	<u>42,998</u>	<u>139,479</u>	<u>86,060</u>	<u>-</u>	<u>268,537</u>
Carrying amount:						
Balance at December 31, 2020	<u>\$ 556,498</u>	<u>249,149</u>	<u>34,973</u>	<u>21,760</u>	<u>9,578</u>	<u>871,958</u>
Balance at December 31, 2019	<u>\$ 556,498</u>	<u>256,141</u>	<u>43,543</u>	<u>19,163</u>	<u>715</u>	<u>876,060</u>

Note: reclassified from property, plant and equipment to other non-current assets.

(h) Right-of-use assets

	<u>December 31, 2020</u>	<u>December 31, 2019</u>
Carrying amount:		
Buildings	\$ 15,473	26,862
Other equipments	13,211	8,248
	<u>\$ 28,684</u>	<u>35,110</u>

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	<u>2020</u>	<u>2019</u>
Additions	\$ <u>14,724</u>	<u>18,205</u>
Depreciation		
Buildings	\$ 13,417	14,240
Other equipments	<u>4,717</u>	<u>8,384</u>
	\$ <u>18,134</u>	<u>22,624</u>

(i) Intangible assets

	<u>Computer software</u>	<u>Royalties for the use of patents</u>	<u>Total</u>
Costs:			
Balance at January 1, 2020	\$ 112,109	4,104	116,213
Additions	1,277	-	1,277
Reclassification (Note)	2,897	-	2,897
Derecognition	<u>(65)</u>	<u>-</u>	<u>(65)</u>
Balance at December 31, 2020	\$ <u>116,218</u>	<u>4,104</u>	<u>120,322</u>
Balance at January 1, 2019	\$ 104,024	4,182	108,206
Additions	4,141	-	4,141
Other reclassification and effect of exchange rate changes (Note)	<u>3,944</u>	<u>(78)</u>	<u>3,866</u>
Balance at December 31, 2019	\$ <u>112,109</u>	<u>4,104</u>	<u>116,213</u>
Accumulated amortization:			
Balance at January 1, 2020	\$ 52,995	940	53,935
Amortization	13,179	222	13,401
Other reclassification and effect of exchange rate changes (Note)	<u>(174)</u>	<u>-</u>	<u>(174)</u>
Derecognition	<u>(65)</u>	<u>-</u>	<u>(65)</u>
Balance at December 31, 2020	\$ <u>65,935</u>	<u>1,162</u>	<u>67,097</u>
Balance at January 1, 2019	\$ 41,208	718	41,926
Amortization	<u>11,787</u>	<u>222</u>	<u>12,009</u>
Balance at December 31, 2019	\$ <u>52,995</u>	<u>940</u>	<u>53,935</u>
Carrying amount:			
Balance at December 31, 2020	\$ <u>50,283</u>	<u>2,942</u>	<u>53,225</u>
Balance at December 31, 2019	\$ <u>59,114</u>	<u>3,164</u>	<u>62,278</u>

Note: reclassified from other non-current asseets to intangible assets.

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The amortization of intangible assets is included in the following line items of the consolidated statement of comprehensive income:

	2020	2019
Cost of revenue	\$ <u>1,942</u>	<u>2,175</u>
Operating expenses	\$ <u>11,459</u>	<u>9,834</u>

(j) Short-term borrowings

The details of short-term borrowings were as follows:

	December 31, 2020	December 31, 2019
Unsecured bank loans	\$ <u>98,350</u>	<u>74,950</u>
Unused credit facilities	\$ <u>1,812,250</u>	<u>2,299,450</u>
Interest rate interval	<u>0.8%</u>	<u>2.43%</u>

(k) Lease liabilities

	December 31, 2020	December 31, 2019
Current	\$ <u>13,659</u>	<u>15,674</u>
Non-current	\$ <u>15,440</u>	<u>19,229</u>

For the maturity analysis, please refer to note 6(v).

The amounts recognized in profit or loss were as follows:

	2020	2019
Interest on lease liabilities	\$ <u>627</u>	<u>823</u>
Expenses relating to short-term leases	\$ <u>667</u>	<u>2,798</u>

The amounts recognized in the statements of cash flows for the Group were as follows:

	2020	2019
Total cash outflows for leases	\$ <u>21,822</u>	<u>26,278</u>

(i) Real estate leases

The Group leases buildings for its office. The leases of office typically run for a period of two to seven years.

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(ii) Other leases

The Group leases office and transportation equipments, with lease terms of one to five years. In addition, the Group leases some office equipments with contract terms within one year. These leases are short-term and the Group has elected not to recognize right-of-use assets and lease liabilities for these leases.

(l) Provisions

	Warranties	Sales returns and allowances	Total
Balance at January 1, 2020	\$ 6,295	5,390	11,685
Provisions made	-	18,487	18,487
Amount utilized	<u>(1,636)</u>	<u>(21,192)</u>	<u>(22,828)</u>
Balance at December 31, 2020	<u>\$ 4,659</u>	<u>2,685</u>	<u>7,344</u>
Balance at January 1, 2019	\$ 7,353	5,272	12,625
Provisions made	416	52,642	53,058
Amount utilized	<u>(1,474)</u>	<u>(52,524)</u>	<u>(53,998)</u>
Balance at December 31, 2019	<u>\$ 6,295</u>	<u>5,390</u>	<u>11,685</u>

(i) Warranties

The provision for warranties is made based on the number of units sold currently under warranty, historical rates of warranty claim on those units, and cost per claim to satisfy the warranty obligation. The Group reviews the estimation basis on an ongoing basis and revises it when appropriate.

(ii) Sales returns and allowances

Expected sales returns and allowances are estimated based on historical experience.

(m) Employee benefits

(i) Defined benefit plans

The reconciliation between the present value of defined benefit obligations and the net defined benefit liabilities for defined benefit plans were as follows:

	December 31, 2020	December 31, 2019
Present value of defined benefit obligations	\$ 67,110	64,056
Fair value of plan assets	<u>(37,854)</u>	<u>(36,188)</u>
	29,256	27,868
Effects of the asset ceiling	<u>-</u>	<u>-</u>
Net defined benefit liabilities	<u>\$ 29,256</u>	<u>27,868</u>

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Except for the Company, there is not any other entity within the Group which has defined benefit plans. The Company makes defined benefit plan contributions to the pension fund account at Bank of Taiwan that provides pension benefits for its employees upon retirement. The Company also established pension funds in accordance with the Regulations Governing the Management, Investment, and Distribution of the Employees' Retirement Fund Established by a Profit-seeking Enterprise, which are deposited monthly in the designated financial institutions. The plans entitle a retired employee to receive a payment based on years of service and average salary for the six months prior to the employee's retirement.

1) Composition of plan assets

In accordance with the requirements of the Labor Standards Law, the Company's pension fund account at Bank of Taiwan is managed and administered by the Bureau of Labor Funds of the Ministry of Labor (the Bureau of Labor Funds). According to the Regulations for Revenues, Expenditures, Safeguard and Utilization of the Labor Retirement Fund, with regard to the utilization of the Fund, minimum earnings shall be no less than the earnings attainable from two-year time deposits, with interest rates offered by local banks.

As of December 31, 2020 and 2019, the Group's labor pension fund account balance at Bank of Taiwan amounted to \$37,854 and \$36,188, respectively. Please refer to the website of the Bureau of Labor Funds for information on the labor pension fund assets including the asset portfolio and yield of the fund.

2) Movements in present value of defined benefit obligations

The movements in present value of defined benefit obligations of the Group were as follows:

	<u>2020</u>	<u>2019</u>
Defined benefit obligations at January 1	\$ 64,056	60,759
Current service costs and interest expense	812	916
Remeasurement on the net defined benefit liabilities (assets)		
— Actuarial loss arising from changes in financial assumptions	4,685	2,392
— Actuarial loss (gain) arising from experience adjustments	(2,223)	1,024
Benefits paid by the plan	(220)	(1,035)
Defined benefit obligations at December 31	<u>\$ 67,110</u>	<u>64,056</u>

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3) Movements of fair value of plan assets

The movements of the fair value of plan assets of the Group were as follows:

	<u>2020</u>	<u>2019</u>
Fair value of plan assets at January 1	\$ 36,188	35,189
Interest income	409	486
Remeasurement on the net defined benefit liabilities (assets)		
— Return on plan assets (excluding current interest expense)	1,065	1,124
Contributions by the employer	412	424
Benefits paid by the plan	(220)	(1,035)
Fair value of plan assets at December 31	<u><u>\$ 37,854</u></u>	<u><u>36,188</u></u>

4) Changes in the effect of the asset ceiling

There was no effect of the asset ceiling.

5) Expenses recognized in profit or loss

The expenses recognized in profit or loss were as follows:

	<u>2020</u>	<u>2019</u>
Current service costs	\$ 92	81
Net interest expense on the net defined benefit liability	311	349
	<u><u>\$ 403</u></u>	<u><u>430</u></u>
Cost of revenue	\$ 145	139
Selling expenses	124	135
Administrative expenses	70	91
Research and development expenses	64	65
	<u><u>\$ 403</u></u>	<u><u>430</u></u>

6) Remeasurement of the net defined benefit liabilities recognized in other comprehensive income

The remeasurement of the net defined benefit liabilities recognized in other comprehensive income were as follows:

	<u>2020</u>	<u>2019</u>
Cumulative amount at January 1	\$ 29,636	27,344
Recognized during the period	1,397	2,292
Cumulative amount at December 31	<u><u>\$ 31,033</u></u>	<u><u>29,636</u></u>

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7) Actuarial assumptions

The principal assumptions of the actuarial valuation were as follows:

	December 31, 2020	December 31, 2019
Discount rate	0.625 %	1.125 %
Future salary increases rate	3.000 %	3.000 %

The Group expects to make contribution of \$408 to the defined benefit plans in the year following December 31, 2020.

The weighted average duration of the defined benefit plans is 16.06 years.

8) Sensitivity analysis

When calculating the present value of the defined benefit obligations, the Group uses judgments and estimations to determine the actuarial assumptions for each measurement date, including discount rates, employee turnover rates and future salary changes. Any changes in the actuarial assumptions may significantly impact the amount of the defined benefit obligations.

The following table summarizes the impact of a change in the assumptions on the present value of the defined benefit obligation on December 31, 2020 and 2019.

	Increase (decrease) in present value of defined benefit obligations	
	0.25% Increase	0.25% Decrease
December 31, 2020		
Discount rate	(2,396)	2,500
Future salary change rate	2,406	(2,315)
December 31, 2019		
Discount rate	(2,392)	2,498
Future salary change rate	2,424	(2,319)

Each sensitivity analysis considers the change in one assumption at a time, leaving the other assumptions unchanged. This approach shows the isolated effect of changing one individual assumption but does not take into account that some assumptions are related. The method used to carry out the sensitivity analysis is the same as the calculation of the net defined benefit liabilities recognized in the balance sheets.

In 2020, the method and assumptions used to carry out the sensitivity analysis was the same as in the prior year.

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(ii) Defined contribution plans

The Company contributes monthly an amount equal to 6% of each employee's monthly wages to the employee's individual pension fund account at the Bureau of Labor Insurance in accordance with the provisions of the Labor Pension Act. Foreign subsidiaries make contributions in compliance with their respective local regulations. Under this defined contribution plan, the Group has no legal or constructive obligation to pay additional amounts after contributing a fixed amount.

For the years ended December 31, 2020 and 2019, the Group recognized pension expenses of \$22,875 and \$24,085, respectively, in relation to the defined contribution plans.

(n) Income taxes

(i) The components of income tax expense were as follows:

	<u>2020</u>	<u>2019</u>
Current income tax expense		
Current period	\$ 78,458	101,379
Adjustments for prior years	<u>853</u>	<u>2,855</u>
	<u>79,311</u>	<u>104,234</u>
Deferred income tax expense (benefit)		
Origination and reversal of temporary differences	<u>898</u>	<u>(1,963)</u>
Income tax expense	<u><u>\$ 80,209</u></u>	<u><u>102,271</u></u>

The components of income tax benefit recognized in other comprehensive income were as follows:

	<u>2020</u>	<u>2019</u>
Items that will not be reclassified subsequently to profit or loss:		
Remeasurement of defined benefit plans	<u><u>\$ 280</u></u>	<u><u>458</u></u>

Reconciliation of income tax expense and income before income tax were as follows:

	<u>2020</u>	<u>2019</u>
Income before income tax	<u><u>\$ 370,669</u></u>	<u><u>478,900</u></u>
Income tax using the Company's statutory tax rate	\$ 74,134	95,780
Effect of different tax rates in foreign jurisdictions	13,814	9,119
Investment tax credits	(4,605)	(4,233)
Changes in unrecognized temporary differences	(5,688)	(2,496)
Prior-year adjustments	853	2,855
Surtax on undistributed earnings	3,441	2,625
Others	<u>(1,740)</u>	<u>(1,379)</u>
	<u><u>\$ 80,209</u></u>	<u><u>102,271</u></u>

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(ii) Deferred income tax assets and liabilities

1) Unrecognized deferred income tax assets and liabilities

	<u>December 31, 2020</u>	<u>December 31, 2019</u>
Unrecognized deferred income tax assets:		
Aggregate deductible temporary differences associated with investments in subsidiaries	\$ 20,041	22,301
Deductible temporary differences	<u>788</u>	<u>788</u>
	<u>\$ 20,829</u>	<u>23,089</u>
	<u>December 31, 2020</u>	<u>December 31, 2019</u>
Unrecognized deferred income tax liabilities:		
Aggregate taxable temporary differences associated with investments in subsidiaries	<u>\$ 53,041</u>	<u>49,613</u>

As the Group is able to control the timing of the reversal of the temporary differences associated with investments in its subsidiaries as of December 31, 2020 and 2019, and Management believes that it is probable that the temporary differences will not reverse in the foreseeable future, such temporary differences are not recognized as deferred income tax assets and liabilities.

2) Recognized deferred income tax assets and liabilities

Changes in the amount of deferred income tax assets and liabilities were as follows:

Deferred income tax assets:

	<u>Defined benefit plans</u>	<u>Provision for inventory obsolescence</u>	<u>Warranty provision</u>	<u>Unrealized impairment loss on financial assets</u>	<u>Allowance for doubtful receivables</u>	<u>Others</u>	<u>Total</u>
Balance at January 1, 2020	\$ 5,574	56,652	1,259	10,000	5,216	17,427	96,128
Recognized in profit or loss	(2)	4,000	(327)	-	(5,216)	(1,132)	(2,677)
Recognized in other comprehensive income	<u>280</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>280</u>
Balance at December 31, 2020	<u>\$ 5,852</u>	<u>60,652</u>	<u>932</u>	<u>10,000</u>	<u>-</u>	<u>16,295</u>	<u>93,731</u>
Balance at January 1, 2019	\$ 6,421	56,724	1,471	10,000	854	17,361	92,831
Recognized in profit or loss	(1,305)	(72)	(212)	-	4,362	66	2,839
Recognized in other comprehensive income	<u>458</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>458</u>
Balance at December 31, 2019	<u>\$ 5,574</u>	<u>56,652</u>	<u>1,259</u>	<u>10,000</u>	<u>5,216</u>	<u>17,427</u>	<u>96,128</u>

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Deferred income tax liabilities:

	Others
Balance at January 1, 2020	\$ 1,779
Recognized in profit or loss	(1,779)
Balance at December 31, 2020	<u>\$ -</u>
Balance at January 1, 2019	\$ 903
Recognized in profit or loss	876
Balance at December 31, 2019	<u><u>\$ 1,779</u></u>

- (iii) The Company's income tax returns for the years through 2018 have been examined and approved by the R.O.C. income tax authorities.

(o) Capital and other equity

(i) Common stock

As of December 31, 2020 and 2019, the Company's authorized shares of common stock consisted of 200,000 thousand shares, of which 100,898 thousand shares were issued and outstanding. The par value of the Company's common stock is \$10 (dollars) per share. The Company has reserved 15,000 thousand shares for the exercise of employee stock options.

During the shareholders' meeting on May 28, 2020, the Company's shareholders resolved to issue 1,200 thousand shares of restricted stock to employees. The Company has filed an effective registration with the Securities and Futures Bureau of the FSC for the issuance. In January 2021, the Company issued 927 thousand shares of restricted stock to employees. The effective date of the capital increase was January 6, 2021, and the related registration process has been completed.

(ii) Capital surplus

	December 31, 2020	December 31, 2019
Paid-in capital in excess of par value	\$ 331,707	331,707
Employee stock options	12,901	12,901
Treasury stock transactions	3,781	3,781
Changes in equity of associates accounted for using equity method	<u>13,130</u>	<u>11,521</u>
	<u><u>\$ 361,519</u></u>	<u><u>359,910</u></u>

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Pursuant to the Company Act, any realized capital surplus is initially used to cover an accumulated deficit, and the balance, if any, could be transferred to common stock as stock dividends based on the original shareholding ratio or distributed as cash dividends based on a resolution approved by the shareholders. Realized capital surplus includes the premium derived from the issuance of shares of stock in excess of par value and donations from shareholders received by the Company. In accordance with the Regulations Governing the Offering and Issuance of Securities by Securities Issuers, distribution of stock dividends from capital surplus in any one year shall not exceed 10% of paid-in capital.

(iii) Retained earnings

1) Legal reserve

If a company has no accumulated deficit, it may, pursuant to a resolution approved by the shareholders, distribute its legal reserve to its shareholders by issuing new shares or by distributing cash for the portion in excess of 25% of the paid-in capital.

2) Special reserve

In accordance with Ruling No. 1010012865 issued by the FSC on April 6, 2012, a special reserve equal to the total amount of items that were accounted for as deductions from shareholders' equity was set aside from current and prior-year earnings. This special reserve shall revert to the retained earnings and be made available for distribution when the items that are accounted for as deductions from shareholders' equity are reversed in subsequent periods.

3) Earnings distribution

The Company's Articles of Incorporation stipulate that at least 10% of annual net income, after deducting accumulated deficit, if any, must be retained as legal reserve until such retention equals the amount of paid in capital. In addition, a special reserve shall be set aside in accordance with applicable laws and regulations. The remaining balance, together with the unappropriated earnings from the previous years, after retaining a certain portion of it for business considerations, can be distributed as dividends to shareholders. Except for the distribution of capital surplus and legal reserve in accordance with applicable laws and regulations, the Company cannot distribute any earnings when there are no retained earnings.

Since the Company operates in an industry experiencing rapid change and development, earnings are distributed in consideration of the current year's earnings, the overall economic environment, related laws and decrees, as well as the Company's long term development and stability in its financial position. The Company has adopted a balance dividend policy, in which a cash dividend comprises at least 10% of the total dividend distribution.

APACER TECHNOLOGY INC. AND SUBSIDIARIES

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The appropriation of 2019 and 2018 earnings was approved by the shareholders at the meeting on May 28, 2020 and May 30, 2019, respectively. The resolved appropriation of the dividend per share were as follows:

	2019		2018	
	Dividends per share (in dollars)	Amount	Dividends per share (in dollars)	Amount
Dividends per share:				
Cash dividends	\$ 2.55	<u>257,289</u>	2.50	<u>252,245</u>

(iv) Other equity items (net after tax)

1) Foreign currency translation differences

	2020	2019
Balance at January 1	\$ (49,159)	(41,061)
Foreign exchange differences arising from translation of foreign operations	<u>(18,749)</u>	<u>(8,098)</u>
Balance at December 31	<u>\$ (67,908)</u>	<u>(49,159)</u>

2) Unrealized gains (losses) on financial assets measured at fair value through other comprehensive income

	2020	2019
Balance at January 1	\$ (29,420)	(26,479)
Unrealized losses from investments in equity instruments measured at fair value through other comprehensive income	<u>(11,630)</u>	<u>(2,941)</u>
Balance at December 31	<u>\$ (41,050)</u>	<u>(29,420)</u>

(v) Non-controlling interests

	2020	2019
Balance at January 1	\$ 150	173
Equity attributable to non-controlling interest:		
Net loss	(9)	(13)
Exchange differences on translation of foreign operations	1	(8)
Unrealized gain (loss) from investments in equity instruments measured at fair value through other comprehensive income	<u>1</u>	<u>(2)</u>
Balance at December 31	<u>\$ 143</u>	<u>150</u>

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(p) Share-based payment—Restricted stock to employees

- (i) During the meeting on 28 May, 2020, the Company's shareholders approved a resolution to issue 1,200 thousand shares of restricted stock to full-time employees who conformed to certain requirements. The Company has filed an effective registration with the Securities and Futures Bureau of the FSC for the issuance. In January 2021, the Company issued 927 thousand shares of restricted stock to its employees and the effective date of the capital increase was January 6, 2021. The employees who were granted restricted stock are entitled to purchase the shares of restricted stock at the exercise price of \$0. The total share of the restricted stocks issued was determined by achievement of the Company's operation objective for the year 2020. The vesting period of the restricted stock is 1~2 years subsequent to the grant date, and the restricted shares of stock will be vested by taking the individual employee's performance conditions into consideration. When the vesting conditions are met, the restricted stock received by the employees shall be transferred from an escrow account to the employee's security account. During the vesting period, the restricted stock could not be sold, pledged, transferred, gifted, or disposed of in any other forms, excluding inheritance; nevertheless, the rights of a shareholder (such as attendance, proposing, speaking, voting and election at the shareholders' meeting) are the same as those of the Company's shareholders but are executed by the custodian who will act based on law and regulations. The Company will take back the restricted stock from its employees and retire those shares when the vesting conditions are not met.
- (ii) There was no expenses recognized for the above share-based payment plan in 2020.

(q) Earnings per share ("EPS")

(i) Basic earnings per share

	<u>2020</u>	<u>2019</u>
Net income attributable to shareholders of the Company	\$ <u>290,469</u>	<u>376,642</u>
Weighted-average number of ordinary shares outstanding (in thousands)	<u>100,898</u>	<u>100,898</u>
Basic earnings per share (in dollars)	\$ <u>2.88</u>	<u>3.73</u>

(ii) Diluted earnings per share

	<u>2020</u>	<u>2019</u>
Net income attributable to shareholders of the Company	\$ <u>290,469</u>	<u>376,642</u>
Weighted-average number of ordinary shares outstanding (in thousands)	100,898	100,898
Effect of dilutive potential common stock (in thousand):		
Remuneration to employees	<u>1,035</u>	<u>1,390</u>
Weighted-average number of ordinary shares outstanding (including effect of dilutive potential common stock)	<u>101,933</u>	<u>102,288</u>
Diluted earnings per share (in dollars)	\$ <u>2.85</u>	<u>3.68</u>

APACER TECHNOLOGY INC. AND SUBSIDIARIES
Notes to the Consolidated Financial Statements

(r) Revenue from contracts with customers

(i) Disaggregation of revenue

2020			
	Segment		Total
	Asia	America and Europe	
Major products:			
Flash memory cards	\$ 3,387,440	766,485	4,153,925
Memory modules	2,584,673	406,181	2,990,854
Others	7,346	97	7,443
	<u>\$ 5,979,459</u>	<u>1,172,763</u>	<u>7,152,222</u>
2019			
	Segment		Total
	Asia	America and Europe	
Major products:			
Flash memory cards	\$ 3,509,182	1,082,390	4,591,572
Memory modules	2,529,103	358,500	2,887,603
Others	6,593	53	6,646
	<u>\$ 6,044,878</u>	<u>1,440,943</u>	<u>7,485,821</u>

(ii) Contract balances

	December 31, 2020	December 31, 2019	January 1, 2019
Notes and accounts receivable (including related parties)	\$ 837,703	929,325	1,179,415
Less: loss allowance	(8,293)	(25,152)	(4,270)
	<u>\$ 829,410</u>	<u>904,173</u>	<u>1,175,145</u>
	December 31, 2020	December 31, 2019	January 1, 2019
Contract liabilities (presented under other current liabilities)	<u>\$ 11,814</u>	<u>6,838</u>	<u>12,958</u>

For details on notes and accounts receivable and its loss allowance, please refer to note 6(d).

The amount of revenue recognized for the years ended December 31, 2020 and 2019 that were included in the contract liability balances at January 1, 2020 and 2019 were \$4,669 and \$11,209, respectively.

APACER TECHNOLOGY INC. AND SUBSIDIARIES
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(s) Remuneration to employees and directors

The Company's article of incorporation requires that earnings shall first to be offset against any deficit, then, a minimum of 4% will be distributed as remuneration to its employees and no more than 1.4% to its directors. Employees who are entitled to receive the abovementioned employee remuneration, in shares or cash, include the employees of the subsidiaries of the Company who meet certain specific requirement.

For the years ended December 31, 2020 and 2019, the Company estimated its remuneration to employees amounting to \$33,993 and \$49,120, respectively, and the remuneration to directors amounting to \$5,599 and \$7,323, respectively. The abovementioned estimated amounts are calculated based on the net profits before tax of each period (excluding the remuneration to employees and directors), multiplied by a certain percentage of the remuneration to employees and directors. The estimations are recognized as operating expenses. If the actual amounts differ from the estimated amounts, the differences shall be accounted as changes in accounting estimates and recognized as profit or loss in following year.

The abovementioned estimated remuneration to employees and directors is the same as the amount approved by the Board of Directors and will be paid in cash. Related information is available on the Market Observation Post System website of the Taiwan Stock Exchange.

(t) Non-operating income and loss

(i) Interest income

	<u>2020</u>	<u>2019</u>
Interest income from bank deposits	\$ <u>4,740</u>	<u>5,376</u>

(ii) Other gains and losses—net

	<u>2020</u>	<u>2019</u>
Loss on disposal of property, plant and equipment	\$ (127)	(416)
Foreign currency exchange loss	(4,886)	(9,110)
Gains on financial assets and liabilities at fair value through profit or loss	6,519	1,131
Loss from burglary	-	(15,953)
Gain from insurance claims	14,773	16,784
Others	<u>7,504</u>	<u>3,463</u>
	<u>\$ 23,783</u>	<u>(4,101)</u>

(iii) Finance costs

	<u>2020</u>	<u>2019</u>
Interest expense from bank loans	\$ (2,377)	(4,263)
Interest expense from lease liabilities	<u>(627)</u>	<u>(823)</u>
	<u>\$ (3,004)</u>	<u>(5,086)</u>

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(u) Financial instruments

(i) Categories of financial instruments

1) Financial assets

	December 31, 2020	December 31, 2019
Financial assets at fair value through profit or loss	\$ 49,354	139,604
Financial assets at fair value through other comprehensive income	36,421	41,994
Financial assets measured at amortized cost:		
Cash and cash equivalents	617,616	696,497
Notes and accounts receivable (including related parties)	829,410	904,173
Other financial assets (including current and non-current)	615,667	416,595
Subtotal	2,062,693	2,017,265
Total	\$ 2,148,468	2,198,863

2) Financial liabilities

	December 31, 2020	December 31, 2019
Financial liabilities at fair value through profit or loss	\$ 168	124
Financial liabilities measured at amortized cost:		
Short-term borrowings	98,350	74,950
Notes and accounts payable (including related parties)	710,975	926,065
Other payables	244,864	306,785
Lease liabilities (including current and non-current)	29,099	34,903
Guarantee deposits	5,620	-
Subtotal	1,088,908	1,342,703
Total	\$ 1,089,076	1,342,827

(ii) Fair value information

1) Financial instruments not measured at fair value

The Group considers that the carrying amounts of financial assets and financial liabilities measured at amortized cost approximate their fair values.

APACER TECHNOLOGY INC. AND SUBSIDIARIES

Notes to the Consolidated Financial Statements

2) Financial instruments measured at fair value

The fair value of financial assets and liabilities at fair value through profit and loss and financial assets at fair value through other comprehensive income are measured on a recurring basis.

The table below analyzes financial instruments that are measured at fair value subsequent to initial recognition, grouped into Levels 1 to 3 based on the degree to which the fair value is observable. The different levels have been defined as follows:

- a) Level 1: quoted prices (unadjusted) in active markets for identified assets or liabilities.
- b) Level 2: 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).
- c) Level 3: inputs for the assets or liabilities that are not based on observable market data (unobservable inputs).

		December 31, 2020				
		Carrying amount	Fair Value			Total
			Level 1	Level 2	Level 3	
Financial assets at fair value through profit or loss — current:						
Open-ended mutual fund	\$	49,121	49,121	-	-	49,121
Derivatives — foreign currency forward contracts		233	-	233	-	233
	\$	<u>49,354</u>	<u>49,121</u>	<u>233</u>	<u>-</u>	<u>49,354</u>
Financial assets at fair value through other comprehensive income — non-current:						
Domestic unlisted stocks	\$	36,110	-	-	36,110	36,110
Foreign unlisted stocks		311	-	-	311	311
	\$	<u>36,421</u>	<u>-</u>	<u>-</u>	<u>36,421</u>	<u>36,421</u>
Financial liabilities at fair value through profit or loss — current:						
Derivatives — foreign currency forward contracts	\$	168	-	168	-	168

APACER TECHNOLOGY INC. AND SUBSIDIARIES
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December 31, 2019					
	Carrying amount	Fair Value			
		Level 1	Level 2	Level 3	Total
Financial assets at fair value through profit or loss— current:					
Open-end mutual fund	\$ 139,527	139,527	-	-	139,527
Derivatives—foreign currency forward contracts	77	-	77	-	77
	<u>\$ 139,604</u>	<u>139,527</u>	<u>77</u>	<u>-</u>	<u>139,604</u>
Financial assets at fair value through other comprehensive income— non-current:					
Domestic unlisted stocks	\$ 41,748	-	-	41,748	41,748
Foreign unlisted stocks	246	-	-	246	246
	<u>\$ 41,994</u>	<u>-</u>	<u>-</u>	<u>41,994</u>	<u>41,994</u>
Financial liabilities at fair value through profit or loss—current:					
Derivatives—foreign currency forward contracts	\$ 124	-	124	-	124

(iii) Valuation techniques used in fair value measurement

1) Non-derivative financial instruments

The fair value of financial instruments traded in active liquid markets is determined with reference to quoted market prices.

The fair values of open-ended mutual funds with standard terms and conditions, and traded in active markets are determined with reference to quoted market prices.

Except for the abovementioned financial instruments traded in an active market, the fair value of other financial instruments are based on the valuation techniques or the quotation from counterparty. The fair value using valuation techniques refers to the current fair value of other financial instruments with similar conditions and characteristics, or using a discounted cash flow method, or other valuation techniques which include model calculating with observable market data at the reporting date.

The fair value of unlisted stock held by the Group is estimated by using the market approach and is determined by reference to valuations of similar companies, third-party quotation, and recent financing and operating activities. The significant unobservable inputs is primarily the liquidity discounts. No quantitative information is disclosed due to that the possible changes in liquidity discounts would not cause significant potential financial impact.

APACER TECHNOLOGY INC. AND SUBSIDIARIES
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2) Derivative financial instruments

The fair value of derivative financial instruments is determined using a valuation technique, with estimates and assumptions consistent with those used by market participants and that are readily available to the Group. The fair value of foreign currency forward contracts is computed individually by each contract using the valuation technique.

(iv) Transfers between levels of the fair value hierarchy

There were no transfers among fair value hierarchies for the years ended December 31, 2020 and 2019.

(v) Movement in financial assets included in Level 3 of fair value hierarchy:

	<u>2020</u>	<u>2019</u>
Balance, beginning of year	\$ 41,994	44,937
Purchased	6,071	-
Losses recognized in other comprehensive income, and presented in unrealized gains (losses) on financial assets measured at fair value through other comprehensive income	<u>(11,644)</u>	<u>(2,943)</u>
Balance, end of year	<u><u>\$ 36,421</u></u>	<u><u>41,994</u></u>

(v) Financial risk management

The Group is exposed to credit risk, liquidity risk, and market risk (including currency risk, interest rate risk, and other market price risk). The Group has disclosed the information on exposure to the aforementioned risks and the Group's policies and procedures to measure and manage those risks as well as the quantitative information below.

The Group's management monitors and reviews financial activities in accordance with procedures required by relevant regulations and internal controls. Internal auditors undertake both regular and ad hoc reviews of risk management controls and procedures, the results of which are reported to the Group's Board of Directors.

The Group's Board of Directors is responsible for developing and monitoring the Group's risk management policies. The Group's risk management policies are established to identify and analyze the risks faced by the Group, to set appropriate risk limits and controls, and to monitor adherence to the controls. Risk management policies and systems are reviewed regularly to reflect changes in market conditions and the Group's operations.

(i) Credit risk

Credit risk is the risk of financial loss to the Group if a customer or counterparty of a financial instrument fails to meet its contractual obligations, and arises principally from the Group's cash and cash equivalents, derivative instruments, and receivables from customers. As of December 31, 2020 and 2019, the Group's maximum exposure to credit risk amounted to \$2,148,468 and \$2,198,863, respectively.

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The Group maintains cash and enters into derivative transactions with various reputable financial institutions; therefore, the exposure related to potential default by those counter-parties is not considered significant.

In order to reduce credit risk of accounts receivable, the Group has established a credit policy under which each customer is analyzed individually for creditworthiness for the purpose of setting the credit limit. Additionally, the Group continuously evaluates the credit quality of its customers and utilizes its insurance to minimize the credit risk. As of December 31, 2020 and 2019, the Group has insured credit insurance that cover accounts receivable amounting to \$474,972 and \$579,389, respectively. When the debtors are in default, the Group will receive 90% of the credit insurance.

The Group believes that there is no significant concentration of credit risk due to the Group's large number of customers and their wide geographical spread.

(ii) Liquidity risk

Liquidity risk is the risk that the Group will encounter difficulty in settling its financial liabilities by delivering cash or other financial assets. The Group manages liquidity risk by monitoring regularly the current and mid- to long-term cash demand, maintaining adequate cash and banking facilities, and ensuring compliance with the terms of the loan agreements. As of December 31, 2020 and 2019, the Group had unused credit facilities of \$1,812,250 and \$2,299,450, respectively.

The table below summarizes the maturity profile of the Group's financial liabilities based on contractual undiscounted payments.

	<u>Carrying amount</u>	<u>Contractual cash flows</u>	<u>Within 1 year</u>	<u>More than 1 year</u>
December 31, 2020				
Non-derivative financial liabilities:				
Short-term borrowings	\$ 98,350	(98,416)	(98,416)	-
Notes and accounts payable (including related parties)	710,975	(710,975)	(710,975)	-
Other payables	244,864	(244,864)	(244,864)	-
Lease Liabilities	29,099	(29,947)	(14,146)	(15,801)
Guarantee deposits	5,620	(5,620)	-	(5,620)
Derivative financial instruments:				
Foreign currency forward contracts:				
Inflow	-	31,240	31,240	-
Outflow	168	(31,408)	(31,408)	-

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	<u>Carrying amount</u>	<u>Contractual cash flows</u>	<u>Within 1 year</u>	<u>More than 1 year</u>
December 31, 2019				
Non-derivative financial liabilities:				
Short-term borrowings	\$ 74,950	(75,103)	(75,103)	-
Notes and accounts payable (including related parties)	926,065	(926,065)	(926,065)	-
Other payables	306,785	(306,785)	(306,785)	-
Lease Liabilities	34,903	(35,804)	(16,281)	(19,523)
Derivative financial instruments:				
Foreign currency forward contracts:				
Inflow	-	24,613	24,613	-
Outflow	124	(24,737)	(24,737)	-

The Group does not expect that the cash flows included in the maturity analysis would occur significantly earlier or at significantly different amounts.

(iii) Market risk

Market risk is the risk that changes in market prices, such as foreign exchange rates, interest rates, and equity prices, will affect the Group's income or the value of its financial instruments. The objective of market risk management is to manage and control market risk exposures within acceptable parameters, while optimizing the return.

The Group utilizes derivative financial instruments to manage market risk. All such transactions are carried out within the guidelines set by the Group's Board of Directors.

1) Foreign currency risk

The Group utilizes foreign currency forward contracts to hedge its foreign currency exposure with respect to its sales and purchases. The maturity dates of derivative financial instruments the Group entered into were less than six months and did not conform to the criteria for hedge accounting. These financial instruments help to reduce, but do not eliminate, the impact of foreign currency exchange rate movements.

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The Group's exposure to foreign currency risk arises from cash and cash equivalents, notes and accounts receivable (including related parties), notes and accounts payable (including related parties), other payables (including related parties) and loans and borrowings that are denominated in a currency other than the functional currencies of the Group entities. At the reporting date, the carrying amounts of the Group's significant monetary assets and liabilities denominated in a currency other than the functional currencies of the Group entities and their respective sensitivity analysis were as follows (including the monetary items that have been eliminated in the accompanying consolidated financial statements):

(Amounts in Thousands of New Taiwan Dollars)

December 31, 2020					
	Foreign currency (in thousands)	Exchange rate	TWD (in thousands)	Change in magnitude	Pre-tax effect on profit or loss (in thousands)
<u>Financial assets</u>					
<u>Monetary items</u>					
USD	\$ 27,120	28.100	762,072	1 %	7,621
CNY	14,530	4.297	62,435	1 %	624
JPY	33,910	0.273	9,257	1 %	93
<u>Financial liabilities</u>					
<u>Monetary items</u>					
USD	22,614	28.100	635,453	1 %	6,355
CNY	33	4.297	142	1 %	1
December 31, 2019					
	Foreign currency (in thousands)	Exchange rate	TWD (in thousands)	Change in magnitude	Pre-tax effect on profit or loss (in thousands)
<u>Financial assets</u>					
<u>Monetary items</u>					
USD	\$ 28,035	29.980	840,489	1 %	8,405
CNY	17,921	4.303	77,114	1 %	771
<u>Financial liabilities</u>					
<u>Monetary items</u>					
USD	28,815	29.980	863,874	1 %	8,639
CNY	62	4.303	267	1 %	3

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As the Group deal in diverse foreign currencies, gains and losses on foreign exchange were summarized as a single amount. The aggregate of realized and unrealized foreign exchange loss for the years ended December 31, 2020 and 2019 were \$4,886 and \$9,110, respectively.

2) Interest rate risk

The Group's bank loans carried floating interest rates. To manage the interest rate risk, the Group periodically assesses the interest rates of bank loans and maintains good relationships with financial institutions to obtain lower financing costs. The Group also strengthens the management of working capital to reduce the dependence on bank loans, as well as the risk arising from fluctuation of interest rates.

If interest rates had been 100 basis points (1%) higher/lower, with all other variables held constant, pre-tax income for the years ended December 31, 2020 and 2019 would have been \$ 984 and \$ 750, respectively, lower/higher, which mainly resulted from the borrowings with floating interest rates.

3) Other market price risk

The Group has long-term investments in unlisted stocks, which the Group does not actively participate in trading. The Group anticipates that there is no significant market risk related to the investments.

The investment target of open-ended mutual funds held by the Group are mostly monetary funds or bond funds. (accounted for as financial assets at fair value through profit or loss — current). The Group anticipates that there is no significant market risk related to the funds.

(w) Capital management

In consideration of the industry dynamics and future developments, as well as external environment factors, the Group maintains an optimal capital structure to enhance long-term shareholder value by managing its capital in a manner to ensure that it has sufficient and necessary financial resources to fund its working capital needs, research and development expenses, dividend payments, and other business requirements for continuing operations and to reward shareholders and take into consideration the interests of other shareholders. The Group monitors its capital through reviewing the liability-to-equity ratio periodically.

The Group's liability-to-equity ratio at the end of each reporting period was as follows:

	December 31, 2020	December 31, 2019
Total liabilities	\$ 1,241,417	1,470,798
Total equity	\$ 2,809,682	2,806,396
Liability-to-equity ratio	44.18 %	52.41 %

In 2020, the Group decreased its notes and accounts payable (including related parties) due to the decrease of stock level. It also resulted in the decreasing of liability-to-equity ratio.

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(x) Investing and financing activities not affecting current cash flow

(i) For acquisition of right-of-use assets under operating lease for the years ended December 31, 2020 and 2019, please refer to note 6(h).

(ii) Reconciliation of liabilities arising from financing activities were as follows:

	January 1, 2020	Cash flows	Non-cash changes Acquisition	December 31, 2020
Short-term borrowings	\$ 74,950	23,400	-	98,350
Lease liabilities	34,903	(20,528)	14,724	29,099
Guarantee deposits	-	5,620	-	5,620
	<u><u>\$ 109,853</u></u>	<u><u>8,492</u></u>	<u><u>14,724</u></u>	<u><u>133,069</u></u>

	January 1, 2019	Cash flows	Non-cash changes Acquisition	December 31, 2019
Short-term borrowings	\$ 138,218	(63,268)	-	74,950
Lease liabilities	39,355	(22,657)	18,205	34,903
Guarantee deposits	15,357	(15,357)	-	-
	<u><u>\$ 192,930</u></u>	<u><u>(101,282)</u></u>	<u><u>18,205</u></u>	<u><u>109,853</u></u>

7. Related-party transactions:

(a) Name and relationship with related parties

The following are the entities that have had transactions with the Group during the periods covered in the consolidated financial statements.

Name of related parties	Relationship with the Group
Ecolumina Technologies Inc. ("Ecolumina")	The Group's other related party
Phison Electronics Corporation ("Phison")	The Company's director
JoiUp Technology Inc. ("JoiUp")	The Group's associate
Directors, general manager and vice general managers	The Group's key management personnel

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(b) Significant related-party transactions

(i) Revenue

	<u>2020</u>	<u>2019</u>
The Group's key management personnel (the Company's director)	\$ 9,757	7,434
Other related parties	-	281
	<u>\$ 9,757</u>	<u>7,715</u>

The sales prices and payment terms of sales to related parties depend on the economic environment and market competition, and are not different from those with third-party customers. The payment terms for related parties and third-party customers are EOM 45~60 days and 30~90 days calculated from the delivery date, respectively. The Group does not receive any collateral for the receivables from related parties. The Group has not recognized a specific allowance for doubtful receivables after assessment.

(ii) Purchases

	<u>2020</u>	<u>2019</u>
Other related parties	\$ -	82
The Group's key management personnel — Phison (the Company's director)	1,081,670	1,085,531
	<u>\$ 1,081,670</u>	<u>1,085,613</u>

There are no significant differences between the purchase prices for related parties and those for third-party vendors. The payment terms of EOM 45 days shows no significant difference between related parties and third-party vendors.

(iii) Receivables

<u>Account</u>	<u>Related-party categories</u>	<u>December 31, 2020</u>	<u>December 31, 2019</u>
Accounts receivable	The Group's key management personnel (the Company's director)	\$ 799	532

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(iv) Payables

<u>Account</u>	<u>Related-party categories</u>	<u>December 31, 2020</u>	<u>December 31, 2019</u>
Accounts payable	The Group's key management personnel – Phison (the Company's director)	\$ 243,948	182,583
	Other related parties	-	32
Other payables	The Group's key management personnel (the Company's director)	561	17
	Other related parties	-	23
		<u>\$ 244,509</u>	<u>182,655</u>

(v) Operating expenses

The operating expenses related to the after-sale service provided by related parties and sundry purchases were as follows:

<u>Account</u>	<u>Related-party categories</u>	<u>2020</u>	<u>2019</u>
Operating expenses	The Group's key management personnel (the Company's director)	\$ 776	422
	Associates	53	-
	Other related parties	-	129
		<u>\$ 829</u>	<u>551</u>

(c) Compensation for key management personnel

	<u>2020</u>	<u>2019</u>
Short-term employee benefits	\$ 44,769	40,702
Post-employment benefits	315	216
	<u>\$ 45,084</u>	<u>40,918</u>

8. Pledged assets: None

9. Significant commitments and contingencies:

(a) Significant unrecognized commitments

	<u>December 31, 2020</u>	<u>December 31, 2019</u>
Unused letters of credit	\$ -	<u>10,000</u>

- (b) As of December 31, 2020 and 2019, the Group had outstanding letters of guarantee amounting to \$20,000 and \$15,000, respectively, for the purpose of the payment of customs duties.

10. Significant loss from disaster: None

11. Significant subsequent events: None

APACER TECHNOLOGY INC. AND SUBSIDIARIES
Notes to the Consolidated Financial Statements

12. Others:

- (a) Employee benefits, depreciation and amortization expenses categorized by function were as follows:

	2020			2019		
	Cost of revenue	Operating expenses	Total	Cost of revenue	Operating expenses	Total
Employee benefits:						
Salaries	139,231	429,275	568,506	138,958	491,591	630,549
Insurance	14,299	38,959	53,258	13,305	40,617	53,922
Pension	6,305	16,973	23,278	5,525	18,990	24,515
Others	11,473	23,789	35,262	8,799	24,303	33,102
Depreciation	24,031	30,770	54,801	18,561	42,161	60,722
Amortization	1,942	11,459	13,401	2,175	9,834	12,009

13. Additional disclosures

- (a) Information on significant transactions:

In accordance with the requirements of the Regulations Governing the Preparation of Financial Reports by Securities Issuers, the Group discloses the following information on significant transactions for the year ended December 31, 2020:

- (i) Financing provided to other parties: None
- (ii) Guarantee and endorsement provided to other parties: None
- (iii) Marketable securities held at the reporting date (excluding investments in subsidiaries and associates):

(In Thousands of Shares)

Investing Company	Marketable Securities Type and Name	Relationship with the Securities Issuer	Financial Statement Account	December 31, 2020				Maximum percentage of ownership during 2020		Note
				Shares/ Units	Carrying Value	Percentage of Ownership	Fair value	Shares/ Units	Percentage of Ownership	
The Company	Fund: Jih Sun Money Market Fund	-	Financial assets at fair value through profit or loss — current	3,286	49,121	-	49,121	-	-	-
The Company	Stock: Formosa Golf and Country Club Corp.	-	Financial assets at fair value through other comprehensive income — non-current	3.6	9,643	0.01 %	9,643	3.6	0.01 %	-
The Company	Stock: OTO Photonics Inc.	-	Financial assets at fair value through other comprehensive income — non-current	3,772	26,467	12.59 %	26,467	3,772	12.59 %	-

APACER TECHNOLOGY INC. AND SUBSIDIARIES
Notes to Consolidated Financial Statements

Investing Company	Marketable Securities Type and Name	Relationship with the Securities Issuer	Financial Statement Account	December 31, 2020				Maximum percentage of ownership during 2020		Note
				Shares/ Units	Carrying Value	Percentage of Ownership	Fair value	Shares/ Units	Percentage of Ownership	
AMS	Stock: Futurepath Technology (Shenzhen) co., Ltd	-	Financial assets at fair value through other comprehensive income—non-current	31.5	311	0.03 %	311	31.5	0.03 %	-

- (iv) Marketable securities for which the accumulated purchase or sale amounts for the year exceed \$300 million or 20% of the paid-in capital:

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counter-Party	Name of Relationship	Beginning Balance		Acquisitions		Disposal				Ending Balance	
					Shares	Amount	Shares	Amount	Shares	Amount	Carrying Value	Gain (Loss) on Disposal (Note)	Shares	Amount
The Company	Fund: Jih Sun Money Market Fund	Financial assets at fair value through profit or loss—current	Taiwan Cooperative Bank	-	-	-	18,752	275,000	15,466	226,391	226,000	512	3,286	49,121

Note: The amount includes the changes in fair value.

- (v) Acquisition of real estate which exceeds \$300 million or 20% of the paid-in capital: None
- (vi) Disposal of real estate which exceeds \$300 million or 20% of the paid-in capital: None
- (vii) Total purchases from and sales to related parties which exceed \$100 million or 20% of the paid-in capital:

Company Name	Related Party	Nature of Relationship	Transaction Details				Transactions with Terms Different from Others		Notes/Accounts Receivable or (Payable)		Note
			Purchases/ (Sales)	Amount	% of Total Purchases/ (Sales)	Payment Terms	Unit Price	Payment Terms	Ending Balance	% of Total Notes/Accounts Receivable or (Payable)	
The Company	AMA	The Company's subsidiary	(Sales)	(525,059)	(7)%	OA30	-	-	32,805	4 %	Note 1
The Company	AMK	The Company's subsidiary	(Sales)	(117,281)	(2)%	OA30	-	-	12,593	2 %	Note 1
The Company	AMH	The Company's subsidiary	(Sales)	(436,927)	(6)%	OA30	-	-	19,465	2 %	Note 1
The Company	AMC	The Company's subsidiary	(Sales)	(498,743)	(7)%	M60	-	-	54,370	7 %	Note 1
The Company	Phison	The Company's director	Purchases	1,081,670	19 %	M45	-	-	(243,948)	(34)%	-
AMA	The Company	AMA's parent company	Purchases	525,059	91 %	OA30	-	-	(32,085)	(87)%	Note 1
AMK	The Company	AMK's parent company	Purchases	177,281	100 %	OA30	-	-	(12,593)	(100)%	Note 1

APACER TECHNOLOGY INC. AND SUBSIDIARIES
Notes to Consolidated Financial Statements

Company Name	Related Party	Nature of Relationship	Transaction Details				Transactions with Terms Different from Others		Notes/Accounts Receivable or (Payable)		Note
			Purchases/ (Sales)	Amount	% of Total Purchases/ (Sales)	Payment Terms	Unit Price	Payment Terms	Ending Balance	% of Total Notes/Accounts Receivable or (Payable)	
AMH	The Company	AMH's parent company	Purchases	436,927	100 %	OA30	-	-	(19,465)	(100)%	Note 1
AMC	The Company	AMC's parent company	Purchases	498,743	100 %	M60	-	-	(54,370)	(100)%	Note 1

Note 1: The above intercompany transactions have been eliminated when preparing the consolidated financial statements.

(viii) Receivables from related parties which exceed \$100 million or 20% of the paid-in capital:
None

(ix) Transactions about derivative instruments: Please refer to note 6(b)

(x) Business relationships and significant intercompany transactions:

Number (Note 1)	Company Name	Counterparty	Nature of Relationship (Note 2)	Transaction Details			
				Account	Amount	Payment Terms	Percentage of Consolidated Operating Revenue or Total Assets
0	The Company	AMA	1	Sales	525,059	OA30	7 %
0	The Company	AMK	1	Sales	117,281	OA30	2 %
0	The Company	AMH	1	Sales	436,927	OA30	6 %
0	The Company	AMC	1	Sales	498,743	M60	7 %
0	The Company	AMJ	1	Sales	93,419	M60	1 %
0	The Company	AMA	1	Accounts receivable	32,805	OA30	1 %
0	The Company	AMK	1	Accounts receivable	12,593	OA30	-
0	The Company	AMH	1	Accounts receivable	19,465	OA30	-
0	The Company	AMC	1	Accounts receivable	54,370	M60	1 %
0	The Company	AMJ	1	Accounts receivable	5,054	M60	-

Note 1: Parties to the intercompany transactions are identified and numbered as follows:

1. "0" represents the Company.
2. Subsidiaries are numbered from "1".

Note 2: The relationships with counterparties are as follows:

- No. "1" represents the transactions from the Company to subsidiary.
- No. "2" represents the transactions from subsidiary to the Company.

Note 3: Intercompany relationships and significant intercompany transactions are disclosed only for sales and accounts receivable. The corresponding purchases and accounts payable are not disclosed.

APACER TECHNOLOGY INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

(b) Information on investees:

(In Thousands of Shares)

Investor	Investee	Location	Main Businesses and Products	Original Investment Amount		Balance as of December 31, 2020			Maximum percentage of Ownership during 2020		Net Income (Loss) of the Investee	Investment Income (Loss)	Note
				December 31, 2020	December 31, 2019	Shares	Percentage of Ownership	Carrying Value	Shares	Percentage of Ownership			
The Company	AMA	USA	Trading of memory modules	610	610	20	100.00 %	244,274	20	100.00 %	17,657	17,657	Note 1
The Company	ACYB	British Virgin Islands	Investment and holding activity	18,542	18,542	2,636	100.00 %	32,347	2,636	100.00 %	21,896	21,896	Note 1
The Company	AMJ	Japan	Trading of memory modules	2,918	2,918	0.2	100.00 %	19,071	0.2	100.00 %	2,862	2,862	Note 1
The Company	ATPL	India	Trading of memory modules	915	915	29	100.00 %	1,394	29	100.00 %	89	89	Note 1
The Company	AMK	Hong Kong	Trading of memory modules	20,917	20,917	5,000	100.00 %	11,488	5,000	100.00 %	(654)	(654)	Note 1
The Company	AMH	Netherlands	Trading of memory modules	130,469	130,469	80	100.00 %	39,691	80	100.00 %	7,886	7,886	Note 1
The Company	JoiUp	Taiwan	Cloud services and software development	7,500	15,000	750	12.86 %	1,340	1,500	16.15 %	(1,709)	(269)	-

Note 1: The above intercompany transactions have been eliminated when preparing the consolidated financial statements.

(c) Information on investment in Mainland China:

(i) Name and main businesses and products of investee companies in Mainland China:

Investee Company Name	Main Businesses and Products	Total Amount of Paid-in Capital	Method of Investment (Note 1)	Accumulated Outflow of Investment from Taiwan as of January 1, 2020	Investment Flows		Accumulated Outflow of Investment from Taiwan as of December 31, 2020	Net Income (Loss) of Investee	% of Ownership of Direct or Indirect Investment	Maximum percentage of ownership during 2020		Investment Income (Loss)	Carrying Value as of December 31, 2020	Accumulated Inward Remittance of Earnings as of December 31, 2020
					Outflow	Inflow				Shares	Percentage of Ownership			
Apacer Electronic (Shanghai) Co., Ltd (AMC)	Trading of memory modules	14,050 (USD500 thousand)	Type 2	14,050 (USD500 thousand)	-	-	14,050 (USD500 thousand)	22,371	100.00 %	(Note 4)	100.00 %	22,371 (Note 2)	29,314	-
Shenzhen Kylinports Technology Co. (AMS)	Trading of gaming products	21,019 (USD748 thousand)	Type 2	16,804 (USD598 thousand)	-	-	16,804 (USD598 thousand) (Note 5)	(934)	99.00 %	(Note 4)	99.00 %	(925) (Note 3)	14,153	-

Note 1: Method of investments:

Type 1: Direct investment in Mainland China.

Type 2: Indirect investment in Mainland China through a holding company established in a third country.

Type 3: Others.

Note 2: Investment income or loss recognized based on the financial statements audited by the auditors of the Company.

Note 3: Investment income or loss recognized based on the unaudited financial statements of investee companies.

Note 4: There was no shares as the investee company is a limited liability company.

Note 5: The amount of AMK reinvestments amounting to US\$134 thousand was excluded.

Note 6: The above intercompany transactions have been eliminated when preparing the consolidated financial statements.

Note 7: The above amounts were translated into New Taiwan dollars at the exchange rate of US\$1=NT\$28.100.

APACER TECHNOLOGY INC. AND SUBSIDIARIES
Notes to Consolidated Financial Statements

(ii) Limits on investments in Mainland China:

Investor	Accumulated Investment in Mainland China as of December 31, 2020	Investment Amounts Authorized by Investment Commission, MOEA	Upper Limit on Investment Authorized by Investment Commission, MOEA
The Company	30,854 (USD 1,098 thousand)	34,619 (USD 1,232 thousand)	1,685,723

(iii) Significant transactions with investee companies in Mainland China:

The transactions between parent and investee companies in Mainland China (the intercompany transaction) have been eliminated when preparing the consolidated financial statements. Please refer to section “ Information on significant transactions” and “ Business relationships and significant intercompany transactions” for detail description.

(d) Major shareholders:

Major Shareholder's Name	Shareholding	Shares	Percentage
Phison Electronics Corporation		10,050,000	9.96 %
Teddy Lu		5,699,906	5.64 %

14. Segment information:

(a) General information

The Group has two reportable segments: Asia segment and America and Europe segment. The Asia segment engages in the manufacturing, maintenance, research and development, and sale of the Group's products. The America and Europe segment engages in the sale of the Group's products.

The Group's reportable segments are separated by geographical segments. Each segment provides different organizational functions and marketing strategies, and thus should be managed separately.

(b) Reportable segments, profit or loss, segment assets, basis of measurement, and reconciliation

The Group uses income before income tax as the measurement for segment profit and the basis of resource allocation and performance assessment. There was no material inconsistency between the accounting policies adopted for the operating segments and the accounting policies described in note 4. The reporting amount is consistent with the report used by chief operating decision maker.

APACER TECHNOLOGY INC. AND SUBSIDIARIES
Notes to the Consolidated Financial Statements

The Group's operating segment information and reconciliation are as follows:

2020				
	Asia	America and Europe	Adjustments and eliminations	Total
External revenue	\$ 5,979,459	1,172,763	-	7,152,222
Intra-group revenue	1,674,521	4,829	(1,679,350)	-
Total segment revenue	<u>\$ 7,653,980</u>	<u>1,177,592</u>	<u>(1,679,350)</u>	<u>7,152,222</u>
Segment profit (loss)	<u>\$ 388,684</u>	<u>31,720</u>	<u>(49,735)</u>	<u>370,669</u>
2019				
	Asia	America and Europe	Adjustments and eliminations	Total
External revenue	\$ 6,044,878	1,440,943	-	7,485,821
Intra-group revenue	1,858,573	-	(1,858,573)	-
Total segment revenue	<u>\$ 7,903,451</u>	<u>1,440,943</u>	<u>(1,858,573)</u>	<u>7,485,821</u>
Segment profit (loss)	<u>\$ 462,457</u>	<u>46,090</u>	<u>(29,647)</u>	<u>478,900</u>

(c) Product information

Revenues from external customers are detailed below:

Products and services	2020	2019
Memory modules	\$ 2,990,854	2,887,603
Flash memory products	4,153,925	4,591,572
Others	7,443	6,646
	<u>\$ 7,152,222</u>	<u>7,485,821</u>

(d) Geographic information

In presenting information on the basis of geography, segment revenue is based on the geographical location of customers, and segment assets are based on the geographical location of the assets.

Revenues from external customers are detailed below:

Products and services	2020	2019
Taiwan	\$ 1,338,231	1,456,120
Americas	963,487	896,248
Hong Kong	515,010	680,137
Japan	528,275	664,096
Mainland China	832,275	873,099
Others	2,974,944	2,916,121
	<u>\$ 7,152,222</u>	<u>7,485,821</u>

APACER TECHNOLOGY INC. AND SUBSIDIARIES
Notes to the Consolidated Financial Statements

Non-current assets:

Products and services	2020	2019
Taiwan	\$ 937,130	949,222
Japan	6,026	8,724
Netherland	3,274	6,046
Americas	4,493	6,946
Others	3,466	2,633
	\$ 954,389	973,571

Non-current assets include property, plant and equipment, right-of-use assets, intangible assets, and other assets, but do not include financial instruments and deferred income tax assets.

(e) Major customer information

The Group doesn't have a single customer representing at least 10% of revenue in the consolidated statements of comprehensive income.

(2) Individual financial report

Independent Auditors' Report

To the Board of Directors of Apacer Technology Inc.:

Opinion

We have audited the parent-company-only financial statements of Apacer Technology Inc. (the "Company"), which comprise the balance sheets as of December 31, 2020 and 2019, and the statements of comprehensive income, changes in equity and cash flows for the years then ended, and notes to the financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying parent-company-only financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2020 and 2019, and its financial performance and its cash flows for the years then ended in accordance with the Regulations Governing the Preparation of Financial Reports by Securities Issuers.

Basis for Opinion

We conducted our audits in accordance with the Regulations Governing Auditing and Certification of Financial Statements by Certified Public Accountants and the auditing standards generally accepted in the Republic of China. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Parent-Company-Only Financial Statements section of our report. We are independent of the Company in accordance with the Certified Public Accountants Code of Professional Ethics in Republic of China (the "Code"), and we have fulfilled our other ethical responsibilities in accordance with the Code. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis of our opinion.

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the parent-company-only financial statements of the current period. These matters were addressed in the context of our audit of parent-company-only financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Key audit matters for the Company's financial statements for the year ended December 31, 2020 are stated as follows:

1. Revenue recognition

Please refer to notes 4(o) and 6(r) for the accounting policy on "Revenue recognition" and "Revenue from contracts with customers" for the related disclosures, respectively, of the notes to parent-company-only financial statements.

Description of key audit matter:

The Company engages primarily in the manufacturing and sales of memory modules and flash memory products, with product diversification and market channels spread globally. The Company recognizes its revenue depending on the various trade terms in each individual sale transaction and the transfer of control of the goods, which are considered to be complex in determining the timing of revenue recognition. Consequently, the revenue recognition has been identified as one of the key audit matters.

How the matter was addressed in our audit:

In relation to the key audit matter above, our principal audit procedures included understanding and testing the design and operating effectiveness of the Company's internal controls over revenue recognition; assessing whether the accounting policy of the timing of revenue recognition is appropriate through understanding the main types of revenues of the Company, and reviewing the sales contracts and the related trade terms with customers; assessing whether the accounting treatment of revenue recognition is appropriate through performing a sample test of the original documents of sales transaction; performing sample tests of sales transactions that took place before and after the balance sheet date, and reviewing the related documents to understand and analyze the reason for any identified sales returns and allowances that took place after the balance sheet date, to assess whether the revenue is recognized within the proper period.

2. Valuation of inventories

Please refer to notes 4(g), 5 and 6(e) for the inventory accounting policy, "Critical accounting judgments and key sources of estimation uncertainty" for estimation uncertainty of inventory valuation, and "Inventories" for the related disclosures, respectively, of the notes to parent-company-only financial statements.

Description of key audit matter:

The Company's inventories are measured at the lower of cost and net realizable value. Management is required to make judgments and estimates in determining the net realizable value of inventories on the reporting date. The market prices of main raw materials of the Company, constituting the majority amount of product cost, fluctuate rapidly and the life cycle of certain products of the Company are short, which could possibly result in a price decline and obsolescence of inventories, wherein the inventories cost may exceed its net realizable value, as the Company fails to timely respond to market changes. Therefore, the valuation of inventories has been identified as one of the key audit matters.

How the matter was addressed in our audit:

In relation to the key audit matter above, our principal audit procedures included obtaining and understanding the Company's accounting policy of valuation of inventories, performing a retrospective test to understand the reasonableness of estimations of allowance for inventory valuation loss with reference to actual write-off of inventories in a subsequent period, and evaluating the reasonableness of the accounting policy of valuation of inventories; as well as performing a sample test of the estimated selling price provided by Management to assess the reasonableness of the net realizable value and allowance for inventory valuation loss.

Responsibilities of Management and Those Charged with Governance for the Parent-Company-Only Financial Statements

Management is responsible for the preparation and fair presentation of the parent-company-only financial statements in accordance with Regulations Governing the Preparation of Financial Reports by Securities Issuers, and for such internal control as management determines is necessary to enable the preparation of parent-company-only financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the parent-company-only financial statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

Those charged with governance (including members of the Audit Committee) are responsible for overseeing the Company's financial reporting process.

Auditor's Responsibilities for the Audit of the Parent-Company-Only Financial Statements

Our objectives are to obtain reasonable assurance about whether the parent-company-only financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the auditing standards generally accepted in the Republic of China will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these parent-company-only financial statements.

As part of an audit in accordance with auditing standards generally accepted in the Republic of China, we exercised professional judgment and maintained professional skepticism throughout the audit. We also:

1. Identified and assessed the risks of material misstatement of the parent-company-only financial statements, whether due to fraud or error, designed and performed audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
2. Obtained an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control.
3. Evaluated the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
4. Concluded on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the parent-company-only financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Company to cease to continue as a going concern.
5. Evaluated the overall presentation, structure and content of the parent-company-only financial statements, including the disclosures, and whether the parent-company-only financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
6. Obtained sufficient and appropriate audit evidence regarding the financial information of the investees accounted for using equity method to express an opinion on the parent-company-only financial statements. We are responsible for the direction, supervision and performance of the audit. We remained solely responsible for our audit opinion.

We communicated with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identified during our audit.

We also provided those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, we determined those matters that were of most significance in the audit of the parent-company-only financial statements for the year ended December 31, 2020 and are therefore the key audit matters. We described these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determined that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

The engagement partners on the audit resulting in this independent auditors' report are Tzu-Chieh Tang and Mei-Yen Chen.

KPMG

Taipei, Taiwan (Republic of China)
February 24, 2021

Notes to Readers

The accompanying financial statements are intended only to present the financial position, financial performance and cash flows in accordance with the accounting principles and practices generally accepted in the Republic of China and not those of any other jurisdictions. The standards, procedures and practices to audit such parent-company-only financial statements are those generally accepted and applied in the Republic of China.

The independent auditors' report and the accompanying financial statements are the English translation of the Chinese version prepared and used in the Republic of China. If there is any conflict between, or any difference in the interpretation of the English and Chinese language independent auditors' report and financial statements, the Chinese version shall prevail.

(English Translation of Parent-Company-Only Financial Statements Originally Issued in Chinese)
APACER TECHNOLOGY INC.

Balance Sheets

December 31, 2020 and 2019

(Expressed in Thousands of New Taiwan Dollars)

		December 31, 2020		December 31, 2019				December 31, 2020		December 31, 2019	
		Amount	%	Amount	%			Amount	%	Amount	%
Assets						Liabilities and Equity					
Current assets:						Current liabilities:					
1100	Cash and cash equivalents (note 6(a))	\$ 323,768	8	421,569	10	2100	Short-term borrowings (note 6(j))	\$ 98,350	2	74,950	2
1110	Financial assets at fair value through profit or loss — current (note 6(b))	49,354	1	139,604	3	2120	Financial liabilities at fair value through profit or loss — current (note 6(b))	168	-	124	-
1170	Notes and accounts receivable, net (notes 6(d) and (r))	670,973	17	706,872	17	2170	Notes and accounts payable	461,032	12	741,021	17
1180	Accounts receivable from related parties (notes 6(d), (r) and 7)	125,086	3	170,703	4	2180	Accounts payable to related parties (note 7)	244,412	6	183,149	4
1310	Inventories (note 6(e))	773,253	20	913,898	22	2200	Other payables (note 6(s))	229,268	6	286,169	7
1470	Other current assets	50,508	1	59,132	1	2220	Other payables to related parties (note 7)	1,849	-	1,287	-
1476	Other financial assets — current (note 6(a))	598,000	15	409,700	10	2230	Current income tax liabilities	74,337	2	41,923	1
Total current assets		<u>2,590,942</u>	<u>65</u>	<u>2,821,478</u>	<u>67</u>	2250	Provisions — current (note 6(l))	7,344	-	11,685	-
Non-current assets:						2280	Lease liabilities — current (note 6(k))	5,569	-	2,784	-
1517	Financial assets at fair value through other comprehensive income — non-current (note 6(c))	36,110	1	41,748	1	2300	Other current liabilities (note 6(r))	34,073	1	26,515	1
1550	Investments accounted for using equity method (note 6(f))	349,605	9	315,092	8	Total current liabilities		<u>1,156,402</u>	<u>29</u>	<u>1,369,607</u>	<u>32</u>
1600	Property, plant and equipment (note 6(g))	868,620	22	872,214	21	Non-current liabilities:					
1755	Right-of-use assets (note 6(h))	14,889	-	14,012	-	2570	Deferred income tax liabilities (note 6(n))	-	-	1,779	-
1780	Intangible assets (note 6(i))	53,099	1	62,130	1	2580	Lease liabilities — non-current (note 6(k))	9,430	-	10,647	-
1840	Deferred income tax assets (note 6(n))	88,048	2	86,042	2	2640	Net defined benefit liabilities (note 6(m))	29,256	1	27,868	1
1980	Other financial assets — non-current	2,792	-	3,308	-	Total non-current liabilities		<u>38,686</u>	<u>1</u>	<u>40,294</u>	<u>1</u>
1990	Other non-current assets	522	-	123	-	Total liabilities		<u>1,195,088</u>	<u>30</u>	<u>1,409,901</u>	<u>33</u>
Total non-current assets		<u>1,413,685</u>	<u>35</u>	<u>1,394,669</u>	<u>33</u>	Equity (note 6(o)):					
Total assets		<u>\$ 4,004,627</u>	<u>100</u>	<u>4,216,147</u>	<u>100</u>	3100	Common stock	1,008,978	25	1,008,978	24
						3200	Capital surplus	361,519	9	359,910	9
						3300	Retained earnings	1,548,000	39	1,515,937	36
						3400	Other equity	(108,958)	(3)	(78,579)	(2)
						Total equity		<u>2,809,539</u>	<u>70</u>	<u>2,806,246</u>	<u>67</u>
						Total liabilities and equity		<u>\$ 4,004,627</u>	<u>100</u>	<u>4,216,147</u>	<u>100</u>

(English Translation of Parent-Company-Only Financial Statements Originally Issued in Chinese)
APACER TECHNOLOGY INC.

Statements of Comprehensive Income

For the years ended December 31, 2020 and 2019

(Expressed in Thousands of New Taiwan Dollars, Except for Earnings Per Share)

		2020		2019	
		Amount	%	Amount	%
4000	Revenue (notes 6((r) and 7)	\$ 6,890,658	100	7,151,398	100
5000	Cost of revenue (notes 6(e), (g), (i), (k), (l), (m), 7 and 12)	(5,995,170)	(87)	(6,043,059)	(85)
	Gross profit before unrealized gross profit	895,488	13	1,108,339	15
5920	Realized (unrealized) gross profit	2,107	-	(2,516)	-
	Gross profit	897,595	13	1,105,823	15
	Operating expenses (notes 6(d), (g), (h), (i), (k), (m), (s), 7 and 12):				
6100	Selling expenses	(313,600)	(5)	(367,615)	(5)
6200	Administrative expenses	(152,162)	(2)	(177,671)	(2)
6300	Research and development expenses	(122,801)	(2)	(117,884)	(2)
6450	Expected credit losses	(2,920)	-	(1,729)	-
6000	Total operating expenses	(591,483)	(9)	(664,899)	(9)
	Operating income	306,112	4	440,924	6
	Non-operating income and loss (notes 6(f), (k) and (t)):				
7100	Interest income	2,715	-	3,035	-
7020	Other gains and losses — net	4,709	-	(1,463)	-
7050	Finance costs	(2,679)	-	(4,600)	-
7070	Share of profit of subsidiaries and associates	49,467	1	28,761	-
	Total non-operating income and loss	54,212	1	25,733	-
	Income before income tax	360,324	5	466,657	6
7950	Less: Income tax expenses (note 6(n))	(69,855)	(1)	(90,015)	(1)
	Net income	290,469	4	376,642	5
	Other comprehensive income (notes 6(m), (n), (o), and (u)):				
	Items that may not be reclassified subsequently to profit or loss:				
8310	Remeasurements of defined benefit plans	(1,397)	-	(2,292)	-
8316	Unrealized losses from investments in equity instruments measured at fair value through other comprehensive income	(11,709)	-	(2,772)	-
8330	Share of other comprehensive income of subsidiaries	79	-	(169)	-
8349	Less: income tax related to items that will not be reclassified subsequently to profit or loss	280	-	458	-
		(12,747)	-	(4,775)	-
8360	Items that may be reclassified subsequently to profit or loss				
8361	Exchange differences on translation of foreign operations	(18,749)	-	(8,098)	-
8399	Less: income tax related to items that may be reclassified subsequently to profit or loss	-	-	-	-
		(18,749)	-	(8,098)	-
	Other comprehensive income for the year, net of income tax	(31,496)	-	(12,873)	-
	Total comprehensive income for the year	\$ 258,973	4	\$ 363,769	5
	Earnings per share (in New Taiwan dollars) (note 6(p)) :				
9750	Basic earnings per share	\$ 2.88		\$ 3.73	
9850	Diluted earnings per share	\$ 2.85		\$ 3.68	

See accompanying notes to parent-company-only financial statements.

(English Translation of Financial Statements Originally Issued in Chinese)

APACER TECHNOLOGY INC.

Statements of Changes in Equity

For the years ended December 31, 2020 and 2019

(Expressed in Thousands of New Taiwan Dollars)

	Retained earnings						Total other equity			
							Unrealized losses on			
							Exchange differences on translation of foreign operations	financial assets measured at fair value through other comprehensive income	Total	Total equity
	Common stock	Capital Surplus	Legal reserve	Special reserve	Unappropriated earnings	Total				
Balance at January 1, 2019	\$ 1,008,978	359,910	308,232	49,321	1,036,382	1,393,935	(41,061)	(26,479)	(67,540)	2,695,283
Effects of retrospective application	-	-	-	-	(561)	(561)	-	-	-	(561)
Balance at January 1, 2019 after adjustments	<u>1,008,978</u>	<u>359,910</u>	<u>308,232</u>	<u>49,321</u>	<u>1,035,821</u>	<u>1,393,374</u>	<u>(41,061)</u>	<u>(26,479)</u>	<u>(67,540)</u>	<u>2,694,722</u>
Appropriation of earnings:										
Legal reserve	-	-	35,884	-	(35,884)	-	-	-	-	-
Special reserve	-	-	-	18,219	(18,219)	-	-	-	-	-
Cash dividends distributed to shareholders	-	-	-	-	(252,245)	(252,245)	-	-	-	(252,245)
Net income in 2019	-	-	-	-	376,642	376,642	-	-	-	376,642
Other comprehensive income in 2019	-	-	-	-	(1,834)	(1,834)	(8,098)	(2,941)	(11,039)	(12,873)
Total comprehensive income in 2019	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>374,808</u>	<u>374,808</u>	<u>(8,098)</u>	<u>(2,941)</u>	<u>(11,039)</u>	<u>363,769</u>
Balance at December 31, 2019	1,008,978	359,910	344,116	67,540	1,104,281	1,515,937	(49,159)	(29,420)	(78,579)	2,806,246
Appropriation of earnings:										
Legal reserve	-	-	37,664	-	(37,664)	-	-	-	-	-
Special reserve	-	-	-	11,039	(11,039)	-	-	-	-	-
Cash dividends distributed to shareholders	-	-	-	-	(257,289)	(257,289)	-	-	-	(257,289)
Net income in 2020	-	-	-	-	290,469	290,469	-	-	-	290,469
Other comprehensive income in 2020	-	-	-	-	(1,117)	(1,117)	(18,749)	(11,630)	(30,379)	(31,496)
Total comprehensive income in 2020	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>289,352</u>	<u>289,352</u>	<u>(18,749)</u>	<u>(11,630)</u>	<u>(30,379)</u>	<u>258,973</u>
Changes in equity of associates accounted for using equity method	-	1,609	-	-	-	-	-	-	-	1,609
Balance at December 31, 2020	<u>\$ 1,008,978</u>	<u>361,519</u>	<u>381,780</u>	<u>78,579</u>	<u>1,087,641</u>	<u>1,548,000</u>	<u>(67,908)</u>	<u>(41,050)</u>	<u>(108,958)</u>	<u>2,809,539</u>

See accompanying notes to parent-company-only financial statements.

(English Translation of Financial Statements Originally Issued in Chinese)
APACER TECHNOLOGY INC.

Statements of Cash Flows

For the years ended December 31, 2020 and 2019

(Expressed in Thousands of New Taiwan Dollars)

	2020	2019
Cash flows from operating activities:		
Income before income tax	\$ 360,324	466,657
Adjustments:		
Depreciation	44,336	50,061
Amortization	13,140	11,997
Expected credit loss	2,920	1,729
Interest expense	2,679	4,600
Interest income	(2,715)	(3,035)
Share of profits of subsidiaries and associates	(49,467)	(28,761)
Loss on disposal of property, plant and equipment	102	355
Unrealized (realized) gross profit on sales to subsidiaries and associates	(2,107)	2,516
Subtotal	8,888	39,462
Changes in operating assets and liabilities:		
Changes in operating assets:		
Financial assets at fair value through profit or loss	(754)	(250)
Notes and accounts receivable	32,979	174,037
Accounts receivable from related parties	45,617	1,182
Inventories	140,645	216,047
Other current assets	8,752	(4,937)
Net changes in operating assets	227,239	386,079
Changes in operating liabilities:		
Financial liabilities at fair value through profit or loss	44	(165)
Notes and accounts payable	(279,989)	(78,026)
Accounts payable to related parties	61,263	50,394
Other payables	(56,832)	(28,852)
Other payables to related parties	562	(1,256)
Provisions	(4,341)	(940)
Other current liabilities	7,558	(4,381)
Net defined benefit liabilities	(9)	6
Net changes in operating liabilities	(271,744)	(63,220)
Total changes in operating assets and liabilities	(44,505)	322,859
Total adjustments	(35,617)	362,321
Cash provided by operations	324,707	828,978
Interest received	2,713	3,035
Interest paid	(2,748)	(4,600)
Income taxes paid	(41,072)	(99,115)
Net cash provided by operating activities	283,600	728,298

See accompanying notes to parent-company-only financial statements.

(English Translation of Financial Statements Originally Issued in Chinese)
APACER TECHNOLOGY INC.

Statements of Cash Flows (Continued)

For the years ended December 31, 2020 and 2019

(Expressed in Thousands of New Taiwan Dollars)

	<u>2020</u>	<u>2019</u>
Cash flows from investing activities:		
Acquisition of financial assets at fair value through profit or loss	(275,000)	(138,900)
Proceeds from disposal of financial assets at fair value through profit or loss	366,004	-
Acquisition of financial assets at fair value through other comprehensive income	(6,071)	-
Acquisition of property, plant and equipment	(32,099)	(25,767)
Acquisition of intangible assets	(1,212)	(4,141)
Increase in other financial assets—current	(188,300)	(409,700)
Decrease in other financial assets—non-current	516	-
Increase in other non-current assets	<u>(3,296)</u>	<u>(3,694)</u>
Net cash used in investing activities	<u>(139,458)</u>	<u>(582,202)</u>
Cash flows from financing activities:		
Increase (decrease) in short-term loans	23,400	(63,268)
Payment of lease liabilities	(8,054)	(13,945)
Cash dividends distributed to shareholders	<u>(257,289)</u>	<u>(252,245)</u>
Net cash used in financing activities	<u>(241,943)</u>	<u>(329,458)</u>
Net decrease in cash and cash equivalents	(97,801)	(183,362)
Cash and cash equivalents at beginning of year	<u>421,569</u>	<u>604,931</u>
Cash and cash equivalents at end of year	<u><u>\$ 323,768</u></u>	<u><u>421,569</u></u>

See accompanying notes to parent-company-only financial statements.

(English Translation of Parent-Company-Only Financial Statements Originally Issued in Chinese)
APACER TECHNOLOGY INC.

Notes to Parent-Company-Only Financial Statements

For the years ended December 31, 2020 and 2019

(Expressed in Thousands of New Taiwan Dollars, Unless Otherwise Specified)

1. Organization and business

Apacer Technology Inc. (the “Company”) was incorporated on April 16, 1997, as a company limited by shares under the laws of the Republic of China (“R.O.C.”) and registered under the Ministry of Economic Affairs, R.O.C. The address of the Company’s registered office is 1F, No.32, Zhongcheng Rd., Tucheng Dist., New Taipei City, Taiwan. The Company is engaged in the research and development, design, manufacturing, processing, maintenance and sales of memory modules, flash memory cards and consumer electronic products.

2. Authorization of parent-company-only financial statements

These parent-company-only financial statements were authorized for issuance by the Board of Directors on February 24, 2021.

3. Application of new, revised or amended accounting standards and interpretations:

- (a) The impact of the International Financial Reporting Standards (“IFRSs”) endorsed by the Financial Supervisory Commission, R.O.C. (“FSC”) which have already been adopted.

The Company has initially adopted the following new amendments, which do not have a significant impact on its parent-company-only financial statements, from January 1, 2020:

- Amendments to IFRS 3 “Definition of a Business”
- Amendments to IFRS 9, IAS39 and IFRS7 “Interest Rate Benchmark Reform”
- Amendments to IAS 1 and IAS 8 “Definition of Material”
- Amendments to IFRS 16 “COVID-19-Related Rent Concessions”

- (b) The impact of IFRS endorsed by the FSC but not yet effective

The Company assesses that the adoption of the following new amendments, effective for annual period beginning on January 1, 2021, would not have a significant impact on its parent-company-only financial statements:

- Amendments to IFRS 4 “Extension of the Temporary Exemption from Applying IFRS 9”
- Amendments to IFRS 9, IAS39, IFRS7, IFRS 4 and IFRS 16 “Interest Rate Benchmark Reform—Phase 2”

APACER TECHNOLOGY INC.
Notes to Parent-Company-Only Financial Statements

- (c) The impact of IFRS issued by IASB but not yet endorsed by the FSC

The following new and amended standards, which may be relevant to the Company, have been issued by the International Accounting Standards Board (IASB), but have yet to be endorsed by the FSC:

Standards or Interpretations	Content of amendment	Effective date per IASB
Amendments to IAS 1 “Classification of Liabilities as Current or Non-current”	The amendments aim to promote consistency in applying the requirements by helping companies determine whether, in the balance sheet, debt and other liabilities with an uncertain settlement date should be classified as current (due or potentially due to be settled within one year) or non-current. The amendments include clarifying the classification requirements for debt a company might settle by converting it into equity.	January 1, 2023
Amendments to IAS 37 “Onerous Contracts—Cost of Fulfilling a Contract”	The amendments clarify that the ‘costs of fulfilling a contract’ comprises the costs that relate directly to the contract as follows: • the incremental costs – e.g. direct labor and materials; and • an allocation of other direct costs – e.g. an allocation of the depreciation charge for an item of property, plant and equipment used in fulfilling the contract.	

The Company is evaluating the impact of its initial adoption of the abovementioned standards or interpretations on its financial position and financial performance. The results thereof will be disclosed when the Company completes its evaluation.

The Company does not expect the following other new and amended standards, which have yet to be endorsed by the FSC, to have a significant impact on its parent-company-only financial statements:

- Amendments to IFRS 10 and IAS 28 “Sale or Contribution of Assets Between an Investor and Its Associate or Joint Venture”
- IFRS 17 “Insurance Contracts” and amendments to IFRS 17 “Insurance Contracts”
- Amendments to IAS 16 “Property, Plant and Equipment—Proceeds before Intended Use”
- Annual Improvements to IFRS Standards 2018-2020
- Amendments to IFRS 3 “Reference to the Conceptual Framework”

APACER TECHNOLOGY INC.
Notes to Parent-Company-Only Financial Statements

4. Summary of significant accounting policies:

The significant accounting policies presented in the parent-company-only financial statements are summarised as follows. The following accounting policies were applied consistently throughout the periods presented in the Company's parent-company-only financial statements.

(a) Statement of compliance

The Company's accompanying parent-company-only financial statements have been prepared in accordance with the Regulations Governing the Preparation of Financial Reports by Securities Issuers (the "Regulations").

(b) Basis of preparation

(i) Basis of measurement

The accompanying parent-company-only financial statements have been prepared on a historical cost basis except for the following items in the balance sheets:

- 1) Financial instruments measured at fair value through profit or loss (including derivative financial instruments);
- 2) Financial assets at fair value through other comprehensive income; and
- 3) Defined benefit liabilities are recognized as the present value of the defined benefit obligation less fair value of the plan assets and the effect of the asset ceiling mentioned in note 4(p).

(ii) Functional and presentation currency

The functional currency of the Company is determined based on the primary economic environment in which the Company operates. The Company's parent-company-only financial statements are presented in New Taiwan dollars, which is the Company's functional currency. Except when otherwise indicated, all financial information presented in New Taiwan dollars has been rounded to the nearest thousand.

(c) Foreign currency

(i) Foreign currency transactions

Foreign currency transactions are translated into the functional currency using the exchange rates prevailing at the dates of the transactions. At the end of each subsequent reporting period, monetary items denominated in foreign currencies are translated into the functional currencies using the exchange rate at that date. Non-monetary items denominated in foreign currencies that are measured at fair value are translated into the functional currencies using the exchange rate at the date that the fair value was determined. Non-monetary items denominated in foreign currencies that are measured based on historical cost are translated using the exchange rate at the date of the transaction.

APACER TECHNOLOGY INC.
Notes to Parent-Company-Only Financial Statements

Exchange differences are generally recognized in profit or loss, except for those differences relating to equity investments designated as at fair value through other comprehensive income, which are recognized in other comprehensive income.

(ii) Foreign operations

The assets and liabilities of foreign operations, including goodwill and fair value adjustments arising from acquisition, are translated into the presentation currency of the Company's parent-company-only financial statements at the exchange rates at the reporting date. The income and expenses of foreign operations are translated into the presentation currency of the Company's parent-company-only financial statements at the average exchange rates for the period. All resulting exchange differences are recognized in other comprehensive income.

On the disposal of a foreign operation which involves a loss of control over a subsidiary or a loss of significant influence over an associate that includes a foreign operation, all of the exchange differences accumulated in equity in respect of that operation attributable to the shareholders of the Company are entirely reclassified to profit or loss. In the case of a partial disposal that does not result in the Company losing control over a subsidiary, the proportionate share of accumulated exchange differences is reclassified to non-controlling interests. For a partial disposal of the Company's ownership interest in an associate, the proportionate share of the accumulated exchange differences in equity is reclassified to profit or loss.

When the settlement of a monetary receivable from or payable to a foreign operation is neither planned nor likely to occur in the foreseeable future, the monetary item is, in substance, a part of net investment in that foreign operation, and the related foreign exchange gains and losses thereon are recognized as other comprehensive income.

(d) Classification of current and non-current assets and liabilities

An asset is classified as current when one of following criteria is met; all other assets are classified as non-current assets.

- (i) It is expected to be realized, or sold or consumed in the normal operating cycle;
- (ii) It is held primarily for the purpose of trading;
- (iii) It is expected to be realized within twelve months after the end of the reporting period ("the reporting date"); or
- (iv) The asset is cash or a cash equivalent unless the asset is restricted from being exchanged or used to settle a liability for at least twelve months after the reporting date.

A liability is classified as current when one of following criteria is met; all other liabilities are classified as non-current liabilities:

- (i) It is expected to be settled in the normal operating cycle;
- (ii) It is held primarily for the purpose of trading;
- (iii) It is due to be settled within twelve months after the reporting date; or
- (iv) The Company does not have an unconditional right to defer settlement of the liability for at least twelve months after the reporting date.

APACER TECHNOLOGY INC.
Notes to Parent-Company-Only Financial Statements

(e) Cash and cash equivalents

Cash consists of cash on hand, checking deposits, and demand deposits. Cash equivalents consist of short-term and highly liquid investments that are readily convertible to known amounts of cash and are subject to an insignificant risk of changes in value. Time deposits that meet the aforesaid criteria and are held for meeting short-term cash commitments instead of holding for investing and other purposes are also classified as cash equivalents.

(f) Financial instruments

Accounts receivables and debt securities issued are initially recognized when they are originated. All other financial assets and financial liabilities are initially recognized when the Company becomes a party to the contractual provisions of the instrument. A financial asset (unless it is an accounts receivable without a significant financing component) or financial liability is initially measured at fair value plus, for an item not at fair value through profit or loss (FVTPL), transaction costs that are directly attributable to its acquisition or issue. An accounts receivable without a significant financing component is initially measured at the transaction price.

(i) Financial assets

On initial recognition, financial assets are classified into the following categories: measured at amortized cost, fair value through other comprehensive income (FVOCI) and fair value through profit or loss (FVTPL). Regular way purchases or sales of financial assets are recognized or derecognized on a trade-date basis.

The Company shall reclassify all affected financial assets only when it changes its business model for managing its financial assets, in which case all affected financial assets are reclassified on the first day of the first reporting period following the change in the business model.

1) Financial assets measured at amortized cost

A financial asset is measured at amortized cost if it meets both of the following conditions and is not designated as at FVTPL:

- it is held within a business model whose objective is to hold assets to collect contractual cash flows; and
- its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

These assets are subsequently measured at amortized cost, which is the amount at which the financial asset is measured at initial recognition, plus/minus, the cumulative amortization using the effective interest method, adjusted for any loss allowance. Interest income, foreign exchange gains and losses, as well as impairment, are recognized in profit or loss. Any gain or loss on derecognition is recognized in profit or loss.

APACER TECHNOLOGY INC.

Notes to Parent-Company-Only Financial Statements

- 2) Financial assets at fair value through other comprehensive income (Financial assets at "FVOCI")

A debt investment is measured at FVOCI if it meets both of the following conditions and is not designated as at FVTPL:

- it is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets; and
- its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

On initial recognition of an equity investment that is not held for trading, the Company may irrevocably elect to present subsequent changes in the investment's fair value in other comprehensive income. This election is made on an instrument-by-instrument basis.

Debt investments at FVOCI are subsequently measured at fair value. Interest income calculated using the effective interest method, foreign exchange gains and losses and impairment are recognized in profit or loss. Other net gains and losses are recognized in other comprehensive income. On derecognition, gains and losses accumulated in other comprehensive income are reclassified to profit or loss.

Equity investments at FVOCI are subsequently measured at fair value. Dividends are recognized as income in profit or loss unless the dividend clearly represents a recovery of part of the cost of the investment. Other net gains and losses are recognized in other comprehensive income. On derecognition, gains and losses accumulated in other comprehensive income are reclassified to retained earnings instead of profit or loss.

Dividend income derived from equity investments is recognized in profit or loss on the date on which the Company's right to receive payment is established, which in the case of quoted securities is normally the ex-dividend date.

- 3) Financial assets at fair value through profit or loss (Financial assets at "FVTPL")

All financial assets not classified as amortized cost or FVOCI described as above are measured at FVTPL, including derivative financial assets. On initial recognition, the Company may irrevocably designate a financial asset, which meets the requirements to be measured at amortized cost or at FVOCI, as at FVTPL if doing so eliminates or significantly reduces an accounting mismatch that would otherwise arise.

These assets are subsequently measured at fair value. Net gains and losses, including any interest or dividend income, are recognized in profit or loss.

APACER TECHNOLOGY INC.
Notes to Parent-Company-Only Financial Statements

4) Assessment whether contractual cash flows are solely payments of principal and interest

For the purposes of this assessment, ‘principal’ is defined as the fair value of the financial assets on initial recognition. ‘Interest’ is defined as consideration for the time value of money and for the credit risk associated with the principal amount outstanding during a particular period of time and for other basic lending risks and costs, as well as a profit margin.

In assessing whether the contractual cash flows are solely payments of principal and interest, the Company considers the contractual terms of the instrument. This includes assessing whether the financial asset contains a contractual term that could change the timing or amount of contractual cash flows such that it would not meet this condition. In making this assessment, the Company considers:

- contingent events that would change the amount or timing of cash flows;
- terms that may adjust the contractual coupon rate, including variable rate features;
- prepayment and extension features; and
- terms that limit the Company’s claim to cash flows from specified assets (e.g. non-recourse features)

5) Impairment of financial assets

The Company recognizes loss allowances for expected credit losses on financial assets measured at amortized cost (including cash and cash equivalents, notes and accounts receivable and other financial assets).

The Company measures loss allowances at an amount equal to lifetime expected credit loss (ECL), except for the following which are measured as 12-month ECL:

- bank balances for which credit risk (i.e. the risk of default occurring over the expected life of the financial instrument) has not increased significantly since initial recognition.

Loss allowance for accounts receivables are always measured at an amount equal to lifetime ECL.

Lifetime ECLs are the ECLs that result from all possible default events over the expected life of a financial instrument. 12-month ECLs are the portion of ECLs that result from default events that are possible within the 12 month after the reporting date (or a shorter period if the expected life of the instrument is less than 12 months).

The maximum period considered when estimating ECLs is the maximum contractual period over which the Company is exposed to credit risk.

APACER TECHNOLOGY INC.

Notes to Parent-Company-Only Financial Statements

When determining whether the credit risk of a financial asset has increased significantly since initial recognition and when estimating ECL, the Company considers reasonable and supportable information that is relevant and available without undue cost or effort. This includes both quantitative and qualitative information and analysis based on the Company's historical experience and informed credit assessment as well as forward-looking information.

ECLs are probability-weighted estimate of credit losses. Credit losses are measured as the present value of all cash shortfalls (i.e. the difference between the cash flows due to the Company in accordance with the contract and the cash flows that the Company expects to receive). ECLs are discounted at the effective interest rate of the financial asset.

Loss allowances for financial assets measured at amortized cost are deducted from the gross carrying amount of the assets.

The gross carrying amount of a financial asset is written off, either partially or in full, to the extent that there is no realistic prospect of recovery. The Company individually makes an assessment with respect to the timing and amount of write-off based on whether there is a reasonable expectation of recovery. The Company expects no significant recovery from the amount written off. However, financial assets that are written off could still be subject to enforcement activities in order to comply with the Company's procedures for recovery of amounts due.

6) Derecognition of financial assets

The Company derecognizes financial assets when the contractual rights to the cash flows from the financial assets expire, or it transfers the rights to receive the contractual cash flows in a transaction in which substantially all of the risks and rewards of ownership of the financial assets are transferred or in which the Company neither transfers nor retains substantially all of the risks and rewards of ownership and it does not retain control of the financial assets.

The Company enters into transactions whereby it transfers assets recognized in its statement of balance sheet, but retains either all or substantially all of the risks and rewards of the transferred assets. In these cases, the transferred assets are not derecognized.

(ii) Financial liabilities

1) Financial liabilities

Financial liabilities are classified as measured at amortized cost or FVTPL. A financial liability is classified as at FVTPL if it is classified as held-for-trading, it is a derivative or it is designated as such on initial recognition. Financial liabilities at FVTPL are measured at fair value and net gains and losses, including any interest expense, are recognized in profit or loss.

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Financial liabilities measured at amortized cost are subsequently measured at amortized cost using the effective interest method. Interest expense and foreign exchange gains and losses are recognized in profit or loss. Any gain or loss on derecognition is also recognized in profit or loss.

2) Derecognition of financial liabilities

The Company derecognizes a financial liability when its contractual obligation has been fulfilled or cancelled, or has expired. The Company also derecognizes a financial liability when its terms are modified and the cash flows of the modified liability are substantially different, in which case a new financial liability based on the modified terms is recognized at fair value.

The difference between the carrying amount of a financial liability derecognized and the consideration paid (including any non-cash assets transferred or liabilities assumed) is recognized in profit or loss.

3) Offsetting of financial assets and liabilities

Financial assets and financial liabilities are offset and the net amount presented in the statement of balance sheet when, and only when, the Company currently has a legally enforceable right to set off the amounts and it intends either to settle them on a net basis or to realize the asset and settle the liability simultaneously.

(iii) Derivative financial instruments

Derivative financial instruments such as foreign currency forward contracts are held to hedge the Company's foreign currency exposures. Derivatives are recognized initially at fair value, and attributable transaction costs are recognized in profit or loss as incurred. Subsequent to initial recognition, derivatives are measured at fair value, and changes therein are recognized in profit or loss. If the valuation of a derivative instrument results in a positive fair value, it is classified as a financial asset; otherwise, it is classified as a financial liability.

(g) Inventories

Inventories are measured at the lower of cost and net realizable value. The cost of inventories is calculated based on the weighted-average method and includes expenditure incurred in acquiring the inventories, production or conversion costs, and other costs incurred in bringing them to the location and condition ready for sale. Fixed manufacturing overhead is allocated to finished products and work in process based on the higher of normal capacity or actual capacity; variable manufacturing overhead is allocated based on the actual capacity of machinery and equipment. Net realizable value represents the estimated selling price in the ordinary course of business, less all estimated costs of completion and necessary selling expenses.

(h) Investment in associates

Associates are those entities in which the Company has significant influence, but not control or joint venture, over the financial and operating policies.

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Investments in associates are accounted for using the equity method and are recognized initially at cost, plus, any transaction costs. The carrying amount of the investment in associates includes goodwill identified on acquisition, net of any accumulated impairment losses. When necessary, the entire carrying amount of the investment (including goodwill) will be tested for impairment as a single asset by comparing its recoverable amount with its carrying amount. 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.

The Company's financial statements include the Company's share of the profit or loss and other comprehensive income of those associates, after adjustments to align their accounting policies with those of the Company, from the date on which significant influence commences until the date on which significant influence ceases. When changes in an associate's equity are not recognized in profit or loss or other comprehensive income of the associate, and such changes do not affect the Company's ownership percentage of the associate, the Company recognizes the change in ownership interests of its associate as "capital surplus" in proportion to its ownership.

Gains and losses resulting from transactions between the Company and an associate are recognized only to the extent of unrelated Company's interests in the associate.

When the Company's share of losses in an associate equals or exceeds its interest in the associate, the recognition of further losses is discontinued. Additional losses are provided for, and a liability is recognized, only to the extent that the Company has incurred legal or constructive obligations or made payments on behalf of the associate.

When an associate issues new shares and the Company does not subscribe to the new shares in proportion to its original ownership percentage, the Company's interest in the associate's net assets will be changed. The change in the equity interest is adjusted through the capital surplus and investment accounts. If the Company's capital surplus is insufficient to offset the adjustment to investment accounts, the difference is charged as a reduction of retained earnings. If the Company's interest in an associate is reduced due to the additional subscription to the shares of associate by other investors, the proportionate amount of the gains or losses previously recognized in other comprehensive income in relation to that associate shall be reclassified to profit or loss on the same basis as would be required if the associate had directly disposed of the related assets or liabilities.

(i) Investment in subsidiaries

When preparing the parent-company-only financial statements, investment in subsidiaries which are controlled by the Company is accounted for using equity method. Under the equity method, the net income, other comprehensive income and equity in the parent-company-only financial statement are the same as those attributable to shareholders of the Company in the consolidated financial statements.

Changes in the Company's ownership interest in a subsidiary that do not result in a loss of control are accounted for as equity transactions.

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(j) Property, plant and equipment

(i) Recognition and measurement

Items of property, plant and equipment are measured at cost, which includes capitalized borrowing costs, less accumulated depreciation and accumulated impairment losses.

If significant parts of an item of property, plant and equipment have different useful lives, they are accounted for as separate items (major components) of property, plant and equipment.

Any gain or loss on disposal of an item of property, plant and equipment is recognized in profit or loss.

(ii) Subsequent expenditure

Subsequent expenditure is capitalized only if it is probable that future economic benefits associated with the expenditure will flow to the Company.

(iii) Depreciation

Depreciation is calculated on the cost of an asset less its residual value and is recognized in profit or loss on a straight-line basis over the estimated useful lives of each component of an item of property, plant and equipment. Land is not depreciated.

The estimated useful lives for property, plant and equipment are as follows: buildings and improvements: 4 to 47 years; machinery and equipment: 2 to 11 years; and other equipment: 3 to 15 years.

Depreciation methods, useful lives, and residual values are reviewed at each reporting date, with the effect of any changes in estimate accounted for on a prospective basis.

(k) Leases

(i) Identifying a lease

At inception of a contract, the Company assesses whether a contract is, or contains, a lease. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration. To assess whether a contract conveys the right to control the use of an identified asset, the Company assesses whether:

- 1) the contract involves the use of an identified asset – this may be specified explicitly or implicitly, and should be physically distinct or represent substantially all of the capacity of a physically distinct asset. If the supplier has a substantive substitution right, then the asset is not identified; and
- 2) the Company has the right to obtain substantially all of the economic benefits from use of the asset throughout the period of use; and

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3) the Company has the right to direct the use of the asset if either:

- The Company has the right to direct the use of the asset when it has the decision-making rights that are most relevant to change how and for what purpose the asset is used; or
- In rare cases where the decision about how and for what purpose the asset is predetermined; and
 - the Company has the right to operate the asset and the providers do not have the right to vary; or
 - the Company designed the asset in a way that predetermines how and for what purpose it will be used.

(ii) As a lessee

The Company recognizes a right-of-use asset and a lease liability at the lease commencement date. The right-of-use asset is initially measured at cost, which comprises the initial amount of the lease liability adjusted for any lease payments made at or before the commencement date, plus any initial direct costs incurred and an estimate of costs to dismantle and remove the underlying asset or to restore the underlying asset or the site on which it is located, less any lease incentives received.

The right-of-use asset is subsequently depreciated using the straight-line method from the commencement date to the earlier of the end of the useful life of the right-of-use asset or the end of the lease term. In addition, the right-of-use asset is periodically reduced by impairment losses, if any, and adjusted for certain remeasurements of the lease liability.

The lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date, discounted using the interest rate implicit in the lease or, if that rate cannot be reliably determined, the Company's incremental borrowing rate. Generally, the Company uses its incremental borrowing rate as the discount rate.

Lease payments included in the measurement of the lease liability comprise the following:

- fixed payments, including in-substance fixed payments;
- variable lease payments that depend on an index or a rate, initially measured using the index or rate as at the commencement date.

The lease liability is measured at amortized cost using the effective interest method. It is remeasured when:

- there is a change in future lease payments arising from the change in an index or rate; or
- there is a change of its assessment on whether it will exercise an extension or termination option; or
- there is any lease modifications in lease subject, scope of the lease or other terms.

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When the lease liability is remeasured, other than lease modifications, a corresponding adjustment is made to the carrying amount of the right-of-use asset, or in profit and loss if the carrying amount of the right-of-use asset has been reduced to zero.

When the lease liability is remeasured to reflect the partial or full termination of the lease for lease modifications that decrease the scope of the lease, the Company accounts for the remeasurement of the lease liability by decreasing the carrying amount of the right-of-use asset to reflect the partial or full termination of the lease, and recognize the difference in profit or loss relating to the partial or full termination of the lease.

The Company presents right-of-use assets that do not meet the definition of investment properties, and lease liabilities as a separate line item respectively in the balance sheets.

The Company has elected not to recognize right-of-use assets and lease liabilities for short-term leases of office equipments. The Company recognizes the lease payments associated with these leases as an expense on a straight-line basis over the lease term.

(l) Intangible assets

The Company's intangible assets are carried at cost less accumulated amortization and accumulated impairment losses. Amortization is recognized in profit or loss using the straight-line method over the following estimated useful lives: acquired computer software: 2 to 10 years; royalties for the use of patents: 13 to 20 years.

Amortization methods, useful lives and residual values are reviewed at each reporting date and adjusted if appropriate.

(m) Impairment of non-financial assets

Non-financial assets other than inventories, deferred income tax assets, and assets arising from employee benefits are reviewed for impairment at each reporting date to determine whether there is any indication of impairment. When there exists an indication of impairment for an asset, the recoverable amount of the asset is estimated. If the recoverable amount of an individual asset cannot be determined, the Company estimates the recoverable amount of the cash-generating units ("CGU") to which the asset has been allocated.

The recoverable amount for an individual asset or a CGU is the higher of its fair value less costs to sell or its value in use. When the recoverable amount of an asset or a CGU is less than its carrying amount, the carrying amount of the asset or CGU is reduced to its recoverable amount, and an impairment loss is recognized in profit or loss immediately.

The Company assesses at each reporting date whether there is any evidence that an impairment loss recognized in prior periods for an asset other than goodwill may no longer exist or may have decreased. If so, an impairment loss recognized in prior periods for an asset other than goodwill is reversed, and the carrying amount of the asset or CGU is increased to its revised estimate of recoverable amount. The increased carrying amount shall not exceed the carrying amount (net of amortization or depreciation) that would have been determined had no impairment loss been recognized in prior years.

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(n) Provisions

Provisions are recognized when the Company has a present obligation (legal or constructive) as a result of a past event, it is probable that the Company will be required to settle the obligation, and a reliable estimate can be made of the amount of the obligation.

(i) Warranties

A provision for warranties is recognized when the underlying products or services are sold. This provision reflects the historical warranty claim rate and the weighting of all possible outcomes against their associated probabilities.

(ii) Sales return and allowances provision

A provision for sales returns and allowances is recognized when the underlying products are sold. This provision is estimated based on historical sales return and allowances data.

(o) Revenue recognition

Revenue is measured based on the consideration to which the Company expects to be entitled in exchange for transferring goods to a customer. The Company recognizes revenue when it satisfies a performance obligation by transferring control of a good to a customer.

(i) Sale of goods

The Company recognizes revenue when control of the goods has been transferred to the customer, being when the goods have been delivered to the customer, and there is no unfulfilled obligation that could affect the customer's acceptance of the goods. Delivery occurs when the customer has accepted the goods in accordance with the terms of sales, the risks of obsolescence and loss have been transferred to the customer, and the Company has objective evidence that all criteria for acceptance have been satisfied.

A receivable is recognized when the goods are delivered as this is the point in time that the Company has a right to an amount of consideration that is unconditional.

(ii) Financing components

The Company does not expect that the period between the transfer of the promised goods to the customer and payment by the customer exceeds one year. As a consequence, the Company does not adjust any of the transaction prices for the time value of money.

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(p) Employee benefits

(i) Defined contribution plans

Obligations for contributions to defined contribution pension plans are expensed during the year in which employees render services.

(ii) Defined benefit plans

The Company's net obligation in respect of defined benefit plans is calculated separately for each plan by estimating the amount of future benefit that employees have earned in the current and prior periods, discounting that amount and deducting the fair value of any plan assets. The discount rate for calculating the present value of the defined benefit obligation refers to the interest rate of high-quality government bonds that are denominated in the currency in which the benefits will be paid, and that have terms to maturity approximating the term of the related pension obligation. The defined benefit obligation is calculated annually by qualified actuaries using the projected unit credit method.

When the benefits of a plan are improved, the expense related to the increased obligations resulting from the services rendered by employees in the past years are recognized in profit or loss immediately.

The remeasurements of the net defined benefit liability (asset) comprise (i) actuarial gains and losses; (ii) return on plan assets, excluding amounts included in net interest on the net defined benefit liability (asset); and (iii) any change in the effect of the asset ceiling, excluding amounts included in net interest on the net defined benefit liability (asset). The remeasurements of the net defined benefit liabilities (asset) are recognized in other comprehensive income and then transferred to retained earnings.

The Company recognizes gains or losses on the curtailment or settlement of a defined benefit plan when the curtailment or settlement occurs. The gain or loss on curtailment or settlement comprises any resulting change in the fair value of plan assets and any change in the present value of the defined benefit obligation.

(iii) Short-term employee benefits

Short-term employee benefit obligations are measured on an undiscounted basis and are expensed during the period in which employees render services. A liability is recognized for the amount expected to be paid under short-term cash bonus or profit-sharing plans if the Company has a present legal or constructive obligation to make such payments as a result of past service provided by the employees, and the obligation can be estimated reliably.

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(q) Income taxes

Income taxes comprise current taxes and deferred taxes. Current and deferred taxes are recognized in profit or loss unless they relate to items recognized directly in equity or other comprehensive income.

Current taxes comprise the expected tax payables or receivables on the taxable profits (losses) for the year and any adjustment to the tax payable or receivable in respect of previous years. The amount of current tax payables or receivables are the best estimate of the tax amount expected to be paid or received that reflects uncertainty related to income taxes, if any. It is measured using tax rates enacted or substantively enacted at the reporting date.

Deferred income taxes are recognized in respect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. Deferred taxes are not recognized for:

- (i) Temporary differences on the initial recognition of assets or liabilities in a transaction that is not a business combination and that affects neither accounting nor taxable profit (losses) at the time of transaction;
- (ii) Temporary differences related to investments in subsidiaries and associates to the extent that the Company is able to control the timing of the reversal of the temporary differences and it is probable that they will not reverse in the foreseeable future; and
- (iii) Taxable temporary differences arising on the initial recognition of goodwill.

Deferred taxes are measured at tax rates that are expected to be applied to temporary differences when they reverse, using tax rates enacted or substantively enacted at the reporting date, and reflect uncertainty related to income taxes, if any.

Deferred tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets against current tax liabilities and when the deferred tax assets and liabilities relate to income taxes levied by the same tax authority on either the same taxable entity or different taxable entities where there is an intention to settle the balances on a net basis.

Deferred tax assets are recognized for unused tax losses, tax credits, and deductible temporary differences to the extent that it is probable that future taxable profits will be available against which they can be utilized. Deferred tax assets are reviewed at each reporting date and reduced to the extent that it is no longer probable that the related tax benefit will be realized; such reductions are reversed when the probability of future taxable profits improves.

(r) Earnings per share ("EPS")

The basic and diluted EPS attributable to shareholders of the Company are disclosed in the parent-company-only financial statements. Basic EPS is calculated by dividing net income attributable to shareholders of the Company by the weighted-average number of common shares outstanding during the year. Diluted EPS is calculated as the net income attributable to shareholders of the Company divided by the weighted-average number of common shares outstanding during the year after adjustment for the effects of all potentially dilutive common shares such as employee compensation.

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(s) Operating segments

The Company discloses the operating segment information in the consolidated financial statements. Therefore, the Company does not disclose the operating segment information in the parent-company-only financial statements.

5. Critical accounting judgments and key sources of estimation uncertainty

The preparation of the parent-company-only financial statements in conformity with the Regulations Governing the Preparation of Financial Reports by Securities Issuers requires management to make judgments, estimates and assumptions that affect the application of the accounting policies and the reported amount of assets, liabilities, income and expenses. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimate is revised and the future periods affected.

Information about assumptions and estimation uncertainties that have a significant risk of resulting in a material adjustment to the carrying amounts of assets and liabilities within the next financial year is as follows. The assumption and estimation have been updated to reflect the impact of COVID-19 pandemic:

Inventories are measured at the lower of cost or net realizable value. The Company estimates the net realizable value of inventory, taking into account obsolescence and unmarketable items at the reporting date, and then writes down the cost of inventories to net realizable value. The net realizable value of the inventory is mainly determined based on assumptions of future demand within a specific time horizon, which could result in significant adjustments.

Refer to note 6(e) for more details of the valuation of inventories.

6. Significant account disclosures

(a) Cash and cash equivalents

	December 31, 2020	December 31, 2019
Cash on hand	\$ 10	10
Demand deposits	204,158	245,859
Time deposits with original maturities less than three months	119,600	175,700
	\$ 323,768	421,569

As of December 31, 2020 and 2019, the time deposits with original maturities of more than three months amounted to \$598,000 and \$409,700, respectively, which were classified as other financial assets — current.

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(b) Financial assets and liabilities at fair value through profit or loss — current

	December 31, 2020	December 31, 2019
Financial assets mandatorily measured at fair value through profit or loss — current:		
Foreign currency forward contracts	\$ 233	77
Open-ended mutual funds	49,121	139,527
	\$ 49,354	139,604
Financial liabilities held for trading — current:		
Foreign currency forward contracts	\$ (168)	(124)

Refer to note 6(t) for the detail of the changes in fair value recognized in profit or loss.

The Company entered into derivative contracts to manage foreign currency exchange risk resulting from its operating activities. As of December 31, 2020 and 2019, the derivative financial instruments that did not conform to the criteria for hedge accounting consisted of the following:

December 31, 2020					
	Contract amount (in thousands)		Fair value	Currency (Sell / Buy)	Maturity period
Financial assets — foreign currency forward contracts	JPY 18,900		31	JPY / TWD	2021/01/29 ~ 2021/02/26
	CNY 7,960		81	CNY/TWD	2021/01/29 ~ 2021/02/26
	USD 5,000		121	USD/TWD	2021/01/08 ~ 2021/01/22
			\$ 233		
December 31, 2019					
	Contract amount (in thousands)		Fair value	Currency (Sell / Buy)	Maturity period
Financial assets — foreign currency forward contracts	JPY 18,200		46	JPY / TWD	2020/01/30
	CNY 6,010		31	CNY/TWD	2020/01/30 ~ 2020/02/27
			\$ 77		

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December 31, 2020					
	Contract amount		Fair value	Currency	Maturity period
	(in thousands)			(Sell / Buy)	
Financial liabilities—	JPY 14,000		(16)	JPY / TWD	2021/02/26
foreign currency					
forward contracts	CNY 6,460		(152)	CNY/TWD	2021/01/29~2021/02/26
			<u>\$ (168)</u>		
December 31, 2019					
	Contract amount		Fair value	Currency	Maturity period
	(in thousands)			(Sell / Buy)	
Financial liabilities—	JPY 23,500		(38)	JPY / TWD	2020/01/30~2020/02/27
foreign currency					
forward contracts	CNY 4,260		(86)	CNY / TWD	2020/01/30~2020/02/27
			<u>\$ (124)</u>		

(c) Financial assets at fair value through other comprehensive income—non-current

	December 31, 2020	December 31, 2019
Equity investments at fair value through other comprehensive income:		
Domestic unlisted stocks	<u>\$ 36,110</u>	<u>41,748</u>

The Company designated the abovementioned investments as at fair value through other comprehensive income because these equity investments represent those investments that the Company intends to hold for long-term strategic purposes.

No strategic investments were disposed for the years ended December 31, 2020 and 2019, and there were no transfers of any cumulative gain or loss within equity relating to these investments.

(d) Notes and accounts receivable

	December 31, 2020	December 31, 2019
Notes and accounts receivable	\$ 679,186	712,165
Accounts receivable from related parties	<u>125,086</u>	<u>170,703</u>
	804,272	882,868
Less: loss allowance	<u>(8,213)</u>	<u>(5,293)</u>
	<u>\$ 796,059</u>	<u>877,575</u>

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The Company applies the simplified approach to provide for its expected credit losses, i.e. the use of lifetime expected loss provision for all receivables (including related parties), as well as incorporated forward looking information. The loss allowance provision were determined as follows:

	December 31, 2020		
	Gross carrying amount	Weighted-average loss rate	Loss allowance provision
Current	\$ 766,881	0.6393%	4,903
Past due 1-90 days	34,844	2.1984%	766
Past due 91-180 days	361	99.0457%	358
Past due over 181 days	2,186	100%	2,186
	\$ 804,272		8,213

	December 31, 2019		
	Gross carrying amount	Weighted-average loss rate	Loss allowance provision
Current	\$ 760,971	0.0584%	444
Past due 1-90 days	119,385	1.9575%	2,337
Past due over 181 days	2,512	100%	2,512
	\$ 882,868		5,293

Movements of the loss allowance for notes and accounts receivable (including related parties) were as follows:

	2020	2019
Balance at January 1	\$ 5,293	4,270
Impairment loss recognized	2,920	1,729
Write-off	-	(706)
Balance at December 31	\$ 8,213	5,293

(e) Inventories

	December 31, 2020	December 31, 2019
Raw materials	\$ 313,088	424,874
Work in process	130,281	44,603
Finished goods	280,145	434,059
Inventories in transit	49,739	10,362
	\$ 773,253	913,898

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For the years ended December 31, 2020 and 2019, the amounts of inventories recognized as cost of revenue were as follows:

	<u>2020</u>	<u>2019</u>
Cost of inventories sold	\$ 5,975,170	6,030,059
Write-downs of inventories	<u>20,000</u>	<u>13,000</u>
	<u><u>\$ 5,995,170</u></u>	<u><u>6,043,059</u></u>

The above write-downs of inventories to net realizable value were included in cost of revenue.

(f) Investments accounted for using equity method

A summary of the Company's investments accounted for using the equity method at the reporting date were as follows:

	<u>December 31, 2020</u>	<u>December 31, 2019</u>
Subsidiaries	\$ 348,265	315,092
Associates	<u>1,340</u>	<u>-</u>
	<u><u>\$ 349,605</u></u>	<u><u>315,092</u></u>

(i) Investments in subsidiaries

Please refer to the consolidated financial statements for the year ended December 31, 2020.

(ii) Investments in associates

	December 31, 2020		December 31, 2019	
Name of Associates	Percentage of voting rights	Carrying amount	Percentage of voting rights	Carrying amount
JoiUp Technology Inc.	12.86 %	\$ 1,340	16.15 %	-

Aggregate financial information of associates that were not individually material was summarized as follows. The financial information was included in the Company's parent-company-only financial statements.

	<u>December 31, 2020</u>	<u>December 31, 2019</u>
The aggregate carrying amount of associates that were not individually material	\$ <u>1,340</u>	<u>-</u>
	<u>2020</u>	<u>2019</u>
Attributable to the Company:		
Net loss	\$ (269)	(884)
Other comprehensive income	<u>-</u>	<u>-</u>
Total comprehensive income	<u><u>\$ (269)</u></u>	<u><u>(884)</u></u>

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(g) Property, plant and equipment

The movements of cost and accumulated depreciation of the property, plant and equipment for the years ended December 31, 2020 and 2019 were as follows:

	Land	Buildings	Machinery and equipment	Other equipment	Equipment to be inspected and construction in progress	Total
Cost:						
Balance at January 1, 2020	\$ 556,498	298,490	182,527	91,847	714	1,130,076
Additions	-	1,834	4,929	10,942	14,394	32,099
Disposals	-	(229)	(7,137)	-	-	(7,366)
Reclassification	-	2,226	3,137	168	(5,531)	-
Balance at December 31, 2020	<u>\$ 556,498</u>	<u>302,321</u>	<u>183,456</u>	<u>102,957</u>	<u>9,577</u>	<u>1,154,809</u>
Balance at January 1, 2019	\$ 556,498	276,430	175,449	88,742	10,547	1,107,666
Additions	-	8,893	4,689	3,845	8,340	25,767
Disposals	-	-	(2,475)	(882)	-	(3,357)
Reclassification	-	13,167	4,864	142	(18,173)	-
Balance at December 31, 2019	<u>\$ 556,498</u>	<u>298,490</u>	<u>182,527</u>	<u>91,847</u>	<u>714</u>	<u>1,130,076</u>
Accumulated depreciation and impairment loss:						
Balance at January 1, 2020	\$ -	42,916	138,989	75,957	-	257,862
Depreciation	-	10,901	16,676	8,014	-	35,591
Disposals	-	(127)	(7,137)	-	-	(7,264)
Balance at December 31, 2020	<u>\$ -</u>	<u>53,690</u>	<u>148,528</u>	<u>83,971</u>	<u>-</u>	<u>286,189</u>
Balance at January 1, 2019	\$ -	34,596	122,538	66,872	-	224,006
Depreciation	-	8,320	18,926	9,612	-	36,858
Disposals	-	-	(2,475)	(527)	-	(3,002)
Balance at December 31, 2019	<u>\$ -</u>	<u>42,916</u>	<u>138,989</u>	<u>75,957</u>	<u>-</u>	<u>257,862</u>
Carrying amount:						
Balance at December 31, 2020	<u>\$ 556,498</u>	<u>248,631</u>	<u>34,928</u>	<u>18,986</u>	<u>9,577</u>	<u>868,620</u>
Balance at December 31, 2019	<u>\$ 556,498</u>	<u>255,574</u>	<u>43,538</u>	<u>15,890</u>	<u>714</u>	<u>872,214</u>

(h) Right-of-use assets

	December 31, 2020	December 31, 2019
Carrying amount:		
Buildings	\$ 1,735	5,764
Other equipments	13,154	8,248
	<u>\$ 14,889</u>	<u>14,012</u>
	2020	2019
Additions	<u>\$ 9,622</u>	<u>15,000</u>
Depreciation		
Buildings	\$ 4,029	4,713
Other equipments	4,716	8,490
	<u>\$ 8,745</u>	<u>13,203</u>

APACER TECHNOLOGY INC.
Notes to Parent-Company-Only Financial Statements

(i) Intangible assets

The movements of costs and accumulated amortization of intangible assets for the years ended December 31, 2020 and 2019 were as follows:

	Computer software	Royalties for the use of patents	Total
Costs:			
Balance at January 1, 2020	\$ 107,620	4,104	111,724
Additions	1,212	-	1,212
Reclassification (Note)	2,897	-	2,897
Derecognition	(65)	-	(65)
Balance at December 31, 2020	<u><u>\$ 111,664</u></u>	<u><u>4,104</u></u>	<u><u>115,768</u></u>
Balance at January 1, 2019	\$ 99,517	4,104	103,621
Additions	4,141	-	4,141
Reclassification (Note)	3,962	-	3,962
Balance at December 31, 2019	<u><u>\$ 107,620</u></u>	<u><u>4,104</u></u>	<u><u>111,724</u></u>
Accumulated amortization:			
Balance at January 1, 2020	\$ 48,654	940	49,594
Amortization	12,918	222	13,140
Derecognition	(65)	-	(65)
Balance at December 31, 2020	<u><u>\$ 61,507</u></u>	<u><u>1,162</u></u>	<u><u>62,669</u></u>
Balance at January 1, 2019	\$ 36,879	718	37,597
Amortization	11,775	222	11,997
Balance at December 31, 2019	<u><u>\$ 48,654</u></u>	<u><u>940</u></u>	<u><u>49,594</u></u>
Carrying amount:			
Balance at December 31, 2020	<u><u>\$ 50,157</u></u>	<u><u>2,942</u></u>	<u><u>53,099</u></u>
Balance at December 31, 2019	<u><u>\$ 58,966</u></u>	<u><u>3,164</u></u>	<u><u>62,130</u></u>

Note: reclassified from other non-current assets to intangible assets.

The amortization of intangible assets is included in the following line items of the statement of comprehensive income:

	2020	2019
Cost of revenue	<u><u>\$ 1,942</u></u>	<u><u>2,175</u></u>
Operating expenses	<u><u>\$ 11,198</u></u>	<u><u>9,822</u></u>

APACER TECHNOLOGY INC.
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(j) Short-term borrowings

The details of short-term borrowings were as follows:

	December 31, 2020	December 31, 2019
Unsecured bank loans	\$ <u>98,350</u>	<u>74,950</u>
Unused credit facilities	\$ <u>1,812,250</u>	<u>2,299,450</u>
Interest rate interval	<u>0.8%</u>	<u>2.43%</u>

(k) Lease liabilities

	December 31, 2020	December 31, 2019
Current	\$ <u>5,569</u>	<u>2,784</u>
Non-current	\$ <u>9,430</u>	<u>10,647</u>

For the maturity analysis, please refer to note 6(v).

The amounts recognized in profit or loss were as follows:

	2020	2019
Interest on lease liabilities	\$ <u>302</u>	<u>345</u>
Expenses relating to short-term leases	\$ <u>667</u>	<u>1,194</u>

The amounts recognized in the statement of cash flows for the Company was as follows:

	2020	2019
Total cash outflow for leases	\$ <u>9,023</u>	<u>15,484</u>

(i) Real estate leases

The Company leases buildings for its office. The leases of office typically run for a period of two to seven years.

(ii) Other leases

The Company leases office and transportation equipments, with lease terms of one to five years. In addition, the Company leases some office equipments with contract terms within one year. These leases are short-term and the Company has elected not to recognize right-of-use assets and lease liabilities for these leases.

APACER TECHNOLOGY INC.
Notes to Parent-Company-Only Financial Statements

(l) Provisions

	Warranties	Sales returns and allowances	Total
Balance at January 1, 2020	\$ 6,295	5,390	11,685
Provisions made	-	18,487	18,487
Amount utilized	(1,636)	(21,192)	(22,828)
Balance at December 31, 2020	<u>\$ 4,659</u>	<u>2,685</u>	<u>7,344</u>
Balance at January 1, 2019	\$ 7,353	5,272	12,625
Provisions made	416	52,642	53,058
Amount utilized	(1,474)	(52,524)	(53,998)
Balance at December 31, 2019	<u>\$ 6,295</u>	<u>5,390</u>	<u>11,685</u>

(i) Warranties

The provision for warranties is made based on the number of units sold currently under warranty, historical rates of warranty claim on those units, and cost per claim to satisfy the warranty obligation. The Company reviews the estimation basis on an ongoing basis and revises it when appropriate.

(ii) Sales returns and allowances

Expected sales returns and allowances are estimated based on historical experience.

(m) Employee benefits

(i) Defined benefit plans

The reconciliations between the present value of defined benefit obligations and the net defined benefit liabilities for defined benefit plans were as follows:

	December 31, 2020	December 31, 2019
Present value of defined benefit obligations	\$ 67,110	64,056
Fair value of plan assets	(37,854)	(36,188)
	29,256	27,868
Effects of the asset ceiling	-	-
Net defined benefit liabilities	<u>\$ 29,256</u>	<u>27,868</u>

The Company makes defined benefit plan contributions to the pension fund account at Bank of Taiwan that provides pension benefits for its employees upon retirement. The Company also established pension funds in accordance with the Regulations Governing the Management, Investment, and Distribution of the Employees' Retirement Fund Established by a Profit-seeking Enterprise, which are deposited monthly in the designated financial institutions. The plans entitle a retired employee to receive a payment based on years of service and average salary for the six months prior to the employee's retirement.

APACER TECHNOLOGY INC.
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1) Composition of plan assets

In accordance with the requirements of the Labor Standards Law, the Company's pension fund account at Bank of Taiwan is managed and administered by the Bureau of Labor Funds of the Ministry of Labor (the Bureau of Labor Funds). According to the Regulations for Revenues, Expenditures, Safeguard and Utilization of the Labor Retirement Fund, with regard to the utilization of the Fund, minimum earnings shall be no less than the earnings attainable from two-year time deposits, with interest rates offered by local banks.

As of December 31, 2020 and 2019, the Company's labor pension fund account balance at Bank of Taiwan amounted to \$37,854 and \$36,188, respectively. Please refer to the website of the Bureau of Labor Funds for information on the labor pension fund assets including the asset portfolio and yield of the fund.

2) Movements in present value of defined benefit obligations

The movements in present value of defined benefit obligations of the Company were as follows:

	<u>2020</u>	<u>2019</u>
Defined benefit obligations at January 1	\$ 64,056	60,759
Current service costs and interest expense	812	916
Remeasurement on the net defined benefit liabilities (assets)		
— Actuarial loss arising from changes in financial assumptions	4,685	2,392
— Actuarial loss arising from experience adjustments	(2,223)	1,024
Benefits paid by the plan	(220)	(1,035)
Defined benefit obligations at December 31	<u><u>\$ 67,110</u></u>	<u><u>64,056</u></u>

3) Movements of fair value of plan assets

The movements of the fair value of plan assets of the Company were as follows:

	<u>2020</u>	<u>2019</u>
Fair value of plan assets at January 1	\$ 36,188	35,189
Interest income	409	486
Remeasurement on the net defined benefit liabilities (assets)		
— Return on plan assets (excluding current interest expense)	1,065	1,124
Contributions by the employer	412	424
Benefits paid by the plan	(220)	(1,035)
Fair value of plan assets at December 31	<u><u>\$ 37,854</u></u>	<u><u>36,188</u></u>

APACER TECHNOLOGY INC.
Notes to Parent-Company-Only Financial Statements

4) Changes in the effect of the asset ceiling

There was no effect of the asset ceiling.

5) Expenses recognized in profit or loss

The expenses recognized in profit or loss were as follows:

	2020	2019
Current service costs	\$ 92	81
Net interest expense on the net defined benefit liability	311	349
	\$ 403	430
Cost of revenue	\$ 145	139
Selling expenses	124	135
Administrative expenses	70	91
Research and development expenses	64	65
	\$ 403	430

6) Remeasurement of the net defined benefit liabilities recognized in other comprehensive income

The remeasurement of the net defined benefit liabilities recognized in other comprehensive income were as follows:

	2020	2019
Cumulative amount at January 1	\$ 29,636	27,344
Recognized during the period	1,397	2,292
Cumulative amount at December 31	\$ 31,033	29,636

7) Actuarial assumptions

The principal assumptions of the actuarial valuation were as follows:

	December 31, 2020	December 31, 2019
Discount rate	0.625 %	1.125 %
Future salary increases rate	3.000 %	3.000 %

The Company expects to make contribution of \$408 to the defined benefit plans in the year following December 31, 2020.

The weighted average duration of the defined benefit plans is 16.06 years.

APACER TECHNOLOGY INC.
Notes to Parent-Company-Only Financial Statements

8) Sensitivity analysis

When calculating the present value of the defined benefit obligations, the Company uses judgments and estimations to determine the actuarial assumptions for each measurement date, including discount rates, employee turnover rates and future salary changes. Any changes in the actuarial assumptions may significantly impact the amount of the defined benefit obligations.

The following table summarizes the impact of a change in the assumptions on the present value of the defined benefit obligation on December 31, 2020 and 2019.

	Increase (decrease) in present value of defined benefit obligations	
	0.25% Increase	0.25% Decrease
December 31, 2020		
Discount rate	(2,396)	2,500
Future salary change rate	2,406	(2,315)
December 31, 2019		
Discount rate	(2,392)	2,498
Future salary change rate	2,424	(2,319)

Each sensitivity analysis considers the change in one assumption at a time, leaving the other assumptions unchanged. This approach shows the isolated effect of changing one individual assumption but does not take into account that some assumptions are related. The method used to carry out the sensitivity analysis is the same as the calculation of the net defined benefit liabilities recognized in the balance sheets.

In 2020, the method and assumptions used to carry out the sensitivity analysis was the same as in the prior year.

(ii) Defined contribution plans

The Company contributes monthly an amount equal to 6% of each employee's monthly wages to the employee's individual pension fund account at the Bureau of Labor Insurance in accordance with the provisions of the Labor Pension Act. Under this defined contribution plan, the Company has no legal or constructive obligation to pay additional amounts after contributing a fixed amount to the Bureau of the Labor Insurance.

For the years ended December 31, 2020 and 2019, the Company recognized pension expenses of \$18,683 and \$18,142, respectively, in relation to the defined contribution plans.

APACER TECHNOLOGY INC.
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(n) Income taxes

(i) The components of income tax expense were as follows:

	<u>2020</u>	<u>2019</u>
Current income tax expense		
Current period	\$ 69,376	89,938
Adjustments for prior years	<u>3,984</u>	<u>(4,339)</u>
	<u>73,360</u>	<u>85,599</u>
Deferred income tax expense (benefit)		
Origination and reversal of temporary differences	<u>(3,505)</u>	<u>4,416</u>
Income tax expense	<u><u>\$ 69,855</u></u>	<u><u>90,015</u></u>

The components of income tax benefit recognized in other comprehensive income were as follows:

	<u>2020</u>	<u>2019</u>
Items that will not be reclassified subsequently to profit or loss:		
Remeasurement of defined benefit plans	<u>\$ 280</u>	<u>458</u>

Reconciliation of income tax expense and income before income tax were as follows:

	<u>2020</u>	<u>2019</u>
Income before income tax	<u>\$ 360,324</u>	<u>466,657</u>
Income tax using the Company's statutory tax rate	\$ 72,065	93,331
Investment tax credits	(4,605)	(4,233)
Changes in unrecognized temporary differences	(5,688)	(2,496)
Prior-year adjustments	3,984	(4,339)
Surtax on undistributed earnings	3,441	2,625
Others	<u>658</u>	<u>5,127</u>
	<u><u>\$ 69,855</u></u>	<u><u>90,015</u></u>

(ii) Deferred income tax assets and liabilities

1) Unrecognized deferred income tax assets and liabilities

	<u>December 31, 2020</u>	<u>December 31, 2019</u>
Unrecognized deferred income tax assets:		
Aggregate deductible temporary differences associated with investments in subsidiaries	\$ 20,041	22,301
Deductible temporary differences	<u>788</u>	<u>788</u>
	<u><u>\$ 20,829</u></u>	<u><u>23,089</u></u>

APACER TECHNOLOGY INC.
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	December 31, 2020	December 31, 2019
Unrecognized deferred income tax liabilities:		
Aggregate taxable temporary differences associated with investments in subsidiaries	\$ 53,041	49,613

As the Company is able to control the timing of the reversal of the temporary differences associated with investments in its subsidiaries as of December 31, 2020 and 2019, and Management believes that it is probable that the temporary differences will not reverse in the foreseeable future, such temporary differences are not recognized as deferred income tax assets and liabilities.

2) Recognized deferred income tax assets and liabilities

Changes in the amount of deferred income tax assets and liabilities were as follows:

Deferred income tax assets:

	Defined benefit plans	Provision for inventory obsolescence	Warranty provision	Unrealized impairment loss on financial assets	Others	Total
Balance at January 1, 2020	\$ 5,574	56,473	1,259	10,000	12,736	86,042
Recognized in profit or loss	(2)	4,000	(327)	-	(1,945)	1,726
Recognized in other comprehensive income	280	-	-	-	-	280
Balance at December 31, 2020	\$ 5,852	60,473	932	10,000	10,791	88,048
Balance at January 1, 2019	\$ 6,421	53,873	1,471	10,000	17,359	89,124
Recognized in profit or loss	(1,305)	2,600	(212)	-	(4,623)	(3,540)
Recognized in other comprehensive income	458	-	-	-	-	458
Balance at December 31, 2019	\$ 5,574	56,473	1,259	10,000	12,736	86,042

Deferred income tax liabilities:

	Others
Balance at January 1, 2020	\$ 1,779
Recognized in profit or loss	(1,779)
Balance at December 31, 2020	\$ -
Balance at January 1, 2019	\$ 903
Recognized in profit or loss	876
Balance at December 31, 2019	\$ 1,779

- (iii) The Company's income tax returns for the years through 2018 have been assessed by the R.O.C. income tax authorities.

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(o) Capital and other equity

(i) Common stock

As of December 31, 2020 and 2019, the Company's authorized shares of common stock consisted of 200,000 thousand shares, of which 100,898 thousand shares were issued and outstanding. The par value of the Company's common stock is \$10 (dollars) per share. The Company has reserved 15,000 thousand shares for the exercise of employee stock options.

During the shareholders' meeting on May 28, 2020, the Company's shareholders resolved to issue 1,200 thousand shares of restricted stock to employees. The Company has filed an effective registration with the Securities and Futures Bureau of the FSC for the issuance. In January 2021, the Company issued 927 thousand shares of restricted stock to employees. The effective date of the capital increase was January 6, 2021, and the related registration process has been completed.

(ii) Capital surplus

	December 31, 2020	December 31, 2019
Paid-in capital in excess of par value	\$ 331,707	331,707
Employee stock options	12,901	12,901
Treasury stock transactions	3,781	3,781
Changes in equity of associates accounted for using equity method	<u>13,130</u>	<u>11,521</u>
	<u>\$ 361,519</u>	<u>359,910</u>

Pursuant to the Company Act, any realized capital surplus is initially used to cover an accumulated deficit, and the balance, if any, could be transferred to common stock as stock dividends based on the original shareholding ratio or distributed as cash dividends based on a resolution approved by the shareholders. Realized capital surplus includes the premium derived from the issuance of shares of stock in excess of par value and donations from shareholders received by the Company. In accordance with the Regulations Governing the Offering and Issuance of Securities by Securities Issuers, distribution of stock dividends from capital surplus in any one year shall not exceed 10% of paid-in capital.

(iii) Retained earnings

1) Legal reserve

If a company has no accumulated deficit, it may, pursuant to a resolution approved by the shareholders, distribute its legal reserve to its shareholders by issuing new shares or by distributing cash for the portion in excess of 25% of the paid in capital.

APACER TECHNOLOGY INC.
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2) Special reserve

In accordance with Ruling No. 1010012865 issued by the FSC on April 6, 2012, a special reserve equal to the total amount of items that were accounted for as deductions from shareholders' equity was set aside from current and prior year earnings. This special reserve shall revert to the retained earnings and be made available for distribution when the items that are accounted for as deductions from shareholders' equity are reversed in subsequent periods.

3) Earnings distribution

The Company's Articles of Incorporation stipulate that at least 10% of annual net income, after deducting accumulated deficit, if any, must be retained as legal reserve until such retention equals the amount of paid in capital. In addition, a special reserve shall be set aside in accordance with applicable laws and regulations. The remaining balance, together with the unappropriated earnings from the previous years, after retaining a certain portion of it for business considerations, can be distributed as dividends to shareholders. Except for the distribution of capital surplus and legal reserve in accordance with applicable laws and regulations, the Company cannot distribute any earnings when there are no retained earnings.

Since the Company operates in an industry experiencing rapid change and development, earnings are distributed in consideration of the current year's earnings, the overall economic environment, related laws and decrees, as well as the Company's long term development and stability in its financial position. The Company has adopted a balance dividend policy, in which a cash dividend comprises at least 10% of the total dividend distribution.

The appropriation of 2019 and 2018 earnings were approved by the shareholders at the meetings on May 28, 2020 and May 30, 2019, respectively. The resolved appropriation of the dividend per share were as follows:

	2019		2018	
	Dividends per share (in dollars)	Amount	Dividends per share (in dollars)	Amount
Dividends per share:				
Cash dividends	\$ 2.55	<u><u>257,289</u></u>	2.50	<u><u>252,245</u></u>

(iv) Other equity items (net after tax)

1) Foreign currency translation differences

	2020	2019
Balance at January 1	\$ (49,159)	(41,061)
Foreign exchange differences arising from translation of foreign operations	(18,749)	(8,098)
Balance at December 31	<u><u>\$ (67,908)</u></u>	<u><u>(49,159)</u></u>

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- 2) Unrealized gains (losses) on financial assets measured at fair value through other comprehensive income

	<u>2020</u>	<u>2019</u>
Balance at January 1	\$ (29,420)	(26,479)
Share of other comprehensive income of subsidiaries	79	(169)
Unrealized losses from investments in equity instruments measured at fair value through other comprehensive income	<u>(11,709)</u>	<u>(2,772)</u>
Balance at December 31	<u><u>\$ (41,050)</u></u>	<u><u>(29,420)</u></u>

- (p) Earnings per share ("EPS")

- (i) Basic earnings per share

	<u>2020</u>	<u>2019</u>
Net income attributable to shareholders of the Company	\$ <u>290,469</u>	<u>376,642</u>
Weighted-average number of ordinary shares outstanding (in thousands)	<u>100,898</u>	<u>100,898</u>
Basic earnings per share (in dollars)	<u><u>\$ 2.88</u></u>	<u><u>3.73</u></u>

- (ii) Diluted earnings per share

	<u>2020</u>	<u>2019</u>
Net income attributable to shareholders of the Company	\$ <u>290,469</u>	<u>376,642</u>
Weighted-average number of ordinary shares outstanding (in thousands)	100,898	100,898
Effect of dilutive potential common stock (in thousand):		
Remuneration to employees	<u>1,035</u>	<u>1,390</u>
Weighted-average number of ordinary shares outstanding (including effect of dilutive potential common stock)	<u>101,933</u>	<u>102,288</u>
Diluted earnings per share (in dollars)	<u><u>\$ 2.85</u></u>	<u><u>3.68</u></u>

- (q) Share-based payment—Restricted stock to employees

- (i) During the meeting on 28 May, 2020, the Company's shareholders approved a resolution to issue 1,200 thousand shares of restricted stock to full-time employees who conformed to certain requirements. The Company has filed an effective registration with the Securities and Futures Bureau of the FSC for the issuance. In January 2021, the Company issued 927 thousand shares of restricted stock to its employees and the effective date of the capital increase was January 6, 2021. The employees who were granted restricted stock are entitled to purchase the shares of restricted stock at the exercise price of \$0. The total share of the restricted stocks issued was determined by achievement of the Company's operation objective for the year 2020. The vesting period of the restricted stock is 1~2 years subsequent to the grant date, and the restricted shares of stock will be vested by taking the individual employee's performance conditions into consideration. When the vesting conditions are met, the restricted stock received by the employees shall be transferred from an escrow account to the employee's security account. During the vesting period, the restricted stock could not

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transferred, gifted, or disposed of in any other forms, excluding inheritance; nevertheless, the rights of a shareholder (such as attendance, proposing, speaking, voting and election at the shareholders' meeting) are the same as those of the Company's shareholders but are executed by the custodian who will act based on law and regulations. The Company will take back the restricted stock from its employees and retire those shares when the vesting conditions are not met.

(ii) There was no expenses recognized for the above share-based payment plan in 2020.

(r) Revenue from contracts with customers

(i) Disaggregation of revenue

	<u>2020</u>	<u>2019</u>
Major products:		
Flash memory cards	\$ 3,997,657	4,435,733
Memory modules	2,885,634	2,708,862
Others	<u>7,367</u>	<u>6,803</u>
	<u><u>\$ 6,890,658</u></u>	<u><u>7,151,398</u></u>

(ii) Contract balances

	<u>December 31, 2020</u>	<u>December 31, 2019</u>	<u>January 1, 2019</u>
Notes and accounts receivable (including related parties)	\$ 804,272	882,868	1,058,793
Less: loss allowance	<u>(8,213)</u>	<u>(5,293)</u>	<u>(4,270)</u>
	<u><u>\$ 796,059</u></u>	<u><u>877,575</u></u>	<u><u>1,054,523</u></u>
	<u>December 31, 2020</u>	<u>December 31, 2019</u>	<u>January 1, 2019</u>
Contract liabilities (presented under other current liabilities)	<u><u>\$ 10,503</u></u>	<u><u>5,762</u></u>	<u><u>12,392</u></u>

For details on notes and accounts receivable and its loss allowance, please refer to note 6(d).

The amounts of revenue recognized for the years ended December 31, 2020 and 2019 that were included in the contract liability balances at January 1, 2020 and 2019, were \$3,849 and \$10,898, respectively.

(s) Remuneration to employees and directors

The Company's article of incorporation requires that earnings shall first to be offset against any deficit, then, a minimum of 4% will be distributed as remuneration to its employees and no more than 1.4% to its directors. Employees who are entitled to receive the abovementioned employee remuneration, in shares or cash, include the employees of the subsidiaries of the Company who meet certain specific requirement.

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For the years ended December 31, 2020 and 2019, the Company estimated its remuneration to employees amounting to \$33,993 and \$49,120, respectively, and the remuneration to directors amounting to \$5,599 and \$7,323, respectively. The abovementioned estimated amounts are calculated based on the net profits before tax of each period (excluding the remuneration to employees and directors), multiplied by a certain percentage of the remuneration to employees and directors. The estimations are recognized as operating expenses. If the actual amounts differ from the estimated amounts, the differences shall be accounted as changes in accounting estimates and recognized as profit or loss in following year.

The abovementioned estimated remuneration to employees and directors is the same as the amount approved by the Board of Directors and will be paid in cash. Related information is available on the Market Observation Post System website of the Taiwan Stock Exchange.

(t) Non-operating income and loss

(i) Interest income

	<u>2020</u>	<u>2019</u>
Interest income from bank deposits	\$ <u>2,715</u>	<u>3,035</u>

(ii) Other gains and losses—net

	<u>2020</u>	<u>2019</u>
Foreign currency exchange loss	(5,518)	(5,426)
Gain on financial assets and liabilities at fair value through profit or loss	6,519	1,131
Loss on disposal of property, plant and equipment	(102)	(355)
Others	<u>3,810</u>	<u>3,187</u>
	\$ <u>4,709</u>	<u>(1,463)</u>

(iii) Finance costs

	<u>2020</u>	<u>2019</u>
Interest expense from bank loans	\$ 2,377	4,255
Interest expense from lease liabilities	<u>302</u>	<u>345</u>
	\$ <u>2,679</u>	<u>4,600</u>

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(u) Financial instruments

(i) Categories of financial instruments

1) Financial assets

	December 31, 2020	December 31, 2019
Financial assets at fair value through profit or loss	\$ 49,354	139,604
Financial assets at fair value through other comprehensive income	36,110	41,748
Financial assets measured at amortized cost		
Cash and cash equivalents	323,768	421,569
Notes and accounts receivable (including related parties)	796,059	877,575
Other financial assets (including current and non-current)	600,792	413,008
Subtotal	1,720,619	1,712,152
Total	\$ 1,806,083	1,893,504

2) Financial liabilities

	December 31, 2020	December 31, 2019
Financial liabilities at fair value through profit or loss	\$ 168	124
Financial liabilities measured at amortized cost:		
Short-term borrowings	98,350	74,950
Notes and accounts payable (including related parties)	705,444	924,170
Other payables (including related parties)	231,117	287,456
Lease liabilities (including current and non-current)	14,999	13,431
Subtotal	1,049,910	1,300,007
Total	\$ 1,050,078	1,300,131

(ii) Fair value information

1) Financial instruments not measured at fair value

The Company considers that the carrying amounts of financial assets and financial liabilities measured at amortized cost approximate their fair values.

2) Financial instruments measured at fair value

The fair value of financial assets and liabilities at fair value through profit and loss and financial assets at fair value through other comprehensive income are measured on a recurring basis.

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The table below analyzes financial instruments that are measured at fair value subsequent to initial recognition, grouped into Levels 1 to 3 based on the degree to which the fair value is observable. The different levels have been defined as follows:

- a) Level 1: quoted prices (unadjusted) in active markets for identified assets or liabilities.
- b) Level 2: 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).
- c) Level 3: inputs for the assets or liabilities that are not based on observable market data (unobservable inputs).

		December 31, 2020			
		Fair Value			
	Carrying amount	Level 1	Level 2	Level 3	Total
Financial assets at fair value through profit or loss — current:					
Open-ended mutual funds	\$ 49,121	49,121	-	-	49,121
Derivatives — foreign currency forward contracts	233	-	233	-	233
	<u>\$ 49,354</u>	<u>49,121</u>	<u>233</u>	<u>-</u>	<u>49,354</u>
Financial assets at fair value through other comprehensive income — non-current:					
Domestic unlisted stocks	\$ <u>36,110</u>	<u>-</u>	<u>-</u>	<u>36,110</u>	<u>36,110</u>
Financial liabilities at fair value through profit or loss — current:					
Derivatives — foreign currency — forward contracts	\$ <u>168</u>	<u>-</u>	<u>168</u>	<u>-</u>	<u>168</u>

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		December 31, 2019				
		Carrying amount	Fair Value			Total
			Level 1	Level 2	Level 3	
Financial assets at fair value through profit or loss — current:						
Open-ended mutual funds	\$	139,527	139,527	-	-	139,527
Derivatives — foreign currency forward contracts		77	-	77	-	77
	\$	<u>139,604</u>	<u>139,527</u>	<u>77</u>	<u>-</u>	<u>139,604</u>
Financial assets at fair value through other comprehensive income — non-current:						
Domestic unlisted stocks	\$	<u>41,748</u>	<u>-</u>	<u>-</u>	<u>41,748</u>	<u>41,748</u>
Financial liabilities at fair value through profit or loss — current:						
Derivatives — foreign currency — forward contracts	\$	124	-	124	-	124

(iii) Valuation techniques used in fair value measurement

1) Non-derivative financial instruments

The fair value of financial instruments traded in active liquid markets is determined with reference to quoted market prices.

The fair values of open-ended mutual funds with standard terms and conditions, and traded in active markets are determined with reference to quoted market prices.

Except for the abovementioned financial instruments traded in an active market, the fair value of other financial instruments are based on the valuation techniques or the quotation from counterparty. The fair value using valuation techniques refers to the current fair value of other financial instruments with similar conditions and characteristics, or using a discounted cash flow method, or other valuation techniques which include model calculating with observable market data at the reporting date.

The fair value of the unlisted stock held by the Company is estimated by using the market approach and is determined by reference to valuations of similar companies, third-party quotation, and recent financing and operating activities. The significant unobservable inputs is primarily the liquidity discounts. No quantitative information is disclosed due to that the possible changes in liquidity discounts would not cause significant potential financial impact.

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2) Derivative financial instruments

The fair value of derivative financial instruments is determined using a valuation technique, with estimates and assumptions consistent with those used by market participants and that are readily available to the Company. The fair value of foreign currency forward contracts is computed individually by each contract using the valuation technique.

(iv) Transfers between levels of the fair value hierarchy

There were no transfers among fair value hierarchies for the years ended December 31, 2020 and 2019.

(v) Movement in financial assets included in Level 3 of fair value hierarchy:

	<u>2020</u>	<u>2019</u>
Balance, beginning of year	\$ 41,748	44,520
Purchased	6,071	-
Losses recognized in other comprehensive income, and presented in unrealized gains (losses) on financial assets measured at fair value through other comprehensive income	<u>(11,709)</u>	<u>(2,772)</u>
Balance, end of year	<u><u>\$ 36,110</u></u>	<u><u>41,748</u></u>

(v) Financial risk management

The Company is exposed to credit risk, liquidity risk, and market risk (including currency risk, interest rate risk, and other market price risk). The Company has disclosed the information on exposure to the aforementioned risks and the Company's policies and procedures to measure and manage those risks as well as the quantitative information below.

The Company's management monitors and reviews financial activities in accordance with procedures required by relevant regulations and internal controls. Internal auditors undertake both regular and ad hoc reviews of risk management controls and procedures, the results of which are reported to the Company's Board of Directors.

The Company's Board of Directors is responsible for developing and monitoring the Company's risk management policies. The Company's risk management policies are established to identify and analyze the risks faced by the Company, to set appropriate risk limits and controls, and to monitor adherence to the controls. Risk management policies and systems are reviewed regularly to reflect changes in market conditions and the Company's operations.

(i) Credit risk

Credit risk is the risk of financial loss to the Company if a customer or counterparty of a financial instrument fails to meet its contractual obligations, and arises principally from the Company's cash and cash equivalents, derivative instruments, and receivables from customers. As of December 31, 2020 and 2019, the Company's maximum exposure to credit risk amounted to \$1,806,083 and \$1,893,504, respectively.

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The Company maintains cash and enters into derivative transactions with various reputable financial institutions; therefore, the exposure related to potential default by those counter-parties is not considered significant.

In order to reduce credit risk of accounts receivable, the Company has established a credit policy under which each customer is analyzed individually for creditworthiness for the purpose of setting the credit limit. Additionally, the Company continuously evaluates the credit quality of its customers and utilizes its insurance to minimize the credit risk. As of December 31, 2020 and 2019, the Company has insured credit insurance that cover accounts receivable amounting to \$349,936 and \$395,017, respectively. When the debtors are in default, the Company will receive 90% of the credit insurance.

The Company believes that there is no significant concentration of credit risk due to the Company's large number of customers and their wide geographical spread.

(ii) Liquidity risk

Liquidity risk is the risk that the Company will encounter difficulty in settling its financial liabilities by delivering cash or other financial assets. The Company manages liquidity risk by monitoring regularly the current and mid- to long-term cash demand, maintaining adequate cash and banking facilities, and ensuring compliance with the terms of the loan agreements. As of December 31, 2020 and 2019, the Company had unused credit facilities of \$1,812,250 and \$2,299,450, respectively.

The table below summarizes the maturity profile of the Company's financial liabilities based on contractual undiscounted payments.

	<u>Carrying amount</u>	<u>Contractual cash flows</u>	<u>Within 1 year</u>	<u>More than 1 year</u>
December 31, 2020				
Non-derivative financial liabilities:				
Short-term borrowings	\$ 98,350	(98,416)	(98,416)	-
Notes and accounts payable (including related parties)	705,444	(705,444)	(705,444)	-
Other payables (including related parties)	231,117	(231,117)	(231,117)	-
Lease liabilities	14,999	(15,619)	(5,870)	(9,749)
Derivative financial instruments:				
Foreign currency forward contracts:				
Inflow	-	31,240	31,240	-
Outflow	168	(31,408)	(31,408)	-
December 31, 2019				
Non-derivative financial liabilities:				
Short-term borrowings	\$ 74,950	(75,103)	(75,103)	-
Notes and accounts payable (including related parties)	924,170	(924,170)	(924,170)	-
Other payables (including related parties)	287,456	(287,456)	(287,456)	-
Lease liabilities	13,431	(13,739)	(3,035)	(10,704)
Derivative financial instruments:				
Foreign currency forward contracts:				
Inflow	-	24,613	24,613	-
Outflow	124	(24,737)	(24,613)	-

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The Company does not expect that the cash flows included in the maturity analysis would occur significantly earlier or at significantly different amounts.

(iii) Market risk

Market risk is the risk that changes in market prices, such as foreign exchange rates, interest rates, and equity prices, will affect the Company's income or the value of its financial instruments. The objective of market risk management is to manage and control market risk exposures within acceptable parameters, while optimizing the return.

The Company utilizes derivative financial instruments to manage market risk. All such transactions are carried out within the guidelines set by the Company's Board of Directors.

1) Foreign currency risk

The Company utilizes foreign currency forward contracts to hedge its foreign currency exposure with respect to its sales and purchases. The maturity dates of derivative financial instruments the Company entered into were less than six months and did not conform to the criteria for hedge accounting. These financial instruments help to reduce, but do not eliminate, the impact of foreign currency exchange rate movements.

The Company's exposure to foreign currency risk arises from cash and cash equivalents, notes and accounts receivable (including related parties), notes and accounts payable (including related parties), other payables (including related parties) and loans and borrowings that are denominated in a currency other than the functional currency of the Company. At the reporting date, the carrying amounts of the Company's significant monetary assets and liabilities denominated in a currency other than the functional currency of the Company and their respective sensitivity analysis were as follows:

(Amounts in Thousands of New Taiwan Dollars)

December 31, 2020					
	Foreign currency (in thousands)	Exchange rate	TWD (in thousands)	Change in magnitude	Pre-tax effect on profit or loss (in thousands)
<u>Financial assets</u>					
<u>Monetary items</u>					
USD	\$ 27,120	28.100	762,072	1 %	7,621
CNY	14,530	4.297	62,435	1 %	624
JPY	33,910	0.273	9,257	1 %	93
<u>Financial liabilities</u>					
<u>Monetary items</u>					
USD	22,614	28.100	635,453	1 %	6,355
CNY	33	4.297	142	1 %	1

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December 31, 2019					
	Foreign currency (in thousands)	Exchange rate	TWD (in thousands)	Change in magnitude	Pre-tax effect on profit or loss (in thousands)
<u>Financial assets</u>					
<u>Monetary items</u>					
USD	\$ 28,035	29.980	840,489	1 %	8,405
CNY	17,921	4.303	77,114	1 %	771
<u>Financial liabilities</u>					
<u>Monetary items</u>					
USD	28,815	29.980	863,874	1 %	8,639
CNY	62	4.303	267	1 %	3

As the Company deal in diverse foreign currencies, gains and losses on foreign exchange were summarized as a single amount. The aggregate of realized and unrealized foreign exchange loss for the years ended December 31, 2020 and 2019 were \$5,518 and \$5,426, respectively.

2) Interest rate risk

The Company's bank loans carried floating interest rates. To manage the interest rate risk, the Company periodically assesses the interest rates of bank loans and maintains good relationships with financial institutions to obtain lower financing costs. The Company also strengthens the management of working capital to reduce the dependence on bank loans, as well as the risk arising from fluctuation of interest rates.

If interest rates had been 100 basis points (1%) higher/lower, with all other variables held constant, pre-tax income for the years ended December 31, 2020 and 2019 would have been \$ 984 and \$ 750, respectively, lower/higher, which mainly resulted from the borrowings with floating interest rates.

3) Other market price risk

The Company has long-term investments in unlisted stocks, which the Company does not actively participate in trading. The Company anticipates that there is no significant market risk related to the investments.

The investment target of open-ended mutual funds held by the Company are mostly monetary funds or bond funds. (accounted for as financial assets at fair value through profit or loss—current). The Company anticipates that there is no significant market risk related to the funds.

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(w) Capital management

In consideration of the industry dynamics and future developments, as well as external environment factors, the Company maintains an optimal capital structure to enhance long-term shareholder value by managing its capital in a manner to ensure that it has sufficient and necessary financial resources to fund its working capital needs, research and development expenses, dividend payments, and other business requirements for continuing operations and to reward shareholders and take into consideration the interests of other shareholders. The Company monitors its capital through reviewing the liability-to-equity ratio periodically.

The Company's liability-to-equity ratio at the end of each reporting period was as follows:

	December 31, 2020	December 31, 2019
Total liabilities	\$ 1,195,088	1,409,901
Total equity	\$ 2,809,539	2,806,246
Liability-to-equity ratio	42.54 %	50.24 %

In 2020, the Company decreased notes and accounts payable (including related parties) due to the decrease of stock level. It also resulted in the decreasing of liability-to-equity ratio.

(x) Investing and financing activities not affecting current cash flow

(i) For acquisition of right-of-use assets under operating lease for the years ended December 31, 2020 and 2019, please refer to note 6(h).

(ii) Reconciliation of liabilities arising from financing activities were as follows:

	January 1, 2020	Cash flows	Non-cash changes Acquisition	December 31, 2020
Short-term borrowings	\$ 74,950	23,400	-	98,350
Lease liabilities	13,431	(8,054)	9,622	14,999
	\$ 88,381	15,346	9,622	113,349

	January 1, 2019	Cash flows	Non-cash changes Acquisition	December 31, 2019
Short-term borrowings	\$ 138,218	(63,268)	-	74,950
Lease liabilities	12,376	(13,945)	15,000	13,431
	\$ 150,594	(77,213)	15,000	88,381

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7. Related-party transactions:

(a) Name and relationship with related parties

The following are the entities that have had transactions with the Company during the periods covered in the parent-company-only financial statements and the Company's subsidiaries.

<u>Name of related parties</u>	<u>Relationship with the Company</u>
Apacer Memory America Inc. (AMA)	The Company's subsidiary
Apacer Technology B.V. (AMH)	The Company's subsidiary
Kingdom Corp. Limited (AMK)	The Company's subsidiary
Apacer Technology Japan Corp. (AMJ)	The Company's subsidiary
Apacer Technologies Private Limited (ATPL)	The Company's subsidiary
Apacer Technology (BVI) Inc. (ACYB)	The Company's subsidiary
Apacer Electronic (Shanghai) Co., Ltd (AMC)	ACYB's subsidiary
Shenzhen Kylinesports Technology Co. (AMS)	AMK's subsidiary
Ecolumina Technologies Inc. (Ecolumina)	The Company's other related party
Phison Electronics Corporation (Phison)	The Company's director
JoiUp Technology Inc. (JoiUp)	The Company's associate
Directors, general manager and vice general managers	The Company's key management personnel

(b) Significant related-party transactions

(i) Revenue

	<u>2020</u>	<u>2019</u>
Subsidiaries	\$ 1,671,429	1,849,567
The Company's key management personnel (the Company's director)	9,757	7,434
Other related parties	-	281
	<u>\$ 1,681,186</u>	<u>1,857,282</u>

The sales prices and payment terms of sales to related parties depend on the economic environment and market competition, and are not different from those with third-party customers. The payment terms of 30~90 days calculated from the delivery date shows no significant difference between related parties and third-party customers. The Company does not receive any collateral for the receivables from related parties. The Company has not recognized a specific allowance for doubtful receivables after assessment.

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(ii) Purchases

	<u>2020</u>	<u>2019</u>
Subsidiaries	\$ 4,846	-
The Company's key management personnel—Phison (the Company's director)	1,081,670	1,085,531
Other related parties	-	82
	<u>\$ 1,086,516</u>	<u>1,085,613</u>

There are no significant differences between the purchase prices for related parties and those for third-party vendors. The payment terms of EOM 45 days shows no significant difference between related parties and third-party vendors.

(iii) Receivables

<u>Account</u>	<u>Related-party categories</u>	<u>December 31, 2020</u>	<u>December 31, 2019</u>
Accounts receivable	Subsidiaries:		
	AMA	\$ 32,805	53,974
	Others	91,482	116,197
	The Company's key management personnel (the Company's director)	799	532
		<u>\$ 125,086</u>	<u>170,703</u>

(iv) Payables

<u>Account</u>	<u>Related-party categories</u>	<u>December 31, 2020</u>	<u>December 31, 2019</u>
Accounts payable	Subsidiaries	\$ 464	534
	Other related parties	-	32
	The Company's key management personnel—Phison (the Company's director)	243,948	182,583
Other payables	Subsidiaries	1,288	1,247
	Other related parties	-	23
	The Company's key management personnel (the Company's director)	561	17
		<u>\$ 246,261</u>	<u>184,436</u>

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(v) Operating expenses

The operating expenses related to the after-sale service provided by related parties and sundry purchases were as follows:

<u>Account</u>	<u>Related party categories</u>	<u>2020</u>	<u>2019</u>
Operating expenses	Associate	\$ 53	-
	Other related parties	-	129
	The Company's key management personnel (the Company's director)	776	422
		<u>\$ 829</u>	<u>551</u>

(c) Compensation for key management personnel

	<u>2020</u>	<u>2019</u>
Short-term employee benefits	\$ 44,769	40,702
Post-employment benefits	315	216
	<u>\$ 45,084</u>	<u>40,918</u>

8. Pledged assets: None

9. Significant commitments and contingencies:

(a) Significant unrecognized commitments

	<u>December 31, 2020</u>	<u>December 31, 2019</u>
Unused letters of credit	\$ -	10,000

- (b) As of December 31, 2020 and 2019, the Company had outstanding letters of guarantee amounting to \$20,000 and \$15,000, respectively, for the purpose of the payment of customs duties.

10. Significant loss from casualty: None

11. Significant subsequent events: None

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12. Others:

Employee benefits, depreciation and amortization expenses categorized by function were as follows:

	2020			2019		
	Cost of revenue	Operating expenses	Total	Cost of revenue	Operating expenses	Total
Employee benefits:						
Salaries	139,231	320,467	459,698	138,958	361,393	500,351
Insurance	14,299	23,454	37,753	13,305	23,791	37,096
Pension	6,305	12,781	19,086	5,525	13,047	18,572
Remuneration to directors	-	13,599	13,599	-	10,323	10,323
Others	11,473	13,999	25,472	8,799	15,077	23,876
Depreciation	24,031	20,305	44,336	18,561	31,500	50,061
Amortization	1,942	11,198	13,140	2,175	9,822	11,997

For the years ended December 31, 2020 and 2019, the information on the number of employees and employee benefit expense of the Company is as follows:

	2020	2019
The number of employees	<u>478</u>	<u>511</u>
The number of non-employee directors	<u>7</u>	<u>7</u>
Average employee benefits	<u>\$ 1,151</u>	<u>1,151</u>
Average employee salaries	<u>\$ 976</u>	<u>993</u>
Average employee salaries adjustment rate	<u>(1.71)%</u>	<u>4.20 %</u>
Remuneration to supervisors	<u>\$ -</u>	<u>-</u>

The Company compensation policies (including compensation to the directors, managers and employees) are as follows:

The Board of Directors is authorized by the Company's Articles of Incorporation to determine the compensation recommended by the Remuneration Committee for the directors with reference to the extent of his/her involvement in and value of his/her contribution to the operation of the Company and industry norms in Taiwan. In addition, when there is profit in any fiscal year, based on the percentage of the profit as remuneration to directors stipulated in the Company's Articles of Incorporation and the criteria for allocation subject to the Company's policy, the amount of remunerations for each director must be recommended by the Remuneration Committee to the Board of Directors for approval.

The appointment, discharge and compensation of the Company's executive officers shall be subject to the Company's policy. The Company set the compensation policy for its executive officers by referencing industry norms in Taiwan, as well as their education, experience, responsibility and performance.

In order to achieve the purpose of attracting talents, retaining and training talents for a long term, the Company set the compensation policy for its employees by referencing to the industry norms in Taiwan, as well as their education, experience, responsibility and performance to provide employees with competitive salaries, as well as various reward systems to motivate employees.

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13. Additional disclosures

(a) Information on significant transactions:

In accordance with the requirements of the Regulations Governing the Preparation of Financial Reports by Securities Issuers, the Company discloses the following information on significant transactions for the year ended December 31, 2020:

- (i) Financing provided to other parties: None
- (ii) Guarantee and endorsement provided to other parties: None
- (iii) Marketable securities held at the reporting date (excluding investments in subsidiaries and associates):

(In Thousands of Shares / Thousands of Units)

Investing Company	Marketable Securities Type and Name	Relationship with the Securities Issuer	Financial Statement Account	December 31, 2019				Note
				Shares/ Units	Carrying Value	Percentage of Ownership	Fair value	
The Company	Fund: Jih Sun Money Market Fund	-	Financial assets at fair value through profit or loss — current	3,286	49,121	-	49,121	-
The Company	Stock: Formosa Golf and Country Club Corp.	-	Financial assets at fair value through other comprehensive income — non-current	3.6	9,643	0.01 %	9,643	-
The Company	Stock: OTO Photonics Inc.	-	Financial assets at fair value through other comprehensive income — non-current	3,772	26,467	12.59 %	26,467	-
AMS	Stock: Futurepath Technology (Shenzhen) co., Ltd	-	Financial assets at fair value through other comprehensive income — non-current	31.5	311	0.03 %	311	-

- (iv) Marketable securities for which the accumulated purchase or sale amounts for the year exceed \$300 million or 20% of the paid-in capital:

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counter-Party	Name of Relationship	Beginning Balance		Acquisitions		Disposal				Ending Balance	
					Shares	Amount	Shares	Amount	Shares	Amount	Carrying Value	Gain (loss) on disposal (Note)	Shares	Amount
The Company	Fund: Jih Sun Money Market Fund	Financial assets at fair value through profit or loss—current	Taiwan Cooperative Bank	-	-	-	18,752	275,000	15,466	226,391	226,000	512	3,286	49,121

Note: The amount includes the changes in fair value.

- (v) Acquisition of real estate which exceeds \$300 million or 20% of the paid-in capital: None
- (vi) Disposal of real estate which exceeds \$300 million or 20% of the paid-in capital: None

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(vii) Total purchases from and sales to related parties which exceed \$100 million or 20% of the paid-in capital:

Company Name	Related Party	Nature of Relationship	Transaction Details				Transactions with Terms Different from Others		Notes/Accounts Receivable or (Payable)		Note
			Purchases/ (Sales)	Amount	% of Total Purchases/ (Sales)	Payment Terms	Unit Price	Payment Terms	Ending Balance	% of Total Notes/Accounts Receivable or (Payable)	
The Company	AMA	The Company's subsidiary	(Sales)	(525,059)	(7)%	OA30	-	-	32,805	4 %	
The Company	AMK	The Company's subsidiary	(Sales)	(177,281)	(2)%	OA30	-	-	12,593	2 %	
The Company	AMH	The Company's subsidiary	(Sales)	(436,927)	(6)%	OA30	-	-	19,465	2 %	
The Company	AMC	The Company's subsidiary	(Sales)	(498,743)	(7)%	M60	-	-	54,370	7 %	
The Company	Phison	The Company's director	Purchases	1,081,670	19 %	M45	-	-	(243,948)	(34)%	
AMA	The Company	AMA's parent company	Purchases	525,059	91 %	OA30	-	-	(32,805)	(87)%	
AMK	The Company	AMK's parent company	Purchases	177,281	100 %	OA30	-	-	(12,593)	(100)%	
AMH	The Company	AMH's parent company	Purchases	436,927	100 %	OA30	-	-	(19,465)	(100)%	
AMC	The Company	AMC's parent company	Purchases	498,743	100 %	M60	-	-	(54,370)	(100)%	

(viii) Receivables from related parties which exceed \$100 million or 20% of the paid-in capital: None.

(ix) Transactions about derivative instruments: Please refer to note 6(b)

(b) Information on investees:

(In Thousands of Shares)

Investor	Investee	Location	Main Businesses and Products	Original Investment Amount		Balance as of December 31, 2020			Net Income (Loss) of the Investee	Investment Income (Loss)	Note
				December 31, 2020	December 31, 2019	Shares	Percentage of Ownership	Carrying Value			
The Company	AMA	USA	Trading of memory modules	610	610	20	100.00 %	244,274	17,657	17,657	
The Company	ACYB	British Virgin Islands	Investment and holding activity	18,542	18,542	2,636	100.00 %	32,347	21,896	21,896	
The Company	AMJ	Japan	Trading of memory modules	2,918	2,918	0.2	100.00 %	19,071	2,862	2,862	
The Company	ATPL	India	Trading of memory modules	915	915	29	100.00 %	1,394	89	89	
The Company	AMK	Hong Kong	Trading of memory modules	20,917	20,917	5,000	100.00 %	11,488	(654)	(654)	
The Company	AMH	Netherlands	Trading of memory modules	130,469	130,469	80	100.00 %	39,691	7,886	7,886	
The Company	JoiUp	Taiwan	Cloud services and software development	7,500	15,000	750	12.86 %	1,340	(1,709)	(269)	

(c) Information on investment in Mainland China:

(i) Name and main businesses and products of investee companies in Mainland China:

Investee Company Name	Main Businesses and Products	Total Amount of Paid-in Capital	Method of Investment (Note 1)	Accumulated Outflow of Investment from Taiwan as of January 1, 2020	Investment Flows		Accumulated Outflow of Investment from Taiwan as of December 31, 2020	Net Income (Loss) of Investee	% of Ownership of Direct or Indirect Investment	Investment Income (Loss)	Carrying Value as of December 31, 2020	Accumulated Inward Remittance of Earnings as of December 31, 2020
					Outflow	Inflow						
Apacer Electronic (Shanghai) Co., Ltd (AMC)	Trading of memory modules	14,050 (USD500 thousand)	Type 2	14,050 (USD500 thousand)	-	-	14,050 (USD500 thousand)	22,371	100.00 %	22,371 (Note 2)	29,314	-
Shenzhen Kylinports Technology Co. (AMS)	Trading of gaming products	21,019 (USD748 thousand)	Type 2	16,804 (USD598 thousand)	-	-	16,804 (USD598 thousand) (Note 5)	(934)	99.00 %	(925) (Note 3)	14,153	-

Note 1: Method of investments:

Type 1: Direct investment in Mainland China.

Type 2: Indirect investment in Mainland China through a holding company established in a third country.

Type 3: Others.

Note 2: Investment income or loss recognized based on the financial statements audited by the auditors of the Company.

Note 3: Investment income or loss recognized based on the unaudited financial statements of investee companies.

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Note 4: The above amounts were translated into New Taiwan dollars at the exchange rate of US\$1=NT\$28.10

Note 5: The amount of AMK reinvestments amounting to US\$134 thousand was excluded.

(ii) Limits on investments in Mainland China:

Investor	Accumulated Investment in Mainland China as of December 31, 2020	Investment Amounts Authorized by Investment Commission, MOEA	Upper Limit on Investment Authorized by Investment Commission, MOEA
The Company	30,854 (USD 1,098 thousand)	34,619 (USD 1,232 thousand)	1,685,723

(iii) Significant transactions with investee companies in Mainland China:

Please refer to section "Information on significant transactions" for detail description.

(d) Major shareholders:

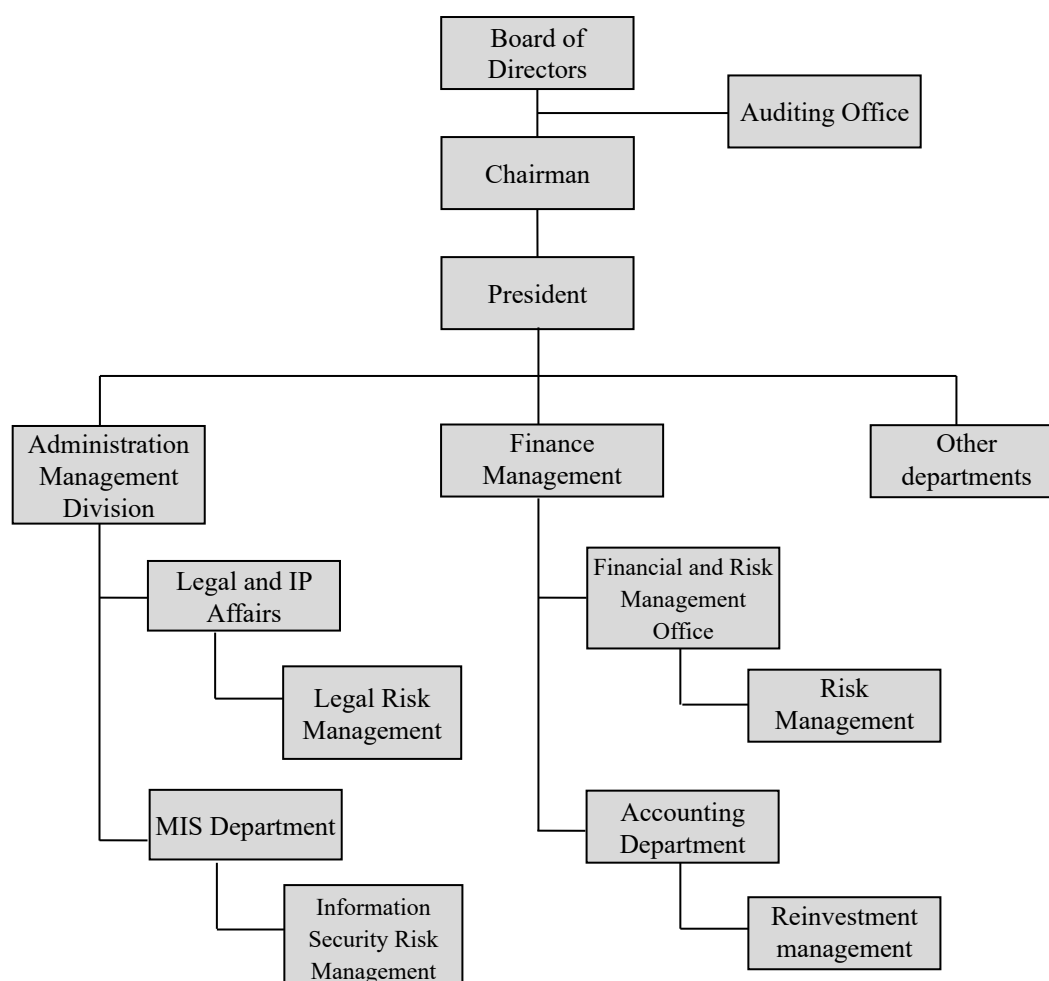
Major Shareholder's Name	Shareholding	Shares	Percentage
Phison Electronics Corporation		10,050,000	9.96 %
Teddy Lu		5,699,906	5.64 %

14. Segment information:

Please refer to the consolidated financial statements for the years ended December 31, 2020 and 2019 for disclosure of segment information.

VII. Review and analysis of the financial status and financial performance and risk issues

Risk management organization structure:



- The Board of Directors reviews and supervises the implementation of risk management and control
- The President and other senior executives are in charge of supervising the implementation of risk management decisions, and regularly controlling and evaluating the effectiveness of the risk management implementation.
- The Auditing Office regularly review and supervise the actual implementation of internal control processes and annual audit programs
- The Legal and IP Affairs Office is in charge of legal risk management, contract reviews, and litigation to reduce legal risks
- The Finance and Risk Management Office is in charge of financial hedge planning and hedging transactions
- The Accounting Department is responsible for the confirmation of the hedging transactions and the checking related accounts to ensure the accuracy of the transactions and the reliability of the financial statements.
- The MIS Department is responsible for designing and implementing various control programs for information systems, network environments and computer software/hardware authority to reduce information security risks.

1. Financial status

Unit: TWD 1,000

Item \ Year	2020	2019	Difference	
			Amount	%
Current assets	2,959,170	3,158,606	(199,436)	(6.31)
Long-term investments	37,761	41,994	(4,233)	(10.08)
Real estate, plant and equipment	871,958	876,060	(4,102)	(0.47)
Right-of-use assets.	28,684	35,110	(6,426)	(18.30)
Intangible assets	53,225	62,278	(9,053)	(14.54)
Other assets	100,301	103,146	(2,845)	(2.76)
Total assets	4,051,099	4,277,194	(226,095)	(5.29)
Current liabilities	1,191,101	1,421,922	(230,821)	(16.23)
Non-current liabilities	50,316	48,876	1,440	2.95
Total liabilities	1,241,417	1,470,798	(229,381)	(15.60)
Share capital	1,008,978	1,008,978	-	-
Capital reserve	361,519	359,910	1,609	0.45
Retained earnings	1,548,000	1,515,937	32,063	2.12
Other equities	(108,958)	(78,579)	(30,379)	(38.66)
Treasury shares	-	-	-	-
Attributed to stockholders of the company	2,809,539	2,806,246	3,293	0.12
Non-controlling interests	143	150	(7)	(4.67)
Total equity	2,809,682	2,806,396	3,286	0.12
Changes of more than 20%, or more than TWD 10 million are described below:				
1. The increase in “Other equities” is due to the recognition of conversion differences in the financial statements of overseas business entities and the unrealized loss of financial assets measured at fair value through other comprehensive income.				

2. Financial performance

(1) Analysis of financial performance over the past two years

Unit: TWD 1,000

Item \ Year	2020	2019	Difference	
			Amount	%
Operating revenue	7,152,222	7,485,821	(333,599)	(4.46)
Gross operating profit	1,125,902	1,400,243	(274,341)	(19.59)
Operating income	345,419	483,595	(138,176)	(28.57)
Non-operating income and expenses	25,250	(4,695)	29,945	(637.81)
Net profit before tax	370,669	478,900	(108,231)	(22.60)
Net profit for the current period	290,460	376,629	(86,169)	(22.88)
Other comprehensive income for the period (net income after taxes)	(31,494)	(12,883)	(18,611)	144.46
Total consolidated income for the current period	258,966	363,746	(104,780)	(28.81)
Changes of more than 20%, or more than TWD 10 million are described below:				
1. The decrease in the “operating income”, “net profit before tax”, “net profit for the current period” and “total consolidated income for the current period” was a result of the decrease in profit due to impact of the pandemic on the global economic environment and the appreciation of TWD in 2020.				
2. The increase in “non-operating income and expenses” was due to increased income from insurance compensation.				
3. Decrease in “other comprehensive income for the period (net income after taxes)”: This was due to an increase in the loss of exchange differences on translation of foreign operations, caused by fluctuations of foreign exchange rates.				

(2) The main factors influencing the expected sales volume in the coming year and the main factors for our company's expected continued growth or decline of our sales volume:

Our company is rooted in core technologies for storage and focuses on vertical industry applications, grasps consumer market trends, and develops an integrated ecosystem for services around information storage, reception, analysis, control, and sharing. We lead in the continuous development of solutions for the cloud and the Internet of Things. With the help of our solid production and marketing mechanisms and a comprehensive distribution system that serves regional markets with a full range of and diversified products and services, our company expects to achieve its sales target for 2021.

3. Cash flow

(1) Analysis of changes in cash flow over the past two years (consolidated):

Unit: TWD 1,000

Item \ Year	2020	2019	Difference	
			Amount	%
Operating activity	337,211	900,567	(563,356)	(62.56)
Investment activity	(151,524)	(583,445)	431,921	(74.03)
Financing activity	(248,797)	(353,527)	104,730	(29.62)
Changes of more than 20%, or more than TWD 10 million are described below:				
1. The decrease in net cash inflow from operating activities was due to the decrease in profit and increase in accounts payable in the current period.				
2. The decrease in net cash outflow from investing activities was due to the decrease in time deposits with a term of three months or longer in the current period.				
3. The decrease in net cash outflow from financing activities was due to the decrease in short-term borrowings in the current period.				

(2) Improvement plan for lack of liquidity: None.

(3) Cash flow analysis for the coming year:

Unit: TWD 1,000

Cash balance at beginning of period	Annual net cash flow from operating activities	Annual cash inflow	Cash surplus (deficiency) amount	Remedy for cash shortage	
				Investment plan	Financial plan
617,616	273,515	(178,331)	712,800	-	-

4. Impacts on financial operations from major capital expenditures in the coming year: None.

5. The reinvestment policy of the past year, reasons for profits or losses, the improvement plan and investment plan for the coming year:

- (1) The reinvestment policy of the past year: Our company's reinvestment policy mainly aimed to increase revenue and profit.
- (2) Reasons for the major losses on the reinvestments: Our subsidiaries have already demonstrated their profitability, but due to rapid changes in the market and fierce competition, the current business growth rate of these reinvestments has slowed down. In the future, we will exert tighter control on certain processes to ensure higher profits.
- (3) Investment plan for the coming year: Our company will leverage its accumulated advantages of deep R&D in core technologies to develop potential applications in information reception, analysis, control, and sharing, and integrate these high-tech information services into an ecosystem to seize early opportunities in cloud business and the Internet of Things.

6. Risk matters requiring analysis and evaluation

(1) The effects of changes in interest rates and exchange rates and inflation on the profit and loss of the company as well as future countermeasures

A. Changes in interest rates

Our company's liquidity is sufficient, and short-term bank borrowings are used for operational turnover. Interest rate fluctuations have a limited impact on our company. Short-term investments are mainly in time deposits, which are combined with funds to increase revenue.

If the annual interest rate on bank borrowings increases or decreases by 1%, ceteris paribus, the consolidated company's net profit before tax in 2020 would decrease or increase by TWD 984,000.

B. Changes in exchange rates

The foreign exchange positions of our company are mainly in US Dollar. Exchange rate risks stem from commercial transactions, and recognized assets and liabilities. We will maintain our consistent and stable strategy and actively avoid foreign exchange risks to reduce the impact of exchange rate fluctuations on our company's income.

Unit: TWD 1,000; %

Item	Year
Consolidated net operating income (A)	2020 7,152,222
Consolidated net operating profit (B)	345,419
Consolidated net gains (losses) from foreign exchange (C)	(4,886)
(C)/(A)	(0.07%)
(C)/(B)	(1.41%)

C. Inflation

The operating status of our company last year and this year to the date has not been significantly affected by inflation.

(2) Policies on high-risk, high-leverage investments, capital lending, third-party or endorsed guarantees, and derivative commodity transactions, and the main reasons for profits or losses from these and future response measures

A. The Company is not engaged in high-risk, high-leverage investments.

B. Loaning of funds and endorsements/guarantees: The Company has not lent out, endorsed, or guaranteed any third-party funding.

C. Transaction of derivatives: Our transactions in derivative products are mainly hedging transactions, which are handled in accordance with the provisions regarding trading procedures for derivative financial products in the "Criteria for Handling Acquisition and Disposal of Assets".

(3) Future R&D projects and expected R&D expenses

A. Our research and development plan for 2021 includes the following:

(A) Technology for high speed transmission

This year, we will continue to invest in the development of industrial SSDs for PCI Express Gen4 high-speed transmission interfaces. We expect PCIe to become the high-speed memory interface of the next generation and the mainstream standard for transmission interfaces. We will continue to invest in the development of SSD hardware, software and firmware architecture technology. We expect to invest TWD 30,000,000 in R&D for this area in 2021.

(B) Flash memory products for industrial applications

Focusing on the design and application technology of related solid state disk storage products, we research and develop embedded SATA, PCIe and USB interface products and related value-added application software, hardware and firmware. The main use of these industrial storage modules is to replace traditional mechanical hard disk storage products to ensure high reliability of data transmission and provide value-added applications. We will continue to develop solid state disk application technologies and products geared to customer and market needs in different fields. We expect to invest TWD 20,000,000 in R&D for this area in 2021.

(C) Random dynamic memory storage devices

In response to the era of big data analysis, the server storage market, and the increased demand for high-speed data access, the new generation of DDR5 will be introduced this year and we will invest resources for the research, testing and development of the random dynamic memory devices of the next generation. We expect to invest TWD 8,000,000 in R&D for this area in 2021.

(D) Industrial optical inspection and intelligent IoT architecture technology

In response to the development of the Industry 4.0 era and the Internet of Things, as well as the increase of industrial optical inspection requirements and applications, we will continue to develop rapid optical inspection devices to solve problems in industrial inspection applications. We will also invest resources in the R&D of inspection and IoT platform technologies to provide a platform system structure with well-integrated technologies and extensive industrial IoT applications. We expect to invest TWD 3,000,000 in R&D for this area in 2021.

B. Estimated investments in R&D

Our R&D expenses in 2020 were TWD 122,801,000. We expect to invest TWD 145,459,000 in research and development in 2021. Competition in the market for consumer and embedded storage and application products is fierce. To keep our products competitive and stay ahead in the industry, we have become a manufacturer that continuously launches innovative products. We intend to annually increase our R&D expenditures as a proportion of total revenue as one of our key expenditures.

Looking into the future, the Company, while continuing to invest in the research and development of consumer products, will develop a stronger focus on the rapidly increasing demand from the industrial control market. We have served the industrial control memory and storage market for many years and have a deep understanding of customer needs there. Thus, we will assertively develop our R&D capabilities in embedded solid state disk storage modules and industrial IoT architecture technologies, gradually increase R&D in core technologies, hire more R&D engineers specialized in firmware, software, hardware, and mechanisms, and annually increase our R&D investments in R&D personnel, tools, and testing hardware and software. This will enable us to develop and provide the industrial control market with diverse applications and customized services that are competitive, differentiated, and optimized.

C. The main factors affecting the success of R&D in the future

- (A) Mastery of high-speed transmission core technologies and R&D of storage algorithms.
 - (B) R&D personnel experienced in software, hardware, system and system architecture.
 - (C) Electromechanical integration capabilities for firmware, hardware, mechanisms, and systems.
 - (D) Capabilities in storage testing and verification technologies.
- (4) Changes in important policies and laws in Taiwan and abroad impacting our finances, and response measures

Our company has not been affected by changes in important policies and laws in Taiwan or abroad last year that have affected our finances or business. Our main sales markets are in Asia, Europe, and the Americas. The European region consists mostly of developed countries, whose laws and major policies are more stable than other regions, while the Americas are dominated by the United States, which in the short term should have no military or political risks. Therefore we do not expect that our company will be adversely impacted by changes in important policies and laws in Taiwan or abroad in the future.

- (5) Impacts from changes in technology and the industry, and response measures

Our company closely follows changes and developments in technologies in our industry. Thus over the past year there was no significant impact on our company's finances or business arising from changes in technology or the industry.

- (6) Impacts from changes in corporate or corporate crisis management, and response measures

For many years our company has taken great care of maintaining a good corporate image and complying with statutory requirements. In the event of any situation that may affect our corporate image or legal compliance, a task force will be set up to formulate response measures. To date, there have been no incidents that could affect the corporate image.

- (7) Expected benefits and potential risks from a merger or acquisition: None.

- (8) Expected benefits and potential risks from expanding our plant:

Our company has completed the integration of the management of our factory in Tucheng and the headquarters of our company. We have established company milestones and objectives for our company's sustainable business. As of the printing date of this annual report, our company has no plans to expand the factory.

- (9) Risks of concentrated procurement of or sales of goods, and response measures: None.

- (10) Impacts and risks from large transfers of shares held by our company's directors, supervisors, and large shareholders holding more than 10% of shares, and response measures: None.

- (11) Impacts and risks from changes our company's operating rights, and response measures: None.

- (12) Litigation and non-litigious events

A. Outcomes of major litigious, non-litigious, or administrative disputes last year or this year to date that have been determined or are still proceeding and that may have serious impact on shareholder income or share prices: None.

B. Outcomes of major litigious, non-litigious, or administrative disputes last year or this year to date involving our company's directors, supervisors, and large shareholders holding more than 10% of shares, that have been resolved or are still proceeding and that may have serious impact on shareholder income or share prices: None.

- (13) Other major risks and response measures: None.

7. Other important issues: None.

VIII. Special items

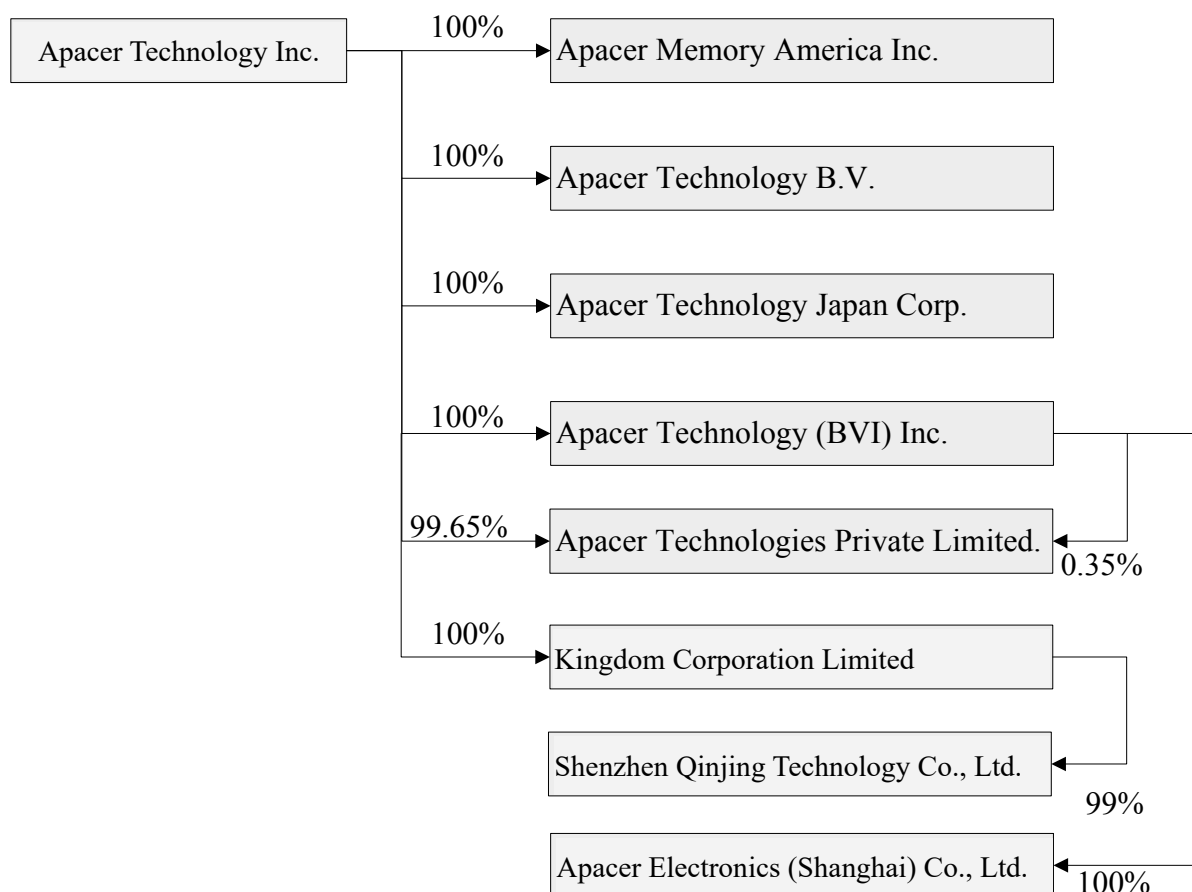
1. Information on affiliated companies

(1) Consolidated business report of affiliated companies

A. Overview of affiliated enterprises

(A) Organization chart of affiliated companies

December 31, 2020



(B) Basic information of each company

December 31, 2020

Company name	Date of establishment	Address	Amount of paid-up capital	Main business items
Apacer Memory America Inc.	1997.10.14	46732 Lakeview Blvd., Fremont, CA 94538	USD 20,000 (USD:TWD=1:28.100)	Sales of memory modules, small storage memory cards and consumer electronics
Apacer Technology (BVI) Inc.	1997.02.17	3rd Floor, J & C Building, Wickhams Cay 1, Road Town, Tortola, British Virgin Islands	USD 550,000 (USD:TWD=1:28.100)	Professional investment and foreign stock holding
Apacer Technology Japan Corp.	2000.07.21	Roppoto Fa Center, 1-9-1, Nagase, Mihama-Ku, Chiba-Shi, Chiba, Japan	JPY 10,000,000 (JPY:TWD=1:0.273)	Sales of memory modules, small storage memory cards and consumer electronics
Apacer Technologies Private Limited	2007.02.06	1874, South End C Cross, 9th Block Jayanagar, Bangalore-560069, India	INR 1,387,022 (INR:TWD=1:0.385)	Sales of memory modules, small storage memory cards and consumer electronics
Kingdom Corporation Limited	2001.01.02	Room 901, Yip Fung Building, No. 2-12, D'Aguilar Street, Cnetral, Hong Kong.	HKD 5,000,000 (HKD:TWD=1:3.625)	Sales of memory modules, small storage memory cards and consumer electronics
Apacer Technology B.V.	1998.02.17	Science Park Eindhoven 5051 5692 EB Son, The Netherlands	USD 79,513 (USD:TWD=1: 28.100)	Sales of memory modules, small storage memory cards and consumer electronics
Apacer Electronics (Shanghai) Co., Ltd.	2001.10.16	Room 207, No.80 Xinling Road, Shanghai Pilot Free Trade Zone, China	USD 500,000 (USD:TWD=1: 28.100)	Sales of memory modules, small storage memory cards and consumer electronics
Shenzhen Qijing Technology Co., Ltd.	2016.06.03	Room 2505, Block A, World Trade Plaza, Fuhong Road, Futian Avenue, Futian District, Shenzhen, China	RMB 5,000,000 (RMB:TWD=1: 4.297)	Sales of gaming products, gaming peripherals and consumer electronics

(C) Information on the same shareholders involved with or controlling affiliated companies: None.

(D) Operating activities of the affiliated companies

Our company's main business activities are the manufacture and sale of memory modules and small storage memory cards. The main business activities of our reinvested companies are the purchase and sale of memory modules and small storage memory cards.

(E) Information on directors, supervisors, and president of the affiliated companies

December 31, 2020

Company name	Title	Name or representative	No. of shares held	
			Number of shares	Shareholding ratio
Apacer Technology (BVI) Inc.	Director	Apacer Technology Inc. Representative: Austin Chen	2,635,775 shares	100%
Apacer Memory America Inc.	Director	Apacer Technology Inc. Representative: Xu Qin-Yi	20,000 shares	100%
Apacer Technology B.V.	Director	Apacer Technology Inc. Representatives: Chang Chia-Kun and Zheng Cui-Wen	79,513 shares	100%
Apacer Technology Japan Corp.	Director	Apacer Technology Inc. Representatives: Chang Chia-Kun, Luo Rong-Fa, Lin Xia-Yun	200 shares	100%
HONG YU Technology Co., Ltd.	Director	Apacer Technology Inc. Representatives: Lai Zi-wen, Luo Xue-ru, Quan Sen-yu	5,000,000 shares	100%
Apacer Electronics (Shanghai) Co., Ltd.	Director	Apacer Technology Inc. Representatives: Chang Chia-Kun, Lai Zi-wen, Quan Sen-Yu	Amount of contribution USD 500,000	100%
Apacer Technologies Private Limited	Director	Apacer Technology Inc. Representatives: Lai Zi-Wen, Chen Zhu-Ming, Naveen	28,799 shares	100%
Shenzhen Qijing Technology Co., Ltd.	Director	Apacer Technology Inc. Representatives: Lai Zi-wen, Quan Sen-yu, Zheng Cun-ben	Amount of contribution RMB 4,985,714	99%

B. Business status of the affiliated enterprises

Unit: TWD 1,000

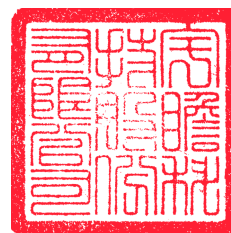
Company name	Capital amount	Total assets	Total liabilities	Net worth	Operating revenue	Operating income	Current Net Profit/Loss (after tax)	Earnings per share (TWD)
Apacer Memory America Inc.	610	290,443	46,169	244,274	674,423	19,797	17,657	882.84
Apacer Technology (BVI) Inc.	18,542	32,347	0	32,347	0	(70)	21,896	8.32
Apacer Technology Japan Corp.	2,918	32,670	13,599	19,071	111,977	1,709	2,862	14,309.04
Apacer Technologies Private Limited	915	1,734	340	1,394	1,522	153	89	3.08
HONG YU Technology Co., Ltd.	20,917	29,753	18,265	11,488	120,199	246	(654)	(0.14)
Apacer Technology B.V.	130,469	69,837	30,146	39,691	503,170	9,350	7,886	99.18
Apacer Electronics (Shanghai) Co., Ltd.	15,358	93,130	63,816	29,314	542,597	9,169	22,371	-
Shenzhen Qijing Technology Co., Ltd.	22,975	14,327	32	14,295	0	(902)	(925)	-

(2) Consolidated financial statements of the affiliated enterprises: Please refer to pages 175 - 298.

(3) Affiliates reports: Not applicable.

2. Private equity securities transactions during last year and this year to date:
None.
3. Shares of this (parent) company held or handled by subsidiaries:
None.
4. Other necessary additional statements:
None.
5. Matters that have a significant impact on shareholders' income or securities prices as set forth in Article 36, paragraph 3, subparagraph 2 of the Securities and Exchange Act during last year and this year to date:
None.

Apacer Technology Inc.



Chairman: Austin Chen



Date of publication: 30 April 2021



Apacer Technology Inc.

2020 Annual Report

Taiwan Stock Exchange Market Observation Post System: <http://mops.twse.com.tw>

Apacer annual report is available at <https://www.apacer.com>

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