V. Operational Highlights

1. Business Activities

1. Business Scope

1. Main Business Scope:

(1) CC01080 Electronic Parts and Components Manufacturing

(2) CC01101 Electronic Parts and Components Manufacturing

(3) CC01110 Computers and Computing Peripheral Equipments Manufacturing

(4) CC01120 Data Storage Media Manufacturing and Duplicating

(5) CC01990 Electrical Machinery, Supplies Manufacturing

(6) F119010 Wholesale of Electronic Materials

(7) F219010 Retail Sale of Electronic Materials

(8) H201010 Investment

(9) I301010 Software Design Services

(10) I501010 Product Designing

(11) JE01010 Rental and Leasing Business

2. Revenue Proportion：

Established in May 1997, the Company’s primarily provides Integrated Circuit (IC) packaging and testing services. Revenue proportion as of 2018 is as followed：

Unit：NT 1,000s

Items	Net Revenue 2019	Revenue Proportion
Packaging Service	40,183,544	60.41%
Testing Service	17,623,648	26.49%
Wafer Level Packaging	3,446,149	5.18%
Wafer Level Testing	4,851,085	7.29%
Others	420,718	0.63%
Total	66,525,144	100.00%

3.Current Product/Services：

(1) High Pin-count Thin Small Outline Package (TSOP) packaging and testing services

(2) Quad Flat No-leads (QFN) Packaging Services

(3) Multi-Chip Packaging (MCP, S-MCP) Packaging and Testing Services

(4) Ball Grid Array (wBGA, FBGA) IC packaging and testing services

(5) Secured Digital Memory Card (SD, microSD)，USB packaging and testing services

(6) Solid State Drive(SSD)、Embedded Memory (eMMC, eMCP, UFS) packaging and testing services

(7) DRAM Chip-Stacking packaging and testing services
(8) Mobile memory packaging and testing services
(9) Wafer testing services
(10) Wafer bumping packaging services
(11) Copper Piller Bump (CPB) Wafer testing services
(12) System-in-Packag (SiP) packaging services
(13) Redistribution Layer (RDL) services
(14) Wafer Level Chip Scale Package (WLCSP) packaging services
(15) Package on Package / Package in Package(PoP, PiP) packaging and testing services
(16) Micro-electro-mechanical systems (MEMS) packaging services
(17) CMOS Image Sensor (CIS)packaging and testing services
(18) Flip-Chip Chip Scale Package (FC CSP) Packaging Services
(19) Packaging service with laminate substrate
(20) Through-Mold-Via (TMV) Technology development for chip-stacking requirement in packaging services
(21) Copper Pillar Bump Flip Chip (Cu Pillar Bump Flip Chip) packaging services
(22) CMOS Image Sensor (CIS) packaging services
(23) Electro Magnetic Interference (EMI) shield package packaging services
(24) Fan-Out Wafer Level (FOWLP) packaging and testing services
(25) Fan-Out Panel Level (FOPLP) packaging and testing services
(26) LPDDR3 KGD testing services

4. Product/Service in Development：

(1)Embed PiFO® package with Chip Middle and Cu pillar connecting RDL route on the side to achieve connection between high density dominate chips. Packaging reliability expect to certify by end of 2020.
(2)Developing ultra-fine RDL line and space 2/2um to provide high efficiency, I/O count, band width, and heterogeneous integration package technologies.
(3)Developing Dielectric Stack Via with ultra-fine RDL line and space to achieve high density dominate chips connection.
(4)Developing Dry Film Dielectrics to provide better qualify of Surface Coplanarity for FO products.
(5)Developing Fan-out on FCBGA Substrate technology with fine line/space replacing 2.5D

Si interposer to achieve better performance and lower cost solution.

(6)Developing Cu/Ni/SnAg micro bump technology use on Fan-out on substrate to provide performance competitiveness solution with 2.5D Si interposer solution.

(7)Promote TSV technology with CIS customers to co-develop next generation high speed and resolution automotive products.

(8)Promote TSV technology on high performance computing memory products with high die stacking and band width.

(9)Developing grade zero automotive products using wire bond FBGA to meet higher grade qualification.

(10)Developing TSV for customized CIS(CMOS Image Sensor) solution to meet automotive grade qualification.

(11)Developing FCBGA packaging technology for grade zero automotive product to meet automotive grade qualification.

(12)Developing 110X110 mm2 FO products to provide solution for high-end products requirement.

(13) Introduce Low k materials on GDDR6 products to improve process speed.

(14)Developing LLHBM PKG structure on FCBGA package to provide solution for future large size package structure.

(15)Developing FCCSP Hybrid (Flip-chip and wiring) packaging structure for 5nm wafers to provide solution for future products.

(16)Developing FCCSP technology for ADAS products to meet automotive grade requirement.

(17)Promote thin film glasses for compact CIS(CMOS Image Sensor).

(18)Research on improving TSV material for CIS(CMOS Image Sensor) to provide compact package solution.

(19)Working on break through 7x7mm2 panel size restriction to target for larger size wafer level package for CIS (CMOS Image Sensor) market.

(20)Developing multiple layers distribution bumping to improve IC design flexibility.

(21)Developing fine bump pitch and narrow gap between chips to SBT for FCCSP to meet the trade of compact packages.

(22)Developing FCBGA 55x55mm2 & 77.5x77.5mm2 to meet high speed interconnection requirement such as AI , server and networking.

(23)Developing advanced CIS(CMOS Image Sensor) and ultra-thin wafer level package to provide solution for automotive products.

(24)Developing larger dimension and fine space TSV packaging technology for advanced CIS and 5G products.

(25) Developing PCIe Gen4 testing services and software.

(26) Developing Higher Speed NAND testing services and hardware.

(27) Developing CIS testing services and hardware.

(28) Developing Drone related testing services and hardware.

(29) Developing Multi-Die Package.

(30) Developing T5503A IOOCK LPDDR4 testing services and hardware.

(31) Developing 5Grelated testing services and hardware.

2. Industry Summary

1. Current Industry Status & Outlook

The “World Economic Outlook” report published by the International Monetary Fund in January 2020, noted that the global economic growth rate of 2.9% in 2019 was the weakest since the global financial crisis from 10 years ago. The US-China trade war, Brexit and a slowdown in major economies all led to a significant downturn in global economic activity, trade and investment during the course of 2019.

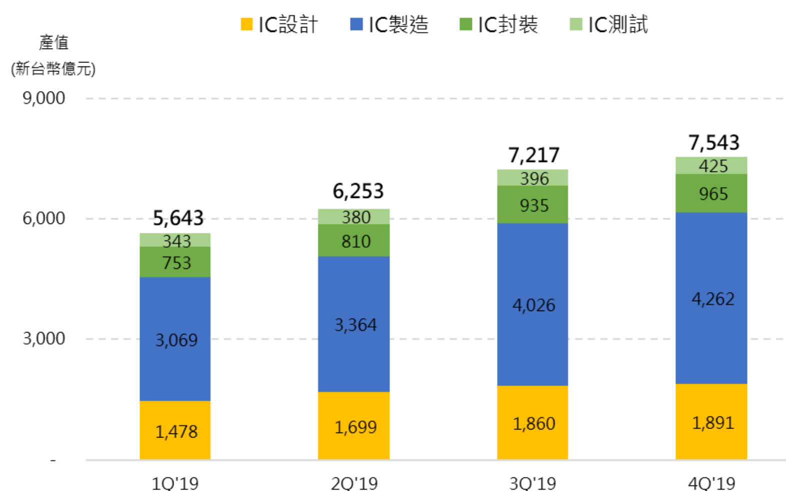
The semiconductor industry was affected by the economic weakness of 2019 as well. Data published by the Semiconductor Industry Association (SIA) and World Semiconductor Trade Statistics (WTST) organization in February 2020 put global semiconductor sales for 2019 at US$412.1 billion by value, down 12.1% from the US$468.8 billion reported for 2018; Global semiconductor sales by volume in 2019 was 932 billion chips, down 7.2% from 2018. The biggest decline by region was in the US semiconductor market that shrunk by 23.8%, followed by the Japan market with a decline of 10.0%. The decline in the China market was 8.7%.

In terms of IC categories, the massive memory market plays an important part in the semiconductor market. Over the last decade, DRAM accounted for around 14 ~ 16% of the global semiconductor market value, while NAND Flash accounted for 11 ~ 12%. In 2019 the memory market was affected by a slide in market demand and excessive OEM inventory levels so the average selling price (ASP) plummeted by 47.4% and the value of the global memory market dropped 31.5%. The drop in the memory market was therefore a main factor in the decline of the semiconductor market.

The US-China trade war spurred Chinese companies to increase their investment in in-house IC R&D and to seek help from the Taiwanese semiconductor industry chain. The Taiwanese semiconductor industry saw positive growth every quarter in 2019 as a result. Statistics compiled by the Industry, Science, and Technology International Strategy Center (ISTI) of Industrial Technology Research Institute. The Taiwanese IC industry was worth NT$2,665.6 billion in 2019, up 1.7% from 2018. The IC packaging industry in particular was worth NT$346.3 billion, up 0.5% from 2018, while the IC testing industry was worth

NT$154.4 billion, up 4.0% from 2018.

2019 Taiwan IC Industry Market Value by Quarter



2019 Taiwan IC Industry by Segment Unit：NT $billions

	1Q19	YoY Growth	2Q19	YoY Growth	3Q19	YoY Growth	4Q19	YoY Growth	2019	Annual Growth
IC Design	1,478	-1.9%	1,699	4.7%	1,860	4.7%	1,891	15.1%	6,928	8.0%
IC Manufacturing	3,069	11.4%	3,364	-4.7%	4,026	5.5%	4,262	8.3%	14,721	-0.9%
IC Packaging	753	-0.39%	810	-6.9%	935	0.5%	965	8.4%	3,463	0.5%
IC Testing	343	3.3%	380	10.8%	396	0.8%	425	6.3%	1,544	4.0%
IC Industry Toal	5,643	-6.4%	6,253	-2.0%	7,217	4.4%	7,543	9.8%	26,656	1.7%

Source：TSIA；Industrial Technology Research Institute (2019/02)

2. Industry Supply Chain

Sectors in IC industry can be categorized according to position in production process, including IC Design at the upstream, IC Manufacturing & Foundries at the mid-stream and IC Assembly & Testing sector at the downstream.

(1) Upstream：

IC Design Sector includes companies designing IC products. The sector is knowledge-intensive with high entrance barrier and return on investment. Its main business scope includes designing and sales of own products or customized design for customers.

(2) Mid-stream：

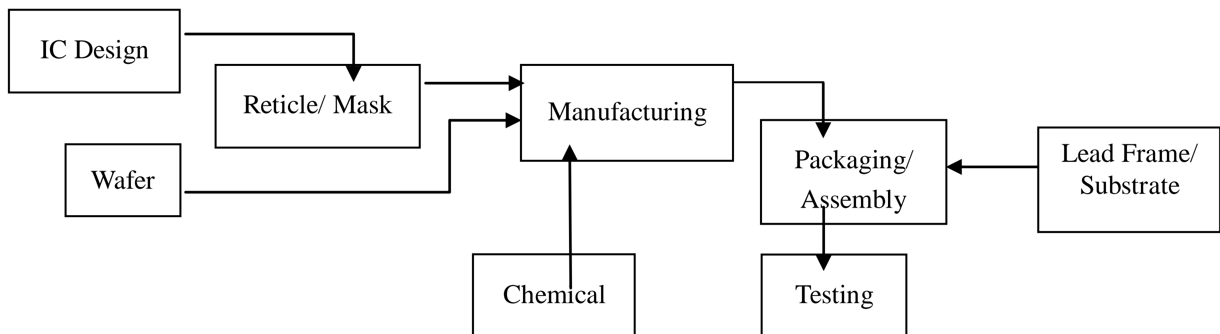
Include IC manufacturing sector and related chemical suppliers. Its main business scope involves manufacturing wafer with precision tools according to in IC circuits designed in

house or specified by customers. This sector is capital and technology intensive with high entrance barrier

(3) Downstream：

Outsource Assembly and Testing (OSAT) sector provides cutting, packaging, assembly and testing service to manufactured IC wafer for final product application.

IC Industry Supply Chain as illustrated below



In recent years scope of IC manufacturing as well as assembly and testing continues overlap due to increasing market demand for larger quantity and higher quality IC. In addition to higher performance and smaller profile, IC is also required to satisfy demands for integrated functions. As a result some wafer foundries begin to develop products and services that extends into scope of IC packaging and assembly. Majority of wafer foundries choose to work closely with cooperating assembly and testing service providers. Integrated Design and Manufacturers (IDM) also collaborate with OSAT service providers in designing and developing product solutions.

3. Trend of Product Development and Competition

(1) Trend of Product Development

IC Assembly and Testing refers to back end of line production process of IC production, including packaging and assembly, as well as testing. Its purpose is to provide protection, thermal management and connectivity to IC chips. Packaging and Assembly technology can be divided broadly into two main stages, including lead frame packaging and leadless packaging on substrate. The initial stage of development is lead frame packaging, which connects IC chips to external connection pins around the IC chips through means of wire bonding. Subsequently lead frames are replaced by substrate where external connection is replaced by led balls under IC chips. The latest development no longer uses lead frames or

led balls. The latest Flip-chip packaging technology places the IC chip directly on motherboard where IC chips are connected directly to substrate through metal bumps

There are two main areas of technological development in Assembly and packaging technology. One is System on Chip (SoC) where the entire system circuit, including Central Processing Unit (CPU), Memory (Flash memory/ SRAM), Digital Signal Processor (DSP), Input/Output Interface (I/O interface)… are incorporated onto one single IC chip. The other is System in Package (SiP) where IC chips with different digital or analog functions are connected to Integrated Substrate or Functional Substrate with embedded passive components or electric circuits through bumping or wire bonding. SiP packaging technologies also differs according to application requirements, such as surface Multi-chip Module (MCM) packaging or 3D Chip-Stacking packaging which reduces surface area.

While System on Chip (SoC) and System in Package (SiP) are currently the two major direction of development in Semiconductor Assembly and Packaging technologies, System in Chip (SoC) technology has reached a stage of bottleneck. As SoC faces difficulties such as high defect rate, extensive development time and high cost, SiP multi chip module package with advantages such as small profile, high speed and frequency, lower lost and shorter production lead time becomes highly valued solution. As semiconductor micro-manufacturing technologies and IC production cost reaches bottleneck, relevance of Moore’s Law is gradually reaching its limit of applicability. In addition, end-product for Internet of Things also emphasizes heterogeneous integration of different components such as Sensor, Logic/Dram, GPU and other IoT Product applications. Consequently utilizing SiP technology to achieve heterogeneous integration through assembly, particularly integration of sensor units that SoC struggles to achieve, becomes popular areas of research and development. Based on its production process of Wafer-level SiP Assembly and Packaging (e.g. CoWos, InFO package) wafer foundry TSMC is currently leading the movement towards Fan-Out packaging utilized in smart phone application. More than 20% thinner than traditional Flip Chip assembly, fan out packaging matches the trend of increasingly slim profile of smart phones. In addition, Fan-Out packaging also offers advantages in higher performance, low power consumption and better thermal management than Flip Chip packaging. Furthermore, its lower cost also fulfils consumer demands for lower price in electronic devices. The above factors indicate that Fan-Out packaging technologies will become the mainstream for smart phone applications. With exception of TSMC, most wafer foundries choose to collaborate with closely cooperating OSAT service providers in product development. IDM manufacturers also collaborate with OSAT service providers in product design and development. This creates increasingly close integration of

assembly and OSAT service providers, wafer foundries, and IDM manufacturers.

In response to trend of technological development of the industry, as well as increasing demand from upstream customer for capacity in memory, logic, as well as advance assembly, packaging and testing, our company continues to invest in new equipment and capacity to satisfy customer demand. In the meantime, our company continues to develop assembly and packaging technologies providing high performance at low cost. As assembly and packaging industry evolves with an increasing diversity and technology-intensiveness, companies with capability of independent technological development as well as maintaining stable customer base will benefit the most. PTI held a groundbreaking event in Sep 2018 for a Fan-Out Panel-Level Packing (FOPLP) facility, which is the first one in the world FOPLP dedicated facility. PTI believes the FOPLP will be essential for future applications on 5G, AI, bio tech, Advanced Driver- Assistance System (ADAS), smart city, and IoT related products. Ability to develop advanced packing and testing services and secure customer relations will play major factors for corporate sustainability.

(3) State of Competition：

Unfavorable factors in the first half of 2019 such as the global economic slowdown, the volatility of international trade, and weak end-user product demand all created a very challenging environment in the global semiconductor packaging and testing market. Thanks to 5G demand, easing of downward pressure of memory prices and a gradual recovery in mobile phone sales all helped the global semiconductor packaging and testing industry hold the line in the second half of 2019.

The Taiwanese IC packaging and testing industry was worth approximately NT$500.7 billion in 2019 and accounted for more than half of the global semiconductor packaging and testing market. Five out of the top ten packaging and testing service providers in the world were based in Taiwan.

PTI has many years of experience in the packaging and testing sector. We lead the global top five in semiconductor packaging and testing service providers with our stacked IC packaging technology. For 2019 our total revenues for the year were NT$66.525 billion, with Flash accounting for 38%, DRAM accounting for 25%, logic IC accounting for 27%, while System in Package (SiP) and modules accounted for 10% of total revenues.

In the past, System on Chip (SoC) integrated a number of identical technology node components onto the same chip. The cost of IC fabrication jumps when advanced processes move to the 7nm and 5nm scale. Not all IC design houses can afford the high costs associated with advanced processes. This was why PTI focused on the

development of various advanced packaging technologies. We now lead the rest of the industry in our advanced packaging technology and production capacity for "heterogeneous integration." We are also now investing Fan-Out Panel-Level Packaging (FOPLP) technology. Using FOPLP we can integrate the functional components of dissimilar technology nodes. The result is a more cost-effective packaging method that rivals the performance of SoC fabricated by advanced processes. In other words, we can help our customers achieve technological leadership and improved returns by "integrating heterogeneous components made up of multiple technology nodes into the same chip packaging."

Factors such as import substitution, national policy, financial support and innovative applications have spurred China's development of its semiconductor industry in recent years. New fabs entering mass production and the injection of capital from Big Fund have also led to the rapid development of the Chinese semiconductor packaging and testing industry. Data from DIGITIMES Research suggested that Chinese semiconductor packaging and testing companies are mainly focusing on Flip Chip and SiP packaging technologies are the present time due to market demand.

Annual Growth 2014-2019 of Taiwan OSAT Companies Ranking Among Global Top 10

Unit：NT million

Year	2019	19/18	2018	18/17	2017	17/16	2016	16/15	2015	15/14	2014
Company	Revenue	Annual Growth	Revenue	Annual Growth	Revenue	Annual Growth	Revenue	Annual Growth	Revenue	Annual Growth	Revenue
ASE Holding	413,182	4.0%	397,261	36.8%	290,441	5.7%	274,884	-3.0%	283,302	10.0%	256,591
PTI	66,525	-2.2%	68,039	14.1%	59,632	23.4%	48,344	13.7%	42,524	6.2%	40,039
KYEC	25,539	22.7%	20,816	5.7%	19,686	-2.0%	20,081	17.2%	17,129	5.2%	16,278
Chipbond	20,419	9.0%	18,725	16.4%	18,428	6.8%	17,256	2.3%	16,863	4.6%	17.683
ChipMOS	20,337	10.0%	18,480	3.0%	17,941	-7.5%	19,392	-2.4%	19,869	9.7%	22,005

Source：Market Observation Post System/ Relevant Financial Statements Organized by PTI

For Semiconductor backend companies, collaboration with strategic partners possessing leading advantage in technology and production cost enables long term supply chain partnership while securing stable business and profit in the oligopolistic DRAM and Flash market. PTI strives to establish and maintain solid strategic relations with customer while focusing on market segmentation. Currently our primary customers consist of best-known international semiconductor companies in memory manufacturing. Considering risks of price fluctuation due to excess capacity caused by over investment in memory market, PTI also expanded its business scope in 2008 into integrated advanced assembly and packaging services (SiP, MCP, 3D IC, Bumping, Flip Chip MEMS, Fan out, TSV CMOS…). Based on

its fundamental advantage in memory assembly and testing, PTI aim to integrate multiple functions such as logic, wireless, wired and micro-processing unit within a single package to provide high performance and small profile solutions. PTI also continues to emphasize UPH, increasing production efficiency while lowering production cost.

(3) Summary of Technological Research & Development

1.R&D Cost

Latest Annual R&D expenditure as followed

Unit：NT thousands

Item / Year	2019
R&D Expenditure	1,905,221

2. Successfully developed technology or product：

I. Packaging Solution Achievements:

A.提供多樣性面板級扇出型封裝技術：

a. The CHIEFS® packaging solution used Chip First technology as the basis for developing a packaging that offers 6-side protection. Package level reliability verification was completed in 2019.

b. CLIP® packaging solution used Chip Last technology as the basis for integration of MLCC passive components. Package level reliability verification has been completed and there is a chance that it may be applied to automotive products such as Advanced Driver Assistance System (ADAS) and Infotainment in the future.

c. PiFO® packaging solution replaced the conventional substrate by embedding the Controller in the Fan-Out Packaging. Flash memory IC are also stacked on top to give an ultra-slim, high-capacity memory package suitable for mobile phone, wearable devices and other applications.

d. PiFo® packaging solution replaced the conventional substrate by embedding multiple chips in the Fan-Out Packaging. Superior control of structural thickness dimensions and relatively lower structural expansion compared to conventional substrate offers high-end applications with a new option for embedded IC substrate.

e. BF2O® packaging solution used Bump-free Fan-Out and Redistribution Layer (RDL) technology to provide very cost-competitive Fan-out Panel-Level Packaging (FOPLP) suitable for end products that require lightweight, thinness and compact size. Packaging for mobile phone power management IC has now successfully entered mass production.

B. High-speed, high-bandwidth 8-chip high-end memory packaging based on Through

Silicon Via (TSV) technology has now completed reliability testing. Mass production will commence in 2020 Q3 in support of the customer's sales plan.

C. A special glass carrier was developed to further streamline TSV integrated production process, increase the yield of die stacking and brought us closer to the realization of low-cost 3D IC.

D. Developed a special structure for TSV chip packaging of CMOS Image Sensor (CIS). The new structure brought us closer to realizing ultra-slim image chips with super-high resolution.

E. Wire Bond FBGA packaging product for automotive grade 2 product applications was successfully developed and put into mass production.

F. FCBGA packaging product for automotive grade 1 production applications was developed to meet customer requirements on high-end automotive products.

G. Certification completed for GDDR6 graphics memory using epoxy resin with high heat dissipation for improved processing performance.

H. Commenced mass production of BioChip with TSV-based packaging. Such biochips can be used to rapidly check the genetic sequence of the subject and identify diseases for early intervention.

I. Successfully developed SiP packaging for passive components with very fine interval that will enable the provision of lighter, thinner, more compact and low-cost packaging solutions.

J. Developed bumping process for different wafer sizes that can be used in conjunction with special embedded substrates. Electrical connections can be made with other chips to optimize the product's electrical characteristics and improve product performance.

K. Developed 5G mmWave AiP FCCSP and completed its packaging certification to meet the needs of 5G products.

L. Developed vertical wire interconnection technology for use with fan-out packaging for memory with 4-chip stacked IC. This will replace the conventional 16-chip stacked wire-bonded packaging to meet the requirements for low-cost and fast delivery time.

M. Developed advance BIO CSP TSV technology to realize a high-capacity rapid genetic sequence testing function for biological organisms.

II. Testing Solution Achievements:

A. B6700D burn-in oven BI testing services with software and hardware development

B. UFS2.1 system level testing services with software and hardware development

C. Automotive IC testing services

D. T5503HS 4.5Gbps testing with software and hardware development

E. T5383 chip probing services

F. Testing socket mold-type development

(4) Long-term and Short-term Business Strategy

Our Short-term and Long-term strategic business planning in management, production, sales & marketing and research & Development are outlined below

1. Short-term business planning

(1) Actively expand product capacity while developing new technologies and production process

In response to persistent growth in semiconductor market and customer demand, we will continue to actively expand our capacity. We will also increase our competitive advantage by emphasizing on developing new technology and production process such as WLP, FC, SiP/Modules, 2.5D/3D IC, Fan-Out and other advance packaging technologies in accordance with product development trend.

(1) Continue to reduce production lead time in order to provide speedy service for customers.

Out main advantage lies in flexible production process offering high level of mobility. We will continue to reduce production lead time in order to provide speedy service for our customers.

(2) Continue to provide integrated Turn-Key services

Due to consideration in cost, up-stream wafer foundries continues to outsource IC assembly, packaging and testing to specialized assembly and testing facilities (OSAT). We are among the few companies capable of providing complete assembly, packaging and testing services in the country. In order to increase our competitive advantage in providing customer with more options and better service, we will continue to offer integrated Turn-Key services.

(3) Explore foreign and domestic market and increase market share

In addition to maintaining strong relationship with existing foreign and domestic customers, we will use our competitive advantage in flexible production process, high level of mobility and capability in proving Turn-Key services to develop new customer worldwide.

2. Long-Term Business Planning

(1) Emphasize long-term partnership with customer and supplier

Through emphasizing long-term collaboration with up-stream and down-stream partners, we

aim to become the trusted OSAT service provider providing our customer reliable quality and service. We will also develop strong collaborative partnership with our suppliers

(2) Increase investment in automated equipment, accelerate automated production, improve production yield, increase production efficiency and reduce manpower dependence.

(3) Continue to develop new assembly, packaging and testing technology and new customer
As semiconductor moves beyond micrometer and enters the era of nanometer, demand for advance technology in IC assembly, packaging and testing continues to grow rapidly due to increase in function diversity and decrease in size profile. PTI established out research and development facility dedicated to advance assembly and packaging technology in order to satisfy demand from existing and new customers and continues to strengthen our competitive advantage.

(4) Increase revenue contribution from Logic, Module(SSD) and Micro-electro-mechanical Systems(MEMS)
Through increasing customer and revenue in areas of Logic, Module (SSD) and (MEMS) we continue to diversify product risk and increase company scale.

2. Market and Product Sales Outlook

(1) Market Analysis

1. Primary area of product/service sales/provision

Our primary business scope includes providing IC outsourced assembly and testing (OSAT) services in overseas as well as domestic market. As of 2018 revenue from domestic sales account for 20.21% of overall revenue while that of overseas markets account for 79.79%. Our principle markets are Japan, Singapore, and North America.

Unit：NT Thousands

Year / Market	2018	%	2019	%
Domestic	13,752,607	20.21	13,401,920	20.15
Export	54,286,772	79.79	53,123,224	79.85
Japan	22,270,182		23,245,391	
Singapore	14,947,281		13,147,802	
North America	13,167,078		12,634,897	
Europe	2,052,881		2,367,141	
China and Hong Kong	1,381,878		1,133,562	
Others	467,472		594,431	
Total	68,039,379	100	66,525,144	100

2. Market Share：

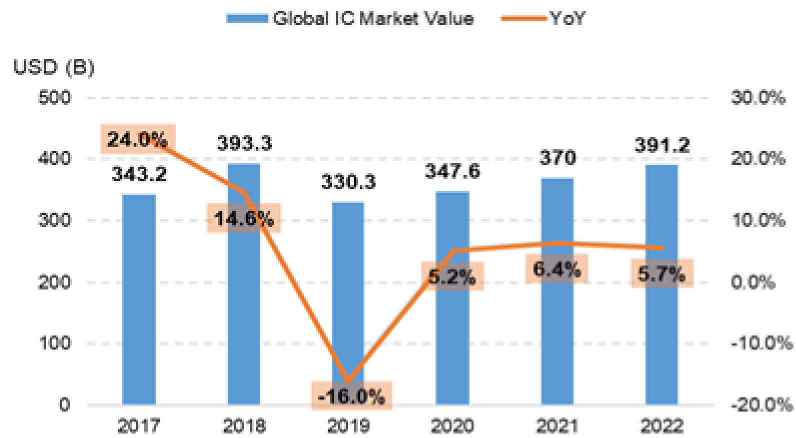
According to data provided by Gartner, PTI is the 4h largest OSAT service provider worldwide in 2018. It is also ranked 2nd in revenue among OSAT service providers in Taiwan. Currently there are over 30 domestic OSAT service providers respectively, of which 20 provides both assembly and testing services. According to 2018 operation results of Taiwanese IC industry published by Taiwan Semiconductor Industry Association (TSIA) in February 2019, overall output value of IC Assembly sector amounts to approximately NT$344.5 billion while that of testing sector amounts to approximately NT$148.5 billion. In 2018, our assembly revenue amounts to approximately NT$ 45.6 billion, contributing 13.2% of overall industry output while testing revenue amounts to approximately NT $22.5 billion, contributing 15.5% to overall industry output. In particular PTI also holds leadership position in assembly, packaging and testing of memory IC products. Powertech Semiconductor (Xian) Co. Ltd., a subsidiary established through investment contract with Micron Technology Inc. on semiconductor assembly, began production in 2016, increasing PTI's market share in memory OSAT sector. In 2017, PTI also reached agreement with Micron Technology Inc. to acquire its Akita facility in Japan as well as 39.6% share of Tera Probe, Inc. from Micron, consolidating PTI's position in Japan. Future applications of 5G, AI, bio tech, ADAS, smart city and IoT related products are going to create massive demand for FOPLP packages which drive PTI to invest heavily in Fan-Out Panel-Level Packaging (FOPLP).

3. Market Supply and Demand Outlook and Growth Potential

Looking ahead to 2020, even though the signing of the Phase 1 trade agreement between the US and China in January 2020 will help reduce the amount of uncertainty in the global economy, the COVID-19 pandemic has impacted on the global industry supply chain and slowed the pace of economic expansion.

World Semiconductor Trade Statistics (WSTS) estimated that the global semiconductor market will grow by 5.9% in 2020 compared to 2019 and reach US$433 billion. Integrated circuits (CI) will account for US$347.6 billion and grow by 5.2%; opto-electronic components will account for US$46.2 billion and grow by 12.5%; discrete components will account for US$24.9 billion and grow by 3.8%, and sensors will account for US$14.4 billion and grow by 5.4%.

2017 ~ 2022Global IC Market Value and Growth Rate

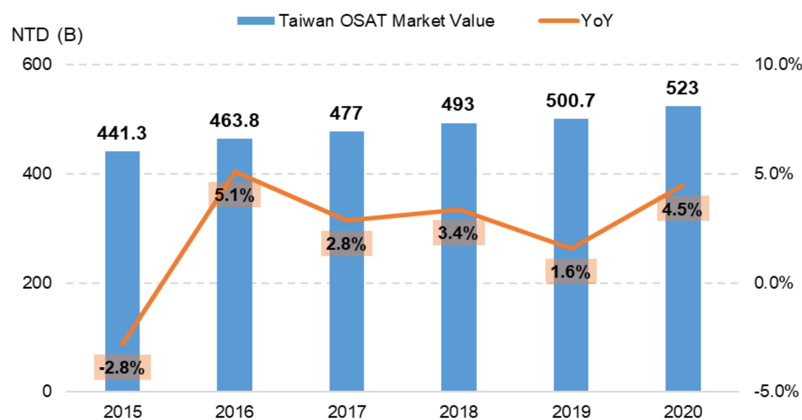


Source: WSTS and IEK   Table by PTI

IC Insights expected semiconductor parts and complications for applications such as smart phones, autotronics, artificial intelligence (AI), big data systems, and in-depth learning applications to underpin the growth of the semiconductor industry in 2020.

The de-Americanization movement launched by China in the second half of 2019 is still building up steam. Add the business opportunities offered by China's 5G infrastructure and Taiwan's semiconductor packaging and testing industry can expect the industry to grow as a whole thanks to advanced packaging and testing capabilities, and heterogeneous IC integration, packaging and testing technology. ISTI estimated that the Taiwanese semiconductor packaging and testing industry will be worth NT$523 billion in 2020, up 4.5% from 2019.

2015 ~ 2020 Taiwan OSAT Packaging and Testing Market Value and Growth Rate



Source: WSTS and IEK   Table by PTI

4. Competitive Advantages

PTI have grown to become one of the major OSAT service providers, delivering high quality, dedicated service and advanced technology for our customers. We continue to collaborate closely and maintain solid relations with our customers. Our competitive advantages are as followed.

(1) Solid Strategic Allies and Globalization

The IC OSAT sector is characterized by high level of collaboration with upstream wafer foundries. Consequently profitability of assembly, packaging and testing service providers relies on solid relationship with customers. In the meantime, IC manufactures also chose long-term partnership with assembly, packaging and testing service providers due to confidentiality in product technology, product quality and production process. Such strategic alliance with concrete relationship of collaboration is beneficial for long-term development of the company.

(2) Turn-key Service

In response to rapid decline in IC sales prices, we offer Turn-key Service to our customers, including both assembly and packaging, as well as testing in order to reducing cost and risk in shipping process.

(3) Outstanding capability in development and production

PTI have been committed in developing new technologies while investing heavily in technological research and production process improvement. We have been proudly awarded many domestic and international patents, as well as technology license from multiple major international manufacturers, establishing our solid competitive edge within the industry.

(4) Investment in high precision automated equipment

In response to development of IC product towards increasingly higher performance, pin-count and density we continue to invest in high precision automated equipment from well-known Japanese and US vendors in order to satisfy customer needs and continuously improve our quality of service.

(5) Online automated customer service system

Our online automated customer service systems enables customer to track closely product status, production progress, and any potential problems. This facilitates swift problem resolution and product improvement while increasing added value for customer.

5. Supporting and Hindering Factors and Responding Strategy

(1)Supporting Factors：

【Industry Background】

① Competitive Advantage of Taiwanese Semiconductor Industry

Taiwan semiconductor industry encompasses a complete semiconductor industry structure from upstream IC Design and wafer foundries to downstream OSAT service providers. This vertically integrated chain of supply, consistent with industry development, contributes to establish the strong competitive position of Taiwanese semiconductor sector in the global market. Booming IC industry facilitated by rapid global development in electronics, information technology, communication technology, consumer electronics, optoelectronic industry, Artificial Intelligence (AI) and Internet of Things (IoT) will continue to support stable growth in OSAT sector.

②OSAT Sector Benefitting from Major Integrated Device Manufacturer (IDM) Outsourcing Trend.

Due to high capital investment of advanced production process, global IDM manufacturers continue to increase its outsourcing of wafer manufacturing, assembly, packaging and testing to Asia region with lower production cost. Taiwan, with its complete industry structure and dynamic vertical supply chain, is the most preferential outsourcing choice for international IDM manufacturers and IC Design Companies. Taiwanese OSAT sector also benefits from OEM orders.

【Competitive Niche】

① Strong Managing Team and Solid Strategic Alliance

Our major share-holders include well-known companies such as Kingston Group and Taiwan Toshiba Semiconductor, facilitating solid reputation and stable customer base. As our revenue continues to grow, support from our shareholders also ensures sufficient capital supply for our future operation and development. Furthermore, our management team is equipped with comprehensive working experience within the semiconductor sector and capability of making appropriate decisions according to market trend.

②Continued Development and Innovation

In response to rapid changes in semiconductor market, PTI is dedicated to technological development. In addition to developing new products, we continue to introduce new technologies through collaboration with our strategic partners. Our research and development team is equipped with capability in independent designing and developing testing software and hardware programs. In addition to continually developing testing program and improving testing equipment in areas of IC testing, we also continue to

develop cutting edge technologies and services in respond to future mainstream IC market demand. Our business scope has extended into logic market from assembly, packaging and testing of memory products. Building on our leading advantage in assembly, packaging and testing for both memory and logic IC, PTI continues to expand its scope into 3D IC. In assembly and Packaging we have completed development in IC Chip-Stacking technology, Field Programmable Gate Array (FPGA) and Fan-Out Packaging technology, and have been rewarded many patents. We will also continue our effort in refining in material and production process.

③Turn-key Service and Flexible Capacity

We able to provide our customer integrated turn-key service of IC assembly, packaging, testing and packing service in a single order, effectively reducing shipping time and cost. In addition, we are able to respond quickly to market and customer demand and swiftly expand and adjust our capacity accordingly through timely investment in advance equipment, providing our customer with most competitive solutions.

(2) Hindering Factor and Responding strategy

① Fluctuation in IC Industry in Connection With Economic Climate

Strategic Response：

A. Product Diversification

In addition to continually strengthening our memory assembly, packaging and testing quality and technology, acquisition of Greatek Electronic Inc. also contributed immensely to expansion into Logic market. Furthermore, our new production technologies such as copper pillar bump, Re-distribution Layer (RDL), Wafer Level CSP, MEMS and SSD continues to achieve customer qualification. Through product diversification we are able to mitigate risk of economic cycle as well as provide our customer greater range of assembly, packaging and testing services

B. Strengthening Collaboration with Customers

Establish long-term partnership with existing customers, establishing Powertech Semiconductor (Xian) Co. Ltd. and actively developing new customers to achieve stable and sufficient level of capacity utilization.

C. Increase Market Scope

With Akita facility as production basis in Japan, supported by Tera Probe, Inc., PTI will establish comprehensive chain of supply in Japan.

② Erosion of Gross Profit by Increasing Material Cost

Strategic Response：

A. Lowering Production Cost

Mitigating the effect of increasing material cost by varying product structure, improving yield, developing alternative material solution and continue to improve production process.

B. Emphasizing Added value

Continue to support our customer with high quality product with short lead time and swift responding service. Enabling our customers to produce time-effective and competitive product through our dedication in developing new technologies.

③Manpower shortage

Strategic Response：

A. Increase staff welfare and bonus incentives to attract talent and encourage cohesion among staff members. We also design staff training program according to long-term development strategy to support progress for both company and staff member.

B. We will continue to improve productivity and dependence on manpower through actively introducing advanced automated equipment in conjunction with upcoming Industrialization 4.0.

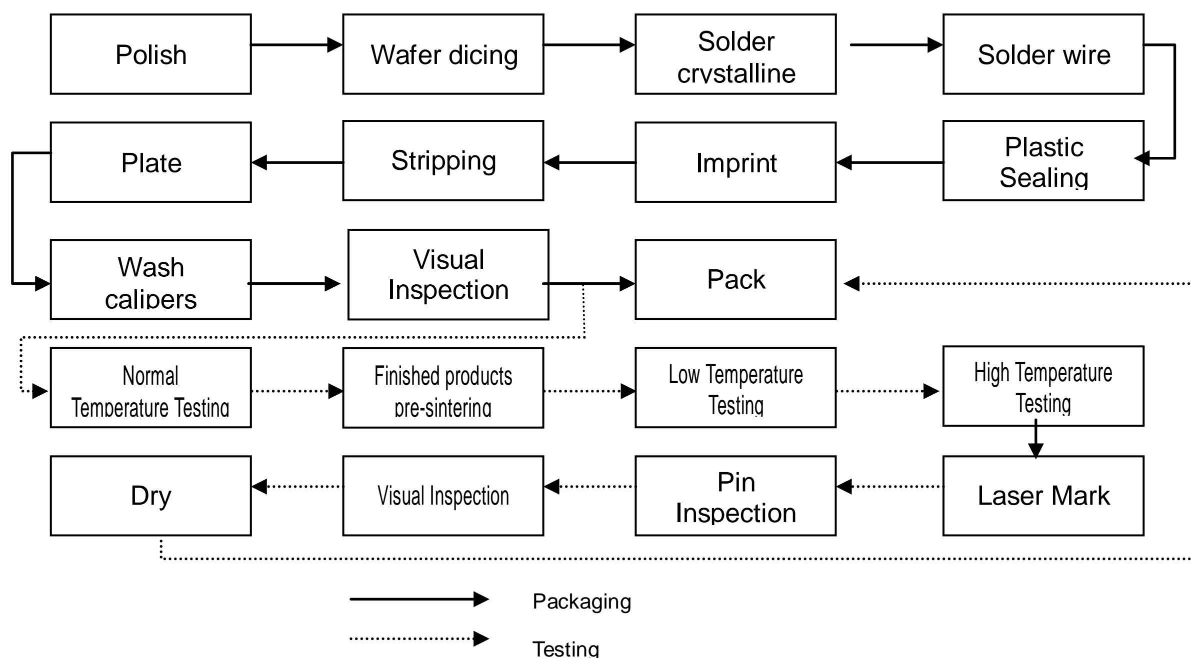
C. Alleviating the effect of manpower shortage by employing foreign workforce with permission from Ministry of Labor.

(2) Important Applications and Production Process of Main Products

1. Product Applications

Main Products or Services	Important Applications or Functions
IC Assembly	To turn Wafer into complete single product through sawing, mounting, wire bonding, molding, trimming/forming, and other processes of the Integrated Circuit (IC).
Final Test	Placing the IC into different environment such as normal, high, or low temperature to test and classify according to test conditions specified by customers. These steps ensure the product conforms to the quality and stability demanded by customers.
Burn-In	Using Burn-In process forced the IC operate in extreme environments to accelerate aging of the products and screen out the unqualified, to ensure reliability of products.
Laser Mark	Printing the name of company and product details on the IC.

2. Production Process



(3) Suppliers of Major Raw Materials

Our company mainly provides IC processing for our customers. The suppliers of the key raw materials used in packaging operations are listed below:

Main Raw Materials	Main Suppliers
Lead-Frame	Shinko Electric, Nichiden Seimitu Kogyo Co., Ltd., Samsung.
Substrate	Unimicron, Nanya, Simmtech, Eastern Company Limited, Japan Circuit Industrial, Shinko,Kinsus, and Daisho.
Die Attach Film (DAF)	Hitachi Chemical Co.(HK) Ltd, Nitto Denko Taiwan, Lintec, Henkel
Gold Wire	Chroma New Material, Tanaka
Compound	Hitachi Chemical Co.(HK) LTD., Hitachi Chemical Taiwan, and Kyocera.

(4) Information of suppliers' who commanding 10% and plus of annual purchasing volume in any year over the last 2 years.

1. There was no supplier accounted for over 10% of total purchase over the last 2 years.
2. List of Major Customers:

Major Customers Information for the Last Two Calendar Years

Unit: NT$ Thousands

Year	2018				2019				As of 2020 Q1			
Item	Name	Amount	Percent of total amount sold (%)	Relation with Issuer	Name	Amount	Percent of total amount sold (%)	Relation with Issuer	Name	Amount	Percent of total amount sold (%)	Relation with Issuer
1	A	14,923,812	21.93	Related Party	A	17,934,998	26.96	Related Party	A	5,187,943	27.58	Related Party
2	B	18,482,277	27.16	None	B	14,818,184	22.27	None	B	4,072,911	21.65	None
3	C	8,673,567	12.75	None	C	9,319,159	14.01	None	C	2,959,458	15.73	None
	Others	25,959,723	38.16		Others	24,452,803	36.76		Others	6,591,368	35.04	
	Net Amount Sold	68,039,379	100		Net Amount Sold	66,525,144	100		Net Amount Sold	18,811,680	100	

Reason for changes: PTI revenue increase contributed by capacity expansion, and customer demand increase.

(5) Production Quantity & Value Table 2018-2019

Quantity Unit: 1,000 wafers Amount Unit: NT$ Thousands

Year / Production Units	2018			2019		
	Capacity	Quantity	Amount	Capacity	Quantity	Amount
IC Packaging	12,324,692	11,025,300	31,914,437	12,633,942	11,083,932	30,073,884
IC Testing	9,129,235	6,960,538	11,480,104	8,861,588	6,715,326	13,151,756
Wafer Level Packaging	1,247	797	3,035,235	1,300	774	2,483,523
Wafer Level Testing	3,282	2,571	5,094,738	1,204	1,068	2,272,550
Total	21,458,456	17,989,206	51,524,514	21,498,034	17,801,100	47,981,713

(6) Sales Quantity & Value Table 2018-2019

Quantity Unit: 1,000 wafers Amount Unit: NT$ Thousands

Year / Sales Quantity & Value	2018				2019			
	Domestic Sales		Exports		Domestic Sales		Exports	
	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
IC Packaging	6,055,816	8,390,151	4,988,870	33,407,896	6,304,864	8,519,264	4,815,833	31,664,280
IC Testing	4,312,491	2,357,230	2,695,853	13,637,546	4,217,109	2,271,432	2,548,104	15,352,216
Wafer Level Packaging	165	915,240	635	2,807,917	176	881,556	551	2,564,593
Wafer Level Testing	1,083	2,072,481	2,351	4,024,018	981	1,722,420	836	3,128,665
Others	—	17,505	—	409,395	—	7,248	—	413,470
Total	10,369,555	13,752,607	7,687,709	54,286,772	10,523,130	13,401,920	7,365,324	53,123,224

3. Employee Status

Table for Employees Number, Average Age, Average Years of Service, and Distribution of Education for Last Two Years

Year		2018	2019	As of Mar 31, 2020
Employees number	Administration and Management Staff	1,369	1,435	1,450
	R&D Engineering Staff	2,381	2,394	2,466
	Operators	7,005	7,562	7,643
	Total	10,755	11,391	11,559
Average Age		32.8	34.12	34.50
Average Years of Service		4.04	5.14	5.46
Education Distribution in %	Doctorates	0.11	0.08	0.08
	Masters	7.74	7.77	7.87
	College and Universities	72.15	71.72	71.61
	High School	19.49	19.96	20.03
	Below High School	0.51	0.47	0.41

4. Environmental Protection Expenditures

Any losses suffered by the company in the most recent fiscal year and up to the annual report publication date due to violation of environmental regulations (including any compensation paid and any violations of environmental protection laws or regulations found in environmental inspection, specifying the disposition dates, disposition reference numbers, the articles of law violated, and the content of the dispositions), and disclosing an estimate of possible expenses that could be incurred currently and in the future and measures being or to be taken. If a reasonable estimate cannot be made, an explanation of the facts of why it cannot be made shall be provided.

(I) Losses due to environmental pollution and total fines during the most recent year and up to the annual report publication date:

Hsinchu County Environmental Protection Bureau sent a notice (Huan-Yeh No. 1083402040) to PTI on August 14, 2019, that hazardous industrial waste was still stored at our 3C factory more than one year after it was produced. For violating Paragraph 1, Article 36 of the *Waste Disposal Act*, and Article 7 of the *Methods and Facilities Standards for the Storage,Clearance and Disposal of Industrial Waste*, A fine of NT$60,000 was therefore imposed under Paragraph 2, Article 53 of the *Waste Disposal Act*.

Improvements and preventive measures:

A licensed waste contractor was immediately contracted after the incident to remove the hazardous industrial waste: Preventive measures: The regulatory knowledge of responsible personnel was strengthened. A reminder function for temporary storage was also added to

the waste report and control to ensure effective execution of waste management operations.

(II) Estimate of possible expenses that could be incurred currently and in the future, and response measures taken:

1. Estimate of possible expenses that could be incurred currently and in the future

Proposed purchase of pollution control equipment or expenditures:

Unit：NT K

Item	2020	2021	2022
GHG inventory counseling and verification fees	360	360	360
Payment of sewage treatment and discharge fees	25,000	30,785	30,785
Wastewater treatment costs	37,624	40,000	40,000
Environmental monitoring and testing fees	800	966	966
Industrial waste removal and processing costs	55,000	55,000	55,000
Expansion of wastewater treatment facilities	69,000	70,000	70,000
Air pollution testing fees	117	125	125
Installation of air pollution treatment facilities	120,000	100,000	0
Air pollution control costs	487	633	633
Total Expenses	**308,388**	**297,869**	**197,869**

2. Maintenance Measures

(1) Management Program:

The Company conducts the following programs to implement its responsibilities on environmental protection:

A. The use of chemicals in the production process is rigorously controlled by PTI to prevent air pollution from Volatile Organic Compounds (VOCs) produced during the production process. Comprehensive control equipment (treatment equipment such as activated carbon and washing towers) effectively limit the amount of air pollution.

B. Recycle Waste Water: Utilize waste water recycle system to reduce waste on resources and re-use the recycle water to save and protect the water resources.

C. Water Pollution Control: all facilities waste water must be treated and meet official standard before release back to the water system. Internal monitoring system and regular measure & calibration were in place.

D. All waste produced during production are disposed of in accordance with the law. Waste is also sorted and collected the source to make it more

recyclable..

E. Work with suppliers: Regular inspects suppliers to meet environmental protection regulations.

F. A trans-department energy conservation organization was established to implement energy conservation projects that reduce energy consumption and GHG emissions; A GHG inventory management process was established in accordance with the ISO 14064-1 standard. Professional organizations were also retained to provide counseling and verification. Disclosure of carbon emission data was provided to conform with international environmental trends.

G. Voluntary Environmental Monitor Program: Program including waste water, noise, air quality, waste material impact on environment to effectively control the company operations impact on the environment.

H. Allowance Permit: Consistently monitor the company operations meet the latest environmental standards.

5. Labor Relations

(1) The Implementation Status for Employee Welfare Policy, Training and Continue Education

PTI values the salary and benefits for its employees and offers lawful benefits. According to the bonus payment specifications, annual earnings minus taxes, surplus and dividends are then appropriate for employee bonuses. Employees can also enjoy benefits provided by the Employee Welfare Committee. With PTI family day, movie screenings and year end banquets to relieve stress from work and bond with coworkers.

1. Insurance: All PTI employees are insured with free general group insurance (including life, accident, medical, cancer, and other insurances). In the spirit of caring for employees as well as their families, the spouse and children of employees also include in the free group insurance.

2. Health and Safety:

   (1) Through professional medical staff and health management, PTI conducts health promotion and health management for employees. All plants are staffed with professional medical personnel to monitor the health of employees. We collaborate with professional medical organizations to conduct health examinations for employees.

   (2) We conduct risk management and assessment for resumption of work for individuals with high health risks. We also offer health information and courses.

   (3) PTI prevent the disease triggered by abnormal workload by self-reporting the workload, work in day/ night shift, prolonged abnormal workload, irregular schedule,

frequent business trips, or tense working conditions. These employees undergo health risk evaluation, overwork risk evaluation, and Framingham risk evaluation. On-site doctors evaluate the results, talk with the employees, and if necessary, change job positions, decrease working hours, or take other administrative management to maintain employee health.

(4) In 2004, PTI obtained the OHSAS 18001 occupational health and safety management certificate. To prevent occupational injuries and accidents and ensure the safety and health of our workplace, we also devised our "Environmental Safety and Health Policy".

3. PTI uses the "Psychological Counseling System" to let employees unload burdens and listened to themselves in this ever changing world of responsibilities. Care-free conversations during the Psychological Counseling System to heal inner wounds, rejuvenate, see a different world, and create a healthy work environment.
4. Company Trips: Employee Welfare Committee has unscheduled company trips to for coworkers to bond with each other. In 2017, we offered vouchers of a value of NTD$1,500 to each employee. PTI Taiwan also signed contract with renowned travel agencies to offer package tour or coupon to employees, allowing them to achieve the balance between commitments to work and relaxing lifestyles.
5. Family Day/ Large-scale events: Employee Welfare Committee has irregularly scheduled family day and other large-scale events. The event is held to bond us together. Also, family members of our employees can get to know each other. This company is driven by the support of our colleagues and families. Family Day makes us happy and maintains our physical and mental health. 2017 was the 20th anniversary for PTI, we held special events to thank all the collaboration from our partners. Movie ticket issuing is part of our benefits. Through regular free ticket issuing, employees can enjoy movies together and

reach the effort of bonding people. In 2017, we organized entertainment park day trip. Each employee was given two tickets.

The Employee Welfare Committee organized family days and other large leisure activities. PTI employees and their dependents are all considered part of the PTI family. The hosting of family day activities allows employees and their families to have fun together, strengthens the bonds between employees, and encourages employees to support charity. These initiatives make employees feel more inspired and happy outside of work. We strive to “build a friendly workplace” and create a quality environment where employees can enjoy their work and life. Our goal for the friendly workplace is to achieve “work-life balance.” In addition to providing generous remuneration and benefits, we also organize a variety of activities. We look after not only PTI employees but their families as well. By 1. communicating the PTI culture, 2. looking after PTI partners, and 3. Building up rapport at PTI, we hope to inspire our partners to focus on the creation of even more unlimited possibilities.

(1) Communication of PTI culture: A corporate culture of “co-creation, co-sharing, co-success” is communicated through different activities. PTI partners are encouraged to create and share as much as possible. The sharing of knowledge between partners is one of sources of continued growth at PTI.

(2) Looking after PTI partners: Employees are offered variety of activities to find one they like in order to achieve a balance between work and life. We help employees stay motivated in work and life by helping them build an exciting life. At the same time, we also look after our partners’ families so they can concentrate fully on their work.

(3) Building rapport at PTI: Activities are used to create more opportunities for partners to connect with the Company and each other in order to build team cohesion and expand personal networks. The personal networks that partners build improves talent retention and provides them with more resources within the organization. The improved productivity will in turn lead to better work performance.

6. Employee Club Activities: We value the balanced development of work and life of our employees. PTI's Employee Welfare Committee plans a variety of events throughout the year and encourages employee participation to relieve stress from work, bond with coworkers, develop physical and mental health, cultivate cultural knowledge, promote social welfare, and thus become an employee in the technology industry with LOHAS. We have 9 employee clubs with 648 members.
7. Leave from work: In accordance with Labor Standard Act, PTI offers holiday and annual

leave to employee. Regular reports are provided to supervisors to assist employee has a balanced work and life.

8. Birthday/ Funeral and Other Benefits:
   (1) Birthday star is given a coupon equivalent of NTD$500 to celebrate his/her birthday. Employees with matters of material contingencies are offered a grant from NTD$1,000 to NTD$10,000.
   (2) PTI offers NTD$1,000 value of cash or equivalent coupon, gift on annual Labor’s Day.
   (3) PTI offers coupon/ gift equivalent of NTD$1,000 during Dragon Boat Festival, Mid-autumn Festival etc.
   (4) Gifts are offered to employees with 3, 5, 10, 20 years of seniority.
9. Maternity Subsidies and Other Services: A NTD$2,000 of subsidies per child birth are provided to employee or its spouse. Also, PTI provides related application services for labor insurance. PTI cares about the employees and their interaction with their families. By having the employee welfare committee signing designated kindergartens and child-care facilities in the areas where employees reside, we offer options of pre-school care for the children of our employees, so that the employees can excel in both their work and their family life without any worries.
10. Food and Housing: PTI has its own cafeteria offering meals with subsidies. Employee only has to pay a small amount to enjoy lavish meals.
11. On-Job-Training: To ensure a diverse talent, we "listen to needs" to consider internal and external issues. We are committed to meet the demand of employee learning, organizational development, and company policies, which has led us to PTI's unique "need and resolution oriented" operational model and training system, where we enhance the managerial abilities of executives, improve employee competence, and ensure the sustainable growth of the company.

(2) The Implementation Status for employee retirement and pension system

PTI Taiwan follows the Labor Standards Law and the Labor Pension Act in implementing employee retirement regulations and established a labor pension supervision committee to appropriate the full amount of pension contribution for employee to apply for pension after retirement. The insurer of Annuity Insurance is an insurance company approved by the central competent authority and the insured of the Annuity Insurance contract is the employer who will insure from the same insurer. The workers are the insured persons and beneficiaries. The Annuity Insurance premium to be paid by the employer each month may not be less than 6% of the monthly wages of the worker. In 2017, the listed total amount contributed to pension was

NT$290,347,000.

(3) Negotiation between Management and Labor and the Implementation of Employee Rights

1. Employee Care:

PTI values the opinion of its employees. We offer various channels to encourage communication between employees and the management, so that we thoroughly understand employees' satisfaction with management and welfare systems and maintain good labor-management relationship. Since our foundation, PTI has enjoyed harmonious labor-management relationship. There has been no occurrence of labor-management disputes that resulted in losses. The possibility of future labor management disputes leading to losses is extremely low. In addition, with quarterly labor management meetings and welfare committee meetings, employees can voice their opinions on specific issues and reach agreement with the company through discussions in the meetings, thus perpetuating effective communication channels. PTI also respect and protect employees' rights of freedom of speech and freedom of assembly and association. The quarterly labor management meetings are negotiated by labor representation voted by employees.

2. Comprehensive Communication Channels

We have established comprehensive channels for diverse, two-way, and open communication. By helping employees communicate their opinions to the management, their concerns can be effectively taken care of. Our fair, confidential, and efficient handling procedure resolves employees' concerns while maintaining good labor management relationship. We have also established sexual-harassment prevention measures, employee psychological counseling services, and rewards and discipline regulations. We are always listening to employees' opinions. Anonymous or otherwise, we always exercise confidentiality and fairness in handling such information. All forms of retribution are protected against, so that employees can express their concerns without fear.

(4)List any losses suffered by the company in the most recent fiscal year and up to the annual report publication date due to labor disputes (including any violations of the *Labor Standards Act* found during labor inspection, specifying the disposition dates, disposition reference numbers, the articles of law violated, the substance of the legal violations, and the content of the dispositions), and disclosing an estimate of possible expenses that could be incurred currently and in the future and measures being or to be taken. If a reasonable estimate cannot be made, an explanation of the facts of why it cannot be made shall be provided.

Date	Document #	Violation Code	Violation Summary	Finding
Dec 2 2019	Fu-Lao-Zi No. 1093930028	Paragraph 1, Article 24 of the *Labor Standards Act*	An employer shall pay worker overtime wages using the following basis: I. When the overtime work does not exceed two hours, the worker shall be paid, in addition to the regular hourly wage, at least an additional one-third of the regular hourly rate. II. When the overtime work is over two hours, but the total overtime work does not exceed four hours, the worker shall be paid, in addition to the regular hourly wage, at least an additional two-thirds of the regular hourly rate. III. When the overtime work requested is governed by Paragraph 4 of Article 32, the worker shall be paid two times the regular hourly rate.	(1) Fine of NT$70,000 (2) Publication of offender's name and that of the person-in-ch arge
		Paragraph 2, Article 32 of the *Labor Standards Act*	The extension of working hours referred to in the preceding paragraph, combined with the regular working hours shall not exceed twelve hours a day; the total number of overtime shall not exceed forty-six hours a month; however, the extension of working hours, with the consent of a labor union, or if there is no labor union exists in a business entity, with the approval of a labor-management conference, shall not exceed fifty-four hours a month and one hundred and thirty-eight hours every three months.	

6. Major Contracts

Contract Classification	Contract Company	Contract Duration	Main Contents	Limitations of Terms
Outsource Services Contract	A Company	Jun 2019 -	Packaging and testing services	Non-disclosure agreement
	F Company	Dec 2019 – Dec 2020	Packaging and testing services	Non-disclosure agreement
	I Company	Dec 2019 – Dec 2022	Packaging and testing services	Non-disclosure agreement
Bank Loan	CTBC Bank	Sep 2019 - Sep 2022	Medium-term credit loan	Commitment to maintain a certain ratio between the assets & liabilities and net worth
	Mega International Commercial Bank, Hsin-An Branch	Dec 2019 - Dec 2022	Machinery & Equipment Loan	None
	Yuanta Commercial Bank	Jan 2019 – Jan 2023	Medium-term credit loan	Commitment to maintain a certain ratio between the assets & liabilities and net worth
	KGI Bank	Dec 2018 - Dec 2022	Medium-term credit loan	Commitment to maintain a certain ratio between the assets & liabilities and net worth
	E.Sun Bank	Sep 2017 - Sep 2032	Building Construction	None
		Sep 2017 - Sep 2024	Building Construction	
		May 2019 - May 2022	Medium-term credit loan	
	Hua Nan Bank	Sep 2019- Sep 2022	Medium-term credit loan	None
		Mar 2019 - Mar 2022		
		Jun 2019 – Jun 2022		
		Aug 2019 – Aug 2022		
	First Bank	May 2019 - May 2024	Medium-term credit loan	None
	Bank of Taiwan	Nov 2012 – Nov 2027	Building Construction Loan	None
		Nov 2016 – Nov 2021	Machinery & Equipment Loan	
		Sep 2017 – Sep 2022		
		Oct 2019 – Oct 2024		

Contract Classification	Contract Company	Contract Duration	Main Contents	Limitations of Terms
	Taiwan Cooperative Bank	Apr 2017 - Apr 2032	Building Construction Loan	None
		Apr 2017 - Apr 2024	Medium-term credit loan	
		Sep 2017 – Sep 2022	Machinery & Equipment Loan	
	Shin Kong Bank	Oct 2019- Oct 2022	Medium-term credit loan	None
	Chang Hwa Bank	Aug 2019 – Aug 2022	Medium-term credit loan	None
		Mar 2017 - Mar 2023	Machinery & Equipment Loan	
		Jun 2017 – Jun 2023	Machinery & Equipment Loan	
		May 2019 – May 2025	Machinery & Equipment Loan	
	Taishin Bank	Jan 2019- Jan 2022	Medium-term credit loan	Commitment to maintain a certain ratio between the assets & liabilities and net worth
	O Bank	Jul 2019 - Jul 2022	Medium-term credit loan	Commitment to maintain a certain ratio between the assets & liabilities and net worth
	Land Bank of Taiwan	Oct 2019 – Oct 2022	Medium-term credit loan	None
	HSBC	Sep 2019 – Sep 2022	Medium-term credit loan	None
	Cathay United Bank	Nov 2019 – Nov 2022	Medium-term credit loan	None
	Shanghai Commercial & Savings Bank, Ltd.	Jan 2019 – Jan 2022	Medium-term credit loan	None
	MUFG Bank	Oct 2019 – Oct 2022	Medium-term credit loan	None