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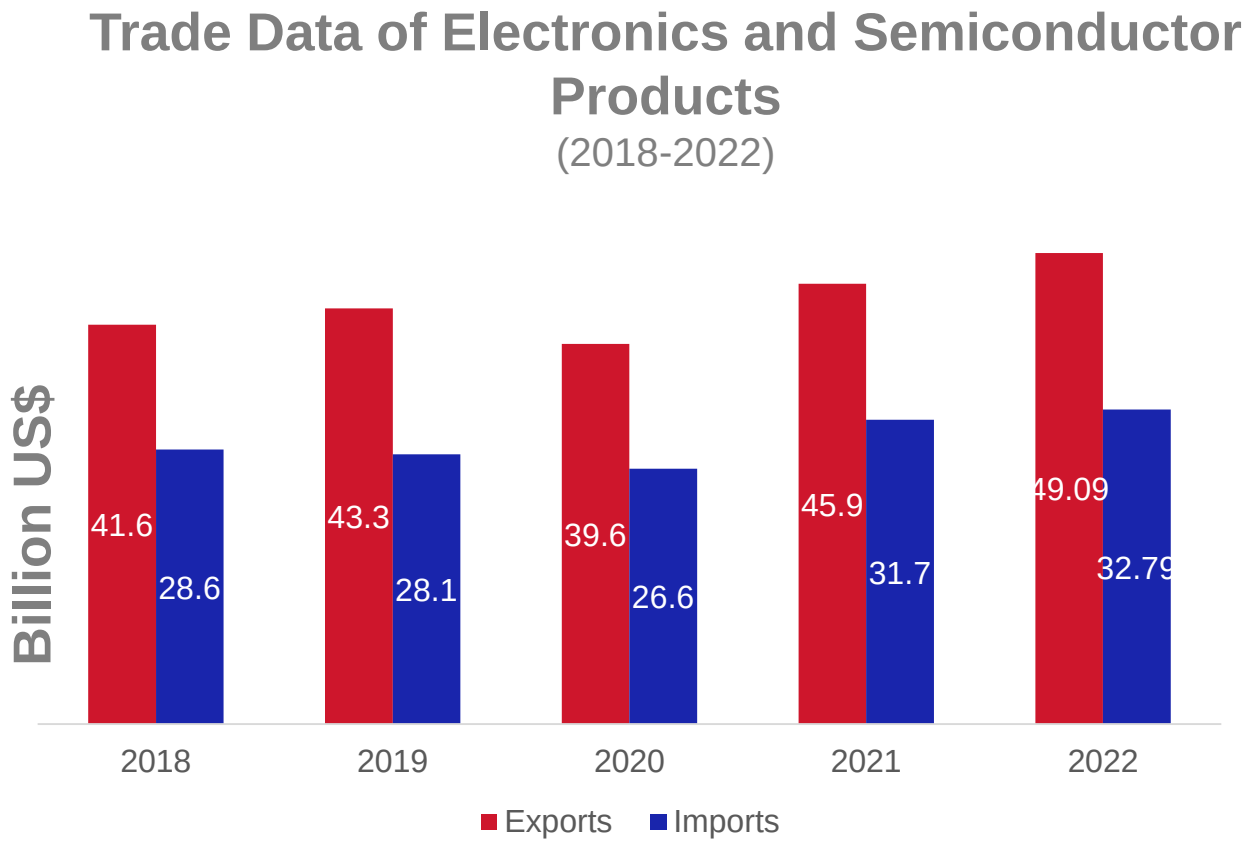
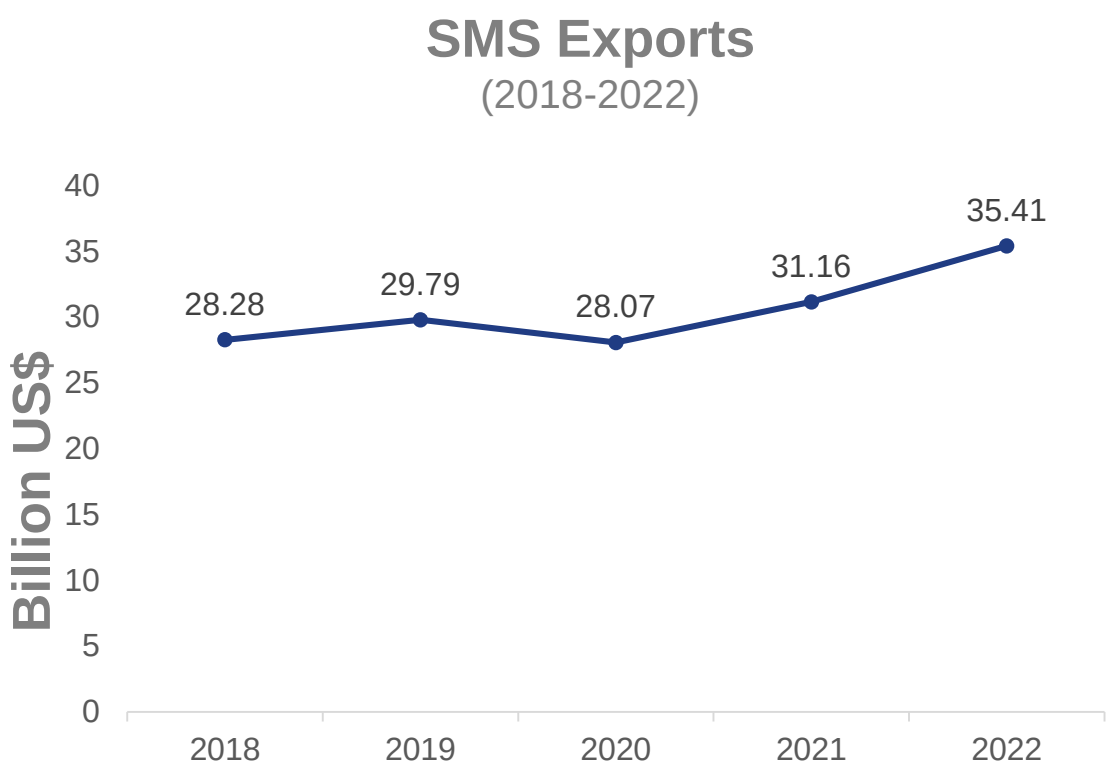
Philippine Electronics Industry

The PH electronics industry remains to be the Top Contributor to Philippines' total exports accounting for around 62.27% or US$ 49.09 billion in 2022 – with a projected growth of 9% this year and hit the US$ 50 billion exports target of the industry





Source: PSA and SEIPI

Source: Philippine Statistics Authority (PSA)

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PH Semiconductor Industry

- **73%** of the electronics firms in PH are engaged in the Semiconductor Manufacturing Services (SMS); **27%** are in the Electronics Manufacturing Services (EMS)

- Semiconductor Manufacturing Services (SMS):

  Back-End of Chip Fabrication
  - Testing (Wafer Probing, In-Circuit Testing, Functional Testing, RF Testing, Flying Probe, etc.)
  - Assembly and Packaging

- Establishment of Science and Technology Center (STC) which will house the IC Design Training Laboratory, R&D Lab and a Lab-scale Wafer Fab

Source: SEIPI

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Among the Major Companies in PH:

Semiconductor Manufacturing Services

Amkor Technology
Texas Instruments
Analog Devices — Ahead of what's possible™
maxim integrated
Allegro MicroSystems — Innovation with purpose
Samsung Electro-Mechanics
amd
Microchip
nexperia
Fastech — Fastech Synergy Philippines Inc
ON Semiconductor
SFA Semicon
ROHM Semiconductor
life.augmented
muRata — Innovator in Electronics
Lattice Semiconductor
IMES
Infineon

Electronics Manufacturing Services

NKG — New Kinpo Group
AcBel
Sercomm
Tong Hsing Electronics
wistron
ems Group
IMI
sti
Ionics EMS, Inc.
MinebeaMitsumi — Passion to Create Value through Difference
Canon
TOSHIBA
EPSON
dyson
Panasonic
brother
Continental

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- Philippines is home to competitive integrated circuit (IC) design companies providing services to the worldwide IC ecosystem
- Growing base of competitive integrated circuit (IC) design with 1,500-2,000 IC design engineers
- Has the training infrastructure to scale engineers in Layout and Verification
- Has engineers with experience in Finfet technology

PH IC Design Industry

FACULTY IMMERSION and INDUSTRY TRAININGS in TAIWAN

- 91 participants in five IC Design Workshops (2008-2014)
- 3 batches of faculty members - with 3 participants per batch - under the Faculty Immersion Program (2017-2019)
- Training at National Sun Yat-Sen University (NSYSU)

LATTICE SEMICONDUCTOR

ROHM SEMICONDUCTOR

SMARTFOX DATA SOLUTIONS, INC.

ANALOG DEVICES AHEAD OF WHAT'S POSSIBLE™

XINYX DESIGN CONSULTANCY & SERVICES, INC.

esi labs

SILVER

Marquee SEMICONDUCTOR Achieves the MAX within the MIN

Canon CANON INFORMATION TECHNOLOGIES PHILIPPINES

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PH Electronics Industry: Enabling innovation and technology driven sectors

- **World class center for OSAT** – Outsourced Semiconductor Assembly and Test with exceptional design capabilities
- A **successful hub** for Electronics Manufacturing Services (EMS) with strengths in complex PCB assembly, box build and systems integration with growing capabilities in Design and Development and Original Design Manufacturing (ODM)
- Deep **intellectual talent pool** with an unparalleled command of English to support the research and development and manufacturing activities right across the well-established electronics ecosystem

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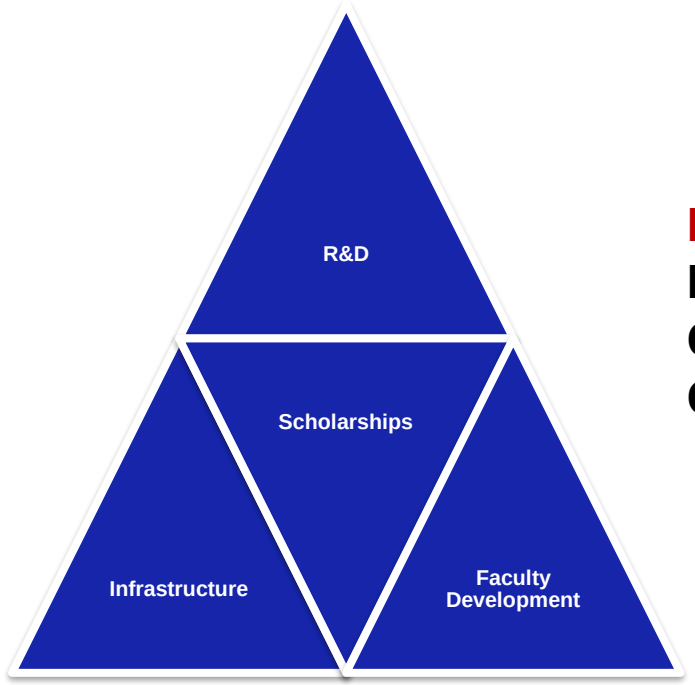
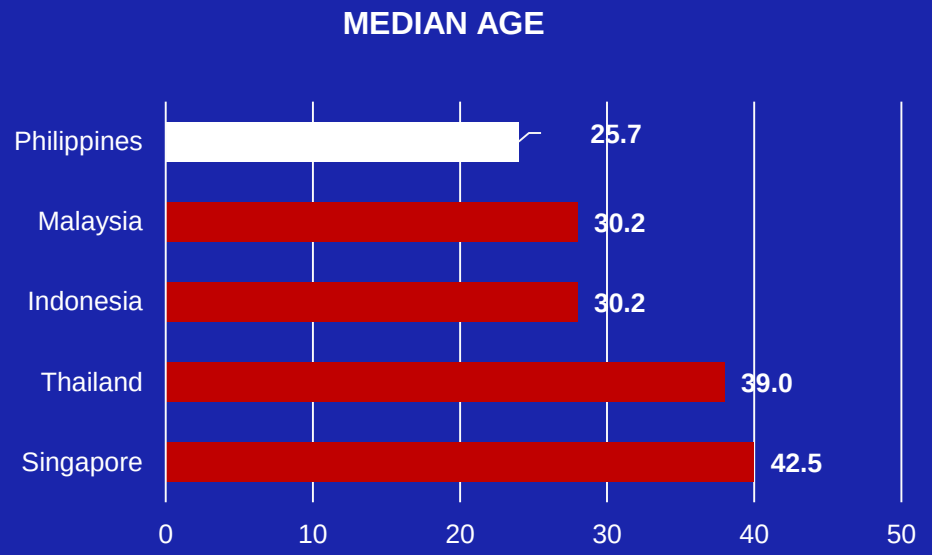
The Philippines uniquely enables companies to minimize costs while maximizing value-add to profitably serve international clients with its large pool of skilled labor, competitive business environment, strategic market access and strong government support.

Large Pool of Skilled Filipinos



ERDT as in Investment for Global Competitiveness

The **Engineering Research and Development for Technology (ERDT)** is a consortium of eight member universities aiming to implement a high-impact research agenda aligned with the National Science and Technology Plan (NSTP) and Philippine Development Plan



50 million human resource pool

2021 population of 113 Million at 1.63% annual growth rate

Over **790,000 college graduates in AY 18-19**

Engineering and Tech: 87,083 (10.9%)
IT-Related: 81,477 (10.2%)
Business Administreation and allied courses: 233,194

Source: Worldbank and CHED

Human Resource Capacity-building Towards 4th Industrial Revolution (Future of Work)

Survey on Human Resource Development (HRD) Needs of Pilot Industries in the Philippines

This Survey is being conducted by the Board of Investments (BOI) and the Commission on Higher Education (CHED) to determine the HRD needs of priority industries. Based on the survey results, the government will provide appropriate interventions to address skills gaps in the identified industries.

Board of Investments

Commission on Higher Education

Pilot Sectors:

1. **Electronics Industry**
2. **IT- BPM with focus on Game Development, Animation, Software Development, Health and Information Management**

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Electrical and Electronics Engineering Institute
University of the Philippines-Diliman

The Institute is organized into 13 research laboratories, each with a specific line of research interest. Work in the various research areas is supported by professorial chairs, grants, and endowments from the Philippine government and various industry partners. These are some of the courses under the Electronics Engineering, Electrical Engineering and Computer Engineering programs of the Institute.

SMS

- Introduction to Digital Integrated Circuit Design
- Introduction to Analog Integrated Circuit Design
- Semiconductor Devices and Circuits Laboratory
- Introduction to Power Electronics
- Advanced Digital Design
- Microwave Engineering
- Essentials of Electrical & Electronics Engineering
- Electronic Circuits
- Electronic Circuits Prototyping

EMS

- Instrumentation Electronics
- Digital Instrumentation & Control Techniques
- Communication Networks
- Digital Communications
- Wireless Communications
- Modern Audio Engineering
- Introduction to Robotics
- Introduction to Mobile Robotics
- Communication Electronics

Source: UP EEEI Website

PH as a Hub for Manufacturing and Product Design

The **Advanced Manufacturing Center (AMCen)** is a state-of-the-art research facility that focuses on additive manufacturing and research and development

- Aerospace and defense
- Biomedical/healthcare
- Printed electronics
- Agricultural machinery
- Automotive

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The **Advanced Device and Materials Testing Laboratory (ADMATEL)** is a national testing laboratory established to reinforce and upgrade the failure analysis and materials testing facilities of local industries.

The **Electronics Product Development Center (EPDC)** is the country's first electronics design facility that provides design, prototyping, and testing facilities for printed circuit boards (PCB).

Center for AI Research (CAIR)

Accelerating Innovation and MSME Digitalization with AI

AI will contribute $92B to GDP by 2030/12% of PH GDP

A **public-private partnership** hub for data scientists and researchers to:

- Perform **collaborative AI R&D and technology application**;
- Offer consultancy services and AI tech products to support **digital transformation of local industries**;
- Conduct data literacy programs and develop learning modules to **upskill and reskill the workforce**;
- Attract leading global firms to **set up R&D activities** in the country.

Focus Areas: Manufacturing | Services | Precision Agriculture | Construction | Finance/banking | Healthcare | Resilience Technology | Smart Cities

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50+ tech startups in the Philippines are already using AI as a core technology in their business model

INDUSTRY 4.0 PILOT FACTORY

FEASIBILITY STUDY

DTI has conducted an Industry 4.0 Pilot Factory Feasibility Study, that aims to eventually construct a sustainable IR4Pilot Factory facility which will host demonstrations and case applications of Industry 4.0 technologies that enterprises, especially MSMEs, can access to facilitate the adoption of Industry 4.0 technologies in their operations.

- **Pilot, demonstration and learning laboratories** with innovative products, modern technologies and digital processes
- **Technology platform** for various stakeholders from industry, academe, and government.
- Serve as a **training and research hub** where industries can have insights and hands on experience on various Industry 4.0 applications.
- The pilot factory will facilitate industry **access to advanced manufacturing technologies**, such as, but not limited to, robotics, intelligent manufacturing systems, cyber-physical systems

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BOI stands ready to formulate and help deliver an attractive 'development package' for electronics companies which can include:

Incentives Package for a maximum of 17 years for qualified projects under the SIPP

- Income Tax Holiday (ITH)
- 5% Special Corporate Income Tax (SCIT) based on Gross Income Earned, for 10 years, in lieu of all national and local taxes
- Enhanced Deductions
  - Depreciation Allowance of Assets - additional 10% for buildings; and additional 20% for machineries and equipment
  - Additional Deduction on Labor Expense, R&D Expense, Training Expense, Domestic Input Expense, Power Expense, and Reinvestment Allowance to Manufacturing Industry; Enhanced Net Operating Loss Carry Over (NOLCO)
- Duty exemption on importation of Capital Equipment, raw materials, spare parts, or accessories
- VAT exemption on importation and VAT Zero-rating on local purchases

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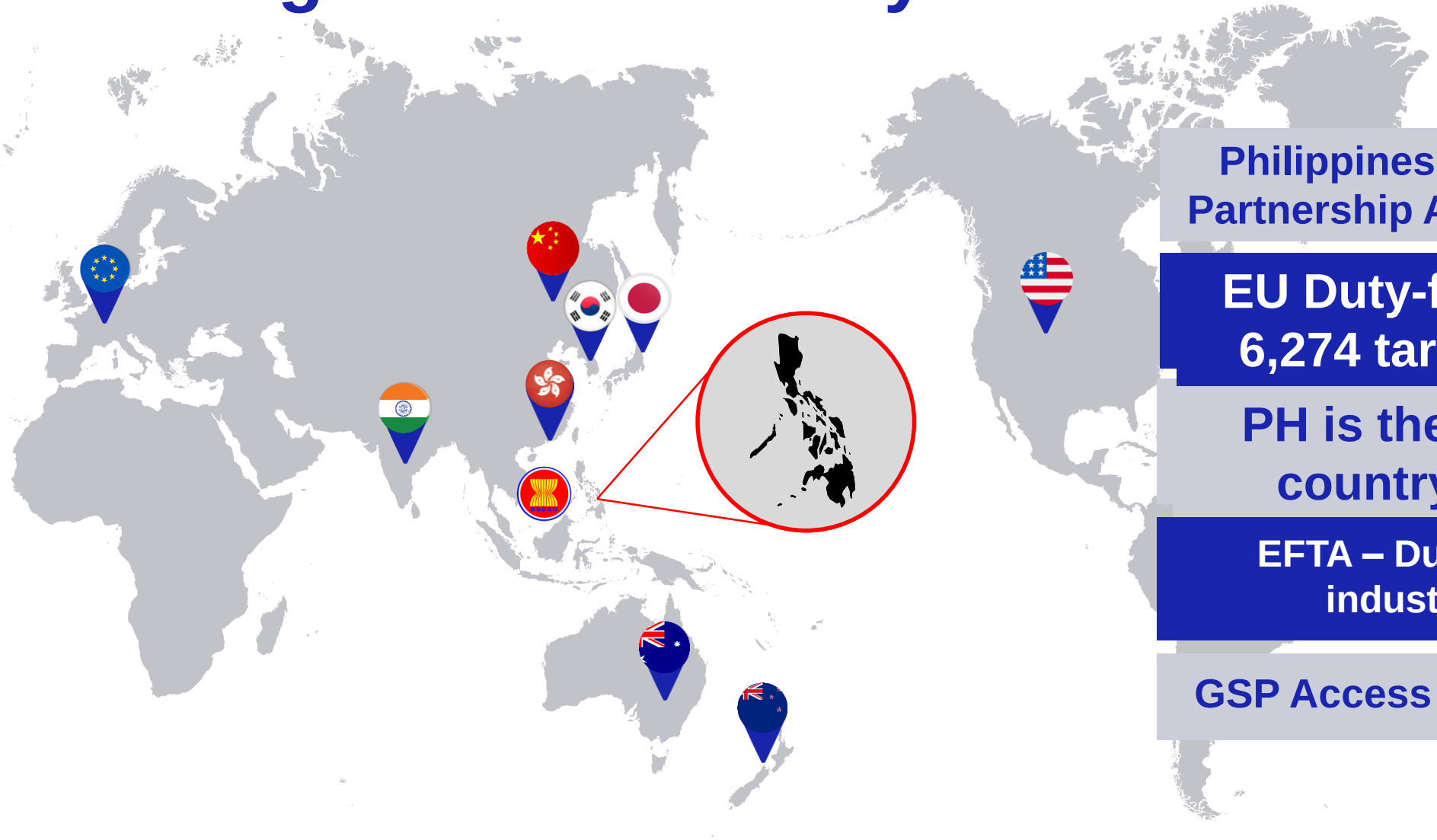
Two routes for electronics companies to benefit from electronics production, design and development in the Philippines

1. 'Greenfield – optimal site options within electronic key clusters to build new facility
2. Identification of existing modern production facility to lease – e.g. Philippine Economic Zone Authority (PEZA) operates 74 manufacturing economic zones and 262 information technology parks

Strategic Access to Key Markets



Philippines-Japan Economic Partnership Agreement (PJEPA)

EU Duty-free access for 6,274 tariff lines under

PH is the only ASEAN country with GSP+

EFTA – Duty-free from ALL industrial products

GSP Access to UK and Canada

Part of the world's largest free-trade deal, the RCEP Agreement

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The Product and Technology Holistic Strategy (PATHS) Roadmap

TIMELINE	2018-2020	2021-2027	2027 onwards
KEY STRATEGIES	Enhancement for a better investment climate & establishment of R&D and Training Institution *(short-term strategy)*	Continuous benchmarking with neighboring countries regarding incentives & policies and support to the R&D & Training Institution *(medium-term strategy)*	Bolster the linkages and integrations with and in the S&E industry by the R&D & Training Institution *(long-term strategy)*
PROJECTIONS	Investment: USD 1.5B Exports: USD 32.5B by 2020 Employment: 5.5M	Investment: USD 3.0B Exports: USD 40B by 2020 Employment: 9M	Investment: USD 5B Exports: USD 50B by 2020 Employment: 13.5M

Top 10 Products & Technologies to become a *niche* for the PH

- Drones
- Autonomous vehicles
- Smart home devices
- Virtual reality devices
- Digital health devices
- Microsatellite
- Wearable Solar Devices
- Augmented Medical Devices
- 3D Printer
- Collaborative Robots

Key ‘take aways’

- The highly capable and cost-competitive intellectual capital sets the Philippines apart from other competing locations

- With around 170,000 engineering, IT-related and sciences graduates annually in the Philippines, electronic companies’ growth will not be constrained. The BOI, with our Academe-Industry Matching (AIM!) program, can connect with SPIL with relevant academe partners to support your operations.

- The Philippines is already fully integrated with electronics, automotive and aerospace global value chains that can significantly enable companies to broaden your customer base

- EMS and SMS in the Philippines continues to grow as both industry and government work hand-in-hand to expand the local industry’s capabilities through various support policies and programs, enabling companies to profitably source locally and serve customers throughout ASEAN and beyond

- BOI, the executive arm of Government for attracting investment and developing industries, can formulate and deliver a very competitive development package for companies entering or expanding in the Philippines

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Thank you!

SPEAK TO OUR TEAM AT
WWW.PHILIPPINES.BUSINESS

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