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THAILAND INVESTMENT REVIEW

Vol. 30 | August 2020

A WORLD OF OUR MAKING:
Smart City and IoT Technology

THAILAND BOARD OF INVESTMENT

CONTENT

BOI NET APPLICATION
January - June 2020

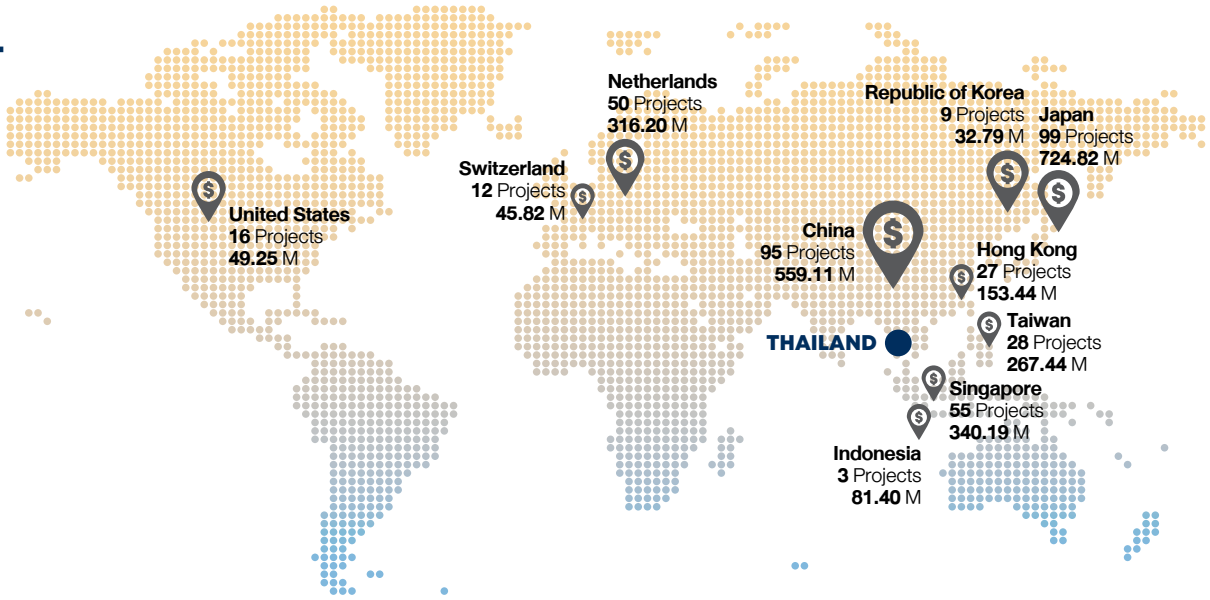
Total Investment
754 Projects
US$ 5,087.69 Million

Total Foreign Investment
459 Projects
US$ 2,430.41 Million

FOREIGN INVESTMENT BY TARGET SECTORS

First S-Curve	New S-Curve
Electronics 63 Projects I 730.00 M	**Biotechnology** 3 Projects I 8.61 M
Agriculture & Food Processing 18 Projects I 123.57 M	**Digital** 51 Projects I 12.01 M
Automotive 40 Projects I 408.13 M	**Aerospace** 2 Projects I 7.81 M
Petrochemicals & Chemicals 26 Projects I 111.08 M	**Medical** 18 Project I 46.53 M
Tourism 4 Projects I 59.75 M	**Automation & Robotics** 2 Projects I 3.55 M

FOREIGN INVESTMENT BY MAJOR ECONOMIES



Unit: US$ (US$=31.23 as of 14 Aug 2020)

Note: Investment projects with foreign equity participation from more than one country are reported in the figures for both countries. Statistics on net applications are adjusted whenever applications are returned to applicants due to insufficient information. For more details, please visit **www.boi.go.th**

SMART CITY LIVING MARKS ANOTHER MILESTONE OF THAILAND 4.0

As Thailand progresses towards its goal of sustainable development under the Thailand 4.0 model, the smart city is front and center in the country's action plan. Leveraging cutting-edge ICT technology and new generation platforms, such as the cloud computing that enables on-demand computing, mobile, AI, and big data analytics, Thailand's smart city plan centers on providing innovative services to citizens, businesses and tourists in the form of social, business and environmental solutions.

Through sensor-based devices and their ubiquitous connectivity enabled by novel ICT infrastructure such as 5G ultra-high speed internet, cities around the world are adopting the smart city concept to address many of the challenges arising from urban expansion, such as traffic congestion, waste management, air pollution, and security, while also meeting business objectives and improving people's quality of life.

As future technology continues to evolve into today's reality, Thailand has placed a priority on developing urban landscapes that encompass connected sensors, connected vehicles, smart meters and smart homes, along with a more flexible, mobile and effective level of connectivity. While preserving green and community areas as well as the local cultural identity, the new way of life in Thailand's big cities is characterized by more efficient city services such as connected traffic lights that control vehicle flows more effectively, smart bins that inform the right people when they need to be emptied, better integrated public mass transit systems and more robust cyber security. Smart technology is even applied to monitor the crops growing in the fields and to predict machinery maintenance schedules to enhance business efficiency.

The COVID-19 pandemic is adding to the relevance of smart city technology as Thailand and its neighbors adopt more stringent healthcare precautions which require efficient data analytics of people's mobility and connectivity.

With the robust cooperation between the public and telecommunication companies, Thailand is poised to be the first country of the ten-membered Association of Southeast Asia Nations (ASEAN) to roll out the fifth generation of broadband internet (5G) for full commercial use in late 2020. The arrival of 5G will further accelerate the adoption of IoT thereby enabling Thailand's smart city endeavors to become a reality more easily[1].

Thailand's smart city development is also aimed at better serving both tourists and meetings, incentive travel, conventions and exhibitions (MICE) visitors, with these two groups accounting for 40 million[2] and 1.27 million[3] visitors in 2019 respectively. This, together with the new investment required in system development, will also help stimulate the overall Thai economy.

Moving Towards Smart City Reality

Smart city developments are materializing across Thailand, with a focus on blending a traditional sense of culture with basic infrastructure that provides residents with greater convenience in transportation, energy efficiency, and digital technology. To qualify for the incentive program of the government and Thailand's Board of Investment (BOI), eligible projects must meet at least two of seven development aspects with smart environment being one of them. The seven categories and their criteria include:

1 https://www.bangkokpost.com/tech/1864284/5g-is-about-to-be-real
2 https://www.tatnews.org/2019/12/tat-targets-3-18-trillion-baht-in-tourism-revenue-for-thailand-in-2020/
3 https://intelligence.businesseventsthailand.com/en/page/mice-statistics
4 https://smartcitythailand.or.th/face/images/card/1559721572.pdf

- **Smart Environment:** minimizing environmental impacts from urban living
- **Smart Economy:** using digital technology to create added value to the economy
- **Smart Mobility:** developing connected and environment-friendly transportation systems
- **Smart Energy:** enhancing energy management efficiency
- **Smart People:** facilitating life-long learning opportunities for residents
- **Smart Living:** maximizing the health, safety and quality of life of residents
- **Smart Governance:** improving people's trust in public services

Proposals must include details on the financial management of the investment, which can be conducted through the Public-Private Partnership approach. The Digital Economy Promotion Agency (DEPA)'s Smart City Office, the Ministry of Energy, and the Office of Transport and Traffic Policy and Planning will assess all proposals and action plans for smart city developments as well as their digital infrastructure. Upon receiving final approval, the cities or municipalities will be allowed to use the designated "Smart City" logo while also becoming entitled to tax and non-tax investment incentives from the BOI as well as financial and technical assistances from the DEPA.

To date, the Smart City Development Steering Committee has received proposals for evaluation from 39 cities across the country, out of which 10 cities have already been approved in seven provinces, namely Bangkok, Phuket, Kon Kaen, Chiang Mai, Rayong, Chonburi and Chachoengsao. The DEPA targets achieving 100 smart cities spread across all of the country's 76 provinces by 2022.

Kon Kaen and Phuket Showcases Pilot Projects

Of the total 39 cities that have already submitted proposals, 12 are municipalities, including seven city municipalities, four are town municipalities and one is a subdistrict municipality. So far, cities in six provinces in addition to Bangkok have begun the process of transformation into smart cities.

Phuket, a popular resort island in Southern Thailand, and Kon Kaen, the largest city in Thailand's northeastern region, are regarded as the cities which have made the most significant progress on the road to becoming smart cities.

Kon Kaen's transformation was led by the private sector, with the emphasis on smart mobility through the development of Light Rail Transit (LRT) and Transit Oriented Development (TOD) mass transit systems around the city's train station to improve the commercial viability of the area. The USD 730-million LRT project, covering a 26-kilometer route, is at the heart of the city's plan to stimulate the economy of the Kon Kaen province and support the growth of the city's MICE and healthcare industries, while also avoiding air pollution. With its focus on transportation, Kon Kaen's smart city development is forecast to increase employment by nearly 20% and reduce traffic on the province's main highway by 10%.

Meanwhile, Phuket's smart city development has been driven by the private sector and local municipalities with a focus on the development of a data platform for integrating data from all sources such as Wi-fi service points, car license plate registrations, and CCTV for analytics to improve understanding of people's mobility on the island. Phuket also aims to install more CCTV units along the island's beaches and entry points to maximize tourist safety. Another smart tourism project launched by Phuket involves tourists wearing smart wrist bands when they go diving so that their position can be monitored and alerts can be activated if they stray too far from their boats. The city also plans to install air and water quality and flood monitoring systems.

Other smart cities have different focuses, based on the needs and participation of the locals. Among them, Chiang Mai, the largest tourism destination in the Northern region, has placed its focus on sustainable tourism and smart agriculture. The Phahon Yothin Smart Mobility Center is one of Bangkok's smart city projects. Its aim is to develop the Bangsue Train Station into a transportation hub connecting Bangkok not only with the central, northern, and northeastern regions of the country but also the ASEAN region and China. The project also includes the development of MICE and commercial facilities. The Eastern Economic Corridor, the country's new Eastern Seaboard economic development zone, which spans Chonburi, Rayong and Chachoengsao provinces, is gearing towards Smart Mobility, Smart People and Smart Economy aspects of smart city development. The public and private sector are driving the launch of ASEAN's most advanced digital centers and academies, known as Thailand Digital Park.

Deepening ASEAN's Connectivity

Launched in 2018, the ASEAN Smart Cities Network (ASCN) is a collaborative platform for cities across ASEAN to work together towards the common goal of sustainable smart city development. As part of a process for building a people-centered ASEAN Community, the ASCN has the goals of raising the quality of life of people in ASEAN through technology and innovations and solving the problems arising from rapid urban growth such as city congestion, poor water and air quality, and disparity between urban and rural society.

The ASCN's pioneer batch in 2018 comprised 26 diverse cities from across the ASEAN region, which were nominated by their national governments. In Thailand, these cities include Bangkok, Chonburi and Phuket. The ASCN aims to synergize its development efforts, sharing best practices and fostering a network of smart city developments across the region. ■

SMART CITY: THE WORLD OF OUR MAKING

The COVID-19 pandemic has provided a timely demonstration of the extent to which digital technology could become entrenched in a city to support health precautions and effective infection control. Sensor connectivity and the Internet of Things have been used to facilitate the screening for and tracking of infections while also enabling the delivery of contactless services in the new normal of people's daily lives.

Thailand has successfully implemented a smart tracking system called "Thai Chana" that allows residents to check in and out when visiting public spaces. By tracking people's visits to public places, this system is able to recommend a test and/or quarantine via a notification to users who visited a specific place at the same time as a person who was later found to be infected.

As the latest ICT technologies and next-generation data platforms become realities, Thailand and its fellow ASEAN members remain committed to enhancing the use of technology to improve the quality of city services and address the challenges of environmental and healthcare threats.

The Smart City concept is a core pillar of the Thailand 4.0 policy that the country is pursuing under its 20-year national development plan. The country aims to lift the digital capacity of the whole ecosystem of city management while preserving Thailand's unique social fabric and enhancing the quality of life of its urban residents. Moreover, the plan looks to encourage the local participations of cities in their future development.

As part of Thailand's efforts to push smart city development forward, the National Charter of Thailand (NCT)[1], the organization tasked with the sustainable development of the cities, has developed a blueprint for creating "smart blocks" or experimental zones of 0.25 square kilometers in communities where physical infrastructure will be set up in an attempt to win public approval and make way for the introduction of digital technology. These experimental zones will see all-in-one "smart poles" and complete streets placing priority on pedestrians, followed by cyclists, public transport users, and finally private car users. Personal vehicles will not be banned, but they rank fourth in order of importance. From an environmental and aesthetic perspective, more trees will be planted and electric wires placed underground. The NCT expects the efforts to be focused on creating economic hubs and developing run-down areas into smart blocks.

The development of smart blocks is already underway in 6 out of thirteen municipalities: Chiang Mai, Nakhon Sawan, Udon City, Khon Kaen, Rayong City, and Patong City.

Thailand's smart city development will not only accelerate investment and create employment across various modern industries, notably in IoT, Artificial Intelligence, Big Data and smart grid energy management, but also in related city management businesses such as waste to energy plants, smart energy, design and smart construction.

Turning the Future into Reality

Driven primarily by consumer-related needs, the IoT market in Thailand is forecast to reach a value of US $2.19 billion by 2030. From a baseline of US $120 million in 2018, this represents a CAGR of more than 27 percent. This rapid growth, the highest among all Smart Electronics segments, makes the

1 https://www.nationalcharter.co/

IoT market an area of huge opportunity. A recent Asia IoT Business Platform survey ranked Thailand highest among all ten ASEAN countries for corporate IoT implementation.

One of the key features of the Smart City vision is the connectivity among devices, places, and transportation infrastructure. To enable such communication to take place, reliable baseline technology like sensors, cloud computing, and Wi-Fi are required. Thailand's potential for IoT is reflected through the country's competency in its electronics and robotics sectors. In the past recent years, the unit price of sensors has fallen significantly from $10 to $2, providing a convincing argument for companies and the governmentto adopt IoT services into their business activities[2].

At the same time, internet penetration is relatively high in Thailand compared to its neighbors. As of 2019, more than 75% of the Thai population had access to the internet, according to the National Broadcasting and Telecommunication Commission (NBTC). This high percentage is partly due to the government's mega projects under its Thailand's 4.0 initiative to develop digital citizens. The country has invested in building a nationwide digital infrastructure through a village internet project called "Net Pracharat," which has made high-speed internet available for 75,000 villages across Thailand.

Beyond home broadband connectivity, 5G development in Thailand has also progressed relatively quickly. The country concluded bidding on its 5G license auction in February this year. The NBTC auctioned off 700-megahertz, 2600MHz and 26-gigahertz, raising more than 100 billion Baht. AIS, a top spending phone operator in the bidding, launched its first 5G trial in early March, allowing users in inner Bangkok to experience the very latest in wireless connectivity. Thailand's achievements in its digital infrastructure opens up many potential innovations and developments as 5G provides 100 times faster connections than 4G and will enable users to download data more quickly, robots to work faster, and cars to drive themselves.

To facilitate Thailand's transition into a smarter society, the government has established the nation's first IoT Institute under the supervision of the Digital Economy Promotion Agency (DEPA). Located in Digital Park Thailand within the Eastern Economic Corridor (EEC), the institute is tasked with providing the necessary infrastructure, digital ecosystem, and business matching service to bring large tech companies and startups together. Covering more than 60,000 sqm, the state-of-art facility will include 5G lab, cloud innovation lab, AI design lab, and data analytics center.

Government and BOI Incentives

Through tax and non-tax incentives, the BOI and government agencies are helping the private sector to play an active role in shaping the future of smart cities in Thailand.

Government agencies are actively stimulating investment in smart city projects through pilot city policy-making mechanisms, an infrastructure-incubated ecosystem, Smart City applications, and the development of personnel and human resources. Tax incentives are also being offered through the BOI for investors in smart city projects. Other benefits include exemption of tax on imported machinery and corporate income tax benefits

Following the Smart City Development Committee's meeting in May, the BOI has enhanced the investment incentives for smart city development. At present, the BOI offers incentives for business activities in smart city area development, smart city system development and smart industrial zones. Development of smart city area and system are entitled to 8 years of Corporate Income Tax (CIT) exemption. For smart industrial zone development, the same length of CIT exemption will be granted if all seven criteria are met.

In order for a project to be eligible for the BOI incentives, it must include a plan for the development process as well as digital technology infrastructure, along with Smart City system services and environmental regulations. A participation meeting for the project must be organized to receive the Smart City Steering Committee's approval to receive the incentives.

Beyond the tax incentives, the BOI also provides land ownership rights, and foreign workers can also enjoy the expedited route of entering the country through the BOI's smart visa scheme, which grants a maximum 4-year permission to stay with exemption from the work permit requirement and entitlement to additional privileges. ■

2 https://www.bangkokpost.com/business/1772229/iot-adoption-set-to-surge-on-lower-costs

THAILAND'S SMART AIRPORTS EMBODY THE DIGITAL REVOLUTION

For many travelers, a city's aerodrome is the setting for their first encounter with a new country. Whether they are tourists, business travelers, expatriates, or permanent settlers, the airport is the place where they get their first glimpse of the alien environment in which they have just landed. The subsequent experience of traversing through the wide-open spaces of these airports can offer a deeper look into the culture of the city and the spirit it wishes to represent.

In cities across the country, the capacity of Thailand's airports is expanding. Powered by 5G ultra-high speed internet, emerging technologies like AI, sensors and data management serve as the central underlying workhorses that allow these so-called "smart airports" to provide ever higher numbers of passenger with a seamless and contactless airport experience.

The COVID-19 pandemic has also added impetus to the deployment of technology such as robotics, biometrics, temperature scanners and UV disinfection systems to ensure effective healthcare management at the airport.

The Ministry of Transport's Department of Airports, Airports of Thailand Plc, the National Broadcast and Telecommunication Commission, and the country's top ICT operators have all played a part in ushering in the 5G network and the technological solutions that improve both service capacity and security in the country's main airports. Regarded as a priority action, these technological developments support Thailand's aim of enhancing the digital capacity of its overall economy and the capacity of the country's airport ecosystem. These initiatives form part of the government's plan to raise the standard of Thailand's transportation system, not only to meet the changing needs of an increasing number of MICE and tourism visitors, but also to support the country's aim of becoming a hub of modern industries in ASEAN, especially serving the CLMV countries (Cambodia, Lao PDR, Myanmar and Vietnam).

The plan initially focuses on overhauling the digital capacity of the services and airport and aviation security in Suvarnabhumi International Airport and Don Muang International Airport in Bangkok as well as in airports serving key business and tourism destinations including Chiang Mai, Chiang Rai, Phuket, Songkhla, Krabi and the Eastern Economic Corridor (EEC).

As a strategic economic zone supporting the government's Thailand 4.0 policy, the EEC is served by U-Tapao International Airport. U-Tapao is equipped with ICT facilities that have the capacity to support the mobile applications, video analytics, computer and communication systems that can enhance the effectiveness of many services and improve the visitor experience overall.

Among the initiatives for U-Tapao International Airport, which is expected to serve 2-2.3 million visitors per year, is the plan to introduce WiFi6 technology, the latest Wi-Fi standard with the fastest speed. Connected to the airport's security management system, thermal scanners will be used to screen passengers' temperatures, while robots will be utilized to perform various tasks. The airport will also deploy the smart video analytics and biometrics solutions which will enhance the terminal management with intelligent image analysis and processing technology to improve the passenger experience and security standard. With its 5G network, the airport will be able to serve mobile applications and artificial intelligence robots that allow passengers to access aviation services and airport information in one app. The 5G network will also enable the airport to integrate the data management of its Radio Frequency Identification (RFID) equipment to enhance the efficiency of services such as luggage tracking and management, the airport cloud parking system and the automatic locker system. ■

RAYONG ENGINEERING & PLANT SERVICE CO., LTD.

AN INNOVATIVE DRIVER OF MACHINERY AND FACTORY ENGINEERING SOLUTIONS

"BOI incentives have the potential to fundamentally change the landscape of Thailand's machinery and factory maintenance industry. By incentivizing automation, costs will inevitably reduce, thereby resulting in improved outputs for factories across Thailand."

Charoenchai Prathuangsuksri,
Managing Director
Rayong Engineering & Plant Service

An Innovator in Technology-Based Solutions

First registered in Thailand in October 2001, Rayong Engineering & Plant Service is the engineering and maintenance arm of leading business conglomerate the Siam Cement Group (SCG). Drawing upon SCG's decades of extensive global and regional experience, Rayong Engineering has become known across the region for providing innovative technology-based solutions for factory and machine maintenance. This ongoing pursuit of innovation is reflected in a number of advancements that have been made in system integration, the utilization of data analytics, and the development of sensors to detect and monitor machinery erosion.

In recent years, as part of its continued drive towards technological advancement, Rayong Engineering & Plant Service has made a significant contribution to the changing face of factory machine maintenance. This has primarily taken shape in the form of analytics and predictive maintenance, a process that has resulted in many businesses fundamentally changing the way they approach maintenance and operating standards.

As a result of the growing domestic and international interest in predictive machine maintenance, Rayong Engineering & Plant Service has witnessed strong financial performance in recent years. For example, in 2018, the company saw net sales revenue increases of 4.56%, with an associated total asset growth of 4.96%.

Delivering Sustainable Industrial Solutions

Rayong Engineering & Plant Service has a belief that - similar to any business sector - there can be no 'one size fits all' approach for developing industrial mechanical solutions. Instead, it is incumbent upon businesses to identify and implement their own tailored solutions, i.e. a strategy that addresses the needs of their specific business model.

To this end, Rayong Engineering & Plant Service has established itself as a leader in research and development for machine analytics. This technology has been developed so that mechanical problems can be identified and addressed before they occur. As such, no longer is it necessary for factories to store data across numerous hard and soft platforms, but rather everything can now be brought under a single system. This can reduce the disjointed nature of existing data, and instead, provide a cohesive body of information for analytics. In addition to creating an overview of the machine and what needs to occur, this advancement can also pre-empt any serious issues that may force a machine to be suspended from operation, thus avoiding costly delays to production.

As this technology has developed, Rayong Engineering & Plant Service has taken a proactive approach to providing services to a range of business sectors including petrochemical, power generation and food manufacturing. This support extends far beyond general servicing and maintenance, but rather shifts the focus to the application of analytics to determine contingencies, and to avoid any costly repairs before they are needed.

What support has Rayong Engineering & Plant Service received from the BOI and the Thai Government?

Since Rayong Engineering & Plant Service was established nearly twenty years ago, it has benefitted from an assortment of Board of Investment (BOI) tax and non-tax incentives. Such benefits include exemptions of import duties on raw materials used for export production, an exemption of import duties on machinery, and finally, an array of non-tax incentives such as assistance in facilitating the hiring of foreign labor.

To date, the support given by the BOI has provided Rayong Engineering & Plant Service with the ability to 'push the boundaries' when it comes to improvements to machine automation and maintenance processes. This ability to innovate has resulted in both SCG and other Thai companies operating at ever-increasing levels of automation. This has resulted in a subsequent reduction of operating costs, thereby creating the opportunity for increased profit margins and growth. With continued investment in machine automation by the BOI, in particular in the research and development fields, it is anticipated that the sector will continue to develop and provide a strong platform for future growth.

What does the future look like for Rayong Engineering & Plant Service?

Throughout Asia, factory and machine automation is becoming more prevalent, with South Korea, Japan and Singapore accounting for three out of the world's top four countries with the highest density of robot workers. In 2017, in South Korea alone, there were approximately 710 installed robots for every 10,000 employees. In Singapore, the number was 658 out of every 10,000 employees.

In Thailand, however, the interest in technological mechanical adaptations has yet to mature fully. This means that, at present, there remains a high reliance on physical labor. Such a low uptake of mechanical aVutomation can primarily be attributed to the significant upfront costs involved with robotics, a financial hurdle that many companies are not willing to invest in at this point in time.

As a well-respected industry leader, Rayong Engineering & Plant Service plays an essential role in the future development of Thailand's machine automation and maintenance sector. Through a range of measures such as knowledge sharing and capacity building, Rayong Engineering & Plant Service seeks to act as a catalyst for increased competition for both the domestic and international markets. This will, in turn, spur further demand for the company's services, and propel Thailand forward as an innovator within the burgeoning machine automation sector. ■

5 August 2020:

The BOI, in cooperation with the Joint Foreign Chambers of Commerce in Thailand (JFCCT), hosted an online webinar entitled "Support Measures for Economic Recovery" on 5 August. The session featured distinguished panelists including Ms. Duangjai Asawachintachit, Secretary General of the BOI; Dr. Pisit Puapan, Executive Director of Macroeconomic Policy Bureau, Fiscal Policy Office, Ministry of Finance; and Dr. Charl Kengchon, Executive Chairman of Kasikorn Research Center. During the webinar, the panelists discussed Thailand's effective response to the public health challenge and the responsive measures implemented to ensure continued investment and a swift recovery.

5 August 2020:

Ms. Duangjai Asawachintachit, BOI's Secretary General, together with Mr. Narit Therdsteerasukdi, BOI's Deputy Secretary General, hosted a meeting of 5 August with Dr. Julapong Taweesri, Deputy Permanent Secretary of Industry; Mr. Somwang Boonrakcharoen, President of the Thai-German Institute; and Mr. Rungsak Nawong, Director of the Center of Robotic Excellence (CoRE). While the meeting agenda focused on the direction of investment incentives to support the robotics and automation sector, the discussions highlighted the overall surge in the adoption of robotics and automation worldwide due to the global pandemic and the opportunities that this provides to Thailand in the midst of the ongoing crisis.

8 August 2020:

Ms. Duangjai Asawachintachit, the BOI's Secretary General, delivered the opening remarks at a seminar held at the Thai Overseas Investment Support Center on 8 August. Aimed at empowering Thai investors in foreign markets, the seminar was attended by 55 selected Thai investors, along with many experienced entrepreneurs. The BOI hosted the seminar to support and strengthen Thailand's outbound investments. Selected participants will go through intensive training from August to December this year.

31 July 2020:

Mr. Chokedee Kaewsang, the BOI's Deputy Secretary General, delivered his presentation on the topic of the "Current situation and support measures for the digital industry in Thailand" at the virtual investment webinar. The webinar was also joined by Mr. Yoshitaka Yamamuro, Director of the Ministry of Economy, Trade and Industry; Mr. Yutaka Ueno, Director of JMNC Sales NTT Thailand; and Mr. Kazushi Kawase, General Manager of the Software Development R&D Center, Panasonic Automotive Systems Asia Pacific Co., Ltd. Addressing more than 590 participants from Thailand and Japan, the webinar's panel highlighted the present situation and the measures implemented to support the digital industry and ecosystem in Thailand and Japan.

14 August 2020:

Mr. Narit Therdsteerasukdi, the BOI's Deputy Secretary General, and members of the BOI's management team welcomed Dr. Kengpong Tangarunsanti, President of the Senior Health Service and Trade Association and Vice President of Thai Caregivers Association to the BOI headquarters for a meeting on 14 August. The participants discussed ways in which the business direction of Thailand's product and service development can be steered to accommodate the aging economy. During the meeting, both parties highlighted the strength of Thailand's medical industry as a robust foundation for the development of healthcare services for the elderly.

THAI ECONOMY AT-A-GLANCE

Key Economic Figures

GDP (2020*)
US$ 493.7 Billion

GDP per Capita (2020*)
US$ 7,103.2 / Year

GDP Growth

2019 2.4% — 2020* -5%

Note: *Estimated value I Source: NESDC
(Data as of May 2020)

Unemployment 2020*

1%

Headline Inflation 2020*

-0.54%

Source: National Statistical Office

Investment Growth

2019 2.1% — 2020* -2.1%

Export Value of Goods Growth

2019 3.2% — 2020* -8%

Market Profile (2019)

Population
66.56 Million

Minimum Wage
THB 313 - 336

US$ Approximate
US$ 9.7 - 10.4

Source: Ministry of Labour, BoT

Export Figures

Export value (USD million)
Jan – Dec 2018 : 252,956.98
Jan – Dec 2019 : 246,244.51
Jan – April 2020 : 81,620.30
Year-on-year Growth : 1.19%

Top 10 Export Markets (January - June 2020)

Rank	Value (US$ million)	Share
United State	16,396.40	14.34%
China	14,595.80	12.76%
Japan	11,173.00	9.77%
Hong Kong	5,819.10	5.09%
Vietnam	5,262.00	4.60%
Singapore	5,172.90	4.52%
Indonesia	4,839.70	4.23%
Australia	4,505.60	3.94%
Switzerland	4,136.20	3.62%
Malaysia	3,837.10	3.36%

International Competitiveness

E-Government Development Index
2018 : 73rd **2020 :** 57th

Global Competitiveness Business
2018 : 38th **2019 :** 40th

World Digital Competitiveness Ranking
2018 : 39th **2019 :** 40th

Time to set up business : 4.5 days

Source: World Bank, WEF and IMD

Top 10 Exports

Goods / Products	Value (US$ million)	Share
1: Precious Stones and Jewelry	10,077.84	8.81%
2: Motor Cars and Parts	9,312.21	8.14%
3: Computers and Parts	8,806.82	7.70%
4: Rubber Products	5,437.80	4.76%
5: Plastic Beads	3,798.74	3.32%
6: Electronic Integrated Circuits	3,444.05	3.01%
7: Chemical Products	3,276.60	2.87%
8: Machinery and parts	3,075.23	2.69%
9: Refined Fuel	2,855.90	2.50%
10: Air Conditioners and parts	2,841.59	2.49%

Source: Ministry of Commerce

Exchange Rates
(Data as of 14 August 2020)

USD	GBP	EUR	JPY	CNY
THB 31.23	THB 41.01	THB 37.04	THB 29.43	THB 4.54

Source: Bank of Thailand

Tax Rate

Corporate Income Tax: 0 – 20%
Personal Income Tax: 5 – 35%
VAT: 7%
Witholding Tax: 1 – 15%

Source: the Revenue Department
(Data as of May 2020)

THAILAND BOARD OF INVESTMENT

ABOUT BOI

The Office of the Board of Investment (BOI) is the principle goverment agency that operates under the Prime Minister's Office for the purpose of encouraging investment in Thailand. We at the BOI serve as the professional contact points for investors, providing them with useful investment information and services. We offer business support and investment incentive to foreign investors in Thailand, including tax and non-tax incentives. A few non-tax incentives include granting land ownership to foreigners and facilitating visas and work permits. Besides serving the needs of overseas investors, we also offer consultation services to Thai investors who are interested in investment opportunities abroad.

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