

# Digital Transformation Enabler



# 2018

ANNUAL REPORT

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2018  
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# Intensify Technological Research and Development and Improve the Value of Patent Applications

Institute for Information Industry (III) uses the five main R&D development strategies including “network and cognition, smart manufacturing, cutting-edge applications, smart services, and environmental construction” to connect to the key development plans for Technology Development Programs and support the development of the digital economy and the 5+2 industries. It also meets policy and industrial requirements for the establishment of cross-industry digital transformation service platforms to facilitate cross-industry and cross-sector collaboration, connect the expertise of entities from different sectors, and create mutual prosperity.

In the past three years, III has completed 417 technology transfers and facilitated investments amounting to NT\$15.9 billion. The income from technology transfer in 2018 amounted to over NT\$140 million which accounted for 11.9% of the funding for Technology Development Programs. Among these projects were 9 high-performance technology transfer projects that amounted to more than NT\$5 million.

III has applied for an average of 240 patents per year in the past three years. The ratio of patent application in Taiwan and overseas was approximately 1:2 in 2018 and all patents were filed for invention patents. The top ten technology sectors included: LTE/LTE-A communication systems, data algorithm processing, 5G communication systems, application platforms and software, image processing, content security and threat management, sensor data integration and control platform, big data applications, machinery, and ServBox. III obtained an average of 191 patents each year in the past three years and the ratio of patent awards in Taiwan and overseas was approximately 1:1 in 2018. Invention patents accounted for 98% while utility model patents accounted for 2%. The top ten technology sectors included: LTE/LTE-A communication systems, application platforms and software, data algorithm processing, content security and threat management, specific processing systems and methods, sensor data integration and control platform, human-machine interfaces, machinery, ServBox., wireless sensing networks, and wireless/short-distance regional networks.

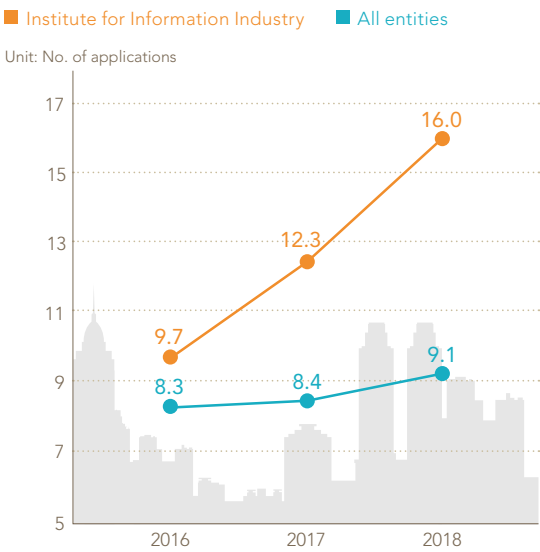


Figure 1 Number of patent applications per NT\$100 million of Technology Development Plan expenditures

Note: All Entities includes ITRI, III, MIRDC, DCB, PIDC, CHC, SRDC, SOIC, PMC, PTRI, ARTC, FRT, TTRI, PDC  
Source: TDP Yearbook

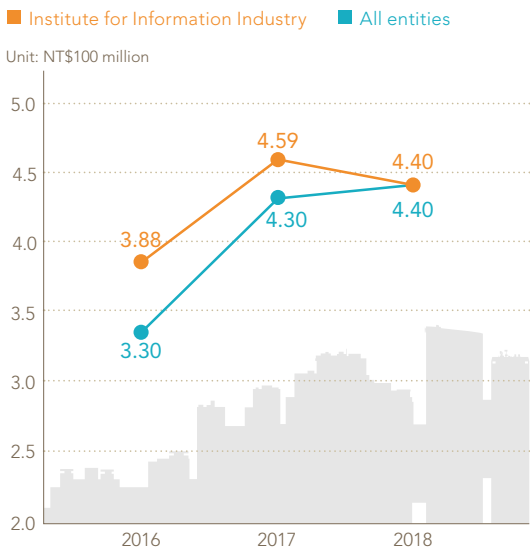


Figure 2 Investments by companies per NT\$100 million of Technology Development Plan expenditures

III also formed categories of patented technologies based on the patent applications including wireless network communication systems, wired network communication systems, embedded systems, cloud computing systems, multimedia, vehicle-mounted ICT, electronic and digital data processing, RFID, environmental perception and control, and information security to improve the value of its patent applications. III also leveraged the 5G communication system and application flagship program, next-generation ambient intelligence systems research, development, and application program, new enterprise service system R&D project, key technologies in smart manufacturing, smart information security technology development project, and emerging application and integration technology R&D project in its “cross-industry digital transformation services” to complete patent portfolios in five main sectors (as shown in Figure 3). III also uses technology transfers, patent licensing, or patent transfers based on the needs of ICT operators in Taiwan to expand the scope of use of the achievements in research and development.

III also received recognition in its active operations in patents and the improvement of patent application quality. It received the Gold Medal Award in the “2018 Taiwan Innotech Expo Invention Awards” for the “charging and discharging control device and method” invention patent, the Silver Medal Awards for the “quality predictive method and its system for multiple-workstation systems” and “multiple-axle robotic arm and its adjustment methods” invention patents, and the Bronze Medal Award for the “anti-collisions system and anti-collision method” invention patent.

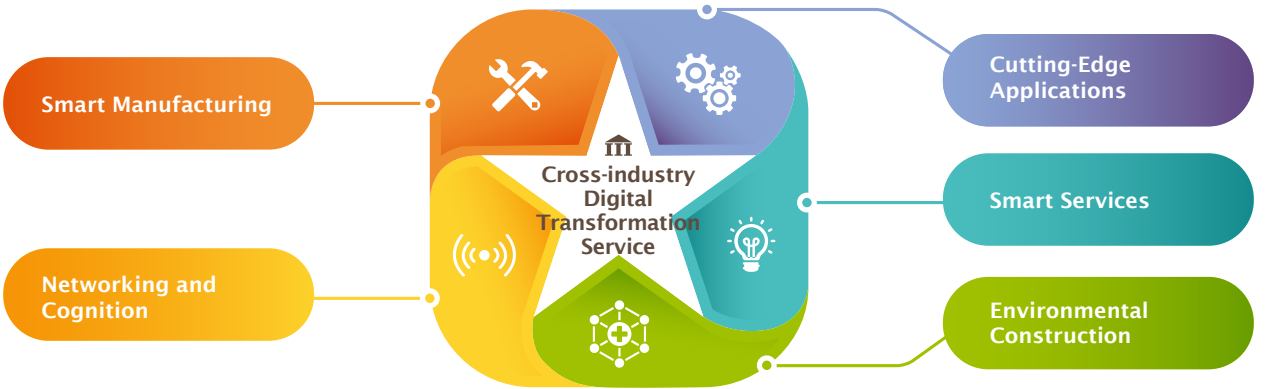


Figure 3 Patent portfolio in five main sectors



Figure 4 Number of high-performance technology transfer projects of III in the past three years and amounts  
(Note: High-performance technology transfer projects refer to projects that amounted to more than NT\$5 million)



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# Building a Healthy Environment to Cultivate Talents

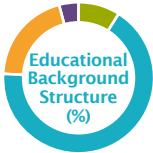
To build employees' core capabilities, III established six major comprehensive training systems and initiated related training projects based on the key operation goals and work requirements for each level/function. III focused on related training in technology R&D, industry trends, and business management in 2018 to improve employees' professional skills in artificial intelligence (AI), machine learning, IoT, smart city, business models, and operation plans. The "AI Experience Camp" helped more than five hundred III employees with no technical background learn more about the principles of AI and the AI sector through actual implementation. In addition, III also sent outstanding managers to Japan to participate in the Future Leaders Program and learn with other outstanding managers from across the world to enhance their technical research capabilities in AI, industrial IoT, and smart city, expand their international perspectives, and establish interpersonal networks.

III focuses on long-term talent development. To ensure that employees retain the necessary basic management skills for promotion to management roles, III initiated the management training and promotion connection in 2018 and uses systematic training and arrangements to strengthen the management skills of managers on all levels. In addition, III also established annual feedback mechanisms for managers to learn more about managers' management skills from more diverse perspectives and help managers learn about their advantages and development requirements for their management skills. The information is used as reference for the cultivation of individual managers and organizational talent cultivation.

III received the Badge of Accredited Healthy Workplace in the Healthy Work Place Accreditation in 2018. III continues to use diverse health promotion and care options to encourage employees to develop habits for exercising, stay fit, and create a healthy and happy workplace with balanced work and life. III organizes high-quality hospital health examinations each year to take care of employees' physical health and care about employees' mental health. III provides the "Employee Life Service Plan" to provide them with comprehensive physical and mental care. III also established diverse club activities such as jogging, badminton, table tennis, volleyball, basketball, and cycling as well as stress-relieving clubs such as guitar and board games to let employees be happy at work and enjoy life.

III not only takes care of employees' physical and mental health but also cares about employees' family and lives. In addition to continuing to organize daytrips, film viewing sessions, and other activities, III expanded family day events in 2018 and organized a barbecue event in Pushin Ranch. III invited employees to bring their family members to connect families and employees. In addition, III also shared its glory for the first time in the III year-end party with the performance reward activities to inspire employees' morale and build a sense of cohesion within III.

III gives back to the society. In addition to organizing the "Blood Donation for Saving People" event, III also encouraged local communities and office buildings to participate in the blood donations. III responds to the ideals for protecting the homeland on Earth Day and implements beach clearing activities to protect the environment. III cleared more than 300kg of marine waste onsite and it shall continue to fulfill corporate social responsibilities to give back to society.



Doctorate	9%
Master's	67%
Bachelor's	20%
Associate Degree & Others	4%



Administration	15%
R&D	61%
Industry Development	23%
Cross Category & Uncategorized	1%

Data prepared: March 31, 2019





01

Institute for Information Industry

## Driving Indispensable Industrial Digital Transformation

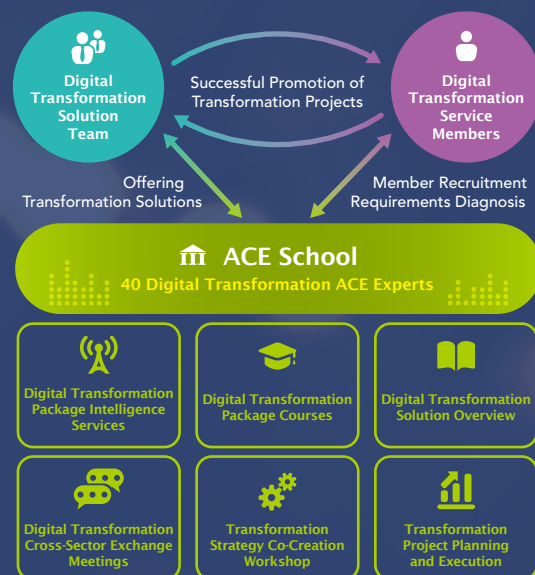
The rapid advancements in mobile network technologies have changed the method of the creation and delivery of market value. As the digitalization trends progress, industries are compelled to accelerate their digital transformation to survive. The Institute for Information Industry (III) promotes the development of information technology in Taiwan and uses its science and research capacity to lead digital transformation that has become imperative for industries in Taiwan.

III organized the Retreat VOC meeting from May 25 to 26 to rebuild organizational culture, strengthen relations with partners in the industry, and break through the framework and restrictions of existing institutions to meet the expectations of all sectors. III invited leaders in the industries, government, academia, and research institutions as well as members of the Advanced Research Advisory Committee (ARAC) to discuss issues on how III should evolve, break through barriers, fulfill visions of the era, utilize energy, create new knowledge, and lead digital transformation in industries. The opportunities for digital transformation in this era constituted one of the important consensuses reached in the meeting.

Faced with companies' demands and their anxiety for transformation, III's first mission is to help businesses clarify the issues they face instead of hurrying to provide answers through technologies. Under the guidance of Vice President Dr. Ren-Dar Yang, III established the "ACE School" with the aim of leading the industries in doing the right thing for digital transformation.

ACE School was established and funded independently by III Departments. It is a framework for providing comprehensive services based on collaboration between DTI, MIC, and DEI. The III units (DSI, DTI, SSI, CSTI, DEI, MIC, STLI, RISD, ID, and TJIC) assign elite trainees to be trained as ACE talents (architects, consultants, and evangelists) and jointly participate in III's assistance for digital transformation for businesses.

According to the MIC survey and the communication and interviews conducted by employees of the Institutes with related companies on their requirements, businesses must first have a professional consulting team to provide short-term onsite services in companies in order to identify the proof of concept (POC). It means that III first seeks to clarify the existing conditions and requirements of businesses before providing strategies, technologies, talent cultivation, and other feasible plans. III provides preliminary general assistance or special assistance for specific industries with recommendations, strategies, and blueprints for specific forms of transformation.



III "ACE School" implementation framework

To promote the businesses described above, III shall conduct an inventory of mature and stable (comprehensive) digital transformation solutions of the entire III and assemble experts and consultants recommended by internal departments to plan training programs. The ACE framework shall be adopted for actual training and licensing to establish a professional consultant service group for digital transformation on the institutional level and provide onsite consulting services for businesses. In the future, III shall invite different entities, experienced businesses, and experienced external experts to participate in the program in order to grasp the opportunities for digital transformation in this era.

Doing the right thing is more important than doing thing right. The "ACE School" shall cultivate at least 40 ACE talents in 2019 and gradually accumulate 40 digital transformation success stories to spread the seeds of digital transformation to more sectors and industries, promote digital transformation in industries, and improve the competitiveness of industries.

02

X Digital Transformation Institute (DTI)

## Introducing the Digital Brain to Make Factories Smarter

The development of Industry 4.0 has gradually formed a clear path of development. The Digital Transformation Institute (DTI) of the Institute for Information Industry (III) has developed the "Process Big Data Analytics System" that provides a comprehensive view of the manufacturing process and makes it easier to achieve smart manufacturing and build smart factories.



In factories, hundreds of machines work day and night and they create endless information and data. Without organization and analyses, these data are simply a set of digits with no association between them and they generate no meaning. However, efficient data collection through the system will become the key factor to improving the performance of factories.

In recent years, the manufacturing industry has continued its transformation to smart manufacturing. However, investing in high-cost and talent and technology-intensive smart manufacturing is not easy for small and medium enterprises in Taiwan's manufacturing industry. DTI recognizes the difficulties of the manufacturing industry and developed the "Process Data Analytics System" with the support of Technology Development Programs of the Department of Industrial Technology, Ministry of Economic Affairs. The system uses time, performance, and quality as indicators to observe the performance of machines and help free factories from the inefficient

manual supervision of machines and inspections to save time and strength. It allows factory operators to gain a comprehensive understanding of the overall production performance, quality, and bottlenecks for building smart factories and achieving smart manufacturing. The system also received recognition in the global R&D 100 Awards.

The "Process Data Analytics System" mainly uses events as drivers and distributed, fault-tolerant, and continuous real-time streaming analyses to process material events from multiple sources. It also highlights issues rapidly with precision for decision makers to observe the risks in the production process, control risks, and increase output.

The system is equipped with fault-tolerance capabilities, an ultra-large storage environment, and parallel computing. It saves time in construction and satisfies practical requirements for production. It also reduces the amount of time required for evaluation, analysis, and actual implementation during the introduction period to reduce the technical barriers for customization.

The "Process Big Data Analytics System" has been adopted for industries such as semiconductor packaging and tests, plastic extrusion, and battery assemblies to help operators improve production efficiency. DTI shall continue to promote the system in the petrochemicals, textile, automobile, and the aerospace industries and build pilot programs in collaboration with operators to attract more operators and accelerate digital transformation in Taiwan's manufacturing industry.

In addition, DTI also uses applied data analytics and artificial intelligence technologies to develop smart allocation solutions for production lines. It is akin to building a digital brain in a factory to help decision makers make accurate decisions and establish partnerships with information service operators and system integrators. DTI uses the cloud to help operators introduce applications and extend the scope of smart solutions to handling materials, production, and quality inspections and accelerate the development of smart and virtual factories.





## 03 Smart System Institute (SSI) Smart Bus Stops Equipped with Crank Generators and Autonomous Communication Equipment

For people living in urban areas, obtaining information on the movement of buses is hassle-free. We simply switch on our mobile phones, open the app, and enter the bus route to gain all necessary information. However, for remote areas with incomprehensive Internet coverage, waiting a long time for buses is a part of daily life. The bus stops equipped with crank generators developed by the Smart Systems Institute (SSI) resolves the difficulties for riding on buses in remote areas.

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Video:  
**SMART BUS STOPS**



The SSI R&D team developed the Hybrid Mass LINK crank generator smart bus system with the primary aim of resolving the issue of not knowing how long people have to wait if they miss a bus due to the low number of buses in remote areas. SSI seeks to use technology to provide solutions for transportation issues in remote areas even with limited funding for construction.

The crank generator smart bus system is equipped with Hybrid Mass LINK technology and it integrates two types of wireless communication technologies including NB-IoT and LoRa. It removes the need for complicated network distribution work procedures. The external appearance is similar to regular bus stops but equipped with solar panels on top and a crank handle below. Each stop on the bus stop sign has an indicator light. To find out where the bus is, simply turn the crank handle to start the connection and the light of the bus stop where the bus is at will be lit.

The service received recognition from the Ministry of Transportation and Communications and it was deployed in pilot programs in Jianshi Township, Hsinchu County and the Linglan Ecological Farm in Malingkeng, Qidu District, Keelung. The R&D project also won global recognition in the R&D 100 Awards.

The R&D results may be invigorating but the process was precarious. The first issue faced by smart bus stop with crank generators is the selection of the data transmission system in remote areas with low 3G/4G coverage. Fortunately, the Hybrid Mass LINK developed by the team provides two types of transmission modes including NB-IoT and LoRa which enhanced the Low-Power Wide-Area Network (LPWAN) technology and operates under authorized or unauthorized frequencies. It uses small-scale data transmission for long-distance communication and it has advantages such as low-power consumption and wide-area coverage. The use of the technology in the smart bus stop with crank generator provides anti-interference capabilities, ultra-sensitive receiving capabilities, and high transmission success rate. The transmission distance can reach 200km or above within visual range.

The other issue is power supply. SSI found manual power generation to be the most reliable and it can operate in the rain and at night. It is simple, easy to use, and easy to maintain and it can be cranked easily by children or the elderly.

The Smart City Taiwan concept covers a wide range of ideas. It can be a complicated IoT system in cities or simple applications in remote areas. It provides a human touch to the smart bus stops with crank generators and it is the optimal interpretation that technology connects people.



## 04 Digital Service Innovation Institute (DSI) Using “Empirical Verification” to Transform Technology Professionals into Fintech Professionals

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**FINTECH SPACE**

The traditional finance industry continues to explore ways to respond the onslaught of FinTech advancements as tech companies advance into the finance sector and give birth to the concept of TechFin. In reality, both FinTech and TechFin must cooperate closely with each other in order to power the transformation of the industry.

FinTech refers to the provision of new forms of financial services through innovative technologies. Well-known examples include crowdfunding and third-party payment which are typical startups in FinTech. These innovative technologies are gradually changing the traditional finance industry.

TechFin, on the other hand, involves large tech companies who use the tools they know best to provide financial services and go after the existing markets of the finance industry. The rise of TechFin poses stronger impact and threats on the transformation of the industry.

To promote the domestic FinTech development environment and provide a one-stop Fintech innovation and resource environment, the Digital Service Innovation Institute (DSI) of the Institute for Information Industry (III) assisted the Financial Supervisory Commission (FSC) and Taiwan Financial Services Roundtable in the establishment of the first “FinTechSpace” in Taiwan. The FinTechSpace focuses on the integration of space and venues, assistance services, and open API for FinTech resources to promote and co-create an ecosphere for FinTech, accelerate the innovative development of financial institutions, and establish energy for technology innovation of the finance sector.

In practice, it is impossible for the finance industry to achieve innovation without help. For both tech companies and financial institutions, it is difficult to have both sufficient data and technology capabilities at the same time. Cooperation is the only way for them to accelerate development from good ideas to the launch of official products. It is also the first goal in the development of the FinTechSpace.

FinTechSpace provides physical space for teams to use as well as soft assistance resources including supervision and diagnosis, regulations consulting services, information security health examinations, startup seminars, finance and accounting assistance, resource matchmaking, and digital sandbox API services.

The digital sandbox API service is a fault-tolerant environment well-known to the tech industry and it is an interactive interface that attracts technology professionals into the FinTech sector. The supervision and diagnosis are supported by the FSC and the competent authority of FinTech periodically operates in the park to provide compliance consultation and assistance services. The direct communication between the competent authority, startup teams, and financial institutions also help accelerate operators' compliance practices and deployment in individual stages when they enter the market.

When ideas of technology professionals are implemented in the park, they can transform from technology professionals into FinTech professionals. The exchanges and communication between the competent authority and operators also facilitate the establishment of FinTech knowledge, regulations, and applications. The “Innovation Index” is of great importance in FinTech. The establishment of the FinTechSpace allows technology professionals to freely experiment and pursue innovation in a one-stop platform environment with comprehensive assistance resources from ideas to product verification and actual launch. They accumulate FinTech innovation capacity in the “empirical verification” process and become FinTech professionals that lead innovation in the finance industry in Taiwan.





# Global Presence and Experience

In order to actualize the vision of "Techno-Cultural Synergy, Innovation Unbounded", III actively engages in international collaboration to advance technologies and to elevate her R&D capabilities. III works with Taiwan's ICT industry to build an integrated marketing platform, aiming to facilitate business development in the regional markets of Southeast Asia, India, the Middle East, Africa, North and South America, the Caribbean, Japan, and Greater China.

## International Collaboration

III engaged in international collaboration projects, bringing benefits of its engineering expertise and management skills to ICT projects across the globe.

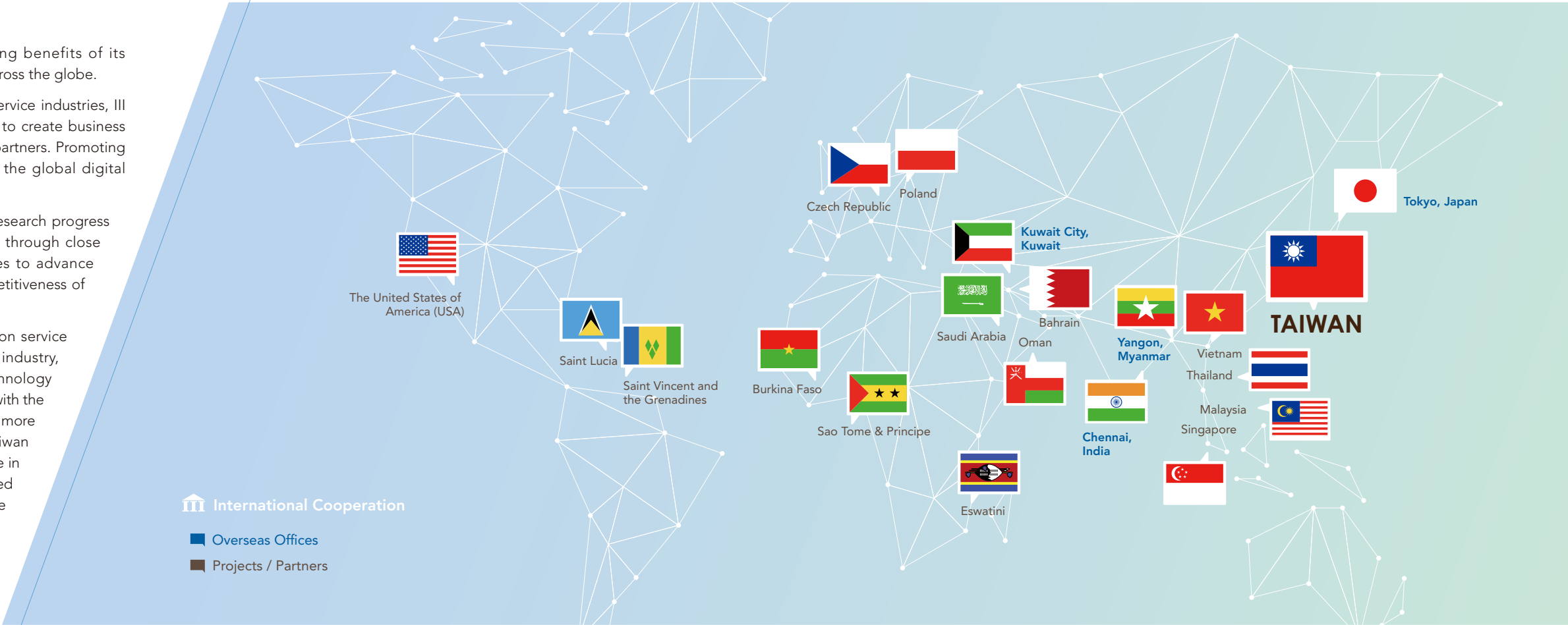
To support internationalization of Taiwan's ICT & information service industries, III expands its global network and develops exchange platforms to create business opportunities through collaborations with significant strategic partners. Promoting international collaboration and business as well as bridging the global digital divide are III's main goals.

The focus of collaboration is to expedite R&D undertakings, research progress and the expansion of joint international technology research through close collaboration with foreign enterprises and research institutes to advance technology, set technological standards, and elevate the competitiveness of ICT applications

To boost international business for Taiwan's ICT and information service industries, III cultivates professional talents for the domestic industry, promotes business incubation, market development, and technology exchanges. Besides supporting businesses, III also works closely with the government to help bridge the global digital divide by setting up more than 101 APEC Digital Opportunity Center (ADOC) and 10 Taiwan Digital Opportunity Center (TDOC) for the disadvantaged people in many regions throughout the world. Besides achieving its intended goals, the ADOC and TDOC network also helps promote the visibility of Taiwan's ICT technologies and their penetration into the emerging markets of the Asia Pacific region..

III has also been active in promoting cooperations between Taiwan and Japan, for both private enterprises and local governments, based on the principle of reciprocity and mutual benefits with an aim to invigorate local economies as well as create win-win situations for both countries. To date, many new technology alliances have been forged between the enterprises of the two countries, and there is a significant increase of Japanese investment in Taiwan's technology sector due to such effort, and this trend will be continued.

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Read more about  
International  
Collaboration



## North America & Caribbean

- USA** · Information Security Testing
- St. Lucia** · E-document Exchange  
· PKI system  
· G-Net
- St. Vincent** · Consultancy for ISO 27001 (Info Security)  
· Programming Training  
· e-document exchange

## Eastern Europe

- Czech Republic** · Appointment / Registration System  
· iiiGuide Solution
- Poland** · iiiGuide Solution

## Middle East & Africa

- Bahrain** · E-Govt Training Course and Workshop
- Saudi Arabia** · Healthcare Training
- Kuwait** · ICT & Science Park Consulting, GIS  
· Training, Attendance System  
· Basic Manufacture Models Consulting  
· REU  
· Disaster Mitigation Consulting
- Oman** · Virtual Innovation Center Consulting
- Sao Tome** · E-Govt Consulting & Training  
· G-Net
- Swaziland** · National Data Center Consulting  
· Intelligent Transportation  
· Network Forensics  
· Mobile Commerce Consulting
- Burkina Faso** · ICT Training  
· Digital Inclusion

## South East Asia

- Malaysia** · Green Energy  
· SME ICT Enabled Cluster Consulting
- Thailand** · E-Govt Exchange Training Program
- Singapore** · ATE (Auto Test Equipment) Station for SMRT (Singapore Mass Rapid Transit)  
· KD8 : Mobile shopping APP generator
- Vietnam** · E-Govt Consulting for Ministry of Communication

International Partners

III has partnered with the leaders from Governments, Industries and Academia worldwide to establish international networks and platforms for collaboration in both technology and business development to benefit all parties involved. With international partners and overseas offices in Tokyo, Kuwait City, Yangon Myanmar, and Chennai India, III is well connected globally, and primed to assist Taiwan's ICT industry in extending their global reach.

R&D Partners

  
Kuwait Institute for Scientific Research



  
Massachusetts Institute of Technology



  
UNIVERSITÉ PARIS SAUTERRE





  
独立行政法人 情報通信研究機構





  
cea tech





  
innovation for life

Business Partners



























  
TOKAI コミュニケーションズ

Venture Capital Partners







  
Silicon Valley in a Box







International Research Cooperation

III collaborates with research institutes in the United States, Europe, Japan, and other part of the world for joint research and standard setting in areas such as smart cities, Internet of Things(IoT), 5G communication, and big data analytics.

In the recent years, under the support of the Ministry of Economic Affairs (MoEA) Taiwan, III has forged alliance with European research institutes and companies. Currently, III has maintained a close relationship with more than 30 EU research institutes such as INRIA, TNO, Fraunhofer, CEA-Leti and VTT, etc, and have participated or facilitated Taiwan ICT enterprises in more than 10 EU projects. In 2013, the IoT Forum was established and III was invited to become one of its founding members. Through this network, III's research teams also joined the EU-funded projects such as Clear5G in the area of 5G, IoT projects in the area of Smart Energy and Smart Commerce.

There are 3 types of international research collaboration models that III engages in:

Joint Research Collaboration

This type of research collaboration includes bilateral and multilateral international collaboration projects where individual participants contribute to the project goals collaboratively set by all participating parties, and each party is responsible for its own budget.

Contract-Based Research Collaboration

III conducts technology research services, talent training, and market analysis for international organizations and government agencies on a contractual basis.

Talent Exchange

The purpose of the talent exchange is to give engineers from III and partner institutes exchange opportunities so that participants can gain new experiences, competencies and relationships. Talent exchange projects provide hands-on experience for engineers from both sides of the participating parties.

International Business Collaboration

III, in cooperation with Taiwanese institutes and industry partners, endeavors to promote and deliver ICT technologies, solutions and services to the international markets. The focus of the business collaboration includes training, consulting services, proof of concept, proof of services, and proof of Business.

Training and Marketing Events

III and our industry partners have conducted technology training and marketing events in many fields and topics ranging from e-Government, Smart City, Internet of Things (IoT), Cybersecurity, Big Data and Cloud Systems, to name a few.

Proof of Concept/Service/Business

III and our industry partners have implemented many successful international proofs of service projects in the fields of smart agriculture, e-Marketing, smart energy solutions and e-learning.

Project Consultancy Services

III and our industry partners have provided consultancy services for e-Government initiatives, Government network solutions, IT project management systems, reverse engineering workshop, and numerous other topics.



# Other Cooperation and Exchange

## Professional Cultivation

The goal is to increase the technology proficiency of ICT professionals in Taiwan and to help these individuals succeed in their personal careers by using the most effective learning methodologies.III has been conducting ICT training programs to help provide skilled workforce for the rapid development of the information technology industry in Taiwan since 1979. With decades of experience in education and training, III has trained more than 460,000 professionals in various technical fields. The impact has spread to the government, academia and research institutions.

## Multinational Talent Exchange

To foster the continual growth and competitiveness of the gaming industry, III sets up an exchange platform for the young entrepreneurs and game developers in both Taiwan and Japan to collaborate and tap into one another's ideas and talents while instilling a sensitivity to and awareness of other cultures which are critical in gaming design for the global market. Coupling this platform with an incubation program, III helps aspiring young entrepreneurs to start their own business by providing necessary coaching in technical and management aspects of running a business as well as other assistance.

## Market Intelligence Consultancy

III's Market Intelligence & Consulting Institute (MIC) is positioned to provide intelligence, insight, and unique perspective on ICT industry which are necessary for our clients in the government and industry to make winning strategic decisions. In a dynamic ICT environment, its regional insight uncovers nascent trends and untapped opportunities-regional insight is the core competence of MIC's research.

## Research Reports

Research reports are available for purchase, which contain selected publications from our Industry Intelligence Programs. MIC's Research Reports are presented in several report types, including statistical reports, topical reports, and Monographs-a comprehensive collection of researches that help our clients to have a full spectrum of knowledge on various topics.

## Industry Intelligence Programs

MIC's Industry Intelligence Programs (IIP) are subscription-based programs that provide an in-depth look at a wide range of ICT sectors, including communication, computing, consumer electronics, and display. Subscribing to these programs is the best way for our clients to be kept informed of the latest industry development in their business area. IIP subscriptions are valid for one year and subscribers are also entitled to many of MIC's regularly issued practical and informative intelligence reports.

## International Events

As an internationally recognized advanced information society, Taiwan can be a development model for many countries aspired to quickly transform themselves into advanced information society. To this end, III organizes various events/ workshops to share the "Core Competence and Experience" with international partners, focusing primarily on government policies, R&D, business development, and entrepreneurship programs, etc.

Here are some examples:

### · IDEAS Show

Launched in 2008, IDEAS Show serves as a significant annual event to cultivate entrepreneurship of innovative services in Taiwan. As the event progresses it is shaped to align with the actual market requirements and trends. Participating teams are divided into categories and go through a vigorous 6-minute demo/pitch, each team showcases their idea and business plan to a panel of veteran entrepreneurs, business owners and investors as well as media. Only the winners of each category will present a keynote at the highlight of the IDEAS Show before a large audience, allowing them to gain publicity and press

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Read more about IDEAS Show

coverage, increase users, and most importantly attract investment. In the past 3 years, the IDEAS Show also partners with international accelerator and global venture capitals, allowing the nascent start-up to gain international exposure, foreign investment and potentially international market. To date, this program has accelerated more than 1,000 teams and accumulated a total investment of NTD 4.36 billion. III aims to provide the best support for startups and facilitate their development globally. This event has been recognized and sponsored by APEC since 2016.

### · Smart City exchange platform

European cities are normally densely populated with rich cultural life, active citizen participation, and highly developed and convenient public transportation systems. In the past decades, sustainability and low-carbon footprint figure prominently in the awareness and pursuit of the citizens and planners of many of these cities. All these are important hallmarks of smart cities, and the success of many European cities has also made them the models for the promotion of smart cities around the world. To promote smart city development and business opportunities for related ICT solution vendors, III together with Taipei Computer Association and New Taipei City Computer Association, organized several delegations to participate B2B matchmaking event in some of the model smart cities in European (i.e. Rome, Amsterdam, Eindhoven, Barcelona, and London), and held international conferences and hosted many multilateral visits.

### · Enhance the technical capabilities of AI talents with III and Japanese companies

We follow Taiwan's AI talent and industrial development trends and gain information on development trends in next-generation smart manufacturing and smart driving technologies developed in Taiwan and Japan. We promote AI technology cooperation and talent exchanges between Taiwan and Japan and sign MOUs on collaboration between Japanese companies and III to enhance the technical capabilities of AI talents. We organized multiple technical and talent cultivation and exchange programs in 2018 to strengthen the scope and intensity of collaborative development in autonomous driving for both countries.





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about  
International  
Projects

International Projects

Kuwait KISR Reverse Engineering Unit (REU) Program

The Kuwait Institute for Scientific Research (KISR) is a longstanding partner with III. The main goal of this project is to establish a highly professional and fully functional reverse engineering unit. Adhering to ISO standards, at the conclusion phase of this project, KISR's Reverse Engineering Unit (REU) will be equipped with the latest equipment, instruments, software such as 3D, CAD, CAM, CAE, and the know-how to deliver high quality prototypes for mechanical components as well as the blueprints for their potential Commercialization opportunities.

The REU consulting team has completed the SOPs for producing over 100 major equipment parts and trained REU staff during the course of the project. Three model cases were completed for KISR research centers including the Energy and Building Research Center (EBRC), the Water Research Center (WRC), and the Petroleum Research Center (PRC). Upon the successful completion of these projects, the REU lab has collaborated with other research centers within and outside KISR for future projects and business opportunities including smart medical technology, which require a high level of customization for meeting patients' needs.

Location	Kuwait
Project name	Reverse Engineering Unit Consulting Project
Client	Kuwait Institute for Scientific Research (KISR)
Project Duration	(2014-2020)

Enhance the technical capabilities of AI talents with III and Japanese companies

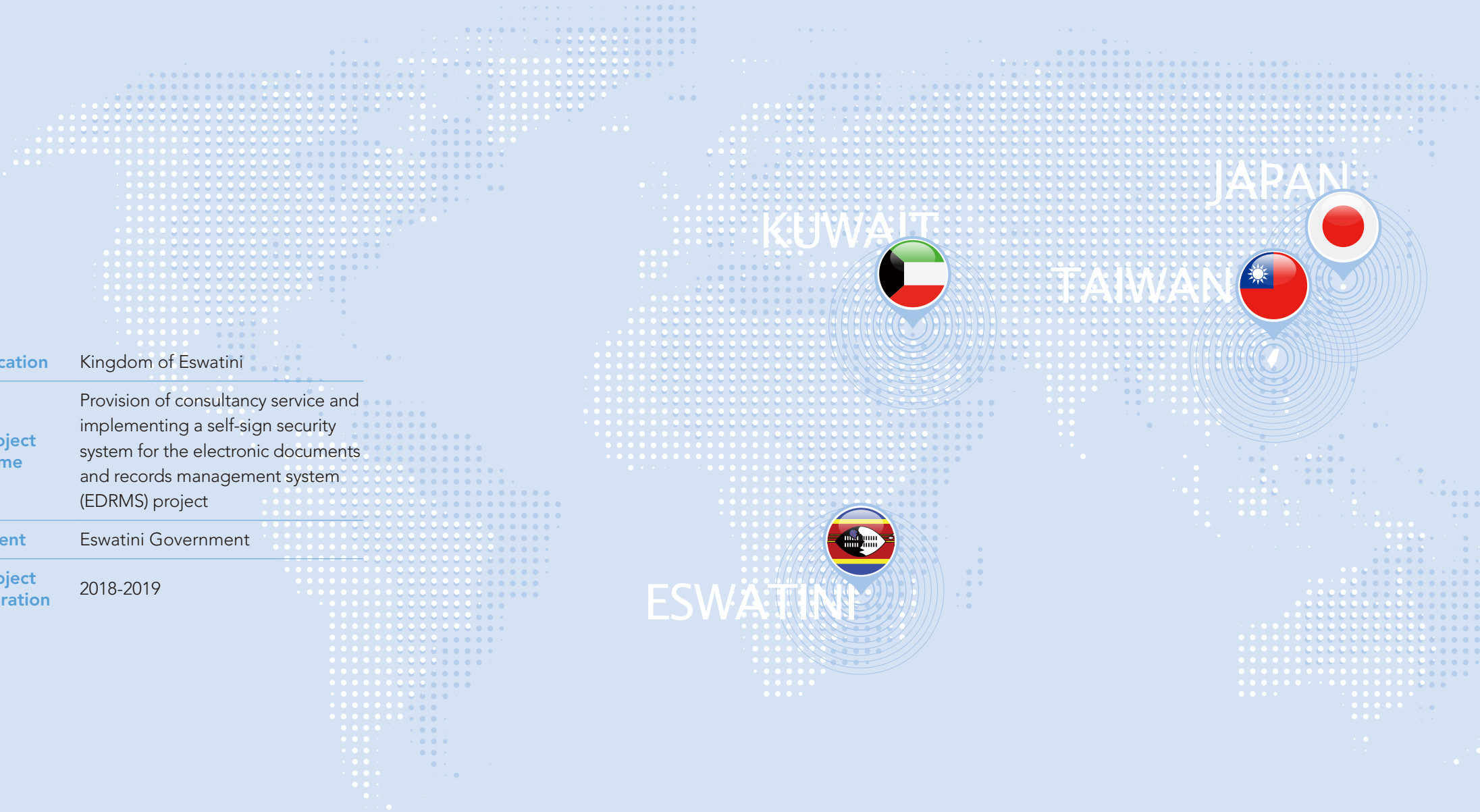
Taiwan Japan Industry Center maintains close connections in Japan and began assisting the Ministry of Economic Affairs in 2018 in consultations with Japanese companies on the possibilities of collaboration on talent cultivation. We aim to build a bridge between AI technology R&D and talent exchanges between Taiwan and Japan, strengthen the scope and intensity of AI collaboration between the two parties, jointly develop autonomous driving powered by AI, cooperate and expanding business opportunities in the global market, and promote a future of smart transportation.

Location	Taiwan
Project name	Enhance the technical capabilities of AI talents with III and Japanese companies
Client	Taiwan
Project Duration	2018-2019

Eswatini PKI and EDRMS POC Project

In order to increase government efficiency in public services while protecting the security of information, the Eswatini Government chose to use Public-Key Infrastructure (PKI) technology as an information security infrastructure for e-government systems. Among all the e-government systems, Electronic Documents and Records Management System (EDRMS) is one of the most suitable systems to implement the PKI functions, as it can use PKI to do user authentication. It can also use PKI to enable users to sign the e-documents digitally so that they cannot deny the operation they performed (non-repudiation); PKI can encrypt and decrypt the document using users' digital certificate. An EDRMS Proof of Concept (POC) was built to demonstrate the security features. After the training, the developers of Eswatini are expected to be able to apply the EDRMS security features to other suitable e-government systems.

Location	Kingdom of Eswatini
Project name	Provision of consultancy service and implementing a self-sign security system for the electronic documents and records management system (EDRMS) project
Client	Eswatini Government
Project Duration	2018-2019





# 2018 MAJOR EVENTS

Jan.

**01/25 ▶** III developed the narrowband IoT (NB-IoT) solution and conducted live demonstrations in the “2018 National Symposium on Telecommunications” from January 25 to 27 to help domestic companies achieve success in the low-power wide-area network (LPWAN) technology market.

Feb.

**02/20 ▶** III’s “Smart School Alliance” and “X-Parking Smart Parking Guidance Solution” received the “Outstanding Digital Opportunity Award” and “Outstanding Mobile Application Award” in the 2018 WITSA Awards. **1**

Mar.

**03/02 ▶** To respond to employees’ needs and form cohesion and consensus, III organized the “III, High High High - Passion Grand Gathering” event during Lantern Festival on March 2 to exchange new wishes for the new year. **2**

Apr.

**04/10 ▶** III used AI technology to assist the transformation and upgrade of Eclat Textile Co., Ltd. It established an automatic system for importing purchase orders to fully streamline manual operation procedures, establish a comprehensive database for AI smart analytics, and provide solutions for AI upgrades for traditional industries in Taiwan.

**04/18 ▶** III’s spin-off InSynerger Technology Co., Ltd. received funding of more than NT\$100 million companies such as Lite-On Technology Corporation and Aaeon Technology Inc. to form alliances for grasping business opportunities in the IoT sector.

May

**05/15 ▶** III achieved great results in cross-sector talent cultivation and the DIGI+Talent Accelerator & Jumpstart Program received the Innovation Award in the ATD Awards, known as the Oscars for global talent cultivation in 2018.

**05/23 ▶** III responds to the New Southbound Policy and signed an MOU for cooperation with the National Electronics and Computer Technology Center (NECTEC) of the National Science and Technology Development Agency (NSTDA) to open up a new chapter in exchanges in the ICT industry between Taiwan and Thailand.



Jun.

**06/07 ▶** III and the Joint Commission of Taiwan jointly developed the Smart Healthcare Quality Management Solution” to connect information technology and medical expertise and guide the development of smart healthcare services in Taiwan. **4**

Jul.

**07/13 ▶** III promoted the establishment of outdoor wireless networks in the villages of indigenous tribes in the i-Tribe project. It has completed the establishment of the system in 190 villages since 2013. III organized the “2018 i-Tribe Wireless Broadband Launch Ceremony” in the Pasikau Village in Yanping Township, Taitung County on July 13. **5**

**07/24 ▶** The results of the Jury’s Awards in the 2018 IDEAS Show were officially announced on July 24 and six teams including Dipp, Uspace, Olis Innovation, Toss Lab, Luxrobo, and EzQ won the annual Jury’s Awards.

Aug.

**08/13 ▶** III partnered with Microsoft Taiwan and Kaohsiung Medical University in the cultivation courses for cross-sector AI medical information talents.

**08/24 ▶** III partnered with the Central News Agency in opening up new frontiers in new media innovation and application services. **6**

Oct.

**10/18 ▶** III’s “Digital Elite Study Cube (DESC)” won first place in the Social Service Award in the 2018 Asia Pacific ICT Alliance (APICTA) Awards.

**10/19 ▶** III and Dalin Tzu Chi Hospital jointly developed the “Knee Health Management System” to improve the efficiency of following up on the management of individual cases and instilling new hope in the digital transformation of the healthcare industry.

Nov.

**11/02 ▶** To concentrate internal energy, connect external resources, and develop transformation technologies or solutions that meet market demand, III launched the Special Interest Group (SIG) exchange meetings on November 2.

**11/19 ▶** III received the R&D 100 Awards for the “Monitor and Diagnose Framework for Manufacturing Processes (MDFMP)” and “Hybrid MassLINK Bus Stop”.

Dec.

**12/10 ▶** III organized the closing meetings of the Advanced Research Advisory Committee for 2018 on December 10 and 11 and invited 8 top experts from home and abroad including entrepreneurial expert Cheng Wu from Silicon Valley and the famous international angel investor James Lee to visit and review the innovative forward-looking projects. **7**

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Read more  
about  
Major  
Events





# FINANCIAL REPORTS

## Statements Of Comprehensive Income

Unite : Million NTD

Account	2018	2017
<b>Total revenues</b>	<b>\$ 5,378</b>	<b>\$ 5,537</b>
Service revenues	5,271	5,479
Non-operating revenues	107	58
<b>Total expenses</b>	<b>\$ 5,322</b>	<b>\$ 5,528</b>
Service costs	4,842	5,010
Administrative expenses	458	458
Non-operating expenses	23	70
Income tax benefit	(1)	(10)
<b>Net surplus</b>	<b>\$ 56</b>	<b>\$ 9</b>
<b>Other comprehensive income, net</b>		
Gain (loss) on remeasurement of defined benefit plans	1	(3)
Share of other comprehensive (loss) income of associates accounted for using equity method	(4)	4
Income tax relating to components of other comprehensive surplus	-	-
<b>Total other comprehensive (loss) income for the year</b>	<b>\$ (3)</b>	<b>\$ 1</b>
<b>Total comprehensive income for the year</b>	<b>\$ 53</b>	<b>\$ 10</b>

## Balance Sheets

Unite : Million NTD

Account	2018	2017
<b>Assets</b>		
Current assets	\$ 3,487	\$ 3,664
Cash and cash equivalents	415	863
Current investment in debt instruments without active market	1,726	1,374
Notes and accounts receivable, net	949	1,019
Prepayments	64	62
Restricted assets	311	308
Other current assets	22	38
Investments, long-term receivables, loans and reserves	1,026	1,307
Pension payment	370	458
Financial assets measured at cost-non-current	127	67
Non-current investment in debt instruments without active market	-	272
Investments accounted for using equity method	529	510
Property, plant and equipment	345	327
Investment property	306	310
Intangible assets	373	327
Other assets	128	112
<b>Total assets</b>	<b>\$ 5,665</b>	<b>\$ 6,047</b>
<b>Liabilities and Net Position</b>		
<b>Liabilities</b>		
Current liabilities	\$ 1,453	\$ 1,764
Notes payable	6	8
Accounts payable	492	570
Other payables	664	821
Current tax liabilities	-	2
Advance receipts	245	321
Other current liabilities	46	42
Non-current liabilities	856	981
Net defined benefit liability, non-current	761	876
Deferred tax liabilities	7	12
Other non-current liabilities	88	93
<b>Total liabilities</b>	<b>\$ 2,309</b>	<b>\$ 2,745</b>
<b>Net Position</b>		
Funds	\$ 700	\$ 700
Other surplus	4	4
Accumulated surplus	2,650	2,594
Other net position	2	4
<b>Total net position</b>	<b>\$ 3,356</b>	<b>\$ 3,302</b>
<b>Total liabilities and net position</b>	<b>\$ 5,665</b>	<b>\$ 6,047</b>



2018 HONORS

2018 RD100 Awards

III Received TWO 2018 R&D 100 Awards for MDFMP Smart Manufacturing Solution & Hybrid MassLINK Bus Stop Serving Remote Areas. 1 2

iF Design Award

III Received iF Design Award for Health Posture Protector. 3

2018 APICTA Awards

III's "Digital Elite Study Cube (DESC)" won first prize in community service at 2018 Asia Pacific ICT Alliance (APICTA) Awards. 4

2018 WITSA Awards

III's "Smart School Alliance" and "X-Parking Smart Parking Guidance Solution" received the "Outstanding Digital Opportunity Award" and "Mobile Excellence Application Award" in 2018 WITSA Awards. 5

CLICK!

Read more about HONORS

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## ANNUAL REPORT



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