SIEMENS

Siemens to co-create 2020+ with Taiwan in the age of A.I.

- **Siemens has engaged in AI R&D since 1980s and its long-term strategic plan has made it a pioneer in the development and implementation of industrial AI applications**
- **Siemens invests over 500 million euro annually on training of talents. To date, it has nurtured over 800 experts in AI and data analysis, and has multiple success stories in implementing AI solutions throughout the world**
- **Siemens combines AI and domain knowledge and applies them in various industries, aiming to accelerate Taiwan's digital transition and sustainable development**

Artificial Intelligence (AI) has become a crucial area of development for Taiwan and its industries. The Ministry of Science and Technology (MOST) designated 2017 as the starting point for Taiwan's AI development and it is estimated to devote NT$16 billion to creating an innovation-oriented AI ecosystem. In 2018, the Executive Yuan instituted the Taiwan AI Action Plan, bringing together domestic and international resources, along with the capacities of international partners. The initiative strived to foster the development of AI and related applications with the objective of realizing the "Digital Nation, Smart Island" vision. This year (2019) marks the 30th anniversary of Siemens' presence in Taiwan. Siemens, embracing the pledge to "Grow Taiwan Together," has long been committed to close cooperation with the public and private sectors, providing specialized technologies that have helped create important milestones in Taiwan's economic and social development. Siemens intends to add more depth to AI-related applications for industries in Taiwan, accelerating Taiwan's digital transformation, making Taiwan a smarter place, and underpinning sustainable development.

Looking ahead to 2020 and digitalization trends beyond, Siemens has been focusing on 14 core technologies, including Additive Manufacturing, Autonomous Robotics, Blockchain Applications, Connected (e)Mobility, Connectivity and Edge Devices, Cybersecurity, Data Analytics, Artificial Intelligence, Distributed Energy Systems, Energy Storage, Future of Automation, Materials,

Power Electronics, Simulation and Digital Twins, and Software Systems and Processes. In recent years, Siemens introduced a cloud-based, open IoT operating system MindSphere, which creates a foundation for AI deep learning and smart algorithms. In addition, Siemens invests over 500 million euros annually in the training of highly skilled talents. To date, the company has cultivated over 800 specialists in AI and data analysis and has created impressive achievements in the implementation of AI in industries around the world. Solutions developed by Siemens are responsible for enhancing predictive analysis and reducing quality testing costs in manufacturing by 30%; reducing train delays by 33% and achieving train safety reliability to 99.9%; and cutting nitrogen oxide emissions from gas turbine by 20%, while optimizing its operational efficiency.

Erdal Elver, President and CEO of Siemens Taiwan stated, "The collection and analysis of big data, together with domain know-how and smart algorithms of AI technology, provide decision makers with a more accurate basis to define strategies, thereby enhancing industrial productivity and efficiency, while creating substantial value in social and economic development. Siemens has been involved in AI R&D for over three decades, combining electrification, automation, and digital expertise with AI technology. Siemens is committed to assist Taiwan in comprehensive digital transition and smart upgrading, leading to smart manufacturing, sustainable energy, and intelligent infrastructure."

Looking back at fiscal 2018, Siemens completed a number of representative projects in three main domains, namely Future of Manufacturing, Sustainable Energy, and Intelligent Infrastructure, which have helped create a solid foundation in the introduction of AI throughout industries and infrastructure here.

- <u>Future of Manufacturing:</u> Siemens signed a memorandum of understanding (MoU) on the use of MindSphere with SYSTEX Corporation, WiAdvance Technology and NEXCOM International in global strategic partnerships. Leadermac Machinery and LISKY INDUSTRIAL introduced MindSphere and other Siemens digital solutions, strengthening their manufacturing quality and efficiency. Siemens and the Taipei City Government's Department of Education signed a MOU on a pilot project to train digital talents, strengthening links between the industrial and academic sectors, while enhancing the international competitiveness of Taiwan's technical personnel. Siemens also launched a Digital Experience and Application Center (DEX) in Taichung Office, providing advanced digital solutions and educational training for machine tool manufacturers.

- Sustainable Energy: Siemens provided Taiwan Power Company with Energy IP, its Meter Data Management System (MDMS) software that optimizes power transmission efficiency and power supply quality. This will be crucial in the management of over three million smart meters installed throughout Taiwan by 2022 and ensuring the transmission stability of renewable energies.

- Intelligent Infrastructure: Siemens equipped Taipei Nanshan Plaza with solutions to reduce energy consumption and operating costs of the building and assisted the customer in winning the Excellent Intelligent Green Building DESIGN Award of Asia Pacific Intelligent Green Building Alliance (APIGBA). The Air Force- JiaShan Base and the Taipei Metro Circular Line are employing Siemens intelligent building management platforms, creating reliable and stable environment control systems. Both projects received the Public Construction Golden Quality Award. The Company and its partners won bidding for the Taoyuan Metro's Green Line electrical and mechanical systems, providing the advanced Trainguard MT Communications-Based Train Control system (CBTC)", traction drives for the trains and the direct current traction (DC) power supply. This is creating Taiwan's most advanced intelligent rapid transit system.

In 2019, Siemens will continue its engagement in Future of Manufacturing, Sustainable Energy, and Intelligent Infrastructure, and will establish a MindSphere World for IoT users in Taiwan. This will bring together industrial, government, and academic experts in forging an Industrial IoT ecosystem. It also plans for the preliminary establishment of a Digital Experience and R&D Center (DEX) at the Intelligent Manufacturing Pilot Production Site in Taichung. In support of the government's Asia Silicon Valley initiative, Siemens will display advanced digital technologies at the Hutoushan IoT Innovation Base, providing the industrial, public, academic, and research sectors with an opportunity for knowledge exchanges and mutual learning. Furthermore, Siemens will initiate exchanges and cooperation with industry, government and academic institutions in the coming years, thereby assisting Taiwan in fully implementing and popularizing AI applications throughout industries "Co-create 2020+ in the age of A.I."

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Siemens AG (Berlin and Munich) is a global technology powerhouse that has stood for engineering excellence, innovation, quality, reliability and internationality for more than 170 years. The company is active around the globe, focusing on the areas of electrification, automation and digitalization. One of the largest producers of energy-efficient, resource-saving technologies, Siemens is a leading supplier of efficient power generation and power transmission solutions and a pioneer in infrastructure solutions as well as automation, drive and software solutions for industry. With its publicly listed subsidiary Siemens Healthineers AG, the company is also a leading provider of medical imaging equipment – such as computed tomography and magnetic resonance imaging systems – and a leader in laboratory diagnostics as well as clinical IT. In fiscal 2018, which ended on September 30, 2018, Siemens generated revenue of €83.0 billion and net income of €6.1 billion. At the end of September 2018, the company had around 379,000 employees worldwide. Further information is available on the Internet at www.siemens.com.