Photo by Theerasak Saksritawee

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A different kind of medal

While all eyes are on the medal counts at 2016 Olympics in Rio de Janeiro, not many people know that Taiwan has long been a top-notch manufacturer of athletic goods used by many Olympic participants.

For example, more than 20 athletes are using Made-in-Taiwan badminton racquets at Rio. A well-known international brand also sourced water-free dyeing fabrics from Taiwan for various countries' Olympic uniforms. Already, at 2014 FIFA World Cup, international teams were wearing jerseys made in Taiwan with recycled plastics bottles.

Hsu Shu-ching

The list doesn't end there. The soccer balls developed by the Taiwanese were used at this year's World Cup, while Merida bicycles have long enjoyed a reputation among professional cyclists. According to Taipei-based CommonWealth magazine, Taiwanese manufacturers of athletic wear and gears generated more than NT$460 billion (US$14.65 billion) annually. Of which, about NT$115.6 billion a year is generated from the production of bicycles.

At Rio

Taiwan weightlifter Hsu Shu-ching earned the nation's first gold medal of the Olympic Games in Rio de Janeiro August 7 by lifting a total of 212 kilograms in the women's 53 kg event. Following Hsu was her peer, Kuo Hsing-chun, who bagged a bronze medal in women's 58-kilogram division the next day with a combined lift of 231 kilograms. Three women archers, Tang Ya-ting, Le Chien-ying and Lin Shih-chia, competing for Taiwan also gained Olympic glory by winning bronze in the women's team category, outperforming their Italian opponents 5-3. This is the first time Taiwan archers stood on the Olympic podium since the 2004 Olympics in Athens when the nation claimed a men's team silver and a women's team bronze. A total of 58 Taiwan athletes traveled to Rio for the Olympic Games.

So far Taiwan has won one gold and two bronze medals. Before Rio, Taiwan had won a total of 2 gold, 7 silver and 12 bronze medals at Olympic Games from 1956 to 1972, and from 1984 to 2012.

Source: Taipei Representative Office in Hungary, Taiwan Today, Photo: Sports Administration, Ministry of Education

Taiwan-proposed big data initiative adopted by APEC

The Taiwan-proposed Advancing Big Data Applications in Trade project was approved August 1 by the Asia-Pacific Economic Cooperation Committee on Trade and Investment (CTI), underscoring Taiwan's consistent efforts to create a modern trade environment in the Asia-Pacific region, according to the Ministry of Economic Affairs.

"This project aims to encourage APEC member economies to explore the possibilities and benefits of a data-driven method for improving cooperation and information sharing in the field of international trade," said Yuan Hung-lin, executive secretary of the Multilateral Trade Affairs Division under MOEA's Bureau of Foreign Trade (BOFT). "In particular, small and medium-sized enterprises in the region will benefit greatly from big data technologies, allowing them to identify new trade and economic development opportunities."

Source: Taiwan Today, Photo: © Aiconimage | Dreamstime

To promote big data applications in international trade and boost trade momentum in the Asia-Pacific region, the BOFT proposed the Advancing Big Data Applications in Trade initiative at the APEC CTI meeting held May 10-11 in Arequipa, Peru. The US$150,000 MOEA-sponsored initiative received a warm response from APEC member economies, gaining co-sponsorships from Australia, South Korea, the Philippines and Thailand, Yuan said.

Taiwan will cooperate with the aforementioned four countries to organize a seminar at Taipei World Trade Center (TWTC) October 6-7 that will include specialists and representatives of trade promotion organizations from all around the Asia-Pacific region, according to the executive secretary. These experts will share their experiences and perspectives on big data applications and development trends in the area of trade.

Additionally, seminar participants will be invited to visit the 2016 E-Commerce Expo Asia also held at TWTC October 5-7. The event will showcase new technologies, trends and applications for big data, as well as innovations in cross-border e-commerce, digital marketing and mobile commerce. It is expected that officials from all 21 APEC member economies and representatives from the APEC Secretariat will attend the events, Yuan said.

APEC is an important platform that allows Taiwan to foster trade and economic

exchanges and cooperation with Asia-Pacific countries, according to MOEA. Over the years, Taiwan has spearheaded several projects to accelerate regional growth and proposed a number of SME-related initiatives, which have secured financing of US$1.73 million from the APEC Support Fund. This year, Taiwan, along with the Philippines and Malaysia, presented the next step in APEC's Online-to-Offline (O2O) Initiative titled "Enhancing SME Digital Competitiveness and Resilience toward Quality Growth," which is designed to create a network of O2O experts and lead to a series of forums and the publishing of an APEC SME Digital Competitiveness and Resilience Guidebook. The plan has thus far gained 13 co-sponsors, as well as approval and funding of US$136,260 from APEC.

President Tsai vows to achieve indigenous transitional justice

President Tsai Ing-wen reiterated the government's commitment to achieving transitional justice for the nation's indigenous peoples in an impromptu meeting with protesters in front of the Office of the President in Taipei City August 3, two days after offering an official apology to indigenous groups on behalf of the Republic of China (Taiwan) government.

Acknowledging the indigenous protesters' concerns and suggestions, Tsai reaffirmed the government's determination to address past injustices and promote reconciliation through the establishment of an Indigenous Historical Justice and Transitional Justice Commission (IHJTJC) under the Office of the President. When asked where she places the nation's indigenous peoples by one of the demonstrators, the president held her hands to her heart and responded, "You are here".

Source: Taiwan Today, Photo: Office of the President

A local newspaper cited a member of the National Security Council as saying Tsai will embark on a tour of indigenous communities across the country in the next two weeks to discuss the government's plans and gather opinions. Tsai made the formal apology for the discrimination and neglect suffered by Taiwan's indigenous peoples over the past four centuries August 1 at an event commemorating Indigenous People's Day at the Office of the President. During the address, she said the government will pursue reconciliation by setting up the IHJTJC, implementing the Indigenous Peoples Basic Law, and establishing a platform for eventual indigenous autonomy.

The president also vowed her administration would give greater attention to the economic and social development of indigenous peoples and create an Indigenous Legal Service Center to address conflicts between tribal customs and modern laws.

Following the apology, protesters gathered in front of the Office of the President to express reservations about the potential effectiveness of the IHJTJC due to its lack of investigative powers. Tsai responded to their concerns by explaining the

government will continue to review relevant laws going forward and, if necessary, create new legal frameworks to promote indigenous transitional justice.

During the meeting with the protesters, Tsai vowed to fulfill the pledges in the apology, in which she stated the government would begin the process of delineating and announcing indigenous traditional territories and lands November 1.

According to the Cabinet-level Council of Indigenous Peoples (CIP), indigenous Malayo-Polynesian peoples have lived in Taiwan for millennia. The latest CIP statistics showed that the population of these groups in Taiwan stood at about 550,000, or 2.3 percent of the nation's total.

The 2016 Taiwan Automation Intelligence and Robot Show will kick off on August 31. The four-day event is expected draw thousands of visitors to get a first-hand glimpse into the latest development in robotics. The following article by Kelly Her provides a background to the event and the burgeoning robotics sector in Taiwan.

New Industrial Revolution

The increasing diversity of technologies on display at the Taiwan Automation Intelligence and Robot Show in recent years evinces the growing strength of the domestic robotics sector. At the 2015 edition of the trade fair, held from July 16 to 19 at the Taipei World Trade Center's Nangang Exhibition Hall, the nation's leading tech companies and research institutes showcased a huge variety of robots, ranging from entertainment and service devices to towering manufacturing machines.

The July event attracted around 63,000 local and foreign industry representatives, marking a 10 percent increase from the previous year. And while many visitors made some time to check out the creative humanoid entertainment bots, the vast majority of people in attendance had come to explore how advanced industrial machines are set to revolutionize manufacturing. "These robots are the driving force behind the technological transformation of the industrial sector," says Eric Chuo, chairman of the Taiwan Automation Intelligence and Robotics Association (TAIROA), which co-organizes the annual trade fair in conjunction with the Ministry of Economic Affairs (MOEA). "A nation's ability to take advantage of these devices, as well as its research and development [R&D] capabilities in this field, will be the major determinant of its industrial competitiveness over the next five decades."

Source: Taiwan Review, Photos: Chen Mei-ling

Chuo is also the chairman of Hiwin Technologies Corp., the world's second-largest supplier of motion control devices, key components of automation systems.

The growth of Taiwan's robotics industry has been fueled by rising international demand and extensive government-industry-academia collaboration. Figures released by the MOEA show that the production value of the sector rose from NT$45 billion (US$1.45 billion) in 2010 to NT$55.4 billion (US$1.79 billion) in 2014, and was projected to reach NT$58.4 billion (US$1.88 billion) in 2015. Industrial robots, including related components, comprise an approximately 90 percent share of the sector, while service robots make up the remaining 10 percent, MOEA statistics show.

Since the mid-2000s, the government has introduced a range of financial assistance schemes to promote the development of robotics technologies. In particular, the MOEA has sponsored a number of R&D projects on intelligent automation at the Industrial Technology Research Institute (ITRI), a government-supported applied research organization, and the Precision Machinery Research and Development Center (PMC), an industry body.

Intelligent automation is the integration of hardware, software and technical services to create machines that can perform a variety of tasks through a cycle of sensing, processing, reasoning and reacting. These systems are valued over traditional manufacturing machines because they can be reprogrammed to perform different functions.

Kuo Tzu-hsin, director of the Intelligent Robotics Technology Division at ITRI's Mechanical and Systems Research Laboratories, explains that government support for intelligent automation research initially centered on service robots, but the focus started shifting to industrial machines in 2010 in response to growing demand. "In the late 2000s, many Taiwanese companies operating locally and in mainland China

began to experience severe labor shortages or rising wage costs," he says. "So firms started incorporating robotics systems into their production lines."

Furthermore, the manufacturing paradigm in Taiwan has evolved in recent years from the mass production of uniform goods to small-volume runs of advanced products. This trend, which is especially apparent in the information and communications technology (ICT) sector, is a significant driver of local demand for intelligent automation systems.

The global market has long been dominated by a few players, including Germany's Kuka Robotics, Japan's Fanuc Corp. and Yaskawa Electric Corp., and Switzerland's ABB Robotics. These firms primarily produce robots for the automobile, steel and other heavy manufacturing industries.

Taiwanese robotics firms, therefore, are seeking to carve out a niche by targeting producers of ICT products, Kuo says.

To date, ITRI has developed delta robots, which consist of three arms connected to a single end effector and are used in precision manufacturing, and Selective Compliance Assembly Robot Arm (SCARA) robots, which are designed to mimic the function of a human arm and are commonly used in automated assembly. It has also created six-axis articulated robots and key components like controllers and grippers.

ITRI has already transferred these technologies to more than 20 local firms, including Advantech-LNC Technology Co., Cheng Uei Precision Industry Co. and Hiwin Technologies Corp. The institute also offers consulting, matchmaking and networking services.

The high-end robotics systems that his organization has created, Kuo explains, incorporate advanced force and compliance controls as well as vision-guided systems, which help ensure operator safety in human-robot collaborative environments and enable the machines to adapt to variations in the dimensions and locations of components being used in assembly processes. Meanwhile, ITRI's six-axis articulated robots can reach almost any point within their work envelope. The robotics technologies developed by ITRI are suitable for use in Taiwan's competitive consumer electronics, food, machine tool and semiconductor industries.

Hsiao Jen-chung, director of PMC's Robotic Automation Division, says that changes in social conditions in many major manufacturing nations are pushing up demand for industrial automation equipment. "Labor shortages have become widespread not only because of people's reluctance to take boring, dangerous and dirty jobs, but also because of shrinking workforces due to aging societies," he adds.

According to the Germany-based International Federation of Robotics, around 225,000 industrial robots were sold worldwide in 2014, up 27 percent from 2013. Asian nations, in particular mainland China and South Korea, were the primary sources of this growth. In total, about 140,000 units were sold in Asia last year, by far the highest volume ever recorded in the region. So far, PMC has developed delta, dual-arm and SCARA robots and

transferred these technologies to dozens of Taiwanese companies. The center also organizes the annual Intelligent Robotics Creative Competition for university students to stimulate interest in the field. For this year's contest, 14 companies, including Advantech-LNC, Delta Electronics Inc. and Hiwin Mikrosystem Corp., part of the Hiwin Group, contributed either prize money or components to the competition. The total value of donated parts exceeded NT$5 million (US$161,290).

Hiwin, which is headquartered in central Taiwan's Taichung City, was established in 1989 as a producer of precision machinery components such as ball screws and linear guideways. Enid Tsai, president of Hiwin Technologies, notes that many of these products are also used in the construction of robots, so the company was well placed to enter the robotics sector.

Over the past decade, Hiwin has succeeded in developing articulated, delta, SCARA and wafer robots. The latter machines are used in semiconductor manufacturing. The firm has also created a variety of components such as grippers and servo motors.

Hiwin works closely with ITRI and PMC on robotics systems development, and has conducted more than 20 research programs with local universities in order to cultivate talent in the field. The company is also heavily involved in TAIROA, which was founded by its chairman, Eric Chuo, in 2011. The association organizes a range of industry activities including lectures and technical exchanges, as well as training and certification programs for automation engineers.

Jerry Chiu, senior vice president of R&D at Hiwin, notes that there has been considerable discussion in recent years about the impending fourth industrial revolution, also dubbed Industry 4.0, in which complex manufacturing will be performed by highly intelligent cyber-physical systems that can control each other autonomously along the entire production chain. "The significance of the shift to a new manufacturing system – the smart factory – cannot be overemphasized," he says.

Taiwanese manufacturers, Chiu believes, have a good chance of tapping into the growing intelligent automation market given the country's well-developed ICT, machine tool and semiconductor industries. However, as relative newcomers to the sector, their biggest challenge is a lack of international brand recognition. Chiu suggests Taiwanese companies establish partnerships to maximize the utilization of local resources.

Michael Kuo, president of Taichung-based Advantech-LNC, which specializes in producing controllers, says that his firm formed a strategic alliance with Hiwin last year, and that this partnership has enabled the company to expand its customer base.

Like Chiu, Michael Kuo believes Taiwan's robotics manufacturers must establish strategic partnerships to boost their international competitiveness. "We should emulate the success of the local machine tool industry by developing a cluster where the up-, mid- and downstream sectors complement each other," he says. "If we cooperate, I'm confident we'll be able to gain a strong foothold in the global industrial robotics market."

Puzangalan Choir performs in Hungary

Taiwan's Puzangalan Choir, which is made up of children from the aboriginal Paiwan tribe, is visiting Hungary from August 12 to 19, 2016.**

The children performed their peoples' traditional songs at a senior citizens' home, Fővárosi Önkormányzat Idősek Otthona, in Budapest on August 13, to much acclaim. The residents were very happy to receive the group from the far-away country in Asia. Some of them even had tears welling up in their eyes when the children sang a traditional Hungarian song at the end of their performance.

Director Dobrainé Csernay Erzsébet thanked Ambassador Tao Wen-lung of the Taipei Representative Office in Hungary, for giving the residents the opportunity to listen to such amazing voice from Taiwan.

The choir, established in 2008 in Majia Township in Taiwan's Pingtung County, will perform in Szerencs and at the Cantemus International Festival Choir in Nyíregyháza.

"Puzangalan" means "hope" in the Paiwan language. The choir has performed in Germany and Japan. They garnered even more public attention when they sang the national anthem at President Tsai Ing-wen's inauguration ceremony this past May.

Text and photos: Taipei Representative Office in Hungary

***There are 16 officially recognized indigenous groups in Taiwan, which are Amis, Atayal, Bunun, Hla'alua , Kanakanavu, Kavalan, Paiwan, Puyuma, Rukai, Saisiyat, Sakizaya, Seediq (or Sediq), Thao, Truku, Tsou, and Yami (or Dawu). The collective population of these groups stands at approximately 550,000 (including about 13,800 people who did not identify themselves as belonging to any one group), or 2.30 percent of the total population of Taiwan. The three largest groups – the Amis, the Paiwan and the Atayal – accounted for 70.90 percent of the indigenous population.*

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