MyAdvantech

Corporate Sustainability 2021

Enabling a Sustainable Planet with ESG Vision

ADVANTECH BEAUTIFUL LIFE
Dedication to CSR to Make the World Better

SUSTAINABLE APPLICATIONS
Collaboration to Deploy IoT Applications and Realize ESG Vision

ESG GOVERNANCE
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ADVANTECH

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ADVANTECH BEAUTIFUL LIFE

Sustainability Objectives and Vision

During our 2021–2025 Five-year Vision Planning Meeting, held in September 2020, Advantech decided on several important environmental, social, and corporate governance (ESG) directives. These directives became cornerstones of Advantech's future direction. This shift, from implementing Corporate Social Responsibility (CSR)-based projects to ESG, is a substantial change that has the full support of the board of directors, management, and general employees. It is my hope that 2021 marks a successful beginning for Advantech's attempt to adopt and implement ESG as a basis for gauging the sustainability and social impact of our operations.

In recent years, both media and investors have emphasized the importance of ESG as an emerging trend. As one of the founders and Chairman of Advantech, I profoundly agree with this sentiment and am determined to steer Advantech's future toward becoming a company that adopts ESG to realize the spirit of Lita and co-enrichment.

Advantech was established 38 years ago, and I have now reached an age where I am considering passing on the torch. I believe that 2021 will be the watershed moment when we channel our experience from CSR into this new ESG era. It is thus my sincere wish to succeed with ESG in the long run and plant the seeds of corporate sustainability into the future systems we develop and the future talents we nurture. ■

Advantech Chairman, KC Liu
January 2021

Sustainability Development Strategy

Advantech is dedicated to our CSR policy and now wants to add ESG initiatives to our existing CSR commitments in order to overcome the global challenges we face. Since 2021, we have taken action on the following sustainability topics:

1. We have established the ESG & Corporate Sustainability Office, to which we have designated personnel to promote ESG initiatives. In addition, we have hired consultants for specific, special projects such as Science Based Targets (SBTi).

2. We have communicated with stakeholders and confirmed our ten major sustainability topics, such as green operations and product innovation. We have also established goals that can be achieved over the coming 3 years.

3. We aim to continuously improve the structure of our publicly disclosed ESG information. This will include regularly updated reports on our website. Hence, our actions toward sustainability and ESG can be comprehensively and transparently reviewed by our employees, partners, and other stakeholders.

4. We have leveraged our core products to proactively realize new smart energy management solutions. Through our IoT education platform, WISE-PaaS@Education, we are able to share and co-create with industry and academia worldwide.

Advantech has been working in the IoT industry for over 30 years. We have assisted many clients with industrial applications across a broad range of fields to help realize Industry 4.0. Our initiatives include the development of smart medicine and transportation that makes the world a more intelligent and sustainable place. In recent years, ESG has been a strong point of emphasis by people in many different fields, and I believe that based on the corporate vision of the Lita spirit and co-enrichment, as well as building a more sustainable world, Advantech and all of our employees will work together towards making Advantech a model ESG company. ∎

Advantech President of General Management, Eric Chen
January 2021

Initiatives for Corporate Responsibility and Sustainability Management

Advantech is committed to fulfilling its social responsibility and proud to take a leadership role in the industry. Accordingly, Advantech has launched a wide range of environmental, social, and governance (ESG) initiatives that incorporate its core capabilities and facilitate the realization of sustainable corporate governance and management.

In August and September of 2020, Advantech hosted a workshop where it officially announced its 2025 Vision Declaration. This declaration outlined its objectives as "Emphasize environmental, social, and corporate governance; implement the LITA spirit of co-enrichment; and enable an intelligent and sustainable planet." The term LITA is derived from the pronunciation of two Chinese characters that mean "to benefit others", or "to demonstrate altruism".

Advantech CSR and ESG initiatives

To determine how to align CSR projects with its core development strategies, Advantech carefully reviewed its existing commitments and the current CSR trends. This resulted in Advantech establishing the ESG & Corporate Sustainability Committee and Office. This office is responsible for analyzing all aspects of company operations through the lens of CSR and ESG values in order to improve business sustainability.

Advantech emphasizes transparent communication and defines its main stakeholders as employees, customers, partners, suppliers, shareholders/investment institutions, media, public associations, communities, and non-profit organizations. In addition to interacting with stakeholders during daily operations, Advantech uses channels such as CSR activities, conferences, surveys, on-site visits, and PR events to cultivate stronger relationships.

In 2020, Advantech conducted its first survey of its overseas branches. The preliminary results were provided to the ESG Office, which evaluated the company's development strategies and coordinated with the committee to offer advice on necessary amendments in the key categories listed below.

1. Customer service and partner co-creation
2. Innovative products and technology
3. Information security management
4. Supply chain sustainable management
5. Sustainable intelligent solutions
6. Eco design and product responsibility
7. Climate change strategies and energy management
8. Talent cultivation and retention
9. IoT education
10. Community care

2025 vision declaration and sustainable development goals

Advantech's ESG endeavors are based on its corporate vision and mission to "enable an intelligent planet". Considering the company's key development strategies, as well as the

ADVANTECH ESG GOVERNANCE

United Nation's 17 Sustainable Development Goals (SDGs), Advantech focused on developing AIoT core competencies and smart solutions to achieve SDG 7 and SDG 13 goals. Namely, improved energy efficiency, energy-saving enhancements in buildings and manufacturing, and low carbon emissions in logistics and retail.

Through innovative efforts aimed at popularizing IoT platforms and solutions, Advantech seeks to achieve SDG 4 and SDG 17 goals by providing education outreach and learning opportunities, while also strengthening global partnerships to ensure sustainable development.

As an IoT and AIoT industry leader, Advantech continues to create sustainable, intelligent solutions that facilitate the realization of international SDG goals and its own ESG vision. Advantech regularly reviews its policies to better incorporate its core competencies and fulfill its social responsibilities in order to achieve sustainable corporate management. For more information regarding our corporate social responsibility initiatives, refer to the Advantech 2020 CSR Report, Chapter 1 - Vision and Objectives on Sustainability. ■

Advantech CSR Website   Advantech CSR Report

Advantech 2025 Vision and Focus on UN SDGs

Community Enrichment

- ABLE Club for employee and community enrichment
- Diverse talent empowerment strategies
- Agile network organization for accelerating innovation

AIoT Popularization

- AIoT Academy
- AIoT Innoworks
- Ecosystem partnership

2025 : 50 universities participated; 100+ i.App co-created with 500+ domain SIs

4 Quality Education   **17** Partnerships for the Goals

Green Operations

- Climate change strategies and energy management
- Green design and products
- Eco-friendly solutions

2025 : 20% renewable energy; SBTi; TCFD; CDP A

7 Clean Energy   **13** Climate Action

Enabling an Intelligent Planet

ADVANTECH

Collective Efforts Lead to Advantech's ESG Achievements

Advantech has established clear environmental, social, and governance (ESG) goals, strategies, and guidelines, as well as standards for communicating with external customers and social groups. It seeks to drive all stakeholders toward sustainable management and development as part of its corporate aim to achieve an intelligent planet.

Through the collective effort of its main stakeholders, Advantech has achieved several goals regarding ESG by strengthening core competencies, fulfilling its social responsibilities, and contributing to a sustainable planet. As of 2021, Advantech remains firmly committed to its ESG targets and aims to realize its commitments over the next five years so they can deliver even better results.

Advantech's ESG achievements in 2020

Advantech has already delivered several successful ESG projects. These achievements are divided into three categories — strengthening core competencies, fulfilling social responsibilities, and building a sustainable planet.

1: Commit to corporate operations and governance, and employee-care to strengthen core competencies.

Advantech's performance — in terms of corporate operations and governance, as well as employee welfare — is the foundation of its core competencies. Advantech posits that its ongoing success, growth, and brand development are rooted in the values of its employees, customers, and partners across the world. Indeed, It was ranked fourth on the Best Global Taiwan Brands list in 2020 – a recognition of its globally integrated regional competence (GIRC) business strategy.

As an employee-oriented, altruistic enterprise, Advantech has invested over NT$6.5 million in employee club activities and welfare. Advantech provides its employees with diverse, interdisciplinary, and cross-border work opportunities to help them advance their careers.

2: Improving industry–academia cooperation and advancing the common good fulfills social responsibility.

Advantech proactively supports schools, universities, hospitals, and many other organizations and groups through industry-academia cooperation, internships, and scholarships sponsorships. Projects such as AIoT InnoWorks, Elite100 Internship, Sustainable Education Platform, and ACT Dreamers have helped many skilled young people over the years.

One of the spotlight achievements regarding community care in 2020 was the provision of extensive support to Taiwan's public health and medical systems. During the COVID-19 pandemic, Advantech provided funds to several hospitals in Taiwan for the establishment of telemedicine systems.

3: Focusing on green operations, environmental management, and low-carbon footprint business practices helps build a sustainable planet

As part of its commitment to building a sustainable planet, Advantech has worked on several projects concerning green operations,

environmental management, and low-carbon footprint business practices. It strives to protect the environment by preventing pollution, using less energy and raw materials, reducing waste generation, and employing clean production technologies. This involves modifying production processes to reduce pollutants generated rather than using end-of-pipe solutions. Advantech's overall greenhouse gas emission density per unit revenue in 2020 decreased by 2.1 percent compared to 2019, and the company was ranked on the B List of the 2020 Climate Disclosure Project climate change questionnaire evaluation.

Setting higher goals for 2025 and building on existing solid foundations
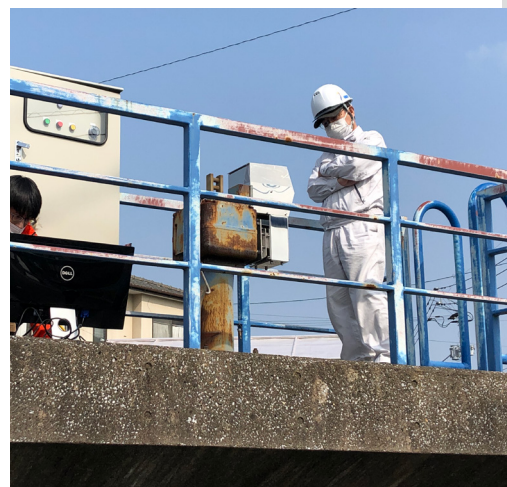
Looking ahead, Advantech's ESG Office will continue to collaborate with departments and business units to further build on the solid foundation laid so far and set new goals. Targets for 2021 include increasing brand value by double digits, reducing disaster recovery time to less than 24 hours, realizing zero environmental pollution, ensuring zero incidents of human rights violations, and establishing the Human Capital Management (HCM) digital talent database. Meanwhile, goals for 2025 include increasing global client satisfaction rates by 10 percent, ensuring that at least 80 percent of A+/A standard items reach annual sales of US$10 million, having key suppliers complete ESG risk assessments, increasing the proportion of green power use in China and Taiwan to 20 percent, and using HCM to promote global talent. Advantech seeks to drive its stakeholders toward sustainable management and development to achieve an intelligent planet. ∎

Advantech's 2020 ESG Spotlight Achievements

Corporate Operations and Governance

No. **4**

ranked in the 2020 Best Global Taiwan Brands with a brand value of US$626 million and growth rate of 13%

Green Operations

4 categories

Scope 3 emissions identified and calculated in 2020

Environmental Management

0

environmental violations

Carbon Intensity

-2.1%

Advantech overall carbon intensity per unit revenue compared to 2019

Industry–Academia Collaboration

14 schools

182 students around the world have participated in InnoWorks IoT innovation development project

Employees Care

NT$**6.5** million +

invested in employee club activities and welfare

Common Good

NT$**3.9** million+

sponsored to community care and public welfare projects

Sustainable Solutions

15%+

products used in sustainable applications

Collaboration to Deploy IoT Applications and Realize ESG Vision

In line with Advantech's ESG vision, the company has collaborated with partners around the world to implement IoT applications, such as smart agriculture, electric buses, remote health care, smart flood management, circular economy, energy storage, and new energy, all of which demonstrate Advantech's commitment to achieving sustainability through practical action.

Greenhouse Smart Application Project that Reduces Waste and Improves Workforce Efficiency at Farms in Spain

Large agriculture businesses in southern Spain are incorporating IoT applications into their greenhouse operations. These applications must integrate industry supply chain information and handle greenhouse energy management. Advantech is contributing its diverse IoT experience to this endeavor.

Photos provided by Advantech, Shutterstock, Fotolia
Interview with Yuan Lee, Product Sales Manager of Advantech Europe; Quelia Blanca,
IIoT Key Account & Channel Manager in Iberia region of Advantech Europe
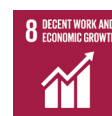
The coastal plains found in Southern Spain's Provincia de Almeria are home to greenhouses that span 31,000 hectares. These facilities produce 3.5 million tons of fruits and vegetables per year, and represent one of the largest fruit and vegetable providers in Europe. Farmers in this arid region receive only 213 mm of annual rainfall and manage water shortages using drip irrigation technology. This has pushed agricultural production under cover into greenhouses,

where farmers adopt smart IoT applications that increase their production yield and optimize crop growth.

Advantech first began helping Spanish farmers in 2018 by combining AI with IoT solutions for their greenhouses. Indeed, Advantech solutions helped Spanish farmers take full advantage of smart technologies, whilst at the same time meet their social responsibility goals related to agricultural sustainability and labor laws.

Intelligent management of greenhouse farming industry

This project was undertaken in response to demands for smart IoT applications from large-scale agricultural corporations in Almeria's greenhouse farming sector. A local system integrator who specialized in greenhouse technologies launched a smart growth prediction system in 2018. The system integrates Advantech's wireless IoT technology, allowing farmers to instantly collect environmental and crop growth data from greenhouses in real time.

Data from greenhouses are sent to a centralized system at the company's corporate headquarters for analysis. The system then helps estimate production times and volumes for individual greenhouses and crops. This allows managers to plan production schedules in advance for downstream processing plants and logistics. This in turn helps reduce waste and improve farm worker efficiency.

Yuan Lee, Product Sales Manager at Advantech Europe stated, "This intelligent system

SMART IRRIGATION SYSTEMS

EKI-7710

WISE-6610

Control Center Management

LoRaWAN

Remote Asset Monitoring

LoRaWAN ----------
Ethernet _____
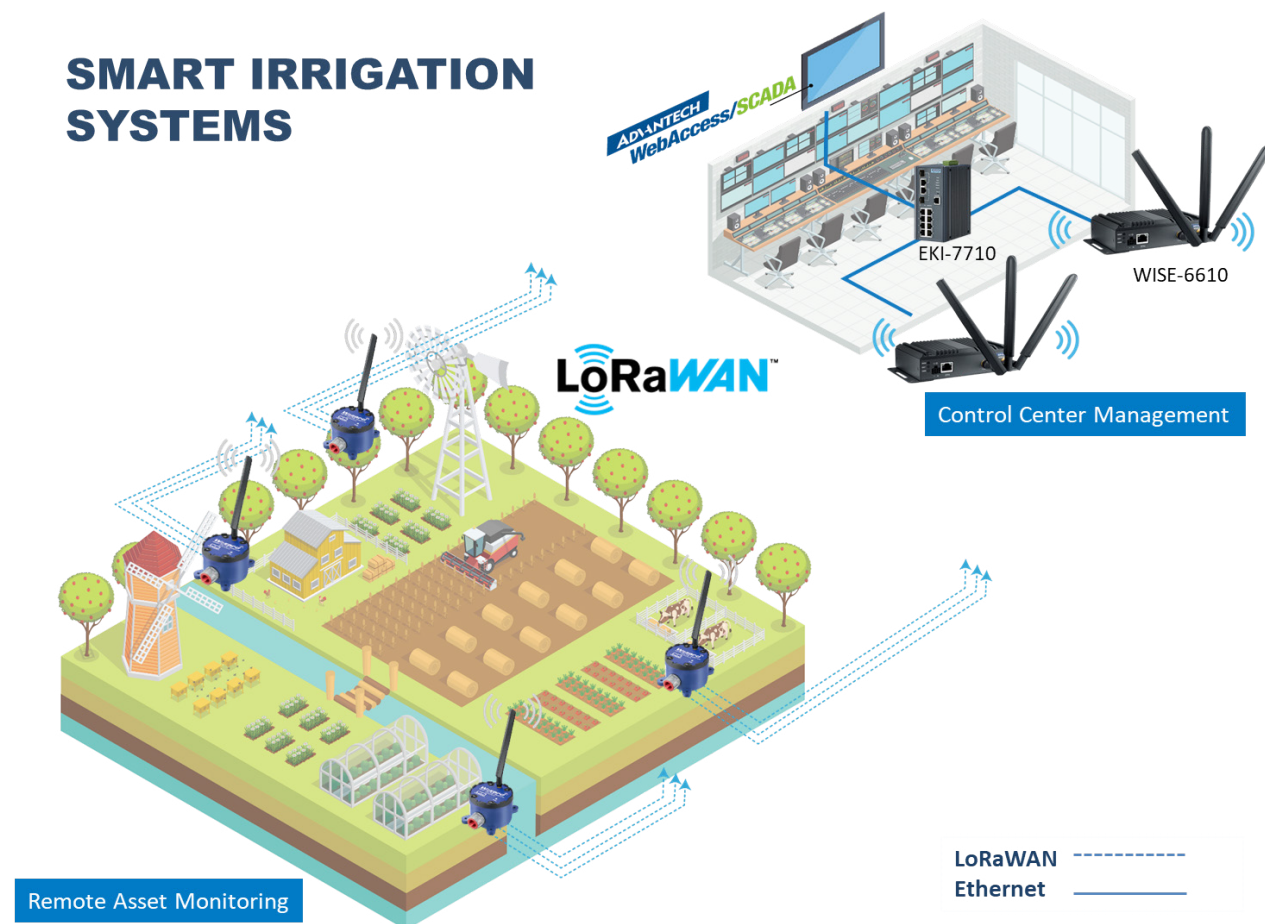
enables more accurate planning and more immediate response times at each point of the industry supply chain". It accurately estimates production volume, enabling greenhouse operators to deliver crops soon after harvest and quickly prepare logistics services. This also helps coordinate production lines and human resources at the processing plant, which prevents crop wastage and rotting.

The system also collects long-term supply chain-related information so farmers can use this information to predict future market demand and formulate appropriate production plans. Doing so avoids overproduction and corresponding price collapses, fire sales, and crop abandonment.

The system can also accurately predict labor force requirements and help greenhouse managers optimize human resource allocation—reducing human resource management problems. For example, the system enables accurate planning of human resource needs, enabling managers to tailor their workforce to the seasons and avoid either a surplus or dearth. This also assures workers by guaranteeing work after being hired for a job.

Benefits from adopting Advantech's smart IoT solutions

Quelia Blanca, Advantech IIoT Key Account and Channel Manager for the Iberia region in Europe helped promote this smart greenhouse supply chain system. She pointed out that her father was a farmer who used traditional methods throughout his career. He relied on personal experience to determine irrigation and fertilizer requirements. Such approaches fail to utilize technology and are labor-intensive. Ms. Blanca added that as an engineer, she could now use technology to improve crop-growing strategies, as demonstrated by this application. Indeed, the ability to calculate water allocation in irrigation helps conserve water, while using only the right amount of fertilizer needed, saves resources and reduces costs. Likewise, harvesting at optimal times boosts crop quality. Congruously, accurately predicting logistics requirements reduces waste and carbon emissions. These benefits allow consumers to enjoy high-quality fruits and vegetables at an affordable price. The system also adds to environmental sustainability in an important sector for European agriculture.

Advantech considers that farming in Almeria is just the first step towards extending IoT solutions to more countries. By extensively using smart agriculture applications, food production, as well as environmental and social sustainability targets can be met, which is a win-win for everyone." ∎

Advantech products and solutions

Description	Product Name
Industrial LoRaWAN IoT Gateway	WISE-6610
Advance Industrial LoRaWAN I/O Node	WISE-4610
Industrial LoRaWAN Smart Vibration Sensor	WISE-2410

Intelligent Electric Bus Management System that Reduces Carbon Emissions in Vietnamese Cities

Advantech provided VinBus with the hardware and software integrated solutions needed to develop smart electric buses and reduce air pollution in Vietnamese cities. Advantech will replicate this successful program in other countries — bolstering carbon reduction efforts worldwide.

Photos provided by VinBus
Interview with David Yang, Intelligent Mobile Solutions & Fleet Management Solution
Product Manager of Advantech; Van Lin, Intelligent Mobile Solutions & Fleet
Management Sector Senior Director of Advantech

13 CLIMATE ACTION

Vietnamese government and system integrators (SI) are actively promoting electric buses to address severe air pollution issues in urban areas.

Indeed, VinBus, a Vietnamese public transportation service provider, is equipping its electric buses with Advantech's intelligent bus solution. These buses are the first of their type to traverse the streets of Ho Chi Minh City, Hanoi, and Phu Quoc. They deliver comfortable and safe service to the public while significantly reducing both noise and air pollution.

Advantech intelligent electric bus systems in Vietnam

VinBus, a subsidiary of Vietnam's largest conglomerate VinGroup, specializes in intelligent electric buses. They have launched a large-scale electric bus project aimed at improving environmental stability.

VinBus conducted a public opinion survey where respondents attributed their bad experiences to the use of diesel engine buses found in all major Vietnamese cities. Indeed, the strong smell of diesel and noisy engines make

passengers extremely uncomfortable and greatly reduce their willingness to take the bus.

VinGroup decided to improve rider experiences by building safe, comfortable electric buses that provide various smart services. Accordingly, VinFast, a subsidiary of VinGroup that builds vehicles, wanted a partner capable of supplying the smart solutions needed to manufacture electric buses. Advantech's superior hardware and software integrated solutions for electric buses and extensive experience implementing similar projects in Taiwan made them a logical partner. VinBus opted to collaborate with Advantech and use their TREK Intelligent Electric Bus Management System.

David Yang, Intelligent Mobile Solutions & Fleet Management Solution Product Manager at Advantech said, "The TREK Intelligent Bus Management System provides advanced driver assistance systems (ADAS) and driver behavior management, passenger Wi-Fi service, and advertisement systems. The TREK system improves bus safety, comfort, and convenience — eliminating the discomfort passengers previously endured on diesel buses and transforming public transportation in Vietnamese cities.

Electric buses deliver exceptional carbon reduction results

VinBus's intelligent electric buses have been undergoing trials since May 2021, providing passenger services on ten routes in Hanoi and four routes in Ho Chi Minh City, and Phu Quoc. Between 150~200 buses are beginning service during this first phase. These buses deliver a comparatively safer, more convenient, and comfortable public transportation experience Vietnamese commuters.

Electric buses also help address air pollution

problems. Let's compare an example from Taiwan, where 44 electric buses were introduced in Taichung City in 2016. The Taichung City Environmental Protection Bureau stated that these reduced carbon emissions by 2,737 metric tons that year alone. Therefore, the 200 VinBus electric buses used in the first phase should have a correspondingly significant effect on carbon emissions.

Van Lin, Intelligent Mobile Solutions & Fleet Management Sector Senior Director at Advantech, pointed out that VinBus has finished the first phase of the electric bus project and is expected to launch the second and third phases within the next two to three years — deploying 2~3 thousand electric buses in major Vietnamese cities. These electric buses use comfortable combined with intelligent features to attract previously reluctant people. The project will also reduce the amount of time people spend on motorcycles, further reducing air pollution.

Van Lin added that pursuing environmental sustainability benefits everyone. Advantech will replicate and export their experience of successfully implementing intelligent electric bus management systems in Taiwan and Vietnam to other countries. It is hoped that this endeavor helps cities adopt electric bus systems that improve environmental sustainability. ■

Advantech products and solutions

Solutions

eBus Management Cloud Solution

TREK In-Vehicle Computing Solution

AI-Based Fleet Safety

Interactive Services

SUSTAINABLE APPLICATIONS

1405

Banner Health
Ocotillo
Medical Center

Helping Non-Profit Organizations Develop Telemedicine for Remote COVID-19 Treatment

In response to the ongoing COVID-19 pandemic, U.S. healthcare providers are using telemedicine solutions to remotely assess patients. These innovative solutions minimize transmission risks and optimize resource allocation, thereby reducing strain on the healthcare system.

Photos provided by Banner
Interview with Jim Roxburgh, CEO of Banner Telehealth

3 GOOD HEALTH AND WELL-BEING

Since its emergence in 2020, the COVID-19 pandemic has presented unique and ongoing challenges. In the hardest hit countries, case numbers have surpassed thousands and reached into the tens of thousands. This rapid increase in cases poses major challenges for both public health and the sustainable operation of medical systems.

In an effort to address these challenges,

Advantech has leveraged its expertise in IoT hardware and software to develop smart healthcare and telemedicine solutions in collaboration with global partners. Additionally, Advantech collaborated with Banner Health, an American non-profit organization, to develop a telemedicine solution for remote COVID-19 treatment. The results of this collaborative project improved the quality and efficiency of healthcare services

Using technology to reduce strain on the medical system

Banner Health operates 30 acute-care hospitals throughout six states of America. Launched in 2006, Banner Telehealth provides innovative ideas for virtual care delivery across their network. Their early strategy focused on adding telehealth capabilities to the televisions and devices already found in patient rooms. Although implementing fixed webcams with microphones and speakers was a good start, superior technology was required to enable telehealth in acute-care settings.

Accordingly, with the emergence of COVID-19, Banner Health adopted medical carts to facilitate the delivery of remote patient care. These carts are equipped with medical-grade, all-in-one computers that allow medical staff to remotely monitor patient vital signs, including heart rate, respiration, and blood oxygen levels, and communicate in real time without entering the ward and risking infection.

Since their introduction, these emergency care telemedicine carts have been used in more than 22,000 treatment consultations. Moreover, 60% of those consultations were performed by resident doctors and 40% were performed by specialists in other medical fields, such as neurology, cardiology, nephrology, and thoracic medicine.

According to Jim Roxburgh, CEO of Banner Telehealth, "Patients in more than 1,000 emergency wards were closely monitored using only 30 carts. This drastically reduced exposure risks for healthcare staff, while improving operational efficiency." Wearing the necessary personal protective equipment (PPE), such as isolation caps, face shields, masks, protective clothing, and hand and foot coverings, can be arduous and time-consuming. Indeed, it takes experienced workers approximately 5~8 minutes to dress and undress, with additional staff needed to provide assistance. These emergency care telemedicine carts are helping medical staff better manage their time by circumventing the need for PPE, allowing more time for patient care.

Congruously, the pandemic has sharply increased global demand for PPE and made related resources increasingly difficult to obtain. However, with telemedicine carts reducing the need for PPE, Banner Health has been able to better manage medical resources and avoid equipment shortages.

Although mass vaccination campaigns are bringing the COVID-19 pandemic under control, Advantech believes ongoing development of telemedicine is key to providing quality medical services. Accordingly, Advantech plans to continue collaborating with partners to co-create innovative solutions that improve public health and well-being. ■

Advantech products and solutions

Description	Product Name
Ubiquitous Touch Computer	UTC-320
Advantech Telehealth Cart	AMiS-72

Telehealth Solutions that Address Healthcare Gaps in Remote Rural Areas

Advantech is actively participating in government-sponsored programs aimed at addressing medical resource shortages in remote rural areas by assisting Shimen Health Clinic in New Taipei City with the deployment of telemedicine solutions for improving public health and welfare.

Photos provided by Advantech
Interview with Chun-kai Chang, Business Development Manager of Advantech

3 GOOD HEALTH AND WELL-BEING

Taiwan has more than 50 outlying mountainous islands and 117 towns/villages that are classified as remote rural areas. When seeking medical attention, residents in these areas typically travel for up to two hours to reach the nearest hospital. Because of this inconvenience, people in remote areas tend to avoid going to hospitals unless absolutely necessary. Despite Taiwan boasting one of the best healthcare systems in the world, the lack of medical resources in remote areas has presented considerable challenges in recent decades.

Leveraging its years of experience developing medical technology solutions, Advantech has been collaborating with local health bureaus and large medical centers to accelerate the deployment of telemedicine care services in remote rural areas. These efforts are giving rural residents equal access to the medical services enjoyed by their urban counterparts, without necessitating long-distance travel. This demonstrates how Advantech is utilizing AIoT to effectively promote sustainable healthcare.

Medical carts facilitate tele-consultations

Since 2020, the New Taipei City Department of Health has helped 13 rural health clinics and regional hospitals implement tele-consultation services that address the lack of specialized physicians in the local area and provide rural residents sufficient access to medical services.

Participating in related government programs, Advantech has provided its telemedicine solutions to Shimen Health Clinic to facilitate remote treatment by ophthalmologists located at Fu Jen Catholic University in the Xinzhuang District. Using Advantech's telehealth carts equipped with a computer, camera, and microphone, doc-

tors can assess patients' health and prescribe appropriate medication or treatment plans.
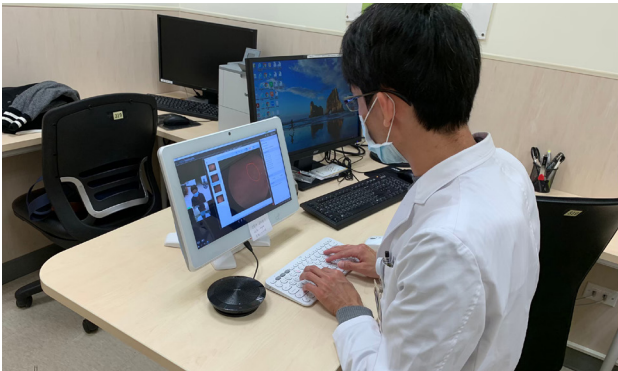
As highlighted by Chun-Kai Chang, Business Development Manager for telehealth at Advantech, because patients with diabetes are at high risk of developing complications, such as diabetic retinopathy, management of their condition requires regular checkups and ongoing monitoring. The New Taipei City Department of Health offers diabetes patients one free eye examination every year. However, only 34% of patients nationwide take advantage of this service, with Shimen Township reporting a substantially lower examination rate. This is because of the lack of locally based ophthalmologists. Instead, Shimen residents must travel to the MacKay Memorial Hospital in Tamsui District for examination. Given that a high number of these diabetes patients are elderly, they are relatively reluctant to travel long distances for treatment. Although the Shimen Health Clinic does arrange transport for local patients to access appropriate treatment, this service is only available once every six months. Patients can easily miss checkups if they forget to make a reservation or fail to arrive at the transport departure time.

In October 2020, Shimen Health Clinic adopted Advantech's telemedicine solutions to enable staff to flexibly arrange examinations for patients. This means that forgotten or missed appointments can be rescheduled within the next few weeks instead of patients having to wait another six months. Mr. Chang asserted that this service improved the flexibility of eye examination appointments and reduced travel time for patients. Moreover, because examinations and consultations can now be completed within half an hour, patients are much more willing to return for regular checkups.

Innovative solutions for remote rural areas

Considering that in some remote rural areas there may not be a fixed location for tele-consultation services, Advantech also developed an innovative telehealth kit as a portable alternative to medical carts. This kit is a 20-inch specialized suitcase that contains all the required equipment, is easy to carry, and allows tele-consultations to be conducted from any location with an internet connection. This ensures that medical care and treatment services are provided in even the most remote rural areas.

To enable healthcare equality for residents in remote rural areas, Advantech continues to leverage its technological expertise to create additional telemedicine solutions that can be adapted to various environments. In this way, Advantech aspires to help people in urban and rural areas remain physically healthy while living long and happy lives. ◼

Advantech products and solutions

Description	Product Name
Advantech Telehealth Cart	AMiS-72
Advantech Telehealth Suitcase	AMiS-22
Advantech Tele-Consultation Software	---------

Advantech Japan Utilizes AIoT Solutions to Build a Sustainable Environment

In line with United Nations Sustainable Development Goals (SDGs), Advantech is utilizing AIoT solutions in flood management to help prevent natural disasters in Japan and thereby build a more sustainable environment.

Photos provided by Advantech

A United Nations report indicated that 55% of the world's population lived in urban areas in 2018. This number is expected to reach 68% by 2050. This increase in urban population is causing various problems related to air pollution, waste management, and increased risk of disaster. As Japan is particularly prone to natural disasters it is necessary for the country's government and cities as a whole to prepare accordingly.

The use of technology as a precaution against natural disaster in Japan is well established. Despite this, some problems remain unresolved. For example, older workers usually control flood sites where they endure risk and hard work. Due to the nature of Japan's aging population, about 80% of manual flood control workers are at least 60 years old. Current manual flood control systems expose them to hazardous situations, as they are required to manually perform quick on-site water gate management in potentially adverse conditions.

To solve this problem, Advantech provided an AIoT solution that realizes unmanned and auto-mated control of the flood water gates in Nogata City, Fukuoka Prefecture. With this AIoT platform,

Advantech was able to help minimize the danger and reduce the workload of older workers, achieving remote flood management without needing to rebuild current flood infrastructure. Instead, the platform was simply an add-on unit.

Advantech will broaden its smart flood management applications going forward to help prevent natural disasters and create a more sustainable environment. ■

Real-Time Plastic Bottle Recycling Monitoring Application Helps Meet European Sustainability Goals

Companies around the world are supporting environmental sustainability goals by placing plastic bottle recycling machines in publicly accessible locations like supermarkets. These machines use AIoT technology to perform real-time monitoring that increases the rate of plastic bottle recycling while reducing pollution. Advantech has proactively partaken in this trend, collaborating with European partners in the pursuit of environmentally sustainable solutions.

Photos provided by Freepik
Interview with Yuan Lee, Product Sales Manager of Advantech Europe; Martin Boettner, IIoT Key Account Sales Head in DACH region of Advantech Europe

Research from Euromonitor International indicates that consumers around the world purchased an estimated 583.3 billion PET bottles in 2021. Most of these bottles will end up in landfills or the ocean, where they pollute the soil, waterways, and atmosphere. Plastic marine debris in particular has an acutely detrimental effect on marine ecology and causes considerable damage to the environment. In an effort to mitigate this crisis, Germany began using deposit return schemes that encourage public PET bottle recycling in 2003. As many as 38 other countries have implemented similar schemes. Advantech began working with one of a number of Europe-

an companies participating in this trend in 2018. They hoped this collaboration would produce recycling solutions that help more organizations protect the Earth.

Bottle recycling machines provide uninterrupted recycling services

Yuan Lee, Product Sales Manager at Advantech Europe, pointed out that easing participation is the key to improving PET bottle recycling rates. Improving the convenience of recycling, and ensuring access—at any time, from anywhere—necessitates the deployment of numerous recycling machines and the utilization of IoT technology. Advantech's participation in the construction and application of bottle recycling machines centered on using IoT technology to perform real-time monitoring and management. This also prevents downtimes and disruptions caused by full loads.

Martin Boettner, Advantech Europe Head of IIoT Key Account Sales in the DACH region, worked on this project. He elaborated on his personal experience using such machines. "Usually, if a user seeking to recycle a plastic bottle finds a machine full and thus out of service, they will be forced to notify staff and wait for the machine to be emptied. This time consuming process

must be completed before the bottle is recycled. Needless to say, this hassle can reduce people's intention to recycle and cause them to either give up or dispose of plastics in the general waste, which doesn't help anything."

Integrating plastic recycling machines with IoT technology enables managers to monitor the status of machines in real-time by making system information promptly accessible. Now full machines can be processed and emptied by staff immediately, resulting in less waiting and more efficient bottle recycling. This also encourages more people to recycle. Looking forward, this solution will encourage people to act in a responsible manner and work together towards an environmentally sustainable future. ■

Advantech products and solutions

Description	Product Name
Industrial LoRaWAN I/O Module	Wzzard LRPv2
Advanced Industrial LoRaWAN I/O Module	WISE-4610
Industrial LoRaWAN IoT Gateway	WISE-6610
Industrial LTE IoT M2M Gateway	ICR-3000
Industrial LTE Router	ICR-2000

Smart Energy Storage Solution Accelerates the Promotion of Green Energy

In response to global warming, Advantech has integrated its software, hardware, and services to develop intelligent edge solutions that can be applied to energy storage systems. By collaborating with partners from green energy industry supply chains around the world, Advantech is helping to accelerate green energy usage in the residential, urban, commercial, and industrial sectors, contributing to environmental sustainability.

Photos provided by iStock
Interview with Xiao-Feng Ou, Regional Sales Director of Advantech China; Nathan Wang, Embedded IoT Product Manager of Advantech

Global warming has led to abnormal climate phenomena and natural disasters, such as heatwaves and rainstorms, which have caused significant damage to property and negatively affected human life. To address these issues, the development of green energy, including solar and wind energy, has become a common goal worldwide. However, because of the unpredictability of green energy, mature and appropriate storage technology is required to store electricity generated during off-peak times for use during peak times, thereby maximizing the benefits of green energy. Accordingly, Advantech has leveraged its innovative technology and extensive experience of developing and implementing IoT applications to create intelligent edge solutions that can be applied to energy storage systems.

Smart energy storage system increases demand for green energy

According to Nathan Wang, Product Manager of Embedded IoT at Advantech, energy storage industries around the world have faced multiple challenges when developing such systems, including regulatory restrictions, limitations on battery technology, and installation/deployment difficulties. However, over the past few years, these challenges have been gradually addressed and resolved. In addition to regulations becoming more relaxed worldwide, the price of batteries continues to decline as manufacturers actively develop the technology.

In terms of installation, deployment, and maintenance, the continued introduction of intelligent management solutions for energy storage systems can ensure effective use of green energy to achieve conservation goals. Such

intelligent energy management solutions include small distributed energy storage systems for residential properties and businesses, as well as large-scale centralized energy storage systems for factories and power plants. These innovations have significantly increased willingness to implement green energy, expanding its utilization rate in many countries.

Xiao-Feng Ou, Regional Sales Director at Advantech China, pointed out that when the energy storage industry was still in its infancy 7 to 8 years ago, Advantech actively promoted green energy and invested in the R&D of related products and solutions. Since then, Advantech has launched comprehensive solutions that meet the needs of large, medium, and small-sized energy storage systems, assisting energy providers and system vendors with promoting green energy applications.

Advantech's intelligent solution expands green energy applications

Ms. Ou stated that one European provider of distributed solar equipment implemented at least 50,000 units of Advantech's energy storage solution as part of their home setups between 2019 and 2020. The solution leverages edge computing capabilities to acquire and analyze real-time energy consumption data, allowing home owners to understand how their system consumes energy and how they can improve energy conservation. In New South Wales, Australia, home owners have been able to save approximately 2,200 AUD annually on electricity bills through the intelligent management of their home setup.

In addition, Advantech's solutions have been used to develop energy storage containers deployed at a Chinese industrial park. These containers obtain real-time energy consumption information and reserved power data in order to optimize power distribution and reduce energy consumption.

Mr. Wang asserted that since the emergence of COVID-19, global transportation and commercial activities have declined significantly. Accordingly, many places around the world have reported an unprecedented reduction in the level of pollutants.

Moving forward, Advantech plans to continue developing solutions that help the transportation, production, and commercial sectors return to normal operations once the pandemic subsides. This presents a great opportunity to promote the use of green energy for protecting the environment. Advantech will also continue collaborating with partners from the green energy and energy storage industries to co-create superior living/working environments that contribute to a cleaner Earth. ∎

Advantech products and solutions

Description	Product Name
ARM-Based Computing Platforms	• EPC-R3220 (TI A8 IoT gateway with Debian OS and DeviceOn) • Customized ARM-based edge system (NXP A53 quad-core processor with IoT OS support)Industrial LoRaWAN IoT Gateway
WISE DeviceOn/iEdge (i.App)	--------

Dedication to CSR to Make the World Better
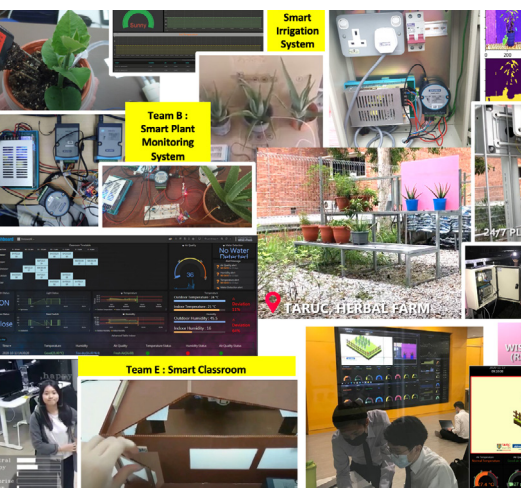
The spirit of altruism is at the very core of Advantech's corporate philosophy. To realize the ideal of altruism, Advantech is committed to creating a fair and open work environment for its employees. Motivated by this altruistic spirit, Advantech's employees around the world are also dedicated to creating social welfare by demonstrating care for the communities and society in which they work and live.

TAIWAN

ACT Dreamers Project Promotes Education and Encourages Children to Realize Their Dreams

The Advantech Foundation established its ACT Dreamers project in an effort to inspire elementary and secondary schools to move beyond traditional teaching and develop diverse and innovative teaching models. With the participation of more than 10 schools in Taiwan, the ACT Dreamers project aims to cultivate altruism in children and encourage them to take concrete actions to improve society, benefit the world, and realize their dreams.

Photos provided by Advantech
Interview with Tang Shang-Zhi, Principal of Chingshin Academy Senior High School; Flora Wu, Employee Care and Corporate Social Responsibility Deputy Manager of Advantech; Jill Tseng, ESG & Corporate Sustainability Manager of Advantech

One a winter's day in Taipei, three students from the Chingshin Academy orchestra gathered outside the Jingmei metro station holding violins and cellos. Courageously they began to play their instruments, unafraid of what passersby might think. Their plan was to raise money to support conservation efforts to save the Formosan black bears from extinction.

The motivation for their plan was fostered by not only the Chingshin Academy's emphasis on altruism, but also the Advantech Foundation's ACT Dreamers project. This project involves assisting elementary and secondary schools with implementing educational initiatives that promote civic engagement and prosocial behaviors that positively contribute to society.

Fundraising for the Formosan black bear was just one of the initiatives inspired by the ACT Dreamers project. In April 2021, a celebration of the ACT Dreamers project was held at the Advantech Linkou Campus. For the event, 15 student teams from Chingshin Academy, Pu Tai Elementary, and Junior High School showcased the practical initiatives they had implemented to address social issues such as animal protection, nutrition and health, food waste, education, poverty alleviation, plastic reduction, marine debris, stray animals, vegetarian lifestyles, and environmental protection.

Teachers from over 20 schools throughout Taipei, New Taipei, Taoyuan, Hsinchu, Miaoli, Yunlin, and Changhua were in attendance to witness the Taiwanese children's incredible presentations of creativity and innovation. With

the goal of expanding the ACT Dreamers project across Taiwan and reaching even more children, the event also brought awareness to the ACT Dreamers mission of inspiring children to become active, innovative, altruistic global citizens.

Fostering a caring spirit among children

"Advantech has a long history of promoting talent cultivation through industry-academia collaboration" said Flora Wu, Advantech Employee Care and Corporate Social Responsibility Deputy Manager, as she explained how the ACT Dreamers project began.

Apparently, it all started when KC Liu, Chairman of Advantech, noticed a project by the Chingshin Academy senior high school named Finding the Five Dreams of Chingshin. Recognizing in it a shared commitment to altruism and desire to inspire children, KC immediately contacted the school and proposed collaboration. The principal of Chingshin Academy's senior high school, Tang Shang-zhi, generously accepted the offer, and the partnership quickly resulted in the launch of the ACT Dreamers project in 2020.

The original Finding the Five Dreams of Chingshin project was established by alumni of Chingshin Academy. The aim was to encourage students to adopt a caring, charitable mindset as they pursed their dreams and aspirations. ACT Dreamers expanded on that foundation by highlighting social issues and encouraging students to propose creative solutions and action plans for positive change. Indeed, the letters A, C, and T of ACT Dreamers stand for "action", "creativity", and "teamwork".

The ACT Dreamers project focuses on the United Nations' 17 Sustainable Development Goals (SDGs), including no poverty, quality education, good health and well-being, climate action, life below water, and life on land. Through concrete actions that contribute to society and protect the natural environment, ACT Dreamers teaches children to value society and contribute positively.

Discussing the partnership with Advantech, Tang Shang-zhi emphasized that Chingshin Academy's strategy of gradual immersive education paired well with Advantech's track record of dedication and efficiency. These complementary advantages ensured that the ACT Dreamers project was rooted in education, while providing children with a broad scope to learn and grow in unique directions.

For example, with the students playing music to raise funds for the Formosan black bear, initially they did not receive their desired response. Although frustrated, the students persevered and decided to make leaflets promoting their performances. Through this experience, they learned to look for solutions and work towards overcoming obstacles in order to achieve their goal.

Building momentum for innovative learning

In addition to helping students, the ACT Dreamers project promotes the implementation of innovative education in Taiwan by providing a

comprehensive platform that fosters innovative learning and can be expanded nationwide.

Unlike the Finding the Five Dreams of Chingshin project, which culminated in a private showcase, the ACT Dreamers project was publicly showcased in a celebrated presentation held at the Advantech Linkou Campus. This provided the students with a bigger platform for exchanging ideas and inspiring the many teachers and school representatives invited to participate. In this way, the promotion of innovative teaching evolved from efforts by individual schools into a joint cooperation of multiple exchanges between schools—all pursuing the same goal for the betterment of society.

Also attending the public showcase was Professor Li Ji-ren, Vice Chairman of the Chengzhi Education Foundation, and Lan Wei-ying, Chairman of the Yingguang Education Association. They had been invited, along with other industry experts, to serve as judges and provide professional guidance to the student teams. However, they also benefited the teachers watching by broadening their horizons and understanding of innovative teaching. Thus, the project shifted from school-to-school cooperation into a broader movement that gave momentum to the implementation of innovative

teaching in Taiwanese schools.

Encouraging even more children

Given the success of the ACT Dreamers project in 2020, Advantech decided to evolve and expand the project scope for 2021. This year teams will include students and teachers from at least 10 schools, divided into two groups - the Dream Takeoff Group and the Dream Pilot Group. Through collective problem solving, Advantech hopes to cultivate altruism and creativity among the children of Taiwan.

According to Jill Tseng, ESG & Corporate Sustainability Manager at Advantech, the Zhanghu Junior and Elementary School of Ecology in Yunlin, Emei Junior High School in Hsinchu, and Toufen Junior High School in Miaoli are among the schools invited to join the Dream Takeoff Group.

For this group, Advantech will cooperate with partners to host student workshops that teach the 17 SDGs, how to identify social issues and solutions, and ways to use project-based learning (PBL) to determine concrete action plans. Through the process of trying, making mistakes, and formulating solutions, the students will cultivate a passion for problem solving.

In regards to the Dream Pilot Group, Flora confirmed teams from Chingshin Academy, Pu Tai Elementary and Junior High School, Taipei Mandarin Experimental Elementary School, Dahua Elementary School, Taipei Municipal Ying-Qiao Elementary School, and Taipei Municipal Xinglong Primary School. The teams in this group will follow the original project structure and curriculum activities. Students will be encouraged to nominate social problems, suggest innovative solutions, and work together to overcome challenges.

Whatever the outcomes for these two groups, both Jill and Flora emphasized that education is, and should be, a consistent and life-long process. By introducing a foundation of altruism early in development, innovative and inclusive teaching has the best chance to pay off in the future. With the ACT Dreamers project, Advantech hopes to leverage expert partners to provide students with valuable life experiences and knowledge, beyond what is found in textbooks. ■

Experts on PBL

"Ask university graduates to name something a teacher taught them, most will describe a skill they acquired through PBL," asserts Professor Li. Granted, he's spent that the last 20 years of his university teaching career using PBL. In the early days, it was known as "action learning". Students would learn through active participation in practical and meaningful projects.

For teachers, it is important to recognize that the process of a project is equally as important as the outcome. In process-focused learning environments, teachers mentor and empower students to build skills through the project implementation process. Therefore, from as early as the project planning stage, teachers should encourage students to take the lead and make decisions for themselves in order to promote curiosity and teamwork.

Professor Li Ji-ren
Vice Chairman of the Chengzhi Education Foundation

Chen Qing-zhen, principal of Zhanghu Junior and Elementary School of Ecology, has researched and applied PBL teaching for 14 years. He believes the key issues facing teachers and students today are excessive administrative responsibilities, fragmented and substandard teaching content, a lack of interest in learning, and educational strategies that are out of touch with the real world. To address these issues, it is necessary to revisit the fundamentals of education and consider what schools should be delivering to students. Principal Chen asserts that students must be capable of navigating abstract concepts about society and community participation in order to successfully contribute to society. PBL can be especially useful for helping students examine social issues, overcome obstacles, learn from mistakes, and produce meaningful results. It is through this type of learning, students learn the practical skills to interact positively with the world around them.

Chen Qing-zhen
The Principal of Zhanghu Junior and Elementary School of Ecology

EUROPE

Advantech Europe Embraces Diversity and Inclusivity

During 25 years of operation in Europe, Advantech has embraced diversity and inclusivity in its workforce. This direction has enabled Advantech to develop great products while nurturing employee creativity and diversity. We provide a well-balanced workplace for emerging talent and establish hiring practices than enable our businesses to thrive in Europe.

Photos provided by Shutterstock
Interview with Roel van der Poort, HR Manager of Advantech Europe

Open-mindedness and diversity broadens Advantech's access to the best talent. Likewise, inclusivity allows management to engage talent effectively. This approach has enhanced our innovation, creativity, productivity, reputation, engagement, and results. Roel van der Poort, HR Manager for Advantech Europe, pointed out that this embodies Advantech's motto of "enabling an intelligent planet," which implies the promise of creating a smart, diverse, and inclusive society".

Challenges in promoting diversity and inclusivity

Diversity and inclusivity need to be embedded into Advantech's organizational DNA. Mr. van der Poort pointed out that over 35 nationalities work for Advantech Europe. "We are constantly working on methods that help hiring managers think more about how to carefully select employees," explained Mr. van der Poort. The aim is to remove unconscious bias and create a truly diverse team that enjoys working together and challenging each other.

Advantech recently surveyed its employees in an effort to determine how to promote themselves. Results indicate that employees viewed the multicultural nature of the company

as one of the most appealing aspects of working for Advantech. Indeed, this has turned out to be an attractive highlight for future recruitment. Despite this, promoting diversity and inclusivity in the workplace still entails certain challenges, since each of Advantech's businesses in Europe are affected by different local business cultures. Some workplaces take more conservative approaches than others during recruitment. Therefore, ensuring that managers are open-minded when it comes to creating diverse teams is an ongoing task.

Diversity and inclusivity help provide higher quality services to customers

A company that embraces diversity and in-clusivity will better understand its customers and make better business decisions, thus enabling it to deliver better results and services. Therefore, Advantech Europe has actively recruited new talent from various ethnic backgrounds regard-less of gender. This has put the company in a stronger position and enables it to innovate and deliver exciting concepts. Teams of diverse new talent create a competitive advantage and help Advantech deliver leading, innovative solutions to the European market. Mr. van der Poort posits that only intelligent and creative people — with the courage to voice their opinions — will be able to bring radical change to entrepreneurial behaviour and adapt to markets where business concepts change rapidly.

Combining great products and solutions with the creativity of a diverse employee population, has enabled Advantech to develop a strong market share during its 25 years of operation in Europe. "Many of our customers have seen how diverse Advantech is in terms of gender and ethnic background — indeed, the company is around 65% men and 35% women, which is a more even distribution than most companies in the sector," said Mr. van der Poort. Diversity and inclusivity have been undeniably significant in helping Advantech innovate and deliver intelligent and optimized solutions to its customers.

Advantech's employees are encouraged to embrace gender, cultural, religious, and ethnic diversity on an individual basis. Mr. van der Poort believes that removing barriers between people in the workplace ultimately allows wisdom and creativity to flow freely between colleagues. In sum, open-mindedness, diversity, and inclusivity are defining characteristics of Advantech which engender exponential growth and future success. ■

We are on the right path to diversity and inclusivity, but still have a long way to go. Indeed, there is always room for improvement. We will soon succeed and deliver enhanced innovation, creativity, productivity, reputation, engagement, and results.

NORTH AMERICA

A4C: Advantech for the Community

2020 was a challenging year for most communities and households. Fostering togetherness became critical. Advantech North America created the Advantech for the Community program, or A4C, to give back to communities and encourage employees to get more involved in local issues through activities such as cleaning beaches, donating to non-profit organizations, supporting fire and police departments, and organizing blood drives. Below is a summary of events that A4C has held so far in 2021. Other initiatives will follow later this year.

Photos provided by Advantech

3 GOOD HEALTH AND WELL-BEING

Cancer Free Kids—Cincinnati, OH

Earlier this year, Advantech North America's Cincinnati office moved to a new location. Furniture and other items from the old office were auctioned off to employees, with proceeds going to charity. The auction generated US$573 for CancerFree KIDS, a foundation selected by employees. The purpose and mission of CancerFree KIDS is to eradicate cancer as a life-threatening disease in children by funding

promising research that might otherwise go unfunded. The Cincinnati team asked A4C to match the funds raised through the auction. A4C met and exceeded the request, bringing the total donation to an even US$1,200! The US$1,200 check was personally delivered to CancerFree KIDS Development Director Nate Krugman at the CancerFree KIDS office, who expressed gratitude and sent the check to Cincinnati Children's Hospital for research.

Orange County Police and Firefighters— Orange County, CA

Having previously donated funds to the Irvine Police Association and OC Professional Firefighters Association, A4C this year increased its donation to US$1,750 for each of these associations. A4C also plans to donate to the Orange County Police K-9 Association.

CHOC Walk—Orange County, CA

A4C became a Bronze Sponsor for the CHOC Walk by donating US$10,000 and creating the Advantech USA Team in 2021. CHOC (Children's Hospital of Orange County) is a non-profit organization relying on community support to provide cutting-edge care for children. The CHOC Walk normally takes place at Disneyland Park, CA, giving people a unique experience to walk the entire park in the early hours, and show their support for the kids. However, with the COVID-19 pandemic, the CHOC Walk went virtual. This gave Advantech a chance to make a difference for the kids in their community while joining CHOC's one-of-a-kind experience that transported Advantech employees virtually to the "happiest walk on earth."

To encourage employee engagement, A4C set a US$5,000 donation goal and joined the Step Up for Kids Activity Challenge, aiming to complete 1,000 miles of activities.

To help reach the 1,000-mile activity goal, two Advantech North America offices hosted walks and hikes. In the end, they walked a total of 1,226 miles.

Advantech Irvine Office–2.8 miles Bolsa Chica Wetlands

Advantech Ottawa Office–5K Walk around Ottawa

In conjunction with the CHOC Walk, A4C held two other fundraising activities. For one of them, Advantech sold raffle tickets and raffled off 11 gift baskets to employees, raising US$1,955.

The other fundraising event was a push-up challenge for managers prior to the CHOC Walk. Hosted by the Advantech Irvine office, this event was live-streamed and held in two parts. First was the challenge set by employees, where they donated US$5 toward their managers to do one push-up. Nine managers joined this challenge and did a total of 219 push-ups. The second challenge was hosted by Advantech North America's General Manager, Ween Niu. Ween challenged all the managers to do as many push-ups as they could in 1 minute and would donate $4 per push-up of his own money, with a cap of $1,000 (total 250 push-ups). Just after 5 managers, we had surpassed the 250 count, but in hopes that Ween would donate more, the managers pushed their limits and the gamble paid off! The managers did 592 push-ups, and because of the tremendous effort, Ween doubled his cap to $2,000.

With $2,766 raised for the 2 challenges, the Advantech Team didn't stop there! Four of the Sales Heads (Shawn Jack, Sean Butler, Brian Wilson, and Huan Trang) helped sponsor a surprise challenge for Ween. Each sales head would donate $10 for every push-up that Ween did in 1 minute. With all eyes watching, Ween did 30 push-ups bringing the total to $1,200 donated by the sales heads. Overall, from these activities and contributions from family and friends, team Advantech USA raised a total of $10,087. ■

ASEAN

AIoT InnoWorks Program Contributes to Talent Cultivation in Malaysia

Advantech has kicked off its AIoT InnoWorks program in Malaysia. This program encourages students at Tunku Abdul Rahman University College to develop AIoT solutions based on Advantech's WISE-PaaS industrial cloud platform.

Photos provided by Advantech
Interview with Dr. Tew Yiqi, Senior Lecturer of the Faculty of Computing and Information Technology, Tunku Abdul Rahman University College; Ryan Lai, ASEAN Business Development Manager of Advantech Malaysia

Since the establishment of the Malaysia Digital Economy Corporation (MDEC) in 1996, Malaysia has been on a journey of digital transformation. Recently, faced with the impact of COVID-19, businesses have fully recognized the value of digital transformation and are keen to implement smart solutions. Additionally, many new digital businesses have been established, with Malaysians becoming more familiar with ecommerce and digital payments throughout the pandemic. Indeed, growing demand for digitalization has highlighted Malaysia's urgent need for tech talent.

and students have limited access to key resources such as cloud platforms and databases, extending the project scope to produce actual solutions is difficult. This lack of key resources limits creativity and innovation.

Advantech believes that the key to overcoming this obstacle is collaboration between industry and academia. The core competencies of businesses can be leveraged to boost innovative creation in academia, which will lead to economic and social prosperity. Accordingly, Advantech launched its AIoT InnoWorks program

Cultivating developer talent with AIoT InnoWorks

According to Dr. Tew from Tunku Abdul Rahman University College (TAR UC), demand for talent in the fields of AI, big data, and IoT is increasing every year, with expertise in electrical engineering and IT paving the way for IIoT development. However, because academic institutions

for Malaysian universities in 2020. The program offers TAR UC students opportunities to explore the latest technologies and develop AI using Advantech's WISE-PaaS industrial cloud platform, which provides database services, notification APIs, 3D content visualization, and more.

The program not only inspired students to create solutions based on actual industrial scenarios, but also helped them take these new ideas from the design stage through to proof-of-concept (PoC). Ryan Lai, ASEAN Business Development Manager for Advantech Malaysia, expressed surprise and delight that each team was able to deliver an industrial solution so quickly. Accordingly, Advantech is looking forward to further collaboration with TAR UC.

Industry–academia collaboration benefits students and industry

Previously, students' academic projects were constrained by the availability of academic facilities and resources. For example, when studying smart agriculture systems, students used embedded systems, such as an Arduino UNO microcontroller board, integrated with environmental sensors and water valve actuators to simulate plant environments in the laboratory.

Dr. Tew stated that with this program, students are able to propose, design, and develop comprehensive PoC systems for smart agriculture and smart classroom applications. With the services and features provided by WISE-PaaS, students can create solutions that are more complete and realistic. Additionally, they can use the WISE-PaaS Dashboard to design interfaces for the real-time visualization of farm sites. This can also be extended by leveraging SAS Composer to depict plant conditions in 3D, with real-time responses based on sensor data.

Overall, most teams utilizing these cloud-based resources have presented outstanding results that impressed the organizer and audience. Collaboration between industry and academia enables students to achieve superior project outcomes and cultivate domain knowledge with the use of industrial-grade products and solutions. Furthermore, as part of our university collaboration program, Advantech also offers an internship module that allows students to work with us and our partners as interns in the future.

Through this collaboration, students can experience actual industrial work environments and small to medium-sized enterprises (SMEs) can obtain unique AIoT solutions. For example, Advantech and TAR UC have established on-campus AIoT projects, specifically a ginger farm and a single-line ginger juice production and packaging facility, which provide both the PoC and proof-of-value (PoV) for Industry 4.0 and smart agriculture IoT.

Moving forward, the next collaboration will involve more students and include the setting up of comprehensive AIoT solutions at the university. These solutions will be presented to SMEs to facilitate their digital transformation. ■

CHINA

Long-Term Volunteer Work to Promote Traditional Cultural Education

Over the last 10 years, the Advantech True Love Education volunteer team has promoted traditional cultural education in elementary schools throughout China, encouraging children in rural areas to achieve their full potential. Through practical actions that embody Advantech's philosophy of altruism, the Advantech True Love Education volunteer team fulfills the company's corporate social responsibilities.

Photos provided by Advantech

Due to disparities in economic development across China, elementary schools in rural areas typically lag behind schools in large urban cities. Indeed, the Dalonghua Central Elementary School, which is located in a mountainous region of Baoding City in Hebei Province, previously struggled with outdated facilities and a lack of teachers. But then in 2010, Advantech's True Love Education volunteer team met with the school principal, Dong Rongxi, to offer assistance and resources. In the years since, the principal's devotion to improving local education, combined with the resources provided by the volunteer team has completely transformed and revitalized the Dalonghua Central Elementary School.

In addition to purchasing winter mattresses, sports equipment, and daily supplies for students, Advantech offered Dalonghua Central Elementary School computer services. For 10 consecutive years, Advantech's True Love Education volunteer team provided teaching materials and recommendations to assist the school in promoting the learning of classical Chinese texts and expanding the chanting and

reciting of Di Zi Gui (Standards for Students).

"It takes 10 years to grow trees, but 100 years to cultivate people. The implementation and promotion of moral education could not have been accomplished overnight. Consistency and perseverance are required to achieve results in education." asserted Dong Rongxi.

Liu Xuedong, leader of Advantech's True Love Education team commented, "Although short-term assistance may bring improvements, maximizing effectiveness is difficult with limited resources. It is only by engaging in consistent, long-term action that Advantech can actualize its commitment to altruism and fulfill its corporate social responsibility roles." ◼

Enabling an Intelligent and Sustainable Planet

ADVANTECH

Enabling an Intelligent Planet

Advantech's hardware, software, I.Apps, and integration solutions consist of various products designed for specific applications, such as in energy (solar energy, wind energy, smart grids, electric vehicle charging stations, building energy-saving, and energy-saving monitors), flood and disaster prevention, sewage treatment, remote education, public safety (smart street lighting, transportation safety), public health, telemedicine, smart medicine, cold chain management (food safety), smart agriculture, information security, and cloud computing. In 2020, our worldwide revenue for the sale of products used for sustainable purposes accounted for 15.79% of our total revenue.

In the future, we aim to incorporate sustainability concepts into our strategy blueprint for developing new products in different industries. We will continue to develop smart solution plans to make the world cleaner, safer, healthier, and more convenient, enabling an intelligent and sustainable planet.

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