Taiwan Tech Arena (TTA) is a flagship startup ecosystem building program launched by the National Science and Technology Council. Through integration of various resources, TTA strives to transform Taiwan into a vibrant international startup ecosystem by supporting startups through our networks of partner accelerators, mentors, investors, and corporate members while expanding their global reach to create more business opportunities.

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TAiWAN TGCH ARENA

Dr. Cheng-Wen Wu, NSTC New Minister

An Exclusive Interview with Minister Wu on his Insights and his Vision Going Forward

Future Scenarios of Smart Living and Trends in Key Technology Applications

How First-mover Advantage is Crucial for Nations and Businesses

TAiWAN TGCH ARENA

TTA

SEP. 2024

15

Breaking Boundaries with Innovation & Entrepreneurship

Empowering Taiwan and International Tech Startups 6 Years on

TTA's Key Role in Transforming Taiwan into an AI Island

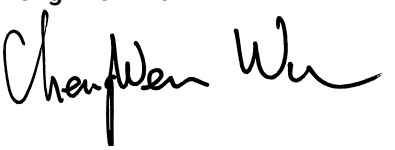
President Lai Ching-te has pledged to fully commit to transforming Taiwan into an "Island of Artificial Intelligence" and making Taiwan a key player in global competition. To achieve this, the National Science and Technology Council (NSTC) will develop relevant strategies, integrating the concept of sovereign AI, gradually transitioning Taiwan from a critical hardware supplier to a nation with independent AI development capabilities.

The Taiwan Tech Arena (TTA) will play a crucial role in creating local market demand and promoting AI technology adoption. Established in 2018 with NSTC's support, TTA has mentored and cultivated over 900 startups, focused on developing advanced systems, applications, and software. Some of these companies have started to expand and grow rapidly, while others are still in the incubation phase.

I am deeply invested in the future development of these startups. The NSTC's policy will focus on the development of sovereign AI, assisting startups in using local data to develop applications, thus preventing them from moving abroad due to insufficient market acceptance. Leveraging TTA's resources will be essential to help startups navigate the "valley of death" and create genuine industrial value in society.

Let's work together to ensure the flourishing of Taiwan's startup ecosystem.

Cheng-Wen Wu



Minister Without Portfolio, Executive Yuan
Minister, National Science and Technology Council

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Develop Sovereign AI to Transform Taiwan into ‘AI Island’

Exclusive Interview with NSTC Minister Wu Cheng-wen

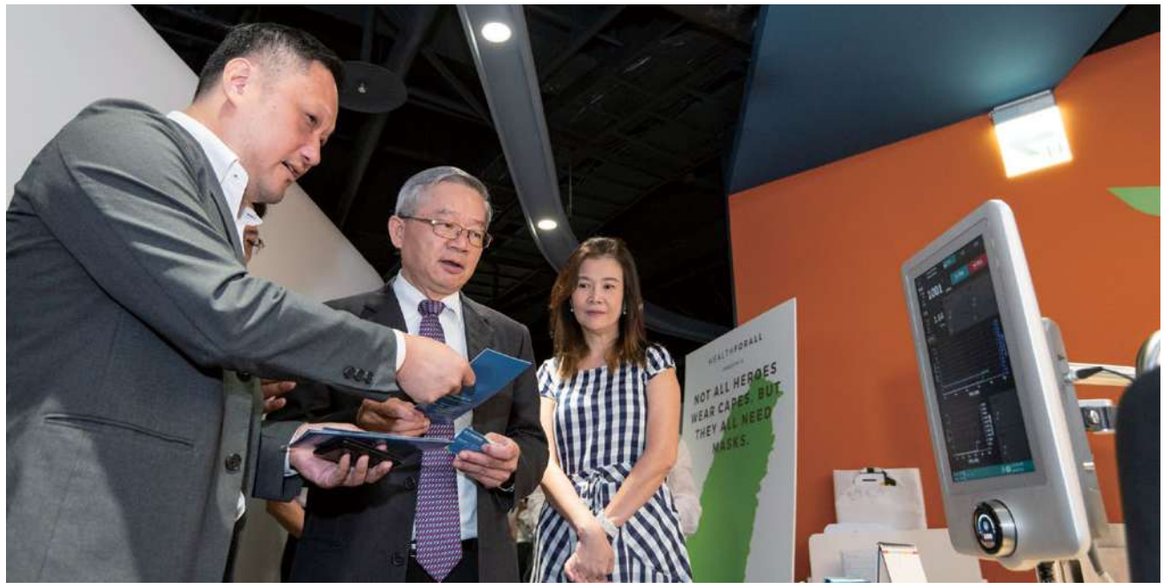
After taking office on May 20, President Lai Ching-te announced a forward-looking plan at the 2024 Computex Exhibition: to transform Taiwan into an “AI Island.” This commitment to future technological development signifies a vision where Taiwan will secure a competitive position globally. When unveiling this plan, President Lai highlighted three key initiatives: enhancing computing power, establishing a stable power supply, and nurturing talent. The core objective behind these initiatives is to ensure the continuous development of Taiwan’s AI industry and its ability to meet future market demands.

Recently, Minister of the National Science and Technology Council (NSTC) Wu Cheng-wen, the president’s key technology cabinet official, elaborated on the council’s policy directions and vision for the next few years in an interview with TTA magazine. He outlined a step-by-step approach to realizing the president’s vision of making Taiwan an “AI Island” through the development of sovereign AI.

Minister Wu provided a clear framework for defining an “AI Island,” stating that Taiwan must meet three basic criteria. First, it must possess the capability to develop AI systems. Currently, the most advanced countries in this field are the United States and European nations, which meet global demand through innovative AI computing methods. This means Taiwan still has room for improvement in AI system development. Taiwan currently has strong advantages in hardware manufacturing, especially in semiconductor production and data center system hardware. However, Minister Wu emphasized that relying solely on hardware is insufficient; investment in AI system innovation and design must be increased.

The second criterion is establishing a complete supply chain from design and integration to manufacturing. This requires more than just hardware provision; it necessitates combining research and development, design, manufacturing, and application to form a strong and comprehensive AI industrial ecosystem.

The third criterion is that the Taiwanese people need to adopt a culture of using AI tools. AI applications should not be limited to experts but should be promoted throughout society, enabling everyone to use these tools to improve work and life efficiency.



Setting the policy directions

To achieve these goals, the NSTC is fully committed to formulating policies and making governance plans public, allowing academia, industry, and various sectors to understand the policy direction. Minister Wu emphasized the importance of transparency to encourage participation from all sectors of society, working together to transform Taiwan into an AI Island. “Without a clear policy direction, governance efforts that do not align with national goals will result in wasted resources and time. Therefore, we must clearly plan the steps to achieve these three criteria and incorporate the concept of sovereign AI, enabling Taiwan to gradually transition from a key hardware supplier to a country with independent R&D capabilities in AI.”

Given Taiwan’s strong manufacturing capabilities, why hasn’t it achieved a leading position in AI applications and data center construction globally? Most of Taiwan’s hardware products are used in foreign markets, with a relatively low proportion for domestic use. This indicates a lack of widespread and deep implementation and use at the application level, which is a key area needing policy improvement, said Minister Wu.

In contrast, Taiwan’s traditional industries have developed well, primarily in manufacturing, supplying advanced machinery, chemical materials, and other products globally. Minister Wu pointed out, “However, we rarely use these crucial hardware products ourselves. This raises an issue the government must address in supply chain management: how to create local demand to promote the implementation of AI technology.”

The Taiwan Tech Arena (TTA) plays a significant role in this process under NSTC’s guidance, fostering numerous startups dedicated to developing advanced systems, application services, and software. TTA cultivates 100-200 startups annually, with over 900 in total to date. Some of these startups have already shown success, expanding their markets and growing rapidly, while others remain in the incubation stage or have dropped out.

Some rapidly growing startups chose to go abroad to find a conducive environment for expansion. Many believe this reflects a small market or overly conservative local venture capital that only invests in mature startups. Minister Wu disagrees with this view. “Taiwan has strong technological hardware capabilities. Although the profit margins in the OEM industry are not high, they remain competitive with sufficient scale. Taiwan’s OEM industry maintains an irreplaceable global position, but supporting local startups is still a challenge.”

Many of Taiwan’s major electronics manufacturing service (EMS) companies also invest in startups with their corporate venture arms, but their lack of interest to handle small orders makes it difficult for startups to gain substantial support. “I am very concerned about these startups, especially when I see many startups closing due to lack of supply chain support, leading to the loss of talented young people to other companies. Therefore, we are planning policies to fully leverage TTA’s resources to assist startups, helping them cross the ‘valley of death’ and create real industrial value in society.”

Ensuring a company’s operations are on track does not necessarily require it to be extremely large. Minister Wu believes the focus should be on whether the company’s gross profit margin exceeds 50%, whether the product is unique and differentiates from other competitors, and whether it provides high salaries and benefits to employees. Under these conditions, can the government help them expand the market? The answer is “Yes!” In our Action Plan to Empower Southern Taiwan Toward an AI-Based Industrial Innovation Ecosystem, we will be launching the Smart Technology Rainforest Program: Toward an AI-Based Industrial Innovation. We invite everyone to join us!

Future Scenarios of Smart Living and Trends in Key Technology Applications

IEK Consulting
Ming Yung Su

1. Future Scenarios of Smart Living

(1) Six mega trends at the center of the new civilization highlighted in the 2040 World Future Report

The 2040 World Future Report by Youngsook Park, futurist and Chair of the Millenium Project's Korean Node, was published in 2022. In it the author predicts the changes facing humanity after the COVID-19 pandemic and the outlook for the world. Based on the Millenium Project's State of the Future Index compiled with feedback from more than 4,500 experts, and using Real-Time Delphi, Futures Wheel, and Scenario Analysis, this book forecasts the development of the future world and proposes the following six mega trends at the center of the new civilization: the fight against aging and death; overcoming the climate crisis; ESG survival strategies; the Space Age; living with robots and the AI Metaverse (Figure 1). Humans will continue to surpass their limits through scientific and technological development. Our dreams and imaginations will gradually become a new reality, and our ways of living will also change as a result.

1. Fight against aging and death

Biomedical technology companies worldwide are dedicated to developing technologies such as gene editing, precision medicine, regenerative medicine, and brain science to solve the problems of aging and disease and break the limits of the human lifespan. Relevant trends and issues include anti-aging technologies, next-generation diagnostics businesses (exosomes), Transformer technologies (AI, AR, and gene editing), superhuman and human-machine sports competitions, modified humans and digital twins, brain-machine interfaces, cryonics, the food revolution and evolving cooking methods, suitable housing for an aging society (3D-printed housing), etc.

2. Overcoming the climate crisis

In response to the climate crisis, companies are committed to reduce carbon emissions. Corporate social responsibility is accelerating the transition to new energy and renewable energy sources, and has set the mobility revolution in motion. Relevant trends and issues include rocket launch technologies, the mobility revolution and drones, investments to address the climate crisis, zero-carbon energy industries (marine energy and hydrogen), the future of animal husbandry (cultured meat), and next-generation transportation (hyperloop trains), etc.

3. ESG survival strategies

ESG (Environmental, Social, and Governance) management is no longer an option but a necessary path for enterprises. Companies will have to change their business models to achieve low-carbon transition and carbon neutrality goals, and the whole world will embrace a new climatic regime. Relevant trends and issues include survival strategies for the new climate regime, evaluation criteria and methods, the importance of business and corporate governance, and new investment models, etc.

4. The Space Age

The challenges and competition in the space domain are intensifying among nations and global companies. Space business sectors and the space economy are continuously expanding, including space-based solar power generation, satellite internet services and space resources exploration. Relevant trends and issues include space hegemony, new space businesses (asteroid mining), satellite networks, space-based solar power generation, space debris industry, space travel and entertainment, and space governance, etc.

5. Living with robots

In the future, various types of robots will become indispensable partners in human life. Related trends and issues include robots for the elderly, decentration and autonomy, love and sex with robots, robots for creative art activities, nanobots, AI in politics, robots and the work revolution, AI investments, etc.

6. AI Metaverse

A new digital world full of unlimited market opportunities and possibilities will become a reality and is set to change the social, economic, and cultural activities of the future. Relevant trends and issues include the convergence of the virtual world and the real world, life recording, multiple identity metaverses, ultra-precise motion capture technology, metaverse leaders and employees, migrating to the metaverse services, political entertainment metaverses, decentralized computing (NuNet), and media memorials, etc.

2. Predictions of Technological Developments and Directions

(1) Strategic Roadmap for Future Technologies in Different Countries

As leading countries around the world have announced their national strategies for future technologies, fields such as semiconductors, biotechnology, artificial intelligence, quantum technology, clean energy, cybersecurity, and space

technology have taken the center stage of investments and developments in numerous nations (Figure 2). These technologies are seen as key to shaping the future world, enhancing national security, strengthening industrial competitiveness and driving economic development. The advancement of these technologies will profoundly impact industrial structures and social development, and will reshape industrial landscapes and competitive dynamics over the coming decades. Therefore, governments and enterprises worldwide are actively developing and investing in these critical technologies to ensure their position and competitiveness in the global technological race.

As the cornerstone of modern technology, semiconductors are widely used in electronic products, communications equipment, high-speed computing, etc. Governments worldwide are focusing on the development of semiconductor technology to ensure their countries' competitive edge in advanced chip design and manufacturing. This includes investing in R&D, talent development, and the strengthening of industry alliances.

The field of biotechnology encompasses multiple directions including genetic research, biomedicine, and agricultural genetic modification. Governments are strategically deploying biotechnology developments to drive innovation and progress in medicare/healthcare, agricultural production, and environmental protection.

Artificial intelligence (AI) technology has found its way into many industries, including autonomous driving, medical diagnostics, and financial forecasting. AI is viewed as a critical and strategic technology in the national agenda. Investment is increasing to promote AI applications in government, industry, and society. At the same time, relevant governance is being strengthened, such as the European AI Act, ethics, regulations, and security measures.

Quantum technology, including the fields of quantum computing, quantum communications and quantum sensing, is considered a major breakthrough in future technology. Countries are expanding their investments and research in quantum technology to enhance information processing capabilities and encryption security, etc.

Clean energy generation and storage is another technology gaining increasing attention and emphasis in national agendas. Given the growing concerns about climate change and environmental protection, all countries are committed to the development and utilization of clean energies such as solar, wind, and hydropower to replace traditional fossil fuels, reduce carbon emissions, and achieve energy sustainability.

Given the increasing frequency of data and information flows across networks, cybersecurity has become a key focus for many developed nations. National technology strategies emphasize strengthening network infrastructure security via the initiation of research on technologies to counter cyberattacks, and the enhancement of international cooperation.

Space development not only concerns technological prowess, but is also important to national security strategies and the development of new economies (e.g., the new space economy). Therefore, countries are formulating space technology development strategies to advance technological innovation and applications in satellite communications, space exploration, space tourism, and other areas.

(2) International Trends in Emerging Industries and Technologies

Leading international research institutes such as McKinsey, the World Economic Forum (WEF), MIT Technology Review, and Gartner have been observing and analyzing emerging industry and technology trends over the long term. The summary by this paper of predictions by these institutes about emerging technologies and trends in tech ecosystems paints a picture of diverse developments, including generative AI, sustainable aviation and computing, climate tech and gene-editing, etc. (Figure 3). These emerging industry and technology trends represent the direction and the potential of future industry development. The predictions by these research institutes not only provide a crucial reference for businesses and investors, but also guide the direction of global technological innovation. The relevant technology trends are explained as follows:

Artificial intelligence (AI) has evolved from traditional supervised learning to generative models, such as Generative Adversarial Networks (GANs) and autoencoders. These technologies enable machines to be more flexible and intelligent when handling complex tasks with higher uncertainty. In the future, generative AI will play a pivotal role in creative industries, new drug development, artistic creation, and other fields, and will profoundly impact industrial structure and value chains.

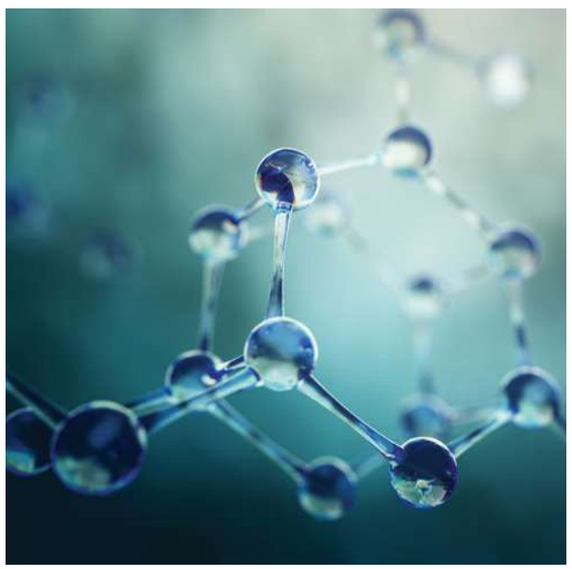
Amid rising concerns about climate change and environmental protection, sustainable aviation and transportation have become important global issues. Research institutes forecast that the future of aviation and transportation will move towards electrification, lightweight design, and intelligent systems. This includes electric aircraft, hydrogen fuel cell technology, and smart traffic management systems to achieve low-carbon, high-efficiency sustainable transportation.

Climate technology refers to technologies that can reduce greenhouse gas emissions or address the impacts of climate change and environmental challenges. Research institutes are focusing on innovations in areas such as Carbon Capture, Utilization and Storage (CCUS), renewable energy, environmental monitoring, and early warning systems. These technologies will help reduce greenhouse gas emissions, improve air and water quality, and protect ecological environments. Gene-editing technologies like CRISPR have already brought revolutionary changes to the medical field by enabling the precise repair of genetic defects

and the treatment of many hereditary diseases. Furthermore, research institutes predict that gene-editing therapies will continue to develop in areas such as cancer treatment, immunotherapy and human organ regeneration, bringing more breakthroughs for human health and quality of life.

3. Next Wave of Key Technological Applications and Trends

Based on the aforementioned analysis of future scenarios of smart living and the predictions and directions of technological development, a summary is provided below regarding the next wave of key technologies: health technology, climate technology, smart virtual-physical world integration technology, resilience technology, and inclusive technology. These trends serve as references for future government technology policy planning and corporate operational developments. Overall, these key technological trends will have a profound impact on government technology policies and corporate operational developments going forward. The government should proactively formulate supportive policies, provide financial support and environmental incentives, and encourage enterprises to expand their R&D investment. The drive for innovative applications can lead to positive interactions and sustainable development of technology and industry.



(1) Health technology applications

Health technology will play a vital role in future scenarios of smart living. This will include the utilization of biosensors, smart devices, and big data analytics to achieve innovations in personalized precision medicine, telemedicine, and healthcare management. In terms of biosensors and smart health devices, governments and companies should increase investment in these areas. Wearables such as smart wristbands, smart blood pressure monitors, and smart blood glucose meters can be developed for the monitoring of physiological indicators, prediction of disease risks, and the offering of health advice. These devices could collect real-time health data and help to optimize health management. When it comes to telemedicine, services can be provided on the internet and with advanced communications technology. For instance, telemedicine platforms could be established to allow doctors and patients to communicate via video consultations and online inquiries. This could facilitate medical access for rural and elderly patients, reduce barriers to healthcare, and save on medical resources and reduce costs. As for the development of healthcare management systems, the integration of various medical data and information could achieve comprehensive management and analysis of health data. This would encompass the establishment of electronic medical record systems and smart medical big data platforms. Doctors could diagnose diseases more accurately, formulate personalized treatment plans, and improve medical efficiency and quality. Finally, in terms of personalized medicine and gene editing therapy, genetic testing technology could analyze genomic information, predict disease risks, and personalize prevention and treatment plans for patients. Gene editing technology could be used to treat hereditary diseases, cancer, and other hard-to-treat diseases.

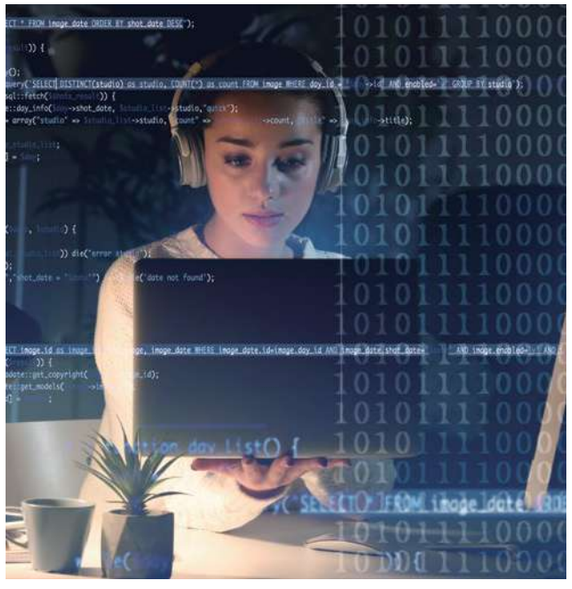
(2) Climate technology applications

In the face of climate change and environmental challenges, climate technology will be key to the achievement of sustainable development. This includes innovations in renewable energy, carbon capture and storage, climate monitoring, and early warning systems. Governments should formulate corresponding policies to encourage enterprises to invest in the R&D and application of climate technologies, promote green energy transition and the development of environmentally friendly industries. The R&D and application of renewable energy technologies includes the development of more efficient solar cells, wind turbines, hydroelectric dams and tidal energy generation. The research and development of carbon capture and storage technologies focus on the capturing of greenhouse gases such as carbon dioxide from emission sources for subsequent storage or use. For example, carbon capture facilities can be built to capture and convert industrial carbon dioxide emissions for permanent underground storage or for industrial uses. Climate monitoring and early warning systems can be developed to monitor climate change and extreme weather events to facilitate early awareness and timely response. For instance, the establishment of meteorological monitoring networks and the development of meteorological models and prediction technologies can improve the predictive accuracy of extreme weather events and sharpen emergency response capabilities. Moreover, the promotion of green transportation and energy transition can reduce dependence on and emissions from fossil fuels. This may involve the development of electric vehicle technologies and smart transportation systems; construction of green transportation infrastructure; and the increase in support for and investment in clean energy.

(3) Applications of smart virtual-physical world integration technology

The smart virtual-physical world integration technology encompasses artificial intelligence (AI), virtual reality (VR), augmented reality (AR), Internet of Things (IoT) and other technologies that will transform people's ways of living and working. It can be applied in various domains such as education, healthcare, manufacturing, and entertainment. The government should strengthen policy guidance about smart virtual-physical world integration technology, promote digital transformation, and provide corresponding laws and regulations to foster innovative applications and industrial ecosystem development. In terms of virtual-physical world integration equipment and platforms, AR glasses, VR headsets, and interactive virtual-physical devices can be developed to provide immersive experiences. Users can perceive the real and virtual worlds at the same time for interaction and operation. Products such as Microsoft's HoloLens and Oculus Quest are the case in point. When it comes to education and training applications, virtual-physical world integration technology can render a richer and more lively learning experience. For instance, virtual laboratories and VR-based classes allow students to conduct experiments and simulations in virtual worlds, for greater learning effectiveness and more fun. With regard to medical and health applications, virtual-physical integration technology can improve healthcare and health management. Use cases in point are the development of virtual surgery simulation systems to provide doctors with pre-surgery training and simulations or the use of AR technology to offer real-time medical data and guidance and enhance medical diagnostic and treatment capabilities.

Furthermore, smart virtual-physical world integration technology can be used for smart manufacturing and production to raise production



efficiency and quality. For example, virtual factory simulation systems can be developed to assist factory design and optimization or AR technology can be deployed to assist workers in manufacturing and assembly to achieve greater work efficiency and precision. In terms of entertainment and cultural applications, virtual-physical world integration technology can create richer and more diverse entertainment and cultural experiences. For instance, the creation of virtual amusement parks, virtual art exhibitions, virtual singers, or virtual musicians allows users or the general public to experience a variety of entertainment activities and cultural resources in the virtual world.

(4) Resilience technology applications

Resilience technology empowers the ability to withstand disasters, risks, and uncertainties. This includes IoT sensing, smart monitoring systems, and blockchain security, etc. The government should step up support and investment in resilience technology; establish technological support systems for disaster prevention, control, and emergency management; and improve the society's overall risk resistance capability. Smart monitoring and early warning systems can be developed to monitor natural disasters and social security risks. For example, advanced sensors can be deployed in earthquake monitoring systems, flood warning systems, and traffic congestion monitoring systems to better detect and respond to disasters and risks. IoT sensing technology can be utilized in a perception network for real-time monitoring and data collection. For instance, sensors and monitoring equipment can be deployed for the monitoring of meteorological conditions, traffic situations, and environmental quality, in order to provide real-time data support and decision-making references. Big data analytics and simulations can assess and predict risk factors. For example, data analysis tools can be employed to build models and predict weather disaster risks so as to facilitate the formulation of response plans and measures in advance. Regarding blockchain technology is concerned, its application ensures data security and reliability and prevents data tampering and single-point failures. For example, blockchain technology can be used to establish a trusted data-sharing platform for secure data sharing and collaboration. Furthermore, big data analytics and predictions can strengthen the resilience and disaster resistance of communities and urban infrastructure. This includes building structure monitoring and reinforcement, flood control and smart traffic management, etc. to improve urban disaster resistance and recovery capabilities.

(5) Inclusive technology applications

Inclusive technology emphasizes the universality and accessibility of technology, including innovations in digital education, sustainable developments, and smart social services. The government should encourage enterprises to develop inclusive technology products and services to narrow the digital divide and allow more people to participate in and benefit from technological progress. First of all, digital education provides widespread digital learning resources and tools, including online learning platforms, digital libraries, and educational games. For example, the offering of free or low-cost online education courses can give more people access to high-quality educational resources. In terms of digital finance technology, its development and applications can promote financial inclusion and the popularization of financial services. For instance, mobile payments, digital currencies, and online financial services allow more people to easily access financial services and resources. When it comes to community participation, collaboration and sharing, community involvement should be encouraged to promote resource sharing and knowledge sharing. For example, the establishment of community sharing platforms allows residents to share resources, skills, and information; provide tools for distinguishing fake news and prevent fraud; and achieve the goals of community information sharing, security and trust.

IEKView

In the face of geopolitical shifts, climate change, rapid technological advances, and heightened competition, first-mover advantage is crucial for nations and businesses. This study identifies five vital technological trends for the future: health technology, climate technology, smart virtual-physical integration, resilience technology, and inclusive technology. These trends emphasize a human-centered tech ecosystem and the fusion of technology and humanities. They are poised to influence future government policies and corporate strategies significantly. For instance, resilience technology demands collaboration among stakeholders, including governments, companies, academia, social organizations, and the public. By focusing on problem-solving, these groups can drive innovation in research, development, and application, enhancing societal resilience and adaptability and ensuring public safety and well-being.

The government should formulate supportive, top-down policies centered on public safety and corporate needs. Financial support and environmental incentives should encourage enterprises to invest in R&D and promote innovative applications, fostering sustainable development. In climate technology, focus on renewables, carbon capture, climate monitoring, and early warning systems to pursue low-carbon development. For resilience and inclusive technologies, prioritize R&D in sensing technologies, intelligent monitoring systems, and blockchain security to enhance data security and social participation. This approach will improve society's digital capabilities, increase resilience to natural disasters, and create a virtuous technological innovation and sustainable development cycle.

Business leaders should seize opportunities in emerging technological trends by adopting a user-centric model, driving innovation, and upgrading their products and services. This can be achieved by fostering an innovative tech ecosystem through cross-domain collaboration across supply chains. In health technology, prioritize R&D for biosensors, smart health devices, and healthcare management systems to advance personalized medicine and telemedicine. Additionally, it focuses on developing virtual-physical integration technologies applicable to sectors like education, healthcare, manufacturing, and entertainment. Such advancements will enhance the quality of life and improve work efficiency, positioning businesses at the forefront of technological progress and market competitiveness.

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From Guitar Hero to Global Impact: Kai Huang's Mission to Transform Taiwan's Startup Ecosystem

Kai Huang, a Taiwanese-born serial entrepreneur who relocated to the United States at the age of four and grew up in the Silicon Valley, returned to Taiwan to help local startups get successful landing on international markets.

Kai Huang
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With a background in gaming and a penchant for entrepreneurial ventures, Kai delved into various industries, including video games, smart electric bikes, and server software.

Kai himself is a serial entrepreneur that has a lot to offer. One of Kai's major achievements was the co-founding of RedOctane, a company renowned for creating the popular game Guitar Hero, which went on to become a multi-billion-dollar global video game franchise and was acquired by Activision in 2006. Following its acquisition by Activision Blizzard, Kai transitioned back to his entrepreneurial roots by launching ventures like Blue Goji, focusing on health and fitness through interactive gamification, and Flashbike, a smart electric bike endeavor.

During the COVID-19 pandemic, Kai and his family made a pivotal decision to relocate temporarily to Taiwan from the US. While in Taiwan, Kai seized the opportunity to contribute to the local startup ecosystem by co-founding 886 Studios, a venture studio aimed at nurturing Taiwanese startups. The studio's primary focus is on incubating innovative ideas, fostering entrepreneurial talent, and facilitating the growth of promising startups through programs like Velocity and Ikigai Launch Pad.

Commitment to contribute

886 Studios was co-founded in 2020 by 12 partners who were all Taiwanese founders who are serial entrepreneurs that founded companies exited in the US. "It started with this idea of, how can we help to foster and grow Taiwan's startup ecosystem," said Kai. "We aim to propel early-stage startups and ambitious founders from Taiwan onto the global stage."

Kai said venture studio, like an incubator or a startup factory, was actually an idea that he had for about 10 years. But he had done nothing

"talented individuals, access to capital across all growth stages, and an atmosphere conducive to idea exchange and collaboration"

about it while he was living in the US, because he felt the timing was not right. “But in Taiwan, everything clicked – all the other partners and I agreed the opportunity was right,” said Kai.

Why the name 886? It is named after Taiwan’s international country code, and the 12 partners include Kai and his brother Charles Huang, who co-founded RedOctane; Chris Wang of ThunderCore; Phil Chen of Cold Electric; Jameson Hsu of WOD.co; Kevin Chou of Kabam; Kevin Lin of Twitch; Jacob Hsu of SYMBIO; Steven Chiang of Zynga; Timothy Chen of VIA Technology (angel investor); Joseph Hei of OrbitBaby; and James Hong of Hot or Not. Their portfolios include high-profile companies such as Discord, Gogoro, P League+, KKBOX, etc.

To help foster Taiwan’s tech innovation and talent, in 2022, 886 Studios established Velocity, an accelerator coaching service to help Taiwan startups get into top global accelerators like Y Combinator. In 2024, it is entering its third phase of development, the Ikigai Launchpad Program.

The concept of “Ikigai” is a Japanese term referring to the passion that gives the value and joy to life. This program is designed to equip startup founders with essential skills in product development while fostering a sense of purpose and fulfillment in their ventures. Ikigai Launchpad offers selected teams both funding and a comprehensive 12-week accelerator program.

Paying it forward

Kai emphasized the importance of paying it forward in building a robust startup ecosystem, drawing parallels to Silicon Valley’s culture of mentorship and community engagement. He outlined key elements essential for a thriving startup environment: talented individuals, access to capital across all growth stages, and an atmosphere conducive to idea exchange and collaboration.

“I can guarantee you that any entrepreneur will give whoever finds a way to reach them 15 minutes of their time. That’s one of the things that I think makes Silicon Valley such a great startup ecosystem that people are willing to pay back freely in time and money, and their expertise and their

mentorship. So that’s one of the things that I think I would love to see happen in Taiwan more,” said Kai.

He emphasized that Silicon Valley is such a great place for startups and innovators because of the community. “There’s a lot of activities and thoughts being shared. People are just generous with their time and experience.”

“TTA is a great example of a seed of this idea. They create events and forums where people gather to exchange ideas. I may excite you with something, and you may excite me with something. This idea of exchange is similar to the debates of great philosophers or literary minds throughout history. That’s how ideas grow and community builds.” Kai’s voice was filled with excitement as he described his vision of Taiwan’s startup ecosystem in five years.

Vision for Taiwan’s startup ecosystem

Looking ahead, Kai envisions a continued evolution of Taiwan’s startup ecosystem, emphasizing the ongoing need for nurturing talent, promoting community building, and fostering a culture of innovation and collaboration. He underscored the significance of initiatives like the Gold Card program in attracting and retaining top talent essential for driving Taiwan’s entrepreneurial success.

Reflecting on Taiwan’s evolving startup landscape, Kai observed a burgeoning interest in AI startups, semiconductor technologies, hardware innovations, and consumer software services. Particularly passionate about supporting consumer-facing startups, Kai highlighted promising ventures like Dentscape AI, which uses AI to help simplify dental design, and Preciser, which uses AI analytical platform to help improve sports team performance, exemplify Taiwan’s drive towards technological innovation.

As Kai and his team gear up to launch the ikigai program within 886 Studios, their commitment to empowering ambitious founders and catalyzing the growth of Taiwan’s startup landscape remains unwavering. Ikigai Launchpad Program is recruiting its first batch of cohorts now. For those interested in learning more about 886 Studios and its initiatives, additional information can be found on their website at 886studios.com.

How Taiwan Should Leverage Its Unique Advantage in Manufacturing: Insights from Michelle Kiang

Taiwan holds a unique value in the global manufacturing landscape, and Michelle Kiang, co-founder of Impact Science Ventures, understands precisely how this strength is pivotal to cutting-edge innovations. As a three-time deep-tech startup founder with successful exits, Michelle provides a perspective shaped by extensive experience in both startups and large public companies in the semiconductor and telecommunications industries.

Michelle Kiang
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"Knowing how to make things at scale and cost-effectively is almost an art form to me, and that's a unique advantage that we should recognize and leverage," Michelle shared in an exclusive interview with TTA Magazine.

Michelle emphasizes that Taiwan's expertise in semiconductor and other manufacturing industries provides a significant competitive edge. This ability allows Taiwan to identify and create solutions for real-world problems that might not be known to those outside of the manufacturing industries. The typical academic researchers, while adept at creating functional prototypes, often struggle with scaling these prototypes into commercial products. Understanding the intricacies of manufacturing enables Taiwan to overcome these challenges effectively.

Beyond semiconductors, Taiwan excels in other areas like plastic manufacturing and other traditional industries. This deep understanding of manufacturing problems and solutions is attractive to global innovators who may have cutting-edge technologies but lack insight into practical manufacturing challenges, much less the ability to design their products for manufacturing.

Sure bets in AI era

Although people still need to identify the killer apps for AI, Michelle believes AI infrastructure such as data center for high-performance computing, the designing and manufacturing of AI-optimized chips, and the development of communications technology to transmit the data right from the data center to the consumers are undoubtedly going to fly and grow in the coming decade. However, the power consumption issue of data centers which already existed before the dawn of the AI era was exasperated by the generative AI fever.

"Taiwan's expertise in semiconductor and other manufacturing industries provides a significant competitive edge."

Michelle believes that Taiwan should get steps ahead, trying to figure out the solutions for reducing the energy consumption problem.

“This includes advancements in semiconductor technology, data centers, and communication systems, all of which are crucial for handling the increasing power consumption and heat generated by AI chips. She emphasizes that optimizing chips for AI models to reduce heat, or to suck the heat out or cool it down when heat is generated --there are still room for innovations at the architectural and even physical levels.

Michelle believes that Taiwan should leverage its expertise in hardware to lead in these areas and develop technologies that address these challenges. This focus on infrastructure and hardware is seen as a sure bet for the country’s future in AI development.

Expertise in deep tech

Michelle’s journey began in Taiwan, where she earned a bachelor’s degree in electrical engineering from National Taiwan University. She then moved to the United States for her graduate studies at UC Berkeley, earning a master’s degree in semiconductors and a Ph.D. in quantum electronics. After graduation, Michelle joined a networking component company to commercialize her Ph.D. work, eventually founded her first company in the telecom sector.

She transitioned from technical roles to the business side through her first startup, gaining valuable experience that led to the founding of two more companies focused on distributed sensors and big data for supply chain visibility, and MEMS-based ultrasonic sensors for consumer and industrial applications. Both companies had successful exits through M&A, with the latter acquired by TDK in 2018. Michelle then focused on advising and incubating startups, becoming an advisor for ITRI and several deep-tech startup incubators, and eventually co-founding Impact Science Ventures in 2021.

Before co-founding Impact Science Ventures, Michelle was a Venture Partner at Industrial Technology Investment Corporation, focusing on early-stage deep-tech investments in the US. Her career includes roles as founder and CEO or CMO of hard tech startups with successful exits, serving a broad range of verticals from consumer to supply chain management. She has also held executive positions in Corporate Development and Strategic Planning for big enterprises in the semiconductor and communication industries.

Plug-in the ecosystem

Michelle highlights the importance of being part of the US innovation ecosystem, which she gained the access through her schooling in the US that got her started in her startup journey. This environment helped her build a crucial network, distinct from those who move to the US after finishing their education elsewhere. She shared these insights at a workshop, emphasizing the need to support Taiwanese and Taiwanese American founders in building successful companies in America.

Recognizing that not all Taiwanese founders can afford or want a US graduate education, Michelle advocates for programs that provide exposure, connections, and market knowledge. Her unique advantage lies in understanding both the US and Asian, especially Taiwanese, tech networks, vital for American companies wanting to work with Taiwanese giants like TSMC and for Taiwanese companies entering the US market.

She suggests that the government should create programs to bridge these gaps. She co-chaired a workshop sponsored by the National Science Foundation (NSF) of the United States and Taiwan’s SMESA under Ministry of Economic Affairs (MOEA) held in April in Taipei this year brought together government officials, incubation program leaders, and startup founders to discuss the what and how for creating collaborative programs to facilitate international partnerships crucial for tech companies’ success.

In the next five years, Michelle aims to promote the commercialization of deep tech to address the world’s biggest problems. Through her venture fund and her advisory work, she helps startups overcome challenges commonly faced by early-stage deep tech companies, particularly around scaling up. A key part of her plan involves fostering international partnerships, connecting US-based portfolio companies with partners in Taiwan and other regions.

Michelle is dedicated to aiding Taiwan’s growth in the startup ecosystem and ensuring access to advanced technology globally, especially in maintaining and evolving Taiwan’s leadership in the semiconductor industry. She emphasizes Taiwan’s potential to play a critical role in solving global challenges, like the climate crisis, leveraging its strengths in the physical as well as digital spaces.

“The Taiwanese government creates programs to facilitate partnerships between global companies and Taiwan’s industry,” said Michelle. “Organizations like Taiwan Tech Arena (TTA) are doing a good job, but more initiatives with a focus on deep-tech are needed to help startups and international companies find the right partners in Taiwan.”

STARTUP STORY

Founded in June of 2018, TTA has to-date supported over 1,300 startups through our accelerator partners and exhibitions. Our alumni startups have raised over US $1 billion in funding and won numerous local and international awards.

ACCUHIT

Enabling MarTech with AI, AccuHit builds all-encompassing marketing solutions

In the rapidly changing business world, data-driven strategies have become crucial to how companies can increase revenue. Digital marketing tools that play an instrumental role in data-driven strategies are also rapidly evolving. AccuHit, committed to MarTech solutions, offers three MarTech platforms including AccuNIX, AccuCDP and Accu3DM. It has recently further introduced AccuFLOW.ai, developed on the foundation of its AI strength. According to AccuHit's associate technical director Bing-Jin Lin, featuring no-code AI, AccuFLOW.ai provides tools that enable companies to build their own generative AI platforms for a diversity of use scenarios with no need for specific expertise.

Developing AI-enabled MarTech innovations, AccuHit provides three major platforms

According to Lin, AI is making giant strides and the launch of ChatGPT at year-end 2022 has spurred a wave of generative AI developments. This has profoundly impacted MarTech. The business world is now paying attention to how to incorporate generative AI into their marketing strategies to thereby make their marketing channels and models more intelligent and boost overall productivity and performance. Moreover, businesses are making efforts to slash the costs of developing applications in recent years. This has also been driving them to increasingly adopt AI.

AccuHit has developed three core products to meet MarTech demand. AccuCDP is a multi-channel customer data platform that collects and consolidates data from various sources. It processes both structured and non-structured data and thereby tracks each user's interactions across different channels to provide companies complete insights into the traces of users' activities, therefore enabling companies to create highly personalized user experience.

Accu3DM is a data-driven decision engine combining a URL shortening tool and AI-based analysis. Not only does Accu3DM quickly generate and manage short URLs, but it also uses short URLs for in-depth analysis of user behavior. Its target URL management model integrates multiple short URL data generated by a batch of target webpages to provide companies a global view on marketing effect analysis.

AccuNIX is an all-encompassing conversational commerce platform featuring chatbot support on multiple social media networks and seamless integration with CRM systems to boost management efficiency. It also provides a wealth of marketing tools that effectively increase user engagement and brand stickiness. Companies can also use its data analysis capability and labeling system to precise divide customers into target groups and create highly personalized marketing campaigns.

Leveraging generative AI to raise MarTech application performance

In early 2023, AccuHit formed a dedicated AI team that developed AccuFLOW.ai, following its three core MarTech platforms. Lin pointed out that AccuFLOW.ai focuses on generative AI applications and works with AccuNIX and AccuCDP to bring greater benefits. It empowers AccuNIX for marketing through social media networks. AccuCDP collects and analyzes user data from various channels and conducts user profiling. AccuFLOW.ai then uses the user profile data from AccuCDP to generate customized marketing content.

AccuFLOW.ai supports a diversity of corporate use scenarios. For example, customer service departments can use AccuFLOW.ai to build an AI chatbot that responds to product inquiries and redirects customers to human agents when appropriate. It can also help backend support agents quick find answers to customers' questions. AccuHit's platforms together form an end-to-end smart system that enables companies to collect and analyze data, perform precision marketing and provide smart customer service. With AccuHit's platforms, companies can increase their marketing effectiveness and raise customer satisfaction.

AccuHit's AccuFLOW.ai is being used in a wide range of applications. For example, a leading automaker uses AccuFLOW.ai for employee training, automobile sales and maintenance services to optimize its internal processes. There are also companies in the finance and insurance sector as well as cosmetics retailors that use AccuFLOW.ai to process data traffic and use AI chatbots for customer service and product sales.

AccuHit expands overseas at a steady pace, said Lin. By joining forces with customers and partners abroad, AccuHit has made contact with companies in Indonesia, Singapore and Japan to gradually introduce its products to foreign markets.

Since its establishment in 2018, AccuHit has been enjoying rapid growth in both the applications of its products and the revenue it generates. The growth is a result of the fact that AccuHit's products and their quality meet companies' marketing needs. More importantly, Taiwan's startup environment and TTA's support also play a critical role.

Lin noted that the government ramping up subsidies and knowledge sharing programs has greatly benefited startup teams. Furthermore, TTA offering workshops and venue spaces also helped AccuHit strengthen its operation and management skills and increase its product visibility. Lin therefore hopes the government will extend and expand its policies to provide even more powerful support for Taiwan-based startups.

Going forward, although AI will be the center of market attention, following cutting-edge technologies will not be AccuHit's only focus. Lin emphasized that AccuHit develops products with an aim to solve real-world problems. It endeavors to help companies raise operation efficiency and competitiveness in the digital era using the most suitable solutions.

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BigGo

BigGo refines shopping experience with an all-round price comparison platform

Many consumers find it difficult to navigate through today's flourishing e-commerce landscape and have trouble comparing prices across shopping websites. BigGo's price comparison search engine allows users to quickly find and compare over 3 billion price listings and discounts, delivering best-of-breed, high-performance and valuable shopping assistant services that help consumers easily compare offerings across major e-commerce platforms and make smart purchase decisions. According to BigGo CEO Dewei Yen (Kevin), BigGo's intelligent search capabilities enable a diversity of applications to help both B2C and B2B service operators deliver premium user experience end to end.

Kevin founded BigGo in 2016, when Taiwan's e-commerce landscape underwent significant changes with foreign e-commerce operators expanding into Taiwan one after another. At that time, consumers had to switch between different online shopping platforms to compare prices. Kevin developed a price comparison system for his own use when shopping for his family. Seeing how his system could also make online shopping more efficient for other consumers and this could be a good business opportunity, Kevin decided to commercialize it by launching the BigGo price comparison website. Online price comparison was exactly what Taiwan's e-commerce market needed at the time so BigGo was enthusiastically embraced. Its single-month active users exceeded one million within just one year after launch.

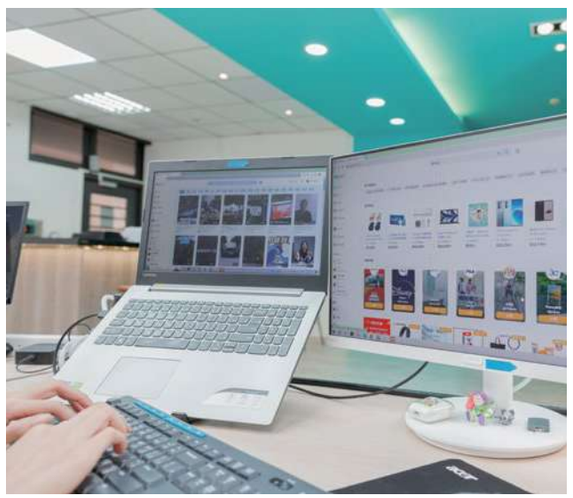
Leveraging comprehensive price comparison services, BigGo expands its footprint

Kevin noted that BigGo is much more than a price comparison website. It is an all-encompassing shopping assistant offering cross-platform price comparisons, BIRSE image search, social media comment checks, price monitoring and product description generators. For price comparison, users can quickly compare prices of goods on major e-commerce platforms, whether it's B2C or C2C. Its image search engine is based on advanced technologies similar to LLM-based AI systems. Instead of simply comparing images by colors and shapes, BigGo's image search engine accurately captures the images' content and style so it is particularly good at conducting searches for merchandise not easily described in words. Furthermore, BigGo incorporates searches for social media posts and short videos so that users can check unboxing videos before they decide to place an order. With these features, BigGo services cover the entire shopping process from start to finish.

It was found that users generally compare prices on BigGo five minutes before they decide to make a purchase, added Kevin. BigGo hopes to expand its footprint and play a more vital role in users' shopping process, starting with initial information gathering, mid-stage price comparison, and final purchase decision making. On BigGo, users can search for goods using texts or images, check social media posts, compare prices and discounts across different platforms and finally go to the platform of his or her choice to complete the transaction.

As to the business model, BigGo generates revenue from advertisements and commissions. For example, it gets paid for the Google AdSense banners on its website. It also gets paid by e-commerce operators when consumers directed from BigGo make a purchase on their platform. Apart from the two revenue sources, BigGo continues to actively expand its service offerings. In 2021, it began to develop price monitoring services that help e-commerce operators keep an eye on their prices against those of their competitors. With such services, e-commerce operators can stay aware of market changes and remain agile with their pricing strategies.

Boasting comprehensive services, BigGo enjoys an 80% share of Taiwan's price comparison website market. It is also making active efforts toward overseas expansion with a focus on Southeast Asia. It is the No.1 price comparison website in Thailand and Indonesia while operating online services in the U.S. and Japan. According to Kevin, built on a uniform platform design, BigGo provides services in different languages to meet local market needs. Among the world's very few cross-border price comparison websites, BigGo will endeavor to provide even more comprehensive services.



A positive startup environment nurtures BigGo while TTA and Orbit Startups provide valuable support

Kevin thinks the support from Orbit Startups and TTA plays an instrumental role driving the successful commercialization of his search engine and helping BigGo gain a foothold in the fiercely competitive market. Orbit Startups' Lifetime Program is aimed at not only initial-stage funding but also long-term partnership. Orbit Startups keeps watching BigGo's progress and helps find business opportunities whenever BigGo introduces new services.

TTA gave BigGo assistance when it was first established. For example, TTA offered a promotional platform for business partnerships, a venue for BigGo to hold product/service launch events, the use of office space and especially opportunities to participate in all types of events and presentations. These have greatly benefited BigGo and other online service providers.

In sum, Kevin thinks Taiwan's startup scene is developing in a positive cycle. He hopes that industry-government-academia collaborations will continue to improve Taiwan's startup environment and invigorate Taiwan's e-commerce and technology development. Going forward, BigGo will continue to endeavor toward big data analytics and machine learning algorithms and strengthen its leadership in the price comparison website as well as e-commerce markets. It will stay committed to creating more intelligent and convenient shopping experiences for consumers.

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COLEGA AI

Colega AI is Revolutionizing Social Media Management for F&B Owners

For most consumers today, checking online content to decide whether to visit a restaurant has become a usual practice. Therefore, one of the most challenging tasks for restaurant owners might not be serving delicious signature dishes, but rather putting effort and time into managing social media platforms to attract potential guests' attention and encourage them to walk through their restaurants' doors.

As a third-generation family member in the restaurant business, Eric Fung deeply understands restaurant owners' pain points. Drawing on 15 years of experience in the tech industry in Silicon Valley and his entrepreneurial spirit, he founded Colega AI with partners, and leverages AI technology to provide solutions that help restaurant owners easily manage social media platforms and create promotional content. Starting with Taiwan as the base, the startup is gaining growth support from TTA and SparkLabs Taiwan, and achieving some success in the market.

"I've been in the AI industry since 2018, and we've seen so much progression in AI, especially with ChatGPT coming out and all those technologies." Eric, the Co-founder & CEO of Colega AI, said, "I'd like to see how I can combine my knowledge in AI and apply it to Industries that still need to be innovative and catch up to modern technology, and what better industry than the industry that I grew up in?"

According to Eric's observations and experience, most restaurant operators do not understand new technologies or think it will be quite difficult to learn how to use them, particularly small and medium-sized businesses with tight human resources. Therefore, his philosophy is to provide AI tools that are easy to use even for those who do not know technology, allowing restaurant owners to focus on what they do best: providing delicious food and a welcoming atmosphere for their guests.

Colega AI's users don't need to know programming or go through the cumbersome process of registering, obtaining an account, and filling out numerous forms. They just need to connect with Colega via instant messenger like LINE or WhatsApp, link their social media accounts, and gain an exclusive 24/7 Social Media Manager who creates engaging content to attract online attention for their restaurant.

Building Exclusive AI Model for the F&B Industry

Of course, the effort and technical expertise required to create such a simple and user-friendly tool is beyond what the end users can imagine. In creating an AI assistant specifically for restaurant owners, Colega choses open-source large language models as the foundation and retrain them with the datasets collected by themselves. During the initial launch phase of Colega's service, they also did extensive manual work on the model fine-tuning to ensure the correct and fluent language they provide, especially the Traditional Chinese used in Taiwan.

"We take a very careful approach to train our AI model, it's because we want our AI-powered social media manager to be like you're essentially talking to a Taiwanese person." Eric explained, "So everything we do revolves around that. One of the big features that Colega AI can do is proactively tell you, give you ideas or suggestions of what to post, and the data sources come from what's happening around you in Taiwan."

For example, if an international superstar recently came to Taiwan, Colega's users will get a message and give suggestions to create a post to capitalize on this hot topic. "So, we have to understand the local events and trends, even the weather. And when it comes down to language, we don't just do a lot of manual work at the moment to make sure that the tone, slang, and phrases or grammar are consistent with the everyday language used by people in Taiwan. We can also learn the users' habitual expressions and preferences from their social media posts to create personalized content for them. It takes a lot of work, but we plan to apply this standard and approach to every international market we enter. It's about respecting each country's nuances," Eric added.

Establishing a Foothold and Expanding to Broader Markets

Colega AI is still in a very early stage. The team is currently gaining experience and continuously improving service quality through close collaboration with both independent restaurants and restaurant chains based in Taiwan. According to Eric, Colega AI offers its services through a monthly or annual subscription. In addition to providing suggestions for social media content posts, the company can also offer customized reports on post engagement and follower analysis. This allows F&B operators to gain valuable insights into how social media tools can help their business.

Currently, Colega AI's services are already operating in Taiwan and the United States through LINE and WhatsApp. The startup also plans to enter Japan, where social media marketing and LINE usage are prevalent, and they have already received on-going interest from restaurants there and across Asia. As for other industries beyond the F&B business that also need social media management, Eric mentioned that while Colega AI hopes to serve a broader market, building datasets and training custom models for specific industries is a demanding task. Therefore, the team will first focus on the areas they are familiar with, and establish a solid foothold before considering longer-term future developments.

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OMNIEYES

OmniEyes boosts fleet management efficiency with real-time Edge AI driver behavior analysis

Driver behavior management is a key part of logistics company operation. Unsafe driver behavior not only threatens road safety but also damages the company's reputation, and worse yet, it might incur large legal expenses. OmniEyes provides a total, flexible and cost-effective fleet management solution built on Edge AI technologies to help logistics companies create a next-generation fleet system by optimizing their resource allocation and intelligently raising their management efficiency.

OmniEyes was founded in 2019 by Chun-Ting Chou, Ai-Chun Pang and Shou-De Lin, three professors at College of Electrical Engineering and Computer Science, National Taiwan University. The startup was established with the support from a project jointly promoted by the Ministry of Education and National Science and Technology Council to encourage scholars to commercialize their research achievements and vitalize Taiwan's startup scene. According to CEO Chun-Ting Chou, OmniEyes was founded with an aim to use AI-based image recognition for real-time analyses of images captured by dashboard cameras. The team then progressed to focusing on commercial fleet management solutions built on Edge AI technologies for instant detection of driver misconduct such as running a red light and parking illegally to help fleet owners stay on top of driver behavior management.

Boasting software and hardware strengths, MyFleet enables three fleet management advantages

Built on both software and hardware strengths, OmniEyes' fleet management solution MyFleet runs on an AI Box, featuring a Qualcomm chipset, LTE, Wi-Fi and Bluetooth communication modules and Android OS. The device supports front and rear cameras and a variety of sensors to deliver all-round monitoring capabilities. In terms of software features, MyFleet is equipped with OmniEyes' in-house developed AI image recognition system that processes video data at the edge in real time and then sends the event-triggered information to the cloud platform for users to access through a web browser.

Chou noted that OmniEyes' MyFleet enables three major advantages. First, by detecting images of driver behavior and vehicle surroundings, reminding the driver to stop before passing through an intersection and alerting the driver of a red light ahead, the solution provides not only warnings beforehand but also analytics afterwards. Fleet owners have access to complete data, allowing them to enhance fleet management efficiency and performance.

Second, by equipping the in-vehicle device with Edge AI image processing capabilities, MyFleet significantly reduces data transmission costs. Third, built with a software-centric design, MyFleet supports Over-The-Air (OTA) updates and upgrades, thereby reducing the need for hardware replacements. Furthermore, OmniEyes also provides customized design services to help fleet owners create a fleet management platform suited to their requirements.

MyFleet is available in two business models. Customers can make a one-time purchase of the AI box and then pay a monthly fee for the use of the SaaS MyFleet web portal. Alternatively, they can pay a monthly fee for the use of both the hardware and software. Customers have the flexibility to choose a model based on their capex and opex.

OmniEyes' solutions have been adopted by well-known third-party logistics companies such as Taiwan Pelican Express and Ally Transport, first-party logistics such as Youbike (Giant Group) as well as taxi and rehabilitation bus fleets to optimize their management efficiency. Customer feedback indicates a 75% reduction in traffic accidents and 70% reduction in traffic tickets and liability expenses since their adoption of MyFleet. This proves that not only does MyFleet improve fleet management efficiency but it also effectively lowers operation risks, bringing substantial benefits to logistics companies and commercial fleets.

In terms of overseas expansion, OmniEyes has made significant progress thanks to its differentiation strategies. Its MyFleet platform has been adopted by the India branch of an international logistics fleet for its fleet of 370 trucks. Validation projects with potential customers in Japan and the U.S. are underway. OmniEyes expects definite results in the near future.

A positive startup environment nurtures OmniEyes while TTA boosts its visibility

For the successful real-world applications of OmniEyes' technologies, Chou gave thanks to the OmniEyes team for their effort. He also identified Taiwan's growingly complete startup environment and TTA's support as key contributing factors. Taiwan has an increasing number of startup accelerators and incubators that guide startup founders on everything including business operation, customer development, fund raising and organization management.

The startups also form an ecosystem where they share experiences and learn from one another. With TTA's support, OmniEyes is able to increase the visibility of its technologies and products and reach out to more potential investors and customers. Chou emphasized that the increased visibility is critical to the company's early-stage growth. He concluded by noting that Taiwan's startup scene is developing in a positive cycle. He hopes that industry-government-academia collaborations will continue to improve Taiwan's startup environment and invigorate Taiwan's economy.

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3T GDS

Combining blockchain and e-ticket technologies, 3T GDS helps Taiwan's service industry capture global business opportunities

In the face of growingly intense market competition, companies began to sell gift cards or vouchers decades ago in an effort to maintain steady growth. This approach allows them to get paid in advance while encouraging consumer spending. Today almost every consumer has a mobile device so electronic vouchers or tickets are replacing the printed version to become the mainstream.

Especially when COVID-19 gave rise to zero-contact shopping, e-vouchers became something that consumers preferred. Seeing that e-vouchers might be susceptible to cybercrime, more and more vendors now integrate blockchain with e-voucher systems and expand their business footprint into the global market.

There are two groups of vendors that combine blockchain with e-vouchers. The first group comprises blockchain startups. They generally don't know the industry well enough to win the favor of international sales channel operators. The second group comprises the original distributors of printed vouchers. They generally work with ICT solution providers but they may not be technically proficient enough to communicate with their ICT partners. 3T GDS is among the very few vendors that have the experience and technical caliber of integrating blockchain with e-vouchers. It was recognized and funded by the Small Business Innovation Research (SBIR) program in 2022.

According to 3T GDS CEO Eric Ko, blockchain enables traceability, immutability and irreversibility. It has been widely used across a diversity of fields. Blockchain integrated with e-voucher systems prevents fraudulent use of e-vouchers and thereby protects consumers and businesses. The security feature will undoubtedly attract partnership opportunities. Safeguarding e-vouchers with blockchain will also help companies expand their footprint globally as overseas consumers can rest assured that their purchase and use of the e-vouchers are protected against cybercrime. This is what distinguishes 3T GDS from the other e-voucher platform vendors.

3T GDS offers more than 5,000 electronic commodities with its global network of 15 channel partners

As consumers increasingly opting for e-vouchers gives rise to rapid growth of the e-voucher market, 3T GSD, a startup founded in 2020, endeavors to realize borderless living with digital assets and tourism banking solutions. Leveraging the popular blockchain technology on top of the team's 20 years of experience, 3T GDS brought together cross-border service providers and formed a big league of international e-voucher suppliers.

3T GDS's team of seasoned experts has built a global e-voucher purchase and sales platform providing travel commodity trust and reservation services, aiming to deliver higher quality service and stronger guarantee for every aspect of the travel experience. The company currently operates the 3TEZ online ticket point-of-sale platform, the 3TET e-voucher shopping site, the 3T GDS global distribution system and the 3T GDS CRM distribution management platform. In collaborations with Trip.com, Ctrip.com, Alibaba, ezTravel and a slew of other internationally known channels, 3T GDS helps them accelerate the distribution and reservation of electronic tickets or vouchers.

According to Ko, not only does 3T GDS enable cross-border merchants to manage their inventory on all the international channels, but it also helps them digitize their commodities or services and make them available on all the international channels. It consolidates all the orders from the international channels and provides them to the merchant so that the merchant does not have to worry about exchange rate and cross-border payment clearing issues. 3T GDS is currently in partnerships with more than 35 channel operators, marketing over 8,000 commodities in Taiwan and over 5,000 commodities abroad.

Successfully foraying into Singapore, 3T GDS signed an agreement with a prestigious banking group

Despite the widespread popularity of e-vouchers around the world, only Taiwan and Japan have a complete system to regulate e-voucher execution to protect consumers from fraudulent bankruptcy. 3T GDS learns from the system and has signed an agreement to work with a Singaporean banking group to provide escrow services for e-vouchers, creating a multi-win situation for merchants, consumers, platform operators and financial institutions.

Ko noted that without laws and regulations in place, there have been incidents in Singapore where e-voucher sellers went out of business maliciously and consumers demanded financial institutions for refunds. In view of this, when expanding into Singapore, 3T GDS signed escrow agreements with financial institutions and merchants to safeguard against such incidents. The Singaporean banking group therefore quickly agreed to the partnership with 3T GDS.

Thanks to the assistance from Foodland Ventures, based in TTA, 3T GDS was able to add many partners in the food service sector, helping them issue e-vouchers and unlock new revenue streams. Going forward, 3T GDS plans to work with TTA and Foodland Ventures to keep expanding OTA, EC, social media and payment channels in different countries as part of its efforts to build a solid foundation for long-term growth.

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BROADSIMS

BROADSIMS builds a healthcare ecosystem and optimizes healthcare efficiency with a 5G smart patient monitoring solution

Precise and complete vital-sign parameter monitoring plays a key role affecting the outcome of medical care and diagnosis. Medical institutions today use a variety of vital-sign monitoring devices. Without a way to integrate these devices, it is difficult to centrally manage patients' vital-sign data and this puts a burden on healthcare professionals. To address this, combining traditional vital-sign parameter monitoring and advanced ICT technologies, BROADSIMS introduces a 5G patient monitoring system featuring multiple vital-sign parameter sensors and connectivity with all kinds of medical applications and third-party devices. BROADSIMS' solution can significantly improve medical care efficiency and diagnostic accuracy.

A synergy between traditional patient monitoring and ICT technologies improves medical care efficiency and diagnostic accuracy

According to BROADSIMS founder and CEO Dr. Bruce Yu, a recent key trend for the healthcare industry is to develop smarter and higher-performance devices through the integration of ICT technologies with traditional medical devices as a way to improve medical care efficiency and optimize patient experience. In line with the trend, BROADSIMS applied its core strength and expanded vital-sign monitors commonly seen at hospitals into a smart platform that integrates a wide range of solutions from the healthcare ecosystem.

BROADSIMS' 5G multi-parameter patient monitoring system checks basic vital-sign signals such as ECG, blood pressure, blood oxygen and respiratory rate like traditional monitoring devices, and more importantly, it also supports all types of medical apps and third-party hardware through an open platform, allowing one device to monitor multiple vital-sign signals. Dr. Yu added that the system is like a smartphone for medical care. Not only does it have robust fundamental monitoring capabilities but it also features software and hardware expandability to accommodate wide-ranging needs of different healthcare use scenarios.

Healthcare professionals will greatly benefit from BROADSIMS' innovation, said Dr. Yu. They will be able to monitor multiple vital-sign parameters on a central platform and no longer need to operate several individual devices just to measure and track a patient's physical conditions. Physicians have simultaneous access to a patient's complete vital-sign data, enabling them to make the right diagnosis.

On top of healthcare efficiency improvement, BROADSIMS' 5G multi-parameter patient monitoring system also benefits vital-sign monitoring device manufacturers. Dr. Yu explained that single-feature medical device manufacturers face fierce competition. Even if their devices have been certified, they still struggle to overcome market entry barriers. By integrating with BROADSIMS' solution, the data collected by their devices can realize greater value, giving them another chance to penetrate into medical institutions.

Taiwan's positive startup environment supports BROADSIMS' global expansion while its open platform strategy expands application scenarios

Dr. Yu revealed that BROADSIMS' ecosystem strategy has generated positive results. The company has actively engaged with ultrasound and video equipment makers for hardware integration on its open platform. It has also introduced a platform development kit (PDK) for use by medical research and academic institutions around the world to develop new applications. With close collaborations with global manufacturers as well as medical research and academic institutions, BROADSIMS continues to expand the scale and diversity of its ecosystem, hoping to start a positive cycle attracting more partners to get on board.

BROADSIMS' 5G multi-parameter patient monitoring system was put to clinical use at NTU Hospital and Taichung Veterans General Hospital in 2021 and 2022. It officially passed medical device certification in May, 2024 and entered the market.

Close to half of the medical centers in Taiwan now use BROADSIMS' 5G multi-parameter patient monitoring system to optimize their healthcare efficiency. For example, Taichung Veterans General Hospital combines the system with mobile communication to continuously monitor the conditions of patients during transit and send the data back to the hospital. This significantly raises emergency care efficiency and patient safety.

The solution also meets the needs of the home critical care program the Taiwan government is actively promoting. It enables the same quality of healthcare outside the hospital setting. Aside from Taiwan, BROADSIMS is applying for medical device certification in Southeast Asia and Europe while exerting efforts toward the U.S. and other overseas markets.

Looking back at the process of developing and bringing the system to market, Dr. Yu attributed the success to the BROADSIMS team's effort. He also considered Taiwan's startup environment and TTA's support critical in helping BROADSIMS secure a foothold in the market. Dr. Yu pointed out with a multitude of accelerators and support programs, Taiwan's startup ecosystem is growingly mature. As an important resource provider, TTA incubates startups by not only offering them opportunities to participate at international exhibitions but also bridging them with mentors, media, prospective customers and investors.

Going forward, BROADSIMS will continue to expand its ecosystem and engage with more partners with its open platform strategy and PDK. Furthermore, it will actively strengthen its collaborations with medical institutions, hoping its robust technological capability coupled with the innovative application model will create a win-win situation for hospitals and patients.

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PILATUS BIOSCIENCES

Pilatus Biosciences makes breakthroughs in immunotherapy, demonstrating remarkable effectiveness in treating cancers with unmet medical needs

In recent decades, cancer immunotherapy, which harnesses the power of the host's immune system to eliminate cancer cells, has marked a significant advancement in cancer treatment. This approach offers a more precise and personalized therapeutic option compared to traditional chemotherapy and targeted therapies. However, emerging evidence indicates that the metabolic dysregulation within cancer cells creates physiological conditions in tumors that suppress anti-tumor immunity by reprogramming the tumor microenvironment (TME) to be more immunosuppressive. This challenge hampers the effectiveness of cancer immunotherapy, highlighting the importance of targeting immunometabolism—ushering in a new chapter for cancer treatment.

Metabolism is a core process underlying essentially all biological functions. The integration of metabolism with immunity, known as immunometabolism, is at the forefront of immunology research, as it continues to transform the field. Given its novelty and potential in cancer immunotherapy, immunometabolism is garnering increasing attention from the global medical and biotechnological industries. According to Raven Lin, co-founder and CEO of Pilatus Biosciences, cancer cells predominantly consume essential nutrients and produce harmful metabolic waste, thereby altering immune responses within the TME. By dissecting immunometabolism, we can understand how the interplay between immunology and metabolism impacts the functions of T cells and other immune cells. This understanding can lead to the development of innovative treatments aimed at reprogramming the TME and enhancing the effectiveness of immunotherapy.

Pilatus Biosciences is avancing preclinical studies and translational medical research in the field of immunometabolism at globally renowned research institutions and medical centers. The company has also developed multiple pipelines aimed at creating innovative treatments that target immunometabolism.

Unveiling outstanding PLT012 preclinical results

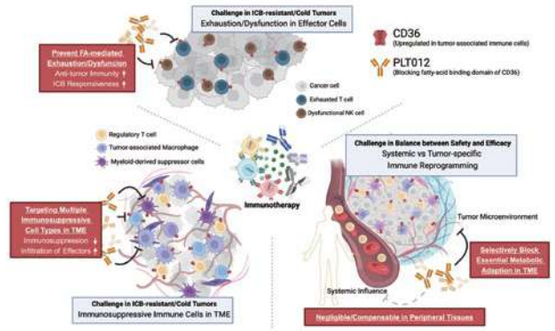
Founded by Prof. Ping-Chih Ho and Dr. Raven Lin at the Ludwig Cancer Research (Lausanne), Pilatus Biosciences pioneers the development of first-in-class biologics targeting metabolic checkpoints. These cutting-edge innovations aim to advance cancer immunotherapy and tackling the current challenges in cancer treatment. The Pilatus Biosciences team boasts extensive knowledge and experience in immunology, oncology and biotechnology, providing a solid foundation for its biologics research and development. Continuingly pushing the frontiers of cancer medicine, Pilatus Biosciences is committed to delivering more effective and safer treatment options to conquer cancer's greatest challenges.

Pilatus Biosciences' first groundbreaking antibody, PLT012, was developed to block CD36-mediated fatty acid uptake, driving immunometabolic reprogramming in the TME. This leads to remarkable anti-tumor efficacy and inhibits the growth and spread of cancer cells. Pilatus Biosciences has presented preclinical proof-of-concept data of PLT012, particularly in the context of liver and colon cancer, at several international medical conferences.

As a leading research group in immunometabolism, Prof. Ping-Chih Ho, co-founder of Pilatus Biosciences, focuses on studying how immune cells' metabolic adaptations are regulated or modulated in response to the tumor microenvironment. Prof. Ho's in-depth research on T cell metabolism in the tumor microenvironment has laid a solid foundation for Pilatus Biosciences' development of innovative immunotherapy and played a critical role in Pilatus Biosciences' remarkable achievements.

Pilatus Biosciences establishes a Subsidiary in Taiwan to strengthen R&D and fundraising efforts

Leveraging its strong expertise in immunometabolism research, Pilatus Biosciences further works with a renowned European cancer center to establish an ex-vivo patient sample culture platform. This platform retains the tumor microenvironment and cell populations of patients' cancer tissues, enabling efficacy assessment across various cancers. As part of its strategy to enhance R&D capabilities, Pilatus Biosciences plans to build a lab in Taiwan starting in July 2024. Pilatus Biosciences' endeavors not only provide more precise data for personalized medical care but also facilitate the selection of indications and biomarkers during biologics development. This approach can significantly reduce the risks of biologics development while greatly benefiting the advances of personalized medical care.



According to Lin, Taiwan has cultivated a comprehensive industry ecosystem for pharmaceutical industry from translational research disease model, manufacturing, pre-clinical testing, and clinical development, gradually establishing itself as a global leader in this field. To accelerate its development, in 2023, Pilatus Biosciences partnered with Mosaic Venture Labs, a startup accelerator based in TTA. This collaboration aims to leverage Mosaic Venture Labs' influence and resources in Asia-Pacific region to drive the company's growth and advancement through every stage of R&D. Pilatus Biosciences is now collaborating with multiple Taiwan-based research institutions and aims to build a strong and agile operation team in Taiwan that will connect with the global research community. Phase-one human clinical trials for PLT012 in Taiwan and the U.S. are scheduled to begin in early 2025. Mosaic Venture Labs is assisting Pilatus Biosciences in a round of funding aimed to raise US$10 million. The startup accelerator's network of biotech venture capital partners in Taiwan will help Pilatus Biosciences build up a solid foundation for its subsequent development. Hopefully, all these efforts will enable Pilatus Biosciences to present more treatment options and opportunities for patients through its biologics development achievements.

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DROXO

DROXO introduces intelligent storage tank maintenance solutions targeting worldwide markets

Semiconductor process technology advancements have enabled extreme miniaturization of electronic devices. Coupled with battery technology breakthroughs and AI algorithm maturity, these developments have given rise to increasing popularity of unmanned vehicles. In particular, the market of unmanned aerial vehicles is of the largest scale.

According to the Association for Uncrewed Vehicle Systems International (AUVSI), the global unmanned aerial vehicle (UAV) or drone market is projected to reach US$140 billion in ten years. Aside from drones, unmanned vehicles are being designed and used for a wide range of application scenarios. For example, governments around the world are investing into autonomous driving vehicles as part of their efforts to improve public transportation. Automated guided vehicles (AGV) are also widely used at warehouses and factories to raise efficiency and reduce labor costs.

DROXO CEO Chun Lin Liu noted that drones are used to do many things, for example, spraying pesticides, shooting videos and delivering packages. There have been a multitude of successful use cases. However, drones have limitations such as inability to navigate confined spaces. For the routine maintenance or repair of industrial equipment made of carbon steel such as petrochemical storage tanks, large vessels and wind turbines, purpose-built unmanned vehicle solutions are required.

This market segment currently does not offer a lot of choices. Existing solutions are mostly provided by foreign device suppliers and generally do not deliver satisfactory results. DROXO is among the few suppliers capable of providing complete smart storage tank maintenance solutions. Its products have been used to successfully address customer needs in Taiwan. DROXO is also in talks with overseas partners to expand its footprint worldwide.

DROXO builds special-purpose solutions to overcome challenges in large storage tank maintenance

Starting out its business developing drone technologies, DROXO chose to endeavor on agriculture drones with a lower entry barrier when it was first established in 2019. It was able to commercialize its agriculture drones and made significant progress within a short period of time. On the foundation, DROXO independently developed wall-climbing intelligent vehicles which received the Ministry of Economic Affairs' Business Startup Award - Innovative Traditional Industry Category 2023.

On the basis of the outstanding achievements, DROXO continues to fulfill customer needs by integrating all types of sensors, mechanical designs and automation accessories while staying committed to technological advancements and innovations. On top of that, DROXO leverages its robust hardware mechanical design and software/firmware development capabilities accumulated over time to develop smart vehicles for industrial applications. Not only has DROXO had its R&D results validated but it has also mastered critical technologies.

According to Liu, DROXO's wall-climbing intelligent vehicles enable the maintenance work on storage tanks to be performed without the need for scaffolding. Leading chemical suppliers have approached DROXO for the labor cost savings its solutions can bring when they are used to inspect or service large storage tanks. Multiple leading Taiwan-based manufacturers including China Steel, LCY Chemical and Chang Chun Chemical have adopted DROXO's solutions for the purpose of eliminating the risks and uncertainties when using human workers to service or inspect storage tanks.

Foraying into Japan and the Middle East, DROXO taps immense maintenance opportunities

DROXO has recently introduced a whole-new and complete range of intelligent storage tank maintenance solutions, including AAAROW Scan, AAROW Blast, AAROW Coater and AAROW DECK. Among them, AAROW Scan adheres to the tank wall using neodymium magnets and checks the wall and coating thickness with non-destructive inspection equipment. The inspection results are presented in 3D visualization on ARROW DECK. DROXO's unique product received the 2024 Taiwan Excellence Silver Award.

Liu commented that the traditional approach of using human workers to perform storage tank maintenance is very risky. First of all, workers might fall from a scaffold or inhale harmful fumes when doing coating. Furthermore, workers manually measuring tank wall thickness might make mistakes and fail to discover weak spots that will soon crack. The traditional approach also does not allow manufacturers to build 3D models of the tank. Each one of these challenges can be addressed with DROXO's intelligent storage tank maintenance solutions. DROXO operates by providing services instead of selling products. Apart from Taiwan, it is also working with partners in Singapore, Japan and the Middle East to provide services in the local markets.

DROXO has focused efforts on technology R&D. Thanks to the assistance from flyingV, stationed in TTA, not only is DROXO able to strengthen its financial planning and business operation skills, but it also gained access to funding from venture capital firms, allowing it to secure market presence in the competitive unmanned vehicle sector.

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TAIWAN TECH ARENA Event Summary

From May – July, 2024

IC Taiwan Grand Challenge Global Call for Proposals – 2nd Batch

Taiwan CbI is a collaborative effort by Taiwanese government ministries, leveraging Taiwan's semiconductor expertise by integrating chips with critical innovations. The National Science and Technology Council (NSTC) spearheads the IC Taiwan Grand Challenge to bolster Taiwan's IC startup ecosystem and attract global tech talent and investment.

Join the Challenge **https://ictaiwanchallenge.org/**
Deadline for the 2nd Batch January 31, 2025
4 key benefits to the winning teams: (Subject to the organizer's final announcement.)

- First is the 30,000 US dollar cash prize, which they will receive to kick off their efforts in collaborating with Taiwan's local industries.
- Second, the teams will be mentored by various experts from our semiconductor industry.
- The third benefit is the most appealing to international startups, especially semiconductor startups. The teams will receive platform support to take their vision from prototyping to production.
- Last but not least, resources will be provided by key stakeholders of Taiwan's overall startup ecosystem to support winners of the challenge to ensure their soft landing success in Taiwan.

NSTC Minister Cheng-Wen Wu Officially Visits TTA

Dr. Cheng-Wen Wu made his first official visit to TTA on July 22! During his visit, Minister Wu engaged in insightful conversations with accelerators and entrepreneurs in residence as well as Black Card members. The discussions provided valuable opportunities for exchanging ideas and exploring potential collaborations to further advance Taiwan startup ecosystem. TTA with full support of NSTC will continue to empower startups with the resources and connections they need to thrive.

TTA's Chip Innovation Unicorns at InnoVEX, June 4-7

This year, TTA Pavilion at InnoVEX 2024 themed "Chip Innovation Unicorn" showcased 25 tech startups and academic research teams with immense potential in IC design and chip innovation. On June 4, TTA also hosted the "IC Taiwan Grand Challenge Forum" where representatives from Taiwan's multinational corporations, investors, and startups came together to discuss the future of the global IC technology applications and Taiwan's pivotal role in this dynamic industry.

Global Startup Ecosystem Index 2024 by StartupBlink

Taiwan advanced 2 spots and is now the #22 best country for startups according to StartupBlink's Global Startup Ecosystem Index 2024 launched on May 30! Over the past four years, Taiwan's growth has been remarkable, climbing from #30 in 2020 to #22 this year. With this upward trajectory, Taiwan is edging closer to the global top 20! All of the 6 major cities - Taipei, Hsinchu, Taoyuan, Tainan, Taichung, and Kaohsiung also show really positive momentum.

Viva Technology in Paris, May 22 - 25, 2024

TTA led an unprecedented number of startups to VivaTech, Europe's #1 Startup & Tech Event, this year! 40 Startups in Sport Tech, Smart MedTech, Smart Data & Security, and Smart Mobility & Sustainability showcased their innovation at TTA Pavilion. And for the very first time, TTA collaborated with VivaTech on the prestigious "IC Taiwan Grand Challenge"!

Go Go Sport Tech: TTA South x French Office in Taiwan

Presented by TTA and the French Office in Taiwan, the "Go Go Sport Tech Forum" combines Tainan's 400-year rich history with cutting-edge technological innovation. This event not only invites experts from industry, government, and academia to engage in forum discussions, but also features TTA startup teams showcasing their impressive work in sports technology on-site.

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EMPOWERING GLOBAL TECH STARTUPS