

Creating a Smart Future: 25 Leading Brands

# Amazing TAIWAN

Developing revolutionary products using the latest technology,  
Taiwanese businesses are changing the world with their power and ingenuity!

# Taiwan is Creating A NEW LIFESTYLE

In Taiwan, you don't need a wallet to go shopping thanks to a payment system the Taiwanese created using IoT devices (smartphones). You don't need to own a bicycle to get around, either, thanks to the sharing economy they've developed, with the YouBike rental cycle system available throughout town.

Among all the nations worldwide competing on research and development to keep pace with the Fourth Industrial Revolution, Taiwan is, incredibly, already at a stage where one can feel the revolution in factories and in citizens' everyday lives.

One of the secrets to making this possible is the speed of the public and private sectors, which have begun working on the construction of an Asian Silicon Valley, where they aim to achieve further innovation using information technology. Another secret lies in the personality makeup of the Taiwanese people, which is uniquely suited for the IT industry.

Up to this point, Taiwan has experienced an unusual and complex history, and actively absorbing foreign cultures and technologies has become part of their DNA. The Taiwanese people, by nature, tend to be open-minded and curious. Even people who barely know each other talk freely, and people love to study regardless of age, with many often studying a foreign language or two. Both individuals and corporations invest in themselves. People know there is no time to be afraid of failure if they want to create a brighter future. Put simply, these are fertile grounds for innovation through IT.

It is said that the Fourth Industrial Revolution will affect everything, from future worldwide trends and society to human values. In this book, we will introduce the development of Taiwanese technologies that will serve as the core of this revolution, such as IoT devices, AI, and block chain technology, with a particular spotlight on IoT. Take a self-driving taxi to visit a fancy restaurant where food is prepared by a robot chef, then let an AI doctor monitor your blood sugar level on the drive home—in Taiwan, this sci-fi lifestyle is already becoming reality.





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#### Legend

📍...Address

☎...Telephone number

🕒...Business hours / regular business holidays

📍...Access

@...Website

\* Regular business holidays exclude public holidays  
and extraordinary holidays.



# Part 1 Taking Center Stage Taiwan IoT 2018

About ten years have passed since the advent of the original IoT device, the smartphone. Today, we have entered an era when all kinds of devices are connected to the internet, and data is shared to the Cloud. In Taiwan, where economic growth has been spurred by manufacturing done by small- and medium-sized enterprises along with active pursuit of overseas expansion, innovative IoT businesses are springing up in rapid succession, drawing attention from all over the world. At IoT Asia 2018, an exhibition for IoT in the Asia Pacific

region hosted in Singapore, two of the six products nominated for the Excellence Award were made by Taiwanese companies. Of these, one received the IoT Excellence Award. Taiwanese startup companies have experienced remarkable success, with Taiwanese companies claiming prestigious awards at events such as Slush Asia, a startup event held in Japan, and FbStart 105, hosted by Facebook. In Part 1 of this book, we will take a look at the Taiwanese businesses that have brought new life to the IoT industry, and their vision for the future.

## Building a Smarter World

### The expanding IoT market is taking the world by storm

What's so great about IoT?

The topic seems difficult, and many people are embarrassed to ask at this point, so let's get the basics out of the way. IoT stands for Internet of Things, and it refers to the concept that different objects all around the world are connected by the internet. IoT is changing lifestyles and business, and these days is featured not only in technical journals but newspapers and magazines with general readership as well.

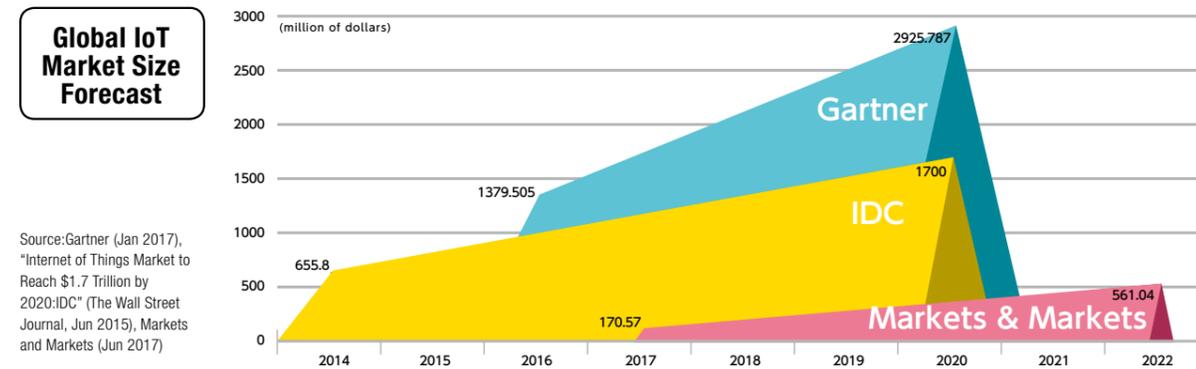
So you might ask: why is it so important that a book featuring Taiwanese industry has been created?

In short, IoT in Taiwan is flourishing right now.

Using the Internet of Things to generate profits requires several

processes. First, sensors are attached to objects. Second, information gathered by these sensors are sent to the Cloud via the internet. Third, information is analyzed using AI and other technologies. Fourth, this analysis allows for improvement in the object's function as well as predictions of consumer behavior. While certain aspects remain controlled by people, the majority of the process is automated. Machines communicate with each other automatically, in turn making them more useful to people. By analyzing the massive amounts of data collected by sensors, one can predict what people want and when they want it, allowing for the creation of goods and services that will sell in today's market.

This graph vividly shows the possibilities of global IoT market.



### A wide range of government-backed initiatives

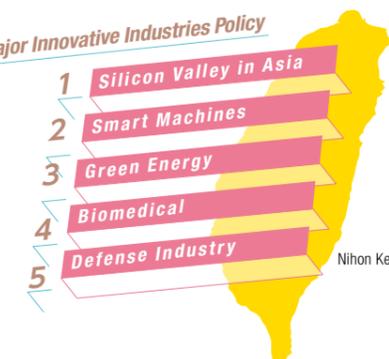
With such a promising market, countries all over the world have created policies to support IoT technology. Taiwan is no exception.

In Taiwan, the Tsai administration inaugurated in May 2016 launched its Five Major Innovative Industries policy. This policy aims to shift the country from existing economic growth models to new economic development models, focusing on five areas: creating a Silicon Valley in Asia, smart machines, green energy, biomedical, and the defense industry. With "smart machines," the connection is obvious, but in fact the idea of creating an Asian Silicon Valley is also, in fact, an IoT promotional measure.

It is well known that electronics are one of Taiwan's strengths. Taiwan took the world by storm with original equipment manufacturing (OEM) from for electronics brands from the United States, Europe, and Japan. Hon Hai Precision Industry, which acquired Sharp in 2016, is famous as an OEM manufacturer for Apple, and TSMC, a spinoff of the Industrial Technology Research Institute(\*), is now the world's largest semiconductor foundry. That said, China's

technology is catching up fast.

For the last twenty years, the high growth of the Taiwanese electronics industry could be attributed to two things: original equipment manufacturing and dependence on China for production and as a market. With the emergence of Chinese industry, the situation will deteriorate unless measures are taken. This is why Taiwan seeks to replace the conventional growth model with a development model called the 5+2 Industrial Innovation Plan, of which IoT is a crucial pillar.



Source : Nihon Keizai Shimbun, 19 Jun. 2016

## The Astonishing Evolution of IoT in Taiwan

### Sweeping change: the fields IoT will revolutionize

There's yet another element to this plan. The concept of the smart city is being promoted in nations around the world, including Taiwan and Japan.

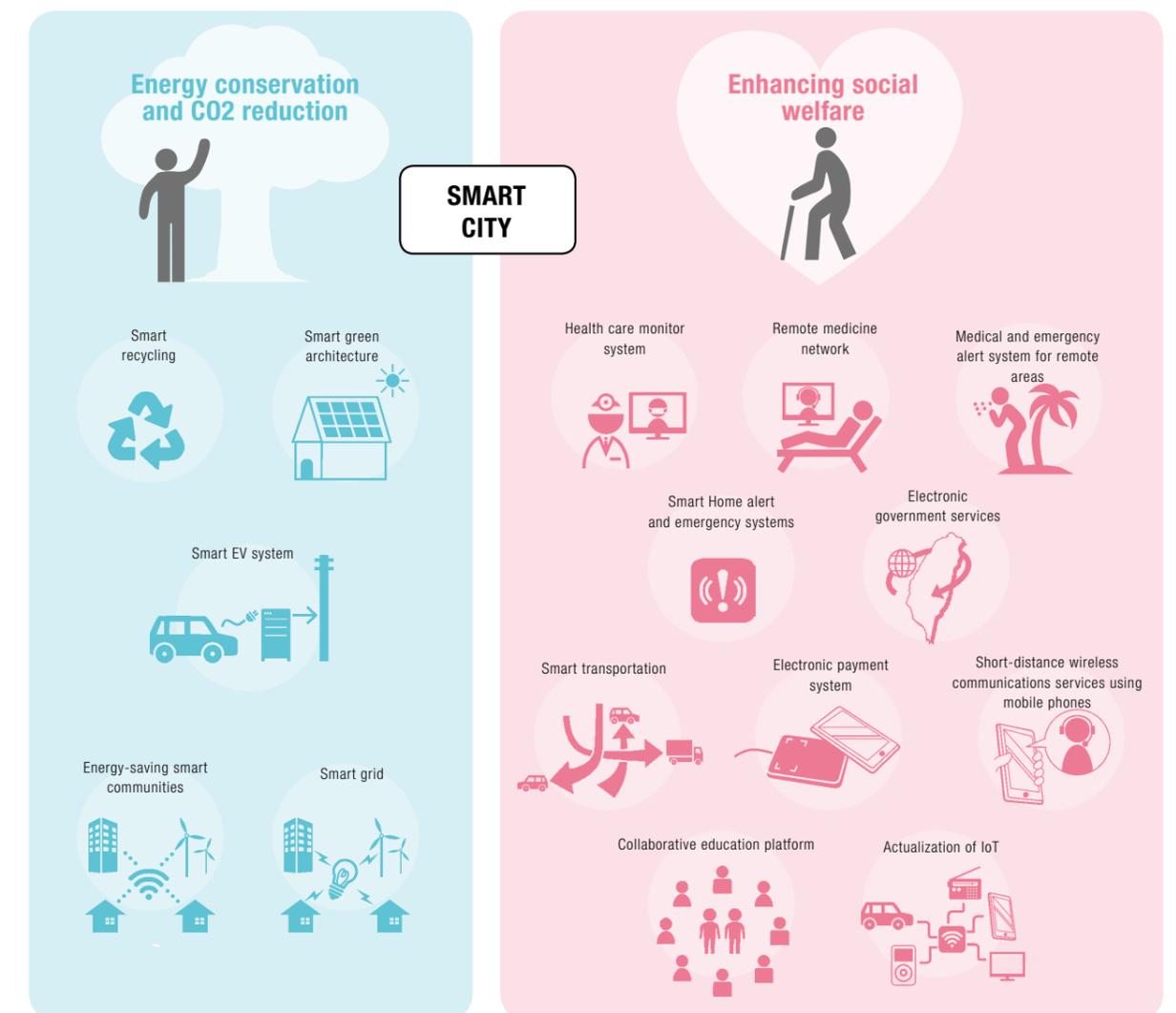
"Smart City" refers to the concept of city building using advanced technology, such as IT, to solve social issues. This will also solve tangible issues such as energy efficiency, waste and recycling, traffic congestion, water supply efficiency, and disaster prevention, as well as intangible things such as improving nursing and medical care, performing remote medicine, education, electronic payments, and administrative services. To solve these problems, cities themselves will be "smartened" and optimized. Doing so will improve quality of life and create new business opportunities.

This is why they are testing smart cities all over the world. The

range of these efforts are so broad, and it is said that it will affect almost everything involved in lifestyle and society.

These smart cities are upgraded by IoT. In short, smart cities have evolved to go beyond simple digitalization and efficiency improvements, to the point where everything is connected to the internet and data is accumulated and analyzed, making things smarter and more intelligent to automatically change behaviors and drastically improve the convenience of daily life.

As you'll see going forward, many areas are already, in fact, covered by IoT. The amazing Taiwanese technologies introduced in this guide are broadly divided into Home, Transportation, and Medical Care. From here, we will introduce three areas: Smart Home, Smart Transportation, and Smart Medical Care.



Source: The Republic of China Taiwan Investment Channel (Nomura Research Institute, Feb 2012)

## Smart Home

### Smart home products that connect the entire household to the internet are winning the Taiwan Excellence Award one after the next

AI speaker auxiliaries, VR, robots, and AI home electronics abound

When people hear the term “Smart Home,” many imagine efficient electricity through IT, or internet-enabled home security and disaster-prevention devices. In fact, home electronics such as lighting and air conditioning, too, have become even more convenient through IT, and helper robots are available for purchase as well.

In addition, energy and heat supply, energy storage, sewage treatment, and gas are all undergoing smartification. Several internal parts of the home are going smart as well, including the panel construction used for ventilation systems or in the walls of buildings, as well as windows, doors, and locks, which until recently did not feature electronics.

Just looking at the winners of the 2018 Taiwan Excellence Awards, the sheer breadth of areas covered is remarkable. In addition to those mentioned above, fields include everything from pet care, beauty, pregnancy support, education, and entertainment products to network equipment such as routers that make smartification possible.

The reason for the success of these lifestyle-related electronics lies in the manufacturing industry, one of Taiwan’s strengths. The smartification of the

A helper robot from Robotelf Technologies. Robotelf offers high-level performance such as discipline for children, nursing care and shopkeeper support for under ¥100,000. → p. 54



The PAWBO Munch from Acer, famous around the world for its PCs. This device lets you stay virtually by your pet’s side even when you are physically away from home. → p. 38

home through IoT is the manifestation of a simultaneous emergence of many innovations, talents and achievements.

Let’s take a look at some of the specific products that are bringing about this revolution.

The PAWBO Munch, developed by Acer, lets you check in on your pet in HD while away from home using your smartphone. This device lets you talk to your pet, feed it, and even play games with it—making it perfect for dog and cat lovers looking to reduce the stress of loneliness felt by their pets.

The VR Gaming Backpack PC from MSI (Micro-Star International Company Limited) is a backpack PC that lets you experience VR without cumbersome cables or cords. Its battery packs can be swapped during use, allowing you to enjoy your VR game without interruption. The heat generated by the PC as it processes the enormous amount of data required for VR is dispersed through the cooling power of its powerful fan.

Then there is the HiMirror Plus, developed by Cal-Comp Big Data. This is the next generation HiMirror, already known among women of discerning taste at home and abroad. In addition to saving a history of your skin condition and recommending cosmetics particularly



The VR Gaming Backpack PC from MSI, famous abroad for its gaming PCs. Unbound by electric cords, the user can move about freely with this specialized VR backpack PC. → p. 34

suited to your skin, this device teaches you makeup techniques using video when you select a makeup style you wish to try. It’s like having your own personal cosmetic advisor in the comfort of your home.

### From the house to the community: building smart cities

The Smart Home concept has existed in the United States since the 1990s, and has progressed both in the public and private sectors in Japan with a focus primarily on energy supply, such as smart grids and smart communities. Part of this is due to vivid memories of the energy conservation measures taken after the Great East Japan Earthquake of 2011. In Taiwan, smartification of various devices has advanced further with government backing, for the reasons mentioned previously.

It is not just about connecting all kinds of household items to the internet, making life more convenient and comfortable. It also involves optimizing the supply of utilities such as electricity and water in the larger unit of the community or town. This is one of the goals of the Smart City vision. Advanced countries worldwide are developing and testing technologies to see how smartification can help to conserve resources.

The Smart City concept also includes services such as transportation and Medical Care. The elimination of traffic jams, more efficient logistics, more efficient medical care even with a limited number of doctors, and medical care for remote locations—these are all natural target areas that larger communities such as towns and cities seek to make more efficient. In the section to follow, we’ll take a closer look at Smart Transportation.



The HiMirror Plus from Cal-Comp Big Data is a vanity mirror for those who truly want to untap their beauty. This device keeps a record of your skin condition and can even help you manage the usage of your current cosmetics → p. 40

## Special Interview 1

### Surviving the IoT Era

# A future human environment made smarter

“Today, many things are getting smarter and more connected. The opportunity for businesses to take advantage of this change is immense,” explains John Wang, one of Taiwan’s most prominent innovators. Today, he looks at how his companies can inject magical experiences into industries like hospitality, transportation, EV, home care, and more importantly how businesses operating in those industries can improve their revenue, brand equity and customer loyalty. What follows is our discussion with John Wang about his initiatives in these areas.

Entrepreneur, IT Innovator  
**John Wang**



#### Noodoe Swift

Noodoe Swift is an order notification system that speeds up beverage sales by making ordering a zero-wait process. For hotels, restaurants, bars, and clubs, Noodoe Swift increases alcohol and drink revenue. Just turn it to your desired waiter request, such as ordering a drink or dessert, requesting more water, or getting the check.

#### Efficiency and optimization opportunities

How can we break through the status quo in existing businesses by utilizing the connectivity, sensor capabilities, and computational power of today’s electronic components along with some creative juices of our insightful solutions team? This is what I spend my days thinking about. Let’s start with something familiar to everyone, for instance, eating out at a restaurant. When you have an impulse to order a drink, you have to get the attention of your server, but calling out in a loud voice for such a small thing can be a hassle. Even worse, from the perspective of the business owner, the slightest hint

of unresponsiveness can be the factor that terminates that order.

That is why we developed the Noodoe Ordering Block and Waiter Wristband, two key components of Noodoe Swift. Customers flip the Ordering Block to “drink”, and this triggers the corresponding Waiter Wristband to vibrate and display the table number and the desire to order drinks. There is literally no time between the moment of impulse and the moment of taking the order. Utilizing this technology gives waiters 360-degree vision. Noodoe Swift allows staff to “see” customers’ requests even when they are not physically looking at their tables.

The end result is not only improved customer satisfaction, but better cost efficiency in running the restaurant and, as a result, increased revenue. Data analysis of requests occurring during shifts can be used to optimize staffing so that potential orders are never lost again. Noodoe is continuing to attract attention overseas. In 2016, Noodoe was chosen as market researcher Gartner’s Cool Vendor of the Year, and also received the ITpro Expo Award from Nikkei BP. The latter award was given to S-cubism, a company that employs Noodoe’s solutions as part of their service offerings.

#### No more wandering around in search of your scooter

In the transportation field, Noodoe’s focus has been on linking the intelligence and connectivity of the smartphone with the scooter. In Taiwan, a place where scooters are so commonplace that they are often referred to as the “legs” of the Taiwanese, people often ask us if that means that scooters will send warnings and notifications about things like tire pressure or remaining gas to people’s smartphones. But this does not address the true needs of the consumer. We think there is a much more compelling opportunity. We asked, what if your smartphone could send information to your scooter?

To accomplish this, we created two innovations. First, a small LCD screen would be placed on the dashboard, displaying helpful notifications, such as incoming messages, from your smartphone. Of course this would only display when you’re stopped, for example at a red light. When you step on the accelerator, the notifications automatically disappear. This solution will prevent you from missing notifications because you were on your scooter and couldn’t check your smartphone, and will also eliminate the annoyance of constantly receiving and not being able to check notifications while riding.

Another innovation is a way to help people find their vehicles. We started with the insight that scooters look very similar. It is very difficult to find your scooter in a dark parking lot at night. By pairing your scooter with your smartphone, GPS data of your location from the moment you left the scooter will be stored on your smartphone. When you return to find your scooter, a compass-like arrow will guide you to your parking spot.

We are also developing a navigation system with KYMCO, the world’s leading scooter manufacturer. The screen design is optimized for a scooter, and is completely different from that of a car. A scooter does not have the space for a large display, and the fact that the user is wearing a helmet restricts hearing and field of vision. We’ve designed a scooter-centric countdown-style screen with messages such as “Turn left at the third intersection” and “one more intersection” to better guide two-wheel riders to their destination.

#### Watching over elderly people living alone with unobtrusive sensor technologies

Elderly people living alone may harbor fears about falling and being unable to get help. Their families, too, feel anxiety about not being able to help their loved ones in time. We’ve come up with a solution that utilizes an unobtrusive ToF (Time of Flight) sensor to help serve as a guarding angel in this situation.

The Noodoe solution uses a sensor to measure the distance between an object and the sensor by emitting waves and measuring the time it takes to return to the sensor after being reflected by an object. When placed on the ceiling of a bathroom and combined with our proprietary intelligent analysis software it can effectively monitor and identify when an accident such as an elderly person falling occurs in the area. Furthermore, since it is Cloud-connected, it provides notifications to family members if the affected elderly individual doesn’t respond in time to turn off the auto alert. Most importantly, this solution doesn’t use video or audio recording, so it is a non-invasive way to ensure the safety of your elderly loved ones.

#### Creating a platform for transformational business solutions

In order to create truly unique and meaningful user experiences



#### Noodoe Navigation

KYMCO Noodoe. Optimized for a scooter, this navigation device shows directions on a round color display located in the center. Noodoe developed the product with KYMCO. The user can display clocks and photos on the round display and can be customized using skins and other self- or community-created designs.

before your competition does, you need innovation capabilities that integrate user experience design, cloud services, software design, industrial design, electronic hardware design, firmware design, RF (radio frequency) technologies, mechanical engineering, manufacturability engineering, marketing, and brand strategy.

This is exactly what is needed for a business in an industry going through a technological transformation, that wants to come out of it light-years ahead.

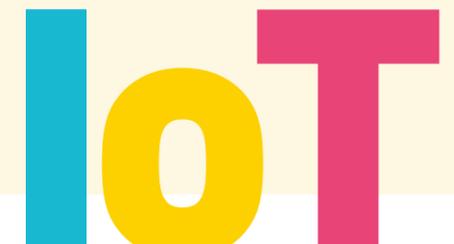
In this respect, Taiwan is truly blessed. This is not only because it is recognized as an “electronics heaven.” We have an abundance of engineers in every innovation field. We are also very inquisitive and always in search for new ideas. The fact that Taiwan has become a global leader in EMS/ODM is in no doubt thanks to our rich human talents. Noodoe is very much a reflection of this way of thinking. Noodoe’s world-class expertise is the rare combination of arts and engineering. We have the passion to discover insights, invent breakthroughs, build magical experiences, and implement state-of-the-art technologies.

Chairman  
**John Wang**

John holds an MBA from Harvard Business School and a bachelor’s degree in electrical engineering from MIT. He joined HTC as it was still a company trying to establish itself. His focus early on was on innovation and later marketing, and his leadership helped HTC become a thriving global technology brand, being recognized as one of the world’s top 100 brands by Interbrand in 2010. After leaving HTC, he established Noodoe and Hooloop in 2014. Noodoe is an innovation company that focuses on transforming businesses. Hooloop is a VR/AR solutions and content boutique consultancy.

#### Noodoe

Chairman : John Wang  
Established : 2014  
Business : Design and sales of IoT devices, services, and content  
Number of Employees : 60 (2017, including affiliate companies)



## Smart Transportation

### Leading the Way in Bicycle Sharing and Free-flow ETC: Taiwanese Advancements in Smart Transportation



Pterosaur™, an ultralight drone created by GEOSAT, features fixed wings like a stealth aircraft. One might think that it would be difficult to operate, but according to the developer, basic operations can be mastered in only ten minutes. Its landing mechanism, which mitigates shock by deploying a parachute to flip over the drone, is popular among professionals. → p. 62

#### Solving traffic problems with IoT

Population concentrates in cities, overloading traffic infrastructures with unrelenting congestion—these problems, too, can be solved with IoT and the “smartification” of traffic. While measures to decentralize and form smoother connections between different modes of transportation are being taken around the world, Taiwan is putting these plans in operation ahead of other countries.

Famously, they have smartified bicycles and scooters. YouBike took hold in the city of Taipei, making bicycle sharing possible through digital management of usage information. Even more recently, they have started such services as scooter sharing, showing a remarkable shift from ownership to sharing. Furthermore, they have introduced on a trial basis “smart parking lots,” which allow users to confirm lot vacancy, and the country is rushing to adjust regulations for Smart Logistics using drones and self-driving vehicles.



An electric assist bicycle from Darfon that allows for smart and convenient cycling through town, or over long distances. It comes with a powerful battery and motor, as well as IoT mechanisms that let you check such things as battery life and current position using an app. In addition to the City Cycle shown in the photograph, they offer mountain bikes and bikes for older riders, all in a wide range of colors. →p. 58



#### An ETC system revolutionized by IoT

IoT is revolutionizing society to make life even more convenient. What speaks most eloquently to this in the transportation field is the smartification of Taiwan’s electronic toll collection (ETC) system.

On the highways of Taiwan, there are no manned toll gates to cause congestion. What kind of technology is behind this? Drivers place a small seal containing an IC tag on their windshields, and this alone enables IoT on your vehicle. As you drive smoothly along the highway and pass through an arch like the one shown on the right, a sensor attached to the arch scans the seal and automatically charges the toll.

When a car without a seal passes through, a photo is taken of the license plate and a bill is sent to the home of the driver. There is no room for error.

This system has reduced traffic congestion, and installation and operation costs are less than that of a conventional toll booth system. For this reason, Taiwan has received inquiries regarding this system from all over the world.



An ETC system employed on highways in Taiwan. Just pass through the sensor installed above the road to pay your toll. This innovation has made manned toll gates unnecessary in Taiwan. → p. 66

#### Smart transportation products

There is huge potential for IoT in the field of transportation alone. This technology is being used not only to make things more convenient, but also to support research and analysis on traffic volume and land use, and even for leisure as well.

For example, the ultra-light drone from GEOSAT (p. 62) lets you capture vivid images with its mirrorless camera. For this reason, it is being employed in a wide range of fields, including agriculture, land

surveying, analysis, and urban planning, in addition to monitoring traffic volume. It is both safe and easy to operate.

You also have the high-powered electric assist mountain bike developed by Darfon (p. 58). The various built-in sensors and linked smartphone app allow you to monitor heart rate and calories burned, and it also includes a navigation function. Its powerful battery could expand the range of activities one can do. One can only imagine the unlimited possibilities for traffic and vehicles, including the potential for excavators, fire engines, strollers, and more.

## Special Interview 2

Capital alliance between  
Sumitomo Corporation and Taiwan's Gogoro

# An environmentally-friendly scooter sharing system to meet society's needs

A scooter is reflected in the clear blue sky and sea. Sumitomo Corporation has, from an early stage, been keeping a close eye on the electric scooters made by Gogoro, an innovative and rapidly growing company in Taiwan. Sumitomo partnered with Gogoro and started a new service in February 2018 on the Japanese island of Ishigaki. Why did Sumitomo do so? What was it about Gogoro that won them over? We asked a key figure at Sumitomo to tell us more.

Sumitomo Corporation  
Deputy General Manager  
Mobility Service Business Dept No.1  
Tsuyoshi Ogata



## Introducing a new service on Ishigaki Island with Taiwanese eco-technology leader Gogoro

In February 2018, a sharing service called Go SHARE was introduced to Ishigaki Island, Okinawa, featuring a fleet of one



An electric scooter with a replaceable battery made by Gogoro, Inc. Battery replacement can be performed at unmanned battery stations called Go Stations, and takes just a few seconds.

hundred scooters made by Gogoro in Taiwan.

All of Gogoro's scooters are electric with replaceable batteries. Riders can visit any of four unmanned battery stations on the island to exchange empty batteries for fully charged ones at any time.

Overseeing operations is e-SHARE Ishigaki, a company founded by Sumitomo Corporation. Having partnered with Gogoro, the company has introduced a system in which both bikes and batteries can be shared.

Since the service was launched in Taiwan in 2015, they have sold nearly 60,000 electric scooters and have established more than 500 battery stations. Tsuyoshi Ogata, Deputy General Manager of Sumitomo's Mobility Service Department, has had his eye on Taiwan's scooter sharing system for a while.

"Taiwan is renowned worldwide for its technological capabilities, starting with its semiconductor manufacturers. Recently, companies are working on building next-generation services making use of these technical capabilities. An example of this is the efforts put forth by Gogoro. Gogoro has received government aid to promote green energy to eliminate discharge of carbon dioxide and nitrogen oxide, and their scooter sharing business is expanding each year. They have incredible momentum."

There was a clear goal in making the island of Ishigaki the starting point of the service in Japan. With the number of tourists visiting Ishigaki increasing, there is concern about new risks, such as the effect of exhaust gas on the environment and insufficient parking space for rental cars.



A Go Station, where used batteries can be exchanged with ease.

"Making electric scooters more commonplace can mitigate these issues. The project received approval from the city of Ishigaki, and there is even a battery station in the parking lot of Ishigaki City Hall."

## Adapting to local needs and exploring partnerships with other companies

The scooter sharing system itself, however, is slightly different from Taiwan's, in that Ishigaki's Go SHARE program is aimed primarily at tourists.

"In Taiwan, scooters are purchased and batteries are shared in a flat-rate system, whereas in Ishigaki, scooters are rented on a time-based system. This decision was made for Ishigaki because of its many tourists, but should the service expand to other cities, we intend to tailor the system in a way that suits that particular region."

Ogata believes that Gogoro's scooter sharing service has huge future potential.

"In the future, I would like to collaborate with other scooter manufacturers and create a shared platform using Go SHARE battery stations. I believe this battery sharing system could go beyond scooters to establish a business model for propagating the use of electric vehicles."

To what extent will Taiwanese scooter sharing services take root in Japan? Many are eager to see what the future holds.



2017 press conference

The MR Headset Foresee-X, a surgical navigation device created by Taiwan Main Orthopedics Biotechnology. MR stands for mixed reality. Wear this device, and images to aid in performing surgery appear in the surgeon's field of vision. → p.74



## Smart Medical Care

### Taiwanese Medical Devices Are Attracting the World's Attention and Coordination with Japan Raises Expectations High



Taiwan is leading a revolution in medical treatment and healthcare

IoT is taking over the field of medical devices and health care products as well, with generic terms such as Smart Medicine and Smart Healthcare having emerged for this development in recent years. Now then, what happens when medical and health care devices are connected to the internet?



A revolutionary surgical instrument for herniated disks developed by Wiltrom. The tools used to fixate the spine are thin and multifunctional, significantly reducing the stress on the patient. This device is already being used for surgical operations in Taiwan. → p. 80

First, Smart Medicine is expected to reduce stress on both doctors and patients, in addition to making remote medical care a reality.

For instance, medical devices that let doctors treat an illness with accuracy and speed while monitoring the inside of the body in real-time using ultrasonic equipment have appeared on the scene. It is now possible to send data collected from diagnostic equipment during yearly health checkups and send it to faraway university hospital doctors, who can then make a diagnosis.

Smart Healthcare digitizes the health equipment around us, such as thermometers and scales, and connects them to the Cloud. Health-related data accumulates daily, and can be checked by a doctor while you stay at home, allowing your personal doctor to perform daily checkups.

Medical devices are one of the Taiwanese manufacturing industry's fortes. Specifically, Taiwan has created medical equipment to measure blood glucose, blood pressure monitors, contact lenses, and large diagnostic equipment for hospitals. This, much like in the



An ECG measurement device that won't get in the way of your exercise, created by Kinpo Electronics. No compromises have been made in the design of the T-shirt, which features a built-in monitoring device. It boasts perfect accuracy, despite feeling as though you are wearing no medical equipment at all! → p. 78

computer industry, is a product of technology and capital accumulated through OEM (original equipment manufacturing).

Taiwan has changed the direction of its policy toward IoT to evolve its medical and health products into higher-end products. Much of this research and development began around 2010, progressing steadily through cooperation between the public, private, industrial, and academic sectors. In recent years, these efforts have begun bearing fruit, and are now attracting interest from all over the world. Together with European and American doctors, Taiwanese innovators have developed new surgical devices, making the presence of their precise, cutting-edge medical technology known.

#### Collecting and using big data to provide more accurate medical care

By connecting medicine and health to the internet of things, manufacturers can gain an enormous byproduct. That byproduct is big data, primarily in the form of medical data. It is expected that this data will be analyzed by scientists to discover causes of unforeseen illnesses, as well as to develop AI.

A representative example is Lite-Med's lithotripsy device, which the company already uses to conduct remote medical care in Indonesia. Over the course of one year, they have collected over twenty thousand instances of medical data. This is being used in AI machine learning to develop AI that supports doctors.

Another example is Kinpo Electronics, whose unique ECG device is designed not to interfere with physical activity. By shrinking the device and linking it to a smartphone app, this product can take ECGs in real time even when the user is exercising.

The speed at which new technology is being developed for cutting-edge medical care is remarkable as well. An example that speaks to this is the revolutionary surgical instrument for herniated disks developed by Wiltrom. Severe hernias require surgery, but spine fixation is a major procedure that places huge stress on the patient. Wiltrom has succeeded in developing an innovative surgical procedure and medical device that significantly reduces stress.

In this manner, the excitement surrounding research and development in the field of health care is spreading to a wide range of areas. The day when Taiwanese innovations in health and medical care become the world's de facto standard is surely close at hand.

### Topics

#### Industrial PC innovators join the medical field with impressive product lines

#### Smart medicine and smart healthcare make advancements around the world

Taiwanese businesses have long honed their skills producing inexpensive, high-performance parts for the PC and smartphone industries. Now, industrial PC manufacturers are rising to expectations by joining the medical field, ushering in a new era of healthcare and treatment with their unique know-how.

The term "industrial PC" refers to professional devices built using PC parts that have been adapted and applied for a specific purpose.

Taiwanese industrial PC manufacturers have won the hearts of major industrial leaders in the United States and Europe for their EMS and ODM expertise. In the medical field, their clients include such big names as GE Healthcare and Philips. Some companies are also introducing and expanding their own product lines in regions which do not conflict with their clients. In those cases, the Taiwanese companies handle everything from design, manufacturing, sales, and after-purchase servicing.

One company actively pursuing such opportunities is Advantech. A leader in OEM/ODM services and embedded system technologies, Advantech announced its "Enabling an Intelligent Planet" initiative in 2010, and has been devoting its efforts to IoT innovations ever since.

These days, Advantech's products are used throughout America, Europe, and Asia, giving them truly a worldwide presence. Mr. Lin from Product Planning and Sales explains his company's stance by saying, "We simply cannot place additional burdens on overworked nurses." This keen understanding of on-site needs is winning over many fans of their products.

Taiwan is facing a turning point with its traditional OEM/ODM business model. In these changing times, leading Taiwanese companies are already showing an impressive ability to innovate, adapt, and bring their own revolutionary products to an ever-growing market.



The 24" Medical Computer, a device from Advantech's self-branded product line. Further details are available on p. 82.



### Special Interview 3

Taiwan's Eye on the Future

# Toward the day when IoT and smart devices become Taiwan's economic growth engine

Taiwan is known to excel as an OEM (original equipment manufacturer) of electronic parts for world-famous brands, and exports are strong as well. Yet government and industry are not satisfied, and rather appear to be feeling a sense of crisis. In these times, Taiwan is trying to find new strengths. Why is that, and where is Taiwan headed? We asked an expert for answers.

Director in Charge of Overseas Research Department  
Japan External Trade Organization (JETRO)

Koji Kato



### Exports of electronic components have symbolized Taiwan's competitive edge

Taiwan continues to experience stable economic growth, and the driving force behind this is solid exports. Among these exports, electronic components in particular symbolize Taiwan's strengths and competitiveness.

"In 2017, Taiwanese exports have grown 13.2% compared to the previous year in terms of monetary value. Of that, electronic components account for about 34% of the value of all exports, followed by telecommunications devices, base metals, and products made from base metals. About 40% of exports are to China and Hong Kong, with the ten ASEAN countries being Taiwan's second largest export market. It is believed that the reason Taiwanese electronic component exports are so strong is in part because the market conditions of the countries exported to are generally on a recovery trend."

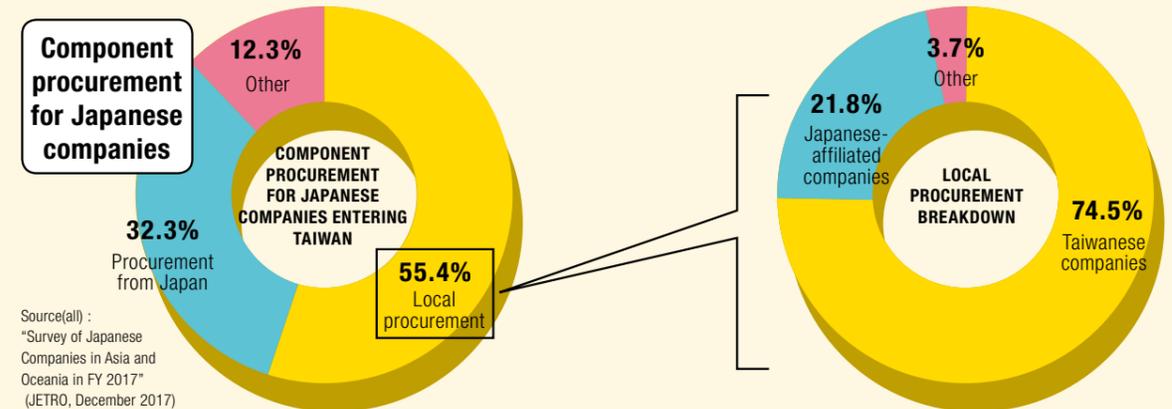
Besides exports, China is Taiwan's largest trading partner, with direct investment from China accounting for about 40% of the total amount of foreign investments. In addition, ASEAN countries along with South Asia, Australia, and New Zealand are target regions of the New Southbound Policy launched by the Ing-Wen Tsai

administration.

Taiwan has other strengths as well. This is easy to tell by taking a look at the results of a survey conducted by the Japan External Trade Organization (JETRO) in 2017 on Japanese companies expanding into Asia and Oceania.

"Looking at raw material and component suppliers for Japanese companies entering Taiwan, the ratio of local suppliers was high at 55.4%. What's more, local Taiwanese companies accounted for 74.5% of this, making the procurement rate from local companies even higher than other ASEAN countries. This is an indication that the components industry in Taiwan is advancing, and this is one of Taiwan's strengths and the source of its competitive edge. In addition, among all countries in Asia and Oceania, Taiwan boasts the shortest average time between cargo arrival and clearing customs. For instance, when exporting parts from Japan to Taiwan, this is a huge merit, not only shortening overall lead time, but allowing for response when there is a sudden change in product design or specifications. This is a considerable advantage when manufacturing products with short life cycles."

Export dependence, or the ratio of exports to GNP, exceeds 50%, and one can see the enormous influence of export trends on the overall Taiwanese economy. Efficient customs clearance is an issue for the entire Taiwanese economy, and Taiwan's strengths and competitiveness are bolstered by the various ingenious efforts instituted by the authorities.



Exports to Japan (by category)	2015	2016	2017	
	Value	Value	Value	Composition ratio (%)
Machinery and electric equipment	11,135	11,228	11,643	56.0%
Electronic components	7,331	7,427	7,427	35.7%
General components	1,308	1,444	1,663	8.0%
Electrical equipment	626	642	682	3.3%
Telecommunications equipment	1,808	1,657	1,801	8.7%
Transportation equipment	589	535	559	2.7%
Precision and optical equipment	808	837	896	4.3%
Chemicals	1,399	1,289	1,396	6.7%
Plastic, rubber and associated products	1,305	1,227	1,463	7.0%
Food	76	67	75	0.4%
Mineral products	129	227	124	0.6%
Textiles	357	343	360	1.7%
Metals and metal products	1,795	1,763	2,159	10.4%
Total (including other categories)	19,592	19,551	20,787	100.0%

### Transforming the economic development model: the 5+2 Industrial Innovation Plan

Starting with electronic devices and components, manufacturing subcontracting has long been the driving force behind Taiwan's economic development. That said, innovation is a critical keyword for Taiwan, and as such the Tsai administration has launched the 5+2 Industrial Innovation Plan as a new economic development model. This is based on five pillars: Creation of Silicon Valley in Asia, Smart Machines, Green Energy, Biomedical, and Defense Industry.

"Creating high added value solely through existing business models like OEM is difficult, and so Taiwan is seeking to change its economic development model. For Smart Machinery, Taiwan plans to use the machine tool manufacturing base developed and accumulated in the city of Taichung to further develop smart machinery and compete in the world market. Machine tool and component manufacturers have already begun collaborating on strategic efforts. Japanese companies including machine tool companies are paying close attention, and there have been movements to establish local support centers as well."

The idea of creating an "Asian Silicon Valley" is not tied to the growth of any particular field, but is rather a promotional effort focused on IoT (internet of things).

"As an actual business movement, the policy aims to create a research and development base for AI, then cultivate human

resources related to AI in Taiwan. Taoyuan is positioned as a primary base for this effort. Taiwan has a history of manufacturing as the driving force behind its economic development, including electronic components and telecommunications devices, and it can use this experience to its advantage. Regionally, we see expansion to the northern and central regions of Taiwan, including the cities of Taichung, Taoyuan, and Hsinchu, with these places garnering more attention as potential locations for an "Asian Silicon Valley," as well as a base for Smart Machinery."

Going forward, as well, we see the possibility for collaboration between Japanese and Taiwanese companies aimed at the Chinese market.

"Japanese and Taiwanese companies already have a record of establishing partnerships and joint venture companies with respect to manufacturing subcontracting and component procurement, starting with electronic components. That said, the market changes daily, and Chinese companies are growing more and more capable. Needless to say, the circumstances differ by business and industry, but considering these changes, I believe that for Japanese companies looking for an ideal business partner, Taiwanese companies can become a very valuable option."

By maintaining mutually beneficial relationships between Japanese and Taiwanese companies in the fields of IoT and smart machinery, the day where these fields will drive Taiwan's economic growth is not far off.





# What is the Taiwan Excellence Award?

The Taiwan Excellence Awards are bestowed upon high quality and innovative products by the Ministry of Economic Affairs (MOEA), R.O.C. You

# Excellence Award?

can see award-winning products at events in various countries and at the Taiwan Excellence Pavilion (see p. 26), so be sure to check them out!

**POINT 1**

**Prestigious awards given to the best Taiwanese products**

The Taiwan Excellence Awards are bestowed on products selected through a strict examination process conducted every year by the Ministry of Economic Affairs (MOEA), R.O.C. They are intended to enhance the image of and promote Taiwanese products around the world. The first Taiwan Excellence Awards ceremony was held in 1993, and the awards celebrated their 26th anniversary in December 5, 2017. Among all the products that claim the Taiwan Excellence Award, those deemed the most

innovative receive the Gold Award—the highest level—with those that fall just short of this standard receiving the Silver Award. As is evident by the word "excellence," this prestigious distinction is only bestowed on products that stand out in all aspects, including R&D, design, quality, and marketing. If a product wins any of the awards, it can use the Taiwan Excellence symbol for all its international marketing and promotion.

**POINT 2**

**The Taiwan Excellence trademark is recognized by 102 countries**

The Taiwan Excellence mark consists of six arching lines representing the spirit of pursuing happiness in Taiwanese traditional culture. At the same time, the symbol stands as proof that the products bearing it have been

recognized by Taiwan on the national level. Now, over twenty years have passed since the birth of the Taiwan Excellence Awards, and 102 countries recognize the mark as a criterion of product value.



**POINT 3**

**A number of events are held to promote Taiwan Excellence products around the world**

To promote awareness of Taiwanese products domestically and globally, events are held regularly in various countries, including the United States, Japan, Indonesia, Vietnam, and elsewhere. At these venues, you can experience Taiwan Excellence-awarded products first-hand, while receiving explanations from event staff. In addition to exhibitions, other events such as marathon races and charity drives are held to create a positive awareness of Taiwan Excellence products both domestically and overseas.



A Taiwan Excellence event held at the Kitte shopping mall in Tokyo in June 2017 drew record crowds



**Operating Authorities**

**Organized by the Bureau of Foreign Trade (BOFT), MOEA**

The Bureau of Foreign Trade (BOFT) under the Ministry of Economic Affairs (MOEA), R.O.C. is responsible for implementing policies and regulations governing foreign trade and economic cooperation. Established in January 1969, the BOFT's role and position have been adjusted regularly to meet the needs of the ever-changing international economic and trade environments. The BOFT has been guiding and working with the Taiwan External Trade Development Council (TAITRA) in numerous promotional trade projects and activities both internationally and domestically. Having worked closely with TAITRA for many decades, the BOFT continues to commission TAITRA for various critical government projects relating to business, trade and investment, while promoting Taiwan internationally.

**Implemented by the Taiwan External Trade Development Council (TAITRA)**

Founded in 1970 to help promote foreign trade, the Taiwan External Trade Development Council (TAITRA) is the foremost non-profit, semi-governmental trade promotion organization in Taiwan. Jointly sponsored by the government, industry associations, and several commercial organizations, TAITRA assists Taiwanese businesses and manufacturers with reinforcing their international competitiveness and coping with the challenges they face in foreign markets. TAITRA boasts a well-coordinated trade promotion and information network of over 1,200 international marketing specialists stationed throughout its Taipei headquarters and 60 overseas offices worldwide. Together with its sister organizations, the Taiwan Trade Center (TTC) and the Taipei World Trade Center (TWTC), TAITRA has created a wealth of trade opportunities through effective promotion strategies.

Come, see, touch, and be amazed!

# Experience the Real Deal at the Taiwan Excellence Pavilion

Come, see, and touch innovative “Taiwan Excellence” in the flesh at the Taiwan Excellence Pavilion. Relocated and renovated in 2018, the Pavilion has over thirty diverse items on exhibit, including gaming PCs, bicycles, and home electronics. Touch the real thing and deepen your understanding of these amazing products!



↑ The Taiwan Excellence Pavilion is on the third floor, and the Taiwan Excellence black bear mascot will greet you with its charming pose there.



↑ Taipei Nangang Exhibition Center Hall 1, Taiwan's first bi-level, purpose-built exhibition complex, welcomes millions of visitors each year during its professional and consumer exhibitions.



↑ Various exhibits take center stage, depending on the event being held at the time. Information on Taiwan Excellence Award-winning products is displayed on a giant, futuristic screen.



↑ The finest products from various companies are lined up at the booths.  
← All the staff are dressed in chic black dresses with crimson jackets. Their professional knowledge enables you to explore each exhibit in further detail.

## STUDY

Each exhibit comes with simple information. If you want to know more, the nearby staff is at your disposal for further explanation. Thirty-six exhibited items, categorized into ICT Trends, Biotechnology, Medicine, Sports, Smart Life, and Environment, will be introduced in an easy-to-understand manner. Come experience cutting-edge technology with your own eyes.

## TOUCH



↑ By moving your arm left to right in front of the enormous screen, you can take in all the 503 award-winning products.  
← WINBOT, a round gaming PC case made of glass (see p. 52 for details), is made by Taiwan's computer enclosure specialist, In Win. Its unique features such as rotating and opening with a pop are sure to delight visitors.

## EXPERIENCE



↑ The IoT Massage Chair provides health care benefits in addition to relaxation. Sit down and give yourself a ten-minute rest on this functional chair (left). Have you ever used a stair climber? Come and experience endless climbing (right).

At the center of the Taiwan Excellence Pavilion lies an area where exhibits are changed in accordance with the exhibitions held in the hall below. For example, during the Taipei International Cycle Show, various sports-related products will be displayed. Test out products unseen elsewhere for an almost theme-park-esque experience.

The exhibits are not enclosed in glass cases, allowing visitors to interact with the objects and see them up close. This accessibility makes discoveries at the Taiwan Excellence Pavilion quite unique. Visitors can measure their skin condition with health care applications, and also experience a fantastic feeling of 3D while taking a close look at ASUS's 21:9 curved screen display.

### TAIWAN EXCELLENCE PAVILION

📍 Taipei Nangang Exhibition Center 3F, No. 1, Jingmao 2nd Road, Nangang District, Taipei City  
☎ +886-2-2785-0605  
🕒 9:30am-6:30pm / Closed on Saturday, Sunday, and public holidays (excluding special events)  
🚶 Adjacent to Exit 1 of Taipei Nangang Exhibition Center MRT Station

# Taiwan's Smart Revolution 25 Leading Companies

Smart products that bring about innovation around the world are in demand. It is said that it is not large corporations—whose strengths lie in refining and improving existing items—but rather entrepreneurial-minded small- and medium-sized businesses that are best suited for developing such products. Small and medium enterprises make up the base of Taiwan's manufacturing industry, and cooperation between these companies is common. Because of this, it's no surprise that Taiwan is a breeding ground for innovation! Furthermore, Taiwan is a land where people of many different languages and roots live together. Its people are accepting different values, and Taiwan has a long history of

trying to build connections with others around them. Also, since the country cannot rely solely on domestic demand due to its small population, the Taiwanese people have been quick to expand their businesses overseas. In Taiwan, connecting with other nations and people is quite common. It goes without saying that a smart future where things, people, and societies are all interconnected is close at hand. Clearly, it is time for the Taiwanese people—for whom this "connectivity" comes naturally—to press home their advantage. In Part 2, we will introduce twenty-five up-and-coming companies endeavoring to change the world for the better by building innovative new connections.

→ P.56

## Smart Transportation

→ P.30

## Smart Home

→ P.72

## Smart Medical Care

# The hanging LED light you've been looking for

Desks tend to get cluttered with PCs, peripherals, and cables of all sorts—leaving no room for a desktop light. Fortunately, now there's the ScreenBar e-Reading lamp, which hooks on to your computer screen, solving space problems entirely!

This light features a distinctive L-shaped structure that attaches to your computer display. Hook one of the Ls to the top of the display to make the large cylindrical weight on the other side of the L stick to the back of

your display through spring force.

"Computer displays come in all sizes and thicknesses. The backs of the screens have various shapes as well, sometimes thin and sometimes round. We built more than ten prototypes in order to create a structure that can be used with any screen," says Tsai, who developed the device.

The light itself has numerous distinctive features designed by Tsai. It can illuminate a wide area on the desk without causing glare

on the display screen. It also comes with an automatic light adjustment sensor which detects the brightness of the room, dimming the light when it is bright and turning it up when it is dark.

This product went on sale in Taiwan in October 2017, and has been so popular that it frequently sells out. The company plans to bring the product to the United States, England, and Germany as well.



## ScreenBar e-Reading lamp

A light that attaches to the upper portion of a computer's LCD display, allowing you to save precious desk space. Its ability to switch between cool to warm colors as well as detect and automatically adjust to the brightness of the room makes this light gentle on the eyes. It is conveniently powered by your computer's USB port.

# Study together as a family with this child-friendly automatic light

Small children often forget to turn on the lights, no matter how many times their parents tell them to. That, or they forget to turn them off, falling asleep with the lights on. And so the inventors of this product got to thinking: what if there were a light that turned itself on and off?

The WIT MindDuo e-Reading lamp is a light with a built-in sensor that detects nearby movement. It turns on automatically when someone comes within about forty centimeters of it.

Does your child often fall asleep while

studying? No need to worry—if there is no nearby movement within thirty minutes, the light will turn off. When the child wakes up and starts moving, the light will turn on once again.

"We designed the light to have rounded corners so it would be child-safe," says Tsai.

To soften the artificial LED lighting, a reflector has been attached around the LED, creating an effect similar to indirect lighting. The light can be switched between cool colors to warm colors.

This product also incorporates features focused on the quality of light, such as automatic light adjustment according to its environment.

For instance, drawing the light near a book will automatically dim the lights. Conversely, the light becomes stronger when the book is further away. "I do not believe there has even been a light with this many features that take into consideration softness, how the light hits objects, and more," says Tsai.



### A light that is easy on the eyes

Automatic light adjustment according to the brightness of the room. Can be switched between cool colors and warm.

## WIT MindDuo e-Reading lamp

The lamp lights up when a person draws near and turns off automatically when there is no movement for thirty minutes. The light from the lamp forms a wide oval shape, making it perfect for parents sitting and studying with children. There is a manual mode, along with the automatic mode that adjusts brightness automatically. Furthermore, it can be switched between cool colors and warm.



BenQ Corporation

President : K. Y. Lee  
 Established : 1984  
 Business : Manufacturing and sales of precision electronics  
 Number of Employees : 1000(2017)  
<https://www.benq.com/zh-tw/>

Interviewee  
 BenQ Corporation  
 Senior Finance  
 Eric Tsai



Vision for the Future

Come up with new designs

Focus on light quality to create lighting that is easy on the eyes





## Multy

With two units per set and three channels (one channel is for communication between the units), this multi-type Wi-Fi router is fully equipped for the smart home era. More units can be added for those who want extra coverage. Installed with the AI assistant Amazon Alexa, the unit can be controlled through speech.

# A multi-type Wi-Fi router that doesn't get jammed when multiple units are connected

Large homes using multiple IoT devices need high-performance Wi-Fi routers. For the impending smart home era, Zyxel has developed Multy, a multi-type Wi-Fi router with two units per set that support three channels.

The device has nine antennas embedded into its main unit to secure three channels. Multy comes with two main units, and can be expanded to three or four for those seeking even wider coverage.

"Designing it so that the wireless connection

would not get jammed was tough. We performed countless experiments to create a unique antenna shape that does not experience interference," says Bill Su, who oversaw development.

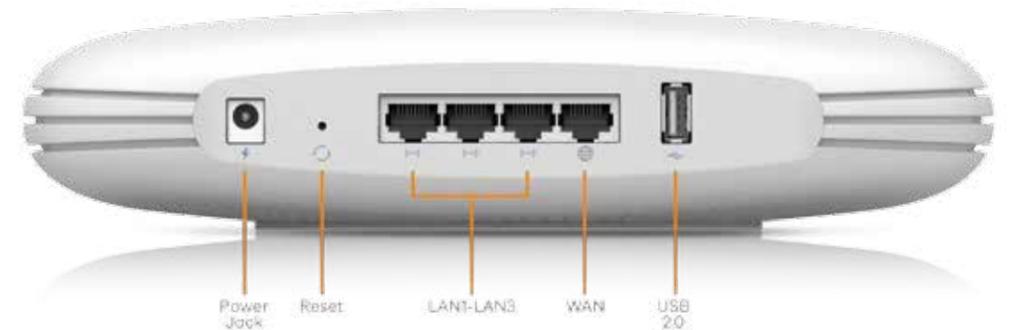
Countless tests were performed to create a viable product. When compatibility issues were identified, measures were taken immediately. Now, the unit has been confirmed to be compatible with over two hundred existing products.

Furthermore, the developers traveled around the world, performing field tests to address a

variety of issues, such as ensuring that signals could pass through the type of stone apartment buildings commonly found in Europe.

They also focused closely on the user interface. Multy X supports Amazon Alexa voice control, and it is possible to manage multiple devices with a special app.

"Other companies make mesh Wi-Fi systems, but none offer the ease of configuration and control that our product does. It was definitely worth it to develop a specialized app," assures Su.



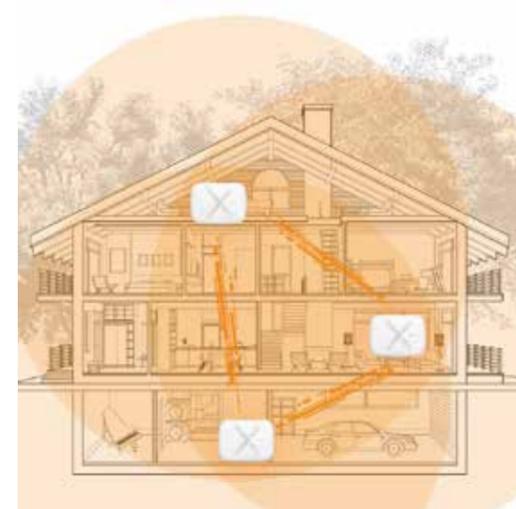
### Easy expansion

The set comes with two units, but can be increased to three or four. Initial setup and management are a breeze with the included app.



### Highly accurate communication

The antenna developed by Zyxel allows for connection between multiple IoT devices across multiple channels without interference.



# ZYXEL

Your Networking Ally

Zyxel Communications Corporation

President : Shun-i Chu  
 Established : 1989  
 Business : Manufacturing and sales of network equipment  
 Number of Employees : 1500(2017)  
<https://www.zyxel.com/>

Interviewee  
 Zyxel Communications Corporation  
 Senior Associate VP  
 Smart Living Strategic Business Unit  
 Bill Su



Vision for the Future

**Multilingual voice recognition support**

**More compact design for the main unit**





### VR Gaming Backpack PC (VR One 7RE)

A backpack computer that lets you experience wireless VR. The extra battery can be swapped in during play (hot-swap). The computer itself can be removed and used as a desktop machine.

## VR entertainment free from power cords

Power cords are an unwelcome guest in virtual reality games. Players move around as they play, making cables a tripping risk. To address the issue, MSI has created a system of two battery packs that lasts 1.5 hours when fully charged, and can be hot-swapped as well. The charger included in the set can charge four battery packs at a time, freeing the user from power cords.

MSI's VR One 7RE is the only genuine backpack-style gaming computer on the

market. This product has significantly high specifications, boasting advanced computing power with the GeForce® GTX 1070 built-in graphic board from NVIDIA and high-speed i7-7820HK CPU created for Intel's notebook computers. Its customers include companies running VR entertainment facilities and game developers. For instance, the device is used for the team battle game Ghost in the Shell: ARISE Stealth Hounds at VR ZoneONE SHINJUKU, run by Bandai Namco.

Also a leader in gaming notebook computers, MSI seeks to expand its range of related products such as VR One 7RE.

"We have invested 80% of our company's resources into the gaming market. Keyboards, mice, audio...we still have plenty of room for growth," says Corporate Marketing Assistant VP Sam Chern with confidence.



#### Powerful Fan Cooling

A powerful cooling mechanism prevents users from feeling heat on their backs. This is made up of two fans and nine heat pipes.



#### Easily Augmentable

The product comes with many ports, including ones for VR headsets made by HTC. It weighs 3.6kg. One battery pack contains eight cells. It comes with a two-year warranty from the date of purchase.



Micro-Star International Co.,Ltd.

President : Joseph Hsu  
 Established : 1986  
 Business : Design, manufacturing, and sales of gaming computers  
 Number of Employees : 12,000 (2017)  
<https://www.msi.com/>



Interviewee  
 Micro-Star International Co.,Ltd.  
 Assistant VP, Corporate Marketing  
 Sam Chern



Vision for the Future

Delve deeper into the gaming PC market



## Your phone is now your magic makeup mirror: Virtually try cosmetics from top brands on your own face

Can you imagine trying out 30 lipstick colors in 30 seconds before purchasing your favorite shade? While it may sound like something out of the future, there's an app that has made this a reality today: YouCam Makeup.

The world's most popular makeover app, YouCam Makeup has partnered with over 150 global cosmetics brands to date and features hundreds of complete AR makeover styles. Users can fine tune makeup details, such as changing eyeliner colors or styles, and includes other options such as true-to-life AR

hair color, glasses, headbands and more.

In the United States, YouCam recently just launched Beauty Advisor 1 on 1 to video chat with professional makeup artists. "You can call and ask a beauty advisor to recommend makeup for a formal party, and they will create a custom makeover look and suggest products for you to try on through AR during the video chat," says Alice Chang, CEO of Perfect Corp., the developer of the app.

The industry-leading facial recognition, facial feature tracking, and color blending are

core technologies of Perfect Corp. Partnering with over 150 beauty brands worldwide was a challenge at the start, but Ms. Chang herself often stepped in to the negotiations to help seal the deal.

"Technology typically has a cold image. So our goal was to create a warm and welcoming app that would soften the feeling of beauty tech. Development was an uphill battle at first, but we finally achieved what we set out to do, making beauty more accessible to women around the world," concluded Ms. Chang.

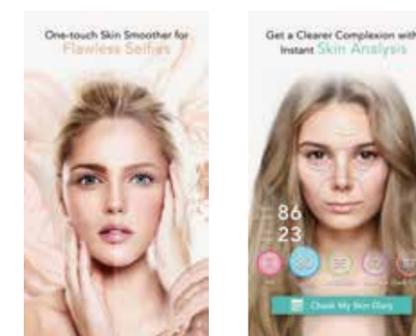
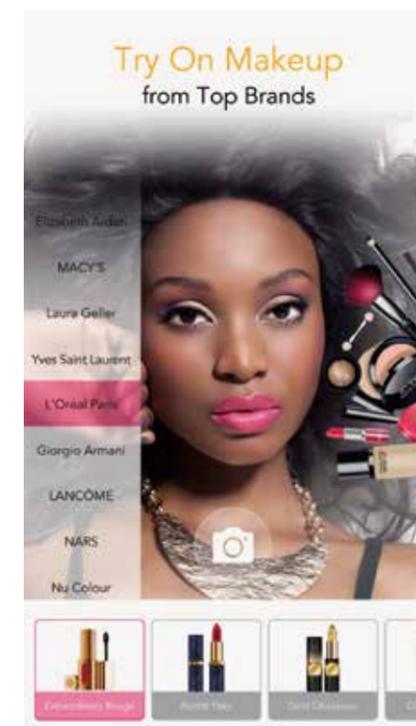
## YouCam Makeup

Using the camera on your mobile phone, YouCam Makeup applies make-up your face instantly just like a magic mirror. The industry leading facial recognition technology detects and tracks each facial feature with high accuracy, resulting in true to life makeover effects. Users can try on the latest lipstick or eyeshadow colors from their favorite brand with just a tap of their finger. This year, the YouCam suite of apps reached 600 million downloads worldwide.



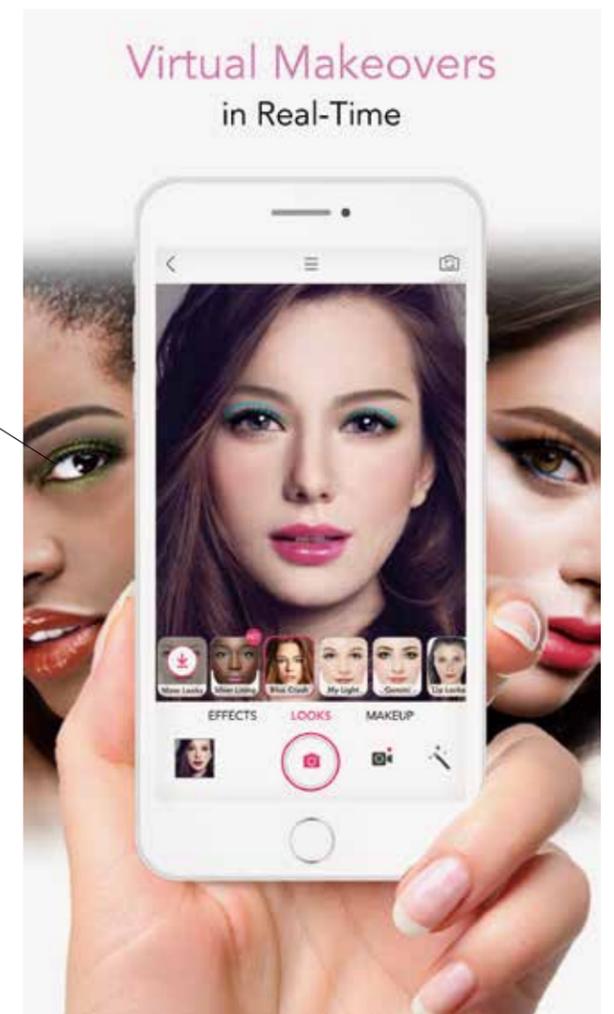
### High precision AR facial recognition technology

Pinpointing more than 100 facial points, the technology powering the app enables hyper-realistic virtual makeovers for users in real time.



### The YouCam Apps suite, your complete mobile beauty toolkit

The popular selfie app YouCam Perfect and other sister apps have also received the Taiwan Excellence Award.



# PERFECT

Perfect Corp.

President : Alice Chang  
Established : 2015  
Business : Beauty-related mobile app development and operation  
Number of employees : 170 (2017)  
<https://www.perfectcorp.com/>

Interviewee  
Perfect Corp.  
CEO  
Alice Chang



Vision for the Future

**Leveraging Big Data for marketing**

**Collaborating across industries to expand the applications of beauty AR**





### PAWBO Munch

Can be operated using a smartphone for owners with PAWBO+, or the remote control included in package. The front screen features a mechanism that displays cute LED light icons along with charming music during operation. A tray for treats is on the bottom, while a container for pet food is inside the Munch device. The amount of food given can be adjusted as well. A slot-machine style game mode and other functions let you enjoy playing with your pets.

### PAWBO+

Features a high-resolution 720p HD camera with a 130-degree wide-angle lens for beautiful, panoramic shots. What's more, the 4x zoom lets you capture your pet's adorable expressions from up close. Up to eight devices can connect at the same time, letting the entire family operate the device. In addition to the treat dispenser, this item allows for communication using the built-in microphone and speaker. It also includes a laser cat toy function that you can enjoy with your pets.



## Stay by your pet's side virtually wherever you go

For people who worry about their pets when they are away from home comes PAWBO. PAWBO Munch manages feeding and includes a game feature, while PAWBO+ comes equipped with a camera as well as a lighter treat dispenser and laser game. Downloading the free app lets you control these devices remotely. Even while you are away, you can check in on your pets in real time and feed them whenever they get hungry.

PAWBO's high-quality 720p HD camera lets you see your pets clearly, and images taken can be stored as movies or pictures on your smartphone. These can be easily posted to social media as well, further adding to the product's popularity. It has been well received for its ability to take candid pictures of pets as they relax at home, as opposed to posed pictures taken in the owner's presence. PAWBO+ also comes equipped with a

speaker. This lets you call your pet directly using the smartphone before giving it a treat. Your pet's voice is delivered by the built-in microphone, allowing for communication and helping to alleviate your pet's feelings of stress or loneliness. You can treat your pet even when you are away, providing further entertainment as well as accompany—helping to keep pets happy and healthy.

## The world's first IoT starter kit

With the spread of the internet, more and more people are interested in learning programming. Up until now, this often required educational software, meaning the hurdle for beginners was somewhat high. In an attempt to make learning programming more convenient and affordable comes CloudProfessor, the world's first out-of-the-box IoT starter kit. Users can choose from two programming languages to learn, JavaScript and Google Blockly. Since its 2016 release in Taiwan, it has already been adopted by over a hundred

institutions of learning. All you need to learn programming is the CloudProfessor product, together with a smartphone, tablet, chromebook, or laptop/desktop with Android, iOS, Chrome OS, or Windows. Students learn programming by accessing the IoT device from their smart devices, chromebook or laptop and directly editing the programming code. The CloudProfessor starter kit contains nearly sixty courses, including control boards, sensors, and learning

apps. With additional accessories, you can even see, for example, how a robot will move using the code you wrote yourself. Experience the joy of programming while learning the fundamentals of coding. This kit may very well serve as the catalyst for the creation of new apps and games that break convention and go beyond existing frameworks.

### CloudProfessor

Software programming and hardware sensor controls equipped on a unit the size of the palm of your hand. Learn from your smartphone, tablet, chromebook, or laptop/desktop by connecting CloudProfessor to Acer Cloud using Wi-Fi. With this groundbreaking product, you can learn programming anywhere—all you need is an internet connection and a supported device.



#### Impressive Scalability

Expansion modules and sensors, such as light sensors, temperature sensors, and LED lights can be connected easily via USB, making an ideal environment to learn programming. The app is compatible with the Android, iOS, Chrome OS, and Windows platforms and lets users learn two different languages, JavaScript and Google Blockly.



### Acer Incorporated

Chairman : Jason Chen  
 Established : 1976  
 Business : Telecom & information  
 Number of Employees : 7169 (2014)  
<https://www.acer.com/>



# A second-generation magic mirror that serves as a beauty advisor

This "magic mirror" features a 14-inch liquid crystal panel, a system LSI with eight built-in CPU cores, an image sensor, and built-in speakers. The user sets up HiMirror Plus like a vanity mirror, and photographs their face every day. By recording and analyzing the user's skin condition, HiMirror Plus provides her with advice on skin care.

These features were supervised by dermatologist Takako Yoshida. "Developing

the software was a challenge. However, we succeeded in applying for a patent based on our discoveries," says marketing manager Tseng.

Behind the design and sales of the HiMirror series is Cal-Comp Big Data, a member of the well-established EMS/ODM company New Kinpo Group. President Simon Shen had the software for the device developed internally, but invested in marketing promotions heavily.

"We advertised in leading English fashion and lifestyle magazines, as we believed that this is because increased awareness of our product would lead to business-to-business sales," says Tseng. The company plans to launch its third-generation device at the end of 2018. It will include a touch panel and software that allows users share before and after shots with sales staff at cosmetics stores.

## HiMirror Plus

LED lights have been added to the liquid crystal panels on either side to improve visibility and make it effective as a makeup mirror, picture storage has been increased sevenfold to 14,000, and the number of users each device can support has been upgraded as well, from four to six user profiles. Furthermore, up to two Bluetooth devices, such as HiMirror's Smart Body Scale, can be connected simultaneously.

### Take pictures using the top-mounted camera

The photo on the left-hand page has been taken with the camera to detect age spots and dullness.



Sync with the special smartphone app to receive health and beauty advice anytime, anywhere.



### Advertising for the English-speaking world

The company has invested in a wide range of advertising in leading English fashion and lifestyle magazines, with an eye toward building a base of cosmetics sales companies that would order customized devices.



## HiMirror プラス

Cal-Comp Big Data, Inc.

President : Simon Shen  
 Established : 2016  
 Business : Design and sales of beauty devices  
<https://www.himirror.com/>

Interviewee  
 Cal-Comp Big Data, Inc.  
 Marketing Division  
 Marketing Manager  
 Alain Tseng



Vision for the Future

**Added features and additional in-house products that support beauty and health**

**Commence contracted design and manufacturing of such products**



# An IoT device that alerts you when it's diaper-changing time

For struggling parents who aren't sure when it's time to change diapers comes the Opro9 Smart Diaper.

This small device alerts the parent's smartphone when it's time to change diapers, saving them the trouble of disturbing their sleeping baby for a diaper check.

The cover of the device is made from skin-friendly silicon that meets the high safety standards of the United States and Europe.

What's more, for the Japanese market, it comes with an additional cover for affixing batteries to prevent accidental swallowing.

"Up to five devices can be managed with a single smartphone. It could also come in handy at nurseries. Since the number of times the baby urinates is recorded on the Cloud, it can also serve as a daily health monitor," says EVP Bruce Lan with a confident smile.

Founded as a connector supply parts manufacturer

in 1990, CviCloud Corporation launched its new smartphone product brand Opro9 for the growing IoT industry. This diaper is the continuation of a line of IoT products that include Apple certified Homekit-light bulb sockets and power plugs. "Our goal is to see that our products can be used for all living room appliances. We spare nothing when it comes to investing in product development," Lan says with great expectations for the future.



### Advanced Urine Sensor

An environment test measuring humidity and temperature is performed once about every two minutes, meaning you won't miss a diaper change.



### Smart Diaper

Simply attach the small device to the part of the diaper that gets wet, download the special smartphone app and go through the initial settings, and you're good to go. When the baby urinates, the sensor in the device detects changes in temperature and humidity inside the diaper. If the humidity and temperature reach certain levels, the device deems it time to change the diaper and notifies the parent's smartphone.



### Intuitive interface

When the temperature and humidity reach certain levels, the face on the screen frowns.

Opro9



CviCloud Corporation

President : Chao-Chun Yang/Steve Yang  
 Established : 1990  
 Business : Manufacturing and sales of electric parts and IoT devices  
 Number of employees : 3000 (as of 2017, group total)  
<https://www.opro9.com/>



Interviewee  
 CviCloud Corporation  
 EVP  
 Bruce Lan



Vision for the Future

Development of remote systems using the Cloud

Promotion of in-app advertising functionality targeting other industries



## Connecting high-reliability smart water meters wirelessly to the Cloud

EMS is the leading Taiwanese smart water meter company, and their TH/RMT/CCT series of products integrates metering expertise with wireless communication technology.

In the past, the company developed an electronic water meter without gears that detects water consumption using electronic parts on the rotating impeller. This meter almost never breaks down, and its measuring capabilities are unaffected by magnets. The battery life of the electronic parts is more than sufficient at a minimum of ten years. What's more, this product meets the dustproofing and

waterproofing standard IP68, meaning it will not malfunction even during a flood.

TH/RMT/CCT adds to this electronic water meter the company's own 3G/4G (GPRS) communications modules. In the era of IoT technology, EMS have applied LoRawan and NB-IoT into water metering technology to exceed clients' communications requirements as well.

For submetering applications, water meters in condominiums are expected to send real-time data to the network servers to collect and analyze data. With the combination of the TH/RMT/CCT set, every user can receive

alerts about abnormal water consumption, leakage events and water quality status.

Vice General Manager Su hopes to receive orders for projects related to Japan as a subcontractor. Competitively priced, EMS's smart water meters are installed at Aeon Mall BSD City in Indonesia. "Since the price is less than half that of Japanese manufacturers, many worry that it is untrustworthy, but our products have been in use for more than three years now, and their reliability and durability has been proven." says Su.

## Smart Submetering Reading System

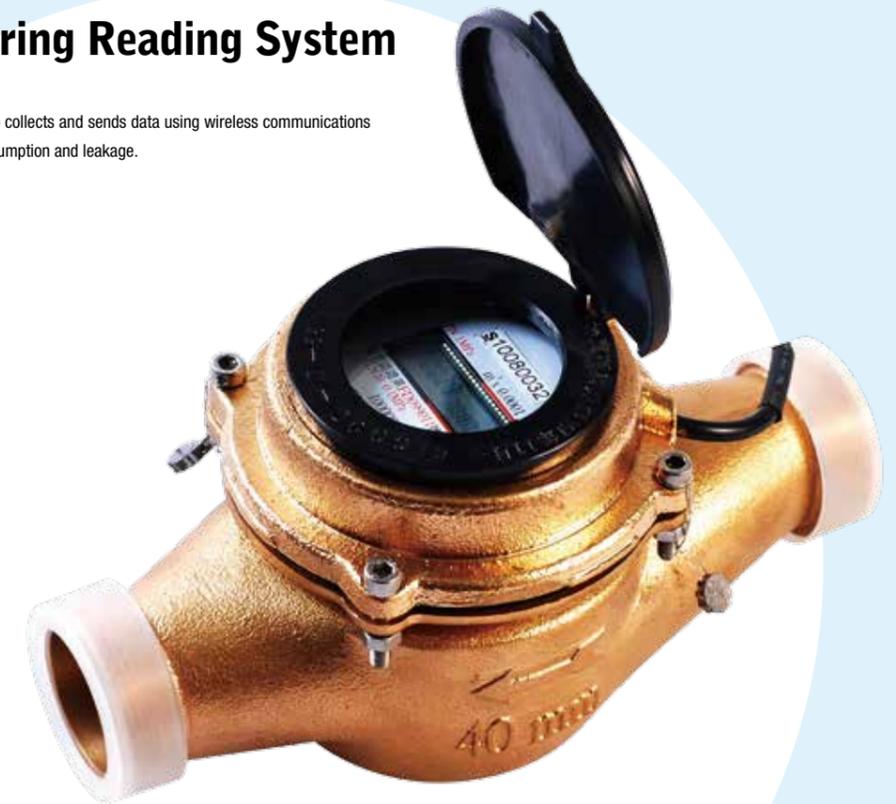
(TH/RMT/CCT)

Not only does the meter measure water usage, it also collects and sends data using wireless communications channels to warn about abnormal behaviors like consumption and leakage.



### Monitor with a mobile device

Fluctuations in water usage can be checked via a smartphone app. This app also alerts users if there is a leak.



### Optical inspection

Optical inspection is performed with an IC chip soldered to a printed circuit board at a reflow soldering furnace at the company's factory.



### Final inspection

Final inspection of the water meter being performed pre-shipment.



ENERGY MANAGEMENT SYSTEM CO., LTD.

President : Yung Hsien Ma  
 Established : 1991  
 Business : Design, manufacturing and sales of water meters  
 Number of Employees : 200 (2017)  
<http://en.ems.com.tw/>

Interviewee  
 ENERGY MANAGEMENT SYSTEM CO., LTD.  
 Vice General Manager  
 ZhengXian Su



Vision for the Future

Development of an emergency notification system for elderly people living alone and families in remote locations. Creation of system which sends an alert if abnormalities in water utility usage are detected.

## DC motor range hood – Intelligence System

(DR7793)

A high-performance range hood equipped with an infrared sensor, stylish LED display, and patented spiral suction technology. Its silent, powerful, and deodorizing suction will help create the ideal cooking environment.



### An enhanced turbine motorsensor

Featuring smoke exhaust speed 2.5 times and 60% greater than that of conventional models. In addition to an airflow increase of 35% and power efficiency improved by 60%, the enhanced turbine used boasts excellent sound suppression.



### Detects heat using an infrared sensor

The characters on the LCD panel mean "smart detection."

## Hands-off air control with an infrared sensor and automatic power-saving motor

"This is the second time we have installed an air volume control feature. I am proud to say we have perfected it," says Marketing Department Brand Director Jessica Deng. Her company's kitchen range hood DR7793 needs no one to turn it on and off manually or constantly adjust the air volume. This is because it accomplishes this by detecting infrared rays emitted by heated objects. The infrared sensor and air volume control unit do not malfunction even when cooking with extremely high heat. The inconspicuous

appearance of the sensors, beside the lamps on the side of the range hood, is a stylish touch as well.

The range hood also features low power consumption. It uses half the electricity of conventional AC motors and has kept reduced power consumption in Turbo Mode to 230 W. Turbo Mode is powerful, with an exhaust speed of 22 m<sup>3</sup>/minute. The previous model had exhaust speed of 16 m<sup>3</sup>/minute. It also features a Silent Mode at 42 decibels, with an exhaust speed of 5 m<sup>3</sup>/minute and

power consumption of 8 W. It is powerful, quiet, and helps save electricity.

TAIWAN SAKURA is a long-established Taiwanese kitchen equipment brand, and it is not unusual for Chinese living abroad to go out of their way to purchase this brand and their products. Built on trust, TAIWAN SAKURA plans to meet demand for even better exterior appearance and design. "We will create products unique to our company using laser marking technology and collaborating with architects," says Deng.



### Patented technology

The patented 3D ring suction technology features a concave spiral suction hood that prevents smoke from escaping. The filter is patented as well; using the concave baffle plate, oil is discharged directly into the oil catcher.

# SAKURA

TAIWAN SAKURA CORPORATION

President : Eric Chang  
 Established : 1988  
 Business : Design, manufacturing, and sales of kitchen equipment  
 Number of Employees : 957 (2016)  
<http://www.sakura.com.tw/>

Interviewee  
 TAIWAN SAKURA CORPORATION  
 Marketing Department  
 Brand Director  
 Jessica Deng

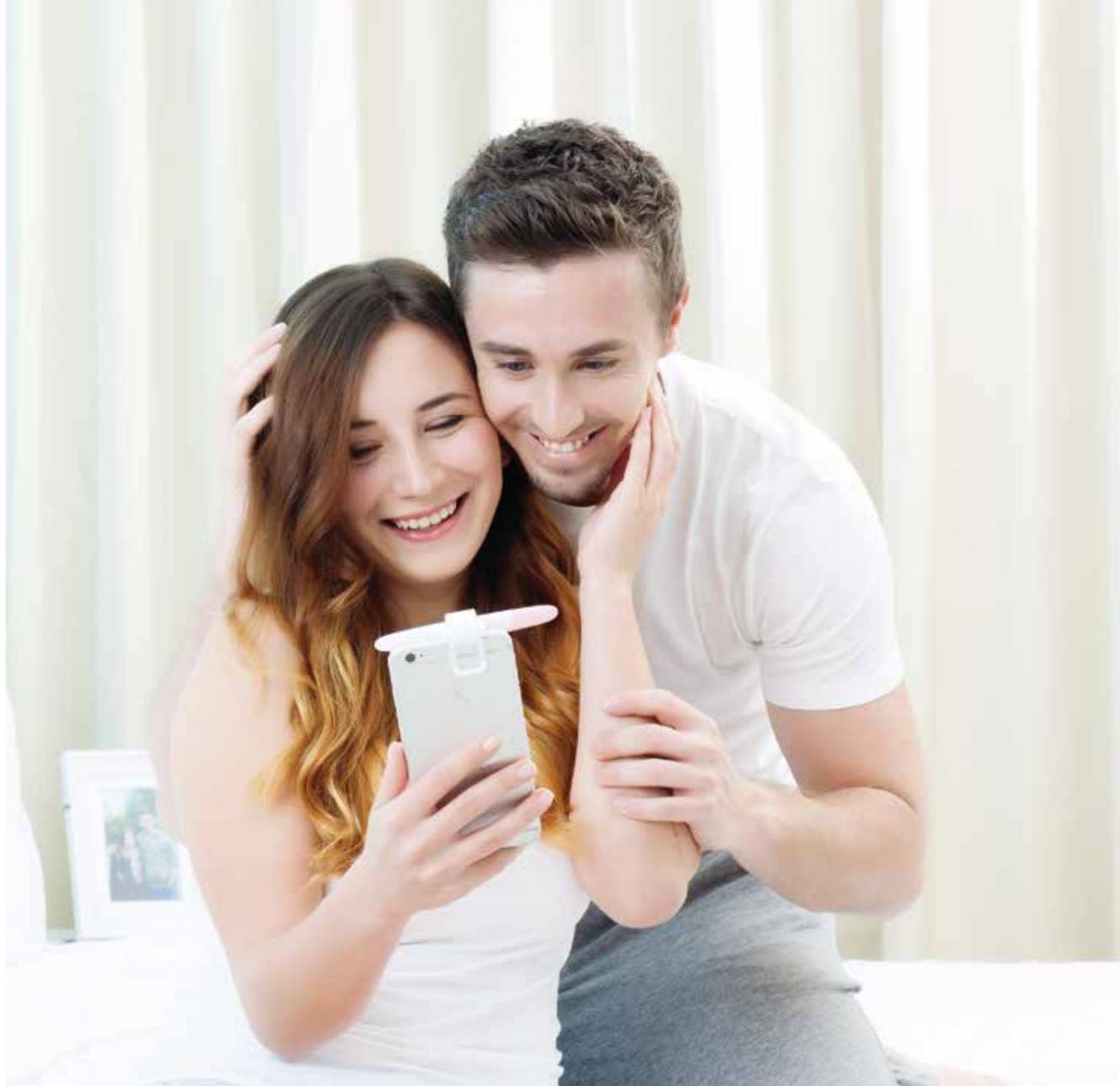


Vision for the Future

Further reduce sound and power consumption

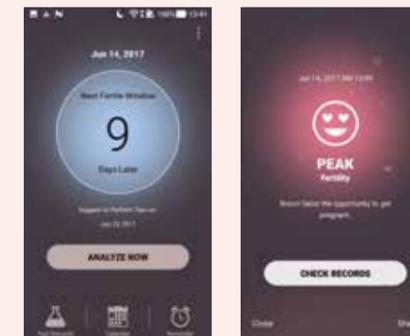
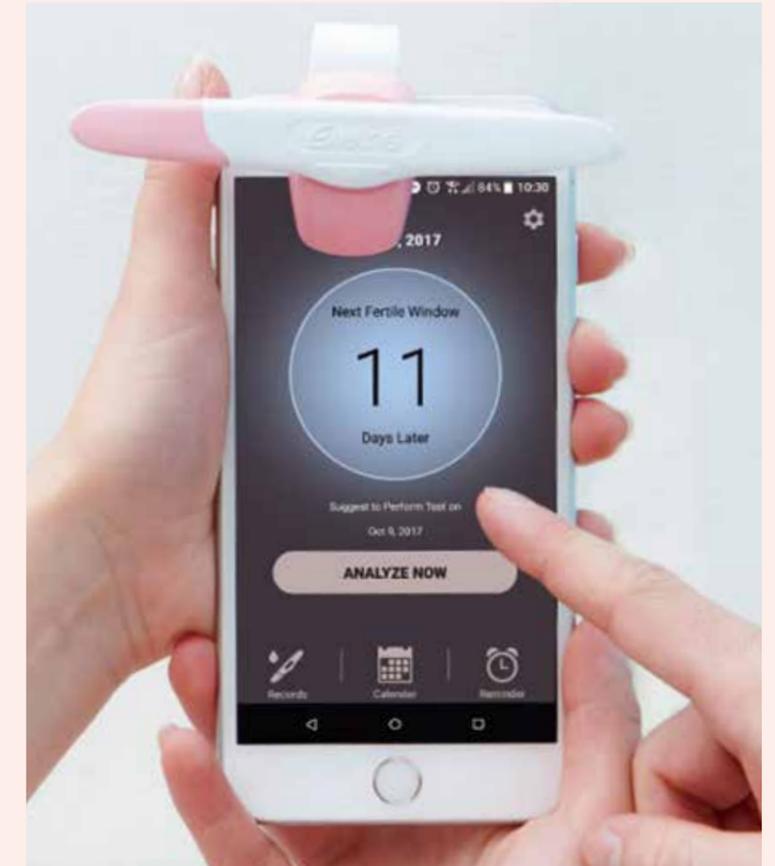
Further improve the exterior design





## Eveline Smart Fertility System

This tool lets users easily predict ovulation dates using their smartphones. Consisting of test strip and a smartphone app, it accurately predicts ovulation dates, using the smartphone camera to scan a test strip that has absorbed urine. Eveline costs 1490 Taiwanese dollars, which includes ten LH test strips and one smartphone attachment clip.



### Notify and share

On the left is a screen showing that the next period of conception starts nine days later. The user can save this data to the in-app calendar and reminder system. On the right is a screen showing peak fertility time. Clicking the share button on the bottom right notifies your partner.

# Eveline

iXensor Co., Ltd.

President : Tung-Meng Tsai/Alan Tsai  
 Established : 2012  
 Business : Development of mobile healthcare products and sales of women's health and chronic disease management systems  
 Number of Employees : 52 (2018)  
<https://www.ixensor.com/>

Interviewee  
 iXensor Co., Ltd.  
 Chief Medical Officer/CMO  
 Jerry Chen



Vision for the Future

**Sell the product overseas (iXensor has acquired governmental approval for blood sugar management tools in several countries, so they are familiar with the procedure).**

**Establish technology to detect progesterone, HCG, etc., to further monitor women's health.**



## A smartphone pregnancy support kit that sold out in spectacular time

iXensor Eveline is a tool that allows couples who want children to monitor ovulation cycles and prepare effectively. It continues to be sold out in Taiwan, thanks to prominent YouTuber Tsai A-Ga introducing the product in a video, saying, "My wife got pregnant within one month using this." He did not explicitly mention the name of the product or company, as iXensor had not asked for publicity.

Eveline consists of a smartphone app and ovulation test strips that measure the

concentration of luteinizing hormone (LH). The procedure is simple: the user urinates on the test strip, launches the app, and scans the test strip with the front camera. Simply by doing this, users can record ovulation dates and, using the app, share when they are most likely to conceive with their partners. When it displays "Peak", users will ovulate within just twelve to twenty-four hours—the optimal window for conception is not long.

LH test strips were available commercially

prior to Eveline's release. However, "The ambiguous colors were difficult for users to distinguish by sight alone, leading to misinterpretations. This doesn't happen with Eveline, since this important task is left to the machine. Although the white balance of smartphone cameras is not uniform, the app has the logic to adjust for this," says iXensor's Chief Medical Officer Jerry Chen. The test strip has been approved for medical use by the Ministry of Health and Welfare.

## AROBOT

ADATA subsidiary AROBOT was in charge of development. Like Erato, a company that grew through the design and sales of completely wireless earphones, this company was founded as an internal venture company in 2015 with approval from the president of ADATA. They are still considering whether to start contract design and manufacturing of household robots.



### An adorable shape

The model that displays expressions on its LCD panel will be priced at around 20,000 Taiwanese dollars. The model without the LCD, which features a built-in rechargeable battery that can fully recharge a smartphone twice will be priced around 9,000 Taiwan dollars.



## An adorable robot that houses a touchstone of machine learning

ADATA is renowned for its computer peripherals, such as DRAM modules and memory cards. The company will release two models in its AROBOT series aimed at infants in Taiwan around October 2018.

These household robots, which appear to be in a different field from ADATA's usual product line, were actually developed by their subsidiary AROBOT. What's more, the company developed the built-in speech recognition software from scratch, without using American speech recognition engines.

Why did they go through all this effort? Project development manager Mic Hsu explains, "It was because the president of the company and the on-site workers felt we should gain experience for the future. Nowadays, software on the Cloud becomes smarter semi-automatically through deep learning, a kind of machine learning. What should we pursue in this era? We sought to answer that question by developing speech recognition software from scratch."

Both AROBOT models recognize voices and

people, and can read picture books or play with the baby using built-in games whenever the baby cries out. It has wheels on the bottom, letting the infant move the robot around using a smartphone app. There are infrared sensors on the bottom so that it will not fall down stairs or the like. It also come with a host of features for parents and guardians, allowing it to serve as a baby monitor and as a mobile battery.



ADATA Technology Co., Ltd.

President : Simon Chen  
Established : 2001年  
Business : Design and sales of computer peripherals  
Number of Employees : 1296 (2016)  
<http://www.arobot.info/index/>

Interviewee  
ADATA Technology Co., Ltd.  
Senior Consultant  
Mic Hsu



Vision for the Future

Evolve robots by applying Cloud machine learning

Diversify business through internal ventures



# A spherical gaming PC case that moves with you

This high-class gaming PC case is made from transparent glass that lets you see the machine inside. The innovators of this trend, which has taken the world by storm, are In Win designer Liu and marketing manager Hsieh.

"We began developing the product that would become our flagship model in 2012 in an effort to create new value." (Hsieh)

"The concept behind the design of our seventh-generation of WINBOT has been glass that lets you see inside." (Liu)

When the first glass PC case was announced in 2012, it was looked upon by peers with skepticism. User response, however, proved different. Starting around 2013, more and more orders came in, and the transparent case became so popular that, before the company knew it, competitors began copying it.

With glass cases now popularized, they sought an innovative new challenge in developing their seventh-generation product, giving rise to the glass sphere. Producing

spherical glass is not easy, and development did not always go smoothly. The WINBOT that was born from this cost five times as much to develop compared to a standard product, with no concern for its profitability.

"We cannot create innovative products if all we do is worry about development costs." (Liu) "But thanks to this, we've achieved world-class levels of recognition. It has been a huge success in terms of branding." (Hsieh)



## WINBOT

A unique PC case with spherical glass covering the machinery inside. The case rotates 360 degrees to follow the user using facial recognition and motion detection, and features playful flourishes, such as the spherical case opening and closing with the raising and lowering of a hand. It measures 700 mm x 685 mm x 648 mm and weighs 22.46 kg. An original water cooling kit can be installed as well.



### The case spins and opens!

The built-in camera recognizes the user's face and movements, with the case moving 360 degrees in response to those movements, opening and closing as well.



### Features high-spec PC compatible ports

Features HD audio, two USB 3.0 ports, and one USB 3.1 Type-C. The motherboard is E-ATX, ATX, and Micro-ATX compatible.



Interviewee  
In Win Development Inc.  
La.De-Sign  
Errien Liu  
Global Marketing Manager  
Nelly Hsieh



In Win Development Inc.

President : Lai, Wen-Hsien  
Established : 1985  
Business : Manufacturing and sales of PC parts  
Number of Employees : 1,200 (2017)  
<https://www.in-win.com/>



Vision for the Future

**We intend to continue developing creative, never-before-seen PC cases for years to come**

# An intelligent robot partner, your Moving Monitor Guardian

"What makes it different from (its competing product) Pepper?" Robotelf's developer William Hong replies to this direct question with a smile. "It's the affordable price. Our Robelf is roughly ¥80,000—that's half the price of Pepper."

With an eye toward expanding the user base by keeping the price reasonable, Robelf is adding new features as it becomes more established as a platform in homes and at stores.

"We have upgraded Robelf by incorporating feedback from users, with the ultimate goal

of creating a versatile helping robot that can clean as well," he says.

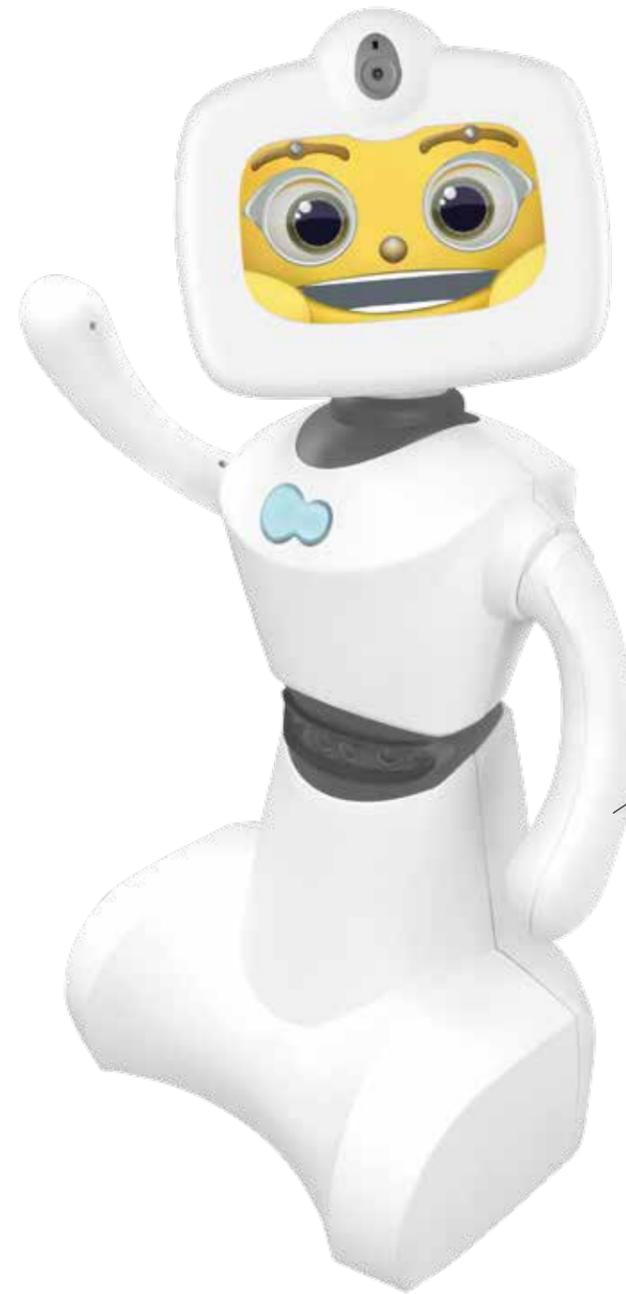
Developed in part for its creator's own daughter, who needs a lot of care, the robot comes equipped with nursing care features, such as reminding people when it is time to take medicine, or conversing with people to stimulate the brain and prevent dementia. It also includes support for child-rearing, including English lessons and the ability to announce when it is time to study. Also, one of its two cameras is removable, allowing it to be placed in an empty room and used for

household security.

There is also an exclusive app for store owners, including restaurant staff, making it a piece of cake to take orders or use the Mobile POS Discount.

User safety is also a top priority. The robot detects objects approaching the sensor and stops. The lower sensor detects steps, meaning it won't trip or fall down stairs.

Robelf is perfect for busy parents, care-takers, and shopkeepers who need a helping hand. The affordable price is the icing on the cake.



## Robelf

A helper robot offering high-level performance for under ¥100,000. It comes with four apps: Education and Discipline for Children, Home Security, Nursing Care Support, and Shopkeeper Support. The functions have steadily expanded through customer feedback, and an automatic charging system and multilingual support program are currently under development.



### Both arms rotate 360 degrees

One of its initial shortcomings was its arms, which were easy for children to break. This has since been resolved by simplifying its structure and movements.



**Robotelf™**  
Technologies Co., Ltd.

Robotelf Technologies Co., LTD.

President : Ling-Feng Chen  
Established : 2013  
Business : Development of robots and applications  
Number of Employees : 50 (2018)  
<https://www.robotelf.com/>

Interviewee  
Robotelf Technologies Co., LTD.  
COO  
William Hong



Vision for the Future

Develop apps for automatic charging together with partner companies

Multilingual support including Japanese and Korean

### Store data on the Cloud

With the ability to capture and manage lifelogs on the Cloud, the robot can easily adapt to the user's lifestyle.



## EdiGreen AirBox (AirBox AI-2002W)

The AirBox AI-2002W measures PM2.5, temperature and humidity, PM10, CO2, TVOC (total volatile organic compounds), and HCHO (formaldehyde), sending this data to servers operated by the company. Edimax is considering offering a continuous billing model in Taiwan in cooperation with telecommunications carriers.



## A government project transformed into a business model

The AirBox AI-2002W is an indoor air quality monitoring device designed and developed by Edimax which is part of the "EdiGreen air quality monitoring" complete indoor and outdoor solution.

The first semi-outdoor device AI-1001W PM2.5 sensor was completed in just three months, including the device itself and the Edimax cloud servers, with the joined effort between Edimax and researchers at national academic institutions. The CEO of Edimax saw this as an opportunity to build a bridge

between the public and private market.

The semi-outdoor device was distributed widely across schools by donation in six major cities in Taiwan. In Korea, they succeeded in selling the device together with system integrators, introducing a continuous billing model according to usage rate. Not only does long-term use mean profitability, but, as Dr. Albert Yeh, the CTO of Edimax OBM BU, explains, "We can ensure the quality of measured data through maintenance."

Another notable product is Office 1-2-3, an

office Wi-Fi system with wireless access points designed for small- to medium-sized businesses. It contains software that lets even network technology novices manage user and device access rights, transmission range, and more.

Chinese companies have grown in recent years, and even Taiwanese wireless networking EMS/ODM companies have faced the stress of competition. Rather than waiting for customer orders, Edimax strives to break through to the future by developing and selling novel, in-house brand products.

## An easy-to-configure office Wi-Fi system for small to medium-sized enterprises

### Office 1-2-3

Office 1-2-3 supports the standard for fifth-generation wireless LAN (Wi-Fi), IEEE 802.11ac, as well as the so-called PoE (Power over Ethernet) standard IEEE 802.3af/at, which combines communications and power supply into a single cord. With power supply restrictions on the ceiling where the Access Point can be installed, PoE allows for fast and flexible network construction.



### A self-managing Wi-Fi system

The standard kit includes three Access Points, with the capability for further extension up to a total of 16 Access Points. Each Access Point automatically connects and can even automatically configure conventional networks if these are connected to the master Access Points. This renders specialized network administrators and expensive servers unnecessary.



Edimax Technology Co., Ltd.

President : Gene Renn  
 Established : 1986  
 Business : Development, design, manufacturing, and sales of Wi-Fi products, network equipment, and IoT devices.  
 Number of Employees : 1438 (2016)  
<https://www.edimax.com/>

Interviewee  
 Edimax Technology Co., Ltd.  
 OBM BU, CTO  
 Marketing Vice President  
 Dr. Albert Yeh



Vision for the Future

Air Quality Monitoring Device »  
 Increase items detected, linking through the Cloud

SME Access Point »  
 Providing access for Wi-Fi devices



# A high-powered electric mountain bike is born!

The United States and Europe are the home of the sports bike, with the German market for electric mountain bikes (e-MTB) being especially large. In this sense, the bicycle industry is a truly global business.

"The German market favors high-end products, making it very attractive. That said, there is a lot of competition. To make inroads into this market, we created a powerful eMTB that would be a cut above the rest," says Jonathan Yin of Darfon Electronics Corp.

Increasing capacity means increasing battery size. To solve the problem of storage, the company employs a unique design in which the battery is stored between two tubes on the front of the aluminum frame. Durability has also been improved, leaving nothing to be desired in terms of pure strength.

Of course, the bicycle is IoT-compatible as well. The speed sensor and torque sensor

on the bicycle send information to the user's smartphone via Bluetooth.

The developer Darfon (headquartered in Taoyuan) originally started out making keyboards for notebook computers. Ever since, they have steadily expanded their operations to include power supply parts and batteries. Using technology developed in-house, the company entered the e-bike market in 2015. This strategy proved right on target, and the company took advantage of increasing

demand for e-bikes to successfully expand sales channels to the United States and Europe. For the Japanese market, the company exports the so-called "mom's e-bikes" aimed at mothers. The company continues to put out products tailored to their respective markets in countries all over the world.



## TRB1

With battery capacity increased by 1.5x and motor power increased by 1.28x compared to ordinary products, this electric-assist mountain bike reduces stress when climbing upward slopes. Connecting the bicycle with newly developed apps lets you check battery life as well as current location using the navigation system, and also lets you manage training programs by showing your heart rate and calories burned.

### Powerful battery

An astounding 756 Wh of battery power provides tiger-like strength and agility.



### Dual-tube structure

Two aluminum tubes on the front of the frame improve strength and provide space for the battery.

CF1 LENA White



PSA1 White



# BESV

Experience Amazing

Darfon Electronics Corp.

President : Andy Su  
 Established : 1997  
 Business : Manufacturing and sales of LEDs, power supplies, batteries, electric-assisted bicycles, etc.  
 Number of Employees : 15,000 (2017)  
<http://www.besv.com/>

Interviewee  
 Darfon Electronics Corp.  
 Associate Vice President  
 Jonathan Yin



Vision for the Future

Further upgrades to our line of electric-assist bikes

Reducing manufacturing costs to keep the retail price low



## Smart LED street light 135W

A high-performance LED streetlight. Resistant to corrosion and shaking, each component can be upgraded easily through modularization. It can be augmented with a control app and timer feature.



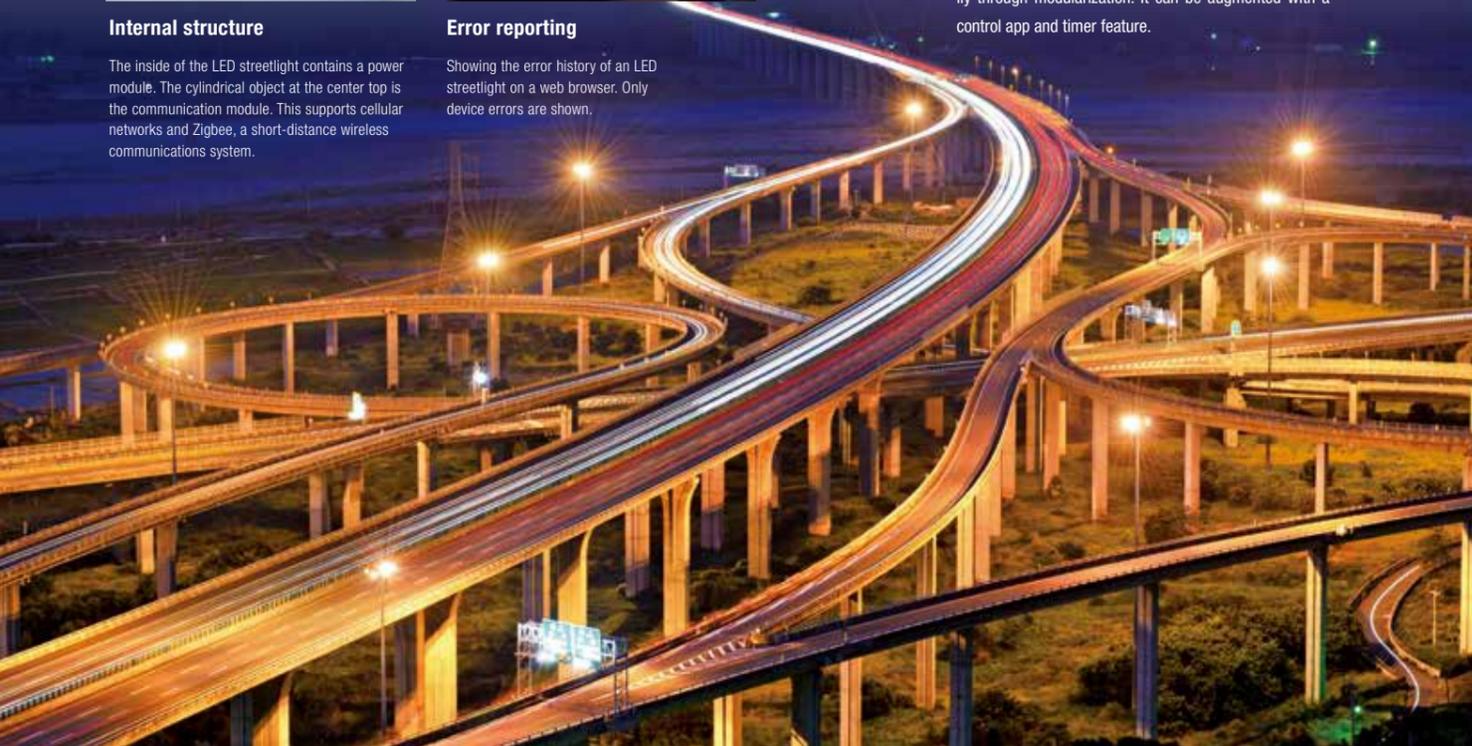
### Internal structure

The inside of the LED streetlight contains a power module. The cylindrical object at the center top is the communication module. This supports cellular networks and Zigbee, a short-distance wireless communications system.



### Error reporting

Showing the error history of an LED streetlight on a web browser. Only device errors are shown.



## LED streetlights with ingenious error reporting

DELTA ELECTRONICS is a global leader in energy-saving solutions. Using their power supply technology, Delta has created electricity-saving LED street lights used in such cities as Taipei and Jakarta. In Taiwan, the company receives revenue from maintenance as well, and has equipped the LED street lights with features to help keep costs down.

"We can determine whether the cause of a malfunction was the streetlight itself, or whether it was caused by external factors, such as a power outage or damage from a traffic accident. The error message is then sent to a web server. This prevents mistakes during initial repair, keeping maintenance costs down,"

explains Lighting Director Steve Lin.

There are even Japanese cellular base stations that say they would not be able to operate without Delta's power supplies. It is also a little-known fact that the company has done subcontracting for the design and manufacture of medical devices since 2005.

In addition to LED technology, Delta is also extending its business in the medical field, from components to systems.

Delta has developed a high voltage (16 kW to 65 kW) generator for X-ray systems.

"For these systems, we launched the DELPet  $\mu$ CT100 in Taiwan last year and are expanding our business overseas now," explains Vice

President Chang.

By seeking out industrial-academic cooperation with one of top medical universities in Taiwan, Delta has built up its strength and started to penetrate into the field of pre-clinical medical imaging equipment step by step.

Key applications for the  $\mu$ CT100 include disease and drug development for research and pre-clinical trials.

DELPet  $\mu$ CT100 offers a two-second fast scan mode with 2  $\mu$ m pixel resolution and is equipped with a patented animal bed which enhances productivity and improves analysis accuracy in the laboratory. Vice President Chang says, "We developed this technology by ourselves here at Delta."

## A new business opportunity: microCT for pre-clinical trials



### Advanced scanning mechanism

This is the structure of the internal mechanism and the rotating scanner. Although the scanner rotates rapidly, it still provides high-precision imaging. "So accurate and precise is it that practically no difference can be observed after geometry calibration", explains Mr. Chang.



### Air circulation

The position of the measurement sample (the patented animal bed) provides an independent heated airflow, and the anesthesia system helps to maintain stable vital signs for the animal.

## Micro CT (DELPet $\mu$ CT100)

$\mu$ CT100 takes up an area of 158 cm by 88 cm with cube-shielding (cube radiation protection), about the same size as an office desk. The instrument is combined with a high-intelligence recognition system to provide intuitive, one-touch operation.



DELTA ELECTRONICS, INC.

Chairman : Yancey Hai  
 Established : 1971  
 Business : A global leader in power and thermal management solutions and a major player in several product segments such as industrial automation, displays, and networking.  
 number of employees : 80,000 (2017, Global)  
<http://www.deltaww.com/>



Vision for the Future

Streetlights »  
 Reduce communications costs using NBloT

CT scanner »  
 Improve spatial resolution from 2 $\mu$ m to 9 $\mu$ m

Interviewee  
 DELTA ELECTRONICS, INC.  
 Vice President  
 JJ Chang

Director, Lighting Division  
 Steve Lin

Delbio, Inc.  
 Chairman  
 Herbert Ho



## A light-weight, fixed-wing UAS

A lightweight, easy-to-operate fixed-wing drone equipped with a landing parachute to protect both the main body and payload. It can fly continuously for up to seventy minutes, and takes high-quality images at 2.4M pixels.



### Absorbs impact at landing

Pterosaur deploys a parachute before landing, which flips the craft upside down. This prevents protruding parts from hitting the ground and breaking.

### It can also take flight when tossed in the air

It can be flown without using the catapult. Flight time is between 60 to 70 minutes, with a flight speed of about 45 to 55 km per hour.



## A drone with durable wings that soars above the competition

"The consumer drone market is already a 'red ocean' market, where companies fight tooth and nail," says GEOSAT Aerospace & Technology's Cheng-Fang Lo.

Lo received a doctorate in aerospace engineering from the University of Texas at Austin. Many of GEOSAT's engineers come from the Aerospace Industrial Development Corporation (AIDC), which works on domestic fighter jets. GEOSAT brought these airplane enthusiasts together and developed a new product that

would set the company apart from the competition: the all-wing Pterosaur, which resembles a stealth bomber.

Without vertical propellers, one might think that the camera would be matchbox-sized and the device difficult to operate, but nothing could be further from the truth. The Pterosaur supports a mirrorless camera with changeable lenses, and is so easy to operate it can be mastered in just ten minutes. The drone is operated using an Xbox controller, also employed

on US Navy submarines.

In addition, the Pterosaur includes a mechanism to absorb shock when landing. When the user commands the drone to land, it deploys a parachute, the air resistance turning the drone upside down.

The side that contacts the ground when landing has no protruding parts, making it resistant to damage. This feature has been warmly received by professionals using drones for land surveys and other vital tasks.



### Full assembly

How it looks fully assembled. The exterior casing is made from expanded polypropylene (EPP) supplied by a Japanese manufacturer, which, unlike polystyrene, does not chip or crack easily. It weighs just 2.2 kg, including its lithium polymer battery.



### Helicopter-style drones available as well

GEOSAT also manufactures and sells propeller-type drones with gasoline-powered engines.



GEOSAT Aerospace & Technology Inc.

President : Lo, Cheng-Fang(Ph.D)  
Established : 2004  
Business : Design, manufacturing and sales of drones  
number of employees : 220 (2017年)  
<http://www.geosat.com.tw/>

Interviewee  
GEOSAT Aerospace & Technology Inc.  
Chairman and CEO  
Cheng-Fang Lo



Vision for the Future

Develop a larger (4 kg) model.

Meet agricultural demand from Southeast Asia and China (mainly agrochemical spraying).





## CROXERA

An IoT dashboard for motorbikes. Its main features include a smartphone-linked navigation system, speed warnings, and an emergency contact feature that alerts family when there has been an accident. With a wide dashboard and speed warnings in conspicuous bright red, the product is designed for drivers whose field of vision is high and facing forward.

# A futuristic IoT dashboard for motorbike comfort and safety

Taiwan boasts the highest rate of motorbike use in the world. While technological advancements have given rise to cheap yet sturdy motorbikes, this has decreased the frequency with which people buy new ones. "I want to challenge the idea that a motorbike has to break down before you buy a new one. From now on, I want people to buy new bikes for their added value, such as design or new features," says Tony Lin, the young 33-year-old CEO of AEON MOTOR.

This new vision is embodied in the IoT dashboard CROXERA. Prioritizing driver-friendliness, this product offers a wide 178-degree field of vision. All dashboards come in subdued tones, to avoid distracting the driver with overly bright colors.

It also comes with a plethora of features. Connect to a map application on your smartphone to turn the dashboard into a navigation system. When the sensor detects erratic driving or flipping over of the vehicle, it informs

the driver's family that an accident may have occurred. It also can warn the driver when the speed limit has been exceeded.

Despite all these features, it remains highly affordable, with the price of the panel and sensor simply added to the price of the bike. Since it uses your smartphone as the computer, there is no need to embed a CPU in the display, helping keep the price down. It's a truly game-changing idea that could only have come from the mind of Lin, an IT industry veteran.



### Accident alert system

If there is any unusual behavior, such as erratic driving or flipping of the vehicle, your family will be alerted to the possibility of an accident.

### Navigation feature

Enter info into your smartphone map, and the dashboard will do the rest. There's no need to keep looking at your phone.



AEON MOTOR CO., LTD.

President : Chieh-Lin Chung  
 Established : 1998  
 Business : Manufacturing and sales of autobikes  
 Number of Employees : 400 (2017)  
<http://www.aeonmotor.com.tw/>

Interviewee  
 AEON MOTOR CO., LTD.  
 CEO  
 Tony Lin



Vision for the Future

Selling the dashboard independent of bikes

Further enhancement of features



## An innovative electronic toll collection system sought after by emerging countries

Taiwan's electronic toll collection (ETC) system is astonishingly innovative. All drivers have to do is to create an account, purchase credit in advance, then place a 926 MHz-compatible wireless sticker tag (eTag) on their vehicles. There are no gates and barriers or toll booths on the highway, creating what is called "free flow." If an unregistered driver uses a toll road, a bill will be sent to the license plate holder.

When asked if there was any concern that such a system would lead to huge amounts of unpaid fees, Information Technology Division Vice President Kenny Chen explains that "only about 0.4%, of the total amount of fees go

unpaid." The Taiwanese government decided that they would have nonstop free-flowing highways, and Far Eastern Electronic Toll Collection developed a system that would collect toll fees with a toll collection rate of up to 99.97%, and a utilization rate that reaches 94%.

One feature of the system is that it can detect duplicate license plates. "Wouldn't it be strange if the same license plate was detected in Taipei at 12:05 and in the distant city of Tainan at 12:08? We would notify the police," says Chen. As of 2014, they have been using flash in addition to RFID. The blue light makes

it easier to recognize plate numbers, which are red and white. "We struggled to find a good flash, but finally found one in Denmark," says Chen.

Far Eastern Electronic Toll Collection has received many inquiries from emerging countries regarding their ETC system. They have been consulted regarding systems in Indonesia, the Philippines, Vietnam, and Malaysia, of which Vietnam has already reached the proof-of-concept stage. They plan to offer consultation to Kazakhstan, Bosnia and Herzegovina, and Belarus as well.

## Taiwan's RFID-Based Multi-Lane Free-Flow ETC System



### Taiwan ETC

The equipment that makes up the Taiwanese ETC is capable of reading tags on vehicles driving at up to 180 km per hour. While the engine used in the license plate recognition software is European, Far Eastern Electronic Toll Collection improved upon it by incorporating machine learning.



### The hurdles of unmanned toll collection

Another challenge to creating a free-flowing traffic system was the need to lay off toll collectors. To address this, employees were provided seven months' severance pay, and dozens were rehired in new capacities by Far Eastern Electronic Toll Collection. "I'm proud to say that two such employees received the 2017 Employee Excellence Award, given to a total of five employees. It seems they've found new meaning in their positions at call centers and service points," says Chen.



Far Eastern Electronic Toll Collection Co., Ltd.

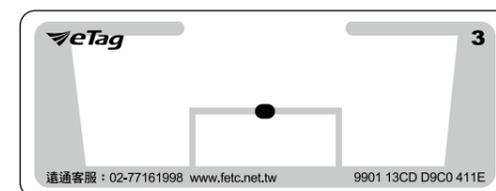
Managing Director : Dr.YC Chang  
 Established : 2005  
 Business : Contracted construction and operation of ETC systems  
 Number of Employees : 580 (2017)  
<https://www.fetc.net.tw/en/>

Interviewee  
 Far Eastern Electronic Toll Collection Co., Ltd.  
 Information Technology Division  
 Vice President  
 Kenny Chen



Vision for the Future

To be the leading RFID-based total solution provider in ETC and Smart City technology



### Wireless sticker tag

Place it right on your windshield or headlight. Each eTag is linked to a virtual account and costs less than a conventional device. Should the sticker get lost or damaged, it can be reissued easily at any of four affiliated convenience store chains, including 7-Eleven and FamilyMart.

Essayist **Tae Hitoto**

# Touring Taiwan on Bicycle



As an essayist, actress, and dentist, Tae Hitoto wears many hats. Her father was the eldest of the famous Taiwanese Yan family, and her sister is the singer Yo Hitoto. In November 2016, she completed a journey around the island of Taiwan.

Going around the circumference of Taiwan is called Huan Dao, and has become popular among the Taiwanese in recent years. Essayist Tae Hitoto is one of those taken in by its charms. She told us what made this journey so appealing for her.



**“The journey around Taiwan is full of learning, discovery, and wonder.” – Tae Hitoto**

“While there are many ways to make the journey around the island, such as by bus or on foot, what I am into right now is traveling around Taiwan on bicycle. In 2015, the 968-kilometer Huan Dao Route 1 cycling road around the island of Taiwan was created, and now it plays host to many tours and events. My first Huan Dao trip was part of an event called Formosa 900, hosted by the bicycle manufacturer Giant. Over a period of eight nights and nine days, I became absorbed in riding my bicycle, learning and discovering so much along the way. I would rest

in small towns I normally would never have visited, and tasted delicious local fare. My most unforgettable memory was traveling through the mountains from Pingtung to Taitung, where many indigenous people live. I stopped at a school where their children learn, and was able to truly gain a feeling of their unique culture. After that, I got over the mountains, my biggest challenge, and I will never forget seeing the vast Pacific Ocean as I rode down the slope. More than anything, what drove me to continue was my interactions with the locals. In Taiwan, where there is a rich

cycling culture, it is common for people to cheer you on with the phrase “jia you (do your best).” Another appeal is the support system in place. They let you pump air at police stations or convenience stores, and there are places all over where you can put up a tent and stay the night.

Cycling novices can start from a quarter or halfway along the course so they don’t have to do it all at once. Rather than seeing it as a sport, think of it as a kind of leisure activity that lets you interact with Taiwanese culture.

## 〔 Stop Along the Way 〕

There are considerable differences in climate, culture, and cuisine between northern and southern Taiwan. Here are some interesting places you won't want to miss along your journey.



### Through the windy Silicon Valley of Asia Taipei to Taichung

**Hsinchu**

Photo courtesy of the Taiwan Tourism Bureau.

An area famous as home to many IT companies. Sometimes called the “Windy City”, strong seasonal winds blow around September. With places such as Hukou Old Town lined with traditional brick buildings, the distinctive townscape is a must-see.

**Taichung**

There is lots to see here with the renovated shop Miyahara Ophthalmology, the National Taichung Theater, and Fengjia Night Market, the largest night market in Taiwan. The Gaomei Wetlands, with its stunning sunsets, is popular as well.

### Enjoy picturesque vistas as you cycle Taichung to Tainan

**Changhua**

See Lukang, which was once a port town, and Changhua Roundhouse, Taiwan’s only railway depot. A famous delicacy here is ba-wan, in which meat and vegetables are wrapped in a jelly-like dough.

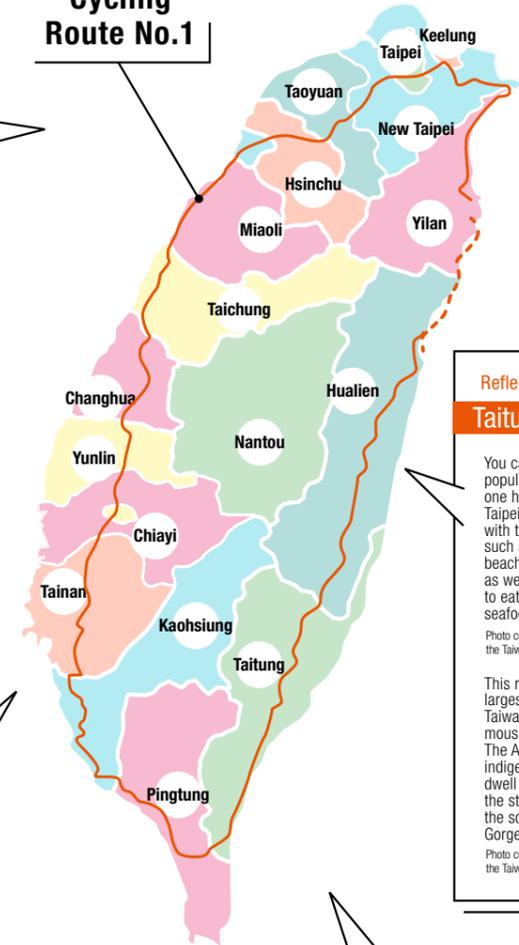
**Chiayi**

A city developed through the forestry and sugar industries, it also serves as a base for sightseeing in Alishan. Fried rice made using turkey is the specialty here.

**Tainan**

An ancient capital that flourished as a cultural and political center. Recently, it is popular among visitors as a treasure trove of fine dining. Specialties such as shrimp rolls and Ta-a Noodles are a must.

### Cycling Route No.1



### Reflect upon this land's deep ties to Japan Taitung to Yilan

**Yilan**

You can visit this popular spot just one hour from Taipei. It is brimming with things to see, such as hot springs, beaches, and farms, as well as delicacies to eat, such as fresh seafood.

Photo courtesy of the Taiwan Tourism Bureau.

**Hualien** ▶ P. 70

This region is the largest prefecture in Taiwan, and is famous for its marble. The Amis and other indigenous people dwell here. It is also the starting point of the scenic Taroko Gorge.

Photo courtesy of the Taiwan Tourism Bureau.

### Over a steep pass to the beautiful coast Tainan to Taitung

**Kaohsiung**

The most flourishing city in southern Taiwan, Kaohsiung is a port town with a tropical ambiance. With plenty of bicycle lanes, you can enjoy safe cycling here. The Love River flowing through the city is also a sight to behold.

**Pingtung**

Photo courtesy of the Taiwan Tourism Bureau.

Home to the pre-eminent resorts of Taiwan, such as Kenting and Donggang, this area is also renowned for its fruit production. With a difference in elevation of 455 meters, Shou Ka is the hardest part of the journey around the island.

**Taitung**

Photo courtesy of the Taiwan Tourism Bureau.

An area where many indigenous people live, featuring mountain ranges and a coastline with a beautiful sprawling sea on either side of you. Jhiben Hot Springs, discovered during the age of Japanese rule, and the Chishang lunch-box are famous.

Explore Taiwan by Bike

**A Closer Look**

# Tour Hualien, the largest city in eastern Taiwan

Situated in eastern Taiwan is Hualien, a major city that can be reached in two or three hours by train from Taipei. In addition to the famous sightseeing spot Taroko Gorge, people flock to Hualien for its stunning wilderness, ancient architecture, and cycling.

### All About Hualien

Still recovering from a large earthquake that struck in February 2018, Hualien's major sightseeing spots are now open and can be visited as usual. Tour the Japanese immigrant villages with their deep ties to Japan and enjoy outdoor activities such as rafting and hot springs. You'll also want to check out the unique culture originating from Hualien, as created by its youth.

### Be healed by nature

#### (Taroko Gorge)

Taiwan's foremost scenic spot, situated in the northern part of the Central Mountain Range, along the steep formations of Qingshui Cliff. With the Jiugudong Tunnel of Nine Turns and the powerful Yan Zi Kou, there is plenty to see.

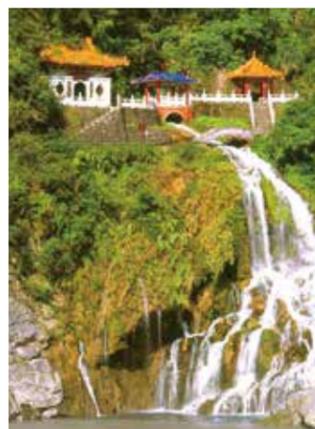


Photo courtesy of the Taiwan Tourism Bureau

#### (Xiuguluan River)

A 103-kilometer-long river flowing from the Xiuguluan Mountains. The sight of the river flowing along the coast and mountains is stunning, and you can go rafting from May to October when the water level is high.



### Tour stylish renovated facilities

#### (Hualien Cultural and Creative Industries Park)

The remains of a sake brewery from during the age of Japanese rule has been turned into a trendy industrial complex with shopping and restaurants. You can find souvenirs from Hualien here as well.



### Relive history at the immigrant villages

#### (Japanese Immigrant Villages)

This area is scattered with villages where Japanese immigrants dwelled during the age of Japanese rule, including Toyota Village and Hayashita Village. There are shrines and Japanese-style houses, giving you a glimpse into a bygone era.



### Savor local delicacies



#### ( Bao Xin Fen Yuan )

A hot and cold dessert in which large balls of tapioca in peanut or taro paste are wrapped in dough and served on fluffy shaved ice.



#### ( Dai Ji Bian Shi )

The balance between the pork and the smooth dough is exquisite. The slowly simmered, consomme-style soup is simple yet addictive.

### Hualien MAP



## Check out these exceptional Taiwanese road bikes

Taiwan boasts a rich cycling culture, and major Taiwanese bicycle manufacturers like GIANT have fans all over the world.

Tae Hitoto's beloved bicycle series

#### ⊙ Liv

#### Envie Advanced Pro

One of the fastest bicycles in the world, with its size and parts redesigned especially for female riders. In addition to a saddle designed especially for women, its compact body makes it more wind resistant. It's easy to handle and is recommended for road bike novices as well.



Taiwan Excellence Award Winner

#### ⊙ Pacific Cycles

#### birdy (model: AIR)

The Japan-only Birdy Air is the lightest version, weighing in at only 9.87 kg, it can really fly. The bike is equipped with road racing class C brakes for superior performance.



### Q&A for Novices

#### Q1: Can a novice really cycle around Taiwan?

It is said that if you can ride 50 km on a bicycle, you can do the Huan Dao course, but the longer you can train, the better. We recommend that novices join a tour group. Recently, tours on e-bikes (electric bicycles) are available as well.

#### Q2: What kind of support do you receive by joining a tour?

Generally, tours come with all you need, such as restaurant and hotel reservations, bicycle repairs, and luggage transportation. You will also have an English-speaking tour guide.

#### Q3: What if I just want to do some light cycling?

If you want to cycle near Taipei, we recommend the course along the Tamsui River, or the village Bali on the opposite shore. You can easily rent a bicycle anywhere.

### Recommended tour companies

#### Planet Adventure

Planet Adventure provides bicycle tours primarily in Taiwan but also abroad, with featuring scenic cycling and much more. All of their guides have received official certification as cycling guides from the Japan Cycle Tourism Association. They also have offer an entry-level road bikes course for beginners. <http://planetadventure.co.jp/en>

#### Dynasty Holiday

If you are looking for air tickets and hotel arrangements for Taiwan, look no further. In addition to Taiwan's leading airline China Airlines, they have a wide range of tours from Taiwan's low cost carrier Tiger Air as well. In November 2018, a tour sponsored by GIANT will be held. <https://www.dynasty-holidays.com>

# Stress-free treatment of kidney stones using precision shock waves

Extracorporeal Shock Wave Lithotripsy (ESWL) is a treatment method that employs a medical device to send shock waves which break up kidney and ureter stones from outside the body. Since there is no surgery involved, there is less stress on the patient; however, conventional shock wave treatment may require local anesthesia.

To further reduce the patient's stress, Lite-Med has attached an ultrasound device to the ESWL device for tracking the stone's exact location in real time, even after slight stone movements caused by the patient's breathing.

Furthermore, compared to conventional treatment, Lite-Med's ESWL increases the accuracy of the shock waves, reducing missed shots and decreasing the total shock waves sent from 3,000 shots (in ordinary treatment) to 1,800 shots.

"Conventional devices take several X-rays during treatment in order to determine the position of the stone. However, this is unnecessary when using Lite-Med's product. In the sense that it decreases radiation exposure, this device benefits both patients and doctors," says Vice President David Hsu.

Lite-Med's product is IoT compatible as well! Since the machines have been installed on outlying islands, such as in Indonesia, doctors in urban areas are able to monitor their patients' status remotely. More than 20,000 records of clinical data have been gathered in one year.

A project to develop AI that can assist with doctors' medical diagnostics is underway as well. With their focus on Industry 4.0, Lite-Med has a very bright future ahead!

## Real-Time Ultrasound Stone Tracking System

This system records the stone's movement trajectory through image capture and computes the required table movement amount, allowing the treatment device to be automatically moved (by computer control) to push the stone back to its original location at the shockwave focal spot. This achieves the goal of real-time-tracking and increases the stone hit rate from the conventional 45% to 86%.

### Real-time ultrasound stone locking system

This allows firing of the shockwave whenever the stone enters the focal zone, while preventing firing of the shockwave whenever the stone moves outside the focal zone. This system can further increase the stone hit rate from 86% to nearly 100%.



### Shockwaves target stones with precision

Shockwaves are sent only when stones enter the frame displayed on the screen.



# LITEMED

Lite-Med Inc.

President : Walt Hsu  
 Established : 1991  
 Business : Medical device development and manufacturing  
 Number of Employees : 50 (2018)  
<http://www.lite-med.com/>

Interviewee  
 Lite-Med Inc.  
 Vice President  
 David Hsu



Vision for the Future

Development of AI physician support using Big Data

Making drive motors IoT-compatible





## Foresee-X

A navigation system for surgery using mixed reality. The small display inside the headset worn by the surgeon shows a computer-generated image of the surgical site superimposed over the surgeon's field of vision. The product was quickly approved by the American FDA.



### What is MR (Mixed Reality)?

While mixed reality (MR), virtual reality (VR), and augmented reality (AR) are similar, when 3D computer graphics are superimposed over real-world images, it is typically referred to as MR.



## Taiwan Main Orthopedics Biotechnology Co.,Ltd.

Founders : Min-Liang Wang  
Lee, Pei-Yuan  
United Orthopedics Corp.

Established : 2017  
Business : Design and sales of medical headsets  
Number of Employees : 15 (2018)  
<http://www.surglasses.com/>

Interviewee  
Taiwan Main Orthopedics  
Biotechnology Co.,Ltd.  
CEO  
Min-Liang Wang



Vision for the Future

**Obtain additional governmental approval from foreign countries in Europe and elsewhere**

**Develop MR systems with overlay display for the liver and brain**



### A demo simulating spinal treatment

The images inside the headset are displayed simultaneously on the rear monitor. The optical components built into the headset are the company's original design. "I've taught at the university level, and I had a brilliant student whose excellence goes beyond written tests assist me with the design." (Wang) At only 650 g, the headset is light. The built-in display has a resolution of 1280 x 720 pixels.

## A mixed reality headset to help surgeons navigate

The mixed reality (MR) system Foresee-X was developed to guide orthopedic surgeons, helping to make spinal surgery quicker and more accurate.

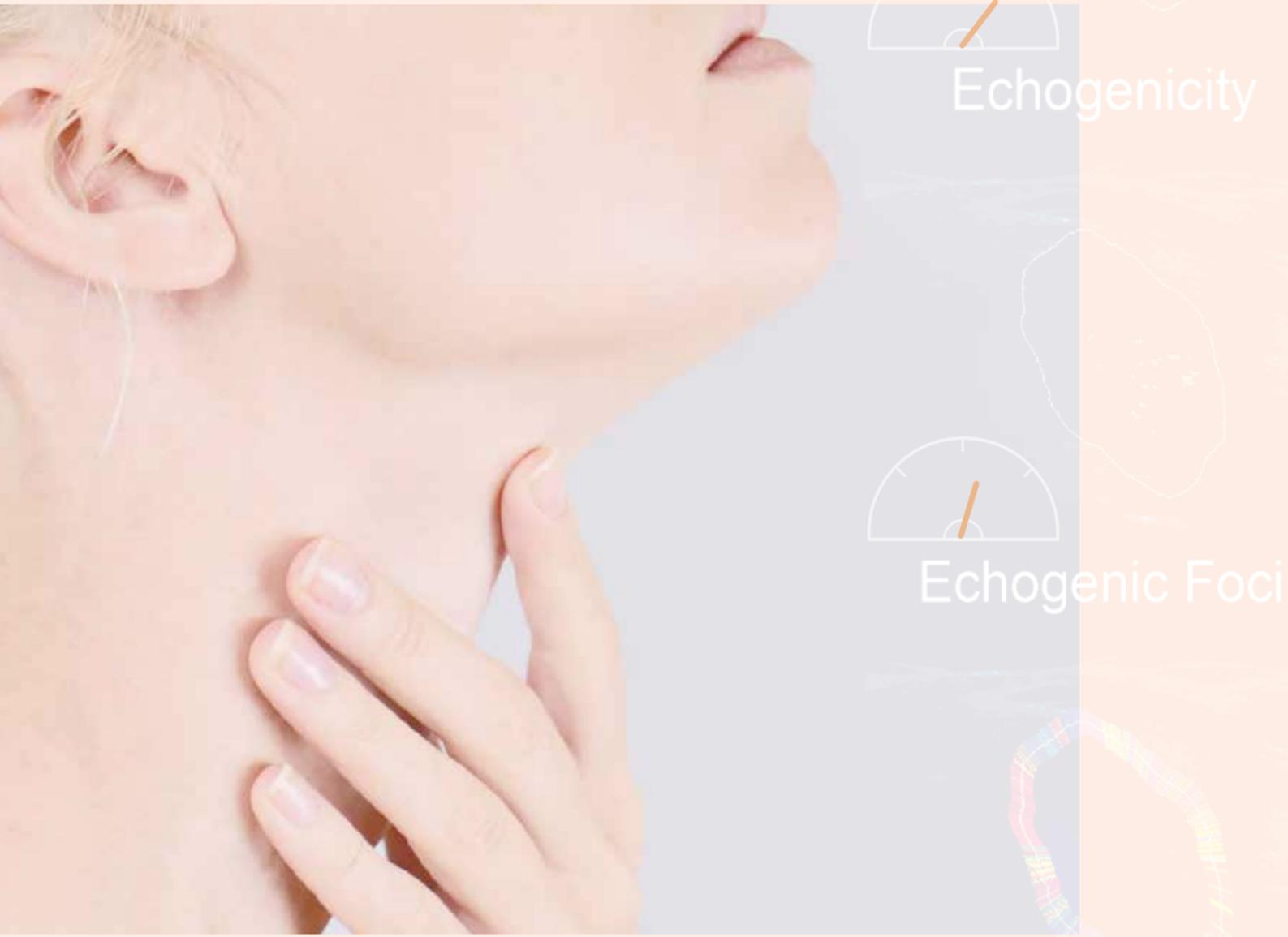
This technology captures the surgeon's field of vision using a stereo camera, then superimposes a 3D computer image of the patient's spine onto this in real time, displaying it on a small screen inside the surgeon's headset. There is no need to bother putting markers in place in advance, and the positional error between the CG and the surgical site is a mere

1.5 mm. In December 2017, Foresee-X received Class II medical device approval from the American FDA.

"I injured myself in Boston in 2013, and while undergoing treatment I decided to create a mixed-reality system," says development leader Wang. "At first, I thought it could work as a projector, but the visual field tracking was poor. We switched to a mounted headset display and reduced the CG to only what was necessary, achieving our goal of developing a surgical navigation system." National

Chin-Yi University of Technology and Show Chwan Memorial Hospital assisted in the development of the product, as did the Tzu Chi Medical Foundation, the University of Southern California, and Dharmais Hospital in Indonesia.

Wang and United Orthopedic Corp (UOC) have invested in Taiwan Main Orthopedics Biotechnology. The company has also established a branch in San Francisco, and is in the process of putting together a sales wing. "We're hoping to do an IPO (initial public offering) in the United States around 2024." (Wang)



# Diagnostic support software that prevents optical illusions to detect thyroid tumors early

The number of people worldwide suffering from cancer and other diseases of the thyroid is said to be over 300 million. The weapon in detecting and diagnosing thyroid cancer without radiation exposure is ultrasound imaging. However, ultrasound scanning can be quite difficult to master, says AmCad BioMed's Chief R&D Officer Argon Chen.

Difficulties arise because images obtained by ultrasound scanning are in greyscale with a relatively low resolution. "Optical illusions are

inevitable when dealing with the human eye. For example, look at Figure 1. Square B appears brighter than and completely different from the Square A, doesn't it? But in truth, they have the same greyscale level. Even an experienced doctor risks overlooking a tumor's malignant feature due to these kinds of optical illusions," says Chen.

To resolve the issue, AmCad BioMed developed AmCAD-UT software that colors the ultrasound images to highlight the tumor features using a variety of modes. The product received

approval to be marketed as a diagnostic tool by the United States FDA 510(k) in 2013.

"With the assistance of AmCAD-UT, physicians can make more accurate interpretations. We believe it will become the world's most essential diagnostic tool for thyroid cancer," says AmCad BioMed's General Manager Yili Lee.

AmCAD-UT comes with an automatic calibration technology and supports all ultrasound imaging systems. As of 2018, no rival tools have been released.

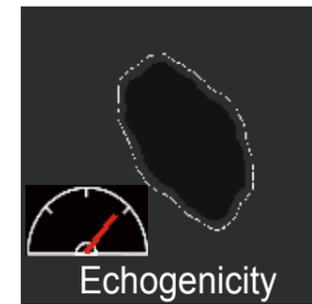
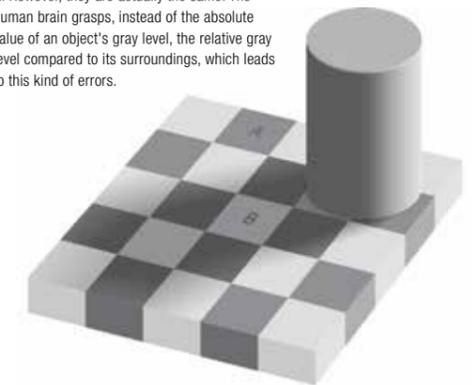
## AmCAD-UT® Detection

A screenshot of AmCAD-UT, software that supports diagnoses based on ultrasound imaging. Doctors who discover malignant tumor features can instruct patients to undergo more thorough cytology testing. AmCad BioMed charges hospitals for the software using a pay-per-use model.



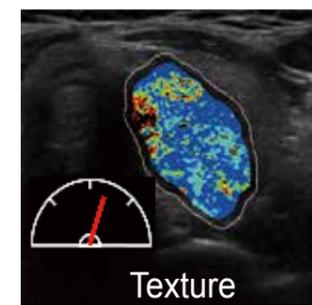
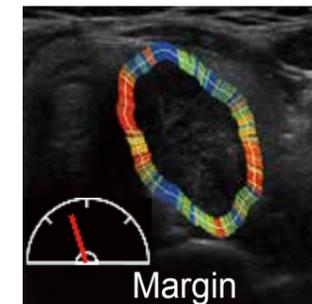
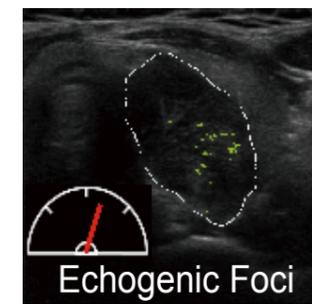
**Figure 1:**  
Optical illusion to the human eye

Square B appears to be brighter in grayscale than A. However, they are actually the same. The human brain grasps, instead of the absolute value of an object's gray level, the relative gray level compared to its surroundings, which leads to this kind of errors.



### A variety of display modes

AmCAD-UT comes with a variety of display modes that make discovering malignant features easier. Its developers elaborate, "We explained to the US FDA that in order to ensure that the software device follows the rigorous verification and validation testing procedures, we got rid of the software code used during research, rewrote the code, then thoroughly tested it."



**AmCad BioMed**

AmCad BioMed Corporation

Chairman : Cheng-Chia Lee  
Established : 2008  
Business : AI-oriented innovative medical devices  
Number of Employees : 40 (2017)  
<http://amcad.com.tw/en/>

Interviewee  
AmCad BioMed Corporation  
General Manager  
Yili Lee  
Chief R&D Officer  
Argon Chen



Vision for the Future

Expand product line to include diagnostic probes

Expand into the overseas market



# An unobtrusive ECG patch with a specially designed shirt that seamlessly measures accurate heart rate

"How can we make an ECG monitor that measures heart rate accurately without getting in the way of sports and life? This is our answer to that question." This is how James Guo, developer at Kinpo Electronics subsidiary Cal-Comp, introduces BC1/WFB02C71. The product comprises three parts, a BLE (Bluetooth Low Energy) cardiogram called the XYZlife Patch BC1, a shirt with built-in electrodes to connect to the patch, and a smartphone app.

Smart bands and smart watches scan wrist pulse using optical sensors. However, the accuracy is too low to be considered for use as a medical device. "Not only that, the user feels as though a foreign object is attached to them. We use microcurrent scanning methods developed by Texas Instruments and place the ECG around the middle of the chest. That is how we obtained the CE mark of approval for medical devices in Europe," says James Guo.

Designing a shirt with a band attached was a first for Kinpo Electronics. "We used materials from textile manufacturers and carefully checked whether it would cause allergic reactions, especially in hot, sultry, or humid environments," says Jacky Ho. The shirt has also passed the color fastness testing standards set by the AATCC (American Association of Textile Chemists and Colorists).



## XYZlife Patch with smart Clothing (BC1/WFB02C71)

An electrocardiogram (ECG) monitor lighter than conventional products that reduces stress on the user when measuring heart rate for long periods of time, as well as a shirt with attachment bands and a smartphone app.



**An ECG that feels comfortable and less like a foreign object on the body**

The ECG patch is attached to the inside of the user's clothes. On a full battery, the ECG patch lasts up to 12 hours.



**A variety of products**

From its origins as a calculator manufacturing subcontractor, Kinpo has a strong foundation as a manufacturer of electronic products. In addition to dealing with nearly all major calculator makers, Kinpo currently manufactures robots, vacuums, fax machines, printers, and more many other products.



### NEW KINPO GROUP

### Kinpo Electronics Inc.

President : Sheng-Hsiung Hsu  
 Established : 1973  
 Business : Design, manufacturing, and subcontracting of home electronics  
 Number of Employees : 2312 (2016)  
<http://www.kinpo.com.tw/>

Interviewee  
 Kinpo Electronics Inc.  
 Engineer  
 James Guo  
 Jacky Ho



Vision for the Future

**Develop a health care device combined with a household robot**

# An innovative, stress-free spinal disc hernia surgical procedure

Severe spinal disc hernias can be treated with surgery. This requires a complex procedure in which the deformed spinal disc is removed, and an artificial bone implanted in its place.

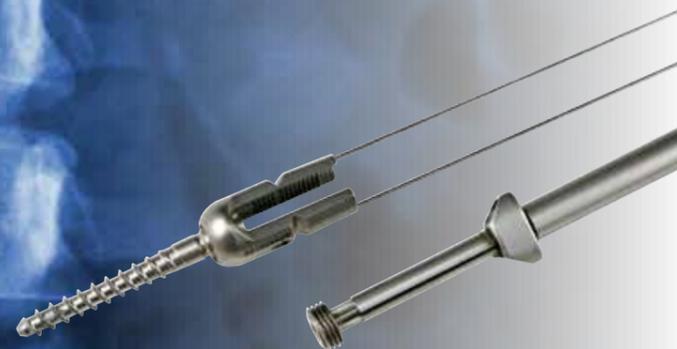
Procedures up until now required creating four holes in the spine per disc, and inserting instruments to secure the spine. However, with a newly developed surgical method known as the minimally invasive single-site spinal fixation system, only one hole is required, significantly reducing the stress placed on the patient.

Blood loss is less than 100 cc. The procedure also reduces the number of X-rays required to locate the position in the spine, decreasing radioactive exposure for patients and doctors both.

This new technology is already being used in Taiwan and was approved by the US government in January 2018.

"Hospitalization time is cut nearly in half, making beds available earlier. This benefits both the patient and the hospital," says company president Liang.

Wiltrom was established in 2009, born from the privatization of technology developed at Industrial Technology Research Institute, a governmental research facility of which Liang is a former member. His enthusiasm for research brought about this collaboration between industry and academia.



## Minimally invasive single-site spinal fixation system

An innovative spinal disc hernia surgical procedure, along with the special medical instruments required. In conventional surgery, it was necessary to make four holes in the spine to treat the herniated disk. This new surgical procedure, on the other hand, requires just one hole, reducing the stress on the patient and cutting hospitalization time in half to only 1 to 5 days.



### A tool called "Shrimp Whiskers"

A thin medical instrument known as "Shrimp Whiskers" is inserted into the spine. This creates a cavity into which a nail can be inserted to secure the spine.



### Only one hole is made in the spine

Multiple instruments are inserted into the 2.5 cm hole. The instruments that were previously inserted into four 2-cm holes are instead inserted into this hole one at a time.

**wiltrom**  
Your Health Partner

Wiltrom Co., Ltd.

President : Huang-Chien Liang  
Established : 2009  
Business : Development, manufacturing and sales of medical devices  
Number of Employees : 40 (2017年)  
<http://wiltrom.com.tw/>

Interviewee  
Wiltrom Co., Ltd.  
President  
Huang-Chien Liang



Vision for the Future

To develop new medical instruments that will allow doctors to realize their dreams





## Hot Swappable Medical-grade Industrial Power System (iPS-M100)

Hot swapping (switching components while the system is possible, and the battery pack works even if it is inserted upside down. "We didn't want to burden busy nursing staff with checking which way is up and down every time they change the battery pack. We also reduced the weight of the pack to 1.9 kg to make it easier for nurses to carry," explains Lin.



## Eliminating excess power cords from hospital rooms

Advantech has worked to develop in-house brand products, acquiring medical device certifications such as IEC-60601-1 and selling their products in Europe and Taiwan.

These regions have an increasing number of elderly patients with disposable income who are treated in private rooms using medical equipment brought in on a cart. Healthcare workers are looking for ways to power this equipment by battery, as doing so would reduce the number of

power cords.

The iPS-M100, a rechargeable cartridge battery pack, was created to meet this vital medical need. The built-in battery pack is made by Panasonic, renowned for their safe, high-capacity products. The provision of hot-swappable capabilities enables care providers to replace the battery without turning off the device, greatly reducing system interruptions and downtime. The POC-WP243, a medical computer with

stylish blue casing, also meets the needs of the medical field. While the specifications of the LCD panel itself are similar to consumer models, it comes with a three-year warranty and an extended service period of ten years. A touch panel can be added as well. "We created proprietary software that powers the touch panel so that it can be operated with ease even when the user is wearing gloves," says product planning and sales manager Hsiung.



### 1 Works even when inserted upside down

Insert and remove the cartridge-type battery pack. Each battery pack has 100 Wh of power and takes only 2.5 hours to fully charge.

### 2 Easily augmentable

The POC-WP243 medical monitor can be augmented through the HDMI, DVI, and USB ports to add devices traditionally used in the medical field.



## 24" Medical Computer (POC-WP243)

A computer terminal display for operating rooms. It comes with a high-speed CPU, no fan to reduce noise, and boasts high electrical efficiency. Unlike consumer monitors, the casing features paint that does not let ethanol or bleach permeate, and there are no vents that these disinfectants could pass through.

## ADVANTECH iHealthcare

Advantech Co., Ltd.

President : K.C. Liu  
 Established : 1981  
 Business : Design, manufacturing, and sales of industrial computers  
 Number of Employees : 7648 (2016)  
<http://www.advantech.tw/>

Interviewee  
 Advantech Co., Ltd.  
 iHospital SRP, Product Manager  
 Hj Lin

Intelligent Healthcare,  
 Product Manager  
 Rick Hsiung



Vision for the Future

Battery »  
**Improve capacity, increase charge cycles (lifespan)**

Medical Computer »  
**A high-performance computing system for critical hospital environments**



Spice up your life with stylish,  
high-performance products

# Taiwan Good Design

Recipients of the Taiwan Excellence Award include a diverse range of everyday essentials such as cosmetics, health care, and household goods. With their attractive designs and impressive functionality, you'll want to make them a part of your daily life.



## ONE-O-ONE TRAVEL MUG 1

A ceramic mug designed inspired by Taiwan's landmark skyscraper, Taipei 101. With help from the famous Italian creative group consortium Hangar Design Group, this mug features the facade of Taipei 101. The ceramic bottle contains a special material that works to purify drinks. A fusion of Eastern and Western culture, this item comes in six colors.

ARTCERA CORPORATION  
<http://www.acera.tw>



## ORGANIC CLEANSING FLAKES 2

Winner of seven international awards in 2017. Subverting the traditional way of cleansing, these ultra-thin, soluble 0.01mm cleansing flakes serve as a 3-in-1 makeup remover, cleansing, and skincare product. Exclusively patented with eight kinds of eco-friendly plant extracts, their ultra-gentle (pH 5.5) composition suits all skin types. Perfect for traveling.

TENART BIOTECH LIMITED  
<http://www.10artbio.com>



## SH-RD PROTEIN CREAM 3

A hair cream beloved by world-famous celebrities including Jennifer Lopez. Use on wet hair to repair damage and treat yourself to resilient, moisturized hair. Use on dry hair to protect it from heat and UV damage. This item has been formulated with natural ingredients and advanced technology from the top cosmetic brand in Taiwan.

SHAAN HONG INT'L COSMETIC CORP.  
<http://www.shaanhong.com/en>



## ACERA OCTOPUS HEAT WAVE MASSAGER

An octopus-shaped ceramic massager. Fill it with hot water to warm and release knots in your muscles. The silicon top fits in the palm of your hand, protecting you from scalding water. The shape of the tentacles varies, with some for the head and some for the body. It can also be used without hot water, or together with massage cream, oil, or the like.

ARTCERA CORPORATION  
<http://www.acera.tw>



## O'RIGHT SHAMPOO 5

The bottle is made from 100% post-consumer recycled plastic from household goods—such as plastic milk bottles, yogurt bottles, shampoo bottles, body wash bottles, and other bottles for food, hair and skin care products—which are cleaned, packaged, and sterilized before production to ensure our customers' safety. Bottles made from 100% post-consumer recycled plastic can be reused to help reduce plastic waste. Throw empty used bottles away in a recycling bin, and take a step towards a better and more sustainable future.

Hair O'right International Corp.  
<http://www.orient.com.tw>



## KSHC NONPOWERED FLOTATION THERAPY MATTRESS 6

A mattress made of cotton knit and 99% pure precious metals such as germanium, titanium, PI π and other precious metals imported from Germany. The far-infrared rays can stimulate blood flow, improving the lymphatic system and creating a detoxifying effect. This patented product has been approved by both the Ministry of Health and Welfare in Taiwan and the Food and Drug Administration in the United States.

\*PI π is a compound precious metal, which incorporates a variety of precious metal elements, is our patented formula.

0857International Marketing Co.,Ltd  
<http://www.0857mall.com.tw>



Fine Dining

Personal Growth

Part 3

# Not Just Business: Experience the True Taiwan



Body Care

Stress Relief

Religion

Taiwan continues to attract visitors from overseas with delicious food stall dining, traditional massage parlors, historical architecture, and so much more. Here, we'll introduce the best dining spots for business meetings, as well as bookstores,

spas, and hiking courses you'll want to visit during your leisure time to make your business trip even more meaningful. Take in new knowledge, refresh your body and mind, and make your business dealings in Taiwan a success.

Not Just Business:  
Experience  
the True Taiwan 1

# Fine Dining

## Build business connections with a truly Taiwanese dining experience!

Having dinner with clients creates important opportunities for communication. Why not enjoy dinner at a sophisticated place with uniquely Taiwanese cuisine sure to delight both the eyes and tastebuds? When you're finished, don't forget to enjoy a relaxing drink at a stylish bar.



### Yu Shan Ge

📍 No. 14, Beiping East Road, Zhongzheng District, Taipei City  
☎ 02-2394-5155  
🕒 11:30am-2:00pm, 5:30pm-9:00pm / Open year-round  
🚶 5 minutes on foot from Exit 1 of Shandao Temple MRT Station  
🌐 <http://www.yu-shan-ge.com.tw/en/index.php>

### Artistic, healthy course dining that will leave your licking your lips

This restaurant lets you experience vegetarian-style course dining. The interior uses bamboo and charcoal, favored by the Chinese for its reputation of bringing good fortune to visitors. Feel the chef's commitment to textures with a Salisbury steak made from lion's mane mushrooms, and salmon reproduced with konjac and carrots to be almost indistinguishable from the real thing.



- 1 A host of dishes to delight the eyes and the palate. Lunch course starting at NT\$1098, dinner course starting at NT\$1998.
- 2 A healthy platter of fruits and vegetables.
- 3 The beautiful, spacious entrance. Private rooms large and small are available as well.
- 4 The Salisbury steak made from lion's mane mushrooms has a texture indistinguishable from meat.



### Mountain and Sea House

📍 No. 94, Section 2, Ren'ai Road, Zhongzheng District, Taipei City  
☎ 02-2351-3345  
🕒 11:30am-2:30pm, 5:30pm-10:00pm / Open year-round  
🚶 5 minutes on foot from Exit 5 of Zhongxiao Xinsheng MRT Station  
🌐 <http://www.mountain-n-seahouse.com/en/>



### Offering carefully crafted dishes made with distinctive ingredients

At this beloved shop, you can experience traditional Taiwanese cuisine from the 1930s to 1950s. Freshly caught fish from the Port of Keelung swim in the pond near the entrance alongside an array of crisp vegetables from the restaurant's own farm. This two-storied shop is decorated with antique furniture collected by the owner, creating a classic atmosphere. Taste signature dishes that will delight all foodies at this elegant restaurant.

- 1 The popular Orchid Course is NT\$2680/person, and features Taiwanese-style dishes such as fried rice with dried mullet roe and spring rolls made with flatfish.
- 2 A private room with the name of an old restaurant.
- 3 A private room connected to a courtyard lined with tropical fruit trees.



### Quan Alley

📍 No. 22, Lane 505, Section 5, Zhongshan North Road, Shilin District, Taipei City  
☎ 02-2883-1599  
🕒 12:00pm-3:00pm, 6:00pm-10:30pm (Saturday, Sunday, and public holidays 5:30pm-10:00pm) / Open year-round  
🚶 2 minutes on foot from Exit 2 of Shilin MRT Station  
🌐 <http://www.facebook.com/QuanAlley>

### Lively spirits and discussions over a sublime modern hot pot

A hugely popular creative hotpot restaurant featuring beautifully arranged ingredients and sophisticated flavor. The Mandarin Duck Pot, which lets you enjoy both a mellow white soup and a spicy red soup made with Chinese prickly ash peppers, is a hit. Within the broth are pork slices in the shape of a rose and handcrafted fish dumplings cut into adorable shapes. Add Japanese udon noodles at the end for a satisfying conclusion to your meal.

- 1 Fatty pork in the shape of a rose for NT\$1280 blossoms throughout the pot.
- 2 The restaurant offers a cultured, tranquil ambiance. Private rooms are available, making it perfect for business.
- 3 Red bean, fish, and shrimp paste sticks for NT\$550.  
\*The soup charge is NT\$150/person, and the two-flavored Mandarin Duck Hotpot is NT\$180/table. The minimum charge is NT\$2000/table. Reservation required.

## } After dinner, visit an off-the-beaten-path bar with sophisticated clientele

### Le Kief

📍 No. 36, Lane 308, Guangfu South Road, Da'an District, Taipei City  
☎ 02-2752-5009  
🕒 7:00pm-2:00am (Friday and Saturday until 3:00am) / Closed Sundays  
🚶 5 minutes on foot from Exit 2 of Sun Yat-sen Memorial Hall MRT Station  
🌐 <https://www.facebook.com/le.kief.09>

While its façade is that of a clothing store, dial the number 09 on the in-store telephone and a hidden door opens, revealing a stylish bar. While they of course serve cocktails, they are also renowned for Taiwanese-style dining, featuring classic dishes like beef cheek noodles and salted egg rice.

- 1 It appears to be a clothing store. In fact, they do not sell clothes, but plan to do so in the future.
- 2 Original gin and tonic, gentleman's afternoon tea NT\$450



### EAST END

📍 3F of Proverbs Hotel Taipei, No. 56, Section 1, Da'an Road, Da'an District, Taipei City  
☎ 02-2711-1118  
🕒 2:00pm-1:00am (Friday and Saturday until 2:00am) / Open year-round  
🚶 2 minutes on foot from Exit 4 of Zhongxiao Fuxing MRT Station  
🌐 <https://www.hotel-proverbs.com>

A fashionable yet casual bar lounge based on the concept "customers are family." Run by renowned Japanese cocktail master Hidetsugu Ueno, who also hosts many events inviting prominent bartenders from around the world.

- 1 Guests are welcome to come alone (minimum charge NT\$800)
- 2 Whiskey-based Above the Valley NT\$500



Not Just Business:  
Experience  
the True Taiwan 2

# Body Care

## Treat your weary body to the hands of a pro

What better way to recover from jet lag or travel exhaustion than a trip to the spa? The spas introduced here welcome both men and women. Recover from fatigue and recharge yourself for the next day!

### An original spa created by Regent Taipei

This popular spa won the World Spa Awards for two years in a row in 2016 and 2017. Massages are performed entirely by hand using original aromas. The spa offers a host of options with over forty courses, including one to cure jet lag and one that massages knots away using hot stones.



1

### Wellspring Spa

20F of Regent Hotel Taipei, No. 3, Lane 39, Section 2, Zhongshan North Road, Taipei City ☎ 02-2522-8279  
10:00am~12:00am (Reservations until 11:00pm) / Open year-round  
5 minutes on foot from Exit 3 of Zhongshan MRT Station  
http://www.regenthotels.com/en/regent-taipei/wellness/spa



2



3

#### Courses to Eliminate Exhaustion

**Treatment courses**  
NT\$4500/105 minutes

A course featuring Dongfang Meiren tea aroma oil, Bath salts and eye pillow. Let the luxurious aromas heal you.



4



5

1 Located on the 20th floor of the hotel, this spa features enormous windows overlooking the streets of Taiwan. 2 Treatments using an herbal ball to improve blood circulation are available as well. 3 The spacious spa has a bath where you can enjoy tea as you soak. It also comes with shower rooms. 4 The massage therapists are masters of their craft, and will make sure that you spend your time in luxury. 5 Original aroma oils fill the room with a lovely scent.



1



2

1 The course comes with tea and dessert. Relax as you gaze out the window. 2 A modern shower room decorated in wood. There is plenty of leg room in this luxurious space. 3 The Chakra Treatment is popular as well. Many company presidents and executives visit this spa.



3

### Sparkle spa

17F, No. 458, Section 4, Xinyi Road, Xinyi District, Taipei City  
02-2720-0796 ☎ 12:00pm~10:00pm (Reservations until 8:00pm) / Open year-round  
7 minutes on foot from Exit 2 of Taipei 101 / World Trade Center MRT Station  
http://thesparklespa.com/en/

A salon tucked away inside an office building. Its modern interior and the staff members' surpassing skill make it a popular choice.

The spa comes with a jacuzzi and sauna. Famous people worldwide visit here, as you can book a completely private room. Next to the jacuzzi inside the spa is a huge window overlooking Mount Yangmingshan and offering beautiful night views. An English price list and English-speaking staff are available as well.

#### Courses to Eliminate Exhaustion

**Five Elements Massage**  
NT\$5500/100 minutes

Based on the Chinese concept of the Five Elements, this course aligns energy and blood flow, improving physical condition.

### Oriental Quantum SPA

1F, No. 520, Section 4, Ren'ai Road, Xinyi District, Taipei City  
02-8780-1520  
10:00am~1:00am (Reservations until 11:00pm) / Open year-round  
10 minutes on foot from Exit 2 of Taipei City Hall MRT Station  
http://www.oqspa.com.tw



1



2



3

### A luxurious spa unlike anything you've experienced

An urban spa on the corner of an office street in Taipei. All kinds of massages are offered here, including foot and Chinese-style massages. In particular, the Energy Massage, which sends electric currents throughout the body, stimulates blood flow and alleviates muscle pain. This treatment is renowned for making one feel lighter afterwards. Many men visit the spa as well as women.

1 The massage therapist receives an electrical current from a plate at their feet and can adjust the strength of the current using their feet. 2 Ask for the large room when coming with friends. Private rooms are available as well, and the spa welcomes solo visitors. 3 Electrical currents emitted from the fingertips are sent throughout the body.

\*If you have a pacemaker or suffer from heart disease, please consult with a doctor before visiting the spa.

#### Courses to Eliminate Exhaustion

**Energy massage**  
NT\$2200/60 minutes

This popular treatment promotes blood circulation and cell activation through electrical currents flowing throughout the body.

## Organic Cosmetics

### Bring home organic cosmetics from Yuan as a souvenir

### Yuan Song Yan Shop

2F, No. 88, Yanchang Road, Xinyi District, Taipei City  
02-6638-7600  
11:00am~10:00pm / Open year-round  
10 minutes on foot from Exit 1 of Taipei City Hall MRT Station  
https://www.yuansoap.com/en



1



2



3

1 A distinctive tangerine-flavored toothpaste NT\$350 2 Bitter melon scalp shampoo NT\$550 3 The product lineup offers a wide variety of soaps as well

All products of the cosmetic brand Yuan, including its soaps, body care, and toothpaste, are made without chemicals or pesticides. Made with herbs grown at their farm in the Yangmingshan, these products are gentle on the body and popular among both men and women.

Not Just Business:  
Experience  
the True Taiwan 3

# Personal Growth

## Enjoy a good book after work

Many bookstores in Taiwan are open until late, and businesspeople reading books on their way home from work is a common sight. Many stores are attached to restaurants so you can enjoy a cup of coffee as you read up on local trends.

### Eslite Bookstore Songsshan Location

3F, No. 88, Yanchang Road, Xinyi District, Taipei City ☎ 02-6636-5888  
11:00am-10:00pm / Open year-round  
10 minutes on foot from Exit 1 of Taipei City Hall MRT Station  
@ <http://www.eslitecorp.com/en>



#### An enormous bookstore where you can discover the latest Taiwanese trends

This Taiwan-based major chain has locations in Hong Kong and mainland China as well. A diverse range of books are arranged by genre in the spacious shop. There is also a best sellers list to identify Taiwanese trends at a glance. The store also features a host of other items, including well-designed accessories and a dining corner with food from all over.

- 1 Check out the popular accessories and recommended books featured in the store
- 2 There is also a seating area. Read and compare books that interest you here.
- 3 Photo collections, cooking books, and magazines can be enjoyed even if you can't understand the words. Eslite's Dunnan location is open 24 hours a day, a rarity for a bookstore.



#### What's VVG?

VVG stands for "very, very good," and is a creative group representing Taiwan. They have seven stores across Taipei, including bookstores, bistros, and accessory shops.

- 1 Goods such as antique accessories from all over the world and items from young Taiwanese designers are arranged in style.
- 2 A book introducing cafes in Moscow for NT\$980. You can also order coffee made with beans from Alishan.
- 3 There are many Japanese books as well, including back numbers of Brutus and Papersky.
- 4 The red door and cool greenery are this shop's signature look.
- 5 Brass stationery from ystudio



### VVG Something

No. 13, Alley 40, Lane 181, Section 4, Zhongxiao East Road, Da'an District, Taipei City  
02-2773-1358  
12:00pm-9:00pm / Open year-round  
4 minutes on foot from Exit 7 of Zhongxiao Dunhua MRT Station  
@ <http://www.facebook.com/vvgteam>

#### A wide array of books in a small shop. What business ideas will be born here?

This bookstore was chosen by the American entertainment website Flavorwire.com as one of the 20 most beautiful bookstores in the world. Buyers and collectors from around the world come here in search of precious books. They also have books on cooking and interior design, as well as international and out-of-print magazines. Be sure to check out the accessories created by young Taiwanese designers as well.



### Bleu&Book

2F of the Glass Roof Building Inside Huashan 1914 Creative Park, No. 1, Section 1, Bade Road, Zhongzheng District, Taipei City ☎ 02-2341-8865  
10:00am-9:00pm / Closes irregularly  
5 minutes on foot from the exit 1 of Zhongxiao Xinsheng MRT Station  
@ <https://bleu.com.tw>

#### The shop is renowned not only for its selection of books, but for its food as well. An independent bookstore you'll never want to leave

A beautiful bookstore with light pouring in from a triangular window. Books of diverse genres, including photo collections, architecture and literature line the shelves, with recommended books displayed in the center. Enjoy a light meal and coffee as you read with both table and counter seats. They also carry translations of hit international books.



## Books

### Three books recommended by Eslite Shopkeeper Si Jia ling

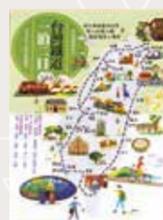


Shopkeeper Si Jia ling



#### 『GOOD EYE CITY GUIDE taipei』 NT\$380

A Taiwanese guidebook filled with beautiful photographs and illustrations. It introduces Taiwan from a different perspective than international guidebooks do.



#### 『台湾鐵道一泊二日』 NT\$340

Taiwan Railways introduces 1 night, 2 day travel plans. Local lines and cities all over Taiwan are carefully explained using adorable illustrations.



#### 『台湾好貨色』 NT\$320

A selection of quality goods from Taiwan selected by Yuka Aoki, a Japanese national living in Taiwan. It might be helpful in helping choose a good souvenir.



- 1 The number of independent bookstores featuring unique selections is increasing in Taiwan.
- 2 A ham and cheese sandwich honoring Elvis Presley for NT\$200 and cappuccino for NT\$140
- 3 Ask the staff for recommendations
- 4 You'll get an original cover on the books you buy, unusual for Taiwan



# Stress Relief

## Refresh yourself with a hike in the hills

There is a diverse range of hiking paths in the mountains of Taipei, which can be easily accessed in your free time. Get some light exercise and refresh your mind and body.

### CITY LOOKOUT

You'll find lookout spots all along the trail. Enjoy views from high above the Tamsui River, Yangmingshan, and Songshan Airport.



### Jiantan Mountain Hiking Trail

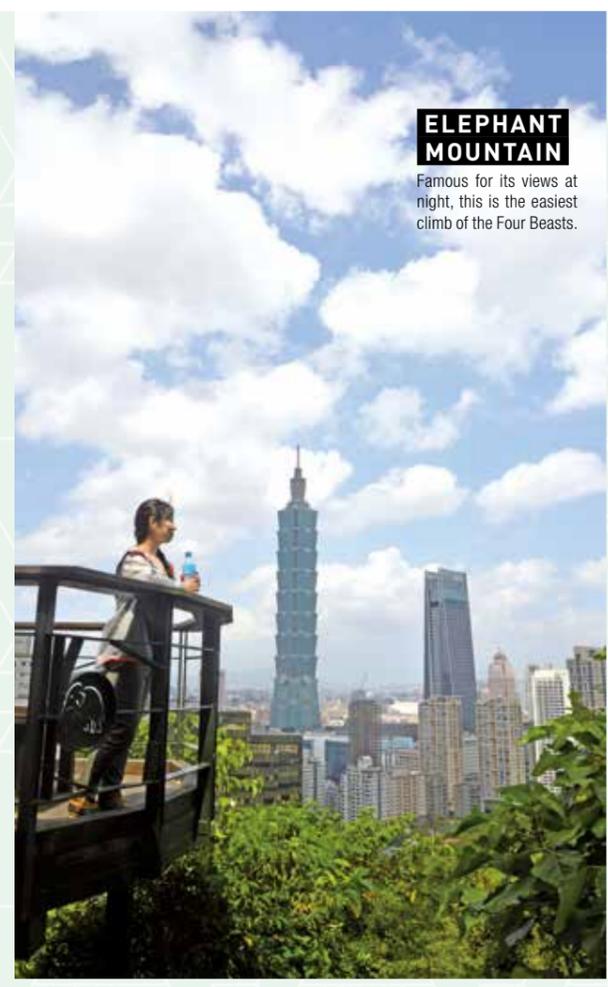
10 minutes on foot to Jiantan Mountain Hiking Trail from Exit 2 of Jiantan MRT Station

Perfect for beginners, this mountain can be climbed with a gentle stroll

Jiantan Mountain Hiking Trail, the hiking trail nearest to the city center. The entrance is right near Shilin, famous for its night market. While there are several different courses, the easiest one is just one hour round trip. You can enjoy views of Taipei 101 and planes landing at Songshan airport from lookout spots along the course. The altitude is 153 meters.



The entrance is close to Jiantan Station, within Jiantan Park



### ELEPHANT MOUNTAIN

Famous for its views at night, this is the easiest climb of the Four Beasts.



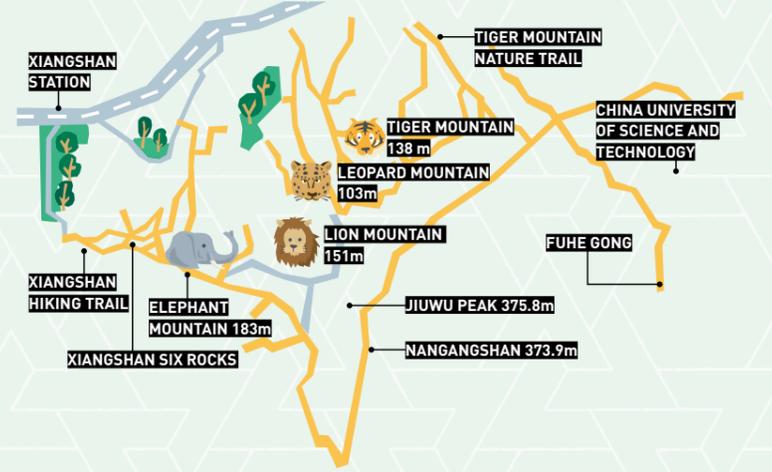
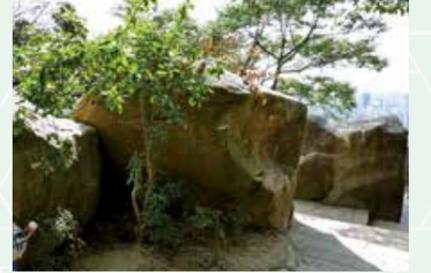
The entrance to Elephant Mountain. The steps are steep, so be sure to bring comfortable shoes.



Signage with maps and explanations of flora line the trail

### XIANGSHAN SIX ROCKS

A line of large boulders, with Taipei 101 rising up behind them. Depending on the time, expect to see lines of people waiting to take a commemorative photo.



### Four Beasts Mountain Trail

5 minutes on foot to Xiangshan Mountain Hiking Trail from Exit 2 of Xiangshan MRT Station

Walk up a wild mountain trail, and take in views of the stunning Taipei 101 from the peak

Four Beasts is the name given to the mountain range consisting of Elephant Mountain, Lion Mountain, Leopard Mountain, and Tiger Mountain. Even the highest altitude along the course is fairly low at only 375 meters. The most popular spot is the Elephant Mountain Lookout. Because Taipei 101 can be seen right before your eyes, this spot is popular not only during the day, but during the evening and night as well, when many visitors come to take pictures. To reach the summit of every mountain would take half a day, but just Elephant Mountain is only one hour round trip.



### TIGER MOUNTAIN

Enjoy mountain streams and all kinds of plants on the path across Tiger Mountain. You can also take in views of the city from various locations.



### LEOPARD MOUNTAIN

The lowest of the Four Beasts, peaking at just 103 meters, it is adjacent to Tiger Mountain.



**GRAND HOTEL**  
Built in 1952 in gorgeous palatial-style architecture, it remains a landmark of Taipei.



### DA ZHONG GONG

A shrine located at the start of the trail—one of many religious sites scattered throughout the area.



### Flora of the Mountains

# Plants



Tropical hibiscus



Walking iris



Papaya trees in the fields along the trail



Vivid blue salvia

You can encounter tropical plants, fruit trees, and wild animals in these lush mountains. Have fun reading explanations of plants written on signage along the trail as you stroll. If you're lucky, you may even encounter the rare Taiwan barbet.

### Local sourcing of Taiwanese outdoor brand products

# Goods



1

### Atunas, Shilin Shop

No. 191, Section 4, Chengde Road, Shilin District, Taipei City  
02-2881-1648 11:30am-9:30pm  
/ Open year-round 7 minutes on foot from Exit 1 of Jiantan MRT Station

1 Original sportswear that has won the Taiwan Excellence Award available as well 2 Popular brands in Taiwan

This major Taiwanese outdoor goods retailer offers a wide range of products, including windbreakers, mountain hats, shoes, and more. You can also find items adapted to the Taiwanese climate, such as waterproof goods for sudden downpours and outdoor wear with good ventilation.



2



# Religion

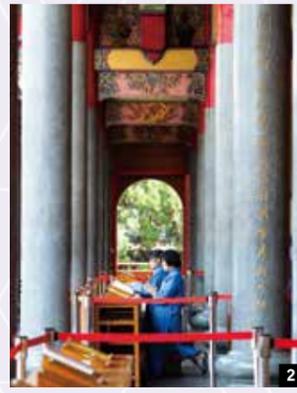
## Hone your mind and spirit at a temple

Taiwanese people are deeply spiritual, and prayer is commonplace. Before important deals or negotiations, or when starting a new business, try joining together with the locals in putting your hands together to ward off misfortune and pray for success.



### Xing Tian Kong

📍 No. 109, Section 2, Minquan East Road, Zhongshan District, Taipei City  
☎ 02-2502-7924  
🕒 4:00am~10:00pm/Open year-round  
🚶 5 minutes on foot from Exit 3 of Xing Tian Temple MRT Station  
🌐 [http://www.ht.org.tw/htk\\_eng/](http://www.ht.org.tw/htk_eng/)



#### Pray for success in business at a traditional shrine to the god of trade

A temple where the popular commander Guan Yu, who appears in Romance of the Three Kingdoms and is popular among locals as a god of trade and study, is enshrined. This temple is always teeming with devotees—you will find some kneeling and praying, some receiving an exorcism rite known as shou jing, some having their fortune told, and more.



1 As it is near an office town, many people come here to pray for success in business. 2 Volunteers clad in blue robes chant sutras and give directions. 3 Shou jing is said to return a soul that has left its body. 4 There is a signboard explaining how to pray, with accompanying photographs for you to emulate. 5 Guan Yu, the god of trade. His most distinctive features are his long beard and red face.



### Fo Guang Shan/ Buddha Museum

📍 No.153, Xingtian Road, Dashi District, Kaohsiung City (Fo Guang Shan)  
☎ 07-656-1921 (Fo Guang Shan)  
🕒 Fo Guang Shan: 8:00am~5:00pm / Open year-round  
Buddha Museum: 9:00am~7:00pm (Saturday and Sunday until 8:00pm) / Closed Tuesdays  
🚶 30 minutes from Zuoying HSR Station by HaFo Kuai Xian Express bus  
🌐 <http://www.fgs.org.tw/en/>

#### A temple that symbolizes southern Taiwan, and home to precious Buddhist documents.

This temple opened in 1967 under Hsing Yun, 48th generation priest of the Rinza Sect. In 2011, the 100-hectare Buddha Museum was constructed alongside, housing a tooth of the Buddha, one of only three worldwide. Eight towers line either side of the walkway leading up to the Museum, and a 108-meter-high statue of the Buddha sits at the front. This statue is renowned as the world's tallest seated bronze Buddha.

1 Eight seven-layered towers line the broad walkway leading to the temple, and there is a Buddha Museum in the back where you can see a statue of the Great Buddha. These majestic grounds are visited by many tourists. 2 The Front Hall near the Buddha Museum contains restaurants and souvenir shops. 3 The Great Buddha Land built in 1975 features a 40-meter-tall Buddha surrounded by four hundred and eighty smaller Buddha statues.



### Lungshan Temple

📍 No. 211, Guangzhou Street, Wanhua District, Taipei City  
☎ 02-2302-5162  
🕒 6:00am~10:00pm / Open year-round  
🚶 3 minutes on foot from Exit 1 of Longshan Temple MRT Station  
🌐 <http://www.lungshan.org.tw>

1 A Guan Yu amulet (right) and a heart-shaped happiness amulet (left). 2 The current building was rebuilt in 1924. It is also beautiful when illuminated at night. 3 Like Xing Tian Kong, Guan Yu, the god of trade, is enshrined here as well. 4 Many young people come here to seek the god of marriage as their matchmaker.



#### A spiritual site where many gods are enshrined

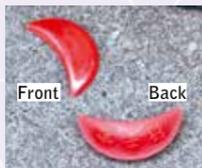
The most famous temple in Taiwan, it boasts a 270-year history. Using Chinese palace mausoleum architecture, this building is renowned for its bright colors and aesthetic sense. In addition to its main object of worship, the Kannon Bodhisattva, it is also known for various other enshrined gods, including Mazu the sea goddess and Wenchang Dijun, the god of test-taking.



# Good Fortune

## Have your work fortune told

1 Throw a red diving block and solicit the will of the gods



2 Draw a lot and return it once you have seen the number



3 Take the lot you drew from the drawing area



4 Ask for an explanation of your fortune at the explanation area



Throwing crescent-shaped wooden fragments before you draw is the custom in Taiwan. If the front and back do not match, you cannot draw a lot.

Know before you go

# Taiwanese Business Culture

Taiwan is said to be one of the friendliest and most welcoming nations in all of Asia, making it easy for people of all nationalities to do business. To make your transactions go even smoother, why not learn a little about Taiwanese culture, basic character, and customs?

I love challenges!



Friendly People



## Personal distance is close and friendly

It is said that the Taiwanese are cheery and positive, like residents of a tropical country. In business, they generally do not force through their own opinions, but rather try to build harmony with others in order to make things run smoothly. Many people will speak frankly about their private lives once they have gotten close.

## Openness to new ideas

While the older generation may be more conservative, Taiwanese people in general are good at incorporating different cultures and new technologies, and arranging them to suit their own tastes. When it comes to work, the attitude is to give anything a try. They have a mindset to get back up even if they fall, and are quick to put their ideas into action. Many people start their own businesses as well.

## Good Connections: The Secret to Success

While connections are important in any country, this is especially so in the Greater China Region. It is often said that to make a connection with someone, it is best to be introduced by a third party. Blood relationships are cherished as well, and family and partners are often present even in business situations. While on a business trip, you'll want to bring along thoughtful presents purchased with family in mind.



Connections

## Gender equality in society

As you can see from the example of Taiwan President Tsai Ing-Wen, women in Taiwan often serve in leadership positions, and are a valued presence in the workplace as well. Part of the reason for this is that, with a culture rooted in dining out (and with many families where grandparents take care of children) household duties are not much of a burden. Many women continue working after having children.



Gender-equality

English Names



## Many Taiwanese have English names

Chinese names are often difficult for English speakers to remember and pronounce. This, along with the fact that many people have the same last name, has led most Taiwanese people to create English names for themselves. These names are written on business cards, and can even be listed as an alternate name on passports.

## Putting ladies first

Many Taiwanese men make an effort to be kind to women and naturally put ladies first by carrying heavy objects, opening doors, and cutting up food for them. Sharing household chores after marriage goes without saying, and husbands provide steadfast support for their wives. Some people may see the behavior of Taiwanese men and mistake it for romantic feelings!



Ladies First



English Company Name	Chinese Company Name	Industry	Introductory Page	QR
<b>BenQ Corporation</b>	明基電通股份有限公司	Manufacturing and sales of precision electronics	30	
<b>Zyxel Communications Corporation</b>	合勤科技股份有限公司	Manufacturing and sales of network equipment	32	
<b>Micro-Star International Co.,Ltd.</b>	微星科技股份有限公司	Design, manufacturing, and sales of gaming computers	34	
<b>Perfect Corp.</b>	玩美移動股份有限公司	Beauty-related mobile app development and operation	36	
<b>Acer Incorporated</b>	宏碁股份有限公司	Telecom & information	38	
<b>Cal-Comp Big Data, Inc.</b>	麗寶大數據股份有限公司	Design and sales of beauty devices	40	
<b>CviCloud Corporation</b>	瀚雲科技有限公司	Manufacturing and sales of electric parts and IoT devices	42	
<b>ENERGY MANAGEMENT SYSTEM CO., LTD.</b>	弓銓企業股份有限公司	Design, manufacturing and sales of water meters	44	
<b>TAIWAN SAKURA CORPORATION</b>	台灣櫻花股份有限公司	Design, manufacturing, and sales of kitchen equipment	46	
<b>iXensor Co., Ltd.</b>	安盛生科股份有限公司	Development of mobile healthcare products and sales of women's health and chronic disease management systems	48	
<b>ADATA Technology Co., Ltd.</b>	威剛科技股份有限公司	Design and sales of computer peripherals	50	
<b>In Win Development Inc.</b>	迎廣科技股份有限公司	Manufacturing and sales of PC parts	52	
<b>Robotelf Technologies Co., LTD.</b>	麗暘科技股份有限公司	Development of robots and applications	54	

**SMART HOME ///**

English Company Name	Chinese Company Name	Industry	Introductory Page	QR
<b>Edimax Technology Co., Ltd.</b>	訊舟科技股份有限公司	Development, design, manufacturing, and sales of Wi-Fi products, network equipment, and IoT devices.	56	
<b>Darfon Electronics Corp.</b>	達方電子股份有限公司	Manufacturing and sales of electric-assisted bicycles	58	
<b>DELTA ELECTRONICS, INC.</b>	台達電子工業股份有限公司	A global leader in power and thermal management solutions and a major player in several product segments such as industrial automation, displays, and networking.	60	
<b>GEOSAT Aerospace &amp; Technology Inc.</b>	經緯航太科技股份有限公司	Design, manufacturing and sales of drones	62	
<b>AEON MOTOR CO., LTD.</b>	宏佳騰動力科技股份有限公司	Manufacturing and sales of autobikes	64	
<b>Far Eastern Electronic Toll Collection Co., Ltd.</b>	遠通電收	Contracted construction and operation of ETC systems	66	
<b>SMART TRANSPORTATION ///</b>				
<b>Lite-Med Inc.</b>	寶健科技股份有限公司	Medical device development and manufacturing	72	
<b>Taiwan Main Orthopedics Biotechnology Co.,Ltd.</b>	台灣骨王生技股份有限公司	Design and sales of medical headsets	74	
<b>AmCad BioMed Corporation</b>	安克生醫股份有限公司	AI-oriented innovative medical devices	76	
<b>Kinpo Electronics Inc.</b>	金寶電子工業股份有限公司	Design, manufacturing, and subcontracting of home electronics	78	
<b>Wiltrom Co., Ltd.</b>	台灣微創醫療器材股份有限公司	Development, manufacturing and sales of medical devices	80	
<b>Advantech Co., Ltd.</b>	研華股份有限公司	Design, manufacturing, and sales of industrial computers	82	

**SMART MEDICAL CARE ///**

# Amazing TAIWAN

 TAIWAN EXCELLENCE OFFICIAL MOOK

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