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## TAIWAN: The New Benchmark of Quality Through Innovation

Viewed by many in the past merely as a former high-tech success story, Taiwan has recently transformed its industries through a collective commitment to quality and looks set to become a major global force in the area of innovation and R&D for many years to come.

In Taiwan these days, few things are prized as highly as innovation. Yet it wasn't always this way — predominantly seen as an original equipment manufacturer (OEM) base that lacked its own creative spark, Taiwan made its name in the 1980s as the world's high-tech powerhouse, before the decline of profits and rise of competition at the turn of the century forced Taiwan's economy into a state of self-contemplation. However, thanks to concerted public and private sector emphasis on innovation over the past decade, companies across the board now have good reason to be optimistic about Taiwan's future. In the coming years, Taiwan looks set to take full advantage of more than 30 years of expertise acquired in the high-tech industry to drive global innovation and become a nurturing environment for ambitious local and international startups alike.

### SEMICONDUCTORS

The bedrock of Taiwan's export-led economy has traditionally been the semiconductor industry. Despite increasingly consolidated attempts to chip away at its dominance, Taiwan still reigns supreme: with sales of US\$84.4 billion in 2017, Taiwan remains the largest semiconductor foundry manufacturing economy in the world. Through innovation, the Taiwan Semiconductor Manufacturing Company (TSMC) remains confident that

Taiwan will retain a five to seven year lead in the industry over its competitors. As **TSMC Chairman Dr. Mark Liu** states, "our vision is to unleash innovation for the world." Given that the world's most powerful chips are for the first time now being made by **TSMC** rather than Intel, its vision is bearing fruit.

The need to stay ahead of the curve is a dominant theme that comes up early into conversation with any senior figure in the business. **President & CEO of Silicon Motion, Wallace Kou**, sees 5G as a crucial development that will transform data storage by 2020: "when 5G comes, service delivery will be a hundred times faster. Technology, storage and connectivity growth will be huge." R&D, in Mr. Kou's eyes, is therefore very important. "If we don't stay ahead of the competition, why would big scale and multinational companies want to invest in Taiwan?"

**Gary Chang, President & CEO of Wah Lee Group**, also speaks of the necessity to be "continuously seeking next generation materials", seeing 5G as a crucial example despite its "many technical barriers." Even though it can often take five to ten years to develop the next generation of projects, R&D developments leave him "hopeful and optimistic about the future." It is hard not to agree with these sentiments given the fact that Google and Microsoft among others have chosen to set up R&D centers in

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Taiwan, which will only serve to further foster the prevailing culture of collaboration and innovation on the island.

**Dr. Collin Wang, Chairman of Machvision** sees the situation similarly: “our future is R&D and innovation. AI is the most important part of R&D: we can use it to solve many problems such as inspecting design quality. Some defects are very hard to identify with current technology, but AI has been very effective for us.” For such reasons, Taiwanese companies have firmly embraced recent tech phenomena and have aimed to include concepts such as AI into its operations where possible, in order to derive even the most minuscule of competitive advantages.

### INNOVATION ACROSS THE BOARD

The push towards R&D and innovation is not exclusive to the semiconductor industry – when Taiwan’s exports were markedly hit after the 2008 financial downturn, there was widespread realization that Taiwan needed to strive towards something which many thought to be almost impossible: diversification. 2009 saw the introduction of the Presidential Innovation Awards, aimed at encouraging Taiwan to diversify its slowly faltering high-tech business. In the decade since, officials and investors alike have



taken their new mission seriously, boosted by a number of innovation-focused programs. The 2016 Asia Silicon Valley Development Plan, for example, focuses on upgrading Taiwan’s startup and entrepreneurship ecosystem, building a complete IoT supply chain by integrating hardware advantages into software applications, and developing applications based on smart logistics, smart transport and smart healthcare.

In addition, the government’s early 2018 announcement that it will spend US\$540 million in AI research over the next five years, alongside Microsoft’s accompanying US\$34 million investment into an AI hub in Taipei, shows that officials and investors alike are not simply feigning interest. Green shoots of opportunity continue to appear in Taiwan, cultivated largely by an improving investment climate where new legislation continues to lift many prohibitive legal barriers which have allowed R&D

processes to be accelerated, as well as assisting new startups. It is, therefore, of little surprise that Taiwan has seen phenomenal growth in the fields of artificial intelligence, cryptocurrency and blockchain. **Dr. Steve J.P. Hsu of Genovior Biotech** echoes this sentiment: “I think one of our biggest advantages is that our regulation is in line with that of Europe and the US.”

Industry leaders look set to take advantage of such favorable conditions: **Dr. Genda Hu, Chairman & Founder of FocalTech Systems** agrees that “high-tech provides an answer” and that the government’s original investment in technology and innovation was “extremely important in order to sustain such a large population with these kinds of living standards and prosperity on such a small island.”

**Dr. Wen-Hsing Hsu** talks about how his fingerprint technology company, **Startek Engineering**, is “always looking to innovate.” From creating quicker and more powerful sensors to implementing sensors in new capacities such as in Smart City projects, the company is increasingly looking to “set a processing and data standard.”

There’s a sense that innovation should supersede the conservative values of hierarchy and order still in place if Taiwan is to be serious about its aspirations of becoming an innovation hub. As **Jane Liu, CEO & Founder of New Deantronics** puts it: “We want to coach the younger generation to think outside of the box when it comes to automation design and innovation in order to be competitive and produce consistently high quality products.” These efforts are now paying dividends. The island has been at the World Economic Forum (WEF)’s “Innovation-driven stage” since 2011, and in WEF’s Global Competitiveness Report, Taiwan was ranked 11th globally and 3rd in Asia, just behind Japan and Singapore. In terms of company R&D investment levels, Taiwan was ranked 10th globally.

A recent key addition to the innovation arena in Taiwan has been the **Artificial Intelligent Manufacturing Systems (AIMS) Research Center** – set up last year – which is focused on developing AI for manufacturing and is looking to support the migration and digital transformation of Taiwan’s industries as well as providing companies with innovation assistance. As Director **Dr. Chen-Fu Chien** explains, **AIMS Research Center** has two goals: “one is to bridge new technology and existing industries, the other is to incubate startups.”

The other widely held belief is that innovation should help Taiwan focus on producing quality rather than quantity. It should mark a clear break from the low-grade, mass-produced products Taiwan was once known for and which can now be produced cheaper elsewhere. As **FocalTech’s**

**Genda Hu** states, “Taiwan is in a transition period. 20 years ago people considered ‘Made in Taiwan’ something cheap and low quality. Nowadays, this perception has changed and many people consider products made in Taiwan as good quality.”

### BIOTECHNOLOGY AND MEDICAL INNOVATION

Taiwan’s progress in software has been beneficial for its burgeoning medical innovation and biotechnology sectors. In 1984, no Taiwanese biotech company was listed on a stock exchange; today, Taiwan boasts more than 100 listed firms with a combined value of almost US\$25 billion. Whereas 20 years ago, Taiwan had no lab offering capabilities in toxicology, biosafety, and drug metabolism and pharmacokinetics, several private companies now offer these services. The sector recorded sales of

Quality is a major focus in Taiwan, not just in biotech but across other industries.

Dr. Herbert Wu, President of DCB

US\$2.4 billion in 2008, but by 2016 this had risen to US\$7.3 billion. Government officials don’t expect it to stop there - **Dr. Herbert Wu, President of the Development Center for Biotechnology (DCB)** expects things to “start accelerating very quickly.” “We have had five brand new drugs approved in Taiwan in the past – that two of them were approved by the Taiwanese FDA before the US FDA shows that the competence and confidence is there. Quality is a major focus in Taiwan, not just in biotech but across other industries”, he comments.

New drug development has been encouraged by the widening of opportunities and incentives. As **Dr. Ko-Chung Lin Founder & CEO of PharmaEssentia** reflects, “40 years ago it was thought that small companies could not make new drugs. People believed only the big companies like GlaxoSmithKline could create new drugs.” But, as **Dr. Herbert Wu** explains, “something that is now being encouraged is entrepreneurship. Previously, there were very clear lines – a scholar was a scholar and an entrepreneur was an entrepreneur. But we realized that if we loosened restrictions, and let scholars focus on problem solving, then scholars and scientists could also become entrepreneurs.” It is this culture of entrepreneurial freedom and academic-enterprise partnerships which has enabled Taiwan to carve out its own niche in biotechnology. As **Jane Liu of New Deantronics** points out, Taiwan has a “major position in glucose monitors, blood pressure monitors, and electronic thermometers. Now we need to think about how to move that up to the next level.”

For **SynCore Biotechnology’s Dr. Yita Lee**, success has been due to “the accessibility and the



quality of the medical centers, which mean that we can do quality clinical trials here.” Infrastructural development has certainly helped: Taipei’s National Biotechnology Research Park joins other recently created biotech institutions such as toxicology facilities, clinical batch manufacturing facilities, and locally set up contract research organizations.

However, experts don’t shy away from the progress that still has to be made if biotech in Taiwan is to catch up to the US. Regulatory issues still hamper production: as **Dr. Ko-Chung Lin of PharmaEssentia** puts it, “it’s not too difficult now to get initial funding if you have a good idea, but the highly regulated system which we have is unlikely to produce innovation.” As a result, third and fourth round funding can be hard to come by for the time being, although **Dr. Herbert Wu** remains confident that the **DCB** can “play a vocal role and interact with the FDA to improve the regulatory environment.”

Consumer products don’t face the same hurdles and have been an increasingly profitable market for the companies involved. **Dyaco International’s** Sole treadmills, for example, “have been very successful”, according to **Chairman Michael Lin**. In a partnership with Philips, **Dyaco** is currently developing a range of ultra-sensitive, rehab-friendly treadmills which, he claims, “Phillips think they are the best products they have seen so far in the market.”

#### HUMAN CAPITAL

It is Taiwan’s enviably well-educated talent pool that made its push towards innovation possible. Taiwan has over 150 universities and an abundance of well-trained graduates, 25% of whom study Engineering. Business leaders are always quick to bring up Taiwan’s impressive human capital. **Silicon Motion’s Wallace Kou** for example states that “Taiwan has developed many talented people in the past thirty years, not just in high-tech but in biotechnology as well”, something he claims to be “good timing”, given that “the United States and others are looking for talented countries to develop innovative technology. **Dr. Mark Liu of TSMC** states that Taiwan has a “highly educated population – virtually unheard of in this part of the world.”

However, in recent times, officials have begun to see academia-industry collaboration as more crucial than simply having high numbers of graduates. **Dr. Thu-Hua Liu, President of Ming Chi University of Technology**, is on board with improving industry links: “we aim to match evolving industry needs with individual student capabilities so that there is a good fit.”



The university has also started ‘design thinking’, where academics from different backgrounds and departments come together to work and learn from each other in the form of an interactive workshop. Dr. Liu feels that “such cross-disciplinary collaboration will be the way forward.”

These types of ventures will go a long way in addressing the criticisms of those who label the Taiwanese education system as too rigid, and too focused on mathematics and science to yield the creativity necessary to fuel innovation.

**Mr. C.K. Yang, Chairman of Electronic Commerce Universal** shares the viewpoint of Dr. Liu with regards the optimal use of the nation’s talent: “What is Taiwan’s niche for our development? I would say R&D, intellectual capital. We try to put good students and intellectual capital in the right place at the right time.” Taiwan has clearly realized the need to play to its strengths and this has been reflected in its education system which now ensures a steady flow of capable graduates towards the sectors which are in most need.

## “ Taiwan has a lot of potential in terms of branding, but we just have to expand our horizons

**Cher Wang, Chairwoman, CEO & President of HTC**

However, some Taiwanese companies are looking to attract new talent and new ideas from further afield to help in their bid to stay ahead of the curve. **Dr. Peter Kunhsi Tsai, General Manager of iMEDPLUS** explains how his company aims to recruit talent with the needs of the US market in mind: “Taiwan needs to recruit lots of engineers from all over the world – we will recruit engineers in the U.S., especially in Silicon Valley.”

#### “MADE IN TAIWAN”

If Taiwan is to fulfill its potential, it needs to have more faith in its own identity. As **Dr. Yita Lee of SynCoreBio** puts it, “Taiwan has had an identity

crisis due to a slowdown in growth and a lack of global recognition.” The lack of an international presence stems from Taiwan’s failure to focus on branding and marketing during its growth period; while the likes of Samsung and Apple now reap the benefits of worldwide recognition, Taiwan’s brands normally rely on product quality - or links with foreign multinationals - for their market presence. However, there has been a sweeping, collective effort across the board through public-private partnerships, legislation reform as well as ambitious attempts to turn Taiwan into a welcoming, knowledge-sharing environment – where innovation is championed and treasured – that is proving so attractive for investors and is allowing Taiwan to position itself as an international brand of innovation.

The process – based on a commitment to excellence and quality – has not been easy, but Taiwan as a brand appears to be on the right track towards the recognition it deserves. **Bob M.S. Wong, Chairman of CMC Magnetics** believes that “Taiwan has replaced Japan as a symbol of high-quality; our technology and R&D always ensure that our products are better and last longer.”

It is important to note that Taiwan is not only promoting and facilitating local-based startups, but also budding companies from far and beyond. It is the vision of many tech leaders in Taiwan to turn the island into a blockchain tech hotbed where Taiwanese and international companies can collaborate, share ideas and grow together. **Cher Wang, Chairwoman, CEO & President of HTC**, shares this vision: “Taiwan has a lot of potential in terms of branding, but we just have to expand our horizons, we cannot just keep our brands confined to this small island. There are 4.4 billion people between China and Europe, which is a huge opportunity for Taiwan.”

It is, therefore, no surprise that corporate giants like Amazon have been suitably impressed by Taiwan’s commitment to nurturing an environment where innovation is allowed and encouraged to flourish that they decided to set up its first innovation center in New Taipei City. Given the fact that Taiwan







plans to establish a 12,000m<sup>2</sup> blockchain economic zone in New Taipei City along with a new incubation center – which will house 200 startups – there has never been a better time for entrepreneurs and companies specializing in these areas to invest in the ‘Beautiful Island’.

There is little doubt that Amazon’s innovation hub working together in harmony with the incubation center, along with other organizations, will provide the region with endless spin-off benefits in terms of attracting talent, creating jobs, providing access to new markets as well as boosting Taiwan’s brand.

Whatever their thoughts on the current situation, a majority of business leaders are optimistic about the future of both Taiwan and their businesses. **Jason Lin, Chairman & CEO of United Orthopedic Corporation** reveals that they have a dozen projects in the pipeline, saying “for the first half of 2018, we delivered over 33% of sales growth compared

to last year. I am optimistic that the next five years will see significant growth for us.” **E&R Engineering Corporation’s President, K.S. Chen**, sees the future similarly: “a lot of new technologies are coming. There will be a lot of new opportunities in automotive technology, super high speed computers, and 5G applications. Taiwan can provide these services.”


#### WELL-EQUIPPED FOR A HEALTHY FUTURE

While we continue to see a strong desire to expand horizons behind Taiwan in order to achieve exponential growth, there is, however, an overarching acknowledgment that this growth should be of benefit to Taiwan as a nation and society, and not just for each respective company. “We do not just want to treat illnesses, we want to also help in the area of prevention – that is very important to us; we feel a very big responsibility to take care of our community”, says **Chairwoman Yu-Mei Chang** when asked about the connection between her company, **Ten-Chen Medical Group**, and the surrounding community. It is quite refreshing that, in a time of ever-increasing globalization, some companies still strive to make a tangible, positive impact in their local communities. This vision is shared by **Dr. Lloyd Hsu of Green Transit** – a company specializing in self-driving buses – who remarks how “A lot of rural areas don’t provide transportation services right now. With this new technology of the self-driving bus, we try to merge

everybody together to provide better service to the public.”

Naturally, each of these key industries in Taiwan – be it technology, medical care, semiconductor or biotechnology – has its own unique dynamic but one thing is for sure, it would be foolhardy to discuss their growth without alluding to the solid foundations laid by Taiwan in recent years to facilitate such prosperity: innovation, education, legislation and a willingness and desire to collaborate with international companies in order to inject new energy, investment and ideas into the island. “In order to compete in the area of new drug development, we need to become more flexible in terms of getting support and entering into partnerships”, answers **Dr. C.Y Cheng, Chairman & President of Formosa Laboratories**, when asked about opportunities for future growth. This aligns with the feelings of **Chi-Mau Sheih, President of Chunghwa Telecom**, who believes that the company “has to be at the forefront of technology, especially in terms of 5G, ILT and IoT. That’s why we partner with international and national companies in different areas.”

It is this open-minded, welcoming nature and collective mentality of Taiwan that is sure to help solidify its reputation as one of the most attractive investment destinations in Asia for the coming years.

Together, it has been possible. 

## Ten-Chen Medical Group — Committed to Intelligent Healthcare and Smart Hospitals

With the sixth-lowest birthrate in the world, per the latest CIA World Factbook, giving rise to an aging population where approximately 30% is accounted for by citizens over the age of 55 years, there is little wonder that there has been a substantial increase in efforts across the board in Taiwan to develop a comprehensive framework to cater for the future healthcare needs of its elderly citizens.



Yu-Mei Chang, Chairwoman

While many healthcare companies in Taiwan have been focusing on the macro-level, **Ten-Chen Medical Group (TCMG)**, 天成醫療體系, has directed its energy and resources closer to home – in the southern Tao Yuan area. Founded in 1991, **Ten-Chen Medical Group** functions within a family-oriented environment while operating in line with its core values: health, love and compassion.

These community-focused hospitals are not only committed to professional medical treatment using the latest advanced medical technology, they also aim to promote healthy living and community integration. Such efforts have not gone unnoticed – TCMG has received a national healthcare quality award from the Central Government as well as an award recognizing their community service efforts.

Fundamental to this success has been the unwavering efforts and support from Company Chairwoman & President, Chang Yu-Mei, who has been



heavily involved in each stage of the company’s growth, right down to the interior design chosen in the hospital. Her entrepreneurial spirit as well as the commitment to “being your good neighbor” is evident in every facet of the medical group.

While continuing to honor its traditional values, TCMG is a company which embraces technological advances and champions innovation as a way to further serve the needs of its communities – something which is becoming even more crucial due to

the current manpower shortage the medical industry currently faces in Taiwan. This is evident in their daycare centers where GPS watches allow medical staff to monitor the status and wellbeing of the elderly – a task which would ordinarily require significant resources in terms of nurses and time taken to carry out.

Looking ahead to the future, TCMG seeks to continue to develop in the area of medical innovation and intelligent healthcare – they plan to unveil a new, ambitious smart hospital in the next two years which will integrate medical care for the elderly while also offering a designated space for retirement living.

Along with its Golden Age Long-Term Care Institutions, 金色年代樂齡長照機構, TCMG is set to increase efforts to transform the attitude and mindset of citizens with regards to healthy living, because we all know that prevention is better than cure. ■

**天成醫療體系** **金色年代樂齡長照機構**  
Ten-Chen Medical Group Golden Age Long-Term Care Institutions



Taipei, Taiwan



Chiayi, Taiwan



Nevada, USA

## New Deantronics – From Concept to Finished Device, Globally

**N**ew Deantronics (ND) is a medical/surgical device developer and manufacturer founded in San Francisco, California in 1985 with engineering and manufacturing operations in Taiwan. Offering solutions to the medical device industry globally, ND's spectrum of services includes design, development, manufacturing, packaging, sterilization, regulatory and other support services. ND is US FDA registered, CE Mark approved, and ISO 13485 accredited, working closely with physicians and medical professionals to assist them in their endeavors to advance healthcare and quality of life. These efforts have allowed ND to foster long-standing partnerships with a diverse customer base ranging from emerging medical technology start-ups to some of the world's leading medical device companies.

ND is focused on a culture of integrity and responsibility to continue meeting the demands of regulatory requirements and customers, along with growing its business in ways that positively impact the communities where ND operates and serves. ND's approach involves a combination of continuous improvement, investments in innovation, rigorous traceability, reducing its environmental footprint through sustainable practices, and ensuring the quality and reliability of its products for the safety and well-being of patients.

From a modest beginning, ND currently operates from a 250,000 sq. ft. unit, employing over 700 people, including an R&D team of 50+ engineers. ND develops solutions for a wide range of medical disciplines, including general surgery, neurosurgery, cardiology, orthopedics and aesthetics.

Looking ahead to 2019, ND is adding a new 450,000 sq. ft. purpose-built facility with manufacturing, sterilization, and "direct to distribution" service in Chiayi, Taiwan. Global Expansion 2020 USA is the establishment of a major facility in Greater Reno-Sparks, Nevada. The campus will include R&D, manufacturing, R4R ("Return for Repair") supports capital equipment exchange and repair services for electronic consoles such as electrosurgical generators, ultrasound instrumentation and other products.

Innovation: The U.S. facility will house a Medical Device Incubation Center to foster and support innovation. ■



## iMEDIPLUS – Leading The Way in Cardiac Care with AI

According to the American Heart Association, cardiovascular disease accounts for over 836,000 deaths each year in the United States, which equates to approximately one in every three deaths and it has been proven that this type of disease claims more lives each year than all forms of cancer and chronic lower respiratory disease combined. More specifically, heart disease is the primary cause of death in the United States, accounting for over 365,000 deaths each year. Early detection is imperative for heart-related illnesses and the need for improved and more innovative detection devices is growing daily.

**F**ortunately for the cardiac care sector, since its inception in 2013, iMEDIPLUS – a Taiwan-based company which has grown exponentially in the area of advanced medical electronics companies, using world-class research and development facilities – has demonstrated its desire and willingness to serve the ever-changing needs of the biotechnology sector. It is this commitment to excellence and continuous improvement which has allowed the company to position itself at the forefront of innovation in the sector.

iMEDIPLUS prides itself as being the pioneer of the development of digital auscultation systems and is dedicated to combining its digital health experience with artificial intelligence in order to create an integrated system which allows for AI in diagnosis and screening while also aiming to incorporate this AI in blockchain which will, in turn, form the basis of big data to assist doctors in diagnosis.



Reference: T.-E. Chen et al., "S1 and S2 heart sound recognition using deep natural networks", IEEE Trans. Biomed. Eng., vol. 64, no. 2, pp. 372-380, Feb. 2016

iMEDIPLUS has succeeded in creating its own brand, CARDIART®, by bringing together well-known international cardiologists, emergency physicians, and acoustic specialists to develop its unique U.S. FDA-certified stethoscope which has been acknowledged for its excellent sound quality and accuracy. Moreover, iMEDIPLUS also boasts its top-of-the-range Wireless 12-Lead Electrocardiograph Monitor which has been proven to be

the most effective way to detect abnormal heart rhythms and also allows for instant Bluetooth transmission where the electrocardiogram can be sent to mobile devices for immediate reviewing.

All iMEDIPLUS products have undergone rigorous medical trials to ensure accuracy and patient well-being and a significant part of this research and development is carried out at its facility in Silicon Valley. Furthermore, the company is also keen to co-operate with its clients in order to develop customized solutions with high-quality products.

iMEDIPLUS is recruiting doctors, specialists on the cutting edge of electronic components, and professionals of global marketing and would encourage any interested patients, in addition to international business partners, to get in contact at [www.imediplus.com](http://www.imediplus.com) or via email at [info@imediplus.com](mailto:info@imediplus.com) ■



# SynCore Biotechnology – Pioneering Solutions for Patients

SynCore Biotechnology (SynCoreBio) is leading the fight against pancreatic cancer. With the lowest survival rate of all 22 common cancers, pancreatic cancer will cause roughly 44,330 deaths this year in the U.S. alone. Owing to the lack of symptoms produced in the early stages, pancreatic cancer is often undetected until advanced progression, making it notoriously difficult to treat.

**H**owever, SynCoreBio – a Taiwan-based biotech company dedicated to acquiring, developing and commercializing novel therapeutics which tackle significant, unmet patient needs – is close to making a breakthrough.

Born in 2008 out of Sinphar Group and the National Health Research Institute (NHRI), SynCoreBio leveraged the more than 30 years of R&D, manufacturing and global commercialization expertise held by its founders to develop a comprehensive portfolio of pipeline drugs in the area of oncology, ophthalmology, dermatology and infectious diseases. Its motto of “Professionalism, innovation, and respect for life” emphasizes SynCoreBio’s approach to drug development, whilst its innovative products have received a number of awards: most notably the Gold Medal at the 2012 Taiwan Healthcare and Agricultural Biotech Industries Innovation and Excellence Awards. SynCoreBio

encourages collaboration and identifies strategic alliances in building a portfolio of marketed products under development that provide investors and shareholders with a diversified, long-term revenue stream. As the global market for pancreatic cancer is set to reach US\$4.2B by 2025, SynCoreBio is seeking to secure commercialization partners for its lead oncology asset, SB05, outside of Taiwan.

Awarded BioTaiwan’s 2018 ‘Innovation of the Year’ award for its potential in combatting pancreatic cancer, SB05 is a cationic liposome embedded with the cytostatic drug paclitaxel. Its positively charged liposomes attack newly developing, negatively charged endothelial cells required by tumoral blood vessels as they divide, enabling SB05 to inhibit the cancer’s growth without affecting the endothelial cells of inactivated and healthy tissue.

Having received Investigational New Drug (IND) clearance by the U.S. FDA and the French ANSM to

conduct a Phase III Clinical Trial for SB05, SynCoreBio will open clinical trial sites in 10 countries with approvals in Taiwan, South Korea, Israel, Russia and Hungary. The trial is anticipated to be completed by the fourth quarter of 2020 and will mark an important milestone in the improvement of treatment for pancreatic cancer patients around the world.

SynCoreBio’s clinical trial is currently open for patient recruitment and would encourage any interested patients, in addition to international business partners, to get into contact at [www.syncorebio.com](http://www.syncorebio.com) or via email at [BD@syncorebio.com](mailto:BD@syncorebio.com). ■



SynCoreBio

# Chunghwa Telecom – Leading 5G Development in Taiwan

Taiwan’s largest integrated telecommunications services company has the vision of building a world-class 5G industry chain in Taiwan that is at the forefront of global development and commercial deployment.

**F**ollowing the inauguration of the “CHT Pilot Team for the Taiwan 5G Alliance” on January 29, 2018 to accelerate 5G deployment, Chunghwa Telecom announced strategic partnerships with Nokia and Ericsson at the Mobile World Congress in Barcelona, Spain. Chunghwa Telecom and Nokia will jointly build 5G trial network at designated sites in 2019.

“Taiwan has played an important role in the global development of the information and communication industries. As a leading telecommunication service provider in Taiwan, we have committed ourselves to assisting Taiwan’s public and private sectors to upgrade, transform, and combine diversified ICT capabilities while accelerating the innovative momentum of software and content in Taiwan. We will establish Taiwan as an important player in the global 5G

value chain,” stated Mr. Yu Cheng, Chairman and CEO of Chunghwa Telecom.

Chunghwa Telecom plans to build a 5G trial network at the Chunghwa Telecom Laboratories in Taoyuan to verify key 5G technologies and applications services as well as interoperability between 4G and 5G networks. By working with Nokia, they will be able to complete the 5G trial network by late 2018 to provide a great 5G test and development platform for the CHT Pilot Team. The combination of the international industry leader’s technologies and Chunghwa Telecom’s solid R&D capabilities will give Taiwan an upper hand in 5G development.

To ensure the success of these developments, Chunghwa Telecom recently announced the construction of a high performance submarine cable which will connect Singapore, Thailand, Cambodia, Vietnam, Hong Kong, Mainland China, Korea and

Japan to Taiwan by 2020, meaning that the intensive bandwidth demands to come will be met. There can be no doubt that, thanks to its competitive advantages in network infrastructure, IDC, and CDN, Chunghwa Telecom will continue to drive digital innovation and consolidate its market leading position.

The company will continue to actively participate in the government’s national initiatives, including DIGI+, The Infrastructure Plan, The Asia Silicon Valley Development Plan, smart cities and IoT. With Chunghwa Telecom’s network infrastructure and extensive experience in providing ICT services, the company will help improve industrial competitiveness in Taiwan. ■



Yu Cheng, Chairman & CEO





# ECom – At the Forefront of FinTech Development

Interview with Mr. C.K. Yang, Chairman of Electronic Commerce Universal Inc.

**Could you please comment on the YouTube video “Google’s Titan Key could be better” and how it could be improved?**



As safety and security are everything in the online processing world, we agree with Google that a hardware solution is much better than software passwords to provide complete protections from security concerns. While Google’s Titan Key is on the right track in addressing security challenges by using chip technology for ID authentication, it still is not 100% safe in the wireless transmission environment. It could still be vulnerable to hacking, viruses, misleading computer programs or “Trojan Horses”, phishing, pharming or ransomware, just to name a few.

We believe that the Titan Key could be improved if it is designed and modified with two ports — one that uses a USB interface linking to a Personal Computer, Notebook, or Smart TV, and the other one that uses a Micro USB/Type C connection to mobile phones, tablets or VR. With the Software Development Kit (SDK), an “improved” Titan Key could run on cross-platform and cross-operating system, available for devices running on Windows, Mac OS, Linux, and Android operating systems. It also won’t be limited by the constraints of many telecom service providers.

In addition to this, we believe that the ideal type of dual-port device with chips should achieve three things: personalized, effective ID verification, and efficient in its transaction with “Session” encrypted protection. By doing so, mobile transactions would be much more secure. Other functions like mobile payments and medical services could also be integrated into this seamless ecosystem.

For all these reasons, our company, ECom, has developed a “Master Key” product that incorporates all these functions with our invention patents. Together, we can succeed and work seamlessly with Google’s Titan Key.

**Our Master Key is created to be user-friendly while offering complete security protection, consistent with Google’s Titan Key but with improvements.**

**User Identity Verification (UIV) is essential for online processing because trusted transaction authentication is a must in commerce. Could you elaborate on this?**

I would like to echo Kirk Yang, ECom’s chief senior advisor, a former top-ranked Wall Street technology analyst and managing director at Citi and Barclays, in saying that in the worldwide wireless environments, online UIV could make identity authentication, personal data protection and access control security a reality, and should be compatible on various electronic devices to perform transactions like mobile payment.

Any useful payment methodology needs patents and legal compliance, as intellectual property rights play a crucial role. This is why ECom’s Master Key gives you a crucial advantage in the online secure transaction world, as it is consistent with Google’s Titan Key hardware solution.

**Could you describe your Master Key design? What makes it unique in offering online security and protection?**

Our Master Key is created to be user-friendly while offering complete security protection. This is achieved by using two chips inside, one for ID authentication, and the other for security protection. This personalized key is also one-of-a-kind. By using it, all transactions are well-protected and safe from being falsified or copied.

Our Master Key has a large capacity for personal data storage, and is accessible only to its owners. It identifies a person’s true identity with high security, allowing the user to perform secure transactions anytime and anywhere. All your personal data such as IDs, digital photos and videos, banking transactions, medical records, prescriptions, tickets, etc. are confidentially stored with different passwords and access control. Unauthorized access and leakage is impossible, your privacy is completely protected by the Master Key. This is that “mobile service at your fingertips”. ■

## TOGETHER WE CAN SUCCEED

The Master Key allows personal data such as IDs, digital photos, medical records, and banking transactions to be confidentially stored with different passwords and access control, making unauthorized access and leakage impossible, consistent with Google’s Titan Key but with improvements.

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