



The 3rd R.O.C. (Taiwan) Presidential Innovation Award Report



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Growth is a miracle of life. Innovation is like a chrysalis. Layer after layer of challenges must be overcome for the butterfly to emerge, reborn, and take to the sky.

Taiwan has long been known as the "Butterfly Kingdom". The numerous butterflies of all colors are like the diverse culture in Taiwan. The soft power formed by their convergence shine on the international stage like iridescent butterfly wings.

The world is a circle. The wings of innovation fly across the world. The butterfly wings extend downwards to the "Mt. Jade" motif to imply "Innovation from Taiwan".

This highlights the outstanding groups and individuals who remember their roots and make a contribution to this land.

Foreword

Since the screening process for the Third Presidential Innovation Awards began in June of 2017, the 68 judges have approached their task in a spirit of fairness, rigor, and professionalism every step of the way. From a total of 249 entries, they selected Delta Electronics, Inc. and Pili International Multimedia Co., Ltd. in the group category, Huang Sheng-Yuan of Fieldoffice Architects in the individual category, and Wu Ting-An of Spring Pool Glass Industrial Co., Ltd. in the youth category. The winners have shown innovative thinking to excel in different areas and demonstrated integrative and innovative values, making concrete contributions to Taiwan's economic development and improving our industrial ecosystem, becoming models of innovative value for all sectors of Taiwan society.

Since taking office, I have actively implemented our "5+2 industrial innovation program." This program is designed to create a new model for economic development and an innovation-friendly environment based on the core concepts of innovation, employment, and equitable distribution. This new model drives industrial competitiveness and enterprise profits while raising workers' wages and generating more employment opportunities. The only way to make overall progress is by casting off old ways of thinking and adopting new methods to transform our industrial structure.

Innovation is the key driver of economic growth, and requires both individual dedication and teamwork through collective collaboration. One of the winners in this year's group category, Delta Electronics Inc. is a leading global vendor in power and thermal management. Through dedication to their mission to "protect the environment, conserve energy, and love the earth," Delta has become an internationally renowned industrial brand in system integration and solutions, making a significant impact in many areas.

The other winner in the group category, Pili International Multimedia Co., Ltd. is a leading producer of glove puppet dramas with a 40-year history in Taiwan. Taking a "More local—More global" approach, the company has brought new technological capabilities to traditional cultural industries, becoming a benchmark for bringing new life to the industry.

In the individual category, Huang Sheng-Yuan, founder and manager of Fieldoffice Architects, was selected for breaking the architectural mold by emphasizing the relationship between buildings, living things and the land we live in through his work. Huang's landmark creations in Taiwan have been widely acclaimed worldwide, and he wields great influence for his outstanding contributions in the field of architecture.

Last but not least, Wu Ting-An, head of R&D at Spring Pool Glass Industrial Co., Ltd. was selected as the winner in the youth category. Wu has developed a unique passion for resource recycling, glass materials, and culture and arts over the years. Through his novel concept of *détournement*, or the idea that everything old is new again, he has opened doors to more diverse possibilities for glass applications, and truly set an example for Taiwan's circular economy.

In the face of challenges posed by our rapidly changing world, Taiwan's economic transformation is an endeavor that calls for the efforts of all. The road to innovation is daunting and requires serious commitment and resolve. This year's award winners have all insisted on taking the road less traveled and led the way with cross-disciplinary innovative thinking that has created new possibilities for traditional industries. This truly is a remarkable achievement. I also want to thank everyone for their combined efforts, allowing Taiwan's innovative capabilities to take root, establishing a strong foundation for innovation and making Taiwan industries into unique global partners. The Presidential Innovation Awards provide public recognition for award winners' achievements, to be sure, but beyond that I also hope that they encourage young people to keep breaking new ground. We publish these stories in the hopes that they will spur a nationwide wave of innovation, and lead our society towards a vision of sustainable development.



Ing-wen Tsai

President Tsai Ing-wen

January 2019

From the Minister of Economic Affairs

Innovation is not only the key to having a strong economy for any country but also a challenge that leaders of all organizations must inevitably face. In recent years, governments around the world have all been devoting their efforts to fostering innovation in response to global development trends. As a trading nation, Taiwan must improve its economic structure and raise its international competitiveness while also promoting policies that support innovation and structural reform so as to lay a solid foundation for continued sustainable economic growth.

Last year, the Ministry of Economic Affairs organized the Third Presidential Innovation Awards to encourage those in industry, government and academia to tread the path of innovation. We wanted to set benchmarks of originality and to acclaim the work of innovators who are models that should be emulated. Our aim is to help build a national culture of high-quality innovation by encouraging citizens to initiate activities that inspire innovation. The Awards not only serve to recognize the contributions of the awardees to society but also to demonstrate how innovation promotes economic growth as well as social well-being.

To ensure a professional and comprehensive selection process, my Ministry set up a committee of experts from industry, government and academia to serve as the panel of judges. From a pool of 249 candidates, the committee selected four candidates that best demonstrated the spirit of innovation and represented benchmarks for leading Taiwan industry along the path of upgrading and transition.

One of the two winners selected in the group category is Delta Electronics Inc. a company that for the past 46 years has devoted significant resources to and achieved significant successes in research and development in four major areas of green energy – namely energy conservation, energy storage, power generation, and smart system integration. It has developed a broad range of high-efficiency and reliable energy-saving products and services, and has been operating in perfect synchronization with the government's current industrial policies. The other winner in the group category, Pili International Multimedia Co., Ltd. has adopted a single-source, multiple-use diversified mode of operations, blending traditional culture and digital technology innovation to elevate the art of glove puppetry to a form of multimedia entertainment at the international level. Apart from being the first cultural and creativity business in Taiwan to be traded over the counter, Pili has also proven its mettle as a pioneer in the tradition of Taiwanese glove puppetry and cultural innovation.

In the individual category, Huang Sheng-Yuan, founder and manager of Fieldoffice Architects, was selected as the winner for his distinctive style that sets him apart from other established architects around the world. His architectural works feature design space with natural elements, integrating sentimental aspects from local culture to combine buildings, people and their lifestyles, and the local landscape into one, thereby imbuing his creations with vitality. In addition, he has also nurtured a number of outstanding young talents in various local projects,

making a significant contribution to practical architectural education in Taiwan, thus earning his office the unofficial title of “Fieldoffice School of Architecture.”

Finally, in the youth category, designed for those under 40 years of age to encourage promising up-and-comers that show strong potential for development, forward vision and growth, this year's winner is Wu Ting-An, chairman's executive assistant and CDO at Spring Pool Glass Industrial Co., Ltd. Through his creativity, Wu has given new life to more than 100,000 tons of recycled glass each year by integrating technology, environmental protection, craftsmanship and service innovation in his business, which has become a model example of the blending of the circular economy and cultural and creativity sectors.

This special album, which took many months to compile, contains the stories of the efforts and challenges of the award-winning organizations and individuals in pursuing their innovations. It is our hope that their legacies of innovation and their contributions to industry become benchmarks for others to emulate in the pursuit of innovation. As we actively work to promote the transformation of Taiwan's economy from efficiency-driven to innovation-driven and the upgrading and restructuring of Taiwan industry in this process, it is our hope that the Presidential Innovation Awards will serve to encourage even more individuals across all sectors to actively devote themselves to pursuing diversified innovation and value creation while working hand in hand to bring about sustainable development for Taiwan's economy, thereby building a brighter and more prosperous future for everyone.



Jong-Chin Shen

Minister Jong-Chin Shen
December 2018

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Aim and orientation of the award

The Presidential Innovation Award is handed out in recognition of those who have achieved outstanding innovative accomplishments and have made concrete contributions to the country's economic development in terms of their products, technical skills, management, services or cultural performance. With their ideas and enthusiasm about how to move from innovation to starting a business, they can be of help to Taiwan's on-going industrial transformation by serving as models for all sectors, leading them toward the development of an innovative economy for Taiwan and helping establish a comprehensive innovation system for the country and create a competitive edge in economic development.

Individuals or groups in public, private, and academic sectors are encouraged to actively pursue innovation and value creation in products, technical skills, management, organization, marketing, services or cultural performance so that they can help boost the country's overall economic development and strengthen its competitiveness in the world.

Introduction to the award

The Presidential Innovation Award is held every two years. It is given out to five winners, with two in the group category, two in the individual category and one in the youth category. Registration for competition for the 3rd Presidential Innovation Award started in June 2017, ending on Sept. 20 of the same year. A total of 249 individuals and companies registered. They were evaluated by a selection team divided into four groups: technology R&D, cultural & creative value added, service innovation and talent cultivation. They were responsible for preliminary and secondary reviews. In the final review, they decided on the winners together with members of the Presidential Innovation Award committee. Delta Electronics Inc. and Pili International Multimedia Co., Ltd. were the winners in the group category. Fieldoffice Architects founder and manager Huang Sheng-yuan was the winner in the individual category. The winner in the youth category was Wu Ting-an, special assistant to the president and chief of research and development at Spring Pool Glass Industrial Co., Ltd.

Group Category



Delta Electronics Inc.

Upholding “Green energy and Environmental Protection” as its standard, Delta Electronics continues to excel in innovation



霹靂多媒體 PILI MULTIMEDIA

Pili International Multimedia Co., Ltd.

Pili International takes the art of puppetry to industrialization. Seamless integration of puppetry into manga and animations to launch the folk craft to the stage of trendy fashion



Delta Electronics Inc.

Upholding "Green Energy and Environmental Protection" as its standard, Delta Electronics continues to excel in innovation

What makes Delta Electronics' innovation exemplary is the fact that the company has achieved diverse innovations that range from inside to outside the company, from the small things to the really important matters. Internally, Delta Electronics has always kept up with the latest trends in the industry and externally, the company has sought to fulfill its corporate social responsibilities with innovative thinking. When it comes to the small things, the company encourages all employees to come up with new ideas and for matters of critical importance, Delta Electronics has taken bold steps to reform its organizational structure in preparation for the next milestone through corporate transformation.

Established in 1971, Delta Electronics will soon be celebrating its 50th anniversary. After the passage of time and the ebbs and flows of the industry, Delta Electronics remains a major player in the business. The secret to the company's success lies in the fact that Delta Electronics has never been complacent with its past achievements but endeavored to excel and strengthen its brand through constant innovation and transition.

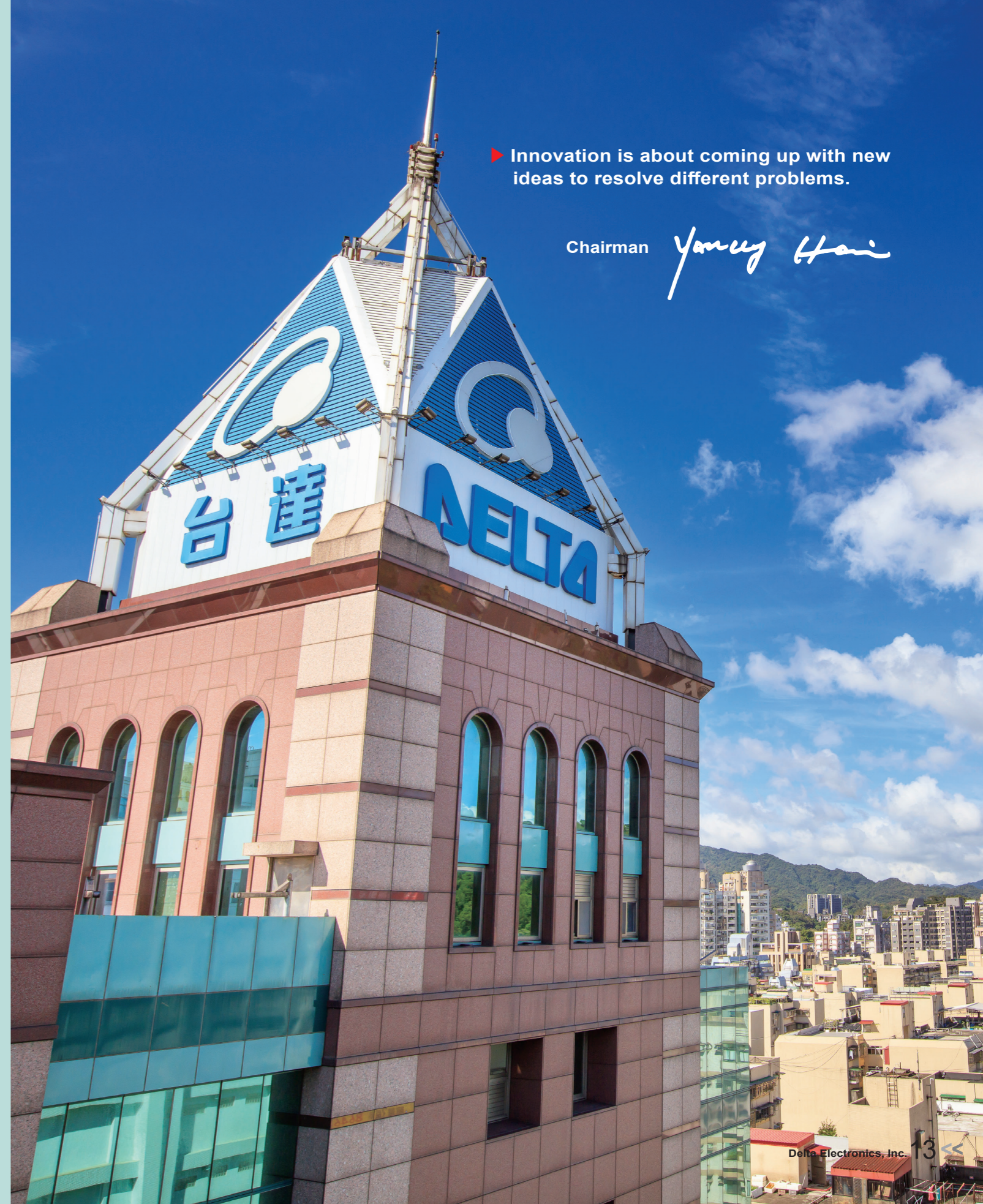
Thus, after establishing and consolidating its leading status in the global distribution of power and thermal management for many years, Delta Electronics has leveraged its substantial R&D and production capabilities for power and electronic product development to aggressively go into other domains such as industrial automation, building automation, data centers, telecom energy solutions, renewable energy, display and monitoring solutions, EV charging solutions and others. Not only that, the company even initiated a strategic reconstruction plan last year (2017) to ensure its capacity to focus more and respond to the rapid changes in the global market with greater versatility.

Nevertheless, regardless of how the company transforms or how its sales operations change direction, Delta Electronics' core values will remain the same as the company stays true to its management philosophy of "To provide innovative, clean and energy efficient solutions for a better tomorrow," by offering high performance and reliable energy-saving products and services in order to establish Delta Electronics' status as an internationally renowned industrial brand for system integration and solutions while exerting its powerful positive influence in relevant domains.

▶ Innovation is about coming up with new ideas to resolve different problems.

Chairman

Yancey Hsu





Organizational restructuring to usher in the era of smart manufacturing

Technology has made incredible progress and advancements in the last 100 years and businesses in the high-tech industry must be able to identify the critical trends within the shortest time possible while making the right judgment and response. For a modern technology company, these are not just the sure-fire ways to survive and thrive but also a reflection of its creative energies. In 2017, Delta Electronics made an apt demonstration of this by initiating the largest organizational reform the company has seen within the last forty years by integrating various business groups within the conglomerate into three major divisions: Power Electronics,

Automation and Infrastructure. The adjustments and divisions were made in accordance with relevant operational demands in order to provide corresponding solutions to respective customers. It was a huge leap forward from the company's solid foundation in the area of power and thermal management, and Delta Electronics is taking the steps to ensure that each leap that the company takes in the future will steer the company in the right direction, with all efforts fully focused on the sectors that promise the most potential for growth.

Delta Electronics Chairman Yancey Hai stressed, "Our organizational reforms are intended to help the company cater to the market directly." Based on this principle, the three pillars of Delta Electronics operations cover the following aspects of operation: "Power Electronics" encompasses

components, embedded power, fan & thermal management, automotive electronics and merchant & mobile power; "Automation" encompasses industrial automation and building automation and "Infrastructure" encompasses ICT infrastructure and energy infrastructure. Under this framework, Delta Electronics' "Power Electronics" contributes approximately 50% of the company's overall revenues while "Automation" and "Infrastructure" make up the remaining 17% and 33%, respectively.

"Although Power Electronics contributed more than 50% of the company's turnover whereas Automation only contributed only about 10%, it is nevertheless the fastest growing domain in the business," Hai pointed out. "Smart manufacturing will without a doubt become Taiwan's path of transition in the foreseeable future." To Hai, innovation is about problem-solving and accordingly, automation and smart manufacturing were created to solve major issues such as the dire shortage of labor, high wages and high worker turnover while offering alternatives for diverse production solutions that can accommodate limited quantities.

With literally the whole world enthusiastically involved in smart manufacturing, needless to say, Delta Electronics has long since jumped on the bandwagon. However, the company has opted for a different approach in this regard. When it comes to "smart manufacturing," the level of sophistication for related technologies is in fact a dynamic factor that will change with time. As such, Delta Electronics has established its own



department for smart manufacturing in order to independently design smart machinery and facilitate continuous improvement in relevant software and hardware so that the company does not have to be restricted by outsourced service providers and make compromises. This enables the company to maintain its steady pursuit of the highest smart manufacturing standards possible. The truth is, Delta Electronics already established its electromechanical business group more than twenty years ago and committed resources to industrial automation. With the dawn of the Industry 4.0 era, Delta Electronics has banked on its existing foundations and begun to focus its attention on relevant domains of smart machinery and production lines starting from 2015. After attaining successful operations at its own production facilities, Delta Electronics has been aggressively promoting its smart production line solutions in order to help the manufacturing industries

promote the objective of smart manufacturing, thereby making Industry 4.0 even closer and within the reach of all.

Establishing an incentive system to encourage creative ideas

Delta Electronics' efforts in innovation have been implemented and materialized in different aspects of the company's operations and management, with innovations constantly taking place in all corners of the company. How did Delta Electronics achieve this? It begins with Hai's philosophy on innovation: "At the end of the day, business is still about making profits and our innovation has to be transformed into products that we can sell in order to create commercial value. When you look at it this way, it is apparent that the greatest driving force for innovation still traces back to market demand and we have to identify the needs and demands of customers and consumers before our competitors in order to find better solutions than the conventional methods," he remarked.

To illustrate, smart phones have become slimmer and more compact in recent years but in order for further breakthroughs to be made in terms of physical dimensions, the issue of cooling has to be addressed first. Delta Electronics' customers require cooling solutions that feature fans that are as small as 3mm in order to fit inside the chassis. As simple as that requirement may appear, it turned out to be a huge hurdle for the company to cross. After much deliberation and exploration for potential solutions,

the company's R&D team was surprised to find that the key to creating miniature fans actually already exists in the natural world. The R&D department took inspiration from the wings of the dragonfly and sought materials that are lightweight, thin yet durable based on the concept of "biomimicry" and

successfully developed an extremely slim yet durable cooling fan to overcome the technical difficulty for smart phone manufacturers.

In truth, it wasn't the first time that Delta Electronics has learned from mother nature in its search for solutions. About three years ago, the company was struggling with resolving a noise issue with cooling fans. Incidentally, one of the engineers responsible for the project has a hobby of bird-watching in Keelung. He is especially fond of the majestic appearance of eagles in flight and has taken

many photographs of eagles whenever he can spot them. As he continued to observe the birds, he noticed that falcons had tapered tail feathers that are slightly elevated. Curiosity inspired him to look deeper into the aerodynamics of a falcon's wings while he continued to make adjustments to the angle of fan blades based on what he had learned. In the end, he not only managed to reduce the noise of the fan operations by 5dB but also increased the volume of the air current from the fan. From these two examples, Hai pointed out, "While engineers should maintain a healthy amount of curiosity, it is just as important that they don't lose sight of practical solutions in their pursuit of unconventional innovations; an innovation that resolves a problem is an innovation worth having. Putting it more bluntly, a good innovation is one that allows the company to profit from it."

The aforementioned miniature fan is one prime example of a good idea that generates revenue for Delta Electronics as it is the only company in the world with the capabilities to produce it. "With no competitors in sight, our customers don't really have other alternatives and that gives us leverage to drive up the profit margin. Speed is everything and there's nothing more important than being ahead of everyone else. The same is true for the high-tech industry. It's not about the strong preying on the weak; it's about the fast knocking the slow out of the competition," Hai emphasized.

A reason that motivates Delta Electronics' employees to observe the natural environment and draw inspiration from



various living organisms can be attributed to the incentive of the Delta Innovation Award. The two aforementioned innovations have been recipients of this prestigious award, which was established by the company back in 2008 with the goal of shaping a corporate culture of innovation. The award covers innovations in different areas, including technologies, products, process improvements, new business models and others. Thus far, the award has had close to 50 teams of recipients, with more than NT\$ 40 million in cash given out as prizes.

Delta Electronics takes its innovative R&D very seriously and this culture is reflected in the gradual improvement in energy efficiency of the company's products over the years. At present, all Delta Electronics products operate at over 90% energy efficiency. Not only that, Delta's telecom power systems operate at the world's highest efficiency of 98%, while its PV inverters and DC-DC converters also reach 98.8% and 96% efficiency respectively. These specifications are top class in the industry. It is also worth mentioning that as early as 2012, Delta Electronics had already developed the world's first titanium grade server power unit that was compliant with "80 Plus" certification with an energy efficiency at an impressive 96%.

"Among various innovations, compared to those of products and technologies, I believe that the innovation in business models is the most difficult. And this is why the award for business model innovation hasn't had many winners," Hai noted. This explains

why he was thrilled to present the first "Delta Innovation Award – for New Business Model" in 2015 to the winning team (the award hadn't been won in the previous 10 years). It was Delta's India Team that won the award with its ATM monitoring solution.

For many years, the India-based IT company Mphasis had insisted on using only Delta's UPS products. After both companies had collaborated in more depth, the client learned about Delta's telecom solutions that also offered monitoring features. Thus, both parties collaborated on the joint development of a monitoring and power management solution specifically for bank ATMs – Protecht. In India, banks have been struggling to combat serious issues of theft and sabotage of their ATMs and as such, many banks have chosen to deploy armed security guards for surveillance and security purposes. Protecht offers a solution using smart image analytics technologies to identify users in possession of weapons or wearing helmets to immediately activate the theft-prevention and automatically notify law enforcement. By using Delta Electronics' UPS and smart remote energy management technologies, Mphasis is able to implement secured monitoring and management of all ATMs, thereby helping its bank clients save on overall management costs.

As Hai commented, "Delta Electronics' green energy-saving solutions have proven effective in helping banks in India boost their competitiveness. And that's the strength of innovative business models."



Caring for society through the fulfillment of corporate social responsibilities

While there are countless examples of Delta Electronics' innovations, numbers and statistics would do a better job at demonstrating the sheer scope of the company's creative energies. Delta Electronics' revenue for 2017 reached US\$ 7.343 billion. The company makes it a

point to invest 6%-7% of its annual revenue towards R&D and in 2017, the margin reached as high as 7.2%. Delta has set up R&D centers around the world and has in excess of 9,000 R&D engineers on its payroll. The company has also received substantial recognition over the years. For example, in the PwC Global Innovation 1000 Study, Delta Electronics ranked in the world's top 300 innovative companies in 2016. Not only that, the company has also been chosen as among Taiwan's top 20 international brands for 8 consecutive years, with a brand value reaching US\$ 266 million.

"Delta Electronics' innovation is not only limited to the expansion of its business and product development; it is also reflected

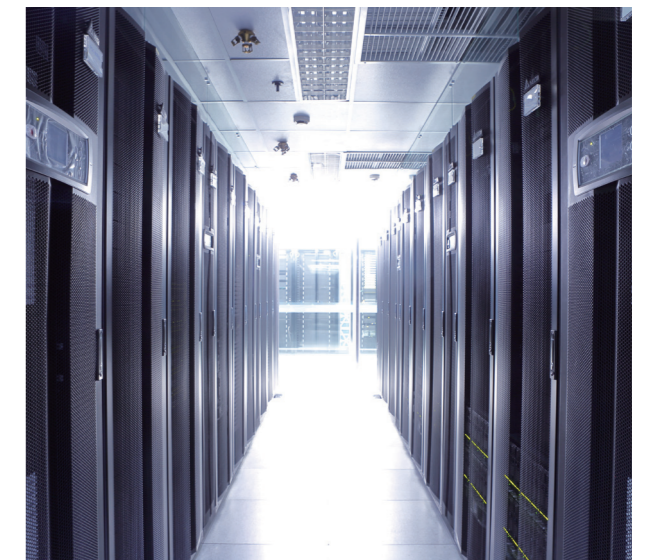


through the contributions we have made to society,” Delta Electronics’ spokesperson and assistant vice-president Jesse Chou emphasized. “Energy and climate education promotion, advancing green building concepts and talent cultivation define the three pillars of our social responsibility. We hope to make our society better by making environmental protection a lifestyle and a universal value for all.”

In truth, ever since the initiation of Delta Electronics by its founder Bruce Cheng, environmental protection and energy conservation have been the unchanging philosophy of the company. These core values of Delta Electronics are evident from the numerous solutions and energy saving products that the company has delivered over the years. In the past decade or so, Delta Electronics has built 26 green buildings as fabs and facilities donated towards academic research. In 2017, these certified green buildings saved a total of 1,490 GWh of power, which is equivalent to 9,268 metric tons of carbon emissions. Not only that, the company has also been working hard to improve the efficiency of its power products. Between 2010 and 2017, Delta Electronics’ products helped clients around the world save approximately 24,300 MWh of power, which is equivalent to 12.96 million tons of carbon emissions.

It is also worth mentioning that Delta Electronics is also committed to the nurturing and development of talent. Internally, the company has offered comprehensive employee development and training plans

and externally, Delta Electronics has made long-term investment in talent development. Concrete measures implemented include the construction of the DeltaMOOCx online learning platform, organization of the Delta Advanced Automation Contest and others in order to nurture future talents for the sector while they are still in senior high schools/ technological universities. “We hope that through these means, we will be able to help students acquire relevant knowledge on the industry when they are still at schools so that they’ll be ready to put the knowledge to use as soon as they complete their studies,” Hai added. “The talent shortage has become an issue of concern for Taiwanese businesses. While others see the problems but do nothing to address it, we have opted to take action to resolve them.” Delta Electronics has sought to contribute to the well-being of society as an enterprise and from its impressive record of achievements and successes, it is evident that innovation is more than just a lofty ideal; it is a true force that can bring about positive change to our world.



Delta Electronics Inc.

■ Milestones

Year	Event
2018	Delta has been included in the Dow Jones Sustainability Index (DJSI) World Index for the eighth consecutive year and recognized at the same time as a global leader in the electronic equipment, instruments, and components industry. Delta was named as a Taiwan Top 20 Global Brand for the 8th consecutive year.
2017	Delta was selected by the Carbon Disclosure Project (CDP) for its Climate Change Leadership Level for the 2 nd consecutive year.
2015	Delta acquired Norwegian corporation Eltek, a leading supplier of telecom power systems, to boost its position in the merchant power supply market.
2012	Delta won the Taiwan National Industry Innovation Award.
2006	The Tainan plant started operations, becoming Delta's first green building and also the first green building in Taiwan to be certified by Taiwan's nine-indicator EEWH rating system as a diamond-level building.
1988	Delta was listed on the TW stock exchange and started mass production of brushless DC fans.
1983	Delta started mass production of switching power supplies.
1971	Delta Electronics, Inc. was established.

Chairman's Name : Yancey Hai

Awardee's Address : 186 Ruey Kuang Rd.,
Neihu, Taipei 11491,
Taiwan, R.O.C.

Date of Establishment : 1971

Telephone No. : 02-8797-2088

Website : <http://www.deltaww.com/>

No. of Employees : 6,357



Business : The Delta Group was founded by Bruce C. H. Cheng in 1971. It is now a global leader in power and thermal management solutions.

As climate change unfolds across the globe, Delta, as part of its decades long concern for the environment, continues to develop energy saving products and solutions while upgrading the power conversion efficiency of its products to reduce the impact of global warming on humanity. Its company mission is "To provide innovative, clean, and energy-efficient solutions for a better tomorrow." In recent years, Delta has gradually transformed from an OEM manufacturer of key components to a supplier of power conservation solutions. It delves deep into three business categories: power electronics, automation, and infrastructure.

The power electronics business includes components, embedded power, fans & thermal management, automotive electronics and merchant & mobile power.

The automation business includes industrial automation and building automation.

The infrastructure business includes ICT infrastructure and energy infrastructure.

Pili International Multimedia Co., Ltd.

Pili International takes the art of puppetry to industrialization
Seamless integration of puppetry into manga and animations to launch the folk craft to the stage of trendy fashion

For anyone even slightly interested in the scene of puppetry show, “Pili” is a brand that would immediately spring to mind when it comes to the topic of Taiwanese puppetry shows. As the most renowned name in the business, Pili has incorporated new elements into the art in the past forty years as multimedia technologies, media and platform become more and more advanced. After countless R&D and improvements in the video recording techniques and production methods for puppetry show, Pili has gradually established the world’s first and only full production line for puppetry show. Pili’s management team has kept a keen eye on the development of the latest trends and been willing to make relevant investments to explore new opportunities for puppetry shows on different new media to enable this traditional folk craft to stay abreast with the market trends and keep up with the times through repeated technological improvements in production and presentation styles.

Having been under the limelight for 30 years, Su Huan Jen has always been Pili puppetry show’s number one protagonist with countless diehard fans and supporters. As he had witnessed the company’s growth over the years, Su Huan Jen is without a doubt a mascot for Pili. This year, as Pili organized a celebration based on Su Huan Jen, it would be a good time for a retrospection of the company’s history of growth and development.

Thus we visited Pili International’s production studio at Huwei of Yunlin County and arranged to interview Chris Huang – founder of Pili International to get his firsthand account of his involvement as the leader of the team all these years; what the staff at Pili had done to keep this oldest intellectual property (IP) in Taiwan fresh with vitality through the passage of time and how the production crew embraced new technologies and incorporated elements from foreign mangas/animations to elevate the traditional craft to the global market.



▶ “Create opportunities for yourself. Do not wait for them to come.” is my motto and also a best description of Pili glove puppetry.

Chairman

Chris Huang

Reform in production process to achieve systematic screenwriting, thereby improving quality and quantity

With regards to how glove puppetry had evolved over the years since the company's initiation, Huang identified the reforms in puppetry show production to be the most crucial innovation. As he grew up as an apprentice in the glove puppetry troupe, Huang has a sharp acumen regarding the trends in puppetry shows and he injected elements of commercial thinking into the plots he had written while actively sought to create highly iconic hero figures in the shows to enhance the product's added-value.

Pili International was the first glove puppetry troupe in Taiwan to adopt the system of collective division for the task of script writing, which was a significant change in the conventional approach for the main puppeteer to perform and create stories on the fly. The problem with this model lies in the fact that the plots had no scripts and being created spontaneously, the stories often suffered from issues of poor logic and inconsistencies in details. After establishing a team of screenwriters, Huang assumed the role as editor in chief and was responsible for establishing the core elements and general directions of the plots while each screenwriter would work on the various characters they had been assigned to by fleshing and developing them in greater detail. Such a screenwriting system took Pili a long time to refine to a satisfactory state as it gradually evolved to reach the efficacy that is needed for the mass production of scripts whilst improving the quality of the story writing at the same time.

In fact, the screenwriting system that Pili developed even changed the sequence of other processes that followed. For example, it is now possible for the production team to have the voice actors record the voiceovers in advance without the manipulation of puppets or even choose the soundtracks for specific sections of the plot to determine the pacing of the story development.

On the other hand, Pili had also transcended the simple dichotomy of good versus evil in its original stories and characters while incorporating Chinese, Western and classical poetry and even the latest memes and catchphrases into the show (within reason) to keep the show fresh for the audience. Not only that, since the team engages in the writing of multiple scripts at the same time, the process also helps to facilitate fund management and scene design, thereby enabling the company to improve its efficacy and productivity.

According to Pili's VP Jill Huang, the company has established a one-stop production system over the years, with different units and teams responsible for very specific tasks and processes. This model of operation has led to the establishment of Pili's full production center, which easily rivals a professional industrial production line with its capacity to deliver stable and reliable productivity with balanced emphasis on quality and quantity. The division of tasks for this specific chain of operations includes screenwriting, narration, music, special effects, animation, scene design, stage set, props, photography, lightings, puppet manipulation, directing, sound mixing, editing, review and so forth.

Another innovation that Pili brought to glove puppetry would be the puppets themselves.



Built in extra-large sizes and decorated with carefully styled wigs, the Pili puppets are known for their flashy and highly detailed finishes. For a character like Su Huan Jen who assumed multiple identities across different story lines, the production team would custom design his apparels and accessories in accordance with the theme of the featured arc whenever Su Huan Jen makes his appearance and it has become an aspect of the show that diehard fans look forward to in different shows. Later on, in the international collaboration between Pili and its Japanese partner, Pili had been responsible for the design and creation of the puppets to be featured in the show and even the Japanese partner was stunned by the incredibly detailed and intricate puppet production expertise demonstrated by the company. This anecdote is a statement of Pili's contribution and achievement in the area of Taiwanese traditional puppet craft heritage and perfection of the craft.



Constructing an industry with a firm grasp on the fundamentals and opting for open collaboration

The scope of Pili's operations has expanded towards the domains of cultural and entertainment business after it has successfully created an industry for the glove puppetry show. Looking back to the path he has taken all these years, Chris Huang accredited his success to a mixture of insistence in specific areas without relying on others while integrating external resources in other parts of the business in order to expand the market.

“When it comes to the creation of our original script, the nurturing of principal production staffs and the research and development of new technologies, I have always insisted that the company must have full control over these operations,” Huang emphasized. “Because the only way for Pili to truly achieve differentiation from the average multimedia entertainment industry and stay ahead in terms of competitiveness is to have core technological capabilities that are exclusive to us.”

That said, Huang is also aware of the fact that even the best contents produced with painstaking effort will need a reliable platform for distribution in order to succeed. With the emergence of new formats in multimedia entertainment, Pili began to lean on royalties for initial publication collected from different content rental channels for its revenue. Such platform of content rental business usually involves large franchise operations with easily over 1,000 retail locations and would require astronomical funding and professional management in order to be viable. After carefully deliberating the situation, Pili decided not to take the route of independent publication and instead sought for a collaborative model that involves distribution by licensed publishers.

Fast forward to 1995 and the company witnessed yet another change in its distribution channels. Due to the rapid development in satellite and cable TV service, Pili established its Epli Networks and for the first time, operated its own broadcasting platform. It was a turning point for the company towards diversification management by expanding both vertical and horizontal aspects of the industry, thus magnifying it to become industry ecology for the art of glove puppetry.



But as one breaks into new grounds and explore uncharted territories, so must he shoulder the risks and price that come along with reform. In 2009, despite all the voices of opposition, Huang made the call to change the company's existing model of collaborating with traditional content rental channels for publication and distribution and opted to work closely with convenient store franchises instead. The extent of such collaboration covered projects of product licensing and gradually expanded to the release of the latest episodes on a weekly basis.

It was a bold move on Pili's part that brought a major change to the domestic multimedia content publication channels in Taiwan. In the end, Huang's vision resulted in huge success as its market of content distribution and turnover reached new heights.

For the years that followed, Pili continued to extend its reach in terms of business operations by going into other domains such as motion picture, graphic publication, game titles, household supplies, toys, network services, satellite television program, museum, theme park, theme restaurant, character licensing, theatric performance and so forth. Today, apart from its signature glove puppetry shows on the themes of wuxia fantasy, Pili International has also been working on the development of other genres such as sci-fi manga and animations, classic Chinese and western historical stories and glove puppetry for early education.

Venturing into movie production and developing 3D video and photography technologies

In 2000, Pili made its first attempt at the big screens and spent NT\$ 300 million on producing the first digital wuxia puppetry motion picture, shot entirely on 35mm film. It was a major endeavor for the company and involved the use of brand new camera equipment, processes, new approaches and concepts to production and animated special effects and the project enabled the company's production crew to significantly elevate its expertise and concepts from TV-show production levels to the standards of movie production.

“While the company will never be able to immediately recoup the funds and resources invested each time we attempt to present our contents in different formats (i.e. screen size), that will not stop me from trying out new things when it comes to puppetry and animation production technologies,” Huang remarked. To him, there is no better way than boldly trying out new technologies while building the company's technological capabilities to ensure success in improving production quality, reaching out to new audiences and expanding the company's distribution channels.

In order to reach the level of digital movie production, Pili has taken the initiative to collaborate with ITRI's 3D graphic technology team and after nearly five years of hard work, the company successfully developed its 3D video and photography technologies. The project culminated with the initiation of Pili's spinoff company BiggerPicture in 2013. By integrating dozens of CGI special effect teams across Taiwan and pooling relevant resources, Pili released its 2nd motion picture “Arti: The Adventure Begins” two years later.

The company has been diligently working to improve the camera works and visual aesthetics of puppetry animations and through various implementations and projects, Pili has been improving its production techniques and fine-tuning its shows in accordance with the audience's preferences. These efforts have not only brought rewards in terms of ticket office performance but also inspired Pili to cherish the accumulation of invaluable market experience so that the company can correct its course and steer towards further improvement.

Pioneer in puppetry anime-international collaboration that creates new sparks in the art form

In 2016, Pili endeavored to cultivate the international market by taking on the project of “Thunderbolt Fantasy” – an innovative title that combines Japanese ACG and Pili’s puppetry craft. The television series was aired at the same time in Taiwan, Japan, the U.S. and China. “Thunderbolt Fantasy” features lavishly crafted puppets, cutting-edge graphic presentation technologies coupled with stunning martial art choreography to spark yet another fad for “puppet animation.” Since the launch of the series, “Thunderbolt Fantasy” has received overwhelming positive response on top of invitations for more collaborations from China and Japan. A second season for the show has also been confirmed.

Through the process of working with Gen Urobuchi – the renowned Japanese visual novel writer and anime screenwriter for the production of “Thunderbolt Fantasy,” the production team at Pili has come to gain better appreciation of the fact that in order for international collaborations to work, they must be willing to engage in open communication and be flexible and adapt to the differences on how things are done in a different country in order to have an opportunity to show the craft of puppetry to foreign audience.

That said, communication is naturally the most difficult aspect in an international collaboration. After all, both parties are used to their own ways of working and getting things done, not to mention a significant discrepancy in terms of art design and puppetry show production. For example, when Pili’s Japanese partner



wrote the screenplay based on conventional logic for animations, they had overlooked the discrepancies in medium that exist between puppetry show and animation.

As Huang pointed out, “When it comes to animations, any change in scenery and setting can simply be taken care of by the illustrator. However, scenes in puppetry show have to be built and it takes time for the audience to get used to a scene. This is why scene changes will always be limited in any given episode.” Another aspect of contention lies in the design of the puppets. Take the female lead - Dan Fei in “Thunderbolt Fantasy” for example; in order to give her the “moe” characteristics, her facial features had been radically different from the usual proportions of Pili’s other puppets and such changes had been difficult for the Taiwanese puppet makers to get used to.

In order to learn about the production process for puppetry shows, screenwriter Gen Urobuchi made numerous visits to Taiwan during the production and he would make multiple verifications for even the smallest detail because he believes that slow work yields fine products. “In hind sight, when we work on our normal scripts, we can create up to 150 minutes of contents per week. To put things in perspective,

Thunderbolt Fantasy only ran for 13 episodes, with 30 minutes per episode and yet the series took us a year to shoot,” Huang recalled.

Thankfully, neither party gave up on communicating with each other, nor did Pili forget its original intention of working with a Japanese partner: to create new sparks for the craft. After much back and forth, the Japanese partner made relevant changes to the screenplay while Pili agreed to give Dan Fei her Barbie-like big eyes. As Huang bluntly put it, “These have been unprecedented attempts at innovation for Pili. If we had insisted on doing things our own way, why even bother reaching beyond the Taiwanese market at all? We could have just shut the doors and stick to the tried and true approach.”

As for reaching into the Chinese market, Pili had already launched its online VOD services in 2017. With the announcement of the “31 Measures to Benefit Taiwan Compatriots” by the Taiwan Affairs Office of the State Council earlier this year, the company anticipates direct benefits in both its production and distribution of contents for the Chinese market and intends to accelerate the deployment of relevant business operations in China.

Building a loyal fan base with diverse plots, characters and story genres

The audience for Pili’s glove puppetry shows is known for one specific quality: a high percentage of loyal (diehard) fans and followers. The significant fan base of Pili shows that supporters have been following the various works put forth by the company. With some of the ultra-long stories of the Pili series running for 30 years, the demographic of Pili fans spread out across the old, middle-age and younger generations, with a substantial number of tri-generation viewers belonging to the same families.

“It is the spirit of Pili that has been the hook for our loyal fans and we have been creating this world of fantasy along with them,” added Jill Huang. According to her, in order to produce quality works that offer good plots and storytelling, having a cast of fully fleshed out characters is of the utmost importance. Diehard fans of the show would even go as far as to establish fan clubs for the highly iconic characters and heroes of the show and organize character popularity polls on a yearly basis, along with various unofficial activities. With the characters from the stories, the fans and Pili interacting at such depth, they have essentially created a taxonomy for the puppetry show.

In addition, Pili also makes an effort to improve the experience of various fan events and has launched a variety of services including a member-only exclusive monthly magazine on Pili’s latest shows, an online shop and physical retail channels in order to ensure that diehard fans of the show would not only be able to enjoy the latest works from Pili but also benefit from

the sense of joy from indulging their cultural sensibilities, connecting with fellow fans and engaging in derivative consumptions.

On the other hand, Pili has also adopted specific strategies for the development of light or new fan base and a key component of such strategies is to explore the preferences of their new fans and develop a variety of story genres through said explorations.

As pointed out by Jill Huang, “New technologies, definition of genres and subject matter and international collaboration are the three pillars of our strategies to developing new audiences. For example, our latest stereoscopic movie “Arti: The Adventure Begins” represents our attempt at creating new visual aesthetics through puppetry animation and it has been well-received among fans of the fantasy movie genre. “Thunderbolt Fantasy” is our collaboration with the Japanese master novelist Gen Urobuchi and the series has proven to be a great hit for our teenage and young audiences who are already familiar with the ACG genre. Our latest project “Draca’s Adventure (tentative translation)” was produced with the goal of lowering the audience’s age threshold to younger children in the hopes of creating a series of puppet shows that is suitable for parents to watch together with their children.”

For casual viewers of the show and loyal fans who are unable to follow the latest episodes due to conflicting schedules, Pili will be launching its re-mastered series of older classics in higher resolutions starting 2018 along with one Pili movie title per year in the hopes of appealing to both the hardcore fans of the show while making it easy for new audiences to explore the world of Pili puppetry shows.

Success begets innovation; getting straight to the action in place of practice to overcome the shortage of talents

Innovation can be a tall order for organizations or industries that have already gotten accustomed to specific conventions. As the company that dominates the domestic puppetry



show industry and a provider of creative cultural contents, Pili has always been on the look out for new inspirations for the next reform and change from the existing model for success. This can be attributed to the fact that Pili’s management has never been conservative but has been willing to promote relevant measures in preparation for the changes that may take place in the near future. One example would be Pili’s approach to the nurturing of talents.

As Huang pointed out, the glove puppetry business is highly exclusive in nature and it is difficult to cultivate professional talents in the business, not to mention that people with unique skill sets are even harder to come by. Because of the industry’s special characteristics, TV puppetry show does not have the luxury of accelerating the process of corporate evolution through mergers and acquisitions like other sectors. And as such, for the special domain of TV puppetry show production technology development, Huang has adopted the strategy of “getting straight to the action in place of practice” to implement talent training for creative production and marketing by getting his staff involved in new project/genre developments.

More specifically, Huang has created a system of in-depth task division for production personnel training that offers clearly-defined job description and competence required for each unit of division in order for personnel to start by focusing on the development of competence in very specific areas. With a division of tasks and labor that involves more than 15 units, the system not only helps to speed up the process of competence development for employees, improve the company’s production quality but also alleviates the issue of production talent shortage. To facilitate the process, Pili has also taken steps to optimize the company’s existing system for employee reward, discipline, promotion and organizational management.

Looking back at Pili’s management practices thus far, while the company has witnessed fluctuations in its revenue for different years, the business has never actually sustained losses and deficits. Even when original works by Pili failed to generate satisfactory profit, the

company still sees value in the improvement of puppetry show production technologies while offering a stage for domestic CGI workers to put their expertise into good use every time the company works on a new project. From the way Huang sees it, these investments have led to meaningful outcome in terms of improvement and internationalization of Taiwan’s glove puppetry culture.

Looking towards the future, Huang feels optimistic and confident. “There are a variety of puppet-related art forms and cultures around the world and they have led to the creation of relevant derivative works and contents in animations. Nevertheless, glove puppetry remains the only form of the art that enables traditional puppetry making and manipulation to stay abreast with the latest market trend and keep up with the times through constant improvement of existing processes and presentation techniques thanks to new technologies.”

For the past forty years, Pili had endeavored for continued improvement and refinement of its craft by delivering numerous puppetry shows and animated works for its wide audience base. This year, the company has also launched its “Pili Fantasy World of Puppet Art” exhibition along with other works such as “Pili Fantasy – War of Dragons,” “Draca’s Adventure (tentative translation),” second season of “Thunderbolt Fantasy” and so forth. Hopefully through these contents, the audience will be able to catch a glimpse of the company’s spirit for constant innovation and how Pili has continued to lead its fans on a journey to the fantastical space and time in the world of puppetry show while remaining undaunted by market competition and the evolution of the sector.

PILI International Multimedia Co., Ltd.

■ Milestones

Year	Event
2018	<ul style="list-style-type: none"> Japanese-Taiwanese glove puppetry television series "Thunderbolt Fantasy: Sword Seekers 2" begins airing. A stage adaptation of "Thunderbolt Fantasy: Sword Seekers", presented by Japanese musical theater troupe Takarazuka Revue, was performed in Japan in August and in Taiwan in October.
2017	<ul style="list-style-type: none"> Japanese-Taiwanese television series-based special edition movie "Thunderbolt Fantasy:The Sword of Life and Death" was released in Taiwan and Japan in winter simultaneously. Puppet show character-shaped lanterns were highlights of the 2017 Taiwan Lantern Festival in Yunlin. Two giant human-shaped lanterns, 8 meters tall, represented the most famous puppetry characters Su Huan Jen and Rahu, quite a spectacle to see.
2016	<ul style="list-style-type: none"> Fantasy martial arts glove puppetry television series "Thunderbolt Fantasy: Sword Seeker", a collaboration with renowned Japanese anime screenwriter Urobuchi Gen and anime companies Nitroplus and GSC, aired in Taiwan, Japan and China simultaneously.
2015	<ul style="list-style-type: none"> The first epic-style glove puppetry 3D animation movie "The Arti: The Adventure Begins" was released. A large-scale Pili Puppet Theater Cosplay Contest was kicked off simultaneously in Taiwan, mainland China and Hong Kong. The final took place at the Iqiyi Comics and Animation Festival in Chengdu, Sichuan Province.
2014	<ul style="list-style-type: none"> Pili became a listed company at the over-the-counter market in Taiwan. Pili International Brand Pavilion became operational on Taobao, selling peripheral products as the start of its all-aspect e-commerce in mainland China. As part of its crossover cooperation with Chunghwa Telecom MOD service, Pili released the FIFA-endorsed film "Pili Soccer Heroes" for the 2014 FIFA World Cup in Brazil. Pili soccer dolls were put on the market at the same time.
2013	<ul style="list-style-type: none"> Pili television drama series DVDs could be bought at 7-Eleven and FamilyMart convenience stores across the country, marking the first-ever sale of products through the two different distribution channels at the same time. "Pili Fantasy World of Puppet Art" exhibition was held, attracting many visitors. It was the first large exhibition that featured Taiwanese culture and art.
2012	<ul style="list-style-type: none"> Bigger Picture Inc. was established to gather the country's best 3D animation specialists and develop specialized skills and 3D animated movies. It has been moving ahead according to its long-term development plan.
2011	<ul style="list-style-type: none"> Pili digital martial arts movie "The Legend of the Sacred Stone" was shown at the BAM Cinema Festival in New York. Pili won an award in the cultural innovation service category of the Top 100 Taiwan Brands Awards.
2002	<ul style="list-style-type: none"> Glove puppetry movie "The Legend of the Sacred Stone" was released in Asia (Japan and South Korea).
2000	<ul style="list-style-type: none"> The first glove puppetry movie "The Legend of the Sacred Stone" was released in Taiwan, setting a box office record for locally-produced films. Pili won an award from the Government Information Office. In collaboration with Jade Dynasty Group Ltd. in Hong Kong, Pili published the "Dapili" comics drawn by comic artists Tony Wong Yuk Long and Chen Uen worldwide.
1998	<ul style="list-style-type: none"> Pili was invited to perform its puppet show "Intrigue in Wolf City" at the National Theater. It was a continuous live performance with no "NGs" or cuts. The show was performed eight times in four days. All the tickets were sold out, prompting a request for additional performances. It was the first time that a glove puppetry show had been performed at the National Theater.

Chairman's Name : Chris Huang / Chairman
 Awardee's Address : 6F., No.209, Sec. 1,
 Nangang Rd., Nangang
 Dist., Taipei City 115,
 Taiwan (R.O.C.)

Date of Establishment : 1996

Telephone No. : 02-8978-0555

Website : <http://www.pili.com.tw/>

No. of Employees : 407



Business : 1. Main businesses: satellite television, television drama production and distribution, 2D and 3D movie production, peripheral products, music production and distribution, domestic and overseas business (licensing) promotion and development, crossover exhibition and performance, physical and virtual distribution channel development and operation, membership activities...

2. Special innovation items :

- The world's largest glove puppetry show production center
- The world's first-ever puppet animation, which is developed from traditional glove puppetry art
- Diversification of marketing strategies, extension of cultural innovation values and creation of market value
- A glove puppetry troupe turned into the first company in the cultural and creative industries to become a listed company at the over-the-counter market
- Innovations derived from one single business: cross-country and cross-industry cooperation/joint venture, diversified development/cross-field original puppet animation

Individual Category

Huang Sheng-Yuan Founder and Principal
Fieldoffice Architects

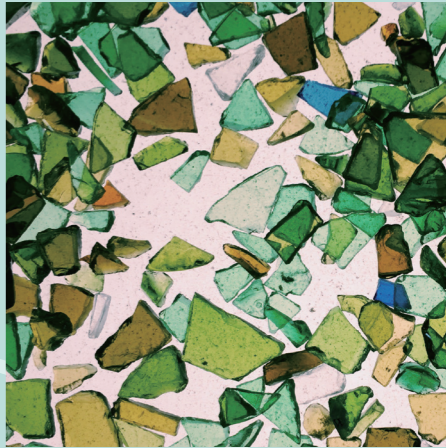
Thinking outside the box – Bringing innovation into the connection between people and land through architectural aesthetics



Youth Category

Wu Ting-An Chairman's executive assistant and CDO
Spring Pool Glass Industrial Co., Ltd.

Carrying on the torch for glass-Recycling to create a circular economy



Huang, Sheng-Yuan

Fieldoffice Architects / Founder and Principal

Thinking outside the box – Bringing innovation into the connection between people and land through architectural aesthetics

With his works that have earned international acclaim and his team working on touring exhibitions around the world, the Fieldoffice Architects headed by renowned architect Huang Sheng-Yuan is literally situated adjacent to a piece of farmland in Yilan County of Taiwan. This extraordinary choice of location aptly reflects Huang's dedication and pursuit to "thinking outside the box," which he has personally advocated and championed in many aspects of his life, be it his architectural works, his management of the team of architects, his nurturing of young talents and even his upbringing of children. Most importantly, it has been a conviction for Huang to devote all his efforts and energies to breaking free from conventions and traditions that he perceived to have become too rigid and confining. Such innovation requires courage, and plenty of it no less.

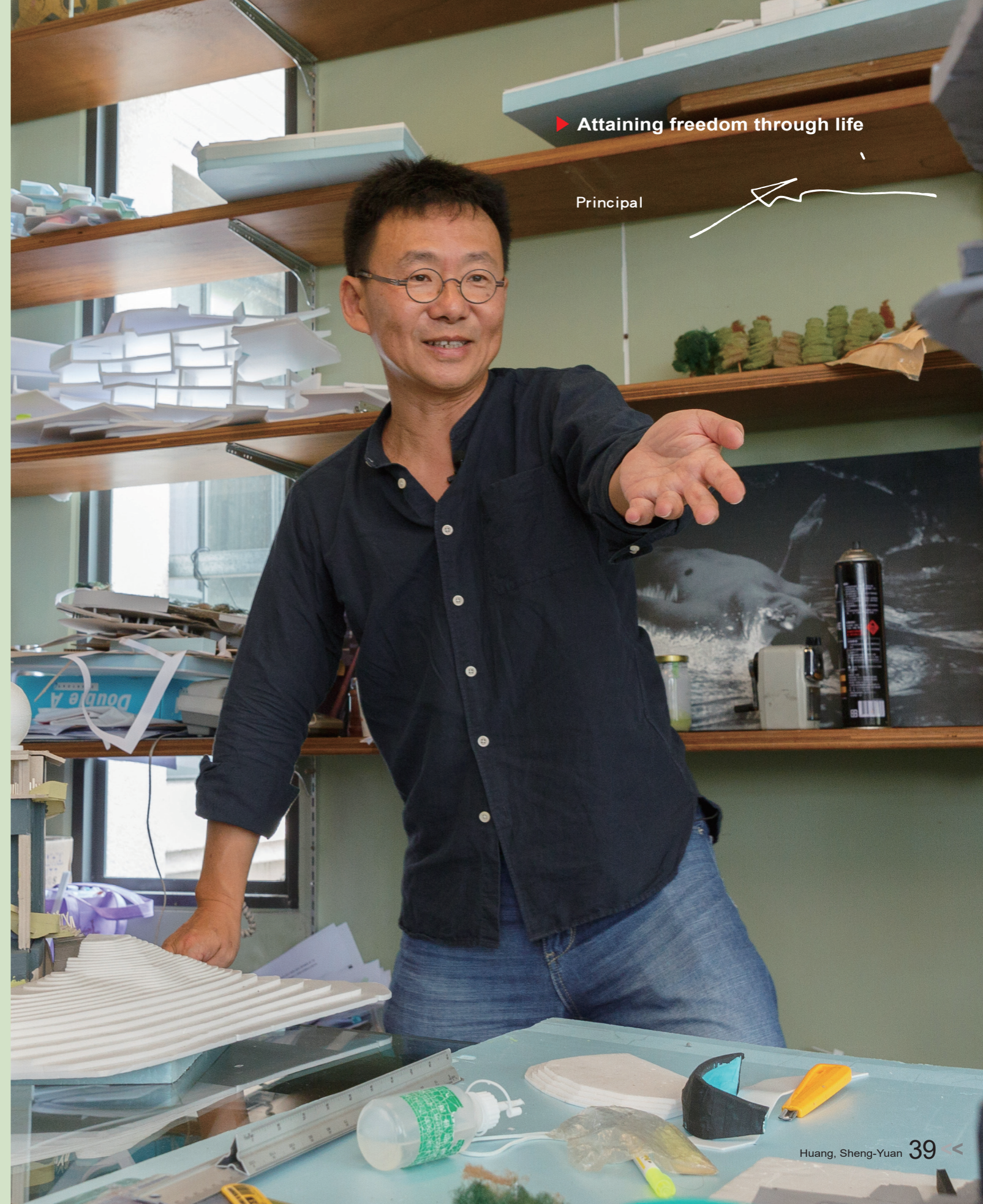
In 1994, Huang went to Yilan and set up his office there and his name has been closely connected to the place ever since. Having distanced himself away from the city, Huang found a place along a country road in Yilan where he could settle down and being in close proximity to the mountains and the sea, he found the space where he can live and breathe with freedom. For more than 20 years, he has been working alongside a team of talented youths and together they embraced and experienced the climate, geography, history and environment of Yilan. They work together, treat each other as equals and deliberate over how their works can be blended into the beauty and serenity of Yilan in the least obtrusive ways.

In order to achieve their goal, the team realized that they must actually live their day-to-day life in Yilan to gain the insight they would need in order for their design to blend seamlessly and least discernibly into the existing environmental texture of the area. As such, Huang and his team of architects at the Fieldoffice Architects not only work but also live in Yilan. "Here, we could be taking a leisurely stroll and just jump right into a small spring by the road for a swim on a whim; for a project, it could take us a decade of slow and meticulous observation and conception of idea. But to be able to live and work in such a carefree way, we see it not just as a conscious choice we have made but also a blessing," Huang remarked.

Nevertheless, freedom has always been something that must be fought for and defended and to do that, one must first demonstrate sufficient courage to "step out of the conventional framework and norms". "We have steered away from the model of division of duties and responsibilities and sought ways to prevent ourselves from being confined by our old habits of prioritizing project budgets. To do this, we have been working with proprietors who have embraced the same philosophies we uphold so that we can breach the knowledge gap created by the academics and protect the dreams of young architects so that their passions for the profession would not be snuffed out by trivial things that we shouldn't concern ourselves with." Despite the numerous challenges and the occasional instances of running out of funding to pay the other architects their full salary, everyone at Fieldoffice Architects has remained true to their original inspiration as they continued to contribute towards the education for architects by encouraging more aspiring architects to join the ranks of public architecture design.

▶ Attaining freedom through life

Principal



Entrenched in Yilan but still visible to the world

Despite being entrenched in Yilan, the creative energies of Fieldoffice Architects have nonetheless radiated across the world, with very impressive results in the last couple of years. For starters, the office received an invitation from GALLERY MA in Japan in 2015 to feature its touring exhibition “Making Places”. GALLERY MA has hosted exhibitions of works by other big-name architects including Tadao Ando, Sejima Kazuyo, Toyo Ito, Kengo Kuma and so forth and Huang became the first architect from Taiwan to be invited by the gallery. After the successful exhibition in Japan, with the curatorial assistance from professors Wang Chun-Hsiung, Lin Sheng-Feng and Chiu Chen-Yu, the team from Fieldoffice Architects set forth for their world tour in October 2016 starting from Europe. The exhibition was featured in Finland, Republic of Estonia, Czech Republic, Poland and later in the United Kingdom and Germany with resounding success.

In September 2017, Huang and his colleagues at Fieldoffice Architects received the 4th Takamasa Yosizaka Award in Japan. It is worth noting that it was the first time for the distinguished cultural award to be given to a non-Japanese recipient, and to an entire team of architects. According to the judges for the award, “Huang’s architectural works “exhibit special characteristics that facilitate the connection between people, thus creating and highlighting an intricate yet unique relationship between people and architecture.”

Such design philosophies coincide with the beliefs that “architectures ought to promote philosophies such as peace” advocated by the late architect Takamasa Yosizaka, after whom the award was named.

With waves after waves of positive response and acclaim, Huang and his comrades and his team from Fieldoffice Architects demonstrated



time and again the power of culture that knows no boundaries on the global stage, thereby making Taiwan visible to the world. This year, Fieldoffice Architects represented Taiwan once more in the Biennale Architecture 2018 in Venice at the Taiwan Pavilion with its presentation of “Living with Sky, Water and Mountain: Making Places in Yilan.” This had been Huang’s third participation in the Biennale Architecture; back when Huang was doing his master’s program in architecture at Yale University in 1990, he was chosen to take part in the event as the university’s

representative. His second involvement in the event took place during the 12th year of Fieldoffice Architects’ establishment (2006) and after another 12 years have gone by, he has been chosen yet once more to be featured at the Biennale Architecture. In a way, Huang’s repeated involvement in the exhibition also reflects the fact that his philosophies with the Fieldoffice Architects do work and are sustainable.

Subtle works that quietly blends into the local landscape

It is only natural for one to wonder: how did the Fieldoffice Architects manage to catch the attention of the world? You don’t ever see them occupied with making a name for themselves, nor had they gone for the usual routine of so-called “internationalization”

(which usually involves forming strategic alliances with international brand names, vying for international projects and so forth). Instead, all they have been doing all these years, is their singular pursuit for the possibility of coexistence between the land, people and architectures in the lands of Yilan. In reality, ever since the Fieldoffice Architects came into existence in Yilan, the team has been involved mostly in local cases only. What’s the reason behind that? “It is because we know we must live our lives right here; feel the tempo of local life, breathe the air here, observe the atmosphere in our environment, witness the changes in the colors and even scents as the seasons change. It is only by doing this that we will be able to conceive ideas for works that can truly blend into the local environment inconspicuously and noiselessly,” explained Huang.

To illustrate using his Jhong-Shan Children's Dome that received the Design Merit Award in the 2017 Taiwan Architecture Award, Huang took into consideration the fact that the concert/sports building at Jhong-Shan Elementary School in Yilan will be used primarily by school children. And as such, due to safety considerations, the entire architecture features no pointed spots, with all vertical planes of the building being perpendicular to the ground to enable natural traffic for occupants and the wind. In terms of spatial design for the interior and outdoor space, Huang drew inspirations from the bamboo three-section compounds (a unique architectural feature in Yilan) so that when the school children engage in any ball games inside the dome, they would feel as if playing in the rice-drying field in a traditional three-section compound and feel truly at ease.

In another project by the Fieldoffice Architects that was recently completed and inaugurated, the "Zhuangwei Dune Visitor Center" was designed with the concept of "leaving the fields empty and making the dunes visible" and the incorporation of natural elements from the Pacific coast to recreate the sand dunes and space. Similarly, the central concept of the design involves emphasis on the strength of the length and width of the landscape in a subtle and inconspicuous manner, thereby allowing visitors to slow down their pace and immerse themselves in the open and free atmosphere.

As Huang noted, "In order to accentuate specific elements or features, conventional commercial projects usually try to cram in

too much contents that ended up creating a sense of anxiety for visitors and occupants. What we really need right now, from the way I see it, are landscapes that help people to unwind and calm down so that they will be able to contemplate while casually enjoying the beauty that the landscape has to offer." To Huang, what he wants is for "sand dunes and the ocean to be heard by people," rather than creating eye-catching architectural works that so irresponsibly occupy the natural space. Here in Yilan, we can see the results of Fieldoffice Architects' hard efforts scattered around across many townships, including the Corridor D of the Cherry Orchard Cemetery in Jiaoxi, Yuan-Shan Kamikaza Aircraft Shelter as War Time Museum, Luodong Cultural Working House and so forth. These works exude the same characteristics and qualities – they are subtle yet "hospitable" as they welcome the approach of people.

Perfection does not exist for works that are organic in nature

Even in the very few projects that Fieldoffice Architects worked on, we can still see that Huang had never strayed from his emphasis on "leading a life of peace." The Cloud Gate Theatre in Tamsui is the first large, formal architectural project that Fieldoffice Architects had undertaken outside of Yilan. Cloud Gate founder Lin Hwai-Min once mentioned that the reason he entrusted the mission of designing Cloud Gate's new home is because "(He) designs architectures from the perspective of daily livelihood, rather than considerations

for aesthetics and other aspects." Incidentally, Huang received the Far Eastern Design Award in May 2017 for his design of the New Home of Cloud Gate.

In 2018, Huang even went on to become one of the recipients for the 20th National Awards for Arts (for architecture). The National Awards for Arts is the highest honor bestowed to important figures in the cultural circles of Taiwan and the award ceremony was held

at Cloud Gate Theatre in Tamsui. During the ceremony, Director Lin Hwai-Min remarked, "When I asked Huang to design the new home for Cloud Theatre, he said: 'Well I'd need to see which way the wind blows and the water flows at the site before I get started' and he spent a really significant amount of time observing how Cloud Gate dancers lived and worked before deciding on the exterior design of the building a year or two before the project was finalized for construction."



By refraining from making his works conspicuous, stand out or utilizing the surrounding environment as their backdrops but rather using his work to compliment or accentuate the local landscape, it wouldn't be an exaggeration to claim the works by Fieldoffice Architects to be "in flawless harmony with nature." Or perhaps Professor Kenneth Frampton from GSAPP offered a more apt description of Huang's "mavericks-esque qualities" in an observation he made of Huang: "Unlike all other architects in the world who are still in the habit of perceiving buildings as independent objects of aesthetics, the Fieldoffice Architects have demonstrated and presented a new vision of seeing architectures and landscapes being one and the same entity."

Because of his commitment to emphasizing the relationships between buildings and living organisms and mother nature, Huang sincerely hopes that his works would never reach the state of "completion." His reasons being: "My works are organic; the substance of an architecture will change according to its occupants, how it is used and the activities that take place in it. As such, no one has the right to claim that a building has reached its final, 'complete' state, not even its designer or owner."

Advocating the philosophies of "Fieldoffice Architects" as a school of architecture

At Fieldoffice Architects, everyone including full time employees and interns has taken on the habit of referring to Huang as

"teacher" because to them, the office is not only an architecture firm but also a school for architects. As Huang is fond of saying, "Compared to making money, I am more concerned about how I should go about nurturing young talents. We live here together and learn from one another, and we give back what we've learnt and assimilated here back to the land of Yilan. It gives me great joy to see my colleagues here attaining growth and leaving the office to achieve greatness in other parts of Taiwan. I believe that everyone has the capacity to bring about different positive influences regardless of where they choose to go."

Despite being regarded as a teacher by his colleagues, Huang does not behave like the stereotypical teacher or act in a condescending way. He eats, drinks and lives with other members of his team in an atmosphere of equality and freedom, which encourages everyone to speak truthfully. It is important to note that the conversations and debates they have carry weight and no one at the office responds to conversations/debates in a patronizing manner. The diversity of such discourses made such interactions potential materials to be converted into ideas and works. "The teacher never issues orders in an authoritative manner. What he does all the time instead is to figure out ways to understand what we are trying to convey even more than we do ourselves before discussing with us," remarked one of the members at the office.

"It is perfectly normal for me to not know the answer to many questions. But that's alright,



because I am confident in my ability to create and offer plenty of room for everyone to pursue and explore their own ideas. What I'll never do is to impose my thoughts, ideas and prior experience on them as low-hanging fruits, which could make them sloppy."

For more than two decades, the Fieldoffice Architects have attracted a significant number of aspiring students who wish to pursue a career in making Yilan a better place and the office has nurtured many young talents who have already demonstrated their impressive talents after returning to their hometown and winning various awards, including the Awards for Emerging Architects in 2014 and 2016 and the 2016 Taiwan Residential Architecture Award for Singleton.

Attaining freedom through life – Huang's visions and wishes for Taiwan

Huang has high hopes for the new generations of architects in Taiwan, and he is more than happy to help more talents from the young generation to better understand the

philosophy of Fieldoffice Architects. Believing in the idea that "changes can be achieved through unity of many" and that eventually he will be able to change the path of development for our society, Huang is always on the road, traveling between universities and colleges giving speeches. He was once the artist-in-residence at NCKU and NCCU. Acute readers may find that to be strange, as NCCU does not have a department of architecture. That's right; Huang made it impossible for others to confine him with his title as an architect and naturally, the "thinking outside the box" philosophy he has been advocating is not an exclusive gift to students studying architecture.

Huang threw a curveball at the audience by noting "It is important for me to add that having said so much, my intention had never been to convince the audience and students to just accept my viewpoint unconditionally or to solve a specific problem; my goal is to help you be relieved of your fear" before continuing by offering his explanation: "Whenever you bring up a question, you would have inadvertently have formed your own opinion but chances are, you don't want to be the odd one out by presenting a solution that differs from everyone else's ideas. So instead, you would play it safe and consult with those who have more experience or expertise. However, from the way I see it, if I offer a suggestion that makes my opinion really obvious, my input would instead become obstacles that restrict your ideas. This is why I will always choose to take the side of others, stay by them and relieve them of their fears so that they can confront their own thoughts and ideas directly."



Huang is extremely concerned that other people would see him as a role model and develop the misconception that they only have one single path towards success. "I don't want anyone to feel frustrated just because they think they are different from me. That would be totally uncalled for and you should never let such unfounded frustration stop you in your path to developing your talents."

As much as Huang is always conscious about whether or not he is living up to his ideals of "thinking outside the box" and "attaining freedom through life," it has certainly limited his freedom in a way because he has to constantly deliberate if others around him have become bound by something and that he is always trying as hard as possible to be free from all shackles. Huang acknowledges such observations and added, "Maybe it's because I grew up during an era of martial law and the

experience has made it very difficult for me to shake free from that feeling of pathos and self-conceited sense of mission."

And as such, he sincerely wishes for future generations who are fortunate enough to grow up in a truly free environment to be able to "attain freedom through life." Here's an excerpt from a letter he has written to his daughter, which is also a part of the acceptance speech

he had given when receiving the Presidential Innovation Award: "Born to be free; as free as the wind, as free as the rain and as free as the weeds that can be found everywhere; to do or not to do – that is a choice for we and we alone to make." That sums up his blessing for his beloved child who was about to leave home to pursue her studies and at the same time, his earnest hopes for the younger generations of Taiwan.

Huang, Sheng-Yuan

Year of birth : 1963

Highest education :

Master of Architecture, Yale School of Architecture, Yale University.

Professional Background

The Founder and Principal of Fieldoffice Architects. Resident Artist of National Chengchi University. Resident Architect of National Cheng Kung University and adjunct professor of architecture at Chung Yuan Christian University, National Ilan University, Huaan University, Tamkang University and Tunghai University.

Assistant Professor at North Carolina State University, USA, Project Associate at Eric Owen Moss Architects in Los Angeles.



Other Awards Received

1. 20th National Award for Arts (2018)
2. 4th Yoshizaka Takamasa Award (2017, Japan, This honor given to a Taiwanese architect for the first time)
3. Far Eastern Architectural Award :
 - Outstanding Award : Cloud Gate Theater(2017)
 - Outstanding Award : Luodong Cultural Working House(2014)
 - Design Merit Award : Sprawl of Daily-life Corridor in Luodong Township project(2010)
 - Honorable Mention Award : Pedestrian Linkage to the Riverside Park in Yilan(2005)
 - Outstanding Award : Jiaoxi Zhulin Nursing Institute, Lin Residence and Sanxing Tsung Suan Shack(1999)
4. Taiwan Architecture Awards :
 - Design Merit Award : Jhong-shan Elementary School gymnasium and surrounding corridors(2017)
 - Design Merit Award : Cloud Gate(2016)
 - Design Merit Award : Cherry Orchard Cemetery Corridor (District D)(2010)
 - Outstanding Award : Episode 1 of Luodong New Woodland(2008)
 - Design Merit Award : Jiaoxi Civic and Public Health Center(2006)
 - Outstanding Award : Pedestrian Linkage to the Riverside Park in Yilan(2004)
 - Design Merit Award : Jiaoxi Township Government(2002)
 - Design Merit Award : West-bank Bridge and Yilan Riverside Green Path(2001)
 - Outstanding Award : Jiaoxi Zhulin Nursing Institute(1999)
 - Outstanding Award : Jiaoxi Lin Residence(1998)
5. 7th Outstanding Architect Award(2006, R.O.C.)
6. A collection of Fieldoffice's works "Living in Place" in both Japanese and English(2015, published by Toto Publishing)
7. Gold award : Vascular Bundle project(2013, Building category of United Nations Most Livable Contest)
8. Innovative Figure Award(2013, Wall Street Journal)

Personal Track Record

Year	Event
2015-2017	<ul style="list-style-type: none"> ● Fieldoffice held its first overseas exhibition at Gallery MA in Tokyo. In 2016, Fieldoffice kicked off a touring exhibition in Europe, with the first stop at the Alvar Aalto Museum in Finland. At the closing ceremony of 2016 Shenzhen-Hong Kong Urban Architecture Biennial, Huang gave a speech as a keynote speaker. In 2017, the touring exhibition of Fieldoffice went from Estonia, Czech Republic, to Poland, with works displayed and speeches given at museums in these countries. Huang also delivered speeches at the Norwegian University of Science and Technology and National Association of Norwegian Architects and in Jaipur, India. He was selected to Taiwan's representative team to the Venice Biennale of Architecture. ● Fieldoffice had its book "Living in Place" published by ToTo Publishing in 2015. ● Fieldoffice completed projects such as Wei-shui Chiang Memorial Cemetery, New Home of Cloud Gate and the Zhuangwei Dune.
2010-2014	<ul style="list-style-type: none"> ● Fieldoffice Architects moved to a place near the county government center. ● In 2011, Huang participated in the Chengdu Biennial and gave speeches at the National University of Singapore and Thailand's Chulalongkorn University. In 2013, he held his first solo exhibition "In-theWhere: Fieldoffice at work" in Eastern District, Taipei. The Mori Art Museum in Tokyo, Japan, invited Huang to deliver a speech at the "Innovative City" forum. He also spoke at the Awards for Excellence in Architectural Thesis in India. ● Fieldoffice completed projects such as Luodong Cultural Working House, Yilan Museum of Art, New Moat, Green Corridor beside Lan-yang Girls' Senior High School and the Cherry Orchard Cemetery Service Center.
2005-2009	<ul style="list-style-type: none"> ● Huang participated in the 2005 Shenzhen-Hong Kong Urban Architecture Biennial, where he presents his idea of a "Free City." In 2006, Huang attended the Venice Biennale of Architecture for the second time. Tsai Tung-nan lead a team to set up the firm's stand in the Taiwan Pavilion. Huang gave a speech in Kuching, Malaysia, in 2005. In 2008, he flew to the U.S., where he delivered a speech to the MIT Department of Architecture. In 2009, he gave a speech in Mumbai, India. ● The Fieldoffice management team took shape, with Tu The-yu serving as CEO, Wang Shih-fang dealing with cultural affairs, Pai Tsang-Hung coordinating links with local authorities and people, and Chou Min-yen working as the administrative assistant. ● The firm completed projects such as Jiaoxi Civic and Public Health Center, Guang-da Lane of Er-wang Community, Jin-mei Pedestrian Bridge across Yilan River, Diu Diu Dang Forest, Renovation of Yilan Distillery, St. Camillus Nursery, Public Lavatory by Dong Shan River Sluice Gate and Cherry Orchard Cemetery Corridor and the Fly-over Bridge.
2000-2004	<ul style="list-style-type: none"> ● Tsai Tung-nan, Wang Shih-fang, Tu The-yu, Huang Chieh-erh, Huang Chih-lu, Chang Chao-tang, Liu Tsung-sheng and Liao Wei-chieh joined the firm almost at the same time. The firm is moved to a former clothing factory in Huihao village, Yuanshan Township. ● The Pedestrian Linkage to the Riverside Park in Yilan, a project by the firm, won recognition from the Taiwan Architecture Awards. The company's accountant Tu Shu-chuan, though not an architect, made the acceptance speech on behalf of the team, which was published in the Taiwan Architect magazine. The speech touched the hearts of many people. The term "Living in Place" was referred to for the first time on a public occasion. ● The firm completed projects such as Sanxing Zhang Residence, West-bank Bridge and Yilan Riverside Green Path, Yang Shih-fang Memorial Garden, and the Yilan Social Welfare Center.
1996-1999	<ul style="list-style-type: none"> ● Yang Chih-chung joined the team, becoming the most important man to manage the construction business for Fieldoffice Architects over the next two decades. Huang's student Yeh Chao-hsien also joined in, developing a design capacity for the next 13 years. ● Huang lead the firm to complete projects including Jiaoxi Guizhulin Basketball Court, Jiaoxi Lin Residence, Jiaoxi Zhulin Nursing Institute and the Public Performance Shelter for Sanxing Township (Tsung Suan Shack).
1994	<ul style="list-style-type: none"> ● Huang Sheng-yuan established the firm in Yuanshan Township, Yilan County. He sleeps at night, and Huang meets with county government officials during the day. As interns come during college summer vacations, he virtually sleeps under the same roof with them. Kuo Wen-hsi is his earliest partner, quite a handyman to him.

Wu Ting-An

Spring Pool Glass Industrial Co., Ltd.
Chairman's executive assistant and CDO

Carrying on the torch for glass- Recycling to create a circular economy

Coming from Taiwan's largest glass recycling enterprise, the 30-year-old Wu Ting-An made up his mind to return to Taiwan in order to save his family business from an impending crisis. But in the last six years, he had taken his family business beyond the scope of a glass recycling enterprise and started a series of action plans conceived around the philosophy of a circular economy whilst strengthening the company's core business operations. Wu is driven by one singular vision in all his ideas and actions: "Whatever we do, we do it for our future generations."

When it comes to the descriptions for Spring Pool Glass, there are many things that come to mind; it is not only a traditional processing factory that collects and recycles more than 100,000 tons of waste glass on a yearly basis but also a green-energy enterprise that recycles waste panels and melts them into energy-saving construction materials. At the same time, Spring Pool Glass is also an innovative business that has boldly advocated the concepts of circular economy and ecology by introducing elements of design to the craft of glass making.

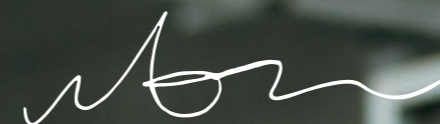
Back in 1972, Spring Pool Glass founder Wu Chun-Tzu had just completed his military service and promptly decided to pursue a career in the recycling of waste glasses. After going through several hardships due to a poor economy, his business managed to survive and kept going due to his constant improvement of the glass melting process. The company later developed energy-saving construction materials and started its glass manufacturing facilities for tourists.

After close to 50 years of operations, the business has not only witnessed the ebbs and flows of Taiwan's glass industry but also gained insight into the growth and decline of the glass recycling business. Today, Spring Pool Glass has become the largest company in the glass recycling business in Taiwan, operating five waste glass processing and recycling facilities in Hsinchu and Miaoli. The company handles in excess of 100,000 tons of waste glass each year, which is roughly equivalent to 70% of all waste glasses generated in Taiwan. Such incredible volume of recycled glasses would end up being distributed as products under four major categories: art works, glass products, construction materials and raw materials.

It certainly came as a nasty surprise for Spring Pool when the company took a heavy fall in the area of glass panel recycling and nearly led to the end of the business. As the late Canadian poet Leonard Cohen so eloquently put it: "There's a crack in everything. That's how the light gets in." The crisis that befell the company in 2012 became a crack that drew Wu Ting-An back to his family business as the second generation at the company's helm. Wu gave his everything to turn the crisis into an opportunity for success while upping the game for glass recycling and by becoming an advocate of the circular economy.

► Innovation is based on an accumulation of specialized knowledge and skills, application of new, breakthrough ideas to solve social and environmental problems and exact execution of those ideas.

Chairman's executive
assistant and CDO



Family business in crisis; turning waste panels into insulation blocks

The processes involved in the recycling of glass begin with sorting by color, sorting by chemical composition, removal of impurities and washing before going through crushing, pulverizing, grinding and sizing before waste glass is converted into cullets. In the past, most of the waste glass came from various containers but the rapid advancement of technologies and 3C products led to the production and use of panel glasses for tablet PCs and smart phones. The processing and recycling methods involved for such panels are distinctively different from that of traditional glass.

As Spring Pool collected massive quantities of waste glass panels, the company soon came to the realization that due to the addition of aluminum oxide, the panels are harder to re-melt and this rendered the existing processes for normal glass recycling at the factory useless. Meanwhile, the quantity of waste glass panels sent to Spring Pool continued to grow and the company actually had as much as 40,000 tons of glass panels waiting to be processed. With the company's money literally tied up in mounds after mounds of waste glass panels, Spring Pool was looking at an inevitable and dire crisis of cash flow.

At the time, Wu Ting-An had already completed his master's degree in industrial management in England, returned to Taiwan and worked for three years at TSMC. News of his family business in peril had prompted him to resign from his job so that he could return home and help his father out. His number one

priority upon returning to the company was to figure out a way to melt the waste panels that Spring Pool has collected. In the end, he not only found the way to melt the panels but also came up with an ingenious application that follows.

It is worth mentioning that in order to achieve scratch resistance, glass used for panels would have added aluminum oxide, which inadvertently increases the melting point for the panels. In other words, in order to recycle glass panels, it would require a kiln that is more advanced than the conventional ones. In addition, the recycled materials can only be used for other purposes (rather than simply be recycled into glass). At the time, Spring Pool's existing technologies and equipment were not adequate to do either.

Nevertheless, Wu analyzed the situation, the quagmire that Spring Pool was apparently trapped and spotted a new opportunity: "If the panel glass has a higher melting point, why not turn them into fire-resistant materials?" Wu then went back to the studies he had done back when he was studying resource engineering at NCKU and invested in new equipment to achieve his vision. The process from development to mass production took him three years and Spring Pool NT\$ 100 million in funding to ultimately create an insulation block that is heat resistant, sound proof and light in weight.

The new construction material Wu created offer the distinctive feature of heat resistance and it has received relevant fire rating testing certifications in England and Singapore. Each slab of the insulation block only weighs 12.5% compared to the standard cement/clay brick and yet costs less than 1/10 the price of clay



bricks. With such incredible price/performance ratio, it is no surprise that the insulation block has become widely used for the construction of partition walls in residential housings and holiday resorts within three years after market launch. Not only that, the product has been doing well in terms of sales in Southeast Asia, bringing more than NT\$ 100 million in turnover for Spring Pool each year.

Material-based connection to different crafts – driving circular economy

After successfully helping Spring Pool from the crisis, Wu continued to help his father to focus on the core operation of glass recycling for the company. At the same time, he reflected on the current state of the recycling industry and came up with ideas to step up the game.

The process of materials recycling and processing has often been perceived as no more than a component of ecological cycle,

and a passive, behind-the-scene component at that, too. But to Wu, that's not the way how things have to be. In fact, he believes that the whole system of circulation should be evaluated from the perspective of "waves of economic development" and that the concept of circulation should be ingrained into the minds of consumers right at the beginning of consumption. As such, he proposed a new concept of "détournement" to describe his philosophy of circular economy and launched two large-scale collaboration projects (W Spring Pool and S Spring Pool) as his approach to reification.

“Although it’s an award of innovation I am receiving this time, I do want to bring up this term: *détournement*,” Wu emphasized. “Without the accumulation of know-how and foundation by those before us, we would never have this opportunity to innovate to begin with. There are some things that require a solid foundation in order for one to come up with new ideas that are feasible; innovation is something that must be achievable, instead of empty slogans and inaction.”

The W Project is a plan of innovation that Wu has launched with heavy emphasis on cultural aspects. It involves the collection of waste glass by Spring Pool as the starting point and horizontal-alliance/cross-domain collaboration with specific brands to fulfill

the vision of “driving circular ecology through economy.”

This project resembles an organic platform that delivers different results when Spring Pool collaborates with different organizations/companies. For example, a new architecture is created when Spring Pool works with the “Orchid House;” new table wares are designed when Spring Pool collaborates with renowned chef André Chiang. Recently, Spring Pool has chosen to work with W Hotel and the joint efforts led to the birth of a new field.

How is it that a project could get so many different things done? Wu offers his explanation: “I work from the starting point of materials and coupled with Spring Pool’s technologies and craft, when connected

together, these things are capable of creating values that one might not be expecting. This is a special approach of paving the way to the last mile for the resource recycling system through specific products and there haven’t been too many instances of it in application in other countries thus far.”

Prioritize product appeal in the process of re-production and the demands from consumers will naturally follow

Right from the start, many people have been bound by the misconception that a circular economy has to involve environmental

protection or recycling and they have little to no interest in both areas. However, that’s certainly not the case; environmental protection and recycling are only the added benefits of a circular economy and when you are really in the midst of it, there’s no need to emphasize or reiterate these points. Wu makes a convincing argument on how Spring Pool has driven its circular economy by using the “Guishan Island Mug” that is made from recycled glass as an example.

“Let’s just assume for the sake of argument that this mug ends up being a huge hit in the market and we get incredible demands for the product. It will not only get our glassmakers at the factory busy in production, but also lead to a few other things,” Wu noted. “First and foremost, it would have resolved the front-end problem of waste glass recycling. Since the product is selling so well, the demands

of consumption (economy) that follows will naturally drive up the demand for more glass to be recycled (circular aspect). Secondly, our experienced glassmakers will be able to preserve and pass on their know-how and techniques to the younger generation from their involvement in making products out of recycled glass.”

Simply put, Wu has not only witnessed for himself but also believes that when a product that is generated from a circular model of operation has sufficient appeal to the general public to create the critical demand for consumption, it will naturally drive the cycle of recycling as it is intended to do. There is no need for strenuous promotion of concepts of recycling and remaking or emphasis on advocating the benefits of environmental protection or recycling.

Wu’s belief was once again reaffirmed at the 2017 Creative Expo Taiwan organized by the Ministry of Culture. At the event, Spring Pool prepared a “Circular Economy Ocean” with the intention of showing visitors that “a circular economy can be felt and experience by the body”. The “ocean” was made up of 40 metric tons of ground and pulverized glass and its transportation and placement had proven to be a significant challenge. Spring Pool and the organizer deliberated and discussed more than six months over details such as the format of presentation, its design and relevant simulations. The project involved heavy use of manpower and relevant resources but the end result had been a defining moment for Wu.





When the audience first saw the featured work, audible gasps of exclamation and surprise could be heard from the visitors. Everyone found it incredible that the glittering and cool looking “ocean” was actually created from waste glass that had all sharp edges removed. The moment one set foot into the “ocean,” the tactile experience and sensation feel both real and refreshing. The never-experienced-before visual and tactile stimulation have led the audience and visitors to automatically make the mental connection between recycling and circularity, and that is exactly what Wu has been working so hard to advocate.

W Project to serve as the bridge that connects glass art to the original creation

From the way Wu described it, W Project was created to tap into the intellectual aspect of

Spring Pool’s core business. “There’s no need to worry about the collection process at the upstream, and we don’t need new technologies when it comes to glass melting in the middle, so my concerns primarily rested on the senior glassmakers at the factory as I need to make sure they are able to deliver the end products that feature new design concepts and the final packaging and presentation of our products.”

While the process may seem costly in the eye of outsiders, Wu pointed out that as he has access to Spring Pool’s existing resources for the project, it would be easier for him to get the results he wants. The most crucial component of the W Project lies in the communication with the company’s senior craftsmen on specific product details.

Presently in the project, Wu is responsible for all communications on behalf of the designer side in the project. Back at Spring Pool’s

factory, the person responsible for going over specific details and production with the craftsmen is the company’s manager, Cheng Cheng-Shih. Among the numerous projects of collaboration, the one project that really forced Spring Pool to step out of its comfort zone has to be the commission from renowned designer Aaron Nieh to design and mold a special glass case for Sotheby’s Hong Kong Limited.

“It was really a very difficult case. But my instincts were telling me that if we don’t give it a shot, that would be as far as the company can ever hope to go.” Fortunately, the crew at Spring Pool did not fail to live up to Wu’s expectations, even though the challenge of changing existing processes had been a daunting one.

Recalling his involvement in the project, Cheng Cheng-Shih (who had been responsible for relevant communications at Spring Pool’s factory) also shared his thoughts: “We were working on the project on a short notice as we didn’t have much time to create the mold for the item. Not only that, the designer’s request to emphasize the fluidity of the glass is something that we have never attempted at Spring Pool. But after much communication and back and forth with our craftsmen who have more than 40 years of experience in the profession, they gave their best efforts in trying new processes based on their knowledge of glass malleability to beat the deadline. After receiving positive feedback from the customer for their attempts, our craftsmen’s willingness to take on new challenges increased substantially from that point onward. On hind sight, the project really is a crucial turning point for Spring Pool’s involvement in cross-disciplinary design collaborations.”

The project also shed light on the two primary functions of the W Project – 1. To bridge relevant design resources and, 2. To utilize the company’s expertise in glass craftsmanship for the creation of new products.

“Although Spring Pool specializes in waste glass recycling technologies and remaking of glass, original design has never been our strong suit. Even if we force ourselves to do it, we’ll never be the best at it,” Wu admitted. “Likewise, we will never know how food connoisseurs prefer to enjoy their food more than André Chiang does, nor will Spring Pool ever gain more insight than W Hotel in designing spaces that consumers will appreciate. These are crucial aspects of original creation that requires the involvement of professional designers. Our W Glass Project merely functions as the bridge to connect these ideas to the glass craftsmanship that takes place in our factory to turn them into realities. The possibilities from such collaborations are limitless.”

Glass bottle recycling to facilitate consumption while creating multiple channels for resource processing

The other S Project promoted by Wu features a platform of communication with consumers. It involves the deployment of a glass bottle/container recycling machine that is capable of handling different materials. The software and hardware needed for this solution will be provided by external developers and Spring Pool has chosen the Dazhuang Store of the PX Mart franchise in Hsinchu.

“Turn container recycling into consumption” is the idea behind the project and with the machine, shoppers will be able to go to the store and feed their empty containers into the machine to redeem for points using the companion App and exchange for selected products. During the experimental phase, the recorded collection volume fell between 100-300 containers but as the official launch of the project coincided with the fad of toilet paper hoarding, the machine ended up processing between 1000-3000 containers per day, which is at its maximum capacity.



Since the profit margin for glass recycling is fairly low, glass has never been a key resource for private recycling service providers and usually only the local public cleaning squads would accept glass containers for recycling. Now that Spring Pool has launched this new channel for recycling, the general public will be able to take advantage of it as an alternative. With Spring Pool taking care of waste glasses and containers of other materials handled by residents involved in resource recycling, this arrangement seems to be working quite well and due to the initial success, Spring Pool is planning to deploy more of its recycling machines at additional retail locations before the end of the year.

The duet of culture and circular economy – a glimpse of Taiwan’s soft power

Claiming to be conservative by nature, Wu admitted that he is always reminding himself that when the opportunity arises for him to make a decision or set a price for something, he must never forget to protect and uphold

the company’s reputation. As of now, Spring Pool is still run by its founder. “I will offer my proposition to my father but if he rejects it, I’ll respect his decision and go along with it. This might be due to the training I received back in TSMC, where I learnt that when the boss has made up his mind, don’t try to be smart and challenge him because the person who is really running the show is the boss, who also happens to be accountable for the success and failure of the business.”

Ever since his arrival at Spring Pool, Wu had been responsible for the development of green building material, which increased the company’s turnovers for export by more than fivefold. Many have spoken highly of his talents and the fact that he could achieve such success despite joining the family business for such a short time.

“And my response to that is always the same – I don’t deserve such credit; it’s the company that has accumulated so much energies and momentum all these years.” Wu provided an analogy to make his point: “Think of the company as a pool that has gradually stored

its water to the brim over the years. When I returned, I realized that I could create specific channels and direct all the water from the pool to the destination. Without the water already in the pool, I could create dozens of channels and they wouldn’t do any bit of good.”

However, Wu also admitted that in order to attract talents from the younger generation to the business of glass recycling, one must resort to the right approach. “There’s another reason why I have launched all these plans of innovation and creativity – I hope to show more people that what we do is in fact something meaningful and worthwhile. I have been at TSMC and I am well aware of the fact that the salary we offer is far from what the high-tech corporations can provide. But on the other hand, I also know that the young generation sees the world differently and they have different ideas. They are more concerned about the values and differences they could make to the society and our environment through what they choose to do.”

The proposition of a new model for circular economy is one of the ways that Wu has

chosen to create values for the society. Wu had given much thought to his ideals and although he still has a long way to go towards making them into reality, Wu has sought comfort and inspiration from what his mentor had once confided in him.

When Wu made up his mind to leave TSMC in order to help with his family business, he informed his mentor Dr. Shi who taught him at the graduate school of Cambridge University. Dr. Shi was intrigued by Wu’s decision and even made a personal visit to Spring Pool Glass’ factories. After taking a tour at the company’s facilities, Dr. Shi said something that truly touched him: “I used to think that China has far exceeded Taiwan in various developments. But now that I am actually in Taiwan and seeing with my own eyes how far you have gone in the area of circular economy, it really moved me in a very special way as I come to realize that at least in some areas, Taiwan’s soft power is still ahead of China.”

“That’s the culture and special characteristics of Taiwan. And what truly matters is how we go about showing these qualities and traits of Taiwan to the world. Right now, what we are trying to do at Spring Pool is to take the first step towards reification,” Wu explained. When asked about his views for the future, he responded, “For someone not in this business, this model of circular economy that I have proposed is probably hard to understand and I haven’t seen other businesses doing something similar thus far.” Although the path of innovation is exciting, it is also a lonely route to take. Fortunately, Wu has his reliable comrades and others who share his beliefs at Spring Pool to keep him company on this journey.

Wu, Ting-An

Year of birth : 1984

Highest education : MA from University of Cambridge

■ Personal Track Record

Year	Event
2018	Wu received an award at the 3rd Presidential Innovation Award from President Tsai Ing-wen.
2018	Wu has been awarded as "Eisenhower Fellowship"
2017	Wu won a "Leader of Tomorrow" award from the Hong Kong-based Tatler magazine.
2016	Wu was selected by Manager Today magazine as "Super MVP Manger of the Year."
2012	Wu started working for Spring Pool Glass Industrial Co., Ltd., a career that has lasted till now.
2009	Wu worked for Taiwan Semiconductor Manufacturing Company from 2009 through 2012.
2009	Wu received an MA degree from University of Cambridge
2006	Wu received a BA degree from National Cheng Kung University

■ Professional Background

Wu Ting-an of Spring Pool Glass got his MA and BA degrees from the University of Cambridge in the UK and National Cheng Kung University in Taiwan respectively. He specializes in glass research and development and optimum factory design. After completing his overseas study, Wu returned to Taiwan to work for Taiwan Semiconductor Manufacturing Company (TSMC), where he had access to practical analysis of management and investment decisions and operation resource planning. Wu is passionate about and interested in recycled materials, glass materials and culture and art. He has obtained multiple patents on materials in the U.S., mainland China, and Taiwan. Unlike many young people who tend to go their own way and be entrepreneurs, Wu insists on "detournement: creating new things with old materials". He aspires to maintain the continuous development of the green and circular economy in Taiwan and create an industry unique to Taiwan. In 2016, Wu won an award at the Taiwan Top 100 MVP Managers Award organized by Manager Today magazine. His story was reported by Business Weekly magazine. He later became a member of the newly-established Business Weekly entrepreneur association. He was selected by Hong Kong-based Tatler magazine as a "Leader of Tomorrow", rated as one of Taiwan's most promising young entrepreneurs. After entering the workforce, Wu continues to acquire new knowledge and upgrade his capabilities in various fields. For example, he takes big data courses offered by Massachusetts Institute of Technology (MIT) in the U.S. and courses offered by RWTH Aachen University in Germany. He also participates in TEDx talks. All these efforts are aimed at enhancing his capabilities in the industry he now works for and in cross-industry integration.



■ Other Awards Received

- 3rd Presidential Innovation Award(2018)
- Eisenhower Fellowship(2018)
- The Leader of Tomorrow Award(2017, Tatler magazine)
- Better Business Award(2017, British Chamber of Commerce)
- Future Commerce Award-A grand jury prize(2017, Business Next magazine)
- Special report "Taiwan Revealed: Green Savors"(2017, Discovery channel)
- Super MVP Manager of the Year(2016, Manager Today magazine)

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