



The 2nd R.O.C. ( Taiwan )

Presidential Innovation Award Report





**2nd  
Award  
Report**

**R.O.C. (Taiwan) Presidential Innovation Award**

# Foreword by President Tsai Ing-wen

The selection process for the 2nd ROC (Taiwan) Presidential Innovation Awards, which commenced in August 2015, has progressed through multiple steps. Each stage has been fair and rigorous as the judges winnowed 301 nominations down to following winners: Taiwan Semiconductor Manufacturing Co., Ltd.; the Fiscal Information Agency, Ministry of Finance; Professor Benson Yeh (葉丙成); Mr. Jung-Ya Hsieh (謝榮雅); and Ms. Shen Hsin-Ling (沈芯菱). Each of these winners has used innovative thinking to demonstrate the value of integration and innovation in their respective fields, be it technological research and development, services innovation, talent cultivation, or value-added cultural and creative activities. Their achievements have helped to propel national, social, and economic development, make lives better, and create new businesses. These are people and organizations that we can be proud of, and would do well to emulate.

Taiwan's economy and society are in need of transformation and upgrading, and this poses daunting challenges. To improve our economic structure and make our country more competitive, we urgently need to pursue a number of innovative and structural reforms, and find new growth engines for our national economy. That is the only way we can keep moving forward. Our new government has adopted an economic strategy that seeks three main goals: innovation, employment, and equitable distribution. And innovation is the most important of the three. Our government is working to build an environment that is supportive of innovation. Only proper innovation can generate high-quality job opportunities, increase incomes, and bring about more equitable distribution, thereby raising the quality of people's lives. I have been very happy to see the sparks of inspiration fly as our prize winners engaged in industrial innovation and crossdisciplinary exchanges. One of the winners in the group category, Taiwan Semiconductor Manufacturing Co., Ltd. (TSMC), has adopted an innovative strategy in joining with industrial partners as part of an active effort to develop a new platform for innovative industries. The result has been win-win outcomes for all the companies involved, with TSMC exercising world-class leadership and guiding Taiwan toward excellence. The Fiscal Information Agency (FIA) under the Ministry of Finance, meanwhile is the first government entity to win this award. Taking the perspective of the general public inspired the Agency to develop a pre-calculation service for individual income tax returns, the first service of its kind in the world. The pre-calculation service has made it much easier for citizens to pay their taxes. In addition, the FIA's overhauled cloud-based invoicing service and tax information system provide tax services of a quality not rivaled in other countries. These efforts by the FIA have contributed greatly to the establishment of electronic government and created a new model for how to go about streamlining procedures and providing more convenient services to the public.

The two awards in the individual category have gone to Professor Benson Yeh, a professor in the Department of Electrical Engineering at National Taiwan University, and Mr. Jung-Ya Hsieh, the chairman of the GIXIA Group. Professor Yeh has

developed the "BTS flipping" scheme for classroom education, experiential learning schemes, and other innovative new teaching methods designed to increase teacherstudent interaction and get children more interested in learning. Professor Yeh's ideas have helped more than 30,000 instructors to change the way they teach, and significantly improved the quality of science and technology education in Taiwan. Chairman Hsieh enjoys world renown in the field of cultural and creative design, and has energetically promoted development of innovative industries in Taiwan. For many years he has helped small and medium businesses here, worked to advance the field of service design, and used a "design-driven innovation" to usher in a whole new way of organizing and running a company.

In the youth category, Ms. Shen Hsin-Ling, the chief operating officer of Fu Tai International Enterprise Co., Ltd., has made intelligent use of technology and tools to create many innovative service models, including a website for direct sales of farm products, digital education, and traditional industries. Ms. Shen has successfully combined webbased marketing with logistics to help disadvantaged people. With her energy and innovative spirit, she is truly one of the most outstanding youths of her generation.

These award winners have pursued innovation and cultivated talent in a wide range of different fields, and each in his or her own way has contributed much-needed impetus for Taiwan's social

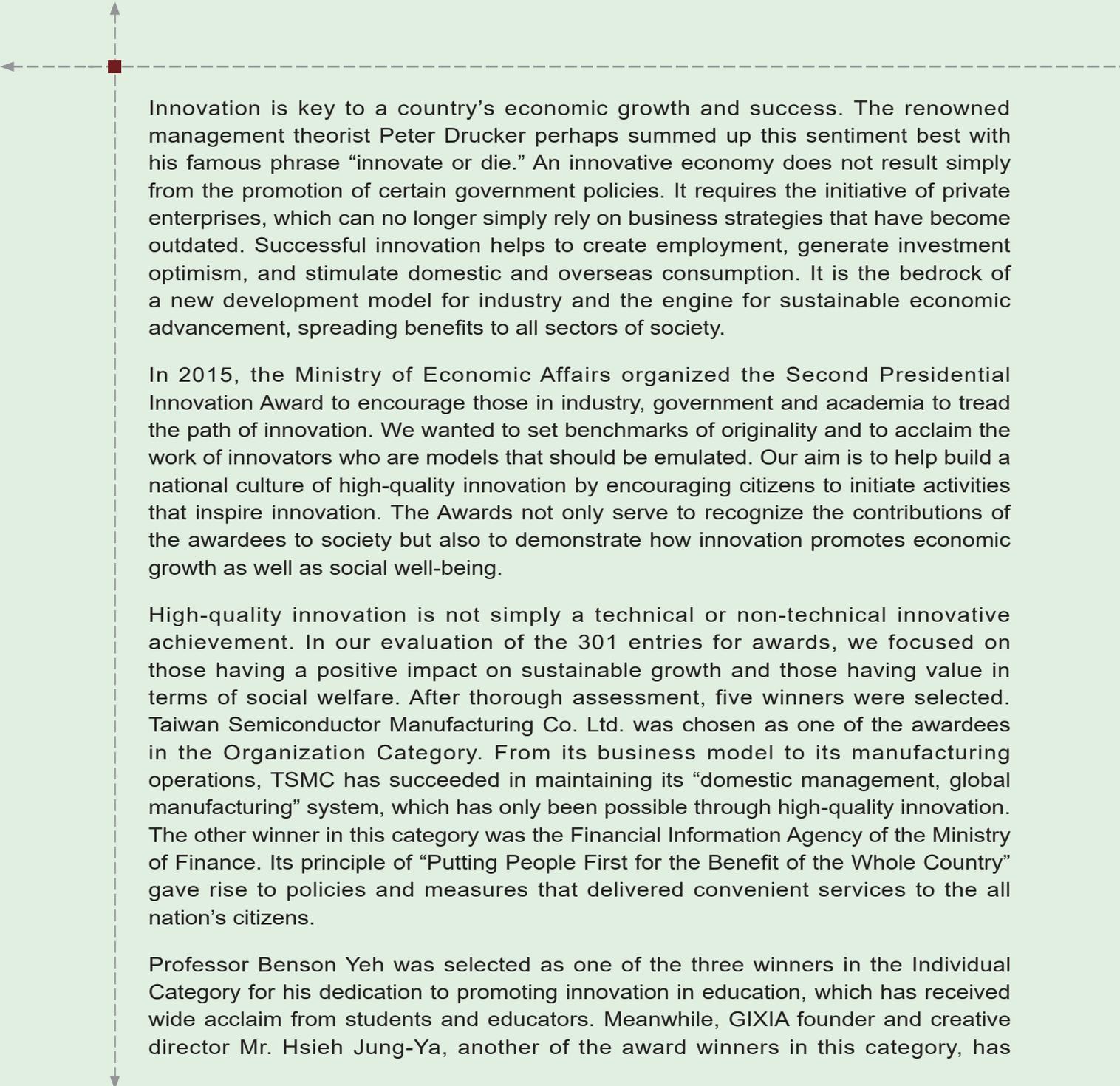


and economic development. The Presidential Innovation Awards provide public recognition for the successes achieved by the award winners, to be sure, but beyond that I would also hope that they might spur a nationwide wave of innovation and inspire the people of Taiwan to boldly break fresh ground and work to make good things better. By publishing their stories, we also want to urge everyone to continue demonstrating team spirit, a problem-solving attitude, and innovative thinking as we all work together for a better future.

A handwritten signature in black ink that reads "Tsai Ing-wen". The signature is written in a fluid, cursive style.

Tsai Ing-wen  
January 2017

# From the Minister of Economic Affairs



Innovation is key to a country's economic growth and success. The renowned management theorist Peter Drucker perhaps summed up this sentiment best with his famous phrase "innovate or die." An innovative economy does not result simply from the promotion of certain government policies. It requires the initiative of private enterprises, which can no longer simply rely on business strategies that have become outdated. Successful innovation helps to create employment, generate investment optimism, and stimulate domestic and overseas consumption. It is the bedrock of a new development model for industry and the engine for sustainable economic advancement, spreading benefits to all sectors of society.

In 2015, the Ministry of Economic Affairs organized the Second Presidential Innovation Award 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.

High-quality innovation is not simply a technical or non-technical innovative achievement. In our evaluation of the 301 entries for awards, we focused on those having a positive impact on sustainable growth and those having value in terms of social welfare. After thorough assessment, five winners were selected. Taiwan Semiconductor Manufacturing Co. Ltd. was chosen as one of the awardees in the Organization Category. From its business model to its manufacturing operations, TSMC has succeeded in maintaining its "domestic management, global manufacturing" system, which has only been possible through high-quality innovation. The other winner in this category was the Financial Information Agency of the Ministry of Finance. Its principle of "Putting People First for the Benefit of the Whole Country" gave rise to policies and measures that delivered convenient services to the all nation's citizens.

Professor Benson Yeh was selected as one of the three winners in the Individual Category for his dedication to promoting innovation in education, which has received wide acclaim from students and educators. Meanwhile, GIXIA founder and creative director Mr. Hsieh Jung-Ya, another of the award winners in this category, has

demonstrated a strong determination to transform industrial design with his “dynamic transformation” principle. Finally in the youth category, Ms. Shen Hsin-Ling, director of Futai International's online commercial services, has confirmed our faith in the ability of those under the age of 40 to change the world through their innovative talent. Guided by the spirit of poverty alleviation, she has succeeded in providing valuable services for the less fortunate members of society.

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.

The Ministry of Economic Affairs will continue to actively cooperate with all sectors of society in working to transform Taiwan's economy from an efficiency-driven to innovation-driven model. And, with a focus on the green energy and lifestyle sectors as well as industries of the future, the Ministry will also work ceaselessly in promoting industry innovation, transformation and upgrading to enhance the international competitiveness of Taiwan industry, and



in creating an economic model with “innovation, employment and equitable distribution” as the core values, so as to achieve sustainable economic development and realize a brighter future for all the nation's citizens.

*Chih Kung Lee*

January 2017

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## About the Award

The Ministry of Economic Affairs has organized the Presidential Innovation Award in support of the president's core values for further economic development – Innovation, Employment, and Distribution. The awards seek to recognize those whose outstanding technical skills, service innovation, talent development, and cultural creativity have made tangible contributions to the country's economic development.

Their innovative efforts have led to start-ups and further creation of employment opportunities, thus actively cooperating in strengthening domestic industries. They have thus become icons of how Taiwan's economy can be transformed from one that is "efficiency-driven" to one that is "innovation-driven." Innovation will thus become the core of the economic system, boosting competitiveness and further development.

The Presidential Innovation Award is held every two years. This year, the awards were given to those who have shown outstanding creativity in technical R&D, creative value, service innovation, and talent cultivation. Two awards were given for the organization category, two for the individual category, and one for the youth category. The fielding of entries for the Second Presidential Innovation Award started in August 2015. The organizers received 301 entries who went through a first-phase evaluation, a second-phase re-evaluation, and the third-phase final decision. Taiwan Semiconductor Manufacturing Co. Ltd. and the Fiscal Information Agency (Ministry of Finance) were chosen for the organization category. Professor Benson Yeh of National Taiwan University's Electrical Engineering Department and Mr. Hsieh Jung-Ya, founder and CEO of GIXIA Group were chosen for the individual category, and Ms. Shen Hsin-Ling, director of Futai International's online commercial services, was chosen for the youth category.

## About the Medal

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.



# Organization Category

***Setting High Standards  
of Innovation at all Levels***

***Taiwan Semiconductor Manufacturing Co. Ltd.***



## *Using Creative Technology to Improve the Lives of Citizens*

### *Fiscal Information Agency, Ministry of Finance*



## Organization Category

### Taiwan Semiconductor Manufacturing Co. Ltd.

## Setting High Standards of Innovation at all Levels

*The birth of Taiwan Semiconductor Manufacturing Co. Ltd. (TSMC) was itself an innovation. The company's entry into integrated circuit manufacturing loosened the bottleneck of wafer fabrication suffered by firms in the IC industry. For ten years, TSMC has enjoyed the prestige of being a "the trusted technology and capacity provider of the global logic IC industry for years to come." Its production processes and business model have taken Taiwan to the front ranks of IC producers in the world.*

Semiconductors are now vital components of everyday life. The use of personal computers and hand-held devices has altered lifestyles and work culture. As the cell is to the human body, a semiconductor is the life of personal computers and mobile phones. Without these devices, neither can we talk of the Internet of Things, nor dream of the day when automatic driver-less cars run on our roads. "World civilization would regress by 50 years if we had no semiconductors," said TSMC founder Morris Chang when he received the Presidential Award for Innovation.

Such a statement simply confirms the importance of TSMC for the whole world, and TSMC continues to push Moore's Law forward. The company has continuously overcome each challenge faced by the semiconductor industry. The vision that drives this company whose revenues from January to December 2015 reached NT\$843.5 billion, comes from Mr. Chang's innovative mindset. "At TSMC, we set very high standards for innovation," he said.

Mr. Chang sets those standards at all levels – in R&D, marketing, customer services, supply chain management, strategic planning. "Every year, every month, our pursuit of innovation has never stopped. Each one of our tens of thousands of employees can be a source of innovation, and the accumulated amount of this innovation can be quite impressive.

TSMC operates in an increasingly competitive industry. The compound growth rate



for the semiconductor industry for the next ten years may be less than 3 percent. The company faces a formidable challenge to retain its leading position yet has set its annual growth rate target at beyond 5 percent. But what strategy would TSMC use in case of a slowing pace of growth for the industry? “Innovation, this is our sole strategy,” said Chang.

— Some Words from the Chairman

*Innovation is the wellspring of our continued growth. We demand innovation in our strategy, marketing, management, technology, manufacturing, and in all levels of our organization. Innovation is not simply originality in thinking; it requires executive ability and readiness to change. Without these, it is simply useless wishful thinking.*

## An Ecological System where Partnerships are forged

What innovations does TSMC have to offer? When it was established in 1987, semiconductor companies had to engage in the both design of integrated circuits and in the manufacture of silicon wafers. Many IC design companies could not reach an adequate level of mass production unless they invested heavily in wafer fabrication.

Seeing this obstacle to industry progress, Morris Chang saw the light of a new business model. He set up TSMC to provide semiconductor manufacturing services for IC design houses. This enabled IC design companies to rid themselves of the burdens of fabrication. It gave them a chance to focus on R&D. "Most of today's leading edge electronic products were made possible by the support of this business model," said Dr. Mark Liu, TSMC president and co-CEO.

Since its foundation, TSMC has never veered from its original purpose of serving IC designers, and always drawn from the company's strengths to solve a problem. And guided by the principle of "providing ever better services," it has established the Open Innovation Platform (OIP), yet another creation that grew out of its business model.

Attention to detail and a proactive work attitude are the two keys TSMC utilizes to unlock the hearts of its customers. "When we see our customers' problems, naturally we must proactively find a solution for them. In particular, these fundamental components and design flows are closely related to our advanced manufacturing processes. This is something we can do for them."



In 2004, TSMC invested in developing the high-tech process of fundamental IPs and design flow. They set up a force of two hundred for this task. Now, over one thousand engineers are involved in this important work. The company's OIP integrates semiconductor design and production, the entire ecological system wherein partnerships with clients are formed. The OIP also manages TSMC's Silicon Intellectual Property (SIP), design applications, design for manufacturing, and packaging and testing services. All of these are targeted at achieving a high success rate for the first silicon wafer manufacturing. A high success rate would mean that IC designers can speed up the product development of customers by one to two years.

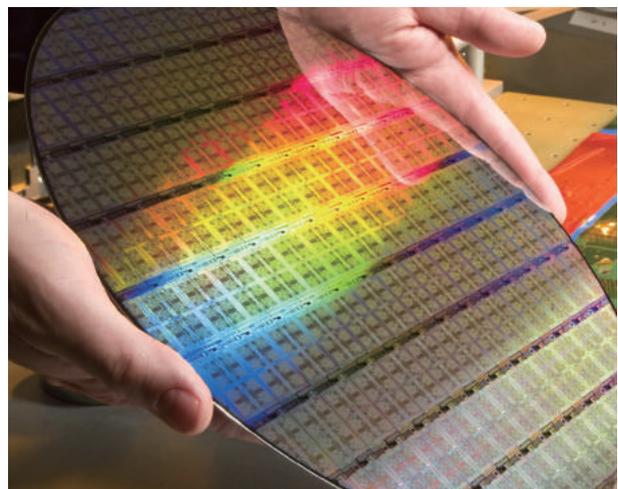


Such integrated services and full support given to IC designers are unmatched by other semiconductor foundries. “We hold the highest number of intellectual property rights and patents among other foundries,” said Hou, “at least ten times those held by the second ranked.” TSMC holds 22,721 domestic and international patents; in 2015 it obtained 1,768 patents in the U.S.

TSMC President Mark Liu says that innovation has become the company’s DNA. “We focus on the fabrication technology and process, while our customers focus on design and development,” he said, “our long-term partnership helps to further develop the semiconductor industry.”

“What we do is ‘unleash innovation’. After

innovating and trying new things again and again, this has become the accepted model for the industry.”



## A Bright Star enlightens the whole Industry

TSMC's numerous innovations are difficult to summarize in brief, as it has made unparalleled achievements in every field. One area where it shines the brightest is its leadership in semiconductor manufacturing technology.

Can semiconductor circuits continue shrinking? This is a question that poses daunting challenges for those in the industry. TSMC's continuous research breakthroughs may provide the answer. It already uses 28 nanometer technology in mass production and is currently working on developing 20 and 16 nanometer fabrication systems. The 20 nanometer process will be used for making systems on chips (20SoC), a breakthrough in mass production.

The culture of innovation at TSMC has made this breakthrough possible. In 2015, qualification was completed on a 10 nano fabrication technology and this was put into production in 2016. At the same time, a 7 nano technology is in full development and by the first half of 2017, it will enter risk production. The company is also intensively developing 5 nano technology. And with foresight of a post-Moore law era, the company is engaged in a leading edge research for a new generation of transistors and fabrication technology.

Every year, TSMC spends approximately 8 percent of its overall revenue on research to develop cutting edge products and services, matching and in some cases surpassing many world-class companies.

## A Pioneer of Industry 4.0

TSMC is also focused on more efficient manufacturing systems and better foundry management. Management thinkers have

acclaimed the coming of the fourth industrial revolution (Industry 4.0) which will see the rise of the "Smart Factory." Ten years ago, TSMC began investing in this area with its wafer fabrication equipment that could learn processes and automatically correct errors without human intervention. This has allowed TSMC's manufacturing yields and efficiency to lead their competition.

"Our 12-inch wafer foundry is already completely automated," said J.K. Wang, TSMC vice president of operations. "The mechanical equipment, manufacturing systems, and production management are all controlled through and highly integrated with the networks. This is the goal of Industry 4.0 – to make the entire manufacturing system more efficient, smarter, and more flexible."

Besides these, TSMC has state-of-the-art work scheduling procedures that outdo its competitors. In tandem with constant simplification of work processes, such procedures enable TSMC to deliver to customers on time and provide the best production cycle time.

Focused on efficiency without forgetting the environment, the TSMC brand is in fact synonymous to green manufacturing. The company is also actively promoting green supply chains. For the past three years, TSMC has consistently been awarded the Dow Jones Sustainability Index (DJSI), gaining the highest score among global semiconductor manufacturers.

"We have always been environment-friendly since our foundation," said Wang, "and we aim to be a benchmark for environmental protection among global companies."

At the TSMC factory, beneath every wafer fabrication machine lies waste gas treatment systems linked to each other. They are used to



dispose of acid gas and other high-concentrate waste gases. A central treatment mechanism transforms all waste gases into emissions that conform to anti-pollution standards. A water treatment plant takes care of wastewater. TSMC divides its water into 5 categories and 36 different level of purity. On the average, every drop of water is recycled and reused four times.

TSMC applies the same high environmental standards when choosing its suppliers. If you want to be a supplier, you need to meet anti-pollution standardst. Waste treatment facilities and recycling systems should be in place. Fab equipment suppliers should demonstrate that they have water-saving, energy-saving, and waste and resource control policies. They should also show long-term plans to decrease carbon emissions and a sound environment-friendly roadmap for the future. TSMC seeks to fulfill its corporate social responsibilities by setting these high standards for themselves and for those doing business with them.



## A Champion of Work-Life Balance

TSMC's corporate social responsibility is also expressed in the close to 40,000 employees it has hired. As a manufacturer, it has created employment opportunities and shares its profitability with its workers whom it considers its most important asset. Employees are paid well and do meaningful work in safe and environment-friendly conditions. In 2014, the Council for Labor Affairs gave the company the first "Work-Life Balance Award," its highest recognition.

Taiwan is aging, and fewer children are being born. But TSMC employees are still willing to "produce" and help Taiwan. This mindset could be due to the company's culture of work-life balance. In 2014, the number of children born to TSMC employees reached 2,480, 1.18% of those born in Taiwan that year. Every day, TSMC employees produce an average of 6.8 babies.

TSMC is not just Taiwan's most profitable company. It is also its biggest taxpayer. In 2014, it paid income taxes of NT\$29.25 billion, an increase of 110.6% over 2013. This amount was 7.3% of total income taxes paid in Taiwan.

In 2011, TSMC total revenues reached NT\$427.1 billion. In 2015, it was NT\$843.5 billion, nearly 100 percent increase over a four-year period. Its gross margin has also increase to around 50 percent.

Despite its size, TSMC still sets records in its sprint to innovation, the key to its staying power. Dr. Morris Chang hastens to add that his company has three other core values: Integrity, Commitment, and Customer Trust. "Integrity is our moral standard, the driving force of our commitment to customers, employees, and

shareholders. They are also the inspiration behind our resolve to be innovative and to fully maximize our potential. They are both indispensable."

Guided by these three core values, TSMC endeavors to do its part to improve society—their most important objective. For the future, the company plans to retain the competitiveness that has led to its leading position in the industry. It will fulfill its social responsibilities and thereby remain a good corporate citizen. And it will show that without a doubt, the TSMC brand is one of Taiwan's great blessings.



## **Taiwan Semiconductor Manufacturing Co. Ltd.**

Chairman's Name : Dr. Morris Chang

Awardee's Address : 8, Li-Hsin Rd. 6, Hsinchu Science Park,  
Hsinchu 300-78, Taiwan, R.O.C.

Date of Establishment : February 21, 1987

Telephone No. : +886 3 563 6688

Website : [www.tsmc.com.tw](http://www.tsmc.com.tw)

No. of Employees : 45,272as of the end of 2015

Type of Business : Semiconductor Foundry

### ■ Milestones

Year	Important Accomplishments
1987	Foundation
1994	Initial Public Offering on the Taiwan Securities Exchange
1995	Inauguration of the eight-inch wafer fab (the third wafer fab)
1997	Listed some of its shares of stock on the New York Stock Exchange (NYSE) in the form of American Depositary Shares (ADSs).
1998	Inauguration of the Wafertech fab in the U.S.
2000	Inauguration of the first wafer fab in Southern Taiwan Science Park (the sixth wafer fab)
2001	Completed acquisition of Worldwide Semiconductor Manufacturing Corp. (WSMC) and TSMC-Acer Manufacturing Corp.; inaugurated the twelve-inch wafer fab
2004	Inauguration of a wafer fab in Shanghai
2011	Inauguration of the first wafer fab in Central Taiwan Science Park (the 15th wafer fab)





## Organization Category

### Fiscal Information Agency, Ministry of Finance

## Using Creative Technology to Improve the Lives of Citizens

*Government agencies like the Fiscal Information Agency (FIA), Ministry of Finance (MOF) have always been associated with just gathering information, its civil servants buried in their devices poring over tons of individual or corporate data. The only thing they cared about was fulfilling their bureaucratic duties.*

The FIA has had a change of heart. It has awakened to the true meaning behind the information. It has understood that behind the data stand the people of Taiwan. Its change of heart has been expressed in services that have made life easier for the citizens of this island. For example, the Service of the Pre-Calculation of Individual Income Tax Returns means that taxpayers no longer have to present hard copies of personal or company documents. The use of E-invoice means that people can enjoy a better environment --- no trees have to be cut down to be transformed into paper forms. Plus, Taiwan's computer savvy population can now fulfill their tax filing duties from the comfort of their desktops or hand-held devices.

The change has given rise to two kinds of services. The first is the "Individual Income Tax E-Deduction Statement Project" and the second is the "Service of the Pre-Calculation of Individual Income Tax Returns." Those who have lived through the era of hard copies would still remember the pain of having to rummage through personal or corporate files just to pick out needed documents. Besides the withholding tax invoice, you would need your health insurance payment receipts, mortgage receipts, tuition fee receipts, donation receipts, medicine purchase receipts, childbirth expenses receipts, proof of property damage due to natural calamities, and disability exemption certificates. Putting all these online is a real service to citizens.



# 104年電子發票成 電子發票雲 link 食品雲

電子發票雲  
追蹤食品上下游販售流向

## 乳品業者導入電子發票系統家數

食品製造物料進口及製造商營業人家數統計表			輔導乳品業者之營業人家數統計表		
103年電子發票家數	總家數	比率	104年電子發票家數	總家數	比率
245	313	78.27%	167	207	80.68%
43	43	100%	24	24	100%
142	146	97.26%	75	77	97.40%
56	56	100%	42	42	100%
41	41	100%	42	42	100%
167	639	26.13%	280	284	98.60%

### — Guiding Idea

*There can be no sustainability without innovation and no power without persistence.*



## Details make creative ideas real

“But innovation is not a miracle,” said Su Chun-Jung, former director of the FIA and now Deputy Minister, Directorate-General of Personnel Administration, Executive Yuan. “Innovation is the fruit of creativity.” And the implementation of creative ideas is full of many small steps. Details are important. In the process of implementing its e-services, the FIA had to confront a number of issues. For example, it was difficult to obtain the support and additional information from other government agencies. There were no regulations that mandated them to cooperate in the effort to offer online services for tax filing. The FIA

had to request the Bureau of Labor Insurance, Ministry of Labor, National Health Insurance Administration, Ministry of Health and Welfare, the Ministry of Education, and other agencies to provide needed information. They had to request the National Taxation Bureaus (NTBs) to inform privatized government units about the impending online services. Only in this way could the FIA convince those agencies of the benefits derived from such services. Eventually, everyone understood that the FIA initiative was the best way to serve citizens.

However, there were still some issues to solve. “One important step that we had to take was the unification of the invoices and documents to be used on the e-system,” said Hsieh Dong-



ling, FIA assistant director. “FIA employees spent much time and effort studying the salary invoices issued by Taiwan’s close to one million employers,” he said. The FIA had to work with the NTBs to see the plan through. They organized meetings and conferences with colleges, insurance, and financial organizations, and hospitals to systematize the abundant data collected and to set up an online platform for the further exchange of ideas. The FIA also built a database.

FIA civil servants bravely untangled knotty problems and patiently awaited the successful outcome of their efforts. They started promoting the use of Individual Income Tax e-Deduction Statement Project in 2009 and in 2014, personal

medical records were also digitized. The e-system is now complete.

However, some snags remained. Submission of data and tax filing could now indeed be done online. But some still found it difficult to go online, fill out the online forms, and calculate the amount of taxes they would pay or how much they would receive as rebate. So the Taxation Administration, also under the MOF, and the NTBs devised a trial system whereby tax filers could easily calculate those amounts. The FIA further developed that system and implemented it. They spared no effort to make e-tax filing a reality.

The FIA cooperated with the National Taxation Bureaus to source the accumulated online tax filing data and withholding tax invoices. Based on these, they then set up the Service of the Pre-Calculation of Individual Income Tax Returns. This Service makes it easy for tax filers to input their personal or household information into the system. Online users just need to answer some questions that show up on screen.

## **Working night & day to make a dream come true**

To achieve a seamless Service of the Pre-Calculation of Individual Income Tax Returns, the FIA made it undergo a trial period of four to five months. “They were days of intense work,” said Hsieh Dong-Liang, Deputy Director-General and the head of the working group for the platform. The NTBs’ database was inadequate. The working group had to find ways to make up for this inadequacy. On the other hand, the amount of overall information gathered was immense. From this huge available data, those useful for the platform had to be identified and utilized to come up with a practical and easy process. Everything had to be done within a few months. “It was a big challenge for us,” said Hsieh.

“To reach our objectives, our group mates went on a vegetarian diet and prayed to the Tudi Gong (the earth god) for the supernatural spirits to help us. We worked night and day until we finally completed the system.”

The annual tax filing period is “battle stations” time for the FIA. They had to be ready to solve any problem that came up. Many FIA employees would spend the night in their offices making sure that the online system worked smoothly. They could only rest when everything functioned properly. The same thing happened when it was time for a system upgrade. Hsieh could never forget the tension everyone went through.

“The first day we made the system public, I saw queues of people before the counters. I was worried that something would go wrong.” Fortunately, nothing happened, the new system worked.

This year, the National Taxation Bureaus have started allowing tax filers to use their National Health Insurance (NHI) cards to file their taxes. The FIA had high hopes for this new procedure. They foresaw many useful and improved functions if taxpayers used their NHI cards for medical consultation and tax filing. “This opens up many areas of further cooperation among government agencies,” said Hsieh. “We could solve problems together.”

FIA civil servants do not accept the saying “Don’t do something if you only commit mistakes doing it.” They just keep on finding new ways of doing their jobs better. The success of electronic receipts proves this. To promote E-invoice, the FIA teamed up with the Taxation Administration and the National Taxation Bureaus to form the “e-Invoice Promotion Division.”

## **E-invoice: Cutting down expenses, not trees**

In 2010, the FIA started planning for the E-invoice Platform and the system testing of the B2C E-invoice. But as with their other innovations, the road to success was full of challenges. When they interviewed company owners, many owners doubted the feasibility and continuity of these projects. They were not willing to support them. They claimed that their budgets were not enough or that they needed additional training. Nevertheless, FIA civil servants did not give up. They kept on explaining the advantages of the system and its cost-saving benefits. They showed owners of small and large enterprises that the e-service platform was the bellwether of government policy.

Their unrelenting efforts have been rewarded. In 2010, when the FIA launched the electronic receipts pilot project, just three enterprises and 27 retail stores had started using it. By 2015, 95,996 companies and 25,593 retail stores use the online platform. From their initial distrust of the system, company owners had been converted into its proactive supporters. After all, they were the ultimate beneficiaries of the electronic system.

By using the online platform, they dramatically cut down on paper expenses. They also need not pore over their accounts, send an employee

to file taxes, and archive paper documents. An overall assessment revealed that in 2015, B2B and B2C E-invoice had helped companies reduce operational expenses by NT\$12.6 billion. E-invoice could also be integrated with Enterprise Resource Planning (ERP) and easily leads to the digitization of accounting and bookkeeping data. E-invoice promote the integration of downstream, mid-stream, and upstream supply chains whose overall annual production value reaches NT\$35 billion and creates 70,000 jobs.





## A Serendipitous Outcome

The above data are those of enterprises. Consumers also benefit from the use of electronic receipts. Every year, 80,000 trees will not be cut down to supply paper—the ensuing environmental improvement is good for consumers. They could also use their mobile phones to enter a store’s cloud system and see their list of purchases. Consumers could easily have proof when asking for a refund or return their purchases in cases of food safety violations, for example. This is a serendipitous outcome that the FIA had not foreseen when they set up the system.

FIA Former Director Su Chun-Jung personally promoted electronic receipts. “I would attach a bar code on my eyeglasses frame and ask the cashier to beep it. This would draw the attention of other customers and thus realize the convenience of E-invoice,” he said. Now, more than fifty percent of retail outlets in Taiwan use electronic receipts. In 2011, the FIA won the FutureGov award given by the Public Sector Organization of the Year for North Asia. In 2012, the agency won another award given by the International Project Management Institute. It was the first time a government agency in Taiwan won the award.

## Encounter Love around the Corner, Social Welfare knocks on your Door

The FIA has launched innovative projects one after another. Where does its persevering creativity come from? The answer lies in the FIA civil servants’ resolve to keep on improving their services. The desire to improve gives rise to innovative ideas, and a dislike for always remaining in one’s comfort zone. Such an attitude drives one to observe, listen to others, and consider ways to improve. The Taxation

Information System will soon implement an online system for social welfare procedures. This will be another breakthrough.

Social welfare subsidies are an important source of income for the disadvantaged. Applicants for such subsidies still have to personally apply at government agencies or request help from their village offices. But some citizens who belong to indigent families do not even know how to apply. So the FIA has drafted the plan called “Encounter Love around the Corner, Social Welfare knocks on your Door.” It is a cloud-based information system that identifies those whose income qualifies them for a subsidy. In this way, the government transforms itself from a passive receiver of subsidy applications into a proactive seeker of those who need help. The objective is to have no indigent left unsubsidized. The plan is just awaiting funding approval from the Executive Yuan.

Civil servants at the Fiscal Information Agency were the first to understand that these kinds of policies expressed their true aspiration to serve society. So they rolled up their sleeves and got to work. Improving the condition of fellow citizens and enabling them to have a better quality of life is after all the intention that should drive creativity.

Individuals or organizations win an award just once. But serving the nation’s taxpayers is the abiding mandate of FIA. Chuan-hsi Chen, FIA’s present director, wants to develop more services to take the Agency beyond what it has achieved so far. Relying on what has been achieved, he is guided by the principle of “Insightful Service, Proactive Service, and Pursuit of Excellence.” Director Chen will maintain the spirit of innovation and constant improvement that now pervades the FIA. He will work at absorbing innovation as the nourishment that will eventually become the DNA of the organization. Robust at its core, the FIA will surely spread the innovative mindset to the people it seeks to serve.

# Fiscal Information Agency, Ministry of Finance

## ■ Milestones

Year	Important Accomplishments
1968-1986 Initial Stages	In May 1968, the Executive Yuan established the Tax Reform Committee to build a fair and reasonable tax management system. On May 17 of the same year, the Executive Yuan set up the Financial Data Processing and Assessment Center. In 1970, this center formed part of the Ministry of Finance. In April 1981, this center was named the Information Planning and Overall Management Agency, Ministry of Finance.
1987-2012 Growth Period	On May 29, 1987, by Presidential Decree, its name was changed to Financial & Taxation Information Center, Ministry of Finance. In 2012, under the Executive Yuan's re-structuring program, another Presidential Decree changed its name to Fiscal Information Agency, Ministry of Finance on February 3. The change took effect on January 1, 2013.
2013 - today Period of Excellence	The Fiscal Information Agency is now responsible for the information management for the Ministry of Finance and its subordinate agencies as well as the planning, coordination, guidance, evaluation, and control of those agencies. The Agency is the MOF's professional information management unit that is also tasked with policy planning and implementation. Within the Executive Yuan, it is also the only agency with a three-level structure. Its policy implementation presently consists of innovating the tax information system, promoting online tax filing and the use of E-invoices, and the improvement of financial information services. The integration of financial data will ultimately lead to the more effective use of such information.



## Fiscal Information Agency, Ministry of Finance

Chairman's Name : Chun-Jung Su

Awardee's Address : No.547, Sec.4, JhongSiao E. Rd., Sinyi District, Taipei City

Date of Establishment : May 17, 1968

Telephone No. : 02-2746-1200

Website : <http://www.fia.gov.tw>

No. of Employees : 393

Type of Business : Information Management for the Ministry of Finance and its subordinate agencies; Planning, coordination, guidance, evaluation, and control of those agencies



# Individual Category

*Teaching for the Future  
A Creative Pioneer of Educational Reform*

General Individual Category

Electrical Engineering Department of the  
National Taiwan University

Benson Yeh Professor

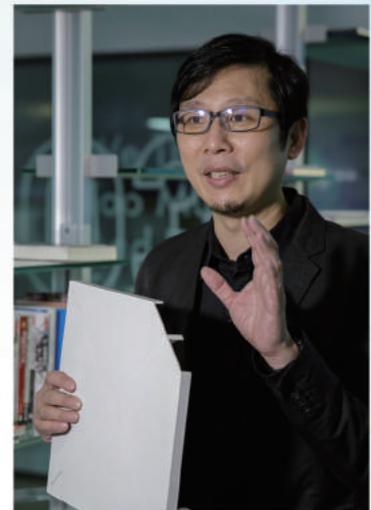


*Teaching for the Future  
A Creative Pioneer of Educational Reform*

General Individual Category

GIXIA Group

Hsieh Jung-Ya Chairman

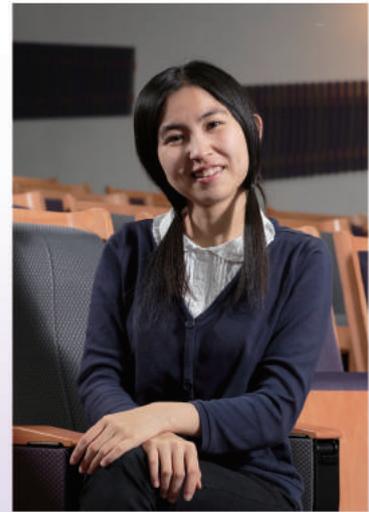


*Teaching for the Future  
A Creative Pioneer of Educational Reform*

**Youth Category**

**Futai International**

**Shen Hsin-Ling e-Business Chief  
Operating Officer**



# Talent Cultivation

## Professor Benson Yeh

Department of Electrical Engineering National Taiwan University

### Teaching for the Future A Creative Pioneer of Educational Reform

*Most teachers run into the problem of motivating their students who lack the drive to learn. Professor Benson Yeh is one educator who confronted the situation and worked hard to change it. He tried every possible means and overturned traditional educational methods to get students motivated and engaged to learning. He gave hundreds of talks all over Taiwan to light up the passion of his fellow teachers, to let them know that they were not alone; that there was much hope in Taiwan's educational system.*

"Today's students are different," he says. "As a result, we have to keep improving our teaching methods from time to time. We have to know our students well and have the courage to be innovative in developing new teaching methods to motivate them to learn." He put this bedrock principle into his teaching. Prof. Yeh is also the Executive Director of NTU's Massive Online Open Courses (MOOC) where he implemented a number of educational innovations.

Prof. Yeh's innovations are often beyond people's imagination. For example, have you ever seen a worldwide competition on Calculus with over 500,000 online viewers? This happened on April 8, 2016 during the finals of the Calculus World Cup (CWC) hosted by Prof. Yeh's team using the PaGamO platform. It was the first time ever event in the world to combine Esports with education. PaGamo is the gaming platform developed by Prof. Yeh and his team to integrate electronic gaming with educational needs. The pronunciation of PaGamO means "play game to learn" in Taiwanese.



— Guiding Idea

*The value of innovation lies not in self-satisfaction but in solving the problems of everyone. Problems are an opportunity for innovation. Be impatient to make a breakthrough in solving a problem, and you will develop a habit for innovation.*

## Computer games stir students' interest

We often hear about kids getting addicted to online games. Their parents, frustrated by this problem, just strictly prohibit them from playing. "But is there a way to make learning as fun as online games?" asks Prof. Yeh. Leading a team of students from Department of Electrical Engineering and Department of Computer Science & Information Engineering, they created the first-ever multi-student social gaming platform in the world that can be used for general courses. Prof. Yeh initially used PaGamo in his "Probability" online course. Now, it is used by thousands of teachers in the world on various subjects.

As the founding Executive Director of NTU MOOC Program, Prof. Yeh was devoted to building team and the program from the very beginning. His "Probability" course on Coursera was the world's first Chinese-taught MOOC course. Prof. Yeh's course drew a record number of over 60,000 students from around the world. No other engineering professor in Taiwan has been able to break this record.

As MOOC Executive Director, Prof. Yeh led the team in the production of the four courses (including "Probability") that were ranked among the top four courses offered by Coursera, with the most number of students from the Chinese world. Coursera is the largest MOOC platform in the world, an online educational platform that offers free courses taught from the world's top 100 universities. Anyone from any part of the planet can register and attend a course on this platform. Due to the great success of NTU MOOC led by Prof. Yeh, he became the first NTU professor to be awarded the Super MVP Manager of the Year of Taiwan, the most prestigious award for managers in Taiwan.



## Flip the teaching to let students take the initiatives to learn

His countless innovations and record-breaking achievements have not drawn Prof. Yeh from his educational goal. "Our experiences just show that students can still have motivation to learn," he says. "As long as we find the effective methods and tools to teach them." Conventional teaching methods are difficult to motivate young people who have grown up in the Internet era. This is why as early as 2010, Prof. Yeh started to create new teaching methods and through years of extensive experiments, came up with the BTS Teaching Method. It radically overturns the



old model of the teacher lecturing in front while students passively sit and listen to the lecture.

The BTS Teaching Method has all kinds of teaching designs to let students take the initiatives in learning. For instances, let students design their own homework problems to challenge their peers, let students comment on each other's homework so they can learn from each other, as well as building their sense of accomplishment. The BTS Teaching Method helps teachers get their students motivated and engaged to learning.

Ten years ago, the National Taiwan University established the Center for Teaching and Learning Development (CTLD). Six years ago, Prof. Yeh was appointed to be the Associate

Director of CTLD. In that position, he actively promoted the concepts of innovative teaching among college professors. "I soon realized that university education should not be the sole target of educational reform; it should start at the primary and secondary levels," he says, "the sooner we get rid of the spoon-feeding system, the sooner we can nurture the young talent for the future."

## Light up the Passion and Build up the Bottom-up Momentum for Education Reform

Starting from three years ago, Prof. Yeh has been giving more than 300 talks all over Taiwan and Asia on his BTS Teaching Method. "My job is to light up teachers' passion for better teaching," he says. "The truth is, there are now many primary and secondary school teachers in Taiwan that have progressive ideas of education and the passion to implement those ideas." In his talk on Sept. 28, 2014, a record high attendance of 2,236 education personnel attended the talk voluntarily on Sunday. Prof. Yeh's talk encouraged more and more teachers to host their own teaching workshop to improve their own teaching. "Education reform used to be top-down," says Prof. Yeh. "It was driven by policy makers; but now it's bottom-up. The clamor comes from the schools themselves, and that is a lot of power."

As teachers' champion who tried hard to help more outstanding teachers get recognized by the society, Prof. Yeh's efforts made his fellow educators feel that they are not alone. His passion for reform has influenced countless teachers. One of them is Shi Xinyuan, a primary school information science teacher. "Education reform is not just another educational concept," Shi says. "It is a social movement to integrate numerous individuals' efforts to make our society better. The journey is tough and lonely, so we need a guide. Prof. Yeh has always been there for us to show us the way forward." For Shi, Prof. Yeh is the good friend who encourages everyone never to give up.

Three years ago, Shi wanted to use digital technology to motivate his students. But the

initial fervor died down and students soon lost interest. Not being able to meet his own expectation, Shi was disheartened at the time. "I wanted to give up. Yet, when I saw Prof. Yeh on TED Talks, he injected vigor into me." Yeh was giving a talk on "Beyond Education: The Online Learning Revolution."

"In that talk, he invited some students to join him on stage. They were the team who helped develop the online learning program. They are the hope of Taiwan's future." Shi was inspired by the thought that a country's future and a teacher's sense of accomplishment come from our own students. "How could I, a teacher, give up? So I decided to work hard for my students. I would follow the lead of Prof. Yeh and keep up the fight."

Since then, he has spent many hours and much effort to re-invent his teaching style, to overturn the old model. "I was really honored when I finally met Prof. Yeh. We became friends and we started to call out to others to join us in this journey." The spark that Prof. Yeh ignited has set the whole communities ablaze. He wrote a book "Teaching for the Future" with tens of thousands readers, including teachers and parents, to a greater awareness of the issues.

The BTS Teaching Method has not only caught fire in Taiwan. It has spread to Mainland China, Singapore, and Australia. In 2014, Coursera invited Yeh to demonstrate his innovation in the Coursera Conference. Prof. Rick Levin, CEO of Coursera, and the former president of Yale University has invited him to develop a similar course in English for flipped classroom teaching.



## Entrepreneurship with Young Talents

Prof. Yeh believes in the unlimited potential of young people. “Some students are truly gifted. After graduation, seeking employment in a large corporation should not be the only option; they could start up their own firm and fulfill their dreams,” he says. But it is challenging for young people to start up on one’s own. So Yeh set up a start-up with some of his students. He wanted to build up their confidence through the experience. “A teacher should be a pillar of strength and I wanted to set a good example,” he says, “and transform an idea into a start-up.” This was BoniQ, a new start-up in the EdTech market that he set up with his students. The idea was to enlarge the influence of PaGamO.

For his students, Prof. Yeh is the power that drives their creative energies, the pied piper who leads them along the untrodden paths of technological entrepreneurship. “He is quick to experiment with new ideas,” says Lin Hao-Zheng, one of Yeh’s team members, “For Prof. Yeh, doing is the first step to succeeding; besides it is the only way to gain the real knowhow.” Lin was part of the team that developed PaGamO and is Taiwan’s Rubik Cube title-holder.

“Prof. Yeh loves to move in different fields and to pop up new ideas. He enjoys interacting with young people and spends time listening to what we have to say.”

With his revolutionary way of thinking, Prof. Yeh has released the entrepreneurial spirit of college start-up. He has also succeeded in getting Foxconn to invest 6 million USD in BoniQ’s Series A venture capital funding. Their teaching technology has also been used by the faculty of Ivy League university. This is very rare achievement among the EdTech companies in Asia.

The market for educational digital gaming is still an immense unexplored market. Prof. Yeh is the first to launch such product by developing the world’s first multi-student educational gaming platform that accommodates countless of players. He has brought Taiwan into the global limelight. His intense interactions with other global pioneers and leaders of EdTech have enabled him to acquire leading edge knowhow that he has then introduced to Taiwan to help our EdTech industry grow.

“By leading young people along the path of entrepreneurship, we hope to create more start-up stories for other young people,” he says. “With our own experience in the journey, we hope we can let more young people know that life is full of choices and entrepreneurship is a valid choice. I would also like to see more teachers and students become entrepreneurs to transform the industrial landscape of Taiwan.”

## Keep your eyes on what lies ahead

Innovation within an existing system is difficult. One needs to destroy stereotypes and remove all kinds obstacles one by one. Yeh always believes that “You have to focus on your goal and not disturbed by other voices that could keep you from moving forward.”

“Understanding your strengths is the first step to determine your own goal. Then you have to objectively identify the needs of the world, i.e., what is lacking, what needs improvement.” Through the process, Prof. Yeh has long determined that education reform was his calling. “Education is the ultimate solution for us to build a better society.” Prof. Yeh firmly believes so, and he will continue to devote himself to the mission.



## Benson Yeh

Year of Birth : 1974

Highest Degree Attained :

University of Michigan, Ann Arbor, Ph.D.



### ■ Professional Background

- Professor at the Electrical Engineering Department of the National Taiwan University
- Executive Director of NTU's Massive Online Open Courses (MOOC)

### ■ Other Awards Received

- The first in Taiwan to lead his students to set up a start-up and to set a record in venture capital funding for that start-up
- The first professor in the world to lead a team of his students to win the Wharton-QS Education Innovation Award
- The first professor in the world to teach a Chinese course to tens of thousands of online students on the Coursera platform
- The first in Taiwan to design an experiential method of teaching that enabled primary school students and university students to compete in making presentations for final exams.
- The first professor in the world to bring together a record number of over 50,000 students from around the world to compete in an online game as part of a MOOC
- The first professor in Taiwan to lead a team of students in writing and publishing the popular science book "The Probability of Being Stunningly Attractive," thus integrating mathematics with literature

### ■ Personal Track Record

2010	National Taiwan University Excellent Teaching Award
2013	National Taiwan University Excellent Mentor Award
2014	As MOOC Executive Director, winner of the 2014 Super MVP Manager award The first recipient of the E-Learning award from Wharton-QS "Reimagine Education" for his PaGamO gaming and e-learning APP The first recipient of the Overall Award from Wharton-QS "Reimagine Education"
2015	National Taiwan University Excellent Teaching Award National Taiwan University Excellent Social Services Award "Teaching for the Future: Yeh Bing-Cheng's BTS Teaching Method" was listed among the ten most influential books in Taiwan for 2015



# Talent Cultivation

## Creative Value

### Hsieh Jung-Ya

## A Legendary Designer out to Change the World

***Among all the Chinese designers in the world, Hsieh Jung-Ya stands out. In twenty years, he has received over a hundred global design awards, an expression of the esteem he enjoys in the international community of designers.***

The awards include iF and Red dot of Germany, Idea of the U.S., and G-Mark of Japan. They have served to spotlight the quality of his works and have brought recognition to Taiwan. Besides his many accolades, Jung-Ya has taken on the mission of integrating Taiwan's manufacturing power with his design creativity. His ultimate objective is to help revive Taiwan's economy. This is something that he could easily accomplish. After all, he is also an entrepreneur and has the talents for great endeavors.

"My designs all reflect the needs that I perceive in others; I believe that the design process helps solve social and economic problems," he said. This is the attitude that imbues Jung-Ya's world of creative design.

His ability to change the world can be seen in the products he has created. "SpreadTHAT," is a simple butter knife that harnesses the heat from the user's hand and from the environment and transmits it throughout the cutting edge. No more struggling to spread cold butter on your breakfast toast. SpreadTHAT melts the butter as you spread it. Now, the way the world spreads butter has changed, thanks to this revolutionary creation.

In 2009, he established GIXIA Group and in 2014, GIXIA Life that developed electronic utensils under the brand name THAT. SpreadTHAT was one of the creations of Gixia Life.

The products that this new outfit launched can be described as cutting edge in terms of technology. MeltTHAT is an ice-melting board, ScoopTHAT's heated ring makes



it easy to scoop up your favorite ice cream, and HeatTHAT warms up your drinks and other liquids. These consumer products have become popular because they solve many small problems that people face in daily life. In 2015, the Chicago German tableware manufacturer WMF Group gave these Gixia Life creations the “Best Product Series” awards and the “Best Display” award.

— Guiding Idea

***Seek Beauty by fulfilling your role and responsibilities in life.***

## Design ideas brought to life by Taiwan's manufacturing power

"We need to be keenly observant and sensitive to problems and then have the ability to give concrete solutions to solve them," said Jung-Ya. One also needs to be like a sponge in absorbing knowledge to find those solutions. "I enjoy learning from experts in various fields; I find ways to always interact with them." The inspiration for SpreadTHAT in fact came from Jung-Ya's previous interaction with technical designers of light emitting diodes and central processing units.

Maximizing Taiwan's manufacturing capabilities to give life to his design ideas, Jung-Ya endeavors to understand the rules of the manufacturing industry. This enables him to communicate with manufacturers in their own language. Arriving at a consensus of what needs to be done is a painstaking process. "I had initially wanted to set up my base in the central part of Taiwan," he said, "because it has a strong manufacturing industry."

"I also wanted to fully understand the OEM technology and business model of SMEs and eventually arrived at a thorough understanding of the manufacturing process. Many designers do not have this grasp of how things are made."

In the process of learning the technology and materials used in the production cycle, Jung-Ya also learned about plastic injection, precision metals, leather, textiles, and carbon fiber. Impossible design concepts suddenly became possible. This helped traditional ODM firms to become OEMs and to even develop their own brand names.



## Design transforms OEMs and ODMs

One example of this is Charder Electronic Co. Ltd., the maker of a Jung-Ya-designed baby scale that has a non-slip surface and cradles infants in a manner mimicking a mother's arms. The scale won the iF International Design award and helped Charder transition from an OEM to an ODM company.

The Flashlight with Quick Connector for bicycles won the iF award, enabling Infini to win a contract with Raleigh International of the UK. Originally a small family-owned factory, Infini has stamped its own name on the flashlight that is sold throughout the European market. Infini



is now known as an innovative bike light in that market. These are just examples of how Jung-Ya's ability to integrate creative design with technical skill have been the touchstones for many SMEs to reinvent themselves.

"We need to link up with various Taiwan industries and save them from the fate of low-profit manufacturing," is how he explains his mission. He draws his strength to carry this out from the support of so many SMEs and from the many awards his designs have won. Part of his mission is to inject new life into old products. By 2015, his designs had already won hundreds of awards, nine of them gold awards. Already the most awarded among Chinese designers, Jung-Ya is still raising the bar for the quality of his creations.

In April of this year, Gixia Group entered into a cooperative venture with Green Energy Technology (GET), a manufacturer of multi-crystalline solar wafers based in Taiwan and China. They used waveguide material to develop light-weight solar panels whose design won the 2016 iF and Red Dot awards in Germany and took Green Energy to the ranks of international solar energy providers.

"These are revolutionary solar panels that weigh no more than 9 kg while most weigh over 20 kg," said Jung-Ya. "However, they raise the conversion efficiency of light, leading to a variety of applications for architects and designers."

The profile of its products defies classification



German Design Award  
SPECIAL MENTION 2015

Sonic MAZE  
www.sonic-maze.com

German Design Council

GOOD DESIGN AWARD

FATIMA Electric Lock  
GOREA  
Anglo-Thai

It is in fact a provider of integrated technology services. In its drive to find a niche in practically all industries, Gixia designers need to store up much Domain Knowledge in the industries they enter. They need to reach the top ranks in terms of creativity, design, technology, and manufacturing resources. They cannot afford to compromise with old thinking.

## The Internet of Things (IoT) is the future

“I think that reason and sensitivity go together.” Jung-Ya believes that design should not be theoretical. It should be pragmatic. It should reflect reality, only then could it have the real power to change things. It is this mindset that has drawn many enterprises to cooperate with him.

Like many people, company owners learn about Hsieh Jung-Ya by reading magazines and newspaper articles. They are impressed by his achievements and awards. But only after personally speaking with him are they infected by his warmth and hospitality.

“In 2006, Jung-Ya won three international gold awards for design. He was lionized by the press,” said Jian Dawei, Jung-Ya’s business partner of ten years. “I was introduced to him and we had a long chat about design in his private workroom; I will never forget the passion in his eyes as he spoke about design and how it could change the world.”

“From that moment on, I knew that I had found a comrade-in-arms in the design field.”

Hon Hai Precision Industry Co. is a Taiwanese multinational engaged in electronics contract manufacturing. Its executives discovered Jung-Ya in magazines. They decided to enter into a joint venture with Gixia Group and established SquareX with Jung-Ya as chairman and as Hon Hai’s innovation strategy consultant. Their partnership led to Hon Hai developing its own brand name. Together, they developed the concept of Wall Economics.

This concept seeks to design the walls and floors of homes with devices connected to the Internet and that could control the lights, the de-humidifier, sound equipment and other home appliances. It is an Internet of Things (IoT) system.

“It’s a big challenge to install such a system from the floor to the walls; we need to integrate design, technology and manufacturing,” said Jung-Ya. Succeeding in this venture is yet another burden that he has cast upon himself. “This will show that it is possible to marry design with contract manufacturing,” he said. “This cooperative venture will destroy stereotypes.”

His unflinching resolve to face up to challenges has gained the admiration of many. “I’ve worked with him for ten years, started new ventures with him, and worked with our team to win three gold awards,” said Jian. “But our path was strewn with difficulties, and I’ve never seen Jung-Ya depressed nor complain; he was always optimistic and inspired our team with his positive outlook. He encouraged everyone to move on.”



## Turning the Impossible into Possible

Gifted with an ability to enthuse others to dream, Jung-Ya is quick to challenge anyone who says “it can’t be done.” He personally gets involved in efforts to break through bottlenecks during the creative process and succeeds in turning the impossible into possible. He does this by building confidence among his team members, gradually injecting positivity into their DNA. Such a management style has led to countless cooperative ventures with enterprises.

“We have strong manufacturing capabilities,” said Jung-Ya. “Manufacturers just need to open their hearts and embrace the values that drive design. Taiwan should have the right to decide on product specifications.”

When global company owners and executives consider the abundant design talent in Taiwan, the first name that comes to their minds is Hsieh Jung-Ya. In 2005, when he won five iF design awards, he made the Taiwanese team place second among others in the world. In 2006, when he won iF, Rd Dot, and IDEA gold awards, he became a legend.

This year, he was chosen to form part of the panel of judges for the Good Design Award (known as G-Mark), an international design prize. It was jointly founded by Japan’s Ministry of Economy, Trade and Industry as well as the organizers of Germany’s Red Dot and iF, and Idea of the U.S. G-Mark is one of the top four design awards in the world. The award is celebrating its 60th anniversary this year and the first time it has invited Taiwanese and Korean designers as judges. This proves that Jung-Ya is indeed a fast rising star in the design world.

He has written down his successes, failures, beliefs, and struggles in the book “Breaking.” One of his objectives is to tell young people looking to enter this field that indeed design could change the world. “You need to see the value inside you,” he wrote. “Self-reliance is the path to glory.” He hopes to summon others to join the ranks of his profession and build a platform where creative designers, technology developers, enterprises, and government agencies could work together to achieve maximum benefits for all.

“Transforming Taiwan needs to rely on its strong manufacturing base, having more people enter the field of design, and company owners understanding the value of design,” he said. ing more people enter the field of design, and company owners understanding the value of design,” he said.





## Hsieh Jung-Ya

Year of Birth : 1967

Highest Degree Attained :

Master's in Design from Daye University



### ■ Personal Track Record

From 2003	He took part in international design competitions and has won 112 awards, nine of them gold. In 2006, he won three highly prestigious gold awards, and in 2011, he won the same three gold awards again, an unequalled honor. His achievements have won the admiration of the international design field and enabled Taiwan to gain recognition in the global arena.
2006-2009	<p>In 2006, he won seventeen international prizes, three of them first prizes. This was a milestone for Taiwan in the industrial design field. For this, he was awarded the "Special Contribution Award."</p> <p>In 2006, the Industrial Technology Research Institute invited him to relocate his office to the ITRI compound. His company thus became the first nationally recognized R&amp;D firm in ITRI and cooperated in the commercialization of technology. He was part of the team that developed a vision for the future of industrial design. He bridged the huge gap that had always existed between technological R&amp;D and manufacturing and raised the level of overall domestic investment in the results of technological R&amp;D. In four years, he helped ITRI win twenty international awards and raised the level of design creativity to international standards. In 2009, he supported ITRI in establishing the Deconology Alliance.</p>
2009	His concept of "overall design" is based on the needs of the user and the market. He sought to offer innovative services that were interconnected "like the sleek body of a dragon," as he once said. Those in the services and commercial industries benefitted from this concept and increased their brand name values. In 2009, he led a team to set up the 7-11 CITY CAFÉ, a next-generation coffee shop that shifted the design focus from the products to the services.
2010	In 2010, Jung-Ya established the Gixia Group and won the prestigious iF award. It was the only design company in Asia to have won such an award. In 2014, he transformed Gixia from a traditional design company into a Design R&D organization. At the same time, Gixia started to develop its own brand name.
2012-2014	He established GIXIA Life that developed electronic utensils under the brand name "ThatInventions!" At the Chicago Housewares Show, the German tableware manufacturer WMF Group gave the Gixia Life creations the "Best Product Series" awards and the "Best Display" award.
2015	Together with Hon Hai Precision Industry Co., he set up SquareX and developed the concept of Wall Economics. This completely new idea integrated the creative design resources available in Taiwan with this island's strong manufacturing capabilities. As Hon Hai's innovation strategy consultant, Jung-Ya led the development of Smart Home designs targeted at the world market.
2015	He published the book "Breaking" where he wrote down his successes, failures, beliefs, and struggles throughout his twenty-year design career.

## ■ Professional Experience

- Design Engineer at Acer Computer Inc.
- Part-time Asst. Professor of Innovative Design at the Taipei University of Science & Technology
- Founder & Design Director of Duckimage
- Founder & Creative Director of GIXIA Group
- Chairman of GIXIA Life Co.
- Chairman of SquareX Inc.

## ■ Other Awards Received

iF, Reddot, and IDEA gold prizes for 2006 and 2011, unmatched in winning three awards in the same year and the only Chinese designer with such an achievement.



## Youth Category

### Service Innovation

## Shen Hsin-Ling

### Harnessing the Life-force hidden in Society's Grassroots

*Shen Hsin-Ling was only 11 years old when she was featured in a magazine. Since then, newspapers and magazines have reported on her innovative work to help the underprivileged and to sow hope in Taiwan society.*

*Throughout her student life—from primary school to her present doctoral studies at the National Taiwan University College of Management—she had always maintained the belief that innovation knows no age limits. Neither does it respect social classes nor gender. And you don't need to belong to a global outfit to express your innovation.*

*Hsin-Ling used her personal computer to set up an online store to help impoverished farmers sell their products. The spirit behind her innovation was her discontent at seeing fruit farmers kept in poverty by the low prices of their harvest. So she began to move and spread her message first in Taiwan and later to the world.*

"The starting point of my journey was my desire to solve a problem," she said. "And I saw that men and women at any age could keep on learning with a computer connected to the Internet." For her, it was a simple matter of utilizing the resources that are now available to everyone. But since she turned eleven, Hsin-Ling has been concerned about social justice and welfare and wanted to do everything she could to realize these ideals--rare among people of that age.

She grew up in Yunlin in a poor family. In elementary school, she helped her parents who worked hard as street peddlers. They only sought to have a place to stay and food to eat. But she never used childhood poverty as a pretext for laziness and passivity. It became the fertile soil in which her maturity grew. Her contact with the personal computer and Internet connectivity led her to firmly resolve to improve their condition and to help others.



"After attending computer class, I would always borrow one from the teacher," she said. "I had a faint understanding that a computer could do so many things. I asked my mother for one." Looking back, she realized that her parents found it difficult to grant this request.

— Guiding Idea

- *Innovation is helping others and not being better than others.*
- *Innovation can solve the problems of this world.*
- *We can never see the future, but we can make the future with innovation.*

## A Mother who believed in her Daughter

Street peddlers could only encounter mockery and ridicule when they borrowed money from everyone just to buy their daughter what she desired. "You can hardly make a living and you want to buy a computer?" But her mother Xu Lijuan understood her daughter's heart. She sold her only beloved jade pendant to buy her a second-hand computer. She could not foresee that it would change their lives and those of many others.

"I simply believed in her," said Xu. "She was our only child and I understood her; it was an inexpensive toy for which I sold a mere stone. She hardly asked for anything. I knew she would forever cherish a computer and will spend hours playing with it." When years had passed, her mother realized that she had done the right thing.

For years, Hsin-Ling's grandparents labored at cultivating pomelo and struggled to sell them for a living. Seeing how little they earned, she set up an online store for them. She was just eleven years old. She convinced her grandparents to get other pomelo farmers to sell their products on her online platform. Eventually, ten joined her online cooperative. This was how the "Dadouliu Pomelo Online Outlet" was born. By 2015, the online outlet had already helped hundreds of farmers sell over 1.5 million various agricultural products online.



## Performing Miracles with a Personal Computer

She didn't stop here. She kept on realizing her conviction that the willingness to learn eventually leads to knowledge. Childhood never passes for those who are always willing to study new things and solve existing problems. At 13 years old, she started reading books on business management and in 2002, she set up her own small firm with just NT\$8,000 capital. It was an online retail store with various products.

She succeeded and helped revive her parents' weakening tailoring business. That was when their lives underwent a radical change. Gone were the days of scrounging for money to pay the rent. No more nightmares of having to repay a debt. Xinling was then a junior high



school student. Now at 27, she has become the breadwinner. As director of Futai International's online commercial services, she has increased sales from a monthly average of 700 to 30,000 cases.

With her computer skills, Hsin-Ling redeemed village farmers and her own family from a life of poverty. Her vision was not simply that of increasing her own income, but that of "helping as many people as possible." Her core value has always been to "do unto others what you would want them to do unto you," or "putting oneself in the shoes of another." She understood the needs and aspirations of the underprivileged.

"My family was very poor when I was a child," she said. "I could not receive pre-school education. I grew up in a Yunlin village

surrounded by children from single-parent families or whose parents were unemployed; they could not afford to go to school."

"I so wanted to help them, to remove the education gap between cities and villages." Coming from a disadvantaged background herself, Hsin-Ling deeply felt the misfortune of her peers. In 2003, she single-handedly set up the Anan Free educational Website (<http://ananedu.com/>). She spent sleepless nights compiling educational material for this website. She wrote computer programs, built databases, spent much time and some money to overcome snags. In the end, the website had hundreds of thousands of educational material for junior and senior high school students. Today, ananedu.com has received 160 million visits and has gained fame on both sides of the Taiwan Strait.

The websites that helped her parents, her grandparents, and others badly in need of a helping hand reflect the firm resolve and clear thinking of this young woman. “When I decide to do something, I don’t let myself find excuses not to go ahead. No resources? Then I look for them,” she said.

After setting up [ananedu.com](http://ananedu.com), Hsin-Ling organized a summer explanatory meeting with students. “Everyone told me that it would be expensive to rent a venue,” she said. “So I spoke to the principal of a school in Yunlin and convinced him of the importance of such an activity; he let me use a venue for free. Seventy-five underprivileged children joined that activity.”

She was one of the winners for the 8th Arts and Business Awards. The judges decided to give it to her because of the acclaim everyone gave her. The decision stated: “With very limited resources, she provided means for the people around her and positively influenced their lives; she popularized Art in the most underprivileged places.”

At the age of 14, she organized the Formosa Year of Youth Creativity Exhibition. The vision behind this exhibition was “the world is immense, and so is youthful creativity.” She won the award for this. She raised funds for 112 young people to exhibit their creations. She also started the “Let’s Eat Oranges” activity. The idea was to contribute NT\$1 “to give a voice to one mandarin orange.” This eventually led the government to set up the “95 Mechanism” that sought to stabilize prices three times for cabbage, banana, and persimmon. It was essentially a mechanism to protect the rights of farmers whose sales incomes were collapsing.



## The Power of Service can change the World

Hsin-Ling promoted the “I Love my Village Digital Dictionary” activity that introduced the use of 1,638 electronic dictionaries to some aboriginal villages, thus bridging an information gap. She also organized the “Free Eyeglasses” activity for children of single parents, foreign spouses, and disadvantaged families. She sought to protect new immigrants with the “Taiwan Learning Network for Foreign Wives.” It was a free online learning site for foreign wives of Taiwanese men, an initiative that helped build bridges across both sides of the Taiwan Strait. Several countries had invited her to give lectures under the theme: “The Power of Service to Change the World.” She gave over 500 lectures on innovation to groups in the United States, India, Hong Kong, Macao, Guangzhou, and Taiwan. More than 350,000 people attended her lectures.

In any undertaking, human effort is ultimately the decisive factor. Hsin-Ling has constantly engaged in projects that many would consider a mission impossible. In five years, she traveled to Penghu, Jinmen, Matsu, Orchid Island, and Green Island and took more than 300,000 photos of ordinary people. She gave the simple name “Taiwan Photos” to that online photographic exhibition ([i2taiwan.com](http://i2taiwan.com)). The



site has received more than 30 million visits from the U.S., Australia, India, Japan, Hong Kong, Macau, and Taiwan.

In recalling her photographic adventure, she said: “I remember poor people scavenging for food on an empty street and a grandma waist-deep in a swamp. She smiled as her hands bled, scratched by oyster shells. What’s a little blood for the tuition fee of my grandchild, she said. I think of the life stories of grandmas and grandpas in their eighties bent over working in a field.” For her, the images and the stories behind them bubble with a strong life-force.

What is the essence of her innovative spirit? “I seek innovation from the grassroots—from the base of the pyramid, to experience the myriad conditions at that level, and to give solutions to

problems. It is an innovation that grows from the fertile soil of society,” she said.

News of Hsin-Ling’s social projects in Taiwan’s farming and fishing communities has already spread beyond this island. She has received invitations to speak at the Google headquarters in Silicon Valley, Stanford University, Beijing University, City University of Hong Kong, and Macao University of Science and Technology. She was the recipient of the Daughters of Formosa award and represented Taiwan in an NGO forum in Kampuchea to discuss the paradigm shift of social entrepreneurship. She attended the 49th Conference on the Status of Women at the United Nations and engaged in discussions on the economic conditions, micro-enterprises, and service innovations for women.



## Innovation: The Key to turn the Tide

Hsin-Ling was among Taiwan's Top Ten Philanthropists and was awarded the Presidential Education Award. She was also counted among Taiwan's Ten Outstanding Young People. "Winning an award is not the most important thing; these awards give hope to the young who are unsure about the future, that together we could build that future," she said. Despite her impoverished origins, lack of resources and daunting challenges, Hsin-Ling remains committed to inspiring the youth.

She knew how to use technology to overcome her many challenges and made full use of the power of the Internet. Many people suggested that she take up information engineering. "There are many outstanding information engineers in Taiwan," she said. "They don't need me; besides technology was just my tool. I want to help solve social problems so I want to understand society better."

She enrolled at Tsinghua University's Department of Humanities and Social Sciences to gain a holistic understanding of the complete person. She wanted a more structured approach to gain a deeper knowledge of the world and thus address deeper problems. After graduation, she obtained a master's degree in journalism from National Taiwan University and she is now doing a doctorate in NTU's College of Management.

"I studied those three very different fields to gain the tools I needed to analyze the main issues that affect land justice, distributive justice, income discrepancy, farmers' production and marketing imbalance, and social class mobility," she said. "These are the areas where I will work for change."

"For 15 years, I have followed the path of service



innovation. I certainly can't live up to everyone's expectations, but I will keep on the same path for the next 15 or 30 years."

When she received the Presidential Innovation Award, Hsin-Ling confirmed her decision to follow the path that she started on at 11 years old. "Sometimes before falling asleep, I would ask myself if it was time I gave up trying to serve others. But I remember the disadvantaged, those who have unstable work in declining industries, the poor helpless farmers, the children who live in mountains or on isolated seacoasts, the outcasts of society who at this very moment struggle to make a living. They are the power that drives me to never give up."

"There is no turning back. The road only goes forward towards 'innovation,' the key to eventually turn the tide."

## Shen Hsin-Ling

Year of Birth : 1989

Highest Degree Attained :

Currently doing her doctorate at the National Taiwan University College of Management



### ■ Professional Background

- Director of Futai International's online commercial services [www.futai6.com](http://www.futai6.com)
- Set up the "Dadouliu Pomelo Online Outlet" (<http://anan6.webnow.biz>)
- Set up the free education website (<http://ananedu.com>)
- Founded the Peace Free Teaching Website (<http://ananedu.com/hope2012>)
- Founded "Taiwan Photos," an online photographic exhibition of Taiwan ([i2taiwan.com](http://i2taiwan.com)).
- Online community chief of the Sunlight Generation Free Education Site ([www.ananedu.com/sw/](http://www.ananedu.com/sw/))
- Founder of the Formosa Youth Creativity Online Exhibition ([www.ananedu.com/formosa/](http://www.ananedu.com/formosa/))
- Set up the "Taiwan Learning Network for Foreign Wives" ([www.ananedu.com/love/](http://www.ananedu.com/love/))
- Organized the "Free Eyeglasses" activity for children of single parents, foreign spouses, and disadvantaged families. ([www.ananedu.com/eye/](http://www.ananedu.com/eye/))
- Promoted the "I Love my Village Digital Dictionary" activity that introduced electronic dictionaries to some aboriginal villages

### ■ Personal Track Record

2001	Set up an online sales platform for farmers
2002	Set up the free education website ( <a href="http://ananedu.com">http://ananedu.com</a> )
2003	Depicted the images of Taiwan through "Taiwan Photos," an online photographic exhibition ( <a href="http://i2taiwan.com">i2taiwan.com</a> ).
2005	Started the "Let's Eat Oranges" activity. The idea was to contribute NT\$1 "to give a voice to one mandarin orange."
2006	Founded the Formosa Youth Creativity Online Exhibition
2008	Promoted solutions for the Kampuchea Out-of-School Youth Program
2012	Implemented "HOPE1132," a series of talks in remote villages schools
2015	Established "Taiwan 6.0 Hope Engineering"

## ■ Other Awards Received

- Innovation Prize for editing 13 textbooks primary and secondary students
- First Special Prize recipient of Social Contributions Award for an NTU student
- Chosen as one of Taiwan's Ten Outstanding Young People for 2012
- Presidential Education Award for 2005 and 2011
- Outstanding Information Talent Award from the Executive Yuan in 2003



National Library of publication catalog (CIP) data

The 2nd R.O.C. (Taiwan) Presidential  
Innovation Award Report  
First Edition--Taipei City:Department  
of Industrial Technology, Ministry of  
Economic Affairs, 2016, 11  
ISBN 978-986-05-1482-7  
1.Industry 2.Creation 3.Taiwan

## 2<sup>nd</sup> Republic of China (R.O.C.) Presidential Innovation Award Report

**Publisher** : Ministry of Economic Affairs

**Address** : 15 Fuzhou St., Taipei, 10015, Taiwan, (R.O.C.)

**Tel** : (02) 2321-2200

**Production** : Chinese Association For Republic of China Industrial Technology Promotion Association

**Address** : 11F.,No.149,Sec.3 Xinyi Rd., Taipei City 106,Taiwan(R.O.C.)

**Tel** : (02) 2325-6800

**Author** : Yu-Feng Chen

**Photography** : Shih-Hao Tsai

**Publication Date** : Nov. 2016, first edition

**ISBN** : 978-986-05-1482-7

**GPN** : 1010503193

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The 2nd R.O.C. ( Taiwan ) 

Presidential Innovation Award

ISBN : 978-986-05-1482-7  
GPN : 1010503193



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