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定靜而後動

張虔生

深思回饋的
燦爛人生



日月光集團董事長 張虔生

*Think before You Act.
Reflections of
a Magnificent Life.*

**定靜而後動
深思回饋的燦爛人生**

撰文 · EDDIE YUAN 攝影 · A-NEW

「創新，人生必須不斷學習」世界級 IC 封裝測試企業，日月光半導體創始人張虔生，以其經商的智慧，一斧一鑿刻劃著事業的布局發展，豐厚的人生閱歷令他提醒大家：資訊爆炸的時代，更要用心思考。"Innovation. We should keep learning throughout our life." These are the words of wisdom from Jason Chang, the founder of Advanced Semiconductor Engineering Inc. (ASE), a world class semiconductor assembly and testing company. Describing to us the development of his business empire and speaking from rich life experiences, he reminds us all that, "in the expanding information era, we need to think even more deeply."

有句台灣俚語說：「生意囡仔不好生」，在日月光董事長張虔生身上卻多了一樣：「生意媽媽很難得！」原因是，仔細細究張虔生的事業歷程，來自媽媽的影響之深不可言喻，甚至可以說，沒有媽媽也許就沒有今日的日月光。

張虔生早在 60、70 年代就看好高科技產業的前景，1984 年成立「日月光」，將家族經營的地產業轉向新興電子行業，從初始的一、兩百多人到今天七萬名員工，在全球半導體整合趨勢中，日月光從原本僅是一間沒沒無名的半導體封裝測試廠，2004 年成為全球第一大的封裝與測試服務供應商。

有著「銅線之父」之稱的張虔生帶領日月光集團更早在 2005 年初期，金價預期快速飆升，即開始投入銅打線技術的製程布局，當金價自 2007 年開始飆漲至 2011 與 2012 年到達高峰之時，成功地提供客戶以銅打線取代金打線的替代解決方案為半導體業帶來莫大助益。今年初，日月光半導體更在封裝製程上，突破傳統金打線，導入銅打線技術，大幅降低成本；這項卓越研究，榮獲 2014 年 SEMI 卓越貢獻獎殊榮。「說服客戶是最困難的部分，」當初為了降低半導體成本，發展出銅線替代，張虔生親上火線，承擔數億美元風險，全球跑客戶，並且要求月報，緊盯客戶轉換率，如今轉換率達七成左右，再一次印証他的眼光和魄力。在張虔生的全球版圖裡，著眼台灣與大陸之外，日月光也在日本、韓國、新加坡和馬來西亞等國布局。

媽媽是合夥人也是事業老師

成就今日「日月光集團」全球霸業，正是張虔生的智慧和不服輸的性格；他當機立斷、在商言商的風格，受母親張姚宏影影響甚深，善於趁勢崛起，不懂就拚勁學習。

「我跟母親最像的，就是不認輸的精神，」張虔生辦公室井然有序的桌面上，一幅母親張姚宏影的照片，常相左右。他與母親討論事業上的問題，「她也許不懂，但一定挺我」。

石油危機後，中東國家暴富，國際建設公司都進到沙烏地阿拉伯分食大餅；張姚宏影跟榮工處合作，也前進沙烏地阿拉伯接案子；但真正一炮而紅的是汐止山坡地開發案，橫跨二十期、四千多戶的伯爵山莊。一口氣推出幾百戶饒富異國風情的別墅大社區，與台北市公寓做出產品區隔，首創分期預售屋先例，是相當豪氣的投資。

張姚宏影的膽識與魄力還不僅止於此，張虔生回想當年碩士畢業剛回國，年輕氣盛地跟榮工處與美國 IT&T 合作，跑到沙烏地阿拉伯參加一個四十億美元的國際標案；花了整整一年時間，也投了不少錢，最後卻沒有拿到標案，張媽媽只淡淡的說，「沒關係，就當寫篇博士論文好了。」

張姚宏影對兒子的力挺與完全的支持，造就了今日全球最大封裝廠日月光。沙烏地阿拉伯之後，張虔生找人研究評估做電子

業，選擇投入封裝測試。日月光成立之初連虧三年，當時摩托羅拉還找張虔生表示要買日月光，賣掉可以獲利一千萬美元。但張媽媽力挺，決定把美國休士頓剛落成的一棟辦公大樓賣掉，損失一千萬美元，拿了錢回來救日月光。今天，日月光反而輾轉購併了摩托羅拉的韓國及中壢廠，「假如當時不立即做決定，就沒有日月光。」張虔生說，「她天生就是生意人，」而張姚宏影經常跟兒子講的一句話是，「要順著大環境走，堅持，但大環境不對，也要能當機立斷。」

SiP 系統封裝新藍海

從一家晶片封裝的低階供應商，成長為多晶片封裝、系統封裝和其它先進產品的高端開發商，張虔生建立起一個全球性帝國，他從小就喜歡挑戰第一，透過多層面國際集資管道、海外併購，張虔生成功將日月光打造成「全球第一」大的封裝測試廠。

洞察行動運算時代的來臨，張虔生說，新的產業路線與商業模式，「正朝向我們的專業領域在走，例如 SiP」。SiP 是日月光營運成長一張新的藍圖，智慧型手機及穿戴裝置為了達到輕薄短小尺寸，又要具備多種功能，更需要有省電特質，無論從產品的產能、設計、或是垂直整合角度來說，高階產品十分仰賴 SiP 製程；而日月光擁有全球最大產能，在封測市場也幾乎沒有競爭對手，幾乎通吃 SiP 市場訂單。張虔生分析，國際頂尖企業對物聯網 (IoT)、以及穿戴式裝置等 3C 產品輕薄短小又省電的需求甚殷，台灣在這方面很擅長、也很有機會；他看見了這一片新藍海，「我有信心，未來的改變將會非常快」。

張虔生跟母親最像的，就是不認輸的精神。



張媽媽說過的話言猶在耳，就如同一幅母親的照片，置放於張虔生辦公室裡乾淨整齊的桌面上，常相左右。

胸懷國際 憂心人才取得

跟隨張虔生已二、三十年的老部屬說，「老闆唯一的娛樂，就是工作。」工作是張虔生生活中最大的樂趣，即使為了健康每天繞著大安森林公園走一萬步的他，仍不忘以微信遙控全球布局。對整體產業未來，張虔生雖持樂觀看法，但也深感人才取得不易。「台灣要有移民政策，才能取得好的人才。」台灣市場趨近飽和，發展開始停滯，為避免與台廠相互競爭，日月光將事業版圖拓展至日本、歐美市場以穩固國際地位；此時，將低階製程部分移到大陸，在台灣繼續做較為高階的先進製程，才能持續攻佔日本與歐美的生意。

「但最重要的還是如何吸引人才，若人才的需求能被滿足，台灣絕對還有擴大發展的機會。假如台灣不開放環境，等於鎖住自己，當別人一起來，原有的領先地位馬上會被搶，屆時處境將更艱難。」張虔生分析說，當年日本鎖國的經驗帶給我們警惕，台灣產業一定得走出去，一旦本身發展停滯，遲早大陸一定會崛起。

「不要怕，愈開放才愈走得出去，假如永遠把大門關起來，怎麼成功？如今網路這麼發達，怎麼鎖得住呢？再不走出去，只會一天被邊緣化。」

深度思考 以回饋成就世界

經營龐大事業體，深思熟慮的定靜與判斷不可或缺，身處資訊爆炸時代，日理萬機的張虔生深有所感，他提醒大家別被太表層的事遮蔽，應多多用心思考，透過細膩過濾各種資訊並多角度思辨後再下定論。這樣的他雖然現在空暇時間變多，但只要一有事情，他永遠都會站在第一線，這不僅有助看清實際狀況，更重要的是，「最後的決定，就是責任的承擔」，張虔生用自己的肩膀接受部屬的犯錯。這正是他的生活哲學：喜歡創新，而人生必須不斷學習。

世界變化瞬息，過往看似不可能的事，越來越趨近可能，以後馬路上的車，也許會像飛碟一樣飛起來。面向未來，張虔生期

許自己「我能做的一天，日月光就會對社會有所貢獻，」回頭看著因為長期贊助溫州同鄉棒球王——王貞治而獲贈的一顆簽名球，默默投入公益事業的張慶生淡淡地笑了，少了一點口水，他要用回饋的心成就世界的美好，創造人生另一種非凡的價值。

There is a Taiwanese saying, 'It is hard to give birth to an enterprising child.' For ASE's Chairman Jason Chang, he adds, "It is even harder to be born to an enterprising mother." Throughout the course of Jason's business career, his mother has been the greatest influence. You can even say that, without his mother, there would be no ASE today.

In the 1960s and 1970s, Jason shrewdly identified a prospective growth in the high-tech business sector. With this vision, he established Advanced Semiconductor Engineering, Inc (ASE), in 1984 and diversified the family-owned real estate business into the emerging electronics business sector. Starting with less than 200 people, ASE now employs more than 70,000 people. In the global semiconductor industry, ASE was previously only an unknown semiconductor assembly and testing factory. By 2004, it had become the world's largest assembly and testing service supplier.

Within the electronics industry, gold wire is a major component in the manufacturing of IC chips. In 2005, as the price of gold continues to soar, Jason foresaw the need to offer an alternative metal to rein in the costs of manufacturing. The industry has already been experimenting the use of copper wire, but it has never been fully accepted as a viable and commercial solution. In a bold move, Jason started to campaign for volume production using copper wire bonding at ASE. Between 2007 and 2011, gold prices indeed soared and reached its peak in 2012. ASE's success in commercializing copper wire as a lower cost and viable alternative, won the company many accolades including the highly honored 'SEMI Award 2014' (www.semi.org). In recent years, Jason was aptly known as the 'Godfather of copper wire'. "Convincing customers is the most difficult part," said Jason. Jason devoted a lot of time directing the manufacturing operations and monitoring the customer conversion rates at the factory level. He personally embarked on a worldwide tour of ASE's customers to promote copper wire. ASE now has a 70% customer conversion rate to copper wire, which is further proof of Jason's skilled and analytical business judgement. Jason continues to set his eyes on global expansion not only in Taiwan and China, but also in Japan, South Korea, Singapore and Malaysia.

Mother as a Partner and a Business Coach

The ASE Group's rise to global dominance can be attributed to Jason's wisdom and unyielding personality. His decisiveness and strong business acumen is deeply influenced by his mother, Madam Chang Yao Hung-Ying. He has the unique ability to spot favorable opportunities. If he does not understand something, he will go all out and learn about it.

"I am most like my mother. We do not accept defeat." On the tidy desk in Jason's office, a pair of photographs of his mother are prominently displayed. He often discusses business issues with her. "She might not understand all of them, but she definitely supports me."

After the oil crisis, Middle Eastern countries suddenly became wealthy. International construction companies all went to Saudi Arabia to get a piece of the pie. Madam Chang too, collaborated with RSEA Engineering Corporation to venture into Saudi Arabia. However, her greatest success was the Xizhi hillside development project in New Taipei City, northern Taiwan, comprising of over 4,000 residences including hillside villas. The development was a game changer where large exotic villa communities were designed, constructed and sold as a luxury housing alternative to Taipei city's typical apartment dwellings. The Xizhi project also created a precedent in Taiwan's real estate industry by offering units for sale in multiple phases during the development.

Madam Chang's courage and boldness was further illustrated by Jason in an incident after his graduation from obtaining a Masters' degree. Young and full of vigor then, he collaborated with RSEA and American IT&T to participate in a USD4 billion international bidding project in Saudi Arabia. He spent a full year in Saudi Arabia and a lot of money but, in the end, did not win the project. Madam Chang calmly told him, "Never mind, just treat this as the tuition for your doctorate thesis."

The support that Jason has from his mother was a great motivating factor to ASE's global success today in the semiconductor manufacturing industry. After Saudi Arabia, Jason began to research and evaluate opportunities in the electronics industry, and he chose to venture into the IC assembly and testing sector. Initially, ASE lost money for three straight years. The US multinational company, Motorola had then approached Jason to acquire the loss-making ASE. A sale would have meant a profit of USD10 million. Instead, Madam Chang decided to sell an office building in Houston at a loss of USD10 million, and use the sale proceeds to save ASE. In a twist of fate, ASE ended up acquiring Motorola's factories in Chungli, Taiwan and Paju, Korea in 1999. "If she hadn't made an



immediate decision, there would have been no ASE," Jason says. "She was born a business woman." Madam Chang often gives her son one advice, "You have to adapt to the environment and persevere. But if the environment is not right, you need to be able to react decisively."

A New Horizon in SiP

Since young, Jason has always challenged himself to be a success in everything he does. From a subcontractor providing low-end IC assembly services to today's supplier of advanced multi-chip assembly, system-in-package (SiP) and other leading edge technology manufacturing, Jason has indeed built a global business empire. Today, he continues to seek international venture investments, mergers and acquisitions to successfully transform ASE into the world's premier IC assembly and testing service provider. Jason observed a new paradigm shift and business model in the era of mobile computing that is clearly heading into the direction of ASE's area of expertise such as the SiP. Developing a blueprint for SiP is ASE's strategy to capture a greater share of the burgeoning electronics market. Smartphones and wearable devices have an increasing need to be thinner, lighter, smaller and to consume less energy while also possessing various functions. The adoption of SiP in the manufacturing process has enabled ASE to expand on its IC assembly and test capabilities in shrinking chips, and integrate its expertise on logistical management of the myriad components on a small form factor. With the advent of the internet-of-things (IoT),

wearables and 3C products, the demand for portable, thinner, smaller and energy-saving technologies are increasing. This is an area where Taiwanese companies have the expertise that could support such new demands. Jason himself sees a new horizon for ASE's SiP and says, "I am confident that the market dynamics will change very quickly in the future."

The Challenges of Recruiting Talent in a Global Arena

A subordinate who has worked with Jason for almost 30 years says, "The boss' entertainment is work." Work is Jason's greatest pleasure in life. Even when he walks ten thousand steps around Daan Park for his health every day, he does not forget to stay in touch with his global network through WeChat. On the future of the entire industry, Jason maintains a positive outlook, but he also felt that recruiting talent in Taiwan remains a huge challenge. "Taiwan needs effective immigration policies to be able to recruit good talent." Taiwan's market is approaching saturation and development is starting to stagnate. In order to avoid competing amongst Taiwanese manufacturers, ASE expanded its businesses to overseas markets in Japan, Europe and America. To maximize operational efficiency, ASE's mature manufacturing processes are transferred to China while the company maintains its advanced and leading edge manufacturing processes within the island of Taiwan to better serve its global customers. Jason further exclaims, "But the most important thing is still about

Innovation. We should keep learning throughout our life.

how to attract talent. If the needs of attracting talent are met, Taiwan will have a better opportunity to expand its economy. If Taiwan does not come up with effective policies of globalizing, its leadership position will be jeopardized when others team up and challenge Taiwan. When that happens, it will be very difficult to overcome." In Jason's view, Taiwan's industries need to take the risks and step up in the global market. In this aspect, he sees China rising to the occasion with the many economic initiatives the country is undertaking. Jason advises 'Do not fear. Open up and you will not risk being marginalized.'

Think long and hard. Achieve Success and Give back to the World.

Critical thinking and shrewd judgement are a few key traits in managing a business of a scale as large as the ASE Group. In an internet era where information is so easily accessible and even as Jason is regularly kept busy planning and working on numerous business matters, he cautions us not to pass quick judgement simply based on the superficiality. One should spend the effort

and time to think about the issue, review through the information as well as look at the issue from all angles before coming up with any conclusion. Whenever a critical situation is present, Jason will immediately put himself in the frontline. This not only allows him to understand the situation first hand, but more importantly as a leader of the corporation, he feels responsible to shoulder the consequences of the decisions made. Jason also readily accepts mistakes made by his subordinates as his own responsibility. These are the philosophies he lives by and are ways to reinvigorate himself and to learn from every lesson in life. The world is changing rapidly. What we thought impossible in the past, are becoming a reality. The cars on the streets in the future might fly around like flying saucers. As to the future, Jason hopes that, "As long as I am able to contribute, ASE will certainly continue to contribute back to society." Looking at an autographed baseball he got from baseball star, Wang Chen-Chih, as a token of appreciation from Jason's long-term sponsorships, the shy entrepreneur breaks into a smile. His low key but generous philanthropy often goes unnoticed but he truly gives from his heart to make the world a better place and to create extraordinary value in life.



PROFILE

張慶生，畢業於台灣大學電機工程系並取得美國伊利諾理工學院工業工程碩士學位。1984 年成立日月光半導體，將家族地產事業轉向新興的電子行業。過去 30 年以持續透過策略性的併購拓展事業版圖，如今躋身為全球最大封裝測試服務公司，集團員工人數將近七萬人。2014 年，日月光半導體公司以創新產業技術而榮獲北美 SEMI 卓越貢獻獎，其銅打線封裝成功替代傳統金線製程，並進入量產，贏得「銅線之父」之譽。

JASON CHANG
Jason Chang holds a Bachelor of Science degree in Electrical Engineering from

the National Taiwan University, as well as a Master of Science degree in Industrial Engineering from the Illinois Institute of Technology, USA. He established Advanced Semiconductor Engineering, Inc. (ASE), in 1984 and diversified the family-owned real estate business into the emerging electronics business sector. In the last 30 years, ASE expanded its presence worldwide with factories in Taiwan, China, Korea, Malaysia and Singapore, and has the worldwide headcount of around 70,000 people. Jason was awarded the 2014 SEMI Award for his successful commercialization of copper wire bonding in IC packaging which enabled further cost and performance efficiencies. Then, he was aptly known as the "Godfather of Copper Wire" in the industry.