



Ahead of the curve

Embracing digitalisation early has allowed this family business to sharpen its edge over the competition.

Unlike many entrepreneurs, Gary Choy, the founder of Singaporean precision engineering company Fong Lee Metal Industries, has no interest in becoming an industry leader.

This perspective stems not from a lack of ambition. “My dad likes to be number two, the runner-up, because this means there is always a leader to chase and learn from,” quips Gary’s son, Bernie Choy, who joined the company in 2010 and is currently its director. “He’s very progressive and always looking to improve. For example, he’s the one spearheading the company’s digitalisation and sustainability journey.”



Bernie first caught a glimpse of his father’s forward-thinking approach in the late 1990s during a visit to Funan Centre. Gary was captivated by the SingTel Magix high-speed internet service. “I remember telling him I was tired and wanted to go home. But he just wouldn’t budge. He was so fixated on how this 512 Kbps broadband connection was many times faster to the 56k dial-up modem at home. He subscribed on the spot,” Bernie recalls. “He’s the sort of person who cannot resist an upgrade — which is pretty much how he’s been running the family business. He knows he has to constantly think ahead and take steps to evolve the company.”

Bernie Choy, Director of Fong Lee Metal Industries, leads the company with a vision for the future and a commitment to excellence.

Embracing innovation and progress

Founded in 1980, Fong Lee was born out of the Choy family home in Lim Chu Kang, where Gary set up several milling and lathe machines to manufacture hardware for clients across different industries. About seven years later, the industrious machinist secured his first deal to produce components for the oil and gas industry. This breakthrough established his reputation as an honest and reliable manufacturer — leading to a significant uptick in business.

The business was very much a family affair. Gary's wife helped with administrative tasks, and discussions about the company and his plans often dominated family dinner conversations. This environment provided Bernie, the company's successor, with an in-depth understanding of Fong Lee's history and evolution.



A technician uses a Faro arm to inspect manufactured parts to ensure they meet the specified tolerances. This process demonstrates Fong Lee's dedication to precision and quality.

The first major technological upgrade occurred in 2007, two years after Fong Lee established factories in China. According to Bernie, Gary recognised that the company's existing operations were becoming outdated with the advent of more sophisticated mill-turn machines, which

could perform both milling and lathe operations. This innovation promised significant manpower cost savings by requiring only one operator per machine instead of two.

Despite initial scepticism from industry peers, Gary's strategic investment in several mill-turn machines proved advantageous. "Many of our competitors did not understand why we did this because these mill-turn machines were very expensive," he explains. "But to my father, this move was necessary to keep up with the times and become more productive. It proved to be a masterstroke, because when the oil and gas industry boomed between 2010 and 2015, we were well-positioned to ride the wave."



The cladding process at Fong Lee is an example of the company's use of advanced manufacturing techniques and modern technology.



Complex machining operations at Fong Lee showcase technical expertise and innovation.

Go smart, go green

In 2018, Bernie and Gary started putting together the company's digitalisation blueprint, attending industry events around the world to gather insights. Implementation started a year later; they expanded their IT department and developed a Management Execution System to optimise the management of manufacturing operations, and to integrate with their existing Enterprise Resource Planning system for seamless and real-time data exchange between systems.

Retrofitting old machines with sensors to monitor usage and output also allowed the company to identify inefficiencies and improve productivity. "Digital technology allows us to pinpoint why machines go idle," says Bernie. "It's perfectly acceptable if a machine is idling because the operator needs to check product dimensions. Other reasons, however, could indicate the production process isn't optimal. This information allows our managers to quickly address the issue."



Digitalisation has been a major boon to the business. Bernie estimates the company's output has increased by at least 50 per cent since 2019. "Output has increased but our staff numbers haven't," he says. "We've become much more efficient and productive by focusing on improving our processes. And all this was made possible by digitalisation."

Bernie also takes pride in how Fong Lee's manufacturing facilities are completely powered by renewable energy. About 30 per cent of its energy needs are met by solar panels installed on its roof, with the remainder sourced from a renewable energy supplier. Additionally, the company has replaced fluorescent lighting with energy-efficient LED lights and installed sensors to manage lighting based on ambient conditions. "Solar panels aren't cheap but will result in cost savings in the long run. That's the reason why my father decided to install them," says Bernie, noting that the panels pay for themselves after just two-and-a-half years.

Powered by the people

However, being forward-looking alone does not guarantee success and longevity. Fostering an inclusive work environment where people feel valued is just as critical, Bernie says. In this vein, the management encourages open communication and collaboration among staff, because doing so allows them to learn better and generate more innovative ideas that benefit the business and, ultimately, everyone.

Having a relatively flat hierarchal structure has helped forge closer ties between staff, too. In fact, Gary can always be found in the manufacturing bay mingling with colleagues and making sure that production goes smoothly. "Here at Fong Lee, everyone matters," says Bernie. "A company is just like a machine, and we are all just cogs within. If just one cog fails to turn, the entire operation will be affected."

The management team also frequently urges staff to adopt continuous learning and seek professional development. Bernie himself leads by example, having signed up for the third cohort of the Enterprise Leadership for Transformation (ELT) programme by Singapore Management University. In partnership with Enterprise Singapore and supported by UOB, this one-year programme is jointly managed by UOB-SMU Asian Enterprise Institute and SMU Academy. It is designed to imbue participants with the skills and knowledge to develop effective strategies and take their business to the next level. Bernie's younger sister, Xin Yi, is also in the programme. This further demonstrates the family's commitment to continuous improvement and professional growth.

“I’ve always believed in continuous learning. Change is the only constant in life, and we need to be updating ourselves all the time to stay relevant with the times,” says Bernie, who also took part in SMU’s Accounting Analytics Capstone programme. “The ELT was a great way to pick up new skills and knowledge because you get access to real-world insights from experienced industry professionals. You’ll also meet people from all kinds of sectors, and this helps expand your personal network and horizons.”



From its premises in Pioneer Road, Fong Lee continues to strengthen its foundation and demonstrate significant growth.

Machining the future

Looking ahead, Fong Lee will continue to augment its digital capabilities to increase productivity. One initiative involves rolling out a performance management system to provide more efficient and objective appraisals. “We don’t want incidents where a manager marks down an employee for not meeting December standards despite performing well for the previous 11 months,” says Bernie. “Humans tend to fall prey to recency bias, and the system would prevent this. What’s more, appraisals can be arduous as managers spend so much time



trying to recall someone’s performance for the entire year. All this time could be spent doing something more impactful to the company’s performance.”

Another major project underway is Fong Lee’s expansion of its manufacturing presence in Saudi Arabia to better serve its customers in the oil and gas sector. “It makes sense to be where our customers are,” Bernie explains. “Being close to them would allow us to understand their needs better. This is something Fong Lee takes very seriously.”

True to its forward-looking nature, the company is also planning to venture into the aerospace industry, having recently acquired new technology for aerospace component production. “This is just another step in our constant evolution,” says Bernie. “Besides, it’s also good to diversify our income streams. We need to be resilient. We need to keep upgrading ourselves.”