

Engineering In Asia – A Labour Market Perspective



1 State Of The Industry

The last three years have been full of uncertainty for industries around the world. Growth continued to moderate in much of Asia during the first half of 2012. Slower growth in import demand in most advanced economies corresponded with weaker export growth in Asia. However, in the engineering industry, one constant is the insatiable demand for infrastructure in all forms, which is causing a fundamental shift in focus for many players in the sector. New imperatives are taking over the industry, with commercial, residential and industrial building projects giving way to energy, natural resources, transportation, communication and technology, as well as other vital civil and social infrastructure projects.

Despite the changing dynamics, civil engineers are still in demand, with the need for talent evident in industries such as construction, aerospace, oil, automotive and power. Industrial engineers are highly sought after, especially with the slowdown of the Asian economy demanding a ramp up of productivity across all sectors. While the shape of the industry will always be changing, the overall demands and requirements remain the same, as technology-driven approaches continue to gain interest with organisations

looking for ways to optimise resources, cut costs and streamline operations.

One area that has seen renewed optimism is the oil and gas sector. In a recently conducted Oil and Gas Survey 2012-2013, by ICD Research, it was found that the anticipated sharp growth in markets across ASEAN led to increased optimism for revenue growth over the next 12 months, with markets such as Singapore and Thailand being cited as those within the region with the highest growth potential, something that has been mirrored by the current demand in the job market.

While the economic recovery has slowed down in the past year, creating expectations of conservative recruitment plans from some employers, the engineering industry has, surprisingly, been faced with a lack of available talent. While the reasons vary from country to country, ranging from demands born of growth in the energy sector to governmental policy shifts that favour locally hired talent, the overall results are the same: The demand for engineers in Asia right now is high.

"In terms of recruitment, there is a very high demand for Engineers. Hiring for Oil and Gas is strong right now, especially with the current shortage of talent and companies keen to identify the best people."

2 Trends

It should really come as no surprise that prospective employers are encountering a shortage of engineering talent, especially when considering the constraints placed upon them. While some are dictated by market needs, others are self imposed and still others are imposed by government policy changes. In Taiwan, for example, where the engineering and technical market has been experiencing a slow and arduous climb since the beginning of 2010, the demand has been for software engineering experts in new businesses such as touch panel and green power. The arrival of Windows 8 has caused a rush for specialists in Windows and Linux related software engineering, and the current demand in that market lies firmly with software, rather than hardware, engineers.

In Thailand, prospective employers seek out candidates who display an affinity for systematic thinking and analytical skills. While in the past, engineers would be responsible for operational and technical support solely within the organisation, today's Thai engineers are expected to support business growth in the region. This

means that organisations are looking to hire engineers who can communicate effectively in English, and who are willing to travel and manage often complex areas such as procurement and sourcing.

In some markets, it is education that matters most, such as in Singapore. While there is no doubt that the small republic faces a severe shortage of talent, a large majority of Singaporean engineering companies will only hire candidates if they have a Class 2 honours degree, or higher. While this may seem counter-intuitive, the fact is that these companies are playing the long game. They are seeking out candidates that can be groomed and raised within the ranks of the company. Given that they will be placing a large investment on any new candidate, it is understandable that they only want to hire the best and brightest. What acts as a setback to this is the newly imposed rulings by the Singapore government that places restrictions on the number of foreign talents a company can hire. Logically, there can only be so many Class 2 Honours students from a country with a population of under 6 million.

"When companies are looking for Engineers, common requirements are Systematic thinking and Analytical skills. These are two traits necessary engineering hires, from juniors through to management level."



3 Industry Development

The past three years have seen massive changes brought by events in the region and around the globe. From the Global Financial Crisis in 2008 to the floods in Thailand and the tsunami in Japan in 2011, the manufacturing sector, and the engineering industry in general, have suffered severe setbacks. However, despite these hurdles, the engineering industry rebounded, albeit with some changes in focus. The key for most engineering companies today is identifying talent that is more specialised.

Where the demand in pre-crisis times was more for hardware oriented specialists, today's markets are seeking software engineers, radio frequency professionals and material experts. On the technology front, mobile communications is a hot area of development, thanks to the rapid growth of smart-phone technology and platforms like Android and Windows 8. At the same time, system device companies are also strongly focusing on drawing in software engineering talent, as they compete in a heavily saturated market to develop the latest technological breakthrough. In the manufacturing sector, green power companies are focusing on material experts to help develop advanced technology or more efficient production methods.

While specialised skills are certainly sought after, another recent development among engineering organisations is the emphasis on soft skills. Engineers today are no longer expected to work in isolation (figuratively speaking), locked away on a shop floor or in a lab. Rather, there is now a special emphasis on professionals who have solid business acumen, expertise in project management and strong language skills to help in growth of business regionally.

There has also been high growth in the energy sector, which includes Oil, Gas, Power and Renewable energy. In Thailand, for example, overseas investments - combined with a surge of Thai companies expanding into other countries - has caused a high demand for energy specialists. On a similar front, in Singapore the high concentration of Oil and Gas companies have caused a boost in hiring in the energy sector. Most of these organisations have cut costs and downsized their resources over the past three years, but thanks to strong recovery from the recession, are now able to once more fill the ranks.

4 Education

The shortage of readily available talent in the engineering industry can be felt across all markets. In many cases it is due to the need for specialised skills, which existing talent may not possess. As such, many organisations turn to newly minted talent - fresh graduates who are the most recent inductees into the engineering world and thus have the most recent educational experience. Are the institutes that provide this education, however, doing enough to ensure that their charges are entering the workforce with the right kind of knowledge? Very often they are, if not in the traditional form of lectures and evaluations, then through cooperation with engineering associations and organisations. In Taiwan, local institutions co-work with enterprises for group interviews after a specific training course end, to provide a more realistic experience. At the same time, they also partner with organisations to secure internship opportunities or campus recruiting activities.

For countries like Thailand, the emphasis is on academic and theoretical knowledge, with engineering disciplines being divided into more specific majors. For example, Electrical Engineering consists of Power, Instrument, Telecom, Electronics and Electromechanics.

In Singapore's Nanyang Technological University (NTU), education takes on a holistic aspect and preparing graduates for the work force is an important part of that. To ensure a well rounded education, the College of Engineering's curriculum integrates principles of engineering with a multidisciplinary education in the arts, humanities, business and social sciences. The engineering student is also grounded in entrepreneurial skills that are highly valued by employers.

Understanding the importance of networking skills, the university also ensures that graduates are provided ample opportunities to make the right connections. Being the first university in Asia to launch the virtual careers fair, which allows students to connect to prospective employers via the internet, the school offers a host of activities and opportunities to make connections. These include careers assessment tools, consultations with career coaches, talks on different industries and networking events.

"Preparing students for jobs is an important aspect of NTU's holistic approach to education. Our Virtual Career Fair, called the NTU iFair, allows students to connect with prospective employers through the use of web technology." Professor Kam Chan Hin, Associate Provost (Undergraduate Education), President's Office, Nanyang Technological University, Singapore

The Future

While the recovery from the global financial crisis has been uneven, at best, and output growth has slowed considerably by the end of 2011, the engineering industry is still showing optimism moving into 2013. Certainly the lines have shifted, with emphasis moving more towards specialisation, but improvements in areas such as the Oil and Gas sector mean greater opportunities for engineers. The shortage of talent make this an employee's market as organisations across all sectors are searching for the talent to fill rapidly widening gaps in their resource pools.



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