

# Engineering In Asia – A Labour Market Perspective 2014



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## 1 State Of The Industry

While the uncertainty that has built up over the past few years, thanks to the Global Financial Crisis, has taken its toll on western economies, Asia has weathered the storm and will be looking at positive outcomes. The unprecedented growth of Asian and Middle East economies is driving a demand for energy, refined products, chemical and consumer goods, and the engineering and construction sectors are looking at a strong future.

In a recent study by Aecom, it was found that construction spending in Asia is forecasted to account for almost half of the total global construction spending by 2020. Last year saw a change in industry focus, with a more pronounced lean towards infrastructure as engineering and construction firms continue to be heavily dependent on national government's infrastructure plans for future growth. This has led to a big push in the energy, mining, rail and water sectors.

While this has yielded a general upward trend, it does cause some concern for the industry as such reliance means that any belt tightening could potentially cut off a vital source of new projects. In a global survey by KPMG, 72% of respondents believe that budget deficits are the biggest threat to the sector. Despite this fear, Asian markets are

*"Recruitment through the engineering sector has been challenging in most Asia cities, with a heightened need for engineering services brought about by the recovery of economies. This has resulted in an increased demand for local engineers." Brad Miller, Managing Director, Spring Professional Northeast Asia.*

going strong, with markets like Singapore reporting a 5.3 percent growth in the construction sector due to robust private residential, private industrial and public residential building works.

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 also highly sought after, especially with the constant focus in the Asian markets to ramp up productivity across all sectors. While the shape of the industry may change, 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.

The engineering industry has definitely seen a comeback recently, with strong demands for infrastructure fuelling the economic growth. There is, however, still 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.

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## 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 or 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 last year caused a rush for specialists in Windows and Linux related software engineering, and the current demand in that market still 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

*"Systematic thinking and analytical abilities are skills prized by companies in their search for engineering talent to fill positions from junior through to management levels." Jay Neesanant, Country Director, Spring Professional Thailand.*

means that organisations are looking to hire engineers who can communicate effectively in English, and are willing to travel and deal with sensitive issues like 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 ruling imposed by the Singapore government last year 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.



### 3 Industry Development

The past four years have seen massive changes wrought by events around the region and 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. Despite these hurdles, however, the engineering industry rebounded, albeit with some changes in focus. The key for most engineering companies today is to obtain talent that is more specialised.

Where the demand in pre-crisis times was more for hardware oriented talents, today's markets are seeking software engineers, radio frequency talents 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, thanks to the rapid evolution of the IT industry and the phenomenon dubbed, 'The Internet of Everything' – where the internet expands

beyond PC and mobile devices into enterprise assets such as field equipment and consumer items like cars and televisions – 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 the business regionally.

*"Competitive enterprises today are investing more on information, technology and human creativity to keep its business growth through a rapid revolution in the development and application of innovative solutions. A Software Engineering Developer Team has become essential to these state-of-the-art industries." Jessica Liu, Country Director, Spring Professional Taiwan.*

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## 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 talents 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 tests, then through cooperation with engineering organisations. In Taiwan, local institutions co-work with enterprises for group interviews after a specific training course ends, to provide a more realistic experience. At the same time, they also work 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.

*“Preparing students for jobs is an important aspect of NTU’s holistic approach to education. Our Virtual Careers Fair 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.”*

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, called the NTU iFair 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.

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## 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 past year has seen the engineering industry recovering strongly, and looking optimistic moving into 2014. Certainly the lines have shifted, with emphasis on areas such as infrastructure, but the move towards specialisation means 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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