Employment Challenges for Graduate Engineers in the Shipbuilding and Ship Repair Sector

By First Admiral Dato' Ir. Hj Ahmad Murad B Hj Omar (R)
Executive Chairman, OMAHAMD Corp Sdn Bhd

Malaysia is a maritime nation with a coastline of 4,675km (Peninsula Malaysia 2,068km and East Malaysia 2,607km) with two key major contributors to the Gross National Product (GNP): petroleum and natural gas products[i]. The Malaysian Industry-Government Group for High Technology (MIGHT), jointly with the Association of Maritime Industries Malaysia (AMIM), released the Malaysian Shipbuilding/ Ship Repair Industry Strategic Plan 2020, which was presented to the stakeholders on July 27, 2011 at Putrajaya. The plan was aimed at setting the national agenda for the industry in the years leading up to 2020. The target was to capture 80% of the local new build market and 2% of the global new build market. The target for ship repair was to capture 3% of the vessels plying the Malacca Straits and 80% of the South China Sea offshore repair market. It was also anticipated that the contribution to the GDP would be RM6.35 billion and the job opportunities created in excess of 55,500[ii]. It was indeed an ambitious plan. A later publication of the Malaysian Shipbuilding/ Ship Repair Industry Report 2017/2018, released by MIGHT, posted a worrying statement[iii]. The graphics showed workers from the industry being laid-off and although the majority were foreign, a number were local. If the situation persists, the 2020 targets were farfetched.

Current Shipbuilding and Ship Repair (SBSR) technology advancements coupled with the

Figure 1: Vessel in Dry Dock
Courtesy OMAHAMS Corp Sdn Bhd

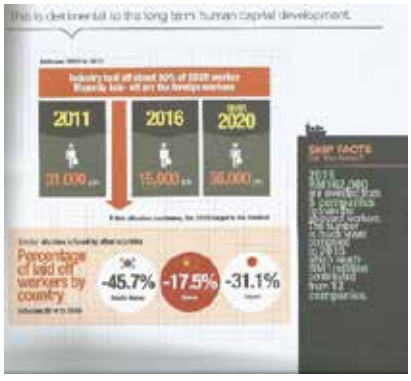

Figure 2: Extract from SBSR Industry Report 2017/2018 (page 25)

impact of the COVID-19 pandemic, badly affected the SBSR sector resulting in a low ebb in business growth. In addition, the drop in oil prices, that occurred before the pandemic arrived, made matters even worse. Referring to Brent Crude Oil Chart for the last three months (July-Oct 2020), the average price was USD42 per barrel[iv]. It is still struggling to climb above the USD50 mark.

The drop in oil prices is bad enough as it has a direct and indirect impact on the supporting industries such as refineries, ships carrying crude, ports, production-related assets such as offshore support vessels, work boats, marine leisure and floating maintenance vessels and equipment suppliers and above all human capital resources. Coupled with the COVID-19 pandemic, the situation has been aggravated.

In light of the human resource predicament, a few issues that come to mind are related to the workforce, including management, supervisors and manual workers. In normal times, graduate engineers who possess an engineering degree in any discipline of engineering related to the SBSR, would enter the business as a technical executive and slowly climb the ladder to become senior technical executive and subsequently to management positions such as Manager, General Manager and Senior General Manager. This would be the ideal situation if everything remained equal.

CURRENT SITUATION

Although the prospects of climbing up the ladder career-wise in the SBSR sector for engineers are encouraging, in the current situation it is not the case as entry level positions for graduate engineers are rare. Such is the dilemma facing young folks attempting to start a career as an engineer in the SBSR sector. If one were to rummage through the messy circumstances, challenges are evident and these are the issues that need to be identified and addressed.

The impact of the drop in oil price caused the reduction in demand for vessels globally. Closer to home there was a serious knock-on effect on the manufacturing entities that produce the equipment and materials for the construction of such vessels and the shipyards that produce them. Shipyards and manufacturers alike are losing business and eventually they will have no choice but to lay off their workers. The material producers too will suffer the same fate. Business owners will have difficulty in paying bank loans and mortgages. Once their reserves deplete, they too will have to take drastic action in reducing operating costs by laying off workers and cutting operating time resulting in reduced productivity.

In summary, the labour situation is poor and is a definite outcome of the various contributing factors resulting in the decline in the number of employed persons. In the current economic situation it is difficult for companies to create employment opportunities for the population and the SBSR sector is not excluded. The Government is however not letting the situation prevail but is taking steps to improve it. Among these is the award of SBSR-related contracts for Government agencies such as the Royal Malaysian Navy (RMN), Malaysian Maritime Enforcement Agency (MMEA), Royal Malaysian Police (RMP) and many more. By releasing such contracts, the industry can bounce back and indirectly assist in improving the nation's economy and at the same time begin employing more graduate engineers who are seeking jobs.

CHALLENGES

Having identified some of the challenges impacting directly on human capital issues, how would the fresh young graduate manage to secure a job? What does the graduate have in his pocket to offer as 'assets'? What does he need to do to bridge the gap? These are some of the questions that require answers to.

THE GRADUATE ENGINEER

A young graduate fresh out of University/College would have little to offer apart from the engineering degree certificate and the knowledge gained through formal education and maybe a few weeks of industrial training at most. Graduates may have a very highly motivational drive and be eager to try out their newly acquired knowledge. In addition they may possess some interpersonal skills picked up during their formative years in University. Their best offer is engineering knowledge plus a few other skills. Some may even be worried about

paying back study loans and meeting living costs and other financial commitments.

Once the graduate steps into the industry, the competition begins. There is competition not only in choice of jobs but also against other candidates who are eyeing the same market sector. To make the situation worse, competing candidates may not only be locals but also foreigners. The latter may be more experienced and possess superior skill levels as they could have been recently laid off and therefore are more desperate.

A solution for some graduate engineers are the Government initiatives linked with training on competencies and promise of employment. These initiatives, organised by the Government under the auspices of the Ministry of Higher Education, afford some help to fresh graduate engineers.

Figure 3: Launching of Penjana KPT CAP 'Graduate Employability'

THE EMPLOYER

In the present business climate, many employers, particularly small medium businesses, are under a lot of strain and pressure to survive and have few business opportunities in their order books. The ability for them to accept new graduate engineers as employees depends on the needs of the company and the ability to pay their remuneration. As such, the Government must also consider some initiatives that can help sustain small and medium industries to ensure survival. Once business is sustainable and recruitment picks up, the attributes of potential employees the companies will seek are likely to be:

1. Strong engineering fundamental knowledge. Creativity and Innovation are essential;
2. Good communication skills, both English and Bahasa Malaysia. Other languages would be a bonus, such as Mandarin and French;
3. Familarity with and ability to understand the principles of Project Management. All projects require this skill. However, this subject is not commonly taught in many University/Colleges;
4. Demonstrated ability to work independently or with little supervision. Possesses good interpersonal skills. Having leadership qualities would help;
5. Not too demanding in terms of working environment related to the three 'Ds' (Dangerous, Difficult and Dirty);
6. Salary package reasonable and not too demanding;
7. Being prepared to upskill with specialised training which usually comes with a bond;
8. Have the necessary skills to help the company migrate to Industrial Revolution 4.0 (IR4.0).

Figure 4: Engineers at work in dangerous, difficult and dirty environment

RECOMMENDED IMPROVEMENT

Having looked at the current scenario and knowing some of the requirements a potential employer might seek from a job-seeker, the graduate has to weigh the odds and balance the needs versus what he or she feels is acceptable. Not an easy task but a task the graduate has to thoroughly examine.

Here are some points a graduate can do to improve him or herself to bridge the gap and ensure a good chance of getting a job.

1. Have a good grasp of engineering fundamentals. Design and Problem Solving are two sought after attributes. Ability to use design software and applications are great skills to have. Demonstration of creativity and innovative skills is a strong point.
2. Ability to communicate in English and Bahasa Malaysia is sufficient but ability in other languages is good to have. Other languages such as Mandarin, French and German would be a plus. Being able to articulate their thoughts and being able to present them clearly is a great asset. Ability to demonstrate leadership skills would be a great plus point as employers like employees who possess leadership qualities.
3. Project Management is a skill much sought after today. Having it would be a good starting point. Although it is true that a fresh graduate may not have the exposure and experience in projects to have this skill set, spending time attending short courses in project management taught by experienced project management practitioners would help. However, employers do not expect a fresh graduate to have PMP (Project Management Practitioner) accreditation when they come for job interview for the first time.
4. Interpersonal skills come in many forms. Having some of them does help to promote oneself at the first impression.
5. The concern of many graduate engineers besides remuneration are the working conditions; 'Dirty, Dangerous and Difficult'. Graduate engineers must overcome this worry and dive straight into the job. In most cases with a little bit of persuasion and guidance from seniors they would soon find comfort in the new working environment. Graduate engineers when undergoing industrial training whilst at University must make it a point to choose the correct industry for attachment where they are likely to find working conditions similar to those they will face in their future employment and not choose jobs where comfort is a priority. A little sacrifice in the beginning will pay off in the future.
6. When a graduate is asked about the remuneration they expect, they must not be too quick to pounce on lucrative packages. In the current situation many employers may not be able offer generous packages. A good move would be to do a quick market survey on the sector to see how much the market is willing to pay. Accommodating the employer's wishes is a good idea.
7. When confronted with employers who wish to further value add the graduate and send them for upskilling courses related to the company's products, graduate engineers should weigh the offer as it normally comes with a bond. If the bond is acceptable, graduate engineers should accept as it would be beneficial for both the employer in getting highly trained competent worker with loyalty and the graduate getting skill level improvement for further advancement in his or her career.
8. Industrial Revolution 4.0 (IR 4.0) is a game changer. Many players in the SBSR sector have begun to move towards IR 4.0 and adopt the elements that underlay the basic foundations of the technological trends in the sector. Graduate engineers must aim to be part of the skilled, well trained human capital, especially in the fields of STEM (Science, Technology, Engineering and Mathematics). Retraining and upskilling is an area graduate engineers must be aware of[v].

WAY FORWARD FOR GRADUATE ENGINEERS

In summary, graduate employability seems to be a difficult issue to overcome at this moment in time. However, to assist them, graduate engineers must be pushed through a short course where they are cautioned and guided by professionals and practitioners and industry captains. These courses may be championed by Government departments, professional bodies, learned societies, and experienced subject matter experts to focus graduate engineers on the essential requirements that employers are looking for to help them make informed decisions. There are still job opportunities in the SBSR market sector but they are not in abundance. To be selective and choosy may not be the best option for a new graduate, but rather it might be better to grab what is available, adopt and adapt quickly to the working environment as a first step and take it on from there.

What matters most is that first step to get a job. Afterwards, it is how the graduate grows within the industry. In the SBSR sector, graduate engineers can choose many sub-specialisation/ departments/clusters. Amongst these are:

1. Design and detail design including production drawings;
2. Production, dockside outfitting, machine shop, painting and blasting, piping and ventilation and deck machineries;
3. Sales and Marketing;
4. Research and Development;
5. Quality Control and Assurance;
6. Classification societies;
7. Commercial shipping maintenance and repair teams;
8. Offshore platform operations and maintenance;
9. Computing and IT.

Graduate engineers have choices but it is not necessary to pick the best one but rather one that is available, to begin a career and slowly work within the system.

CONCLUSION

In conclusion, earlier in 2011, Malaysia charted its course for the SBSR sector and in that ten-year strategic plan ending in 2020, the industry should have flourished and be among the top sectors locally and beginning to make its footprint in the global setting. However, impacted by the global oil price crisis and the COVID-19 pandemic, Malaysia along with many nations in the world has suffered.

Therefore, the SBSR industry must find ways to remain relevant and sustainable. Efforts from stakeholders must be highly focused and the Government must play its role to assist in developing the industry. When business recovers, employers will retain their best employees, create new job opportunities and hasten the process of hiring. Simultaneously on the supply side, jobseekers will be able to leverage on the current labour situation and expand their skills and knowledge. Engaging in Government-led initiatives would be a good starting point for young graduates as it will raise their employability in the labour market. The imbalance between demand and supply within the labour market will be rectified, thereby increasing the likelihood of an acceleration in productivity growth: a dream come true for the SBSR industry in particular and the nation as a whole. In essence, graduate employability will be improved. ■

REFERENCE

i Jurutera Bulletin, IEM, Feb 2012, 'Marine Engineering & Naval Architecture – Relevance in Maritime Industry Development', page 5.

ii Malaysian Shipbuilding/Ship Repair Strategic Plan 2020, MIGHT & AMIM,2011.

iii Malaysian Shipbuilding/Ship Repair Strategic Industry Report 2017/2018, MIGHT, 2017, pp25.

iv http://www.oilcrudeprice.com

v Malaysian SBSR Industry 'Positioning in the Industry 4.0', MIGHT, 2018, pp 52.