The Professional Image - *A Personal Observation*

by Dato' Ir. Pang Leong Hoon

DURING the colonial years and before 1959, the professional engineering activities in the country were held under the auspices of the "Joint Group" formed by the three UK engineering institutions namely, the ICE, the IMechE and the IEE. In line with national aspiration after Merdeka, The Institution of Engineers, Malaysia (IEM) was established in 1959 as the national organisation for Malayan engineers. On the establishment of the IEM, the "Joint Group" agreed to discontinue its activities and such professional activities were undertaken by the IEM.

With a small number of local engineers, the IEM was established with Allahyarham Tan Sri (Dr) Hj. Yusoff bin Hj. Ibrahim as the founding President. Our founding members had the right vision and foresight then not to set up various engineering Institutions along the line of the United Kingdom. Instead, one engineering institution was established to cover all the engineering disciplines. It was also very wise of the members then to have an understanding (unwritten rule) that the office of the IEM President is to be rotated among the disciplines and not monopolised by any one. The Deputy President should not be a candidate from the same discipline. This is to ensure that the smaller groups (disciplines) are not marginalised. The said understanding or practice among the Council Members in nominating a candidate for the Office of Deputy President was well adhered to until 2003.

THE EARLY IMAGE

In the early years of the IEM, most of the members were from the government departments or agencies such as the PWD, DID, NEB, Telekom, *etc*. With the latter providing the necessary leadership and strong support, the Institution was able to move forward during the formative years. The launching of the first five-year development plan and the "Red Book" with great emphasis on infrastructural development was a great challenge to the local engineers. The engineers were called upon to develop and implement many projects.

The image of the engineers then was very high and the work done was well appreciated by the nation and the community. Malayan engineers were at the forefront to accept challenges with great enthusiasm. Up to the 1980s, most of the key Council Members were from government departments or agencies and the image of the IEM was also flying high. The program and activities of the Institution were well participated by the members with strong encouragement and support from the organisations.

THE CHANGES

Over the years, the Institution has had to make changes to deal with situations such as the increase in membership numbers and the addition of new engineering disciplines. From a humble beginning with only 60 members in 1959, the Institution now has 22,974 members (Ref: Annual General Meeting Report 2010), a 383-fold increase over the years. Unlike the past, the engineer is no more a special or rare "species". This change in the perception of the community was inevitable. The younger generation comes with a different set of expectations and career aspirations.

Everyone is affected by the image we perceive others have of engineers and almost everyone has an opinion on what it should be apart from the self-evident observation that the image should be "good". There is a wide diversity of opinion on what constitutes a "good" and an appropriate image. This is understandable for there is also a wide diversity of reasons why engineers are concerned about the way the profession is perceived. The significance of a good and appropriate professional image encompass its role in:

i) Building personal esteem and status
ii) The contribution it has towards achieving influence and recognition

The role models of the medical and legal professions could be readily quoted to emphasise the preferred image for engineers. Equally, there are proponents who argue that engineering is seen as an undervalued contributor to the competitive manufacturing industry and economic health of the nation.

Sustainability and concerns for the environment naturally would turn to engineering contributions with their capacity for creative solutions and for supporting the productive sectors of the country's economy. Without engineering, we cannot provide for the growing population with its expectations of a healthy and productive life. Community benefits and personal benefits are mutual beneficiaries of activities that promote a "good" and appropriate image.

THE WAY AHEAD

Most would agree that it is one of the roles of the Institution to undertake activities which would enhance the image of the profession. The choice of activities and their relative priority should be regularly reviewed to meet the changing needs. How much effort should be directed to well-researched submissions to government and community studies, which often draw little interest from local press?

How much effort should be directed to the promotion of the profession in schools? How effective are the current programmes or activities?

As a learned society, the Institution is in the ideal position to share its informed views on a wide range of topics of common interests to the engineering profession and the community. There should be networking and a closer rapport with the authorities and community, so that the Institution commands their respect and be invited to give its view and recommendation on engineering matters especially on standards and regulations, and safety measures for good engineering practices.

In order for the Institution to play a more proactive role, the function of the various Technical Divisions and Special Interest Groups needs to be reviewed and be given a well defined responsibility to develop and maintain the recognised engineering expertise. This is to ensure that the Institution becomes a resource centre. Over time, and with the appropriate programmed development, the Institution could position itself to better serve and contribute its unbiased view (expertise) and opinion to the authorities and the general public.

With an informed view and timely public statements/announcements as well as submissions to the authorities, it is only natural that the image of the Institution in particular, and the engineering profession in general, would be well appreciated and recognised by the general public.

Presently, there is a decreasing trend in the number of engineers graduating from our tertiary institutions. The root cause can be traced to our secondary schools. Too few students are choosing to study science and mathematics. There is a need to introduce activities to encourage the study of basic enablers to encourage the interest of students and in their pursuit of a career in either engineering or science. It is inescapable that engineers and scientists must work together, particularly in promoting a greater public understanding of the relationship between engineering and science for the future.

CONCLUSION

The profession holds the key to technology and, as a group, are the leaders who spearhead the modernisation of society. They create a new technology based culture in the process. To assure and maintain the leadership role, they depend on the degree of trust society accords to the profession.

In order to earn this trust, it is necessary for the professionals to demonstrate beyond doubt that they are honourable and trustworthy men or women who can be expected to go about their professional work while keeping uppermost the considerations and interests of the society they serve.

As individuals, we may sometimes feel that what we can do individually is so insignificant that it will hold little sway, but every little effort of ours will contribute towards the total image which, as a result of our collective action, will be sparkling or tainted. Therefore, as professionals, it is expected that each and every member to uphold certain accepted standard of behaviour without exception.

As has often been said, the journey to success is more difficult than staying successful. Our destiny is in our hands.

Last but not least, the Institution should also consider a succession plan. There should be a structured process to identify and promote capable members as leaders in the institution. The IEM Council should be given the task to draw up a succession plan and to encourage potential or capable members to take over key offices as the institution progresses and develops. ■

Challenges for Engineer in the 21st Century

by
Ir. Yim Hong Wa

If a doctor makes a mistake, one person dies.
If a lawyer makes a mistake, one person goes to jail.
If an engineer makes a mistake, it is a disaster and many people die.

HEADING into the 21st Century, an engineer will face a multitude of challenges brought on by globalisation, advances in technology and changes in the structure of the economy. In order for the engineer to survive, he or she needs to identify the opportunities, threats and competitions that he or she will be confronting.

Traditionally, engineers take great pride in the professional path upon which they embark on. Engineering has been pivotal in shaping the country's industrial capability and improving the country's economy. More significantly, engineering accomplishments over the past century have greatly improved the standard of living.

Since technology innovation has been so commonplace, it has been taken for granted. Often times, engineers are not duly recognised by the society for their contributions to our standard of living and the improvement of the country's economy and hence wealth.

Presently, there is also a lack of appreciation by many young people on the value of an engineering education. This is despite the fact that half of the CEOs listed in the Fortune 500 magazine are engineers.

The challenges for engineers extend beyond their technical skills. Engineers also need to be entrepreneur savvy to be successful in the 21st Century. Perhaps, we should ponder over the following questions:

- ***What can an engineer do?***
- ***What makes a good entrepreneur?***
- ***How does an entrepreneur understand the business concept?***
- ***How can an engineer adopt and adapt to be a successful techno-preneur?***

WHAT MAKES A GOOD ENGINEER?

In general, a good engineer ought to have strong basic training in the fundamental laws of nature, is very observant of events around him or her and always asks the right questions. Can I design and build something that works like what I see in nature? How can I improve it? Can I innovate something new?

WHAT IS ENTREPRENEURSHIP?

It is a way of thinking and approach novel and complex problems, and solving problems in a viable way. It is an art of finding profitable solutions to problems. A successful entrepreneur or businessperson is someone who is able to identify a problem and come up with a solution before someone else does.

WHAT MAKES A GOOD ENTREPRENEUR?

A good entrepreneur understands the business concept. He will think through the pros and cons of the business challenges and goals he wants to reach by taking calculated risks.

The law of business is the law of supply and demand, the more unique the product and the more demand you have, the more profit you can make. The higher the margin you make out of your product, the more competitors it will attract. Long-term survival depends on development through the innovation and design of new products for the market. A war is won because of the general and his strategy, a business is successful because of its leader and his strategy.

The best innovations are often a matter of pure coincidence, or so it seems. Penicillin is a good example of the greatest accidental discovery of all time. It was first discovered by Scottish bacteriologist Alexander Fleming in 1928 when he was doing research on the flu germ staphylococcus. It was not until 11 years later that Ernst Boris Chain and Howard Walter Florey isolated the pure form of penicillin and began clinical trials. All three men received a Nobel Prize each for their work in 1945.

In order to spite a customer who complained that his fries was too thick, chef George Crum sliced a potato wafer-thin at the Moon Lake Lodge Resort in Saratoga Spring. The customer loved the new crispy creation and potato chips became a house specialty. Today, that industry is worth over US$6 billion a year in the United States.

Along with the compass, gunpowder and kite, ancient China also gave the world its first umbrella. A collapsible umbrella was invented roughly 1,700 years ago. Appropriately, the Chinese character for the word "umbrella" is a pictograph closely resembling the object.

In the 21st Century, engineers need to learn from other professionals such as doctors and lawyers to have good self-esteem. A doctor treats a patient in person and will never comment on another doctor's findings or prescriptions for the patient. If he believes that the patient is suffering from a sickness beyond his area of expertise, he will refer the case to another doctor whom he thinks is a specialist in the area.

Similarly, a lawyer attends to his client by providing suggestions according to his interpretation of the law in a lawsuit to which the judge will make the final judgment. Both the doctor and lawyer provide a "suggested solution" to their clients and this solution can be costly and expensive most of the time. On the other hand, an engineer provides "free" or cheap engineering solutions in most trying circumstances. That may be the reason why an engineer has not been properly treated as a professional.

The scale of fees in the Engineer Act 1967 is going to be removed during the amendment of the Engineer Act as the Trade and Services in the AFTA will be 100% implemented in 2012, so engineers need to adopt the "economy of fees" where fee calculation is based on man day or man hour.

Engineers ought to bear in mind that being a solution provider is expensive; it is simple and easy if you know it, so do not review engineering solutions for free as it is chargeable just like in the medical and law profession. A real estate agent gets 2% of the selling price of a property, whereas a civil and structural engineer get less than 2% of the civil and structural work of the property.

In conclusion, engineers need to re-organise themselves to face the challenges and problems that they face in the 21st Century. They will need to draw up the directions and road map to ensure that the engineering profession is at par with other professions. ■