

ENGINEERS IN CIVIL SOCIETY- SOCIAL SERVICES AND CONTRIBUTION

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With the advent of WTO and the push for globalisation and especially the liberalisation of trade and services, the emergence of foreign engineers in Malaysia is inevitable. Other professional bodies such as the Bar Council and the Malaysian Medical Association have begun to keep their eyes open on this matter. However, engineers seem to be quiet on this subject. However, as is always with the engineering profession, they may have already been busy the past few years preparing themselves to embrace the liberalisation of the services sector in Malaysia.

The services sector is important to Malaysia and it has been identified as one of the three pillars of the economy as Malaysia progresses towards realising industrialised nation status by 2020.

In 2002, services contributed 45.9% to the country's GDP. The

manufacturing sector, on the other hand, contributed 30.7%. Services providers make up 50.2% of the workforce in 2002 compared to 27.1% for the manufacturing sector.

Malaysia ranked the 27th largest exporter and 26th largest importer of commercial services compared to its position as the 18th largest exporter of goods in the world.

Within Asia, Malaysia has a market share of 4.6% of exports and 4.7% of Asia's imports of commercial services.

Under the Third Outline Perspective Plan (2001–2010), the services sector has been earmarked as a sector to propel the further growth of the economy in recognition of the challenges that Malaysia will face in an environment of increasing competition.

It should also be noted also that:

- Global trade in commercial

services grew by 6% annually for the period 1990–2000.

- World export of commercial services in 2000 was US\$1.4 trillion representing one-fifth of global export of goods and services.
- Trade in commercial services is highly concentrated. The top 15 traders accounted for 70% of world exports, and 67.6% of world imports in 2000.
- Developed countries account for most of trade in commercial services. Out of the 20 leading traders (importers and exporters), 15 are developed countries.
- Liberalisation of services in developing countries could provide as much as US\$6 trillion in additional income in the developing world by 2015, four times the gains that would come from trade in goods liberalisation (from the World Bank's report "Global Economic Prospects for Developing Countries" 2001).

With this in mind, Malaysian engineers need not only to be competitive to compete with foreign engineering firms setting up in Malaysia but also export our engineering skills and expertise globally.

Malaysian service providers, particularly in the professional services sector, where many firms operate as small units, will have to consider:

- Vertical integration, through mergers and acquisitions or



Malaysia's share of world exports of commercial services

	1990	2002
World Exports (US\$ bil)	782.20	1540.5
Malaysia's Exports (US\$ bil)	3.77	14.1
Malaysia's Share (%)	0.48	0.92

formation of consortia to take advantage of economies of scale and strengthen the competitive position.

- Forming partnerships or alliances with service providers abroad.
- Specialising in niche areas.
- Exporting Malaysian engineering expertise and services.
- Keeping abreast with new skills, techniques and developments in the profession, and to build up capacity to expand the range of services provided, to keep abreast with the new demands from trade and industry.
- Acquiring internationally recognised accreditation such as ISO certifications, which can be an additional marketing asset in promoting services abroad.
- Accreditation schemes for qualifications that are in conformity with international standards, to facilitate foreign recognition of local professional qualifications.
- Conclusion of mutual recognition agreements, to increase the international mobility of Malaysian professional service providers.
- Branding is just as relevant in services marketing, as it is for the goods sector.

In the 21st Conference of the ASEAN Federation of Engineering Organisations (CAFE0-21), former Prime Minister of Malaysia, Tun Dr. Mahathir Mohamed said in his speech for receiving the AFEO

Distinguished Award that the WTO agreements supposedly were about the lowering the barriers to trade and ensuring that the WTO's member-states did not discriminate in their trade dealings. He added that "free trade" doctrine required countries to focus on their "comparative advantage" i.e. free competition between goods and services between the providers without regard for their sizes and strength. The result would be the ascendancy and increasing wealth of giants of the rich and the practical elimination of the business of the poor. He added that there would be no hope for the poor to industrialise except to provide cheap labour to the foreign giants and enhance their investment and competitiveness further.

Tun Dr. Mahathir added that ASEAN engineers had proven their professional capabilities and had been able to produce goods and products of very high standards which complied with world standards. "Civil works by ASEAN engineers are exportable items as are their fabricated and engineering products. ASEAN must be a centre of excellence in the engineering field. ASEAN engineers must not wait for others to innovate and establish new methods and systems for them to copy. They must do research and development on their own and establish their own methods and systems which should become standards for the rest of the world," he said.

"It is not that ASEAN engineers are less capable and unable to

undertake the job, it is just the collective strength in not marshalled for the collective good of the profession in the region," he said.

He added that obstacles needed to be overcome and this included a change in the mindset.

"Instead of competing with each other in the region, you should pool your resources and expertise and undertake jobs that are being undertaken by your counterparts from the US and Europe. He said pooling resources would enable ASEAN engineers to get bigger jobs and projects both at home, within the region and outside the region.



A BIG MARKET JUST WAITING TO BE TAPPED

Local engineering firms should look into the potential of expanding their businesses into China.

The market potential of China is huge and with its strong economic growth, there are ample business opportunities for expansion.

In the year 2000, about 61% of foreign investments in Asia went to China while the Asean countries received only 18%. The value of foreign direct investment (FDI) in China hit US\$52.7 billion in 2002. Although



China's FDI has taken a recent dip because of SARS in 2003, it is expected to gain momentum in 2004.

In the view of many economists, China remains a top destination for foreign capital and foreign direct investment. China has an abundant supply of educated labour whose cost is relatively lower than that of other developing countries, and the number of research scientists and engineers per 100,000 people is higher in China (454) than in Malaysia (93). Malaysian engineering firms, however, have vast experience and expertise in handling large infrastructure projects and state-of-the-art technology, an attractive and vital selling point in the Asian market.

Despite the oft-repeated calls for Malaysian engineers to be competitive, we have to take a step back and look at the marvellous achievements the engineering industry has contributed to the profession and also to society. It can be safely said that the engineering profession and its achievements in Malaysia has been the main contributing factor to the change in the mindset of Westerners that Malaysia is an obscure and remote country in the globe.

Whilst most engineers in Malaysia have shed the inferiority complex that

they are second best to the Western engineer and are instead equivalent or even better than the Western engineer, there are some local engineers that still "glorify" the Western engineer. It is here that we have to take another step back and look at the engineering feats we have achieved since independence. Malaysia's engineering achievements are commonly "forgotten" or taken for granted. Such would be the case of the Penang Bridge; commuters use it on a daily basis but do not for a while think of the engineering brilliance that went behind the project.

The Petronas Twin Towers

At 1483 feet (452m) tall, the tallest building in the world at the date of its completion, measured to the highest point.

According to the architect Cesar Pelli, The Petronas Towers in Kuala Lumpur, are among the architectural wonders of the world. The construction is one of many challenges, and the resulting design, reflects a melding of East and West.

From the West, the Petronas Towers embody the great spirit of buildings that reach to the heavens and that the towers reflect the latest

technology in making tall buildings, with modern materials such as stainless steel cladding, which makes these spires glisten on the skyline.

According to Pelli, from the East, the design embraces the architecture and decorative arts of Malaysia. When viewed in plan, the towers appear as two overlapping squares — interlocking heaven and earth — to create an eight-pointed star, which is further refined with half-circles between the star points. The spirit of the geometry is Islamic, the dominant Malaysian culture, and the geometric pattern is found throughout the country in screens, architectural ornament, and decorative arts.

Kuala Lumpur Sentral Project

In the heart of the Malaysian capital Kuala Lumpur, an ambitious plan to create a green city within a city where people can live, work and play is being realised on a 29ha site dubbed Kuala Lumpur Sentral. At the core of this grand scheme is Kuala Lumpur Sentral Station (KLSS), a transport hub which will serve the commuter, light and express rail services linking the city with the rest of Malaysia, including the new international airport.



KLIA Airport

KLIA is an airport built to 21st century specifications and the largest civil engineering project undertaken by Malaysia this century.

Kuala Lumpur Airport Express Rail Link

The Express Rail Link (ERL) is a central element in the Malaysian government's strategy to enhance the role of the capital's international airport. From the main Kuala Lumpur Sentral rail terminus, the track runs southwards before deviating to cross the PLUS Expressway near the toll plaza for the University Putra Malaysia and terminates on the ground floor of the main terminal building.

A fleet of 12 four-car electric multiple units is being supplied by Siemens, eight of which will be dedicated for use on ERL services. Based on the successful ET425 design widely used in Germany, the trains will have a top speed of 160 kph (100 mph). The other four units will be employed on CRS commuter services, with higher density accommodation, designed to carry 540 passengers (144 seated) per four-car unit.

KL Monorail Project

The RM1.17 billion KL Monorail privatisation project is an inner-city public transit system that serves the central business, hotel and shopping district of Kuala Lumpur, Malaysia. The 8.6km long, dual guideway, straddle-beam elevated monorail system will begin from the Pekeliling Bus Terminal in the north, pass through Kuala Lumpur's 'Golden Triangle' before reaching KL Sentral in Brickfields.

Fully elevated with 11 stations, the KL Monorail is capable of handling up to 18,000 passengers per hour per direction, operating at up to 2 minutes headway between trains.



PUTRA-LRT network

The system will provide commuters between the city's People's Park and Gombak with a fast, efficient east-west route bypassing some of the most congested roads in the world. Completed during 1999, the system, at 29 kilometres long, is the longest fully-automated driverless metro system in the world.

The PUTRA-LRT network has 24 stations along its 20-mile length, and has been constructed in two sections: Lembah Subang to Pasar Seni, and Pasar Seni to Ampang Park and Gombak. All of the first phase is on elevated single-track bridge sections, which are also used for 8 km of the 14.9 km of the second phase, in order to avoid conflict with existing roads as far as possible. The focal point of the system is People's Park, in the west of Kuala Lumpur and journey times to each end of the route will be 45 minutes to Gombak and 21 minutes to Pasar Seni. The vast majority of the system will be above ground, but 4.4km will be in tunnel with five stations also being constructed underground.

Menara Kuala Lumpur (KL Tower)

Amidst the city of Kuala Lumpur stands the Menara Kuala Lumpur at

515m above sea level.

Majestically poised at a breathtaking height of 421 metres and situated at 94m above sea level, it is on higher ground than the Twin Towers of Kuala Lumpur. Menara Kuala Lumpur is one of the tallest concrete towers in the world, standing at 421m and built with 45,000 cubic metres of sturdy concrete. Designed with vertical ribs on the external surface, the Tower weighs 100,000 tonnes and was built on no-piling, freestanding land.

This tallest tower in Southeast Asia was constructed over a period of four years and completed in May 1996. It is designed to withstand wind pressures of up to 90mph. ■

