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A must for technology

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EACH YEAR, only a handful of Malaysian students manage to gain entry into the Massachusetts Institute of Technology (MIT) in the United States - a world renowned institution in technological sciences.

Not surprisingly, many of them are lured by American companies even before they graduate. This inevitably contributes to the brain-drain stifling Malaysia's efforts at enlarging and increasing its science and technology base. But help may be at hand. MIT is coming to Malaysia. The 130-year-old institution recently signed an agreement with local parties to work together to set up a university called the Malaysia University of Science and Technology (MUST).

The local parties concerned are the MUST Ehsan Foundation, whose board of trustees include Datuk Effendi Norwawi of the Encorp Group, Selangor Menteri Besar Tan Sri Muhammad Muhammad Taib and Sapura Group executive chairman Tan Sri Shamsuddin Abdul Kadir. The foundation will oversee the establishment of MUST and will also source the funds required for the setting up of the university, which is estimated to be RM200 million.

Wooing MIT to Malaysia was not easy, however. Since 1994, a group of Malaysian entrepreneurs led by Effendi have been trying to convince MIT to set up shop here. The signing of the agreement was the culmination of numerous visits by MIT to Malaysia to ascertain the viability of the project.

Effendi says Prime Minister Datuk Seri Dr Mahathir Mohamad also had a lot to do with it. `The successful conclusion of the agreement can be directly attributed to Dr Mahathir who visited MIT many times to impress upon them the seriousness with which Malaysians viewed the establishment of a "knowledge infrastructure" in the country,' Effendi says. Going by MIT's forte, which is carrying out research and development tailored towards industry and government needs, MUST is exactly what the country needs. As Mohammad Taib puts it, `The primary objective of the university is to help Malaysia create indigenous technology and build a pool of technological expertise, an essential ingredient to attaining national objectives under Vision 2020.'

Robert Brown, dean of MIT's engineering faculty, explains what it takes to develop a highly technical workforce. `Firstly, you need high quality students at the undergraduate level and a high quality programme at graduate level. These programmes must be "connected" to an industry which is going to receive the graduates, providing them well-paid jobs, which in turn creates the driving force for students to pursue such courses.'

By being `connected' with industry, Brown explains that MIT had developed dialogues with the private sector and government early in its history. `The input we received from these regular meetings, along with the high quality personnel we had at MIT, enabled us to develop research and education programmes that had high impact on industry in the US. MIT hopes to work with MUST to develop an infrastructure for the same to happen in Malaysia,' Brown says.

One reason why MIT is so industry-focused is finance - the funding MIT receives from industry in return for the research MIT carries out constitutes one third of the institute's total funding. The balance comes from tuition fees and gifts.

It is envisaged that MUST will be approached by local as well as foreign companies to carry out particular research projects in the same mode as

MIT. Brown explains how it is done at MIT: `It's called an RFP or a request for proposal. The industry asks MIT to propose to them that MIT does something for the industry. A dialogue between the parties follows whereby an agreement is reached as to the cost MIT will incur to do specific research. Being a non-profit organisation, MIT only charges for the cost it incurs.'

According to Brown, this tight relationship with industry brings about many advantages - it finances the research and supplies the intellectual drive for the faculty and students to realise the relevance and impact on industry from the research they're pursuing. `Another development which could take place is that graduates from MUST may come out and form their own companies. At last estimate, there were 4,000 companies formed by either MIT faculty or graduates in the US,' Brown adds.

Brown assures that MUST will develop programmes suited to the Malaysian scene. He cites the example of a programme on logistics and transportation - an area most developing countries are interested in. `Graduates of such a professional course in logistics will work in areas such as trucking, air freight and shipping,' he says.

To be assured of success, Brown says MUST will only focus on developing programmes that would be of interest to industry. `Hence companies like Petronas would be important (in that way) to MUST in its development for example, of a chemical engineering programme. We would want companies like Petronas to be committed to sending their employees to the programme and hiring graduates from the programme.'

But questions arise as to how much of MIT's expertise will actually flow into MUST. Brown assures that the Malaysian venture `will not merely be a group of MIT faculty putting up a shingle here that says MUST and teaching'. According to him, as part of the agreement, MUST will impose the same stringent requirements for admission as MIT. He adds, `MIT will be fully involved in all aspects of MUST's establishment and operations for the initial development phase, including joint research, exchange programmes, curriculum development and the provision of the teaching faculty.' MUST aims to begin the first post-graduate class for a masters in engineering by September this year and will be using the premises at Sirim for this purpose.

At a cost of RM200 million, the setting up of MUST is not going to be cheap. So far, RM10 million has been raised - a donation from Effendi's Encorp group. The foundation hopes to raise the rest of the money from research contracts and endowments, the government, research sponsors, benefectors, corporate citizens and other private sources.

According to Effendi, the foundation hopes to be given grants from the government, which has allocated RM3 billion under the Seventh Malaysia Plan to develop science and technology. Under the government's Intensification of Research in Priority Areas (IRPA) fund, RM1 billion has been allocated for bodies carrying out R&D activities. Says Effendi, `Although traditionally such grants have been given only to government research bodies, we are confident that because the government has endorsed the MUST project, it will extend some IRPA funds to MUST. We hope to receive about US$25 million (RM62 million) from the IRPA fund.'

A company called Must Ehsan Development Sdn Bhd will undertake the development of the university. It is a 70-30 joint venture between Encorp and the Selangor State Economic Development Corporation (PKNS) with a paid-up capital of RM50 million. Its biggest asset however, must surely be the fact that PKNS owns over 2,400 hectares of land within the Ulu Bernam area in Selangor, where MUST will be situated.

PKNS has already allocated 100 ha of land for the campus and another 400 ha in the same area which will be developed by Must Ehsan Development. The

development will include residential units and a commercial and recreational centre. `We foresee the company gaining from the sale of lots of land in this project,' says Effendi.

PKNS, in fact, has big plans to develop the Ulu Bernam land which it acquired from Kuala Lumpur Kepong Bhd for RM400 million. To be named the Bernam Valley Technology City, the project will have components such as an education centre and a R&D centre. PKNS also plans to invite small and medium industries (SMIs) and multi-nationals to set up their operations within the area and to draw their personnel from the eduational institutions there.

Industry sources say PKNS has plans to provide a high level telecommunications infrastructure within the whole area including high bandwith fibre optics linkages as well as satellite communications. Included in the plan are housing units and a commercial centre. PKNS itself estimates that a total of RM2.3 billion worth of development is to take place there. The whole project is expected to be completed in 20 years.

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