Rising numbers, changing demands

Singapore universities increasing intake of IT students and expanding range of courses

The rapidly changing IT industry has presented more challenges than before, and universities have been rolling out new courses and refining their curriculum to keep up. Besides core "bread-and-butter" subjects like logic design, software systems and microprocessor systems design, schools are exposing their students to a wider range of subjects.

"Schools have to respond to the demands of students, and these depend on the students’ perceptions," says Prof Steven Miller, dean of the School of Information Systems (SIS), Singapore Management University (SMU).

Students can also mix and match their own curriculum with different kinds of minors. For example, SIS students can take classes in counselling, marketing and international economics, while those from the School of Computing at the National University of Singapore (NUS) can take minors in areas like semiconductor technology and entrepreneurship, among others.

The Nanyang Technological University (NTU), on the other hand, offers minors in business, economics, communications, and even psychology.

"These are all useful skills in a business environment," says Prof Angela Goh, vice-dean of the School of Computer Engineering at NTU.

Universitas 21 Global (U21), which offers programmes in Master’s in Business Administration courses, recently launched a Master’s of Science in Information Systems Management, which will begin in February. Classes will include marketing management, management of services and even corporate social responsibility.

Broadband connection

The range of subjects offered shows that the industry is getting more complex. Managers are in greater demand than specialists, says Dr Mukesh Aghi, CEO of U21. For one thing, the industry and schools in Singapore are fully aware of the fact that code writers, software programmers — the core of the IT industry — no longer command the premium positions they used to.

With masses of highly skilled IT professionals in countries like India and China willing to work at a fraction of the wages, the challenge has never been bigger.

"The thing about programmers is that we are dealing with software," says Chua Chee How, a computer engineering graduate of the NTU. "To move a piece of software from one country to another, all we need is a broadband connection."

A recent report by consulting firm AT Kearney showed that India and China remain the top two favourite locations for companies to outsource their businesses, while Singapore remains at the fifth spot. Malaysia is third and the Philippines, fourth (see "Equipped with more than just know-how").

The "incumbents", like the NTU, are confident their curriculum is solid enough to meet demands from the industry. The School of Computer Engineering's curriculum was developed based on standards recognised by the Association of Computing Machinery and the Institute of Electrical and Electronics Engineers, says Goh.

"This 'standard' represents the collective body of knowledge required for IT professionals, she adds. For good measure, the school also seeks regular feedback from the industry regulator, the Infocomm Development Authority (IDA), and the industry, she adds.

Shared responsibilities

But, at the end of the day, the managing of demand and supply should be shared. SMU’s Miller feels universities should not take complete charge of training the right kind of IT professionals needed by the industry, as companies are in the best position to know the skill sets needed.

"It’s a shared responsibility," he says. "The school’s main function is to teach students how to learn. The schools have a different mission compared to with the industry. These are different aspects. Companies have to change very quickly, based on competitive demands," says Miller. "For schools, they have to train relevant skills, providing the foundation, which is a different approach," he says. "We should dispense with the notion that the industry can just pick up people without training them."

For now, one trend is certain — the demand for IT professionals will keep on growing. According to an IDA survey, the industry employed 108,000 people last year, and this figure is expected to grow 3.5% over the next two years. Naturally, the schools are listening, and responding. U21 expects an enrolment of 150 students next year, and the class size to double in 2007.

The SMU’s SIS, on the other hand, has increased its three existing cohorts from 92 in the first year, to 140 for the third year. For the next intake, the SMU is aiming for 200 students. And now, the industry will see if the quality matches the numbers.