

## Universities need to manage IP

The names Stanford, Berkeley, MIT and Harvard are easily recognised as among the world's leading universities. Readers may not realise that these institutions are also directly involved in the management and commercialisation of some of the world's most valuable technological developments.

A key example is Google, which was founded by two Stanford doctorate students. As a result of properly managed policies, the technology developed by these two students during their studies became the property of Stanford University which in turn licensed the technology to the Google company that the students set up. When Google went public in 2004, the value of shares held by Stanford in return for the licence exceeded US\$200 million.

A significant proportion of modern technologies begin their lives in the hands of research students, yet only the most diligent universities have exploited the value of such inventions. Today, US universities fully develop and commercialise students' innovations to the extent that they are major contributors to America's economic might. In 1991, US universities filed 1,500 patent applications; just 13 years later, they filed 10,517 applications and in the process generated US\$1.3 billion for universities.

Specific university IP management legislation exists in the US in the form of the Bayh-Dole Act. It explicitly enables institutes to obtain protection for and commercially benefit from the results of research conducted using federal funds. As soon as the legislation came into force in 1980, US universities established internal technology management offices (TMOs) in order to structure the protection, management and commercial exploitation of the results of expensive funded research. Without the Act, many

universities would have continued to squander and lose the benefits of years of research.

European universities have not been left behind, with some of the best schools fully exploiting the IP system in order to attract top students, expert teachers and blue-chip research funding.

Asian institutes are also in the game: the top three Chinese universities reportedly have applied for and obtained in excess of 5,000 patents. In Singapore, the Agency for Science Technology and Research (A\*Star) is responsible for managing the IP developed in Singapore's core national research institutes, creating an infrastructure that has propelled that country's biotechnology industry to the fore in Southeast Asia.

In Thailand, the need for an organised structure of university technology management has long been recognised, but implementation has been slow. While the number of science and technology students in Thailand has traditionally been low, the lack of clear IP rules will undermine the attractiveness of the institutes for research funding by large enterprises in the future.

More institutions are attempting to introduce TMOs, but similar obstacles arise. The most sensitive of these impediments is the lack of knowledge of the true benefits of the IP system and of the usefulness of TMOs among many research pioneers. There is also weak infrastructure in place to assist universities in evaluating whether new developments ought to obtain protection and when it should be sought.

If properly structured and managed, university TMOs fulfil a number of important roles. To begin, they implement and manage ownership policies that lend clarity as to who will own the research conducted in the university. Clarity as to

ownership is a fundamental prerequisite before any private enterprise will fund university research.

Proper IP management also enables universities identify when new technologies should be protected using various IP rights. Once rights have been established and protected, university TMOs often function by facilitating the transfer of that technology to new owners (in the form of sales), or by assisting in the establishment of new small enterprises (often with students at the helm). In this respect, proper university IP management may bring benefits to local communities through new jobs and businesses. This function of the TMO is also revenue generating (note Google).

Ultimately, university IP management can harness the value of previous research and cumulative expertise developed within a faculty. The more structured and well-managed a school is, the more attractive it will be for external funding.

Thailand's universities are on the cusp of a modern technological evolution. Scores of young scientists are beginning to branch into new areas of research. As Thailand vies to become a centre for life sciences excellence, more investment will be available to Thai universities and medicinal research facilities.

Unfortunately, the infrastructure to protect the interests of Thai research institutes is not fully fleshed out. It is therefore important that technology and IP management is recognised as a key area if Thailand's universities are to take their place on the world stage.

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