

## A Faustian bargain for universities?

There was a time when the role of universities in society was well defined. Their primary task was higher education, to fill their students' open minds with new thoughts and insights. This community was encouraged to reflect not only on the fields of their expertise, but on everything that caught their interest, and to think afresh and challenge long-held beliefs. Depending on their philosophical context, some universities were also engaged not just in reflection, but also in experimentation. Today, universities still have to fulfil all of these tasks, but, in addition, they are increasingly expected to drive economic development. Is this a distortion that undermines the traditional role of universities, or is it their next evolutionary step as the cultures in which they thrive develop into 'knowledge-based' societies? As with many complex questions, the answer is not a simple 'yes' or 'no'. But it is necessary to ponder on it, as some universities now seem to take the new relationship between the academic and the non-academic realms for granted, and this could have negative consequences in the long term.

When research was performed in small laboratories with minimal reagent costs, it was easily catered for by internal funds, which were often taken from the university's own resources allocated for the practical training of students. The outcome of this research was also appreciated mostly within the university and had little impact on the world outside and beneath the ivory tower. This comfortable time has gone, for a variety of good reasons. Cobwebs started to accumulate in some rooms of the tower, and the word 'academic' gradually changed from being a badge of honour, given to a member of a select club, to a negative adjective, used to dismiss arguments as being irrelevant. Particularly in the life sciences, those scientists who avoid research needed to solve the long list of social problems are now deemed to be irresponsible.

Concomitantly, industry has changed as well. The era of pharmaceutical companies

developing new therapeutics simply by generating numerous test molecules, and using relatively standard screening systems to identify the useful ones, is reaching its end. It does not come as a surprise that academic research, which previously seemed to belong to another world, is becoming an important component of industry's plans. Some academic scientists have been ready to jump on this bandwagon, indeed they have welcomed it and championed the change. They have immediately gained a better reputation, because their work is no longer just some narcissistic activity, but now has a value for society and, of course, for themselves, too. And with this growing interest from industry, the pace of science has accelerated, as the additional funding from the private sector has fuelled the expansion of research enterprises. Those scientists who did not jump aboard find that funding for their projects is becoming more restricted. Students, who are always a great barometer for the status of their seniors, choose the larger, buzzing laboratories. Research on esoteric topics is becoming not only old fashioned, it is even starting to become extinct. Given the long history of fundamental research, which has produced practical and unpredicted outcomes, this is not only regrettable but also a retrograde step. But the forces that are irretrievably turning the academic world into a service for industry are relentless. Government funding for academia is increasingly tied to predicated outcomes and research that stimulates economic growth. Industry also expects universities to enrol on its team and to become outreaches of its own research activities. And many scientists willingly—and with the best academic and social motivation—define their research in such terms. The close proximity between fundamental research and new developments in industry now means that the gap between the two entities has become a short jump. Furthermore, research within industry is now indistinguishable, in some cases, from the best 'academic' research.

Fusion or confusion? One might think that the heads of universities would be leading a major debate on the consequences of these changes. But there is no Cardinal Newman or Alexander von Humboldt yet. The presidents, chancellors and rectors are mostly engaged in the opposite course of action, that is, maximizing income from almost any source at almost any price. In fact, they have no choice. Government funding is increasingly scarce and has been kept at a level that is inappropriate for the current expansion in terms of the quantity and sophistication of research. Universities need expensive investments to ensure that the best staff available can be attracted and retained. And if their professorial staff are viewed as inferior, then the consequences are negative in terms of attracting students, who are the ultimate *raison d'être* of their existence. So the heads of universities read with concern the press releases of their competitors, and establish their own PR machines.

It does not stop there. Spin-off industries are now another measure used to assess the performance of a university, and this creates further problems. As these enterprises can be partly owned by the university, in some cases their staff and students develop conflicting careers as they go back and forth between being an academic and being an industrialist. Even industry gets confused when start-up companies are nourished with the invisible support that the university provides, through access to equipment and discussions, to stimulate new ideas. It can be a wonderful win-win situation for academia, but it can also mean unfair competition, and can be the wrong road to follow. So let us be careful, and strike the right balance between doing what is best in the short term, while protecting the universities in the long term.

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doi:10.1038/sj.embor.embor784