

Session 4: Workshop 2

Title: How do industry and universities depend on each other?

Presenter: Professor Roger Needham, Director, Microsoft UK Ltd

Chair: Professor Jarlath Ronayne, Vice-Chancellor and President of Victoria University of Technology, Australia

Rapporteur: Tammy Webster, ACU

Professor Needham delivered a 15 minute presentation outlining the most commonly cited myths concerning the inter-relationship between industry and universities and what is in his experience the reality from the perspective of the IT industry.

The myths he expounded included:

- University research translates directly into products. *From his experience he feels this rarely happens.*
- Universities' research is appropriated by industry without payment. *Again he feels this does not happen; first because there is rarely anything worth stealing and second because companies fear being sued by institutions.*
- Companies expect exclusive ties with universities or their departments. *As business is so uncertain he believes companies do not want to be over-relied upon and therefore do not want this.*

Instead he described the realities of university and industry inter-dependence by acknowledging that:

- Only the best university research is translated into the “intellectual currency of a subject” and this often takes a long time (in the case of Microsoft between 20-40 years).
- There have been some examples of industry taking a longer-term view and encouraging research for the sake of the future (e.g. BP-Amoco's investment in Cambridge Earth Sciences Department).
- Universities can pick up ideas for research areas by speaking to industry (and remembering that in the case of the IT industry, the academic subject would not exist if it were not for the industry itself).

He concluded by highlighting that in his opinion the university-industry relationship is not necessarily one way with only industry benefiting (as is commonly held to be true by those working within universities). However he added that universities are responsible for the provision of generally well-educated students who are a vital commodity for companies. He concluded that this in itself is valid justification for the continued financial support of universities.

Discussion

Questions and comments from workshop participants addressed these points and can be grouped under the following categories:

The Commercialisation of Universities

To what extent should universities become commercialised when one of their core activities should actually be teaching?

Professor Needham responded by suggesting that universities should also be striving to produce applicable research, and that the purpose of research is to try and make improvements. So if the university produces research that can be commercialised it should be. However, he noted that government should understand that the direct take-up of university research by industry is rarely if ever possible and that the current model being proposed, for instance, by the UK government is unrealistic.

Professor Needham was asked for his views on individuals holding posts jointly in both universities and companies. In response, he acknowledged that this can be a difficulty and can cause discomfort for the individuals involved in trying to please both parties.

Funding of Universities

In the context of the increasing demand for higher education, with the number of enrolments doubling across the globe, what should be done about the issue of funding for institutions?

As previously implied, Professor Needham conveyed his belief that it will not be possible to secure from private endowments the scale of funding that is needed. Therefore industry will not be the source of university funding that government currently thinks.

One Vice-Chancellor raised an example of a current situation in which, following the recent creation of specific pharmaceutical powders, and despite approaches to numerous companies, the university was obliged, after much consideration, to sell the patents in order to meet the need to secure money instantly; rather than being able to hold on to the patent rights, license the products, and perhaps gain more money in the longer term.

Professor Needham echoed that this seemed to be a common scenario.

Professor Needham was also asked whether he considered it likely that industry would ever offer help to universities; without that help being reliant on taking the best products of their research.

This he felt was very unlikely although he offered an example from his time at Cambridge: he contacted local businesses to set up a "Supporter's Club" (with each business donating a small sum of money). In return for this money the local businesses had access to the computer libraries and were allowed to speak with the

students in an attempt to persuade them to work for them. He additionally noted that any money coming from industry would be more likely to go to institutions within the companies' home country.

Industry Support

The question was posed whether industry should be supporting universities with not only money but also knowledge and ideas?

Professor Needham agreed with this suggestion. He offered as an example the current relationship between Microsoft and the University of Cambridge: he described joint meetings that are held between Microsoft employees and Cambridge theorists during which intellectual ideas are shared freely; and he told how Microsoft staff give lectures within the university and supervise graduates. He vouched that this ensures individuals feel they are engaged in a common enterprise.

The Role of a University Education

Comments were also made regarding the purpose of a university education. It was suggested that the basic university function is to enable human development so that the products of an education benefit society in general rather than just industry. The Vice-Chancellor of a major Indian university volunteered that industry should be persuaded of a need to support a broader area of university activity, outside of the immediacy of creating a profit. He offered as an example how his university had persuaded a leading Indian industrialist to provide funding for a leading law programme.

This issue was followed up by the suggestion, from the UK perspective, that industry needs to be persuaded that it is in their best interests to supplement the whole of the university infrastructure in order for it to continue producing good graduates.

Professor Needham agreed with the importance of taking a longer-term view instead of visualising universities as simply producers of "cannon-fodder" for industry. He added that the PhD students recruited at Microsoft will be the best of their year but will not continue to work on their PhD topic once employed.

Production of Exploitable Ideas

Professor Needham was asked why so few university ideas are adopted by industry. He was asked whether it was because the ideas are not good enough or is it instead that those that produce them are bad at taking them forward?

He agreed with the idea that academics are not the best at taking such ideas forward because he considers that they are not trained to be good managers. However, he felt it was due mostly to the fact that some products of research can never be exploitable (even if they will be responsible for altering the future course that industry will take).

Summary

Key issues raised within this session encompassed:

- Current government models for the commercialisation of universities are unrealistic as the products of university research can rarely be directly exploited by industry.
- Government expectations for the level of funding likely to come from industry are also unrealistic in terms of scale. However, Professor Needham described a “Supporter’s Club” he initiated at Cambridge, which encouraged sponsorship from small local businesses. This provides money although not the huge amount envisaged by government.
- Funding constraints in place upon universities mean that even if university products are exploitable by companies they cannot always take the better, longer-term option, instead having to find money immediately and therefore not benefiting from retaining the patent rights.
- It was felt across the group that industry should acknowledge the longer-term benefits of university education and recognise the need altruistically to sponsor a broader section of the university infrastructure so that high calibre graduates continue to be produced who contribute also to wider society.
- Industry would be advised to offer support for institutions additionally in terms of knowledge and ideas. Equally, however, institutions need to acknowledge the value of liaising with industry in generating ideas for research projects.