September 25, 1975

Why industry and academics go their separate ways

ACADEMIC engineers say that industry
- has not the imagination to see long term potential;
- is unreliable when it comes to financial, and even moral, obligations;
- shows little interest even in projects it has backed itself;
- reacts to proposals through its accountants;
- wastes highly qualified manpower;
- is too secretive about its policies and the results of research projects.

For good measure, industry says that academics
- cannot keep to deadlines;
- get distracted from central objectives of projects;
- have too many other responsibilities to manage a project properly;
- are not keen to work to specific contract with a time scale;
- are insensitive to the realities of the market place;
- promise more than they can provide;
- have little notion of the human and environmental contexts of technology.

The caricatures described above do not come from a confidential telephone number to which malcontents could express their anonymous gripes; rather they come from a Science Research Council report published last week and entitled *Academic-Industrial Collaboration in Engineering Research* (SRC, free of charge). We hasten to add that the SRC is not urging these opinions on the community—it is simply reporting, through a panel headed by Professor E. J. Richards (Loughborough University), the common stereotyped views that still circulate widely and undoubtedly have some substance.

The panel, like many predecessors, is concerned at the "far from satisfactory" links between university and industry, and particularly links which develop, or fail to develop, when universities look to the SRC for support in engineering research ventures which are too speculative and risky for industry to pursue in its own laboratories. The problem is put more simply and chauvinistically by politicians and newspapers—"Why do we have so many good ideas and then waste them or let a foreign company exploit them?"

This popular viewpoint may be quite wrong. British companies may steer clear of certain ideas with justification. The panel acknowledges that in some industries (computers, for instance) the collaboration is much easier to bring about. And in some cases the international nature of corporations makes simple-minded talk about British universities benefitting British industry dated and meaningless. But there is no denying that there is still much uneasiness that universities and industry go their separate, mutually incomprehending ways far too much.

The panel sees three serious gaps in the present framework for research support:
- A pre-development gap between researcher and industrialist concerning the time at which a research project can be seen to have an outcome. The academic scents success for an idea long before an industrialist is convinced; the panel urges that bridging work be given much greater support, by either the SRC, the universities, industry or research associations. This is the central message for SRC who have traditionally only supported research.
- An evaluation gap between researchers and industrialists in the following-through of research results. The panel points an accusing finger at the SRC whose record is "very poor" in the dissemination of information so that industry can get early warning of developments.
- An identification gap; it seems that academics would positively welcome a more interventionist approach by the SRC in policy formation and implementation. There is much, says the panel, that the Engineering Board (of the SRC) could do to improve its own ability to identify research needs.

It is striking how much of what the panel says boils down to one problem—adequate communications. Perhaps the most telling section of the report runs: " . . . success [in collaboration] depends strongly on the compatibility of the individuals in contact, and their enthusiasm for the project. Clearly defined objectives and responsibilities are also important, but rank second to satisfactory human relationships".

The panel was in no position to do more than make recommendations relevant to the SRC's policy, but it seems abundantly clear that at some time two broader issues will have to be faced.

First, are not engineering departments in many universities too isolated? The separation of university entrants into mathematicians, scientists, and engineers, each pursuing separate educational paths (and sometimes attending almost identical lectures) not only makes it more difficult for the student to sample widely and choose appropriately but also encourages an artificial erection of barriers around engineering which is bound to lower the general ability to communicate.

Second, the amount of movement in mid-career between university and industry, either for a year or for an indefinite period, is still pitifully small. It is certainly possible to point to short term exchanges, but if communication is to be improved it must be on the basis of understanding the constraints under which the 'other side' works. This can hardly be done in a few weeks, but rather requires people to stay long enough not just to be involved in the making of decisions, but also to have to live with the consequences of those decisions. □