

Industrial collaboration on show

Professional people do not spend time as salesmen at trade fairs each year. But there is much to be learned from what went on at Hannover last week.

Hannover

ALMOST as a matter of principle of general applicability, most people agree that it is wrong to throw out the baby with the bathwater, an image that no doubt derives from the time when baths were movable and plumbing for carrying away waste water had not been developed. The difficulty in most interesting cases is to know which is which. That may be one of the reasons why British universities have for so long felt so threatened by the British government's mixture of exhortation and incentive intended to make them contribute more directly to national prosperity. More applied research means less fundamental research, as in any zero-sum game. The huge annual trade fair that ended here last week provided ample illustrations that this calculation is far too simple.

One of the most unexpected features of this trade fair is that universities take their place alongside industrial companies as exhibitors, sometimes under their own steam, sometimes under the wing of the governments that support them, the *Länder* in West Germany. This year, one of the most important shows of this kind was that provided by the universities of North-Rhine Westphalia, the regional government whose policy on higher education was the most expansionist of all when the whole of higher education in West Germany was growing rapidly fifteen or twenty years ago. Lower Saxony, the local *Land*, was also represented, as was Berlin, universities such as Heidelberg as well as a host of publicly supported laboratories whose work is, in part at least, academic in character. At a guess, there would have been more than 200 people with academic positions or pretensions manning stands at all times during the eight days of the fair.

Why were they there? There is no secret. As with the strictly commercial exhibitors, money is the objective, either an agreement with an industrial company for the commercial development of a device or such a powerful expression of industrial interest that further funds for a research project can be had from one of the public sources of research support, the *Deutsche Forschungsgemeinschaft* (an all-embracing research council), the ministry of research and technology (BMFT) or, more often than one would guess, some other ministry.

The ingenuity and diversity of what these academic people have had to show has been compelling, which is attested by the way in which the university exhibits have gener-

ally been occupied with visitors engaged on deep discussions. (Quite often there is also a certain amount of socializing, as when people from industry try to discover what their ex-teachers are doing now.) Machines and devices predominate, computer programs and applications come next, but there is also a cement of biological research, and of electronics applied to medicine, to give the show coherence.

Diversity is also represented by the variety of institutions with things to show. Some of the great universities are there, but so too are the technical colleges of West Germany (*Fachhochschulen*) and the more recent and controversial creations, the comprehensive universities of the 1960s (*Gesamthochschulen*). In interest and ingenuity, there has been little to distinguish between them. One feature of this unusual academic show is that the chief salesman (and inventor) has been a full-throated enthusiast for what he has to show who can be diverted only with difficulty into talking about more general questions, how his university is faring, or how he balances research and/or development with teaching. (The personal pronoun "he" seems generally applicable.)

The question where the idea came from in the first place seems to yield a great variety of answers. One academic inventor says he had returned from a previous Hannover fair astonished that the great engineering companies had not thought of a way of solving a simple technical problem. Many say their work has its roots in the immediate needs of a local hospital or industrial company.

Showing off the product is not exhibitionism, but an attempt to put the development concerned on a sounder footing. The academic exhibitors also agree that success will bring them kudos back home, perhaps inversely to the standing of their institution. Although the exhibitors are necessarily a self-selected group, they make it seem entirely natural that showing a device should be a part of normal academic life.

Like the academically inclined researchers from the West German national laboratories, they no doubt sense pressure from above to be doing something useful. Indeed, for the national laboratories, technology transfer has been this year's theme for the fair. Inevitably, many of their projects are on the grander scale. The surprise is that many of them are just as particular. Techniques for bonding metal and ceramic may as well be used in useful

domestic gadgets as, for example, in thermonuclear machines. But for the people from the national laboratories, where government edict may matter more directly, there is less enthusiasm for the incidental applications than for the real purpose.

The texture of the exhibition of research is the biggest surprise. It is natural that inventors should be enthusiasts with, occasionally, an air of zealotry. Predictably, the things on show range from particular devices to generally applicable techniques. The theme that holds them all together is the belief that there may be profit in what they have to show.

Everybody acknowledges that this is just a chance, but they are keen to be on show as if that were sufficient in itself; at least they will be able to compare their work with that of others, or learn something useful from their visitors.

The morals in this experience for academic communities other than West Germany are obvious and widely understood. Indeed, in places such as Britain, everybody pays lip-service to them. First, there is no necessary contradiction between membership of an academic faculty and a research interest which is better called development.

Second, there is no way in which the professional people manning these stands can be distinguished from those encountered at quite different gatherings, conferences for example; perhaps this is something distinctive about West Germany, but the machine builders seemed refreshingly interested in what, say, the particle accelerator people are up to. (To university administrators, in any case, the only achievement that counts is success.) Third, even in publicly supported systems of higher education (and the West German system institutionalizes government support for universities to a degree no longer allowed in Britain), extra funds without strings attached are translated into ordinary currency at a higher rate.

That industrial collaboration can be rewarding and respectable is understood elsewhere in Western Europe and North America. (Japan is different; universities deal privately with industry at the outset and exhibit only their successes at even grander fairs.) But while understood, there is a sense in which it is not believed. Academics who dispute that will be more convincing when they put themselves on show, at Hannover or elsewhere.

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