The Anglo-Japanese High Technology Industry Forum

By Louis Turner

The ninth meeting of the Anglo-Japanese High Technology Industry Forum was held in June at Scotland's famous Gleneagles Hotel, located on the edge of the Scottish Highlands, some 100 kilometers north of Glasgow and Edinburgh.

The participants were greeted with a banquet speech by the Right Honorable Ian Lang MP, secretary of state for Scotland, in which he reminded the delegates of past links between Scotland and Japan: Thomas Blake Glover, who settled in Nagasaki and whose experiences served as a stimulus for the opera, *Madama Butterfly*; there is also that famous citizen of Glasgow, Henry Dyer, who established Japan's original engineering college in 1873, later to become one of the constituents of the Engineering Department of the Imperial University (now the University of Tokyo).

Today, tourism, based on golf and whisky, and a lively set of Japanese investors are the main links. Firms such as NEC, Mitsubishi, JVC, Canon and Oki Electric have significant plants around "Silicon Glen," the strip of Scotland which has attracted heavy international investment in electronics activities. But there are also links with Scotland's major universities. In particular, Lang mentioned the artificial intelligence operations at Edinburgh University where 200 researchers are at work, and firms such as Hitachi, Seiki and Toshiba are liaising with these groups. He also mentioned the pharmaceutical research operations of Fujisawa in Edinburgh.

Quite clearly, the collaboration which is occurring between Japan and Scotland is typical of what is going on between Japan and the United Kingdom as a whole. Relations are long-standing, good-natured and mutually productive.

Despite this general good atmosphere, the British side entered this conference in a slightly more self-questioning state than was normal. This resulted from British Aerospace's sale of the Rover Group to the German company BMW, despite Honda's long-term relationship with Rover. British public opinion did not know how to interpret this event. Would Japanese investors feel that Honda had been treated badly, and thus punish the United Kingdom by investing elsewhere? Did this event signal that collaboration with Japanese companies was now out of fashion?

Due to these concerns, a number of sessions touched on collaboration, and the picture which emerged was reassuring. The collaborative principle is alive and well. What has entered into the debate has been a slightly tougher approach to the selection of partners.

Collaboration in action

Dr. Tamada Toshiyuki of Sony gave an overview of his company's approach to this issue, laying out the dynamic possibilities of joining companies with independently viable ideas/businesses/strengths to create totally new opportunities which both parties can exploit. He described the systematic way his company screened potential partners, and summarized the keys for successful strategic alliances (stressing realism, patience, empathy with one's partner and clarity of objectives). Problems arise when the partner's objectives are mismatched, there is lack of give-and-take, or there is too much emphasis on short-sighted financial goals.

Kitazato Koshiro, director of coordination of ICL, put flesh on this analysis by discussing the relationship between that company and its Japanese parent, Fujitsu. He described the original technology agreement signed between the two companies in 1981 which allowed the two companies' engineers to begin collaborating. Fujitsu decided to maintain links when ICL was bought by STC, one of Fujitsu's competitors in telecommunications. Then, in the late 1980s, STC decided to divest itself of ICL and offered Fujitsu the chance to buy into ICL. After considerable debate within Fujitsu concerning issues such as whether or not they had the managerial strengths to handle this increased challenge, they went ahead and took 80% of ICL's shares.

This story shows how power relationships in strategic alliances are always in flux. A simple technology agreement forced Fujitsu into two very serious organizational decisions within a decade. The ultimate acquisition of ICL was forced on it, but the Japanese company made the decision and does not seem to have regretted it since.

Basically, they have decided to leave ICL as a European company, with the existing management (which they knew and trusted) in place. Kitazato is, in fact, the only resident board member from Fujitsu based in ICL headquarters. ICL itself places fourth within the Fujitsu group, alongside computers, telecoms and semi-conductors. On the human front, there is a small, but steady, interchange of trainees between the two companies with there currently being 50 trainees in each company who have worked in the other. He concluded that the two companies, " ... are corporate learning partners. What ICL learned from Fujitsu is reliability; what Fujitsu has learned from ICL is flexibility."

The picture, then, is of a collaboration which has worked smoothly, at least in part because the two business cultures and the relationships of key personnel have meshed well.

From the evidence of other papers, British and Japanese scientists and executives do seem to be relatively relaxed with each other. The Department of Trade's Peter Bunn spoke regarding British approaches to current European technological policies. In the course of this, he cited studies which showed that, within Europe, the U.K. was highly oriented toward international research collaboration. Seven out of the 12 member states of the European Union (including both France and Germany) collaborated most often

with the U.K., and such collaborations tended to endure. This therefore suggests that U.K.-Japanese collaborations do not occur in a vacuum. It may be that the British are more than usually relaxed about international collaboration in general. Therefore, in a world where Japan-bashing is still found, Japanese investors may respond best to a partner which takes such collaborations in its stride.

Evidence to support this judgement could be found in a special session dedicated to Japanese research and development in the United Kingdom. Speakers from Toshiba (Dr. Kasami Akinobu), Hitachi (Uraki Tsuneo), Eisai (Tsuchiya Yutaka) and Canon (Negishi Hirokazu) described a variety of R&D collaborative efforts their companies are involved with in the U.K.

The Anglo-Japanese High Technology Industry Forum, sponsored by the Japan Economic Foundation, is now in its ninth year.

All four of these companies have set down laboratories either within universities or within science parks. Eisai Pharmaceuticals has probably taken the most radical approach by building a substantial research complex within University College London. The company has already made an initial £15 million investment, and is committed to spending some £5 to £6 million per annum for the 10 years or so before any commercial outcome is expected.

Hitachi and Toshiba have both formed links with the Cavendish Laboratory in Cambridge. Hitachi is actually building a new laboratory within the overall Cavendish complex, which will house a joint research program between Hitachi and the Cavendish's Microelectronic Research Centre. Toshiba has located its first corporate level research laboratory outside Japan in the Cambridge Science Park. Although this is not a joint research program, the managing director of the Toshiba Centre is a professor of physics, also from the Cavendish Laboratory.

The Canon example is more closely focused on medium-term product development. Based in Surrey Research Park, Canon's research efforts have already created two business ventures—one in audio, and one in interactive three-dimensional computer software—which rest on research done within Britain. In both cases, corporate headquarters in Japan have given the spin-off companies in Britain the mandate to develop global businesses.

It would have been easy to have picked other such cases from the companies represented in the forum. ICL's research and advanced technology budget is over £200 million per annum, and is very much designed to be complementary to Fujitsu's corporate research thrust. Sony has two British research and development centers, one in Wales focusing on consumer electronics, and one in Basingstoke centering on broadcasting and professional services. Sharp has a significant operation outside Oxford, while Nissan has a 320-person technical center at Cranfield, which has already developed one auto model currently being assembled in Spain.

A picture emerges of a diverse range of research activities, from fairly narrow product development: through operations such as those of Canon and Sharp, which are focused on technologies which will become commercial within three to seven years; through to quite basic research with time frames of well over 10 years (Eisai, Hitachi and Toshiba).

In discussion, slight worries did emerge amongst some British delegates who queried the protection of British intellectual property. Dr. Derek Roberts, provost at the University College London and a member of the British delegation, described some of the care which had gone into drawing up the deal with Eisai. Delegates did, though, question whether his case was similar of other universities. On the other hand, the cases presented gave good examples of the way that British researchers were being attracted back to the U.K.—a phenomenon known as the "reverse braindrain." In the case of the seven-member research staff at the Toshiba Cambridge Research Centre, all five of the British researchers returned to the U.K. to join the center.

Another session on the impact of foreign direct investment on Scotland also raised questions about the deeper impact of Japanese investors. In this case, Scotland is particularly interesting because it is quite an extreme example

of a "branch plant" economy—that is one which is heavily dominated by foreign investors. One example was IBM's Scottish plant, which was established in the late 1940s and is one of the key IBM production sites for personal computers. Amongst their 4,000 employees, there was not a single American. They viewed themselves as working extremely closely with British and wider European component suppliers.

Simakura Keiichi, managing director of NEC Semiconductors in Scotland, told the impressive story of the much more recent investment by his company. His operation has involved a £220 million investment since 1981. There was a policy of continuous improvement, and this has resulted in a plant which was both more productive and more profitable than its Japanese sister plant.

There was some discussion about the extent to which such operations were integrated with local universities and suppliers. Dr. David Milne of Wolfson Microelectronics (a 35-person local company) suggested that, although his company had productive relationships with Japanese investors such as Oki and Fujitsu, there was only limited product development taking place within Scotland. Inevitably, that limited the contributions which local companies could make.

Looking toward the future

One particularly wide-ranging discussion was held on "the next stages of the environmental debate." In this session, delegates debated the role of clean technologies, green products, energy efficiency, new materials, recycling and new concepts of the product life cycle. Papers from the Royal Institute of International Affairs (David Wallace, who is seconded there from the Department of Trade), ICL (Dr. David Parker), Sharp (Dr. Kataoka Shoei), Nissan (Dr. Nakajima Yasuo) and Mitsubishi Heavy Industries (Tanaka Shigeho) were delivered.

The ICL and MHI papers were particularly impressive in showing how today's companies must think both defensively (how to limit emissions and other environmental damage from day-to-day commercial operations), while also thinking positively about the commercial opportunities which more stringent environmental concerns offered. Thus ICL has moved fast into ozone benign CFC replacements. This has led to a new joint venture with Teijin in Mihara, to produce 5,000 tons per year of Klea 134a Hydro Fluoro Carbon. In the case of MHI, they have moved into fuel cells, renewable energy systems (geothermal, hydraulic, wind power, etc.) and are very consciously building up their environmental systems product division.

Dr. Nakajima's presentation pointed to some of the problems companies face, however well-intentioned they may be. Although the energy-efficiency of individual automotive model-ranges has improved, consumers steadily trade up to larger, heavier more complex models so that the performance of the average "sold car" has actually declined since the early 1980s. He could not point to any simple solutions. California is calling for the rapid development of zero emission vehicles, but the relevant technologies are expensive, and these next generation vehicles will need cross-subsidization from more conventional (and polluting) vehicles, if consumers are to buy them in any quantity.

There was a final, extremely wide-ranging session on future directions in high-technological research and development. This focused on presentations from Professor William Stewart (chief scientific advisor to the U.K. government), Professor Nagamine Kanetada (Riken) and Ogawa Keisuke (NTT). Issues discussed ranged from the development of information highways to the contribution of studies of elementary particles to medical technology; to concerns about the nature of public understanding of science in the two countries.

Professor Stewart brought to the fore the extent to which the British authorities are critically rethinking their overall approach to science policy (and not all British participants approved of the current government). Japanese readers will be flattered to know that the British are now in the middle of a massive "Technology Foresight" initiative which is reminiscent of the "Visions" exercises through which Japan has gone through in the past. Fifteen panels have been set up in a wide range of sectors (including financial services—a curious industrial sector in which Britain has been holding its own). Scientists, industrialists, financiers and other specialists sit on these panels.

Inevitably, in a review this length, I have not been able to cover all the presentations which were given. For instance, there was a parallel session which compared Japanese, British and wider European innovation systems in which Dr. Kurokawa Kaneyuki (Fujitsu) discussed the positive and negative impact of life-time employment on the innovation process. In the same session, Steve Cook (Rolls-Royce) drew upon his experiences as a visiting engineer to Japan to compare and contrast corporate approaches to innovation in both countries.

At the conclusion of this conference, it was generally agreed that this was one of the most stimulating to be held under the auspices of the Anglo-Japan High Technology Industry Forum. Obviously, the Scottish environment helped, and I vividly remember the expressions on the faces of the Japanese delegation as a bagpiper led the way into a dinner at which haggis was the prime delicacy on offer!

However, conferences are far more than mere tourist occasions. The high level of the Japanese delegation, which included both Masuda Minoru and his predecessor Akazawa Shoichi, was matched by a particularly good level British delegation as well. What is of note is that the Japanese delegation no longer just consists of executives from Japan. Increasingly, there is interest on the part of British and Japanese executives working for Japanese companies in the U.K. (and elsewhere in Europe).

We all look forward to the 10th Forum, which will be held in Japan in May 1995. JJTI

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