The 10th U.K.-Japan High-Tech Industry Forum

By Louis Turner

The world has changed a lot in the 10 years since the first conference of the U.K.-Japan High Technology Industry Forum was held in London. On the Japanese side, this was the beginnings of the economic "bubble." In key industries such as electronics and automobiles, everything was going well. Although there were some worries about the quality of Japanese creativity, the strength of Japan's production skills was dazzling.

On the other hand, the British delegation lacked confidence. Key British companies like ICL and Rover had been forced to turn to their Japanese counterparts for rescue. In the background, there was the realization that Japan had moved a long way ahead of Britain in key areas, but there was considerable uncertainty about just how this had been achieved.

The 10th anniversary conference was held in May in the beautiful surroundings of Kyoto, one of the world's great cultural and academic centers. Five of the delegates remained from the first conference, but the debates were subtly different. In 1995, there was much more self-questioning on the part of Japanese delegates. From the very first speech, delivered by AIST's Honjo Takashi, there was an acknowledgement that Japan's strengths in key sectors such as

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electronics and biotechnology were less than had once been assumed. From my perspective as part of the British delegation, it was fascinating to watch first-time British delegates realize that top Japanese executives and officials do not have all the answers.

The Forum started in its usual way, with a day of visits and receptions in Tokyo. At Makuhari, the British delegation visited Sharp and Fujitsu and was impressed by the warmth of its welcome, the quality of the technology on display and the imagination with which that technology is presented to visitors. Quite simply, there are very few European companies which come close to companies like Sharp and Fujitsu in the effort they put in to displaying their capabilities to visitors. On the other hand, they are powerful marketing tools. However, what is also clear is how accessible they are to local citizens and schoolchildren. In the evening, the British ambassador, Sir John Boyd, welcomed both delegations.

After the trip to Kyoto, which included visits to the old Imperial Palace and the Golden Pavilion, the Forum got down to the conference. As usual, we debated seven or eight distinctive themes, which had been decided upon after negotiation between the two sides. At the instigation of the Japanese side, multimedia/information superhighway developments were placed on the agenda. The British had asked for technology foresight to be included, and there had been joint interest in topics such as the relevance of technology to an aging society, corporate venturing, and the role of foreign researchers in Japan.

AIST's Honjo opened the conference with an overview of current policy developments. In particular, he pointed to responses to the recent report of the joint committee of the Industrial Structure and Industrial Technology councils which highlighted Japanese weakness in biotechnology and, even, electronics. There was growing concern about the stagnation of private research and development, along with worries about the flight of R&D from Japan. The response would involve a continued commitment to double official funding for research and a considerable effort to improve the supply and flexibility of researchers. Increasingly, these must be treated on their meritocratic strengths, and regulations which hinder creative researchers must be swept away.

The Department of Trade's Dr. Richard Hinder followed this by introducing Britain's major recent initiative, the Technology Foresight program (backed up by reams of documentation, which he donated to the Japan Economic Foundation). As he recognized, Britain has been slow to mount such an ambitious forecasting exercise, and he explained how the British had looked at the experiences of Japan (and some other countries) in establishing this initiative. Organizationally, this was run by the Office of Science and Technology, with a steering group and 15 sector panels of around 20 members each. Each panel called on several hundred experts for specialist advice.

Despite strong leadership from executives, universities, charitable foundations, research councils and government departments were all heavily involved. Although much of this exercise seemed to replicate forecasting exercises in Japan, Hinder pointed to areas where he felt the British were being considerably more ambitious. In particular, three panels looked at financial services; leisure and learning; and retail and distribution—sectors which are of considerable economic importance but tend to be overlooked. He also claimed that the British place much less emphasis on
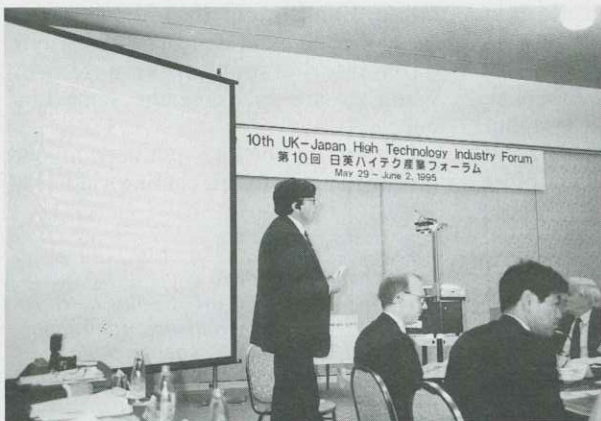
Delphi techniques than was the case in Japan.

Hinder's analysis was supported by presentations from executives who had been closely involved in this exercise (British Aerospace's Terry Knibb, Zeneca's Nigel Beard and ICI's Dr. David Parker). In general, they supported Hinder's analysis of the importance of this initiative. The presentations on the chemicals and health/life sciences sectors particularly brought out its value in identifying crucial areas of technology which had become academically unfashionable (sensors, polymers and catalysis), and which therefore needed regenerating in order to support the industrial drive which would be needed in these areas.

The debate which followed these presentations picked up many of the questions which are always raised about forecasting initiatives: Do they generate an intellectual consensus which stifles radical intellectual approaches? Is it dangerous for governments to modify their research funding as a result of such exercises? How often should one repeat the exercise to pick up fast developing technological breakthroughs?

On the other hand, the debate covered a lot of territory. Some Japanese delegates argued that the British had gone further than in the case of Japan, where visionary exercises have primarily focused on developing exports, whereas the British are concerned with general economic development.

In passing, it was interesting to note that the conference's second intervention by a Japanese executive was to comment that Hinder's presentation concentrated on the need to encourage competitiveness, while the AIST presentation did not mention competitiveness once: Was this an oversight, or did it tell one something about different approaches by officials from the two countries?

This question of whether the British and Japanese approaches to industrial matters were significantly different was brought up in a major way in the session on "Multimedia and the Information Superhighway: The International Dimension."

Heading into untapped horizons

There were three Japanese presentations which focused on various aspects of the new multimedia age. NTT's Ogawa Keisuke introduced a discussion on the need for multimedia agents, during the course of which he touched on linguistic issues, such as the fact that English far outweighs Chinese as a world language. He made a strong plea for a thesaurus and dictionary open to the whole world.

He was followed by Sharp's Dr. Kataoka who analyzed the impact multimedia would have for individuals. He looked at near-term changes in the development of the home television; the application of word processors; the evolution of portable information tools; and the application of visual communication terminals.

He concluded with a vision of a multimedia world in which communications would be "Anytime, Anywhere and Whomever."

The third Japanese presenter was NEC's Dr. Ishiguro Tatsuo who focused on "Electronic Information Media in a Networked Society." He stressed the growing electronic takeover of the paper media, mentioning CD-ROMs, Internet and the Worldwide Web (on which NEC has been an information server since September 1994).

Similar to Sumitomo Electric's Dr. Nakahara Tsuneo's points in a previous talk, he referred to the February 1995 G-7 Information Society Summit. Ishiguro worried about whether intellectual property would be adequately protected in this new era, and he called for global harmonization and the appropriate balancing of rights and interests among participants in the Global Information Infrastructure.

One of the British responses (University of Plymouth's Professor Des Mapps) continued this debate by referring to the equivalent analysis from the Technology Foresight exercise. The second British presentation was very different in nature and raised the question of whether the two nations were approaching the multimedia era from a completely different policy framework.

John Bean, from Oftel (the regulatory body which oversees the whole telecoms sector) presented a paper on "network competition." The picture he presented was of the British authorities concerning themselves with getting the maximum amount of competition into the British telecommunications market. He described measures by which Britain had granted 120 franchises to would-be cable operators from around the world, and described how some of these were moving fast into telephony as well.

The scenario was one of maximum competition, with minimum subsidies, and without any real governmental or BT attempts to lay down firm plans for how the information superhighway will evolve.

To be fair to the Japanese side, we did not get a balancing presentation which laid out governmental policy in this area. Having said that, there was considerable surprise on the British side as to how hardware-driven the Japanese approach seems to be.

A couple of the British delegates (one with long experience in the Japanese environment) pointed out how difficult it was to take full advantage of international developments (such as E-mail) from a Japanese base.

A Japanese delegate asked why NTT was one of the few companies in the world which had not bid for a cable franchise in the U.K. (where companies like Singapore Telecom are active); the answer suggested that NTT felt that the British market was too competitive, it made more sense to improve competitiveness within Asia and market experimentation could be done just as well back in Japan.

Now, I may well be misreporting the Japanese side of this debate. However, it did seem that we have two very different approaches to a fluid, fast-developing, complex set of industries. The impression the British side got was that Japanese approaches are hardware-driven and that there was an unwillingness to trust the workings of full-blown, minimally-regulated competition. In another 10 years time, we will see which approach paid off.

Meeting the needs of the elderly

The session on technology and an aging society produced four interesting papers. Sony's Dr. Yamada Toshiyuki focused on "What Can Electronics Do for an Aging Society?": how technologies can enrich the life of fit senior citizens, help people cope with the aging process and, finally, cope with mental regression. His paper dealt with technologies for monitoring illnesses etc., but he also threw out ideas about ways in which electronics can be used to stimulate the minds and limbs of the old, along the lines that game machines do for children.

AEA Technology's Dr. Mike Pilbeam was perhaps a surprising choice to speak in this session, but he was able to show how techniques developed for measuring materials stress in the nuclear industry were being adapted to help improve the effectiveness of hip replacements.

Two other papers focused on the pharmaceutical contribution to the problem of aging. Eisai's Dr. Ohno Masaji explained how Eisai's research laboratories in Tsukuba, Boston and London work together in the development of new pharmaceutical products.

Dr. Tom Salusbury from the British embassy in Tokyo summarized a major study he has completed on "Biotechnology: Some Comparisons between the U.K. and Japan." He drew a picture of an industry in which the Japanese side is trying to expand within a complex legislative framework (there are five ministries involved), having to draw on a science base which is recognized to be weak.

In contrast, this is one of the sectors in which the U.K. has won recent Nobel Prizes, and the biotechnology industry is well established, with the U.K. having more companies in this sector than any other with the exception of the United States.

This is one industry in which there is significant two-way industrial research, with Zeneca, Glaxo and Amersham International having R&D operations in Japan, while six Japanese companies have research operations in the U.K. (Eisai, Tanabe, Fujisawa, Yamanouchi, Teijin and Sankyo). He described the collaboration of the universities of Kent, Cardiff and Newcastle with JAM-STEC, which is collecting sediments from ocean abysses of over 6 kilometers in depth. The British are cultivating microorganisms from these looking for novel or rare varieties which may be of commercial importance.

Strangers in a foreign land

There was a very different kind of session when the question of foreign researchers in Japan was considered. It was introduced by Exxon Chemical's Dr. Eric Lewis who previewed the findings of the second edition of *Gaijin Scientist*, originally published in 1990 by the British Chamber of Commerce in Japan and its Science and Technology Action Group (STAG), which acts as a loose network for foreign scientists researching in Japan.

An analysis of the experience of Western scientists working in Japan, the booklet was translated into Japanese and sold well in languages both to foreign researchers and Japanese executives, who appreciated an honest set of opinions on how foreigners found Japanese research laboratories.

The new version of this booklet is a complete new piece of research. It does not gloss over some of the problems for foreign researchers (language; a reluctance to challenge old ideas; the unproductive long hours which are sometimes called for; and some feelings of isolation). On the other hand, the study brings out how Japanese employers are becoming more selective in their treatment of foreign researchers. The study suggests that the host organization expects the foreign researcher to bring new approaches to corporate thinking, help in the internationalization of the companies' scientific cultures, specific areas of expertise and the ability to stimulate young Japanese elite scientists.

Kataoka of Sharp confirmed this picture. In his paper, he made it clear that his company valued foreign researchers, and he provided details of the employment conditions on offer (a contract with an annual renewal; salary perhaps 1.5 times that of an equivalent Japanese scientist; the availability of pension schedules and Japanese Language Training System). Within his part of Sharp, the company employed three British and four American researchers, with one researcher each from Brazil, Australia, China and Taiwan. (One point resulting from this session was the growing penetration of other Asians into the researcher pool in Japan.)

Nissan's Nigoro's paper was entitled "The Role of British Engineers in Nissan Vehicle Development," while a young British researcher (Jonathan Westwater) delivered a paper on "Foreign Researchers at the Sony Research Center."

He explained that he came to Japan because he was a specialist in the properties and applications of amorphous silicon, an integral part of LCD technology. Since Japanese industry has taken a commanding lead in this sector, he felt it would be a worthwhile career move to spend some time observing how Japanese research techniques had won them such a lead. As with Kataoka's presentation, he showed how his company (Sony) had increasingly professionalized its treatment of foreign researchers. Along with Lewis, he stressed how essential it was to have a good working relationship with one's boss.

Conclusion

All in all, this was a successful conference, and it was good to see the Forum in such good shape after 10 years of activity. The 1996 conference will be held in Oxford in the second week of June. We are all looking forward to the next decade of the Forum's existence.

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