Winds of change blowing hard in British science museums

London

DECLINING support from the government is forcing Britain's science museums to think hard about ways of reducing costs and attracting funds from alternative sources.

The government is loosening its hold over the museums in an effort to encourage them to forge closer partnerships with the private sector. The British Museum (Natural History), BM(NH), was until a month ago under the aegis of the Department of Education and Science, receiving its funds (£11.44 million last year) from the science budget. On 1

Suresh Karadia/The Independent

A wedding reception among the dinosaurs now possible at BM(NH).

August, BM(NH) was brought into line with the other main museums and passed over to the Office of Arts and Libraries.

On 1 April, funding arrangements for BM(NH) and its neighbour, the Science Museum, were changed, with the government money coming as grant-in-aid, releasing the museums from many of the Treasury's annuality restraints.

Furthermore, the government is shortly to hand over the responsibility for the museums' buildings and estates from the government's Property Services Agency to the museums' trustees. The sums are not inconsiderable — in 1985–86 PSA was given £4.8 million to spend on BM(NH).

At the Science Museum, the new director, Neil Cossons, appointed 18 months ago, is making his presence felt. He hopes to bring the four curatorial departments under the single roof of a 'collections management' department. Research priorities will be redefined by a new head of research, with responsibility for the library service, and a separate marketing division is to be created.

Last year, the Science Museum received £8.8 million from the government, with earnings from publishing, retailing and hiring of rooms totalling £879,000. Sponsorship from industry netted almost £1 million. Cossons believes there is much scope for increasing earnings from non-government sources. But many of the museum's curators are suspicious. Cossons' pledge that he has "no intention" of introducing compulsory redundancies is not regarded as a sufficiently strong guarantee of job security. Several members of staff have been refusing to cooperate with external management consultants brought in to find the best way of implementing the changes.

So far, Cossons has refrained from recommending the introduction of admission fees to the museum's public galleries. He is, however, keeping a close eye on BM(NH) next door, which started charging visitors on 1 April this year, and whose attendance trends traditionally closely reflect those of the Science Museum.

BM(NH) says that it is too soon to gauge the effect of the charges, although admissions do not seem to have changed significantly so far. BM(NH) is pinning its hopes on the success of the new charging policy which is calculated to generate £1.6 million annually by 1990–91. The first formal appraisal of the effect of admission fees is due towards the end of this year. The museum could find difficulty in convincing opponents of the new policy that an estimated 20 per cent drop in attendance figures was expected simply by virtue of the inaccuracy of assessing the numbers of visitors before charging was introduced.

Because curation and research swallow by far the largest proportion of BM(NH)'s resources (41 per cent in 1985–86), the museum's management is trying to lessen the financial burden they impose. If further manpower cuts are necessary, the scientific staff will bear the brunt. The management is also considering ways of marketing the abundance of scientific expertise.

Like the Science Museum, BM(NH) is embarking on a fierce marketing programme. With industrial sponsorship unlikely to be a big money-spinner, most efforts are being concentrated on giving the museum a higher public profile, aimed at pulling more paying customers through the turnstiles. Renting rooms for parties, something that has attracted the attention of the national media, represents a further, small source of income.

When BM(NH)'s new director, Neil Chalmers, replaces Ronald Hedley next year, he will be taking charge of a much-changed institution. **Simon Hadlington**

Taking stock

Munich

STILL in its infancy, the European Academic and Research Network (EARN), a computer communications network, is now embarking on enforced independence without the comforting support of computer giant IBM. EARN must learn to live with the potentially disastrous tariff policies of some European telecommunications monopolies, earning at least enough income to replace the $15 million provided by IBM over the past four years. But director Dennis Jennings is confident that EARN will stay the course.

Since 1984, EARN has connected more than 2,000 computers in 20 countries, largely with the help of IBM's determination to overcome wildly different standards and attitudes in the host countries. The network now includes Israel, the Ivory Coast and Iceland. All members are also connected to US research institutions through BITNET, a US computer network.

EARN's success is measured by its growth. In West Germany, for example, EARN traffic has doubled every 10 months since the beginning. The West German data lines, which carried 2,400 bits per second (b.p.s.) at the outset, have been largely replaced by lines carrying 9,600 b.p.s. and may soon be upgraded to 64,000 b.p.s., already available in many other European countries.

But who will pay the costs when IBM support runs out at the end of 1987? EARN directors decided at Nice in May to adopt the "BITNET model" to fund the lines connecting the various countries. Under that scheme, each user pays for the line leading to its neighbour; the members share the cost of one line to the United States and the other line is paid for by West Germany.

Because of huge discrepancies in the cost of the international lines, however, several countries are considering shifting their lines out of high-priced areas such as West Germany (see opposite) and Switzerland. The United Kingdom, for example, is contemplating a shift of its lines from Geneva to Montpélier, France. West Germany may lose all but one of its five international data lines because its charges are so high. These shifts are not expected to hurt EARN's performance.

Nor do most countries expect difficulty with the transition to self-management. Networks such as SWITCH in Switzerland, JANET in Britain, SURF in Holland and REUNIR in France will continue to belong to EARN. The only problem will be convincing funding bodies to give support to the network. But EARN director Dennis Jennings is confident that all countries have established a

. . . academic networks
. . . without IBM support

source of funds, at least for 1988.

One obvious area for improvement is in EARN's carrying capacity. European researchers are envious of the new US network NSFnet operating at 1.544 megabits a second. In Europe, Jennings says there are "no plans" to upgrade EARN beyond 64,000 b.p.s.

One of EARN's most important tasks in the transition is to tell whether demand justifies such massive increases in capacity. In some fields, such as computer-aided design, the need already exists; but in areas like the humanities demand will depend on how well EARN can sell itself.

Steven Dickman

Munich: Expensive survival

THE prospect of IBM's withdrawal as a supporter of BITNET has dramatically drawn attention to the high cost of long distance communications in West Germany. Because of a new volume-based tariff structure for international leased data lines, the European network EARN plans to shift as many lines as possible out of West Germany. But two of eleven *Länder* plan to underwrite the cost of data transmission for research.

The dispute over tariff policy concerns five EARN lines terminating in West Germany. Since the partners sharing the lines also share the cost, the effective 100 to 500 per cent increase in price makes them unattractive. EARN director Dennis Jennings calls the tariff policy "quite outrageous". West German EARN director Michael Hebgen, of the University of Heidelberg, agrees. He says all the lines may have to be cut if the ministry does not change its policy. Others believe that, while the new policy may cause problems, academic network links will not be cut.

The postal ministry defends the high tariffs by citing the high quality of the West German telecommunications network. Based on the "equal treatment principle", it also says that scientists should be no more entitled to lower rates than anyone else. But the postal ministry's argument that researchers should look elsewhere if they want cheaper service seems cynical in the light of its effective monopoly.

Eventually, federal and state governments may step in to help. There is a two-year-old computer investment programme that may be a model for joint financing, according to Alfred Kupllmer from the Deutsche Forschungsgemeinschaft (DFG). The immediate problem is to take over from IBM the costs of the lines leading to the 24 computers (out of a total of 170) forming the "backbone" of the West German network. With federal and state help, West German researchers are

unlikely to suffer much from IBM's withdrawal. **Steven Dickman**

Washington: Networks multiply

COMPARED to Europe, US computer networks have it easy. Competition in the telecommunications industry in the aftermath of the break-up of AT&T (American Telephone and Telegraph) has produced an overcapacity of high-speed data lines, and therefore nominal transmission costs. US networks have also become more used to being self-supporting.

That being said, all is not plain sailing for networks in the United States. A national debate is under way over who should pay for a 'backbone' for NSFnet, a national research network just starting to operate. At present, NSFnet is moving about 60 million packets a month through its six-node backbone to its collection of regional networks, campus networks and supercomputer centres. Some argue that NSF should include a line item in its budget to pay for the system, but others would prefer that it be supported as part of the indirect cost of research grants. Another possibility is for the regional networks themselves to pay for the backbone through revenue from their members.

The popularity of networks in the United States has created its own set of problems. Different protocols and communications standards has created the potential for a Tower of Babel, making network interconnectivity a nightmare.

A development expected shortly should help to rationalize some of the problems in sideways communications among networks. BITNET will be merging with CSNET. Both have been popular with the research community, and both are self-supporting from user contributions. CSNET began as a network for computer sciences, and BITNET began life as a general academic network.

Congress has requested that the federal government come up with a plan for the future of scientific computing in the United States. That report has now been essentially completed, is under review within the White House, and should be delivered to Congress later this year.

Joseph Palca

London: EARN poor relation

NEGOTIATIONS are proceeding in Britain over the fine print in a formula for a new funding arrangement for the EARN computer network. Britain has agreed to share the costs of the system with other European users, to the tune of £35,000, which would cover the cost of the leased telephone line to CERN in Geneva as well as a proportion of the satellite link between Montpelier and New York. British network users will also

need to find another £35,000 to cover staffing and overheads.

A formula has been hammered out calling for major funding bodies, such as research councils, to pay a proportion of the costs based on their use of the network over the last six months. Each user group within the research councils would be assessed under an arrangement that EARN's director in Britain, Paul Bryant, admits is "a bit rough" since it is based on machine time rather than individual users.

Provided the research bodies agree to pay a proportion of the computer network's costs, the new funding arrangement should make no difference to British scientists who use the network. If any of the groups refuse to join in, their members will not be able to take part in the network.

The funding formula has won the approval of the Computer Board for Universities and Research Councils, which finances computers in universities. Individual universities within the EARN network will meet to discuss the new formula in November, but it is considered they have no option but to agree. A new funding strategy is under consideration for 1989, when the European network will change to a more modern design.

EARN has not taken off in Britain the way it has in some other countries, partly due to an initial fear that it would undermine the local Joint Academic Network, JANET, and partly because EARN uses older and therefore less attractive technology. **Kathy Johnston**

Paris: REUNIR ready

FRANCE'S academic computer network will still function next year when IBM ceases paying for its leased telephone lines through EARN. One of the first countries to be involved with EARN, France has recently become a major link in the network with the choice of CNUSC, the national computing centre at the University of Montpélier, as the site for the European high-speed satellite link to BITNET at the City University of New York.

With the withdrawal of IBM funding for EARN, France's major national academic network, REUNIR, will take over a large share of the financial responsibility. Costs will be split jointly between individual sites (universities and research centres), who will pay a subscription towards running costs, and REUNIR itself, which will pay for global fixed costs, such as renting the data lines. REUNIR's budget comes out of the annual computing budgets of its founder-members, the state-funded research organizations.

A spokesman for REUNIR explained that IBM's funding of EARN played a significant pump-priming role and has enabled the networking infrastructure to develop in France, showing that there was a "considerable need" for such a service.

Peter Coles