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## **Free of charge : an impossible principle in the digital world?**

The question asked in the title is really an impossible one to answer, except as “no”. Information and libraries have never been free; they have always cost someone somewhere money. However, there is a long tradition that public libraries should be free at the point of use as part of the infrastructure of a civilised society and there is every reason to fight for the retention of that principle in a digital world, and with some prospect of success.

My background lies in higher education in the United Kingdom and that is where my examples will come from. Many of you will know such distinguished British public library colleagues as Chris Batt, Bob McKee and Guenever Pachent, all of whom are leaders in moving to an electronic future. Nevertheless higher education possesses the incomparable advantage of the JANET network and it is therefore in higher education that most of the experimental activity is taking place.

UK higher education has taken a number of bold steps to deliver network services through national planning. However, underlying these pragmatically organised services is a philosophical approach to information provision. Central to that philosophy is that services should be free at the point of use and that we have a duty to the nation to turn out graduates who are not only eager to use electronic services, but have been taught the skills to take the fullest advantage of this.

Finally I shall argue that small nations such as the United Kingdom or the countries of Scandinavia have a huge advantage over the United States. We can practise systematic national planning and introduce services, training and documentation on a countrywide basis. To experiment with and change the whole system is not an opportunity offered to very large decentralised or federal countries.

### **General Background**

The United Kingdom has had a long tradition of public libraries funded either by central or local taxation. Although there have always been public subscription libraries these have played a minor part in library development. The concept of libraries being free at the point of use, principally as an educational resource, is a powerful influence in public debate. Although charging has become common in recent

years for such new services as the lending of music cassettes and videos, the core service is a cherished public good.

In considering how to develop services we have been very conscious of a European dimension. It is not necessary to be anti-American to be pro-European and we have felt very strongly that we want to have a base of information skills relating to networked services which will allow us to support European industry and commerce. Within my working career the United States has prevented the export of advanced computing equipment and software to the UK on commercial and political grounds. It is very easy to imagine that data might be similarly treated for the quite proper reasons of protecting American research and American industry in such knowledge dependent areas as biotechnology.

After many years of working with data we are also quite clear that the major costs of electronic services are the ownership rather than the acquisition costs. It is therefore in areas such as training, centralisation of datahandling, documentation and support that the greatest economies are to be made. We are clear that this is best done through a nationally planned strategy.

Of course a library cannot provide an open-ended commitment to provide an infinite amount of support. The core of core and value added services has then begun to emerge. A basic minimum level of service is defined which will meet the needs of most people most of the time. This is the core service. For additional services - value added services - an appropriate charge is then made. Thus, for example, to write down from a computer screen the information retrieved by a search might be seen as core, while to print out the result (which costs the library paper, ink etc.) may be charged for.

We also firmly believe that the state has a responsibility to provide the core infrastructure which enable everyone to have access to the facilities we provide. In that sense the Bangemann Report was a great disappointment since it wishes to leave the development of networks entirely to the market. Since the market has no sense of social responsibility and is interested only in profit this approach may well disenfranchise all but the affluent members of the community. Already in Europe we can see a huge discrepancy in the quality and availability of networks. Instead of enfranchising less favoured regions we run the risk of reinforcing existing discrepancies if the Bangemann approach is adopted.

It is important to remember that increasing classes of information are available only in electronic formats. Satellite data, film, television and radio are obvious examples of this. But the range is growing; in advanced countries the census is available only in machine readable form; weather and crop data, medical and even archaeological data now exists only in electronic form.

The final consideration is the position of publishing and publishers. Many academics can perceive an emerging split between academic and mass market publishing. There is a growing change in the way research is conducted and the results transmitted. A multi-national electronically based future is emerging and while publishers act as though research exists to support publishing (while the opposite is true) it is not clear that they have a long term future in disseminating the results of scholarship.

### **UK Higher Education**

The JANET network and its services is funded centrally from the grant to Higher Education made by the government. The sum is tiny - some £30 million - compared with the total education budget. However it is large enough to provide significantly greater benefit than we would gain from giving each university a few thousand more pounds. About £23 million of the money is spent on the physical network, connecting every university and research institute and providing the international links to other countries. That leaves some £7 million for the provision of services and for research and development. Links to both the United States and Europe are both relatively low speed and expensive to upgrade. This may be expressed starkly as giving us a choice to spend our money on content or bandwidth. We have then developed a two pronged strategy of increasing the capacity to cache data, of building mirror sites and as a corollary of protecting the data we create within the UK. Cache sites simply capture the international traffic and store it for a brief period. This assumes that the best guide to what will be used is what has been used. Data is kept for a few days and future requests simply look there first before using the international link. A mirror site takes a deliberately chosen piece of data and keeps a permanently updated copy in the country. Perhaps the best example of this is the Visible Human Project. These images are very large, but much in demand by medical and health science students. We are therefore discussing with the National Library of Medicine

setting up a mirror service in the UK, simply to keep transatlantic traffic levels within bounds.

Protection of existing data is important. Computing media have gone through astonishing transformations in the last thirty years and unless there is a systematic attempt to “future-proof” research results they may effectively be lost. We have therefore set up centres to deal with this issue. As part of this whole process we are also determined to ensure that we have an adequate national skills base. Dealing with very large datasets of all sorts will be a key skill in future and we are determined that the UK should not be reliant on others for those key skills.

### **UK Higher Education Networked Services**

Let me briefly describe these services, principally so that you can see how far beyond the traditional boundaries of the library they go. The first four services provide the infrastructure, support and training which underpins much of the activity.

**AGOCG.** The Advisory Group on Computer Graphics provides a single national focus for computer graphics, visualization and multimedia. Based at Loughborough it carries out software and hardware evaluations, runs workshops and seminars and assists sites in the introduction of key technologies. It offers a useful “technology watch” service.

**BUBL.** The BUBL Information Service offers an Internet current awareness service, together with organised, user-friendly access to Internet resources and services with the combined gopher/WWW subject tree being a particular feature. It is organised from Strathclyde University.

**MAILBASE.** Based at the University of Newcastle this organises the Listserv activity in the United Kingdom. Its brief is wider however and it also sets out to organise the communities which will operate listservers. It has had notable success in this field, not least with university administrators.

**UKOLN.** The Office for Library Networking which acts as a sort of strategic thinktank and research and development centre. It also acts as the UK Gopher National entry point.

There is also a substantial and growing range of dataservices.

**BIDS.** Based at the university of Bath this is the only substantial commercial service. It provides access to a range of bibliographic datasets, including the ISI citation indexes, Embase and Compendex. The International Bibliography of the Social Sciences has also just been added.

**ESRC DATA ARCHIVE.** The Archive is jointly funded by the ESRC (Economic and Social Research Council), the JISC (Joint Information Systems Committee) and the University of Essex. The oldest national centre, founded in 1967, its function is to acquire and preserve research data in the social sciences and humanities and to make them available for analysis and teaching. About 5000 datasets are held currently.

**HENSA.** This is the shareware archive. It is in two parts with Unix numerical and statistical software offered from the University of Kent and pc software from Lancaster University.

At Kent, Internet searches may also be performed using the archie server and Kent is becoming the national centre for cacheing.

**NISS.** This set of services is based at the University of Bath and concentrates on current information ranging from yellow pages to newspapers. It aims to promote an electronic information culture through providing access to useful collections of information. It also acts as a gateway to other services and resources and provides information through the NISS Bulletin Board.

**MIDAS.** Based at Manchester University, this service is one of very large datasets, most notably the UK 1981 and 1991 Census, continuous government surveys such as the General Household Survey, macro-economic time series databanks and scientific datasets. There is a full range of support services for the data.

**AHDS.** An Arts & Humanities Data Service has just been authorised and will be based at King's College London. This follows a major feasibility study and the service will broadly be based on the experience of the Essex Archive

Work has just begun on defining a national image centre. Higher education produces thousands of images each year ranging from medical and dental through to art & design. We are concerned that these should be retained within and made available to the wider academic community. It is hoped that the plan for such an image service will emerge within about one year.

Negotiations are also under way for the creation of a national higher education OPAC linking the library catalogues of the collections of the major academic research libraries which form the CURL (Consortium of University Research Libraries) group. This will have some value for researchers, but the intention is to link it to new distributed document delivery services which will serve different parts of the country or different subject areas and ensure that maximum value is obtained from the investment that higher education makes in its library collections.

A review study of CNIDR (Clearinghouse for Networked Information and Resource Discovery) and of InterNIC has been commissioned to consider how we might use these American ideas in a UK context to make generally available information on network developments and standards and to provide advice and leadership on local system design.

Finally we are embarking on a digitisation programme which will make available resources on the network. Various models are proposed, some commercial ventures, some partnerships with small publishers and some for heavily used out of copyright material. The intention is to cover a wide range of disciplines.

### **Principles**

It is also worth considering some of the policy issues which have been exposed in developing our services. Firstly, it is a cardinal principle that information must be free at the point of use. Where commercial information is provided it is either paid for from central funds or by the institution or by some combination of the two, but never by the end-user. We want to encourage and stimulate use as a strategic national goal. On the whole suppliers do not lose. There is already anecdotal evidence of increased downstream use. As students become employees they are beginning to seek the same electronic resources they used daily at university. We have had and do have major debate over the price to be charged to institutions for such services but always on the premise that services are free at the point of use. In practice most are wholly free and are paid for by "top-slicing" the higher education budget as described above. Only for the commercial bibliographic products do are sites required to make a payment.

Secondly, we are committed to subscription based or licensing models and will not fund transaction based models. There is always another alternative product and only the most arrogant of publishers believe that they have a true monopoly. In fact there is some evidence

that our policy is beginning to affect the use of products from those publishers who are not willing to accept this model.

Thirdly is the commonality of interfaces. The concept of a common command language for material as varied as the census, wordprocessing software and bibliographic data is an evident nonsense. However by grouping material together in locations by type, whether bibliographic, full text or numeric, we have been able to go some way towards providing common interfaces to the various datasets. Perhaps the next major challenge for the policy is, however, to encourage better and more friendly interfaces.

Fourthly is community involvement. It is a central tenet that resources are to be provided for all disciplines. A Datasets Steering Group has been set up to conduct a planned programme of procurements for all subject areas and it is already planning up to two years ahead. That group conducts product evaluations which involve the relevant academic and library communities in identifying the "best buys" for the subject.

The last point to mention is our present policy of delivering information to everyone. This means delivering to the poorest sort of terminal, currently defined as a VT100. Inevitably this frustrates users with more powerful equipment. As a result we are about to conduct a census of terminals in UK higher education to decide whether it is now time to move the definition upwards without disenfranchising significant numbers of users with old equipment.

Perhaps the greatest challenge remaining is that of mass instruction. Librarians are used to giving individual or small group support to users. However we now see that we must change and be in a position to pass on information management skills to perhaps 5000 students a year. This will require a major shift of attitude, skills and ambitions.

And so this leads us to the underlying goal of the distributed national electronic collection. It is clearly at this point incomplete and it will take several years to have all the elements in place. Some services will succeed and others will fail; we shall have disappointments along the way. But the objective is clear, to create a central core of material which is centrally defined but meets user needs in all disciplines. The user will then have a limited need to search for materials outside the core. We will spend our resources on developing that core rather than on cataloguing anything that might ever be used on the Internet. In doing this we hope to provide a variant of Gresham's Law. While bad money may drive out good, we hope that quality assured data, available reliably and with excellent nationally prepared documentation will remove the need to use unknown data of unknown validity available intermittently and unreliably.



## **National Planning**

As mentioned earlier, the concept of national planning is somewhat foreign to the American experience but it does apply elsewhere. The UK is not alone in its concerns and at least some passing reference must be made to other experiences in national planning. Singapore is a small but ambitious country which has developed a blueprint based on the concept of “The Intelligent Island” and lifelong learning. It mobilises all national resources and places much emphasis on the instruction of the very young, on support for business, and on becoming an information centre for South-east Asia. Australia has a long tradition of resource sharing as a way of conquering geographic isolation. It has pursued some similar goals to those of the UK, but through the voluntary contributions of the universities. At least arguably this may explain why they are moving less quickly than we are. Perhaps the liveliest national planning is in the Netherlands and based on Pica. It is perhaps the most advanced country in Europe, but it bases its services on the philosophy that the user pays. All of these models are worth exploring in deciding how to take matters forward in your countries.

## **Conclusion**

The analogy is perhaps unfortunate, but what we are consciously doing is the equivalent of giving away drugs in the playground. We see it as our responsibility to create graduate students who are dependent on electronic information and who will go out into the industry and commerce of our country spreading the electronic revolution.

We are creating a distributed library. That poses its own challenges but I also opens up new possibilities of serving the community. The housebound, the disabled, ethnic minorities and remote communities can all now have the same opportunities which are offered to those in affluent metropolitan areas. Studies show that what the public wants from networks is education more than entertainment. Education becomes democratised. We can visit and experience the rainforests or the Tivoli Gardens using virtual reality; we can study anatomy a thousand kilometres from a hospital or visit the Vatican archives without leaving Aalborg.

Now all of this has a price - and no doubt a very high price. But we can be imaginative in raising revenue. The earliest experiments in the United States by Ken Dowlin created the Pike’s Peak electronic library. Initially it was largely funded by sponsorship from a local bus company. Dowlin put their timetables on line as part of the Library service - and the bus

company paid. Playboy has just become available on the Internet. It is free because it is paid for by advertisers, who are flocking to be seen. We must also consider our role as information providers rather than consumers and whether this offers possibilities for revenue generation. At the University of Wales Cardiff they have a database of film reviews. It is used by 70,000 people a day, most of them from abroad. Could this be charged for? Should services such as local weather reports or sports results be made available and charged for? Could the library run a local network newspaper and raise advertising revenue?

What kind of commercial and business support services could be made available for profit?

In the UK a report has just been published on the future of the public library "Public Libraries in a World of Cultural Change". It proposes such ideas as information telecentres and library kiosks on motorways providing fee-based electronic information services.

With imagination and foresight - and a retention of our historic vision - libraries and librarians have a great future, but we must persuade the state to join us in sharing that vision. A recent European Union report showed that public libraries were the second most heavily used service in Europe; second only to crematoria. Crematoria have an advantage in that it is easy to identify their "customers". Equally and by definition their customers only ever visit them once. If we can define our customer base and get them to pay only two visits we will build a future in which electronic services can be as accessible to the nation as printed services have been.

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