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Projects Into Services: The UK Experience

[Peter Brophy](#) reviews the experience of the UK academic sector in turning digital library projects into sustainable services.

Introduction: The First Wave

It is worth remembering that there is a long history of successful commercialisation of digital library R&D projects in the UK. While there are probably even earlier examples, the obvious instances are the Birmingham Libraries Co-operative Mechanisation Project (BLCMP) and the South-West Academic Libraries Co-operative Automation Project (SWALCAP) from the 1960s. Both were initially funded by grants from the then Office for Scientific and Technical Information (OSTI, a body whose responsibilities were to be taken over by the British Library Research & Development Department (BLRDD) and later dispersed among various funders such as the Arts & Humanities Research Council (AHRC), the Joint Information Systems Committee (JISC) and the Museums, Libraries and Archives Council (MLA)). BLCMP was a co-operative cataloguing project enabling academic libraries in the Birmingham area to share the costs of creating catalogue records. SWALCAP, perhaps more ambitiously, was a shared circulation system for academic libraries in South-West England and South Wales, using mainframe computers in Bristol and real-time access across leased lines.

BLCMP began in 1969 and gradually expanded by recruiting member libraries across the UK and developing standalone systems. For the next thirty years it continued as a cooperative, with members each holding a voting share, until in 1999 it became a limited company, changing its name to Talis Information Ltd. 100% of the initial shareholding was held by the BLCMP member libraries, but the new business model enabled the company to expand by attracting inward investment, entering into partnerships and so on - moves which were difficult if not impossible in the former legal model. Today Talis describes itself, not unreasonably, as “the market leading provider of (IT) products and services for public and academic libraries in the UK and Ireland” [\[1\]](#).

SWALCAP followed a similar trajectory, developing a range of services (including cataloguing, partly through access to BLCMP’s database, and like BLCMP a standalone system (Libertas)). It became a limited company, SLS, again owned by its university shareholders, before being taken over by Innovative Interfaces of the USA in 1997. The UK system was quickly dropped in favour of the international product, currently *Millennium* [\[2\]](#).

This pattern of creating co-operatives which would then be commercialised is one that has been followed elsewhere in the world. OCLC is an obvious example, though it should be noted that it remains a non-profit, membership organisation within a commercial framework. The model clearly offered major advantages in the past: long development times within a sheltered and supportive environment of shared ownership being the obvious one. There are a number of current UK organisations which could well move down this path over time - [COPAC](#) (the Consortium of Research Libraries OPAC [\[3\]](#)) being an obvious example - though it is unlikely to form a suitable path to sustainability for most projects.

Surfing into the Nineties

By the beginning of the 1990s it was becoming apparent that there was a new imperative for sharing the development and operational costs of services among academic libraries. This time, however, rather than administrative systems, the focus was on delivering content services. Throughout the

1970s and 1980s academic libraries had developed the use of electronic content; first through purely bibliographic data, latterly through full text. However, the arrival first of the PC (or equivalent end-user workstation) to provide processing and display facilities at the desktop and then of local area networks to enable delivery of content from remote servers to those workstations proved a golden opportunity for libraries to demonstrate the benefits of delivery to the end-user.

It was at this time that the Joint Information Systems Committee (JISC) datacentres were first set up (originally [BIDS](#) at Bath [4] and MIDAS (now [MIMAS](#)) at Manchester [5], later to be joined by [EDINA](#) in Edinburgh [6]). The option of mounting and maintaining huge datasets at every institution was clearly uneconomic, so sector-managed national datacentres offered an obvious solution in the absence of viable and affordable commercial alternatives. A critical part of these services was that delivery was “free at the point of use”. As Lynne Brindley wrote in 1996, “within JISC a very clear and successful policy for dataset provision has been established through a model service, free at the point of use, which has enabled every higher education institution in the UK to obtain unlimited access to a range of data files for a flat subscription. The success rate is easily measurable and there are inexorable increases in use as each new academic year rolls on.” [7]

It is worth recalling at this point that the JISC itself is wholly-owned by the Higher Education funding councils (indeed at some points there have been considerable difficulties because of its lack of independent legal status). Since the *raison d'être* of the funding councils is to distribute resources to the individual universities, any expenditure by JISC is ‘top-sliced’ from the total available to the sector and thus reduces the amount available for distribution. There are two ways to look at this:

- top-sliced expenditure is in effect a pooling of resources within a consortium of universities which by joining together are able either to buy services at a better price or to undertake development work which no individual institution could achieve. On this model a high level of JISC expenditure, provided it is properly matched to institutional requirements and well-managed, is a good thing.
- top-sliced expenditure is simply a tax on institutions which accept, as individuals often do with personal taxation, that this is unavoidable but seek to keep the level of ‘taxation’ at the absolute minimum. On this basis, the smaller the JISC budget the better. And, of course, the sooner any nascent JISC service can be shifted into the commercial (or at least non-publicly-funded) sector, the better.

It is hardly surprising that these attitudes keep emerging in discussion and debate. Unfortunately the inability of institutions to agree and stick to an agreed position has made the JISC’s work difficult. As pressures on universities to be competitive have increased, there has been a noticeable emphasis on the second viewpoint - though at present there seems to be a partial shift back to the first again!

In any case, the success of the datacentres led to some moves to commercialise service delivery, perhaps the most notable being the changes at the University of Bath where BIDS dataservices moved from a university-run service to an independent company, [ingenta](#) [8], in 1998, although the University retained a minority shareholding. The reasons for this change are informative:

‘Since the JISC wasn’t in a position to underwrite this sort of work, and because it clearly wasn’t a core activity for the University of Bath, early in 1998 the University started discussions with a number of possible partners. The end result was an agreement to set up a new company, to be known as *ingenta ltd*, which would take responsibility for BIDS and ingentaJournals and the development of the service.’ [9]

A different type of organisation, also spun out of university activity led by the University of Bath, is represented by [eduserv](#) [10], which operates as a charity with a board of trustees and covenants its profits to its educational foundation. The Foundation's objects are 'the advancement of education in particular by facilitating teaching, learning and research for the benefit of institutes and centres of education by such means as are charitable' [11].) Again drawing on what were originally nationally-funded projects, eduserv is now responsible for the [ATHENS](#) [12] authentication and [CHEST](#) [13] collaborative purchasing services.

It is clear from this account that commercialisation (or other routes to independence from central funding) has been a successful route for a considerable number of projects/services. However, it is by no means an easy option and it has rarely been used before a very strong customer base has been developed.

Swimming in the Mainstream

Going back to digital library development in the early to mid-1990s in the UK, the major feature was undoubtedly the [eLib Programme](#) [14]. eLib was quite explicitly designed as a 'let a thousand flowers bloom' exercise, at least in its first two phases, and it was unclear at the outset how many of these projects would turn into services in the short to medium term. The Implementation Group simply recorded the intention to "support of a range of activities to further the development of the electronic library" [15]. However, much of this work has been highly influential and it is legitimate to see it as service development by another route - rather than grow individual projects into services, look to embed them within wider initiatives which have great importance in the landscape of academic library operation today. Chris Rusbridge, reflecting on eLib's contribution, gave an example of this kind of 'service development' when he remarked (in 2001) 'while all the projects were successful in their way, WoPEc and Cogprints, plus the latter's JISC/NSF successor, the Open Citation project can genuinely claim to be forerunners of the Open Archives Initiative. This may turn out to be a crucial development in providing access to a much wider range of "grey" materials, and possibly helping to counter the debilitating effect of the scholarly journals price spiral.' [16] At an intellectual level, which admittedly is stretching the concept of 'service' rather far, the [MODELS](#) [17] work has been of immense importance in helping elucidate the framework of the Information Environment and securing the UK's voice in international debate on these issues.

In the longer term, some of the eLib projects have certainly developed into real services, embedded within the broader framework. The *BIDS JournalsOnline* [18] service, for example, was built upon [InfoBike](#) [19] even though that project was hardly a success in its immediate objectives - and as already noted, the BIDS services are now part of ingenta. Another innovative project, [HERON](#) [20], also became part of ingenta.

Sailing into the New Millennium

The largely experimental period of the 1990s gave way to a much more integrated approach with the conceptualisation and development of the Distributed National Electronic Resource (DNER) [21], rapidly re-titled the JISC Information Environment (IE) [22]. This was a necessary development, not least because the requirement for interoperability between systems made piecemeal development unsustainable and unjustifiable. However, this approach brought with it its own problems from a service sustainability standpoint.

The first problem is how to shift a project into the service mode when it is intertwined with other projects which might not merit the same treatment at the same time. One solution is exemplified by

the [JORUM](#) [23], which represents an attempt to provide a service framework for outputs from programmes like [FAIR](#) [24], but its long-term status is by no means secure.

A second problem arises when the project being considered is a piece of middleware, perhaps with no obvious end-user (or human intermediary) visibility. The issue then becomes how to attract sufficient attention and commitment from potential customers to enable it to be shifted into permanent service mode. Some middleware projects are able to achieve this kind of profile, the most notable example being authentication/authorisation services (in the UK context so far this means [ATHENS](#) [12]). But others, and currently the Information Environment Service Registry ([IESR](#)) [25] springs to mind as an example, face a much tougher battle to gain that level of commitment.

Keeping Afloat

The big issue in all of this discussion is sustainability. Projects are generally self-sustaining during their limited lifetime: there is an agreed budget and no matter whether the work follows the predicted track, barring outright disaster it will continue to the end of the funded period. It is at this point that so many nascent services sink beneath the waves.

There are of course a variety of business models that services could adopt in networked space. The simplest is to persuade the academic sector, usually represented by the JISC, to fund it long-term - though this can be a dangerous path to tread since this ground has a nasty habit of opening up and swallowing the unwary! What is interesting is that relatively few of the models that can be found in the private sector have proved useful for academic services. There is in fact quite a restricted range of approaches which have proved useful in the long-term, and virtually all of these are variations on the theme of collaborative or co-operative purchasing. Sometimes these have survived as academic sector entities; sometimes they have shifted into the private sector as listed companies, but generally retaining their original focus on their academic marketplace; sometimes they are a half-way house, as with charitable bodies.

The difficulties for projects manifest themselves in what sometimes seems to be lack of clear decision-making as to the status of particular projects/services. The best current example of this is the Resource Discovery Network ([RDN](#)) [26]. The case for this as a nationally-funded service is in fact fairly clear-cut. Instead of every university library employing staff (usually expensive subject librarians) to evaluate free Web resources, the effort is pooled and each institution makes use of the resulting service. While they will undoubtedly want to tailor the data to their own particular subject interests, the bulk of the work should be done for them. Development of this service with JISC funding, initially under the eLib Programme and more recently within the DNER/IE, proceeded with this in mind. However, it then became unclear what kind of business model should be adopted to achieve long-term sustainability: there is widespread support, but it has not yet formed itself into a sustainable consortium of interests. Institutions have not been willing to commit to realistic subscriptions for the long-term, leaving the service in a kind of limbo with short-term JISC funding. This itself has knock-on effects on forward planning, both for the service and the institutions.

Conclusions

So, judging from the experience of the past 30 years or more, what are the criteria which make for successful transition from project to service? It would appear that the following are among the key issues:

1. A requirement which is recognised as important by a significant part of the target audience, which in the context of this article usually means the UK academic libraries, of which there

are about 150 significant players. Attempts to broaden the focus, for example to take in the Further Education (technician level) or public library sectors have not been conspicuously successful.

2. The potential for cost savings in individual libraries, provided that the directors of those libraries are convinced that the savings will be real. Co-operative purchasing, whether through JISC-sponsored deals or through other mechanisms, has proved popular.
3. Vision and enthusiasm on the part of those promoting the project/service, coupled with a strong existing profile in the target market. On the latter point it is arguable, for example, that COPAC has succeeded only because the directors of the UK's largest research libraries reached agreement and had the clout to make it happen. Had the enthusiasm and vision come from outside the group it would have been far harder to establish the service.
4. Significant new technological advances. It is worth remembering that the wave of projects and services spawned in the 1990s was largely concerned with the then new concept of end-user access, coupled fairly rapidly with the emergence of the Web into the mainstream. The earlier development of administrative systems occurred when new technology enabled new approaches to cataloguing and circulation control but before commercial players had spotted the potential. What appears to have happened is that libraries realised that there was a need to develop a service, and were willing to invest in that development with additional funding from a national body, in the absence of viable commercial options.
5. The final requirement for successful transition is thus the lack of a commercially available alternative capable of delivering the service required. Generally speaking, institutions prefer to buy into commercial products (for good reason) if these are feasible. A good recent example of this is the way that Ex Libris' OpenURL resolver, [SFX \[27\]](#), has captured market share.

Despite the barriers, however, it is remarkable how many projects from the last 40 years have made the transition. As a result we have a panorama richly populated with real services delivering information to literally millions of users scattered across the cyberoceans of the world.

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