VENI, VIDI, NON VICI: E-JOURNALS MANAGEMENT AT THE UNIVERSITY OF LIVERPOOL

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This paper provides a glimpse of the reality of the management of e-journals within the typical academic environment of the University of Liverpool Library. The paper reflects, firstly, on the local and national context, but then, outlines some of the major issues associated with e-journals including the management methodology adopted at Liverpool. Finally, it considers the current pricing models and the emerging issues in the scholarly information publishing world.

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Overview

This paper gives an overview of the management of e-journals based on experiences gained at the University of Liverpool (UoL) Library. There is nothing novel or innovative in the approach taken at Liverpool but the paper may act as a gentle reminder of the many challenges abounding in the world of e-journals. Though some issues are grounded at the operational level, many have strategic implications for hybrid library management and developments.

   The paper is loosely divided, though not equitably, into five areas. Firstly, looking briefly at the background both locally and nationally, but then, at the management methodology that has been implemented at Liverpool. The third section looks at the life cycle of an e-journal considering some of the major issues currently exercising our minds, emphasising the dynamic nature of the current situation. The final sections consider pricing models and emerging initiatives. Whilst dealing with the immediate non-trivial operational issues, one also has to attempt to plan strategically in the ever changing hybrid environment, where we are not only dealing with an elastic ballpark, but sometimes, it appears, with different ballgames.

University of Liverpool background and context

The profile and awareness of e-journals was raised in the HE sector through the Pilot Site Licence Initiative (PSLI) in 1995. Although there had been much work already done prior to the PSLI project, for example, Elsevier's TULIP programme, BL's ADONIS project, Johns Hopkins University Press's Project MUSE and electronic journals, such as the 'Online Journal of Current Clinical Trials' based on the Guidon software, the UoL e-journals

service was initially based around the four PSLI participating publishers, Academic Press, Blackwells, Blackwell Science and Institute of Physics. A strategic decision had been made to exploit the web for service delivery, hence the development of e-journal web pages that are common currency in the HE sector.

In 1998, the National Electronic Site Licence Initiative (NESLI) emerged as a service to promote the widespread delivery and use of e-journals in the UK academic and research community. Acting through its Steering Group and Managing Agent, NESLI addresses the financial, legal and technical aspects of e-journals within the HE sector. The NESLI initiative differed from PSLI in two important areas; it dealt with electronic only collections, as opposed to print and electronic bundled packages, and it was not 'pump primed'.

In the local context, the UoL Library maintains access to about 1,500 full text electronic journals, which represent about 25% of the print titles taken. The majority of the e-journals are electronic versions of currently or previously held print titles, only about 20% are in electronic only format. We maintain a standard A-Z web page listing of e-journals, with http access also available from the Innovative Interfaces Inc. INNOPAC catalogue, using, as a US MARC site, the 856 field. There is a standard Harvest search facility on the web page.

There are major resource implications to be considered in the development and sustainability of any service. The library management has to balance 'resourcing input' with 'value output'. There are many additional costs associated with supporting an e-journal service not just monetary. Major limiting factors are, perhaps: the cost; publishers' restrictive cancellation policies; timing of the deals, and associated additional staffing resources required. Each library must decide for itself what level of management is practicable and or desirable to support the new service. But where does the responsibility for e-journals lie in the traditional academic library infrastructure? Can the established staff structures and competencies support the developing hybrid library? There are more and more specialised posts being advertised, whose major remit is the management of e-journals but where in the current hierarchies do these posts most effectively

operate? Surely, for successful implementation of the hybrid library, changes to staff structures and skillsbase must be pervasive throughout the department.

Management methodology

To attempt to rationalise and facilitate the e-journal evaluative process, particularly in regard to high cost packages, a set of criteria were devised at Liverpool. The deals are discussed and evaluated by the cross-departmental Electronic Resources Group. The outcome of the evaluations is then posted on the departmental Intranet to inform staff. There has been much work done in the area of performance measurement in recent years, particularly by the PURCEL (Purchasing Decisions of Electronic Resources within HEIs initiative) project. The selection process at Liverpool includes a range of factors including licence/cost, archiving, content evaluation, 'value for money', future access – buying/leasing, 'job lot' v cherry picking. *Figure 1* outlines the major criteria used at Liverpool.

One of the priorities is that e-journal deals are not just evaluated in isolation. They are considered in the context of other departmental resources and how they will harmonise with other 'hybrid initiatives'.

Once the selection process has been completed, there are several stages that are part of the iterative process before access to the titles can be made available to the users. This includes registration, which in itself is a thankless task. There are many methods adopted and the key to all of them is the not so trivial subscription number, which at times appears to be elusive information for both publishers and subscription agents alike. Once registered we then need to consider authentication, the associated problems to which have been well documented. The management of passwords, the problems of caching, locally and nationally, IP authentication particularly for off campus usage are ongoing challenges for all libraries. Currently at Liverpool, we maintain a secure web page of all associated non-ATHENS e-journal passwords. This is, however, useless for off campus users not using the 'dialup' service. Much work has been done in this area on many of the eLib hybrid library projects, such as HEADLINE and HYLIFE.

Figure 1: University of Liverpool E-journals Package Selection Criteria

CRITERIA
Overall Package

Timespan/years
Publisher status/track record: mean % inflation last 2 years
Deal available via other agents
Print cancellation conditions

Cost Factors

One-off deal fee
Deal cost (inc.): min.
Deal cost (inc.): max.
Per title cost/£
SwetsNet Fee
Current spend – hardcopy /£
Cost of separate Esub/% of print sub.
Cost of indiv. Site bundled E/print sub/% of print sub
Vatable %
Volume discounts: no. of participating sites
Total access cost (max) £

Coverage

No. of titles in deal
Depth of coverage/yrs
No. of titles currently held
No. of locally held titles in deal
% of locally held titles in deal
Continuity /% of ejours currently offered locally
No. of titles cancelled since '96
% of cancelled titles/titles in deal

Content Evaluation

ILL activity (last 3 months)(no. of requests/no. of titles)
Docdel. activity (no. of requests/no. of title)/pa

Licensing Issues

Use in ILL
Acceptance site definition
Use in coursepacks

IT Implications

Delivery format
Archival access

Future Access

Archival deposit
Access policy to backruns when sub. ceases

Deal Uptake

E-journal life cycle

Usage, verification and performance measures

At Liverpool, we are constantly reviewing the often conflicting demands of resource prioritisation amongst services. Quantitative, reliable data, one would assume, would be readily available for the usage of e-journals, however this entire area is one that is currently attracting much debate and research. On a local basis usage monitoring may be done readily from the web pages using standard tools, though how valid this data is, has to be considered in a world of caches and proxies. Monitoring of http access from the current generation of catalogues may not be so straightforward.

So, we turn to the suppliers for reliable usage data, but often, in reality what we get varies in quality, timeliness and usefulness, assuming it is provided at all. Standardisation in this area must be a priority for publishers, aggregators and libraries alike; there needs to be agreement about what we are all measuring. At Liverpool, we keep a number of indicators, including full text downloads, number of searches and the number of abstracts viewed. These indicators, it is hoped, allow us not only to collate quantitative activity, but also, some qualitative factors regarding users' behaviour: the comparison of the number of abstracts to full text consulted, for example.

In this evaluative culture, in which we are all living, peer group comparison is becoming more important and is a politically sensitive indicator. Benchmarking, for instance, may highlight areas where there should be more local outreach activity. ICOLC (International Coalition of Library Consortia) guidelines published in 1998 were for the usage of web based A&I and full text resources. ARL (Association of Research Libraries) is currently conducting an E-

Metrics Project. One of the key indicators at Liverpool is the use of non-locally held as compared to locally held titles, which may help in our collection development policy.

Link verification is again a common procedure, but one has to remember that standard tools are only checking the mainly available, non-validated home page of the journals. Access problems to the full text are what we are trying to ascertain. These are difficult to assess by means of a standard verification tool. Inevitably, there needs to be some sort of human intervention to check full text delivery. Again, if we are relying on access through the catalogue, how easy is it to check the links directly?

Collection – connection

E-journals are part of the developing collection of any hybrid library and as such should be subject to the same library collection policies as other resources. Increasingly, there is more than one route to various formats of any given title, resulting in several URLs to maintain. The number of routes supported is down to the library policy, though it is perhaps critical that for IP validated material, there is, at least, an alternative route for off campus users using other ISPs. If, after cancellation of either the print or the electronic version, the publishers still allow access to previously licensed material, however copious the notes are on the web pages or the catalogue, users still often see a hypertext link and expect access to current full text material. In this multi route scenario, the clarity of bibliographic records has to be considered, otherwise catalogue records will soon become crowded. Also, one must recall that in previous versions of some web catalogues, only one http link could be supported per record.

The major strategic decision looming for any academic library is when to migrate from the traditional print to the electronic collection. In realistic budgetary terms maintaining two parallel collections cannot be tenable even in the short-medium term. There are many issues involved, including the cultural implications, which are critical for users and library management and staff. There has been much discussion by commentators on whether moving to electronic only collections will be any cheaper, the economic reality is still in debate. From a service perspective, libraries have to be sure what

and who is the driving force behind the move. Are libraries providing service or are they market led? Successful change will only be achieved if the influential players from the user community are on board.

Like many libraries, we are looking at whether there has been a discernible impact on the recorded usage of the hardcopy journal material in the case of dual holdings. As yet, I would venture that there is not enough time series data available to identify statistically significant trends here at Liverpool. Further work and consultation with users is required in this area.

Cataloguing

If the catalogue is to be either, the only, or one of the supported gateways to e-journals, then basic cataloguing decisions have to be made. For instance, for large package deals, which comprise non-held print titles, are novel bibliographic titles created and maintained? Where dual format is locally available, are multiple records created or just multiple links from one record? Is the level of entry at the title or the gateway point? Direct links sometimes have embedded passwords – are these to be visible in some outputs from the catalogue? Can records be downloaded from bibliographic databases? Many libraries will have dedicated OPACs, which leads to the perverse situation that the only place where one cannot access journals online would be from the library. However, for some licence agreements in regard to 'walk in' users, this practice must be preserved. What if any subject standards are to be complied with, as say with, CONSER?

Figure 2 shows a standard Liverpool bibliographic record for an electronic only journal. This conforms to the local departmental policy whereby all major electronic resources are added to the catalogue. New class marks and status definitions have been created e.g. electronic journal, networked resource. For large collections e.g. NESLI deals or the MCB Emerald library, to increase retrievability the series field is completed with the relevant data, which helps in recall, if any global changes have to be made to the bibliographic records. A conscious effort has also been made in updating closed records of formerly held print titles that we now access electronically. Holdings statements have been clarified both on the bibliographic and the
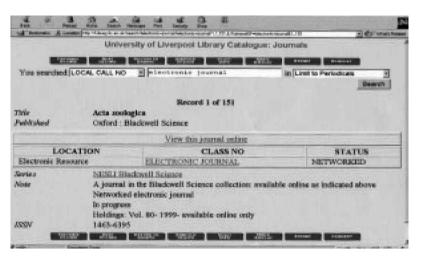
Figure 2: University of Liverpool Electronic Journal Catalogue Record

check-in records. For electronic only available journals, we use the electronic ISSN, which has implications for some of the linkage services from A & I databases.

Service delivery

After all this industry internally, are we exploiting and selling the e-journals to our users in the most transparent and effective manner? What should the primary delivery platform for full text material be? One perhaps needs to consider what fits into the current local electronic resources infrastructure and the related resourcing issues. To maintain multiple access routes manually is a costly and time-consuming process.

Some of the most common routes adopted are the static web page, the catalogue, database management tool, or a gateway resource discovery tool such as ROADS. Each of these has its merits and its disadvantages. A static web page attracts high maintenance but only requires familiar and not specialised skills to maintain, and is, of course, very familiar to users. The catalogue obviously needs to be web based; it is a familiar interface and can act as a single gateway to all resources in a hybrid world. The web-delivered database affords lower maintenance, but does require higher level of specialised skills to implement. One could integrate the management of all electronic resources in a central database. There are bespoke solutions using CGIs and third party web management tools such as Cold Fusion or the use of Active Server Pages.

Aggregators

One of the major issues that has been exercising many a library mind is whether to aggregate or not? The simplistic model of earlier days, where there were one, two and three providers in the information chain with associated clear boundaries and roles, are long gone. In the burgeoning hybrid world, a laissez faire attitude prevails. The growing choice of aggregators does not always make life easier at the 'library shelf'. The functionality and features vary, and any decision must be seen in the light of local circumstances and priorities. One would venture that the generic features that any gateway system should offer, would be critical mass of titles, good management information provision, user friendly interface, currency of material and interoperability with other services. Timeliness of the data has been a problem with many of the aggregator services – often the most current issues are available on the publishers web site before the aggregator service. On the positive side, is it perhaps easier to manage the fixed cost scenario that a commercial aggregator may offer, rather than trying to manage the incremental fluctuating cost of in-house resources necessary to manage the routine operational aspects of the e-journal service? One would hope that the managed aggregator service would result in the demise of the WURL phenomena (Wandering URL) in favour of the PURL (Persistent URL) to ensure the stability of the service.

Pricing models

For a large academic library with a high print journal spend, the popular model of basing the cost of electronic access to an increased portfolio of titles on a percentage of the current publisher print spend, is not tenable, particularly where there are associated print cancellation restrictions. In reality, the larger libraries are often in the position of paying tenfold more than smaller libraries for the same product, for the perverse reason that they have been better customers with

that particularly supplier in the past, spending consistently more monies. Thus, starting off from a higher baseline, the number of new journal titles that are gained from these package deals are lower than in smaller institutions, thereby raising the unit cost by even more. A serials crisis, perhaps? Well, the Keynesian model of supply and demand is certainly turned on its head. The perennial frustration of print spend as the baseline for pricing levels obviously does not favour institutions like Liverpool, though there are many institutions that it does. One can appreciate the rationale that publishers wish to increase their user base: thus offering lower prices to smaller and not their traditional customers. However, they must realise that for many HEIs, additional funds have not been allocated to resource this additional cost, but are paid for by juggling of existing funds.

The other common model is based on institutional FTE count. So are the publishers now looking at a unit costs per potential viewing as their arbitrary indicator of pricing levels? However, in most cases the target audience for any particular title is quoted as the entire university community, which for many specialised titles is neither accurate nor logical. This has been documented recently in the debates on many of the mailing lists. At Liverpool, we have begun to look at the comparable unit access costs of electronic compared to print. In the case of 'job lot' deals, which are ostensibly all or nothing, because of their print cancellation clauses, the actual unit cost of an individual journal is the total deal cost. If one title is cancelled, then access to all cannot be maintained. Related models with deals depending on a print spend threshold, also, in reality, dictate the unit cost of a single journal title.

These scenarios have already been commented on in the literature. All one can say is that the market is as yet immature, if one was being generous. At Liverpool, the cost of many of the large package deals has been tracked over the last few years. The rate of inflation on many of the deals is commensurate with the now much maligned inflation rate on hardcopy journals. Perhaps, what this emerging market has indicated is that there must be a range of flexible models available for all the different guises and requirements within the HE sector. It is also often

cited by publishers, who sell the large 'job lot' deals, that the increased costs will be allayed by a falling ILL activity, thus lowering the costs incurred. At the moment, we are looking at this, though with many other local factors affecting ILL demand recently, it is as yet too early to comment on this premise with statistical evidence. However, is a fall in non-recurrent expenditure, coupled with a rise in recurrent expenditure, a scenario most libraries would wish to advocate?

The concept of 'Value for Money' is very difficult to establish at an institutional level, as priorities for one faculty will not be the same as for another faculty. Thus, the evaluatory processes must be taken in collaboration with the local academic climate. The pros and cons of site licence over 'pay per view' need to be considered, as well as, how that can best fit into the budgetary process.

A survey conducted in 1999 within the UK, reported that HE libraries spend about 2% of their acquisition budget on e-journals. This was forecast to rise to 10-15% in a period of 12 months. In the US, the Association of Research Libraries (ARL) survey of 1998-90 reported an average spend of about 10.5% on electronic resources. In cash terms, this means that the 38 ARL libraries spent $6.9 million on electronic full text journals.

Many initiatives are afoot to change the fundamental publishing model and thus the business models, including SPARC and PEAK.

Emerging initiatives

The University of Liverpool Library like other HEIs is attempting to function and develop in the hybrid world, whilst the nirvana of the seamless interface attains an urban myth status. As with all 'in' fields, the jargon keeps apace with the initiatives. 'Linkage' is now a much-bandied term. Theoretically, any system that facilitates the process of resource discovery and delivery, should be supported, though it is still difficult to establish, and thus warrant additional resources for a service, when there is little real evidence that it is being utilised. The usage of these linkage services must, perhaps, be an indicator that is provided in standard management information reports from all suppliers.

Maximising the exploitation of all A & I databases subscribed to by the HE community is important. Users are often very limited in their natural information gathering behaviour. In 1977 only 1% of articles of interest were identified through A & I databases, though this has risen to 12%. Perhaps 'softening' the interface between the two activities of discovery and delivery will offer better 'value for money'.

Many A & I database providers, such as EDINA, Web of Science, or CSA, now offer linking both to the local catalogue and to the full text. The models adopted vary in their complexity; the most satisfactory being those that allow accurate, institution specific profiling to be done, so that a link is only visible to the user where there is a valid electronic subscription held locally. Maintaining these links obviously has resource implications, both at the time of implementation and after any cancellation exercise – another route to the full text material requiring updating and monitoring. Quirks of some of the systems are, however, frustrating. Some profiling systems are only at the title level, so, where an electronic subscription has ceased but access to the previously licensed material is still available, specific date ranges cannot be linked to. Another issue is which ISSN does one link to and from? On any local catalogue an increasing amount of material is held only electronically, and as such the local catalogue record contains the electronic ISSN and thus, will not be picked up by a hardcopy ISSN query from the A & I database. A possible workaround to this is to opt for the title search query from the A&I database, if this is possible. From these examples, we are quickly getting to the situation where a library is providing a different range of material from different access routes, which can only further confuse the users and library staff trying to support the service.

Linkage is only offered currently to material that is indexed in the specific databases. Links to cited reference material not necessarily indexed, would increase the value of the service to users and facilitate the reality of the seamless interface. Initiatives such as CrossRef and DOI technology are beginning to make this feasible. All these initiative, though, must have a critical mass of publishers and titles involved.

The journal itself is perhaps now becoming a series of related unit articles. The emergence of the self-archives and the pre-print servers, such as PubMed Central and the ePrints server, is fundamentally changing the scholarly information world. Access management tools, such as CANDLE, are tilting the information flow from pull to push, where the unique user, with their predefined criteria and authority levels, will become an individual portal to a portfolio of authenticated resources that are specific to them.

Closing thoughts

The issues outlined above are regularly encountered in any large multi-disciplinary academic library. They appear to be becoming more numerous, but whether solutions are becoming any easier is debatable. Many of the problems are, perhaps, a consequence of trying to re-jig a traditional established and fundamentally flawed model of journal management and scholarly information publishing to allow for electronic journals, the new kid on the block. A different approach would be to follow the tenet of the Bauhaus movement of returning to zero, looking at all aspects of the model from first principles, as otherwise libraries are perhaps liable to repeat the mistakes of the past, as demonstrated with the current costing models.

The hybrid library is a dynamic; it is not a static concept or a given place in time. The culture of all stakeholders in the information cycle must adapt whether they be publishers, aggregators, subscription agents or libraries. The crux to development is resourcing. Libraries are endeavouring to provide access and support to an ever-increasing number and wealth of resources. Any mechanism that streamlines the support of these services is critical. There are many factors outside individual institutions remits that will remain barriers to the move from collection to connection. These include cost and publishers' restrictive practices, as collection development is the purvey of internal management not external commercial vendors, and the provision of standardised management information and authentication.

National developments such as the DNER (Distributed National Electronic Resources) and projects such as BUIDLER are an integral part of

the hybrid continuum in which e-journals must be an important resource. The raison d' tre of any academic library remains the provision of services 'fit for purpose' as defined by Raganathan 70 years ago. Electronic journals are there to be utilised. Every user has their information requirement that may be satisfied through efficient access to distributed information, and the role of the information manager/librarian is to facilitate this process. The opportunities afforded by the timely deployment and support of electronic journals are many, but possibly not all as we know them, as a friendly alien once retorted.

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