Evaluating the Distributed National Electronic Resource

Peter Brophy
Director
Centre for Research in Library & Information Management (CERLIM)
The Manchester Metropolitan University
Manchester M15 6LL
United Kingdom
+44-161-247-6153
p.brophy@mmu.ac.uk

Shelagh Fisher
Reader
Department of Information & Communications
The Manchester Metropolitan University
Manchester M15 6LL
United Kingdom
+44-161-247-6718
s.m.fisher@mmu.ac.uk

ABSTRACT
The UK’s development of a Distributed National Electronic Resource (DNER) is being subjected to intensive formative evaluation by a multi-disciplinary team. In this paper the Project Director reports on initial actions designed to characterise the DNER from multi-stakeholder perspectives.

Categories and Subject Descriptors
C.2.1 Network Architecture and Design; C.2.4 Distributed Systems.

General Terms

Keywords
Distributed collections; information environments; evaluation.

1. INTRODUCTION
The United Kingdom has, over the last decade, invested heavily in both infrastructure and information content to support higher education’s research and teaching functions. The JANET and SuperJANET networks provide very high bandwidth (gigabit) connections. Content is supplied through a series of national-level ‘deals’ with public and private sector suppliers, with services being delivered from three datacentres (in Bath, Edinburgh & Manchester): a guiding principle is that such content should be ‘free at the point of use’. This has helped ensure massive take-up.

Considerable experimentation has taken place with service delivery, not least through the Electronic Libraries Programme (eLib) [1] which as well as investigating specific service developments (such as e-journals, subject gateways, electronic document delivery) has explored generic issues, both through its final (3rd) phase concentration on ‘hybrid libraries’ and ‘clumps’ and through a series of supporting studies, of which the UKOLN-led MODELS workshops are probably the best-known and most influential [2].

In 1999, agreement was reached on the need to engineer a step-change in these services by moving towards an integrated information environment, in which access to any desired resources could be managed coherently. Issues such as resource description, location, request and delivery, alongside authentication and authorisation, need to be considered within a national and international framework if interoperability, coherence, sustainability and scalability are to be secured. The new environment was to be known as the Distributed National Electronic Resource (DNER).

In late 1999, a Call for Proposals (known as JISC 5/99 [3]) was issued to the higher education community in the UK. Subsequently over 40 development projects were selected for funding. In addition, a major formative evaluation project was funded with a primary aim of learning as much as possible about the impacts of the developing DNER on end-users, and feeding this learning back into the development process. The formative evaluation, known as EDNER, is led by the Centre for Research in Library & Information Management (CERLIM) at the Manchester Metropolitan University; the Centre for Studies in Advanced Learning Technology (CSALT) at Lancaster University is a partner. The project will extend over 3 years, and is funded at approx. $1,000,000 over that period [4]. This paper reports on work in progress and initial observations of the evaluation team.

2. DEFINITIONS
The first issue has been to determine exactly what the DNER is and what it is intended to become. To arrive at a clear understanding of what is intended and of its appropriateness, the evaluation team has used a dual approach, analysing the DNER’s objectives, content and use and then comparing it with a variety of real-world services and environments. In essence the first approach is inductive, the second deductive.

An initial project workpackage, which involved garnering views from programme participants, potential users and other stakeholders, suggested that there was a wide range of perspectives, from those who regard the DNER as an e-university to those who see it as a large library or even museum. This variety of view was confirmed by documentary analysis of stated DNER project objectives.
The JISC itself has used a variety of definitional statements about the DNER. The ‘official’ definition, as given in the Call for Proposals for the DNER’s major development programme, is ‘a managed environment for accessing quality assured information resources on the Internet’ [3]. In other documents, however, JISC refers to the DNER as ‘a comprehensive collection of electronic resources’ [5] and ‘the main academic apparatus required for research and teaching in the full range of main subject areas’ [6].

3. MODELS
An alternative approach to understanding the DNER, used in parallel with that reported above, is to make deductions by mapping it to models of other services and environments. This suggests that the DNER has features which show significant commonality with ten other identifiable models, as described very briefly below.

3.1 Publisher
As with any other service in the scholarly communication chain, the DNER has features which suggest parallels with both traditional and emerging models of publishing. For example, it needs to address the quality assurance of content and to provide facilities to enable that content to be distributed, often with payment mechanisms (pace the Open Archives initiative!).

3.2 Traditional Library
There are many models of traditional libraries available, but the DNER appears to be replicating or replacing some of this functionality, such as the organisation of content and its archiving (preservation), the provision of enquiry services and the provision of (in this case, virtual) study ‘spaces’.

3.3 Museum
Some DNER development projects are explicitly designed to digitise museum content. Also, the traditional museum function of organising materials coherently for themed display – as well as, again, the preservation function – find direct parallels.

3.4 Digital Library
Perhaps most obviously, although definitionally it is complex, the DNER has features of a digital library: ‘an organized collection of multimedia data with information management methods that represent the data as information and knowledge’ [7].

3.5 Hybrid Library
The idea of the ‘hybrid library’ emerged during the eLib programme [8]. A model of this ‘library in the twenty-first century’ suggests that its key role is as an ‘invisible intermediary’, dynamically linking each user with exactly the information they need. To achieve this, it is highly sophisticated both in the intelligence it has about its users and in its knowledge of potential information sources.

3.6 Gateway
In DNER terms, gateways are effectively ordered lists of Internet resources; the eLib gateways, now part of the Resource Discovery Network (RDN), form a key component of the DNER. A variety of other gateways are on view.

3.7 Portal
Using definitions suggested within the DNER, a portal differs from a gateway in that the user is not directed to another site in response to a query (as, for example, when a URL displayed by a gateway is clicked). Rather the portal accepts the query, itself interrogates a series of resources, intelligently interprets the results (e.g. deduplicating) and then presents a result to the user. To date portals, on this definition, remain experimental.

3.8 Managed Learning Environment
MLEs should provide not just the communications structures, materials and online tuition needed for virtual learning, but all the support infrastructure that goes with them. It is difficult not to conclude that, unless the DNER can demonstrate interoperability with institutionally-based MLEs, it will not succeed.

3.9 e-university
Going beyond the MLE, an e-university needs a variety of services which enable it to offer and deliver its products across electronic networks. These would include, at a minimum, a brand, quality assurance, awards and financial systems. It could be argued, again, that the DNER will need to interoperate with, and possible to be integrated with, many of these functions.

3.10 dot.com
Again, the dot.com sector provides some lessons for characterisation of the DNER. In brief: dot.coms need both a high profile brand and a high quality product; excellent marketing; robust yet simple payment mechanisms; reliable and rapid delivery mechanisms. The DNER needs all of these.

4. Interim Conclusions
As indicated earlier the EDNER project is in its early stages, and what is reported here is very much work in progress. Nevertheless, it is already apparent that the task of building and evaluating national-level services is complicated by very different perspectives among key stakeholders, and by the lack of any single, clear model on which to base development and evaluative judgements. It is likely that consensus will emerge gradually both through debate on competing models and through assessment of the impact of achievements in service delivery.

5. REFERENCES