Constructing virtual resources for practitioner communities: a 'space for all reasons'

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Annotation

The National Rural Knowledge Exchange is a business and community engagement initiative from a consortium of 14 UK universities and colleges with a particular interest in rural business in the land-based sector, and the rural economy. One of the recent deliverables of this initiative is the OpenFields online library. OpenFields is an open access repository of knowledge transfer materials covering food, farming, the environment, energy and rural business. This position paper identifies the issues addressed by this initiative, summarises lessons learned, and places these in the wider and much debated context of achieving sustainability for such digital libraries.

"Digital libraries are organizations that provide the resources, including the specialized staff, to select, structure, offer intellectual access to, interpret, distribute, preserve the integrity of, and ensure the persistence over time of collections of digital works so that they are readily and economically available for use by a defined community or set of communities."

This is a now long-established working definition used and published by the Digital Libraries Federation (1998) to achieve a common understanding of what a digital library actually is and does. It suggests that there is a set of attributes that gives coherence to the concept of 'digital libraries', and recognises the functions of collection, organization, preservation, interpretation, access and economy.

There is also a further caveat which notes that "digital libraries" need to be defined and measured in relation to the communities they serve, and that their development should also address the larger institutional and social goals of their participants.

Throughout the last decade, the UK academic sector has been encouraged to develop digital libraries and repositories mostly through a number of funding programmes and support initiatives of the Joint Information Systems Committee (JISC). This independent advisory body works with UK further and higher education by providing strategic guidance, advice and opportunities to use ICT in support of learning, teaching, research and administration. As a result, much of the collation of materials within the resulting digital libraries or repositories has focused on the preservation and dissemination of scholarly works (such as academic research papers), and on digitisation programmes for collections of historical artefacts for preservation, dissemination and further study by the academic community. Such projects have been largely "supply driven", in the sense that they have generated digital collections of materials that institutions are already keen to supply and disseminate.

The OpenFields Library has adopted a different set of tactics to service the wider rural and land-based business community, as this niche serves quite a different community demographic to those of the growing population of more traditional institutional or subject repositories. OpenFields sought to be more "demand driven", in the sense that it seeks to generate collections of materials that its target communities require, are otherwise difficult to find or obtuse to obtain, and are readily comprehendible by their more cosmopolitan audience.

Figure 1

Previous work in compiling the National Rural Directory had elucidated a picture of the rural landscape for knowledge transfer. In the post WW2 period, advisory support for UK agri-business had largely been delivered through government schemes incurring little of no cost to the beneficiary, until the eventual 'privatisation' of the Agricultural Development Advisory Service (ADAS) in 1997. There is thus no long tradition of knowledge transfer through private consultancy, and the role of generic public-sector business support schemes (e.g. through 'Business Link' and Chambers of Commerce) has traditionally had a more 'urban' focus. In Northern Ireland and Scotland, local agricultural extension programmes have been retained through these principalities' colleges, but this is not the case in England and Wales, and so for the UK as a whole, academically-sourced extension programmes for the land-based sector are the exception rather than the rule.

The OpenFields niche to some extent seeks to 'fill the ADAS gap' in providing this sector with free and open access to practitioner-ready materials for business development and improvement, and thus raise awareness of other associated continuing professional development, research and advisory services which may be available from contributors, whilst confirming the provenance of these materials' sources.
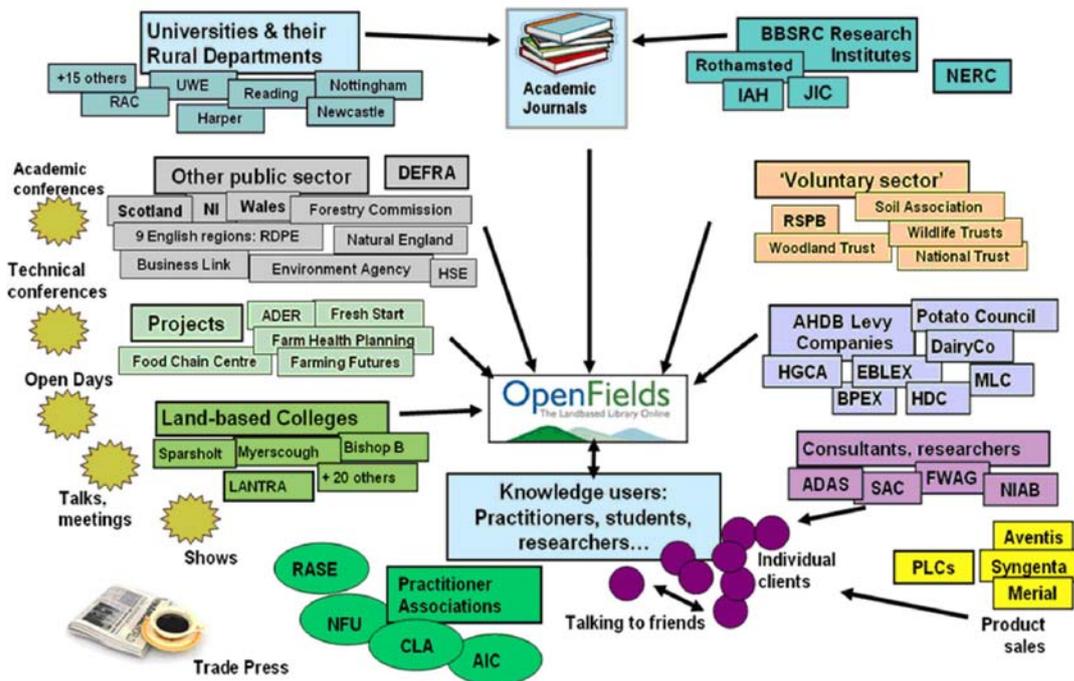
Figure 2. Landscape for UK rural knowledge transfer (NationalRural 2010)
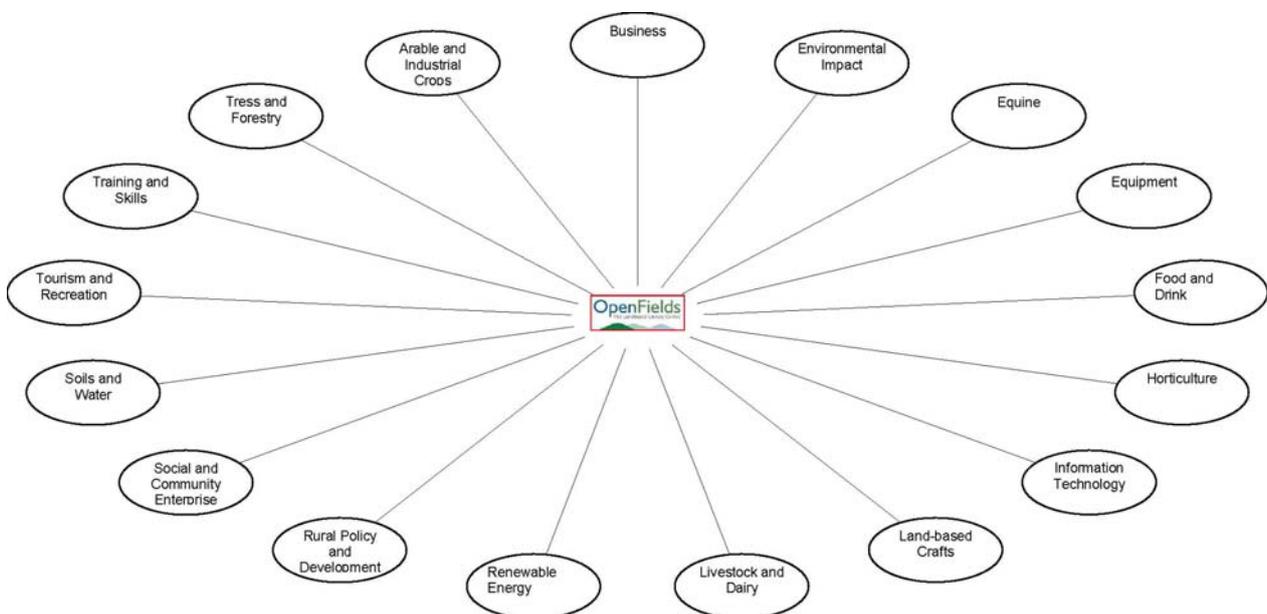
Figure 3. Land-based subject taxonomy – principal sections (OpenFields 2010)

Many knowledge transfer and business support initiatives, events and services are associated with farm business diversification and changes in agricultural practice. The scope of the OpenFields subject taxonomy reflects this range of diversification and the complexity of issues affecting modern agri-business.

The types of knowledge transfer materials in current (paper) circulation and in demand by practitioners in this community are largely 'grey literature', pamphlets and skills-workshop support materials, a composition which is largely at odds with the predominantly academic research focus of the current population of open-access repositories.

Academics contributing to these repositories are largely writing for the benefit of other academics (as a healthy academic publication record is of direct benefit to academic career paths), rather than writing for practitioners (for which the academic motivation is largely only altruistic). Deposit rates for "learning objects" is remarkably low, and despite the availability for several years of Jorum.ac.uk, a national repository for re-purposable learning objects, its current holdings for the entire subject spectrum stands only at approximately 2,500 objects (JISC, 2010, and Jorum, 2010), and 'agri-culture' is currently particularly poorly represented.
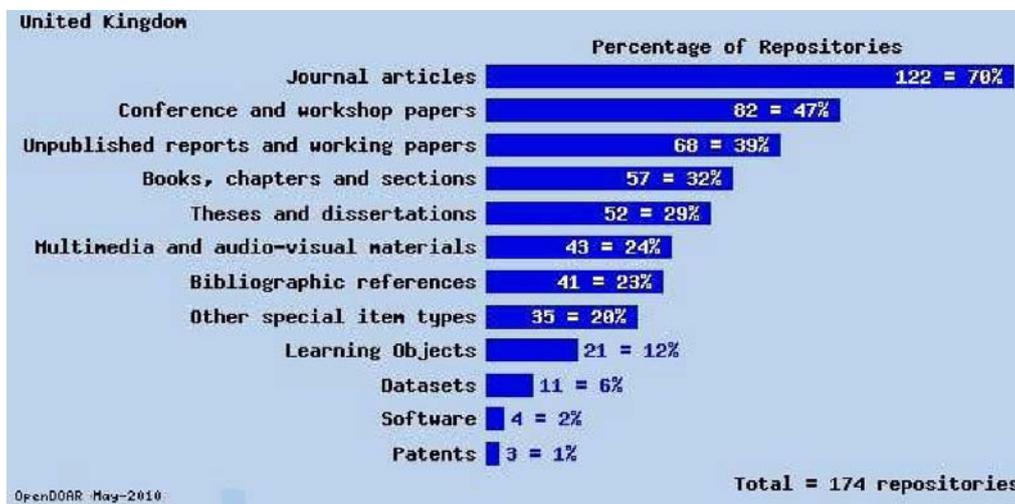
Figure 4. UK content of open repositories (OpenDOAR 2010)
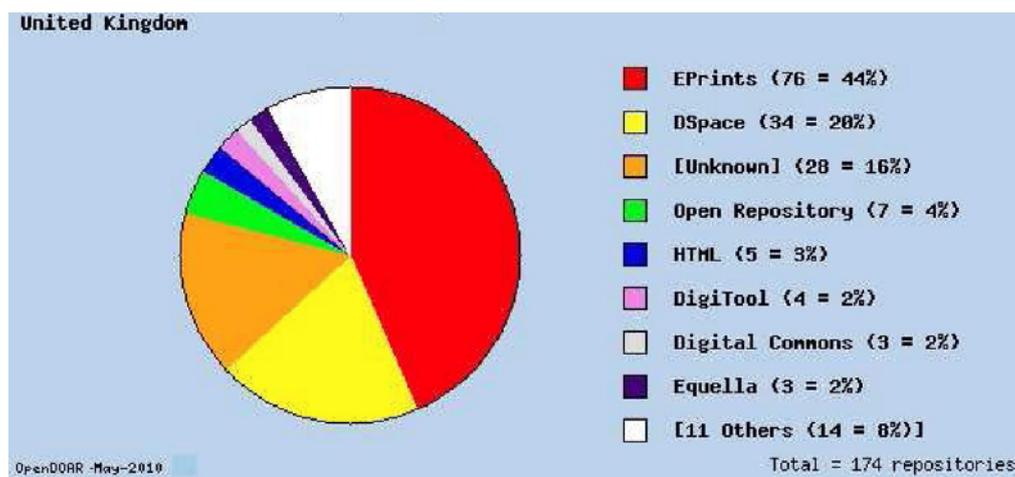
Figure 5. UK usage of open repository software (OpenDOAR 2010)

The precedent for encouraging open access to scholarly works has been set in the biomedical sector by *PubMed Central*, the U.S. National Institutes of Health (NIH) digital archive of biomedical and life sciences journal literature, originally created in 2000, and offering free access to its contents. The scale of contribution to this service, at nearly 2 million articles (PubMed Central, 2010), is an indicator of the effect of mandates for open-access deposit from significant funding bodies: PubMed is the designated repository for papers submitted in accordance with the NIH Public Access Policy. This precedent has been followed in the UK by the UKPubMedCentral variant, which includes National Health Service (NHS) clinical guidelines and UK biomedical and health PhD theses, and is the focus of similar UK funding body mandates for deposit. To this simi-

lar end, the OpenFields team are currently proactive in seeking the establishment of similar deposition mandates from UK agencies funding land-based sector research programmes, as a commitment to effective dissemination of research findings.

Repositories of scholarly-produced materials in the UK have predominantly been constructed using one or other of the DSpace or EPrints open source applications.

Whilst these platforms do facilitate the implementation of cross-site searching (enabling a one-stop search of a federation or repositories, or the harvesting of metadata, their accessibility for indexing by search engine 'crawlers' has been limited. The presumption has been made that the principal route to discovery of their artefacts will be through their native searching or browsing interfaces, and thus programmes of Search Engine Op-

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timisation to encourage public discovery and dissemination have only recently been considered by their operators.

Andrew Powell (2008), in a thought-provoking presentation "Web 2.0 and repositories -have we got our repository architecture right?" reviewed the position with academic digital repositories and highlighted the disparities between these and successful Web 2.0 asset-sharing applications. Powell considered aspects such as metadata implementations, user interfaces, application programmer interfaces, scalability and social features, and it was based on similar observations by the National Rural team that these aspects of the OpenFields platform was first determined.

Summarising a recent "Repositories on the Open Web" workshop of the Centre for Educational Technology Information Standards, Phil Barker (2010) reported

a consensus of interest in social media and web 2.0 rather than conventional, formal repositories; a focus on understanding purpose and user demand; and an exhaustion with new or evolving repository-specific standards.

One of the distinctive aspects of Web 2.0 approaches is the enabling of the "read-write" web - the recognition that a degree of audience engagement comes through interaction, contribution and personalisation. A complementary service to the eclectic biomedical

offerings of the various PubMed Central services are those of the Cochrane Collaboration. The Cochrane Library extends its community focus beyond the research community to develop additional 'research into practice' strands, such that its content, metadata, and user interface facilitate an additional range of anticipated 'user journeys'.

Figure 6. Signposting for appropriate user factions (Cochrane Library 2010)

Chalmers (2010) in a recent editorial for the Cochrane Library remarks "One of the common criticisms made […] is that most of its reviews don't end with clear instructions for action by professionals, patients and policymakers…" which he qualifies with the observation that this simply reflects situations in which there is inadequate research evidence to provide reliable information to guide the healthcare choices which people must make. The empowering position of a service like Cochrane, however, is that it makes visible the two main options: either to sweep the uncertainties under the carpet so that they can be ignored, or to endeavour to reduce them by doing additional research:

·   […] by updating or extending the scope of existing Cochrane Reviews;

·   […] by preparing new systematic reviews;

·   […] by promoting additional 'primary' research because reliable, up-to-date reviews have shown that that is what's needed.

This is a clear statement of community empowerment – *if you aren't a part of the solution, then you must be a part of the problem.*

Providing materials which are appropriate to a community segmented not just by subject interest, but also by purpose and by cognitive expectation adds new layers of complexity. There is inevitably a trade-off be-

tween building in a capability for exhaustive asset description and categorisation (to aid its discovery and representation to a user), and the resulting time and effort barrier to deposition by a potential contributor. The extensive metadata schema capabilities offered, for example, through the UK Learning Object Model, (which originated in 2004 and are still 'work in progress') may be laudable, but it remains unclear whether there is real user demand, when a more pragmatic, less wholesome approach may suffice. A recent study by David Davies (2010) of academic online searching behaviour when seeking potential learning resources showed that despite the provision of national and institutional repositories and despite alleged academic concerns about veracity, quality and provenance, the primary starting point of choice was the Google search engine, followed in close succession by Wikipedia (a free online encyclopaedia written collaboratively by largely anonymous Internet volunteers who write without pay.)

In the physical world, the term "library" and "repository" have a possibly clearer distinction than in the virtual world, in which "digital libraries" and "digital repositories" are difficult, if at all possible, to distinguish. The distinction may be about our perception of purpose – if a library exists primarily for access and dissemination, and a repository exists primarily for pre-

servation, posterity and security, the 'digital open-access' dimension removes some of this distinction. The perceptions and purposes of contributors to the facility may be entirely different to the perceptions and purposes of its consumers. For its sustainability, however, all these aspects may need to me recognised and catered for.

It seems ironic, for example, that a nearby real repository, Blowers Repository, (a local government funded service operated in Shrewsbury by Shropshire County Council), is physically located somewhere between the library and the museum. Indeed, it is an archive. It is neither library, nor museum, but it shares some of the attributes of both.

Etymologically, the word "repository" does itself no favours. We think of a repository being somewhere where one stores materials away very safely for preservation, but without expectation of a need for anyone to visit it often. Recently, a particularly famous London repository of historical art and design artefacts, the Victoria & Albert, reviewed its corporate image, and in the interests of 'widening public participation' came up with this ingenious slogan in a new publicity programme:

"An ace caff with quite a nice museum attached"

The institution lost none of its gravitas - it took a risk and gained some credibility with a different audience demographic.

Meanwhile, in 2004, Blowers Repository (see above) successfully gained funding through the New Opportunities Fund of the National Lottery, and through this programme released some of its content to accessible public view through the Secret Shropshire website. This website provides a series of discovery themes in which places and activities are thematically related to artefacts held in the archive, allowing public users to explore aspects of the county's local history, natural environment and archaeological treasures, online. This example is one of several Digital Midlands 'Sense of Place' projects, all of which are in reality online 'repositories', though without the traditional ethos of repositories. They vary considerably in their funding and sponsorship, target audience, and degree of community interaction. Digital Ladywood, for example, from its layout, scope and declared objectives, gives a strong sense that this resource is actually more about enhancing community and communication than about preservation. Ladywood is a notably deprived area of the city of Birmingham, and the website is funded by a consortium of organisations each with a stake in achieving community cohesion in an area that has undergone huge housing redevelopment. NewhamStory.com, similarly, is a community repository intent on gathering and annotating oral and photographic history of the community in the London Borough of Newham, as contributed by its members.

SecretShropshire.org.uk   DigitalLadywood.org.uk   NewhamStory.com

Figure 7. Examples of community repositories

These latter repositories are a shared local focus for community-gathered artefacts, and provide evolving digital social spaces, rather than being electronic brochures of museum collections.

OpenFields has taken the apparently uncommon step of combining 'three libraries in one':

· "*Technical and Business Information*" is pragmatic, practitioner-focussed material which is straightforward to digest and has a clear commercial relevance.

· "*Research Papers and Abstracts*" are the peer-reviewed outcomes of academic research projects.

· "*Open Learning Materials*" are more about guiding the learner to grasp techniques, skills and concepts.

Each are constructed in rather different styles, and therefore catalogued in rather different ways, yet it is entirely possible that a user browsing the OpenFields collections may be open to exploring more than one type of knowledge asset.

In the current climate of economic thrift, there is considerable interest in the risks, benefits and practicalities of offering shared services and utilising cloud computing platforms (JISC 2010). In the smaller academic institutions (GuildHE 2010) where in-house ICT teams are already stretched to deliver routine services, development opportunities for novel service offerings are comparatively low on the agenda, and more likely to be realised through collaborative engagement and utilization of shared platforms. Awareness and use of simple syndication tools (e.g. RSS), and encouragement of open licensing of content (e.g. through Creative Commons) are essential to the mix.

The main OpenFields tenet is that academia need not just be a provider of knowledge, but can also be a facilitator of knowledge, sourced from a wide community of experts, which may extend beyond traditional academic boundaries. OpenFields is arguably, therefore, a foundation for subject-focused communities of practice.

In the landbased sector, OpenFields is beginning to show that a digital library can contribute to the collection, organization, interpretation, access, economics and continuity of knowledge transfer, but operating at a community level. And maybe there we can all be experts in some way?

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Figure 8. The OpenFields shared repository platform (OpenFields 2010)