JISC

Digital Repositories

Helping universities and colleges

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Repositories are important for universities and colleges in helping to manage and capture intellectual assets as a part of their information strategy. A digital repository can hold a wide range of materials for a variety of purposes and users. It can support research, learning, and administrative processes. However, repository solutions are most viable and sustainable when they are built on open standards.

Repositories are important...

...for institutions

Higher education institutions have to manage their educational, research and associated assets more effectively and transparently than in the past. Ongoing activities at EU level (such as the Bologna Process, the European Research Area) and at national level (such as the Research Assessment Exercise, the Transparency Review, and the DfES e-Strategy) will give tangible benefits to those institutions that can demonstrate and exploit effective information strategies and systems.

The great advantage of repositories is that they help institutions to develop coherent and coordinated approaches to the capture, identification, storage and retrieval of their intellectual assets. These intellectual assets go beyond normal publishing regimes, and may include audiovisual objects, datasets, presentations, learning materials and research works. A managed approach to these assets enhances opportunities for efficient use of existing research, increases opportunities for improved learning experiences and encourages collaboration within and between different disciplines and groups.

There is enormous scope for re-use of digital content such as learning materials. Repositories offer a means by which institutions can break the cycle of individual silos of digital content by establishing a common store with access for all. Repositories can ensure the availability of content to improve the quality of the learning experience and cater for different learning styles. They can also stimulate a culture change in teaching and learning, as teachers review how they deliver their courses and focus on how to improve the learning experience.

Digital repositories of an institution's research output are important for two complementary reasons, as noted by SPARC (Scholarly Publishing and Academic Resources Coalition). These are:

1. As a natural extension of the academic institution's responsibility as a generator of primary research, seeking to preserve and leverage its constituents' intellectual assets
2. As one major component in the evolving structure of scholarly communication

It is becoming increasingly important for institutions to capture research funded by public or charitable organisations that require open publication as part of the funding agreement. The need to capture digital e-learning courseware is essential to ensure that the institution continues to maintain the right to use and build on educational programmes produced for local courses. This is important to help maintain information after an academic moves to another organisation and for an institution's general development.

...for staff and students

Academic staff and students need to store and retain their intellectual assets. They also need to make their work available and visible to others within and outside the institution, while managing their digital rights and maintaining the integrity of their work.

A benefit of institutional repositories is that they enable the free sharing of information, encouraging collaboration and the widespread communication of institutional education and research activity. The 2004 report of the UK House of Commons Select Committee on Science and Technology ('Scientific Publications: Free for All') upheld this view with respect to research, and praised the work of JISC in exploring new models for accessing and sharing such resources.

Much of the institutional repository work to date has concentrated on research outputs, but further work is being undertaken to encourage the growth of repositories for learning materials, data and much else. Once shared, these may be seen to have broad currency, for example across curricula or research communities. Where content is managed in a way that makes access and re-use easy, and maintains digital rights as well as the integrity of the work,

it has a great potential to impact positively on the quality of research and the learning experience. A repository-based infrastructure has the potential to make connections between both different types of content and between different communities of practice.

What is a digital repository?

In simplest terms, a digital repository is where digital content, assets, are stored and can be searched and retrieved for later use. A repository supports mechanisms to import, export, identify, store and retrieve digital assets.

Putting digital content into a repository enables staff and institutions to then manage and preserve it, and therefore derive maximum value from it. Digital repositories may include research outputs and journal articles, theses, e-learning objects and teaching materials or research data.

How does a Repository differ from a Content Management System?

A repository is a type of content management system that both holds the core intellectual assets of a university or college, and enables them to be used to support a variety of business processes as defined in the institution's information strategy. For example, typically a content management system holds resources for a particular course or departmental website. A repository can hold a comprehensive set of core assets that can then be used in a flexible way for different purposes, such as teaching an undergraduate course via a virtual learning environment (VLE), underpinning a website, or collating a university's research outputs across a particular subject area or period of time.

A range of digital repository products, commercial and open source, provide various levels of functionality from basic input and access to more powerful functionality including workflow management and support for preservation. Different systems can be used in a complementary way to provide an appropriate product to the end-user.

Is this a viable and sustainable approach?

If repositories are to support institutions, and their staff and students, in achieving their various objectives, then they must be able to interoperate with other systems (administrative systems, portals, other repositories), and they must not lock their content into systems from which it is difficult and expensive to extract. The key to this is to ensure that repositories comply with 'open standards', so that they declare publicly how the information is stored and made available. If they do this, then institutional repositories have the potential to become embedded as a core element in an institution's information management fabric, enabling institutions to both compete and collaborate more effectively.

Open Standards

Open standards are publicly available descriptions of the ways in which systems can interoperate. Being publicly available, they enable developers to link together systems in innovative ways. JISC supports the work of both UKOLN and CETIS, which are services that play active roles in the creation, maintenance and deployment of open standards.
www.cetis.ac.uk
www.ukoln.ac.uk

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Alternative formats of the briefing paper can be found at:
www.jisc.ac.uk/publications

Further information and resources

DfES e-strategy: Harnessing Technology – Transforming Learning and Children's Services. Available at:
www.dfes.gov.uk/publications/e-strategy/docs/e-strategy.pdf

JISC Briefing on Open Access:
www.jisc.ac.uk/index.cfm?name=pub_openaccess

Questions and answers about opening up access to research results:
www.jisc.ac.uk/index.cfm?name=issue_qaopen

JISC development programmes have investigated may of the issues surrounding the sharing and exchange of institutional intellectual output. The following summaries are available:

- JISC Programme: Exchange for Learning – X4L:
  www.jisc.ac.uk/index.cfm?name=programme_x4l
- JISC Programme: Focus on Access to Institutional Resources – FAIR Synthesis website:
  www.jisc.ac.uk/fair_synthesisintro.html

House of Commons Science and Technology Committee (2004) Scientific Publications: Free for all? Tenth Report of Session 2003–04.
www.publications.parliament.uk/pa/cm200304/cmselect/cmsctech/399/399.pdf

Scholarly Publishing & Academic Resources Coalition, SPARC (2002): The Case for Institutional Repositories: A SPARC Position Paper.
www.arl.org/sparc/IR/ir.html