

The generic open access university - a viral model

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The argument is that openness corresponds closely to academic motivation: scholarship gains value through circulation, scrutiny and reuse, and citation records the extent of that circulation. The model also anticipates two strategic questions for repositories: the appropriate balance between institutional and national infrastructures, and the long-term curation of research data.

Open access must nevertheless demonstrate effects beyond the academy. Claims about social and economic benefit require credible evidence, especially under conditions of financial constraint. Commercial publishing need not disappear; it may shift towards specialised services that add value around openly available content. The generic open access university is therefore neither a closed institution nor a single repository. It is a connected, reproducible and adaptable arrangement for making knowledge public.

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The Generic Open Access University

A viral model

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Abstract

Open access is often discussed as a choice between publishing routes or as a technical problem of repository management. This paper proposes a wider institutional model. The university can be understood as a knowledge node organised around an open access repository containing digital and analogue resources. Networks of scholars, online learning, libraries, museums and archives, and face-to-face interaction translate those resources into usable knowledge. Through these intermediary structures, the university serves learners, the public sector, civil society and business. The argument is that openness corresponds closely to academic motivation: scholarship gains value through circulation, scrutiny and reuse, and citation records the extent of that circulation. The model also anticipates two strategic questions for repositories: the appropriate balance between institutional and national infrastructures, and the long-term curation of research data. Open access must nevertheless demonstrate effects beyond the academy. Claims about social and economic benefit require credible evidence, especially under conditions of financial constraint. Commercial publishing need not disappear; it may shift towards specialised services that add value around openly available content. The generic open access university is therefore neither a closed institution nor a single repository. It is a connected, reproducible and adaptable arrangement for making knowledge public.

Introduction

The case for open access begins with a familiar paradox. Academics work within institutions that depend upon intellectual property, reputation and scarce resources, yet their characteristic scholarly act is to give knowledge away. A researcher ordinarily seeks the widest serious readership for an argument, dataset or discovery. Academic success is then measured, imperfectly but persistently, by how extensively other scholars take up that work. Citation is, in this sense, a measure of successful giving: the intellectual contribution has travelled far enough to become part of somebody else's thinking.

The Budapest Open Access Initiative gives this disposition an infrastructural form. It defines open access as free online availability combined with rights that permit reading, downloading, copying, searching, linking and other lawful uses, while recognising that dissemination still has costs (Budapest Open Access Initiative, 2002). The issue is therefore not whether knowledge production is costless. It is how universities should organise the production, stewardship and circulation of knowledge when digital networks sharply reduce the marginal cost of access.

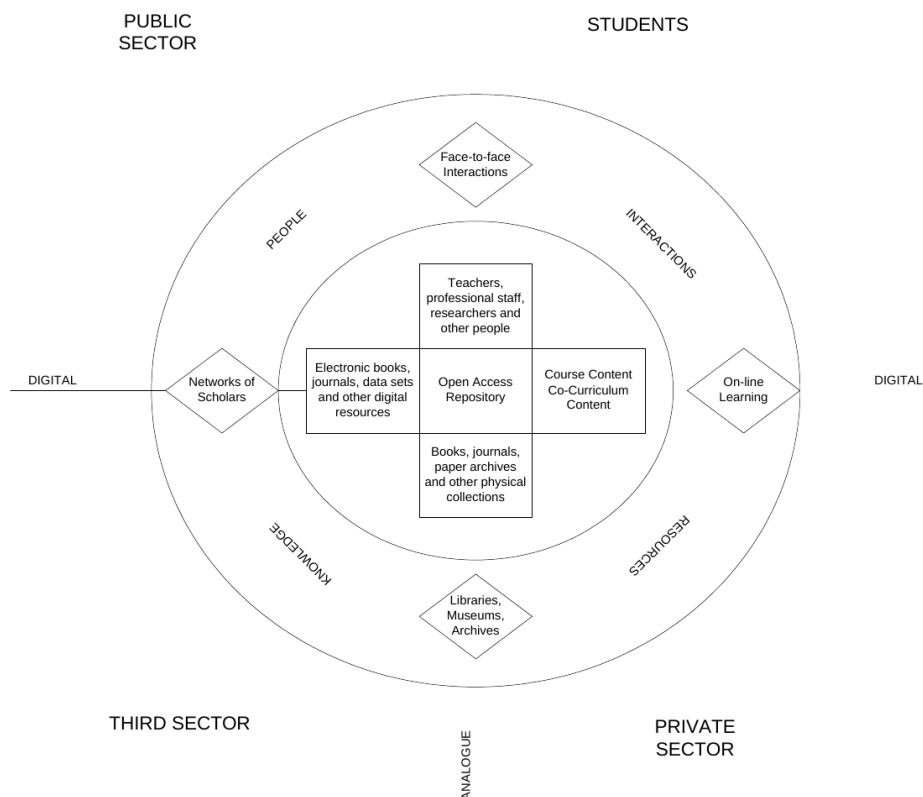
Repositories are central to this question, but they should not be treated as isolated technical services. A repository becomes strategically important when it is embedded in the institution's teaching, research and civic relationships. The model developed here is deliberately generic. It represents a university, or another educational institution, organised around the related principles of open access, open learning and open innovation. Its purpose is not to prescribe a uniform organisation chart. It is to show how an open repository can become the centre of a wider knowledge ecology.

The repository as the institutional core

At the centre of the model is an open access repository comprising several categories of information. These include electronic books and journals, datasets and other digital resources; course and co-curricular content; the intellectual contributions of teachers, professional staff, researchers and other participants; and books, journals, archives and physical collections. The term repository is consequently broader than a database of accepted manuscripts. It denotes the organised knowledge base upon which the university draws and to which it contributes.

The distinction between digital and analogue knowledge remains useful even though the two continually combine. Digitised manuscripts retain relationships with physical collections; online teaching remains

connected to classrooms, laboratories and informal discussion; databases describe objects and places; and scholarship moves repeatedly between embodied experience and electronic representation. The framework therefore uses a horizontal digital axis and a vertical analogue axis. These axes are analytical devices rather than boundaries.



A repository cannot make knowledge merely by accumulating objects. Collections acquire public and scholarly value through selection, description, interpretation, validation and connection. The model therefore places four intermediary structures around the repository. They are “knowledge-making machines” in the limited but important sense that they organise material and translate data into information that can be understood, questioned and reused.

Four intermediary structures

Networks of scholars

Networks of scholars are the “invisible colleges” that have long connected academic work across institutions, disciplines and continents. Digital communication does not invent these networks, but it expands their scale and accelerates their work. Searchable repositories allow scholarship to circulate beyond the subscribers of particular journals and the members of particular universities. They also allow researchers to construct new combinations of sources, methods and collaborators.

Online learning

Online learning is best understood here as curriculum in an extended sense. It includes the structures that organise course content and modules, but also the reading lists, metadata, translation tools, validation procedures and assessment conventions through which learners make sense of a large and

uneven web of information. Content alone is not education. Open educational resources become educationally useful when they are placed in a sequence, interpreted by teachers and peers, related to prior knowledge and connected to credible forms of assessment.

This relationship is reciprocal. Teaching draws from the repository, but it can also enrich it through lecture materials, learning objects, student work where appropriate, and records of practice. The repository becomes part of curriculum design rather than a final destination for research outputs. Open learning and open access thus meet in the university's responsibility to make knowledge both available and intelligible.

Libraries museums and archives

Libraries, museums and archives are treated in the model as places that organise and make available analogue information. This is an intentional simplification. Libraries are already crucial providers of electronic databases, and museums and archives increasingly create digital surrogates and catalogues. Yet their physical character remains important. Paper archives, artefacts, inscriptions, scientific specimens and popular-cultural collections cannot be reduced without remainder to files on a server.

These institutions contribute professional practices of description, provenance, preservation and access. They connect objects with contexts and maintain records across time. In an open access university, their task is not displaced by the repository; it is extended through it. The integrity of digital access depends upon the curatorial labour that makes resources discoverable and reliable.

Face to face interaction

Face-to-face interactions are, simply, people. They remain fundamental to open knowledge systems. The continuing importance of universities as places, and the concentration of digital industries in expensive urban centres, show that electronic connection does not eliminate proximity. Informal exchange, mentoring, disagreement and trust are often generated through presence.

This observation protects the model from technological determinism. A repository is infrastructure, not an autonomous university. Its value depends upon human relationships and professional judgement. Openness enlarges the possible community of interaction; it does not make interaction unnecessary.

Four domains of public connection

The intermediary structures connect the repository to four domains. These sectors are heuristic rather than exhaustive, and individuals often occupy several of them at once.

Learners

"Students" denotes learners in the broadest sense: those pursuing formal qualifications, developing capacity through shorter or informal study, or engaging with knowledge for curiosity and enjoyment. Open access weakens the assumption that university knowledge belongs only to the enrolled. It enables prospective students, alumni, independent learners, teachers and professionals to use materials that public and charitable funds have often helped to create. The university retains responsibilities for admission, pedagogy and awards, but its educational contribution extends beyond those administrative boundaries.

The public sector

Public organisations range from local government to international bodies, and from health services to cultural institutions. They require information at different levels of complexity and depend upon new knowledge in fields as varied as vaccines, economic policy, urban development and renewable energy.

Open repositories can shorten the distance between research and public use. Yet availability is only a first condition. Public value also requires intelligible summaries, stable links, usable licences, reliable metadata and relationships with practitioners.

The third sector

The third sector includes non-governmental organisations, charities, community organisations and issue-based groups. These organisations often lack the subscription budgets of universities and large firms, despite needing research to design services, contest policy or evaluate interventions. Open access can therefore help revive a public intellectual role for the university. It gives civil society a more direct route to scholarship and creates opportunities for communities to question, reinterpret and contribute knowledge rather than receiving it only after institutional mediation.

The private sector

The private sector is integral to the model because universities contribute to research, development and the knowledge economy. Open access should not be conflated with opposition to markets. Open resources may enable commercial innovation by lowering entry barriers, permitting experimentation and establishing shared platforms upon which firms can build services. The experience of open-source software is instructive: IBM's engagement showed that a firm could contribute to common technical resources while creating value through complementary expertise, integration and services (Capek et al., 2005). Chesbrough's account of open innovation similarly describes organisations using purposive inflows and outflows of knowledge rather than relying only on vertically contained research (Chesbrough, 2006).

The implication for universities is not that all intellectual property must be relinquished. Different forms of knowledge require different regimes, especially where confidentiality, personal data, indigenous knowledge or legitimate commercial development are involved. The central proposition is narrower: openness should be the organising presumption for scholarship, with restrictions justified rather than simply inherited.

Institutional repositories national services and network effects

The generic university is a node in a wider network of universities, libraries, archives, disciplinary communities, public agencies and firms. Both its digital and analogue axes extend outwards. Networks of scholars belong to other networks; libraries participate in cataloguing and lending systems; datasets may require disciplinary services; and institutional records may need national discovery infrastructure. A repository becomes more useful as these connections multiply.

This produces a strategic question: should the principal unit be the institutional repository or a national repository? The answer may not be singular. Institutional repositories can align deposit with local governance, research information systems, staff support and institutional identity. National or disciplinary services may offer scale, consistent standards, preservation capacity and easier discovery. A federated arrangement can preserve local responsibility while enabling national aggregation. The key requirement is interoperability: common metadata, persistent identifiers, clear rights information and dependable mechanisms for exchange.

The word "viral" in the title refers to this capacity for reproduction and connection. The model is not franchised from a centre. Each institution can adapt it to local purposes, while compatible standards allow repositories to form a distributed public knowledge system. Success is consequently measured not by the size of a single store but by the movement, reuse and enrichment of knowledge across the network.

Research data and long term curation

Research data bring the repository's future responsibilities into sharp focus. Articles are only one part of the scholarly record. Increasingly, the evidence underlying published claims exists in datasets, images, recordings, software and complex combinations of formats. Preserving these materials requires decisions about selection, documentation, storage, access, ethics and migration. Deposit at the end of a project is not sufficient.

The Digital Curation Centre's lifecycle model is valuable because it treats curation as a continuing process: conceptualisation, creation or receipt, appraisal, ingest, preservation, storage, access, reuse and transformation are linked to description and preservation planning throughout the lifecycle (Higgins, 2008). Universities must therefore clarify roles before data are created, not merely find server space afterwards. Some data cannot be open because they contain personal, confidential or culturally restricted information. Open access to data must mean access that is as open as responsibly possible, supported by governance capable of explaining the exceptions.

Long-term curation may also alter the balance between institutional and shared services. The skills and costs required for preservation can exceed the capacity of smaller institutions, while disciplinary data often gain meaning from aggregation. Collaborative infrastructure will be necessary, but it must retain clear lines of stewardship and accountability.

Demonstrating social and economic value

Advocates often assert that open access benefits research, innovation and society. These claims are plausible, but plausibility is not enough. In difficult economic circumstances, repository communities need credible studies that distinguish access, use, outcomes and causation. Download counts show attention; citations suggest scholarly uptake; neither by itself demonstrates better public policy, commercial innovation or social welfare.

Economic modelling commissioned by JISC estimated substantial system-wide benefits from alternative scholarly communication models, while also warning that available data were often indicative and that causal relationships could not always be demonstrated (Houghton et al., 2009; Houghton and Oppenheim, 2010). This combination of promise and methodological restraint should guide institutional evaluation. Repositories need baselines, comparison groups where feasible, consistent definitions and evidence that follows knowledge into practice. Case studies can establish mechanisms, but they should be accumulated in ways that permit comparison.

A practical evaluation framework would separate at least four stages: whether an output is openly available and discoverable; who accesses it; how it is reused; and what changes follow. Different sectors require different evidence. Scholarly networks may be assessed through citation and collaboration; learners through participation and learning design; public agencies through policy or service use; civil society through documented application; and firms through innovation activity. The purpose is not to reduce every benefit to money. It is to make the chain of contribution visible and testable.

The future of publishing

A world moving towards open access does not necessarily remove publishers. It changes the basis on which they justify payment. Publishing combines certification, editorial coordination, presentation, discovery, preservation and specialist knowledge services. Some of these functions may remain bundled; others may be supplied separately by universities, learned societies or commercial organisations.

One possible direction is towards highly specialised value-added services. A publisher might provide a bespoke bibliographic review, authoritative synthesis, semantic enrichment, data visualisation, or disciplinary filtering around openly accessible materials. Payment would then be attached to demonstrable service rather than control of the underlying scholarly record. The transition will be uneven, and new models will still require sustainable revenue. The important point is that open access does not abolish value; it asks where value is created and how its cost should be recovered.

Conclusion

The generic open access university places the repository at the centre of institutional life, but it does not mistake storage for knowledge. Networks of scholars, curricula, collecting institutions and face-to-face communities interpret the repository and connect it with learners, government, civil society and business. The resulting university is both local and networked, digital and material.

Three priorities follow. Repositories must be embedded in teaching, research and external engagement rather than treated as peripheral technical systems. Institutions must develop interoperable arrangements for national and disciplinary connection, especially for the long-term curation of research data. And the open-access community must strengthen its evidence of social and economic effect, distinguishing claims of benefit from demonstrated outcomes.

The deepest argument is cultural. Scholarship already depends upon circulation, acknowledgement and reuse. Open access gives that academic disposition an institutional architecture. If the model is viral, it is because each open node increases the usefulness of the others, and because knowledge grows when it can move.

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