

The Open Movement in Higher Education

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ULS/iSchool Workshop & Lecture Series
Thursday, October 15, 2015





Importance of “Open” agenda

- Open approaches are gathering momentum
 - bottom-up initiatives led by researchers, librarians, educationalists, and technologists
 - top-down drive by policy-makers and funders
- Influences and instantiations are multifaceted
 - social, technological, economic, political, etc.
- Multifarious movements at different stages
 - typically pursued within separate specialist communities
 - relatively few efforts to think and work holistically
- The open movement has the potential to advance our mission
 - and enhance research, learning, knowledge sharing, and public engagement with science on a global scale



Presentation outline

- Open approaches in higher education and research
 - definitions, dimensions, distinctions
 - proposed typology and model
- Coherence and convergence of open approaches
 - shared commitment, common economic principles,
 - shared characteristics, *de facto* interconnectedness
- Considerations for policy development
 - common benefits, natural limits,
 - institutional mission, stakeholder roles

Acknowledgment

- Based on ongoing research with Dr. Stephen Pinfield, Information School, University of Sheffield, UK



Definitions of Openness

- Interpretations of Open vary between and within different stakeholder and practitioner groups
 - especially in the commercial arena (e.g., Open Standards) and for emergent areas (e.g., Open Peer Review)
- Some transfer concepts/terms from existing practice
 - Gratis and Libre “sub-species” of Open Access derived from Open Source Software community (Suber, 2012)
- Others develop their own frameworks and meanings
 - 4 Rs of Open Educational Resources: Reuse, Revise, Remix, Redistribute (Wiley, 2010)
- Focus may be on content (product) and/or process



Open Access

Budapest Open Access Initiative

“...free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited.”

(BOAI, 2002)



Open Access

Sub-Species of OA

(using terminology from the software community)

“Gratis OA is free of charge... Users must still seek permission to exceed fair use. Gratis OA removes price barriers but not permission barriers.”

- significantly limits use and practical benefits

“Libre OA is free of charge and also free of some copyright and licensing restrictions ... Libre OA removes price barriers and at least some permission barriers.”

- may allow copying, reformatting and analysis for content/text mining

(Suber, 2012, pp. 65, 66)



Open Educational Resources

4 Rs of Openness

- **Reuse:** the right to reuse the content in its unaltered/verbatim form (e.g., make a backup copy of the content)
- **Revise:** the right to adapt, adjust, modify, or alter the content itself (e.g., translate the content into another language)
- **Remix:** the right to combine the original or revised content with other content to create something new (e.g., incorporate the content into a mashup)
- **Redistribute:** the right to share copies of the original content, the revisions, or the remixes with others (e.g., give a copy of the content to a friend)

(Wiley, 2010, p. 10)



Open Content

“a collective name for creative work published under a non-restrictive licence that explicitly permits the work to be copied and...to also be adapted and distributed.”

(Keller & Mossink, 2008, p. 13)

Open Bibliography

“systematic efforts to create and maintain stores of Openly accessible, machine-readable bibliographic data”

(Jones et al., 2011)

Open Data

“Data that meets the criteria of intelligent openness. Data must be accessible, useable, assessable and intelligible.”

(Royal Society, 2012, p. 12)



From Content to Process

Open Source Software

“The essence of open source is not the software. It is the *process* by which software is created. Think of the software itself as an artifact of the production process. And artifacts are often not the appropriate focus of a broader explanation.”

(Weber, 2004, p. 56)

Open Peer Review

“the opposite of double blind, in which authors’ and reviewers’ identities are both known to each other (and sometimes publicly disclosed), but... also used to describe other approaches, such as where the reviewers remain anonymous but their reports are published.”

(Ware, 2011, p. 25)



Open Process

Open Educational Practices

“...collaborative practice in which resources are shared by making them openly available, and pedagogical practices are employed which rely on social interaction, knowledge creation, peer-learning, and shared learning practices.”

(Ehlers, 2011, p. 6)

Open Literature Review

“...uses a social networking space to aggregate and collectively discuss an evolving body of literature around a set of core research questions.”

(Conole & Alevizou, 2010, p. 6)



Open Process

Open Science

“making methodologies, data and results available on the Internet, through transparent working practices”

(Lyon, 2009, p. 6)

Open Notebook Science

“a form of Open Science where the laboratory notebook is made public in as close to real time as possible”

(Bradley, Owens & Williams, 2008)



From Process to Infrastructure

Open Standards

“Open standards are developed in a transparent and collaborative process, are available for free or at a nominal cost and can be implemented royalty free – in particular regarding software interoperability standards – or at reasonable cost.”

(Undheim & Friedrich, 2008, p. 2)

Open Systems

“...conform to internationally agreed standards defining computing environments that allow users to develop, run and interconnect applications and the hardware they run on, from whatever source, without significant conversion costs”

(Bryant, 1995, p. 32)



Open: A simple overarching definition



“Open means ensuring that there is little or no barrier to access for anyone who can, or wants to, contribute to a particular development or use its output.”

(e-Infranet, 2013, p. 12, adapted from CETIS, former JISC-funded Center for Educational Technology and Interoperability Standards)



A Typology of Open (Corrall & Pinfield, 2014, p. 298)

Open Type	Open Domain
Open Content	Open access to research publications (OA) Open data Open educational resources, including open courseware and open textbooks Open bibliography/metadata Open source software
Open Process	Open development Open educational practices Open peer review Open research/science, including open literature review and open notebook science Open innovation
Open Infrastructure	Open standards Open systems



Open Types and Aims

- **Open Content** – making content of various sorts freely accessible and available for reuse
e.g., publications, theses, dissertations, datasets, metadata, learning objects, computer code
- **Open Process** – carrying out academic or business processes in the public arena
e.g., product/service innovation, software development, scientific work, peer review, pedagogical practices
- **Open Infrastructure** – creating an interoperable technical environment for education and research
e.g., standards, systems



Relationships and culture

- Different open domains overlap, support each other, and stimulate new forms of openness
 - open research data building on open access to publications and open source software
 - open educational resources using open source systems leading to shared pedagogies and peer learning

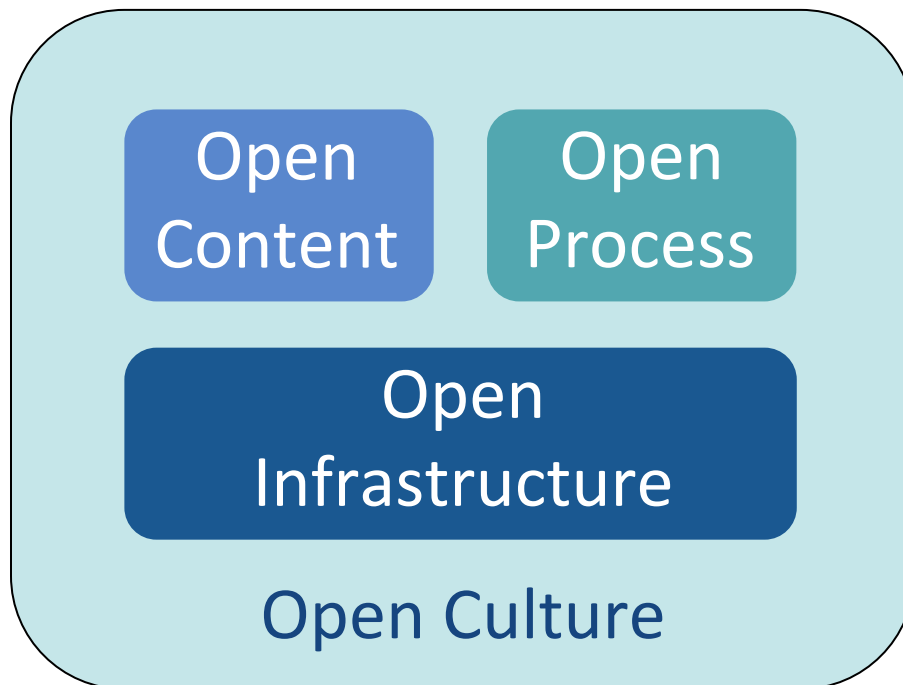
“share not just the content that MIT uses in teaching – the original OCW model – but also explicit information on how we teach at MIT...pedagogical statements from and interviews with participating faculty, links to exemplary teaching practices, showcases of educational innovations and other framing information ”

(Abelson, Miyagawa & Yue, 2012, p. 9)



High-Level Open Typology

(Corrall & Pinfield, 2014, p. 299)



“As...access to content and infrastructural resources increases, the need for and use of ‘open processes’ becomes more evident.

Where ‘open content’ is used and produced in ‘open processes’ within an open infrastructural setting, **a culture of ‘openness’** gradually emerges”

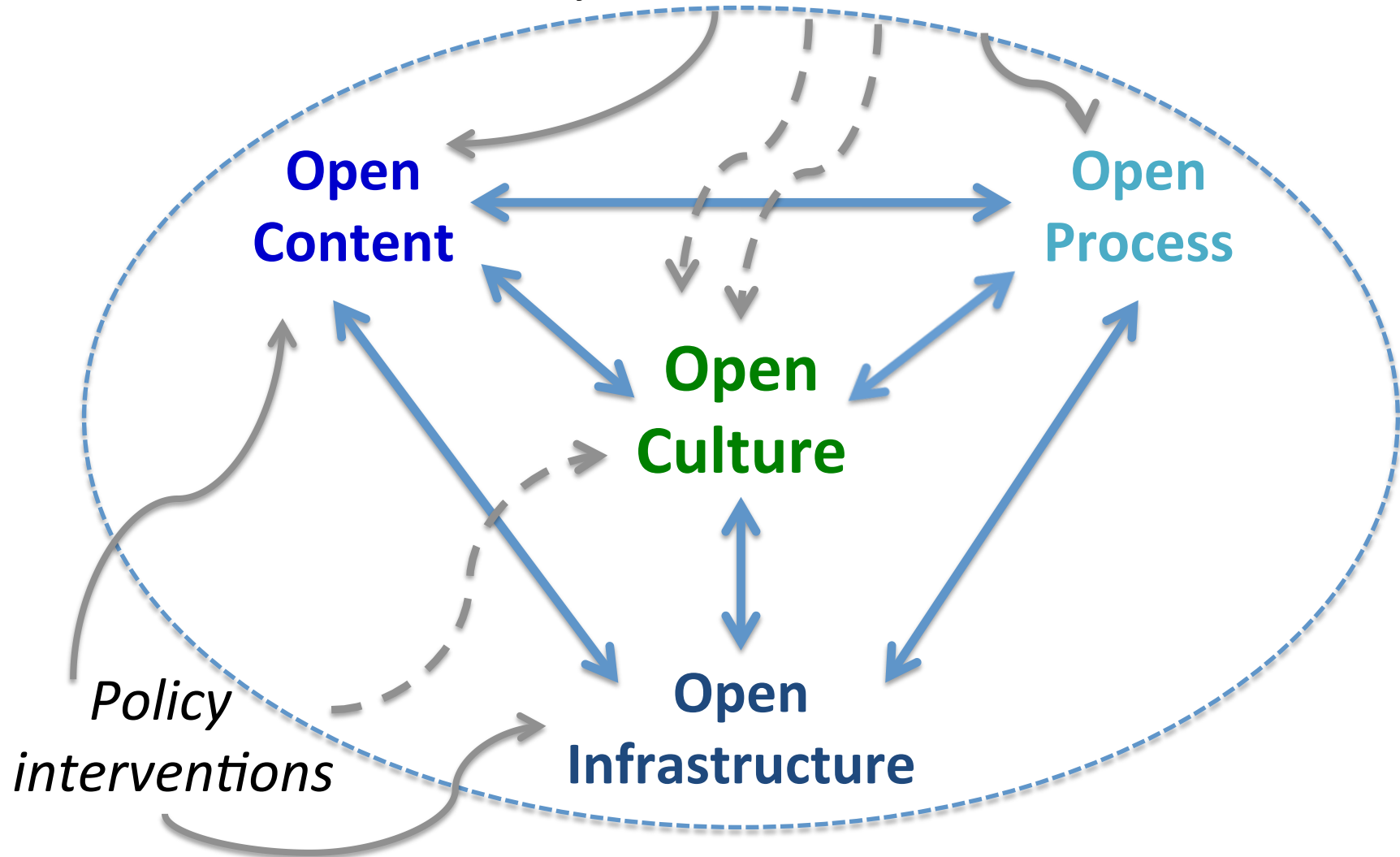
(e-Infranet, 2013, p.13)



An Evolving Model of Open

Policy interventions

(Corrall & Pinfield,
2014, p. 301)





Fragmentation vs. Integration

- Open domains at various stages of evolution
 - from ideas to maturity
- Promoted by diverse communities of practice
 - often with little or no connection between them
- Initiatives managed at different levels
 - institutional/consortial, national/international
- Open types have a shared theoretical foundation
 - commitment, principles
- Open domains face similar practical issues
 - IPR, business models, sustainability
- Libraries are especially well placed to exploit synergies
 - operationally, tactically, and strategically

Dependencies and synergies among open domains indicate the significance of **coordination** and **culture**



The Case for Convergence

Willinsky's (2005) argument for the ("unacknowledged") "convergence" between OA and OSS can be extended to other Open domains to demonstrate coherence:

1. The different Open domains have a shared "commitment"
2. They are governed by common "economic principles"
3. The domains have shared characteristics (derived from 1 and 2)

To which we add:

4. The de facto interconnectedness between the Open domains is continuing to develop



A Shared Commitment to Open

- Shared “commitment to the unrestricted exchange of information and ideas” (Willinsky, 2005)
- Arguments often framed around “transparency”, “public good”, “public accountability” (Davis, 2009)
 - resonate with policymakers
- Arguments developed around Open Content (particularly OA) can be extended to Open Process



Common economic principles

1. The efficacy of free software and research (Willinsky, 2005)
 - Corresponding to Libre OA
 - Based on the non-subtractive, non-depletable nature of information and non-rivalrous nature of consumption of digital objects (“Knowledge Commons”)
(Hess & Ostrom, 2007)
2. Reputation-building afforded by public access and patronage (Willinsky, 2005)
 - Economy of recognition
 - “Competitive sharing” (Pinfield, 2012)
3. The emergence of a free-or-subscribe access model

The principles can be extended across the Open domains



Shared Characteristics and *de facto* Interconnectedness

Characteristics

- Driven by the impulse of intellectual curiosity
- Supporting an economy of reputation building
- Facilitated by motivation for competitive sharing

Interconnectedness

- OSS and OA, e.g., Eprints and DSpace software
- Open data as the natural complement to open access for research publications
- General principle

“if content is open, the means with which to access and process it – manually and/or through machine processing – needs to be open as well” (e-InfraNet, 2013, p. 48)



Common Benefits and Limits

Open approaches offer significant common **benefits** for institutions and individuals

- Visibility and impact
- Reuse
- Innovation and agility
- Cost effectiveness
- Quality enhancement
- Reputation and trust

(e-InfraNet, 2013;
Read, 2011)

Opens have “natural” **limits**, which need to be identified and tested as part of the policy-making process

- Open access – limited to royalty-free literature
- Open data – limited by personal or commercial confidentiality
- OER – limited by selectivity
- OSS – limited by a strong mixed economy



Challenges of policy formulation

Pluralities and complexities of the open landscape have resulted in many factors for stakeholders to consider

- parallel development paths, different maturity stages, and interrelationships of open domains
- varying levels, shared benefits, and natural limits of openness
- intellectual property rights, business models, and sustainability of open initiatives
- institutional, disciplinary, and professional culture

Dependencies and synergies make a strong case for institutions to adopt a holistic approach and develop an integrated strategy

- Open agenda must be a priority concern for universities as part of their mission to have a positive impact on society



Current trends and developments

- Open science efforts evolving beyond content towards process (e.g., workflows) and infrastructure (e.g, systems)
- Developments with specific focus on humanities
 - Open Library of the Humanities
- Emergence of broader more holistic perspectives, framed by Boyer's (1990; 1996) model of scholarship
 - discovery, integration, application, teaching, engagement
- Academic library initiatives with open linked data (GOKb), OERs/MOOCs/open textbooks, and text/data mining
- Institutional policy development is not keeping pace with current thinking and desirable practice





Key references

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Willinsky, J. (2005). The unacknowledged convergence of open source, open access and open science. *First Monday*, 10(8).

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Additional reading

Peters, M. A., & Roberts, P. (2012). *The virtues of openness: Education, science, and scholarship in the digital age*. Boulder, CO: Paradigm.



Towards an Integrated Strategy?

Four Questions for Debate

- Should policy for the Open domains be aspirational or mandatory and uniform or variable for different categories?
- Which definition(s) of Openness should be adopted?
- What roles could different stakeholders play to advance the Open movement, e.g.,
 - institutional administrators? academic faculty? students? information professionals?
- What roles should librarians have in relation to Open agenda
 - educators? advocates? facilitators? mediators? coordinators? leaders?