From eBooks to OERs in the US

OPPORTUNITIES AND CHALLENGES

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"Open" and "Free" in a Digital World

Tensions in Early Computer Culture

- "Free" (hacker culture) vs. early development of personal computer industry
  - Apple 1: built in 1976
  - Early internet (from US military ARPANET): 1983
  - Original Apple Mac: 1984
- Commonly cited (but misquoted) comment of Stuart Brand (editor of *Whole Earth Catalog*, founder of The Well)
  - "Information wants to be free"

Tensions in Early Computer Culture (cont.)

- Actual quote (from 1984 conversation with Steve Wozniak, co-founder of Apple)
  - "On the one hand information wants to be expensive, because it's so valuable…. On the other hand, information wants to be free, because the cost of getting it out is getting lower and lower all the time. So you have these two fighting against each other." (see Gans 2015)

- My argument
  - The same tension exists today between OERs and costs associated with producing, disseminating, curating, and augmenting them

Early "Open" Initiatives

- ■ Project Gutenberg
  - ■ Michael Hart (1971, University of Illinois)
  - ■ Typed in texts of books that were out of copyright
  - ■ Available through ARPANET on mainframes
- ■ Google Books
  - ■ Project began in1996 at Stanford
    - ■ Goal of Sergey Bryn and Larry Page: tool for using with digital libraries
    - ■ Led to Google as a search tool
  - ■ Book-scanning began in 2002
  - ■ Tensions, law suits between Google and authors, publishers: Should Google Books content be free or should authors be paid royalties?

Creative Commons

- History
  - Goal: expand range of creative works that others can legally use to share or build on
  - Founder: Lawrence Lessig (2001)

- From US to international scope
  - Creative Commons US (https://creativecommons.org)
    - First project: December 2002
  - Creative Commons Belgium
    - http://www.creativecommons.be

- Choose your own conditions, type of license

Creative Commons (cont.)

- ## License types

	Can someone use it commercially?	Can someone create new versions of it?
Attribution	👍	👍
Share Alike	👍	Yup, AND they must license the new work under a Share Alike license.
No Derivatives	👍	👎
Non-Commercial	👎	Yup, AND the new work must be non-commercial, but it can be under any non-commercial license.
Non-Commercial Share Alike	👎	Yup, AND they must license the new work under a Non-Commercial Share Alike license.
Non-Commercial No Derivatives	👎	👎

Free Contributions of Labor

- Wikipedia
    - Founded in 2001 by Jimmy Wales
    - Anyone can contribute new entries, edit existing ones
    - Back-end editing hierarchy
    - Number of contributors: >2.4 million (https://www.statista.com/statistics/265837/number-of-wikipedia-contributors-worldwide/)

- Online product reviews, book reviews
    - Issue: Which are authentic, which are not?

The Academic Journal Crisis

- High cost of academic journals (print and digital)

- Concern in scientific community about lack of access to journals for researchers, students not at institutions with paid subscriptions

- Public Library of Science (PLOS)
  - Begun publishing in 2003 (with foundation money)
  - Open Access (Creative Commons licenses)
  - Highly prestigious, competitive
    - 61 Nobel Laureates have written articles for PLOS
  - Now 8 different journals

Other "Free" Collection Initiatives

- Essentially all digital (since distribution is free and available to anyone with internet access)
- In US, include
  - Digital Public Library of America
  - Library of Congress: The American Memory Project
- BUT: someone still needs to fund making these "free" materials available
  - What happens when grants, foundation money, federal funding, local funding run out?

The Rise of eBooks

- Appearance of key hardware devices
  - Sony eReader (Japan): 2003
  - Amazon Kindle: December 2007
  - Apple iPad: April 2010

- NOTE on calculating eBook sales
  - Most-cited statistics based on >1200 recognized publishers; self-published works (which are now primarily digital) are not included
  - Total sales profile heavily influenced by best-sellers (e.g., *Fifty Shades of Grey*)

The Rise of eBooks (cont.)

- Golden period of eBook sales (US)
  - Triple-digit growth from c. 2009-2012

- Current sales profile (US)
  - Recent years: annual declines in eBook sales, modest growth in print; biggest growth in audio
  - For 2016 (compared with 2015)
    - Print: -   .2%
    - eBooks: -15.6%
    - Audio: +29.6%

    - Source: Association of American Publishers (http://newsroom.publishers.org/aap-statshot-book-publisher-trade-sales-flat-for-2016/)

Cost as Driver of eBooks in American Education

- ■ Effects of the Great Recession (2007-c.2010)
  - ■ California budget crisis affected K-12; other states followed (reduced state funding for schools)
  - ■ Financial challenge for college students whose parents lost jobs

- ■ Cost of college textbooks in US
  - ■ Major issue (especially given high cost of tuition)

- ■ eBooks less expensive than print (to buy or rent)
  - ■ NOTE: Not true in many other countries
    - ■ Fixed prices on books
    - ■ Higher VAT on eBooks than on print
    - ■ Tuition, plus sometimes books, paid by state

Cost as Driver of eBooks in American Education (cont.)

- Models for lowering costs on eBooks
  - Aggressive bargaining with publishers
    - Indiana University (Brad Wheeler, CIO)
      - Cost of eBooks folded into tuition or fees, so every student must purchase (plus: no used book market)
      - Motivation for publisher to reduce eBook price, since sales guaranteed
    - Model now used (through a consortium) at many other universities in the US
  - Bundled digital subscriptions for academic term
    - E.g., Scribd: access to Scribd library + *New York Times* for c. $30 USD for 4 months

What are OERs?

- Origin of the term/concept
  - David Wiley [now Chief Academic Officer, Lumen Learning] (1998)

- Related US-based open educational initiatives
  - MIT: OpenCourseWare program (2002)
  - Sal Kahn's Kahn Academy (2004)
  - Stanford University: YouTubeEDU (2009)
  - MOOCs (Canada: 2008; Stanford: 2011; Harvard/MIT edX: 2012)

What is Included in OERs?

- Just digital? Anything available for free use?
- UNESCO's definition
  - "Open Educational Resources (OERs) are any type of educational materials that are in the public domain or introduced with an open license. The nature of these open materials means that anyone can legally and freely copy, use, adapt and re-share them. OERs range from textbooks to curricula, syllabi, lecture notes, assignments, tests, projects, audio, video and animation."
  (http://www.unesco.org/new/en/communication-and-information/access-to-knowledge/open-educational-resources/what-are-open-educational-resources-oers/)

What is Included in OERs? (cont.)

- Definition of William and Flora Hewlett Foundation (major funder of OERs in US)
  - "Teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and re-purposing by others. OERs include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge." (https://www.hewlett.org/strategy/open-educational-resources/#overview)

What is Included in OERs? (cont.)

- David Wiley's 5 Rs of Openness
  - **Retain:** the right to make, own, and control copies of content
  - **Reuse:** the right to use the content in a wide range of ways (e.g., in a class, in a study group, on a website, in a video)
  - **Revise**: the right to adapt, adjust, modify, or alter content itself (e.g., translate the content into another language)
  - **Remix**: the right to combine the original or revised content with other open content to create something new (e.g., incorporate the content into a mashup)
  - **Redistribute:** the right to share copies of the original content, your revisions, or your remixes with others (e.g., give a copy of the content to a friend)
  - (https://opencontent.org/blog/archives/3221)

What is Included in OERs? (cont.)

- Inside HigherEd/Cengage definition (2017)
  - "free **online** materials to use instead of or in addition to textbooks" [emphasis added]
  - NOTES
    - Most articles in Inside HigherEd/Cengage collection (articles that appeared earlier in Inside HigherEd) are about free OER textbooks
    - However, Cengage (sponsor of this collection) looks to augment OERs with paid materials (typically for digital lease), i.e., with cost for students

Open Access versus Open Source

- Open access
  - Right to use existing materials for free, but not to change, remix, sell, etc.

- Open source
  - Right to use (and re-use) materials as you wish
    - E.g., Linux operating system

- Creative Commons licenses offer range of options for both open access and open source

- For students whose libraries have paid subscriptions (e.g., to journals), use "feels" like open access

OER Textbook Movement in US

- Contributing factors
  - Rising cost of textbooks (coupled with efforts in higher education to increase access to college)
  - Substantial funding from foundations
  - Broader move towards using digital resources in education
    - Libraries (university plus civic) going digital-only
    - Use of online Learning Management Systems
    - Moving course readings, homework submission online
  - Growth of eBooks made digital reading of book-length works increasingly familiar

Some Major OER Initiatives in US

- University of Minnesota
  - Center for Open Education (David Ernst) (http://open.umn.edu/about/default.asp)
  - Open Textbook Network (https://research.cehd.umn.edu/otn/)

- Rice University
  - OpenStax (Richard Baraniuk) (https://openstax.org)

- SPARC (Scholarly Publishing and Academic Resources Coalition) (libraries) (https://sparcopen.org/who-we-are/)

- SUNY OER Services (State University of New York)
  - OER texts to be used system-wide (>430,000 students) (https://textbooks.opensuny.org/open-educational-resources/)

Academic & Commercial Publishers

- Growing shift from print to digital
  - Progressive creation of digital "supplements" (e.g., audio labs for foreign language courses)
  - Strong move into digital homework for mathematics classes (e.g., Pearson MyLab Math - https://www.pearsonmylabandmastering.com/northamerica/mymathlab/)
  - Challenge: access to digital "keys" is expensive (and students can't share, as they can with print)

- Publisher responses to OERs
  - A work in progress (see our subsequent discussion)

OER Opportunities

- Cost
  - NOTE: US students mostly choose free digital, not low-cost print (where print-on-demand is available)
- Convenience
- Visual, audio opportunities
- Embedded links
- Potential for individualized ("adaptive") learning
  - But: Most producers of OERs don't have resources of time or money to develop such labor-intensive adaptive texts

OER Challenges

- Quality of materials
- Faculty knowledge of / faith in materials
- Learning digitally versus in print
- Challenges for publishers
- The "packaging" of education
- Stuart Brand's challenge
  - Should information be free or expensive?

Quality of Materials

- Mixed
  - Development of excellent materials still a work in progress
- Initiatives to generate quality materials
  - OpenStax: very substantial foundation money
  - Open Textbook Network/Library
    - Peer review process is a first step, but not enough
- Most OERs are produced by well-meaning faculty but with little review, vetting of content
  - Assistance from instructional designers is useful, but they are not content specialists

Faculty Knowledge of / Faith in OER Materials

- ■ Campus Computing Project (2016)
  - ■ 39% of faculty surveyed had never heard of OERs
  - ■ Only 36% agreed "OER content provides a viable alternative to traditional print/commercial course resources"

- ■ Babson Survey Research Group (Allen & Seaman 2016)
  - ■ Only 5.3% of courses were using OER textbooks
  - ■ Faculty concern about time, effort needed to find and evaluate OERs

Learning Digitally versus in Print

- Presupposition of OER movement
  - Medium of instruction for text-based materials (e.g., PDF, ePub3 versus print) does not matter
  - Implied assumption: advantages of cost, audio and video options outweigh potential differences

- What we know – and don't know – about learning digitally versus in print (see Baron et al. 2017)
  - Research to date suggests differences do exist (especially when deep reading, abstract concepts, long text, or complex texts are involved)
  - Type of subject matter (e.g., literature versus calculus) probably important – needs study

Challenges for Publishers

- **Hybrid model** (and its challenge to OERs concept)
    - Ownership (by user) vs. leasing access (from publisher)

- **Reality of publishers' bottom line:** 2016 revenues
    - Cengage: c. $1.5 billion USD (c. 50% digital)
    - Pearson: c. $6.1 billion USD (c. 68% digital/services)

- **Cengage strategies**
    - "we are experimenting with augmenting OER with other content to find affordable solutions for students. We know that OER can be a powerful complement to proprietary content." (Michael Hansen, CEO, Cengage – in Inside HigherEd/Cengage 2017)

Challenges for Publishers (cont.)

- Cengage strategies (cont.)
  - "We provide pre-populated courses using vetted OER content, saving your institution precious time by having Cengage manage the curation, content upkeep and reducing the cost of materials for students." (http://www.cengage.com/institutional/ -- flyer)

- Pearson strategies for 2017 (see Pearson 2017)
  - Lowered prices on 2000 eBook rentals
  - Creating own print rental program
  - Creating digital products with "greater personalization, enhanced engagement and cognitive tutoring"

Challenges for Publishers (cont.)

- David Anderson (executive director of higher education, Association of American Publishers) (in Dimeo 2017)
  - "While there is a vast amount of free educational content available at our fingertips online, there is still a need for professionally researched and vetted materials produced by learning companies."
  - "Education companies can help deliver accessible, interactive and personalized digital content by the first day of class, the cost[s] of which are far lower than traditional hardbound print textbooks."

Challenges for Publishers (cont.)

- John Fallon (CEO of Pearson) (in Cavanagh 2016)
  - OERs can provide benefits to some schools, but commercial resources will continue having value because of technological enhancements, analytics, adaptive learning – beyond academic content
  - These additional resources can't be done "without continuous and sustained investment, and that investment has to [be] funded from somewhere"
  - "If [the education community goes the open] route, it's not a free route. They will have to find a way to fund and sustain that approach…. Quality has to be paid for"

The "Packaging" of Education

- What learning materials make for excellent education?
  - How many faculty want pre-packaged materials (whether OERs or commercial)?
    - Lesson of failure of MOOCs to dominate education in US (e.g., San Jose State University: quality, control)
    - Reality of pressures on faculty time, lack of pedagogical expertise
  - Is the trend to reduce education to packaged content + analytics?
  - How can OERs be used creatively to address these issues?

Stuart Brand's Challenge

- Should information be free or expensive?
  - Can OER quality be assured without students needing to pay, even reduced prices?
    - What happens when foundation etc. funding ends?
    - Is "free" the goal – or is it, realistically, "lower cost"?
  - Should authors' labors be compensated?
    - Were US courts correct in ruling against Authors Guild in suit against Google Books? (see https://www.authorsguild.org/where-we-stand/authors-guild-v-google/)
    - Do OERs (or Creative Commons licenses more broadly) enhance or diminish motivations for serious writers?

Conclusions

- **OERs are vital educational resources**
- **However, we need to figure out**
  - How to create, vet, and publicize excellent works (not assume that everything "free" is valuable)
  - How to pay for this process
  - What learning works best digitally – and what doesn't
  - How to harmonize OERs with commercially-produced educational materials
  - How to enfranchise faculty in their educational mission rather just being stewards of other people's materials (same challenge with commercial textbooks)

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Thank you

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Words Onscreen:
The Fate of Reading in a Digital World
(Oxford University Press, 2015)