Cost Impact in Managing the Transition to Open Access Model

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34th Annual Charleston Conference: Issues in Book and Serial Acquisition
November 5 – 8, 2014, Charleston, South Carolina
The University of Hong Kong (est. 1911)

- English-medium university
- 10 Faculties represented: Law, Dentistry, Medicine, Engineering...
- 4 year UG since 2012
- Teaching Faculty 1688+
- Student FTEs: 27440, 47% PG
- US$13M+ on library resources
- Rank 43rd (Times Higher 2014)
Today’s Learning Environment
A modern view of the Learning Commons in the Centennial Campus opened in Fall 2012

Expand existing main campus by one-third 6000 sqm learning commons mended by ITS 24/7 Open Knowledge, promise of the cloud, collaboration, open access to scholarly contents, broader sharing and transfer of knowledge
Addressing the 3 big challenges
Three big challenges in transforming collections within an Open knowledge environment

*Factor in the impact of a flat recurrent base budget, what to retain to match budget*

*Limits of Ownership - embrace a model that ensures access vs. ownership of scholarly materials, purchasing will only satisfy partial needs*

*Managing transition toward OA, understanding this pace of substitution*
Journal costs unsustainable

Digital price trends analysis indicates that e-journals expenditures outstrip the electronic resources and overall library materials budget. The five big deals alone take up US$ 5.2 million or 53% of the total SERF.
The “long tail” materials tie up too much funds

Big deal is not the answer to everything

Questionable how much longer libraries can hold out
Transitioning strategies to support broader research needs

New models of access and acquisitions
Moved from a “just in case” strategy to a “just in time”
On–demand purchasing
Purchasing contents in multiple formats
Strengthen and enrich the knowledge base of born digital materials
Consortial purchase to leverage resources
Recognizing that library budgets are the primary source of revenue for scholarly journal publishing, and the limits of ownership and unsustainable costs of subscription model….

“Prudent transition of academic library budgets from support for subscriptions journals to support for open access publishing will be key to a successful transition to open access” (Morrison, 2013)
The Open Access Research Environment
Tipping point OA reached 2011

Figure 4 Per cent of freely available peer-reviewed papers, 2004-2011

Source: Computed by Science-Metrix using DOAJ, PubMedCentral, and Scopus.

Tipping point, no return

- Half of the research published worldwide in 2011 was now available for free after an embargo of a year (Archambault, E. et al, 2013)

- Several countries and research areas in the general science and technology, biomedical research, biology, and math and statistics have reached the tipping point, that is, “more than 50% of the papers published 2011 are available for free” (Archambault, E. et al, 2013, p.i)
Next big challenge managing transition to OA movement

“...Gold OA could account for 50 percent of the scholarly journal articles sometime between 2018 and 2020, and 90 percent of articles as soon as 2021 and more conservatively by 2024.”

Megajournals radical growth

PLOS ONE is expected to publish over 30,000 articles in 2013, which will be almost 3% of all 2013 STM articles. ...Extrapolate 2013 - 75,000 (8%) of total STM articles (Binfield, 2013)

Transition from the journal subscription model to open access APC model is fully underway

Almost 400,000 OA articles have been published since 2000, and 120,972 of these (almost a third) were published in 2013

Source: OASPA Growth of Fully OA Journals Using a CC-BY License (2014)
What is accessible in Open Access?

- 2011: 50% new research is made available online free—a mix of green and gold OA (Archambault, 2013)
  - **Gold and hybrid**: author pay for OA release
    - **Green** or self-archiving (delayed OA)
  - 75% of major publishers accepted embargo periods of between six to 12 months (European Commission, 2013)
  - 80% of accepted articles indexed in Scopus are green, can be loaded within 12 months' of publication (Laakso, 2014)
Green and Gold in Top Research Areas

<table>
<thead>
<tr>
<th>Field</th>
<th>Papers</th>
<th>Green &amp; Hybrid</th>
<th>Gold</th>
<th>OA</th>
<th>OA Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Papers (%)</td>
<td>Papers (%)</td>
<td>Papers (%)</td>
<td>apers (%)</td>
</tr>
<tr>
<td>Biology</td>
<td>7,031</td>
<td>2,749</td>
<td>1,224</td>
<td>3,973</td>
<td>57 ± 1</td>
</tr>
<tr>
<td>Biomedical Research</td>
<td>12,571</td>
<td>6,377</td>
<td>1,346</td>
<td>7,723</td>
<td>61 ± 0.8</td>
</tr>
<tr>
<td>Clinical Medicine</td>
<td>42,806</td>
<td>15,479</td>
<td>4,658</td>
<td>20,137</td>
<td>47 ± 0.5</td>
</tr>
<tr>
<td>Earth &amp; Environmental Sciences</td>
<td>4,700</td>
<td>1,771</td>
<td>339</td>
<td>2,110</td>
<td>45 ± 1</td>
</tr>
<tr>
<td>General Science &amp; Technology</td>
<td>2,760</td>
<td>720</td>
<td>1,036</td>
<td>1,756</td>
<td>64 ± 2</td>
</tr>
<tr>
<td>Mathematics &amp; Statistics</td>
<td>4,318</td>
<td>2,091</td>
<td>310</td>
<td>2,401</td>
<td>56 ± 1</td>
</tr>
<tr>
<td>Physics &amp; Astronomy</td>
<td>15,028</td>
<td>5,824</td>
<td>698</td>
<td>6,522</td>
<td>43 ± 0.8</td>
</tr>
<tr>
<td>Public Health &amp; Health Services</td>
<td>4,688</td>
<td>1,640</td>
<td>589</td>
<td>2,229</td>
<td>48 ± 1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>160,000</td>
<td>53,072</td>
<td>15,538</td>
<td>68,610</td>
<td>43 ± 0.2</td>
</tr>
</tbody>
</table>

Notes: *In order to decrease the margin of error for the fields of General Arts, Humanities & Social Sciences, and Visual & Performing Arts, the Scopus population of papers were used instead of a sample. However, this does not affect the error margin for the total as this was based on sample data only.

Driving toward marginal cost
Cost impact of Open Access

- Sutton argues that “costs associated with online distribution of articles have and will continue to fall to the point that the marginal cost of adding additional users is practical zero....zero is inevitable”; “author’s self-archiving in institutional repositories impact the marketplace” (Sutton, 2011)
Cost of publishing challenged by lower OA cost model

- Cost of a research paper in the US remains well over $100,000
- challenged by the lowering cost of open access models

In Search for Value: Rationalizing Budgets and Resources

- Developments in OA leading to a tipping point
- Consideration aggregated use, license fee, cost per article download, and the distribution of use
- Rationalize investment in a changing research environment and universe of publication
Big Deal is not everything

- Big Deal - 75% of publisher’s journal output

- "Bundled" titles 1150 (58%)
- Core titles 333 (17%)
- OA 176 (9%)
- Excluded 327 (16%)

Majority of subscription-based journals are also hybrid.
Contents of Licensed Big Deal

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Titles</th>
<th>Bundled</th>
<th>Core Subs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>1178</td>
<td>327</td>
<td>851</td>
</tr>
<tr>
<td>2013</td>
<td>1150</td>
<td>333</td>
<td>817</td>
</tr>
<tr>
<td>2014</td>
<td>1147</td>
<td>337</td>
<td>810</td>
</tr>
</tbody>
</table>

-1.5% Decrease for 2013-2012
-1.4% Decrease for 2014-2013
License cost – rationalizing value

- 2012: US$747
- 2013: US$782 (5% increase)
- 2014: US$824 (10% increase)

X 1000

US$1,200
US$1,000
US$800
US$600
US$400
US$200
US$0

2012 2013 2014
Aggregated Use (JR1)

Usage statistics extracted from:
- COUNTER JR1: Number of Successful Full-Text Article Requests by Month and Journal
- COUNTER JR1 GOA: Number of Successful Gold Open Access Full-Text Article Requests by Month and Journal
Aggregated Use (JR5)

Usage statistics extracted from:
COUNTER JR5: Number of Successful Full-Text Article Requests by Year-of-Publication (YOP) and Journal
Cost on the rise, lesser contents, is this still good value?

- To put the cost into perspective, the cost per article derived from JR5 use report (number of successful full-text article requests for current year of publication against the annual license fee gives a different picture.

\[
\begin{array}{c|c|c}
\text{Cost per use} & \text{2012 JR5 (YOP2012)} & \text{2013 JR5 (YOP2013)} \\
\hline
\text{US}\$0 & \text{US}\$16 & \text{US}\$22 \\
\text{US}\$5 & \text{US}\$16 & \text{US}\$22 \\
\text{US}\$10 & \text{US}\$16 & \text{US}\$22 \\
\text{US}\$15 & \text{US}\$16 & \text{US}\$22 \\
\text{US}\$20 & \text{US}\$16 & \text{US}\$22 \\
\text{US}\$25 & \text{US}\$16 & \text{US}\$22 \\
\text{US}\$30 & \text{US}\$16 & \text{US}\$22 \\
\end{array}
\]
Use distribution (Core titles)
Use distribution (Bundled titles)

Number of titles (Total: 1150 titles)

Number of FT requests (2013 JR5 YOP13)
Long tail of core subscribed titles

- 34% CORE titles
- 80% of uses
- Cost/use EUR 22

- 66% of titles
- 42 uses or below
Open Access Impacts Use and Cost
Rationalizing value

- Core journal use in decline
- May be gravitating toward high growth in open contents
- Open access articles beginning to surface
- at 4.5% of the total publisher bundled contents

Publisher has yet to rationalize the hybrid income to lower subscription cost
Big deal seems hardly sustainable and justifiable

Sustainable pricing wanted!
Addressing sustainability

Flat budget

- 2014:
- 2015: 15% reduction
- 2016: +5%
- 2017: +5%
- 2018: +5%
Shift from ownership to access

- OA a growing dimension in the universe of scholarly communication
- Acknowledge the limits of big deal
- Recognize and acknowledge researchers’ reliance on OA and limits of ownership (Jisc Survey 2013)
- HKU currently contributes to several OA programs to support authors

Rechanneling of current budgets toward open access APC support is inevitable
What funders/institutions pay for OA

Wellcome's OA APC spending

<table>
<thead>
<tr>
<th>Publisher</th>
<th>Spending (USD)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elsevier</td>
<td>1.65M</td>
<td>25%</td>
</tr>
<tr>
<td>Wiley</td>
<td>0.8M</td>
<td>12%</td>
</tr>
<tr>
<td>PLOS</td>
<td>0.58M</td>
<td>9%</td>
</tr>
<tr>
<td>Springer/BMC</td>
<td>0.53M</td>
<td>8%</td>
</tr>
<tr>
<td>OUP</td>
<td>0.51M</td>
<td>8%</td>
</tr>
</tbody>
</table>

What funders spent turns into OA Income for publishers

Strategies in managing transition toward OA

- Ensure ownership via deeper collaboration
- Let use analytics inform budget decisions
- Unbundling not yet rationalized due to politics and logistics
  - Find sustainable cost model
  - Acknowledge institution/funders OA support
  - Keep down costs of ownership
- Greater optimization of resources and budget