Research Landscape: New Trends

Stellenbosch, South Africa
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Johns Hopkins University Medical Library to Close and Move Completely Online

Source: The Digital Shift (Library Journal), as referenced in LJ Academic Newswire, 3 November 2011.
Today’s discussion

1. Traditional Role of Librarian
2. Research Landscape is changing
3. Elsevier is Transitioning from “Content” to “Content + Solutions”
4. Role of Librarian is Evolving
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Main Drivers for Research

- Assets/Laboratories
- High Performance Research Engine
- Resources/Researchers
- Access to Content
Investment in access to content positively impact an institute’s grant income (ROI >4x)

University investments in the library: What’s the payback?

A case study at the University of Illinois at Urbana-Champaign

$1.00 invested by the university in the library returned $4.38 in grant income (ROI Value)
There is a strong correlation between the e-journal usage, research output and funding

- UCL research has investigated the correlation between content usage and research output and funding
- Doubling in downloads from 1 to 2 million, is statistically associated with dramatic – but not necessarily causal – increases in research productivity
  - Papers output up 207%
  - PhD awards up 168%
  - Research grants and contract income up 324%
- This positive correlation is even stronger by multiplying the article downloads by 4

![Article downloads versus research productivity](chart)

Source: "Electronic journals: their use, value and impact" – Research Information Network, University College London
Correlation between the e-journal usage, research output

![Graph showing the correlation between e-journal usage and research output in India, China, and South Africa from 1996 to 2010. The graph compares the number of articles published and FTA downloads per million inhabitants over the years. The data is represented for South Africa, China, and India.](image-url)
Correlation between the e-journal usage, research output

![Graph showing the correlation between the number of articles published and FTA downloads for South Africa and Russia from 1996 to 2010. The graph includes lines for South Africa Articles Published, South Africa SD Usage, Russia Articles Published, and Russia SD Usage.](image)
Correlation between the e-journal usage, research output
Correlation between the e-journal usage, research output
What do we hear from librarian?

role of librarian

assessment

creative new roles

OPEN ACCESS

more choice

innovation

“local publishing”

publishing format

health

metrics

funding

ROI

networks

interdisciplinary

collaboration

metrics

authors & journals

authors

China

India

USA

leading indicators

brain drain

budget cuts

decisions

competition

access

information

decision

quality

research paper

indexed

OPEN ACCESS
“You need to demonstrate that you are performing very well, and need more money and support – how can you make the case?”
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Information is growing exponentially
Science became complex and interlinked

... to the very complex
Research became more inter-disciplinary

“Pinpointing new inter-disciplinary themes is like looking for a needle in a haystack. We need to take the guesswork out of it.”

– Director, office of Research, Australian university
Collaboration became essential

... the individual research
International collaboration correlates strongly with publication impact

Domestic articles (‘1’, no international collaboration partners) have around 3 times fewer citations per article than those with four collaborating countries (‘5’).
Resources are Scarcer

“Our planning for 2009-10 assumes that our endowment will have lost roughly 30% of its value in 2008-09”, Harvard, 2009
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Reminder – what do journal publishers do?

- 5,000 new editors per year
- 500 new journals launched per year
- 40 million articles available digitally, back to early 1800s
- 12 million researchers
- 4,500+ institutions
- 180+ countries
- 1 billion+ downloads/year
- 10 million+ printed pages/year
- Organise editorial boards
- Launch new specialist journals
- Solicit and manage submissions
- Archive and promote
- Manage peer review
- Publish and disseminate
- Edit and prepare
- Production
- 3 million+ article submissions per year
- 2.5 million+ referees
- 3.75 million+ referee reports per year
- 50%+ of submissions rejected
- 125,000 editors
- 350,000 editorial board members
- 30 million+ author/publisher communications per year
- 1.5 million new articles produced per year
- 350 years of back issues scanned, processed and data-tagged
- Note: Industry estimates based on known numbers for a subset of the industry that are then scaled to 100% based on the article share of the known subset
Elsevier - transitioning to content + solutions

Today:
Scientific information solutions

1665:
First peer-reviewed journal

High quality science content
E-distribution
Decision Support Tools
Derived content
Insight
Services

BIS
Department for Business Innovation & Skills

SciVal

nexxy
pharma
illumin8

GEOFACETS

ScienceDirect
Scopus

Cell

ElsevierBiofuel™

EXCELLENCE IN SCIENCE

ELSEVIER
2010 onwards...

Provide **content driven information and workflow solutions** that help institutional decision-makers and researchers **create significant value** by building insights, enabling advancement in research and improving **research-driven returns-on-investment**
Web of linked data and knowledge outside the formal literature is growing exponentially

- **107 trillion** – The number of emails sent on the Internet in 2010
- **294 billion** – Average number of email messages per day
- **1.88 billion** – The number of email users worldwide
- **480 million** – New email users since the year before
- **89.1%** – The share of emails that were spam
- **262 billion** – The number of spam emails per day (assuming 89% are spam)
- **2.9 billion** – The number of email accounts worldwide
- **25%** – Share of email accounts that are corporate

**Source:** PINGDOM – Internet 2010 in Numbers
The problem isn’t having too much information…

…It’s about accessing the right information, at the right time, in the right place, in an efficient and effective way.
SciVerse: our platform for delivering the right information and tools, at the right time

ScienceDirect

10 Million
Full text articles

15 Thousand
E-Books

Scopus

41 Million
abstracts

Web / Third Party Content

300 Million
Web pages

13 Sources
Society

18 Institutions
Instit. Repository

23 Million
Patent files

SciTopics

Pages
Written by scientific experts only

Share
Your knowledge and learn from others
We already know a range of metrics...

- Total number of papers
- Total number of citations
- Average number of citations per author
- Average number of papers per author
- Thomson Reuters’ Impact Factor
- Bergstrom’s Eigenfactor
- Egghe’s g-index
- SCImago’s Journal Rank
- Hirsch h-index
... and are rapidly developing new tools to meet today’s and tomorrow’s needs

- **Competencies** – Interdisciplinary, new areas
- **Usage** – Different perspective; Social Sciences & Humanities more visible
- **Brain circulation** – Researcher mobility and attraction
- **Collaboration networks**
Tools to map strengths to focus and co-ordinate R&D investments

Source: SciVal Spotlight
Tool to explore collaboration
Tool to explore collaboration
Tool to explore collaboration
Tool to enable collaboration
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Extraordinary Times Require Extraordinary Thinking

Challenges facing librarians

• Shrinking library budgets due to economic downturn
• Increased scrutiny and pressure on demonstrating return on investment
• Broader range of research products available in the market

“Libraries are attempting to face a future in which almost every fixed point has disappeared. Users are changing; content is changing; research is taking new forms.”

Derek Law
Centre for Digital Library Research
## Librarians across the globe are responding to changes in creative ways...

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<thead>
<tr>
<th>Challenge</th>
<th>Approach</th>
<th>Pivotal role of Library</th>
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<tr>
<td><strong>Associate Professor in Malaysia</strong>&lt;br&gt;Start a new <strong>Cross-discipline subject fields</strong></td>
<td>• Using SciTopics for its topic-field to <strong>promote pioneering work</strong></td>
<td>Link with Publishers, help with a Media sweep to enable cross-disciplinary research</td>
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<td><strong>Systems librarian in Ireland</strong>&lt;br&gt;Demonstrate <strong>ROI</strong> from public investment in the institution</td>
<td>• Design <strong>system infrastructure</strong> to showcase world-class research &amp; easily extract business intel. reports</td>
<td>Bridge with IT and external suppliers, furnish research leaders with key performance analysis</td>
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<td><strong>Dean of Library in Italy</strong>&lt;br&gt;Provide library services with low budget</td>
<td>• Introduce <strong>Communities of practice</strong> to share resources, foster learning and org. Development</td>
<td>Facilitating and supporting communities</td>
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<td><strong>Associate Professor in Romania</strong>&lt;br&gt;Find international <strong>collaborators</strong> in Heat Transfer</td>
<td>• Use publications/online channel to <strong>promote</strong> research&lt;br&gt;• Initiate conferences, publishing projects</td>
<td>Leverage A&amp;I/Research Informatics data to expose potential collaborators</td>
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Thank you