



# Sustainability of Digital Libraries



## Economic Issues and Business Planning

Emeritus Prof. Mel Collier

**Sustainability of Digital Libraries**  
**Economic Issues and Business Planning**



**Emeritus Prof. Mel Collier**  
Former Library Director  
K.U. Leuven, Belgium



1

---

---

---

---

---

---

---

---

**What they have said**

- Lesk: "economics is definitely not a solved problem" (1997)
- Collier: "many digital library projects are started without much attention to the business issues" (2004)
- Lesk: "...is emphatically not a solved problem" (2004)
- Baker: "do we have a true understanding of digital library developments?" (2006)
- Brindley: "no one really knows how the economic and business models will emerge" (2009)
- Law: "we know...the price of electronic content but almost nothing about the total cost of ownership" (2009)

2

---

---

---

---

---

---

---

---

**Definition of the digital library**

*"A managed environment of multimedia materials in digital form, designed for the benefit of its user population, structured to facilitate access to its contents, and equipped with aids to navigate the global network; Its users and holdings may be totally distributed, but it is managed as a coherent whole"*

Collier 2010 (revised)

3

---

---

---

---

---

---

---

---

### Two basic types of digital library

- Assemblage
  - The library assembles content by paying for licences so that the end user can access it or by assembling content that is freely available on the web and linking to it
- Repository
  - The library manages content itself by placing digitised material or born-digital material in a repository; The library may also provide facilities for long term digital preservation of the material
  - Some libraries, particularly those of institutions with significant research output or heritage collections may do both

4



---

---

---

---

---

---

---

---

### In practice a variety of activities

- Providing remote access to (licensed) published content
- Providing access to own digital collection – digitised
- Providing access to own digital collection – born digital
- Ensuring long term preservation of digital material
- Providing web services around own content – “digital publishing”
- Providing portal services around distributed content

All of these present various economic issues and challenges for sustainability

5



---

---

---

---

---

---

---

---

### Issues and challenges

- How to keep up in budget terms with exponential growth in information and escalating cost of licensed access?
- How to resource digitisation programmes as well as maintaining existing services?
- How to resource long term digital preservation as well as maintaining the physical heritage legacy?
- How to resource the born digital record of today's activities – tomorrow's archive and heritage – a new workflow in the organisation's daily work?
- How to develop and train the workforce for the new environment while maintaining existing services?

6



---

---

---

---

---

---

---

---

### Sustainability issues - assemblage

- Journals and databanks
  - Exponential growth of research and research literature
  - Consolidation of the supply side resulting in quasi-monopolistic market situations
  - Big deals providing very increased access at lower per article cost but greater budget commitment
- E-books
  - Variety of business models
  - Slow user uptake in relation to cost
  - Market situation less monopolistic therefore cost should be more reasonable

7



---

---

---

---

---

---

---

---

### Example: assemblage - Leuven University

- Researchers want access to the top journals (impact factors) but budget does not keep pace
  - Solution: find efficiencies, go e-only, reduce other fixed costs and free up resources
- In humanities disciplines demand for print resources still high **as well as** growing demand for digital
  - Solution: similar – reduce costs but more difficult to achieve
- E-books – take-up slower due to lack of Dutch resources, relevant materials, and inappropriate business models
  - Solution: serious publisher negotiations, internal marketing to change attitudes, and reduce fixed costs

8



---

---

---

---

---

---

---

---

### Is open access a solution to access to research literature?

- Types:
  - Golden road: free access, costs covered by “author” – *i.e.* the institution or the research funding body
  - Green road: the textually correct last peer-reviewed pre-publication version is made available in a repository
- Opinions differ as to whether open access is cheaper
- Golden road would require a fundamental change in the financial model for both libraries and publishers
- Green road is a pragmatic, in practice feasible approach, but entails extra cost over and above collection development

9



---

---

---

---

---

---

---

---

### Open access - Leuven's policy

- Leuven signed the Berlin declaration
- Leuven supports the LERU initiative to promote open access
- Leuven supports the Green Road because:
  - Repository and academic bibliography already in place
  - Internal budget process not geared to golden road
  - Value-add of publishers is appreciated
  - Not convinced that open access is (yet or in the foreseeable future) the solution to escalating literature costs
  - Wants to support societal role by making publically funded Leuven research available to the community and developing countries
- Participation is not mandatory but promotion and research grants depend on it

10



---

---

---

---

---

---

---

---

### What about the big deal?

- The big deal is a sales package whereby many (all) the titles of a publisher are bundled for an all-in price, mostly negotiated by consortia of libraries
  - Delivers far more access to research information than would be possible via individual subscriptions
  - Enables libraries to access a high proportion of high impact journals
- But:
  - Ties libraries in for contractual periods often with restrictive conditions
  - Progressively absorbs greater proportion of budget
  - Squeezes other (smaller) publishers and book budgets
  - Benefits and disadvantages often poorly understood by academic users

11



---

---

---

---

---

---

---

---

### Leuven's policy on the big deal

- Leuven supports the big deal because it meets the goal of obtaining maximum access to high ranking journals
- Works with the Flanders consortium to obtain the best terms
- Chooses e-only where possible to reduce administration costs and free up resources to meet the licence costs

12



---

---

---

---

---

---

---

---

### Sustainability issues - born digital

- Endless task and almost immeasurable scope
- What to select?
- How to select?
- Allocation/acceptance of responsibility between librarians/archivists and the content creators
- Cost and time implications of introducing archiving into content creators' workflows
- Who pays?
- Inevitable that much more of the contemporary record, socio-historical material and ephemera will be lost than in the print era

13



---

---

---

---

---

---

---

---

### Example: born digital - Pandora, Australia's web archive

- High priority given to archiving of government publications, academic e-journals and conference proceedings
- Also documents Australian life as represented on the internet – culture – diverse peoples – community concerns – politics – sport
- Collaboration between national library, state libraries and other nationally important partners
- Funded from budgets of partners – no new government money was allocated

14



---

---

---

---

---

---

---

---

### Example: Leuven University

- The university archive (part of the library) has started a small pilot to develop procedures and systems for systematic transfer of university official documents to the digital archive
- The university's collaborative working platform (Sharepoint) is used as a staging post for transfer
- Documents are ingested and provided with preservation metadata for permanent storage in LIAS (Leuven Integrated Archive System)
- This is all extra work, so far absorbed in current costs
- Not easy to engage administrators with the need and the change in work practices

15 Not yet seriously adopted as university policy – resources?



---

---

---

---

---

---

---

---

### Funding issues - digitisation

- Scale definable – can be determined at institutional, local regional, national and international level
- Rights management may be more manageable
- Funding may be available from subsidies
- Is public-private partnership applicable and desirable?
- How to select
  - Collaborative decision-making increases validity
  - National/regional cultural heritage
  - Scientific heritage
  - Avoidance of duplication

16



---

---

---

---

---

---

---

---

### Example: digitisation - Leuven University

- LIAS (Leuven Integrated Archive System) infrastructure developed from 2008 onwards – internal digitisation, outsourced digitisation, repository, ingest procedures and software, aggregation of metadata, export of metadata, digital preservation
- Infrastructure partnership with *Ex Libris* and ScopeArchiv
- Funding from EC and Province of Flemish Brabant
- Own budgets developed within existing global budget
- Digitisation team developed – co-ordination, routine and expert digitisation (e.g. digital photography of precious mss), metadata, technical (ingest, preservation, aggregation, author rights management)
- Co-operation with international, Belgian and Flemish partners

17



---

---

---

---

---

---

---

---

### Funding issues - distribution and access

- Distributors/agents – portals – who are not rights holders must find other income streams
- Unless a compelling social/cultural justification must compete with other web products for visibility
- Visibility is key for sponsorship and for commercial income streams
- Value-add from additional services
  - The new European library proposal (Europeana libraries project)

18



---

---

---

---

---

---

---

---

### Example: portal - the European library - value for researchers

- Projects "Europeana Libraries" and "Europeana Research" propose to draw researchers to the portal by:
  - Searchable full text
  - Research across objects linked by a common theme or timeframe
  - Virtual exhibitions
  - Timelines, showing the occurrence of a particular search term through the centuries
  - APIs, so that the content of the database can be analysed and displayed in contexts outside of The European library website
  - Direct export of records to popular reference management services such as Mendeley and Zotero
  - Automatically updated results against stored search queries as new collections are added to the portal

19



---

---

---

---

---

---

---

---

### Example: portal - the European library - value for subscribing libraries

- The European library prepares aggregated data for inclusion in Europeana
- Aggregated data is enriched for enhanced discovery, using external vocabularies
- Full text is indexed, when appropriate, to enhance the portal search, and is available to any other search service capable of consuming it
- The European library provides its participating libraries with a forum for networking, experience-sharing and participation in new funding

20



---

---

---

---

---

---

---

---

### Business models for digital libraries

- Components:
  - Vision/mission – clear statement of the aims and nature of the business – and why
  - Definition of the service/products offered
  - Target market – user/customer/client profile
  - Nature of the business (profit, not-for-profit, public service, self-sustaining, etc., combination of these)
  - Nature and sources of income

21



---

---

---

---

---

---

---

---

**The business plan**

- Expected income streams
- Investment required
- Recurrent costs (personnel, materials, services)
- Marketing plan
- Branding
- Risk analysis
- Milestones
  - Pilot phase?
  - Go – no go decision?
  - Break-even?
  - Evaluation

22



---

---

---

---

---

---

---

---

**Income stream models**

- Direct financing by the institution
- Direct financing by the content partners (subscription)
- Subsidy by stakeholder parties – government, associations
- Pay to publish (e.g., the golden road)
- Sponsorship
- Advertising
- Subscription by the end-users
- Pay-as-you-go by the end users

23



---

---

---

---

---

---

---

---

**Ithaka-JISC study on sustainability**

- Sponsored by Strategic Content Alliance on behalf of UK academic community
- Focus – how can results and products of academic projects be turned into web-based services (“online academic resources”) and become financially sustainable?
- Tries to apply entrepreneurial principles to not-for-profit activities

24



---

---

---

---

---

---

---

---



### Ithaka observations

- Easy to put content on the web, difficult to sustain a service
- Academics (and other public sector?) need new mindset
  - Can be antipathy to “commercialising”
  - Little attention to strategic planning
  - Don't think about value = user impact and benefit
- Sustainability defined as:
  - Generating the economic resources necessary to keep the intellectual property or the service available on an ongoing basis

25



---

---

---

---

---

---

---

---

### Ithaka framework

- Clearly define the not-for-profit mission
- Separate the enterprise from the existing organisation
- Establish governance with outside expertise
- Allow flexibility to adjust to the market
- Secure sufficient capital
- Develop viable model with income complementing financial support
- Communicate value effectively to constituents and stakeholders

26



---

---

---

---

---

---

---

---

### High level expert group - i2010

- Formed as part of i2010 digital libraries initiative
- Report on public-private partnerships for digitisation and access of European cultural heritage
  - Encourages PPP's
  - Makes recommendations on good practice, governance *etc.*
  - Makes certain recommendations on copyright and the protection of public domain content
  - Provides a number of case studies
  - Discusses business models in the context of the case studies
- The case studies are all big names – not obvious that PPP can work for lesser players

27



---

---

---

---

---

---

---

---

### Example: Ontario digital library business plan

- Ontario digital library
- Goals:
  - Access to digital content for citizens
  - Ontario history/memory portal
  - Virtual reference desk
  - Training of Ontarians in critical analysis and lifelong learning skills
  - “One-stop” access gateway

28



---

---

---

---

---

---

---

---

### ODL - business plan elements

- Governance and management
- Staffing
- Technology and infrastructure
- Marketing and communication
- Bi-linguality
- User and staff training
- PEST (political, economic, social, technological) and SWOT analysis
- Review of other jurisdictions
- Funding requirements

29



---

---

---

---

---

---

---

---

### Example: Flandrica - the digital library of the Flanders heritage library

- Collaborative project between 6 heritage libraries in Flanders
- Portal giving access to selected premier heritage items for both research and general interest – free access
- Developed to support Flemish government heritage policy
- Minority funding from Flanders ministry of culture
- Majority funding by participants (staff time for planning, design, digitisation, metadata)
- Significant infrastructure sponsorship by Leuven LIAS

30



---

---

---

---

---

---

---

---

**Europeana**

<http://www.europeana.eu/portal/>

- Vision
  - Europeana.eu inspires ideas and understanding by sharing Europe’s cultural and scientific heritage with the world online
- Mission
  - Europeana.eu enables people to explore the digital resources of Europe’s museums, libraries, archives and audio-visual collections; It promotes discovery and networking opportunities in a multilingual space where users can engage, share in and be inspired by the rich diversity of Europe’s cultural and scientific heritage

31



---

---

---

---

---

---

---

---

**Europeana (2)**

- A collaborative portal giving access to the distributed collections of European heritage
- Broker and aggregator
- Single search access to 25 million digital items by 2014
- From over 100 (+) suppliers and aggregators of content and harvestable partners
- Spread over the 27(+) member states of the EU

32



---

---

---

---

---

---

---

---

**Special requirements  
of Europeana business model**

- Supports the aims of the EU – flagship project
- Must satisfy aspirations of the partners, who are:
  - Heterogeneous (domain)
  - International
  - Very different in financial and technical capacities
- Must attract new partners (marketing challenge)
- Must be widely attractive to general public (user interest/attraction challenge)

33



---

---

---

---

---

---

---

---

### Stakeholder value proposition

- For the EU it contributes to political priorities
- For the private sector:
  - Critical mass and social networking attracts user volume
  - User volume provides channel for advertising
  - User volume provides platform for sponsorship
  - Critical mass offers new views and opportunities for re-use – aggregation, publishing, semantic operators
- For the public sector:
  - Raises usage of own repository
  - Raises profile of own digital library
  - Provides enhanced services for own users and researchers
  - Returns enriched metadata
  - Provides networking partners and access to new project funds

34



---

---

---

---

---

---

---

---

### Business model

- EU funds central organisation
- Digitisation and content supply mostly subsidiary = financed locally (public or institutional funds)
- (Modest) market dependent income stream rising to 15% over time, based on:
  - Sponsorship
  - Advertising (dependent on page views)
  - Further project funding for innovation

35



---

---

---

---

---

---

---

---

### Conclusions

- Economics not “solved” but now plenty of experience
- Sustainability is the challenge: often the digital library cannot completely replace existing services = additional cost in difficult economic times
- Institutional digital libraries require radical policies and change to remain sustainable – not yet happening on a wide scale
- Sustainability of open web-based products remains a challenge
- Public-private remains a big challenge and commercial financing requires a compelling business case
- Culture is to large extent expected to be publicly subsidised but funding bodies not yet made the shift on any scale

36



---

---

---

---

---

---

---

---

**References**

- Andrews, J. and Law, D. ed. (2004) *Digital libraries: policy, planning and practice*; Ashgate, ISBN 0754634485
- Baker, D. and Evans, W. ed. (2009) *Digital library economics: an academic perspective*; Chandos, ISBN 9781843344032
- Collier, M. ed. (2010) *Business planning for digital libraries: international approaches*; Leuven University Press, ISBN 9789058678379
- Lesk, M. (2005) *Understanding digital libraries*; 2<sup>nd</sup> ed. Elsevier, ISBN 9781558609242

37

---

---

---

---

---

---

---

---

38

---

---

---

---

---

---

---

---