資訊時代編目員面臨的衝擊

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Percentage of gross domestic product (GDP) spent on libraries

Country library spending

<table>
<thead>
<tr>
<th>Country</th>
<th>Library Spending (Millions)</th>
<th>% GDP on Libraries</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>$11,951</td>
<td>0.13%</td>
</tr>
<tr>
<td>Japan</td>
<td>$3,287</td>
<td>0.09%</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>$3,221</td>
<td>0.23%</td>
</tr>
<tr>
<td>Italy</td>
<td>$1,599</td>
<td>0.14%</td>
</tr>
<tr>
<td>France</td>
<td>$1,591</td>
<td>0.11%</td>
</tr>
<tr>
<td>South Korea</td>
<td>$1,507</td>
<td>0.32%</td>
</tr>
<tr>
<td>Canada</td>
<td>$1,447</td>
<td>0.20%</td>
</tr>
<tr>
<td>Germany</td>
<td>$1,353</td>
<td>0.07%</td>
</tr>
<tr>
<td>Australia</td>
<td>$834</td>
<td>0.20%</td>
</tr>
<tr>
<td>Netherlands</td>
<td>$536</td>
<td>0.13%</td>
</tr>
</tbody>
</table>

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<th>Country</th>
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<th>% GDP on Libraries</th>
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</thead>
<tbody>
<tr>
<td>Spain</td>
<td>$531</td>
<td>0.08%</td>
</tr>
<tr>
<td>China</td>
<td>$218</td>
<td>0.02%</td>
</tr>
<tr>
<td>Norway</td>
<td>$179</td>
<td>0.09%</td>
</tr>
<tr>
<td>Mexico</td>
<td>$104</td>
<td>0.02%</td>
</tr>
<tr>
<td>India</td>
<td>$103</td>
<td>0.02%</td>
</tr>
<tr>
<td>Brazil</td>
<td>$90</td>
<td>0.02%</td>
</tr>
<tr>
<td>Singapore</td>
<td>$70</td>
<td>0.08%</td>
</tr>
<tr>
<td>South Africa</td>
<td>$68</td>
<td>0.06%</td>
</tr>
<tr>
<td>Hungary</td>
<td>$64</td>
<td>0.10%</td>
</tr>
<tr>
<td>Slovenia</td>
<td>$35</td>
<td>0.17%</td>
</tr>
</tbody>
</table>

Country

<table>
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<tr>
<th>Country</th>
<th>Library Spending (Millions)</th>
<th>% GDP on Libraries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malaysia</td>
<td>$28</td>
<td>0.03%</td>
</tr>
<tr>
<td>Colombia</td>
<td>$16</td>
<td>0.02%</td>
</tr>
<tr>
<td>Chile</td>
<td>$13</td>
<td>0.02%</td>
</tr>
<tr>
<td>Cuba</td>
<td>$8</td>
<td>0.04%</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>$7</td>
<td>0.00%</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>$3</td>
<td>0.02%</td>
</tr>
<tr>
<td>Trinidad &amp; Tobago</td>
<td>$3</td>
<td>0.03%</td>
</tr>
<tr>
<td>U.A.E.</td>
<td>$3</td>
<td>0.00%</td>
</tr>
<tr>
<td>Uganda</td>
<td>$1</td>
<td>0.01%</td>
</tr>
</tbody>
</table>

Source: Various including LISCON, UNESCO, World Encyclopedia of Library and Information Services and estimates for certain countries.
一些新的編目實例

• FRBR 的實際應用：IU Digital Music Library
• Metadata的串連及視覺化呈現
• 知識分類體系：分類表、索引典及 topic maps

Variations 1

• Variations
  – Production DL of sound recordings (~8000 titles) and scores (~200 titles) in IU Cook Music Library
  – Used for course reserves and general collection access
• Variations = production service
• Variations2 = R&D system
Variations2 system

- Integrated access to music in all formats
  - Digital audio recordings
  - Score images
  - Score notation
  - Video
- Delivery to wide range of users
  - Faculty: teaching, course design, research
  - Students: coursework, independent study
  - Music librarians, other library users
  - Extensible
- Multiple user interfaces
- Staged development

Variations2 Data Model: Example

CONTRIBUTORS
- Horowitz, pianist
- Uchida, pianist
- Mozart, composer
- Broder, editor

WORKS
- Sonata K. 279
- Fantasia K. 397

INSTANTIATIONS
- Sonata K. 279 recorded in 1965, Carnegie Hall
- Fantasia K. 397 recorded in 1991, Tokyo, Suntory Hall
- Prepared from autographs in 1960

CONTAINERS
- CD Mozart, Piano Works
- Score Mozart, Piano Fantasia K.397
Beethoven, Symphony No. 7

- Movement 1: Poco sostenuto
- Movement 2: Allegretto
- Movement 3: Presto
- Movement 4: Allegretto con brio

Arturo Toscanini, NBC Symphony
Beethoven, Symphonies No. 7 and No. 2
Symphony No. 7

- 0:00 to 11:07
- 11:07 to 19:11
- 19:11 to 26:10
- 26:10 to 33:02

Pierre Monteaux, London Symphony
Beethoven, Symphonies No. 2, 4, 5, 7
Symphony No. 7

- 30:31 to 42:35
- 42:35 to 51:19
- 51:19 to 60:31
- 60:31 to 67:10

Dover miniature score, Beethoven, Symphony No. 7

- Pages 1-29
- Pages 30-40
- Pages 41-64
- Pages 65-89
Work Structure: Example

\[\text{Beethoven, Symphony No. 7}\]
- Movement 1: Poco sostenuto
- Movement 2: Allegretto
- Movement 3: Presto
- Movement 4: Allegretto con brio

\[\text{Arturo Toscanini, NBC Symphony}\]
\[\text{Beethoven, Symphonies No. 7 and No. 2}\]
\[\text{Symphony No. 7}\]
- 0:00 to 11:07
- 11:07 to 19:11
- 19:11 to 26:10
- 26:10 to 33:02

\[\text{Variations2 1.0}\]
\[\text{Communications}\]

- \text{Apache HTTP Server}\n- \text{Darwin Streaming Server}\n- \text{DB2 Database}\n- \text{Variations2 Kerberos Server}\n- \text{Variations2 Library Server}\n- \text{Variations2 Client}\n
- \text{HTTP}\n- \text{RTSP/RTP}\n- \text{Java RMI}\n- \text{Kerberos}\n- \text{JDBC}\n
\[\text{Dover miniature score, Beethoven, Symphony No. 7}\]
- Pages 29
- Pages 30-40
- Pages 41-64
- Pages 65-89

\[\text{Pierre Monteux, London Symphony}\]
\[\text{Beethoven, Symphonies No. 2, 4, 5, 7}\]
\[\text{Symphony No. 7}\]
- 30:31 to 42:35
- 42:35 to 51:19
- 51:19 to 60:31
- 60:31 to 67:10
Figure 3. Visualization of Search Results

Cello Concerto no. 1
Composer: Bohuslav Martinu
Composed: 1939
First Performed: 28 January 1931

Online Media

<table>
<thead>
<tr>
<th>Published</th>
<th>Recordings</th>
<th>Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1959</td>
<td>Concerto No. 1 for Cello and Orchestra, performed by Janos Starker in 1955</td>
<td></td>
</tr>
<tr>
<td>1978</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1992</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1996</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Related Resources

New Grove Dictionary of Music and Musicians
Online list of chamber works by Martinu is available
Bohuslav Martinu Foundation website
Offers list of works (in Czech) and many other resources

Figure 4. Work Window
Figure 5. Composer Window
Visual Reserve List
IFLA FRBR Entities

- Work
  - Is created by Person or Corporate body
  - Is realized through Expression
  - Is embodied in Manifestation

- Expression
  - Is realized by Work
  - Is produced by Manifestation

- Manifestation
  - Is exemplified by Item

- Person or Corporate body
  - Is owned by Work
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Topic maps 可做為 Portable semantic networks
利用topic maps 做資訊過濾

利用topic maps建立網站資料的階層式分群(Hierarchical Clustering)

- 資料之間有從屬關係
- 形成樹狀結構
The Library Landscape

• The Social Landscape
• The Technology Landscape

Source: The landscape, OCLC

The Social Landscape

• Staffing
• New roles
• Accommodating users
• Traditional versus nontraditional content
• Preservation and persistence
• Funding and accountability
• collaboration
Staffing: key points interviewed by OCLC

- 該多年長者要退休，新進者必需熟知 e-material and virtual services
- 我們需要組織免費的網路資源嗎
- 要讓年長的館員徵集未出版的資料，相當困難
- 圖書館員需重新分配工作，處理digital scholarship, open-source projects等事務
- 有很多館長並非圖書館專業
- 年輕的館員希望設計的系統是 meet users where they are
- 圖書館員無冒險精神
- 並無繼續教育
- We're well aware of trends and issues但是很多館員並不想改變現狀
Staffing

- Collectively, we feel we need to do everything ourselves – we need to get over this
- Working collaboratively with people to make things happen
New roles: key points interviewed by OCLC

- The library should serve as a community/civic center
- 公共圖書館應匯集社區資訊並與其他地方性組織合作
- Retail expectations
- Access is a form of sustainability
- 館藏發展難在new formats and delivery mechanisms
- 由於讀者自web 上 self-service , 圖書館典藏使用降低 , 一般民眾使用之資料 , 大量降低其傳統通路 - 如圖書館
- 圖書館應該成為其他社群之資訊管理資源
- 圖書館應與更多元的機構一起工作
- 圖書館要積極推動e-learning, 而非成為他人的partner

Accommodating users

- 避免由圖書館員的角度看事情，應由讀者的角度看事情
- 使用者不太在意資料是web pages, a book or a serial
- Personalization and categorization 真的很重要
- 圖書館員低估使用者查尋 web的能力
- 使用者在圖書館中satisfaction with self-service的比例很高
- 圖書館員不可能change user behavior
- 對使用者而言，”方便” 非常重要
Traditional versus nontraditional content

- Collection-centric is old-fashioned, context is the king
- Context means adding intellectual value to content
- 以POD方式買書應較為便宜
- We need a way to bring together all content on a topic, not just what’s in the catalog
- 圖書館應將一般已出版書的館藏留給Amazons
- 圖書館的特藏應該liberated and desegregated

Preservation and persistence

- 數位保存是國家層次的問題
- 目前的目錄無法建立主題性的瀏覽方式
- 數位化的目的在流通而非典藏
Funding and accountability

• 技術不是問題，經費才是
• 圖書館對內容的價格有不實際的期望 –因為他們對出版經濟不了解
• 數位內容對經費控制一點幫助都沒有
• 我們需要更有彈性的數位內容電子商務模式

Sustainability is only possible through collaboration.
The Technology Landscape

• An increasingly interconnected environment
• Network services and architecture
• New standards
• Universal access to information

An increasingly interconnected environment

• 為何環境有越來越多的連結需求
  – 數位時代圖書館需有更多的系統支援
  – 聯盟的成立及其他的合作計畫迫使系統需連結
  – 需與非圖書館單位連結，如校園入口網站或教學系統
  – 跨應用系統的單一授權服務
An increasingly interconnected environment

- System support
  - Library management system
  - Digital object management system
  - Portal or metasearch system
  - Resolver/Linker
  - ILL/resource sharing system
- Growth of formalized sharing
- Interconnecting and interoperability

The Technology Landscape

- An increasingly interconnected environment
- Network services and architecture
- New standards
- Universal access to information
Network services and architecture

- Presentation services
- Application
- Content services
- Common services
The Technology Landscape

• An increasingly interconnected environment
• Network services and architecture
• New standards
• Universal access to information
New standards

• Repository and content standards
  – OAIS
  – Preservation
  – Content packaging
  – Content exchange
  – Metadata

• Application
  – Cross searching: Z39.50
  – Harvesting: OAI
  – Resolution: OpenURL
  – Niche library transaction application: NCIP and ILL

The Technology Landscape

• An increasingly interconnected environment
• Network services and architecture
• New standards
  • Universal access to information
Universal access to information

- Semantic web
- Web services
- Grid computing
- Wireless technology

資訊時代編目員面臨的衝擊

- 我們不是唯一做資訊組織的人
- Metadata格式多元，MARC只是其中的一種
- 過去的資訊組織方法無法滿足主題瀏覽的需求
- 彈性的主題知識體系的呈現
- 更視覺化的目錄介面
- 有太多新科技、新標準需要徹底了解及實作
- 我們需要重新考慮圖書館的經營型態，當然包括分類編目模式