Background

- Digital technology has started to ‘take over’ library’s traditional roles & functions
  - Technical services (Acquisition: approval plan, selector services, bundled e-journals, purchased licensed; Cataloging: copy cataloging, metadata-ready monographs)
  - User services (Circulation: self check-in/out; Reference: Internet search engines, Ask A Librarian, Question Point)
- New roles of libraries:
  - Space for users (individual & collaborative work) and for social activity (Pomerantz & Marchionini)
  - More collaborative roles in the creation and dissemination of knowledge (Davenport)

The Nature of Libraries

- Libraries are growing organisms that always focus on user services
- Libraries always look for innovative ways to reach out to their (traditional & non-traditional) users, advertise & advocate themselves, and enhance their values in the campus community & society
- Libraries always assume their “silent” or background public relations functions, reaching out to the outside-campus communities

Capitalize on those aspects to support the roles & functions of academic libraries as:
- Public space
- Information and content gallery
- Hub for information and knowledge cross-fertilization

The Landscape of the Future

Changing Landscape: Digital Librarianship (Part 1)
- Institutional Repositories/IR or Digital Libraries/DL
- Scholarly Communications
- Open Access

Emerging Technology as Tools: (Part 2)
- RFID (Radio Frequency Identification)
- Digital Signage
- Social Networking

The Case for IR

- Study Case: Desa Informasi/DI (Information Village)
  - Project carried out at Petra Christian University Library
  - Identify, collect, digitize, catalog, and disseminate Local Content (indigenous knowledge)
  - Utilizing an institutional repository system
  - Started out as a simple digital conversion project to digitize students’ theses collection into CD-Roms

Institutional Repository

- SPARC’s definition on IR contents:
  - scholarly;
  - produced, submitted, or sponsored by an institution’s faculty (and, optionally, students), or other authorized agents;
  - non-ephemeral; and
  - licensable in perpetuity.
- Desa Informasi’s definition:
  - locally-produced; and/or
  - containing features of local entities expansion of SPARC’s definition enable an IR to incorporate contents that are valuable to local communities outside the campus boundaries

Local Content
**Desa Informasi Collections**

- **Digital Theses**: theses documents (including multimedia resources)
- **eDIMENSI**: journal articles (textual documents only)
- **Petra@rt Gallery**: mixed media resources
- **Petra iPoster**: digital posters
- **Petra Chronicle**: historical documents
- **Surabaya Memory**: historical and cultural documents of Surabaya city

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**Desa Informasi Collections**

<table>
<thead>
<tr>
<th>Collection Name</th>
<th># of Record</th>
<th># of Digital Objects</th>
<th>File Size (bytes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Theses</td>
<td>7,266</td>
<td>71,967</td>
<td>77,866,272,879</td>
</tr>
<tr>
<td>eDIMENSI</td>
<td>654</td>
<td>654</td>
<td>206,569,490</td>
</tr>
<tr>
<td>Petra iPoster</td>
<td>116</td>
<td>238</td>
<td>336,640,137</td>
</tr>
<tr>
<td>Petra@rt Gallery</td>
<td>104</td>
<td>551</td>
<td>3,262,629,706</td>
</tr>
<tr>
<td>Surabaya Memory</td>
<td>202</td>
<td>512</td>
<td>367,587,640</td>
</tr>
<tr>
<td>Petra Chronicle</td>
<td>179</td>
<td>604</td>
<td>1,479,506,895</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>8,521</td>
<td>74,420</td>
<td>83,521,206,747</td>
</tr>
</tbody>
</table>

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**Accessibile on Online Catalog**

**Digital Theses**: Viewer for Reading

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**Library Collections**

- Grey Lit.
- Local Coll.
- Local Content
- eBooks
- eJournal
- Books
- Audio Visual
- Journals
Acquisition Strategy

- Be proactive and lead the way;
- Develop thematically;
- ‘Piggyback’ the university formal administrative system;
- Make it their (academic departments, faculty members, students, administrative units, etc.) interest, not merely the library’s;
- Provide/maintain quality control in the systems (scholarly communication) and;
- Go beyond digital content and digital library development.

Impact on Physical Acquisition: Instead of purchasing, financing students to produce duplication(s) of the work(s).

Usage Statistics

- Annual usage:
  - 2005/2006: 2,000,000 pages
  - 2006/2007: 5,000,000 pages
  - 2007/2008: 10,000,000 pages
- Access distribution:
  - 2005/2006: 33.34% (internal) vs. 66.66% (external)
  - 2006/2007: N/A
  - 2006/2008: 20% (internal) vs. 80% (external)
IR/DL Applications

- DSpace
- FEDORA
- Greenstone Digital Library
- Indonesia:
  - Ganesha Digital Library (Bandung Institute of Technology)
  - LONTAR (University of Indonesia)
  - New SPEKTRA (InCU-VL – Indonesian Christian Universities – Virtual Library), etc.

Desa Informasi Onsite Exhibition

Positive Impacts of IR

- Increases scholarly communication, increase users exposure to scholarly resources, and increase visibility of campus-produced resources to the society
- Encourages collaborations and (scholarly) communication across academic disciplines
- Enhances learning & research in online environment
- Facilitates accountability to stakeholders
- Functions as ‘digital archives’
- Provide opportunities for developing countries to enrich and contribute to the advancement of science and art
- Empowerment of local communities

Empowerment of Local Communities

- Positive impacts to campus communities
  - motivation to produce better works;
  - increase awareness and commitment to quality for lecturers & academic departments;
  - increase awareness in copyright and plagiarism issues
  - increase collaborations between the library and academic departments & other campus units
- Positive impacts to the society
  - increase profile of locally-produced resources
  - increase awareness of local historical & cultural heritage
  - Towards a more culturally self-assured society

Spheres of Influence
Digital Librarianship & Emerging Technologies for Libraries

Part 2

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Petra Christian University Library

Presented at the 5th ForATL Consultation 2009 Workshop
11 March 2009, Trinity Theological College – Singapore

RFID

- Radio Frequency Identification
- Passive & Active tags
- Combining the functions of barcode (ID, inventory) & magnetic stripe (security)
- Eliminate the need of line of sight reading

How RFID Works

RFID for Libraries

- Helps libraries to:
  - Facilitate & enhance students’ learning process
  - Speed up check-in/out & inventory processes
  - Track misplaced books/materials & in-library use
  - Enhance security
RFID Benefits for Other Sectors

<table>
<thead>
<tr>
<th>Area</th>
<th>Activity</th>
<th>Benefits of RFID over Barcode</th>
<th>Cost Reduction %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warehouse</td>
<td>Storage</td>
<td>Automated, accurate inventory management</td>
<td>20%</td>
</tr>
<tr>
<td>Warehouse</td>
<td>Dispatch</td>
<td>Automated checking process</td>
<td>20%</td>
</tr>
<tr>
<td>Supplier</td>
<td>Claims Management</td>
<td>Automated, accurate data exchange, claims processing</td>
<td>15%</td>
</tr>
<tr>
<td>Hub</td>
<td>Cross Docking</td>
<td>Automated, reduced paperwork, improved accuracy</td>
<td>10%</td>
</tr>
<tr>
<td>Retail</td>
<td>Instore</td>
<td>Reduced paper work</td>
<td>3%</td>
</tr>
<tr>
<td>Retail</td>
<td>Storage</td>
<td>Automated inventory management</td>
<td>2%</td>
</tr>
<tr>
<td>Retail</td>
<td>Replacement</td>
<td>Improved/efficiency</td>
<td>4%</td>
</tr>
<tr>
<td>Retail</td>
<td>Return</td>
<td>Reduced (out of stock, overstock)</td>
<td>1%</td>
</tr>
</tbody>
</table>

Source: FKI Logistex, 2005

Digital Signage

- The use of (big) electronic screens or projection to display rich media (text, audio/video, animation, etc.) “with the goal of delivering targeted messages to specific locations at specific times” (Wikipedia)
- Main application: advertising
- Other applications: information, corporate communication, education, entertainment, etc.
- Advantages over traditional advertising:
  - Richer media to capture viewers’ attention
  - Content easily updated/changed
  - Viewers segmentation
- Major Vendor: 3M, SCALA, Reactrix, etc.

Digital Signage … (cont’d)

Digital Signage characteristics:
- New platform with rich (multi) media
- Can be integrated to the Internet (web-based services)
- Provides innovative interactivities
- Integrating advertising and corporate communication

Advertising

Information

Flight Information

Hotel Information
Broadcast

- Broadcast SINGLE video signal to display devices
- Advantages
  - Minimum/no maintenance on the display device side
  - More reliable (private & dedicated) network
- Disadvantages
  - No viewers segmentation (all display devices show the same content)
  - Cannot utilize Internet (limited to company private/dedicated network)

Server & Player

- Distribute MULTIPLE digital contents to player computers in display device side
- Advantages
  - Viewers segmentation (display devices in different locations can display different content, remote channel assignment)
  - Can utilize Internet
- Disadvantages
  - Maintenance on the display device side (player computers)
  - Rely heavily on the Internet (any disruption will affect the system)

Hybrid

- Broadcast MULTIPLE video signals to display devices
- Advantages
  - Minimum/no maintenance on the display device side
  - More reliable (private & dedicated) network
  - Some level of viewers segmentation
- Disadvantages
  - Cannot utilize Internet (limited to company private/dedicated network)
  - Local channel selection only
Software

- Device-dependent vs. device independent
- Functions:
  - Authoring
  - Content Sequencing
  - Region assignment
  - Scheduling
  - Log, tracking, and billing

Sample Software

Sample Screen

Content

- Different content for different applications
- Types of content displayed:
  - Text (crawling and ticker-tape)
  - Video
  - Image & Animation
  - Web
  - Clock
- Content production:
  - Locally developed
  - Custom-made order
  - Live feed from the Internet (vendor-fed, RSS, Google NewsShow, etc.)
- Software as Services (SaS)

Social Networking

- Definition: A social network service focuses on building online communities of people who share interests and/or activities, or who are interested in exploring the interests and activities of others. Most social network services are web based and provide a variety of ways for users to interact, such as e-mail and instant messaging services. (Wikipedia)

Social Networking [2]

- Based on “Six degrees of separation” theory: “anyone on the planet can be connected to any other person on the planet through a chain of acquaintances that has no more than five intermediaries. The theory was first proposed in 1929 by the Hungarian writer Frigyes Karinthy in a short story called ‘Chains.’” (Bitpipe.com)
- General sites: Facebook, Friendster, MySpace, LinkedIn, etc.
- Interest-based: Flixster (shared-interest on films/movies)
- Others: Bookmarks, Instant Messaging, Blogs, etc.
- Virtual Reality: Second Life
Why Social Networking?

- Librarians need to understand characteristics of their users
- Libraries can get ideas on how to utilize the features available for promotion and marketing, or adopt some features for their own services & website
- Libraries can use it to enhance the image of libraries and librarians
- It’s the way of the future generations

Variety of Services

Facebook - Friends

Facebook - Home

Facebook - Profile

Facebook - Inbox
Conclusions

• Libraries must grow and focus on user services
• Libraries must always look for innovative ways to reach out to their (traditional & non-traditional) users, advertise & advocate themselves, and enhance their values in the campus community & society
• Libraries must be aware of their “silent” or background public relations functions, reaching out to the outside-campus communities
• Libraries taking the leads in these ‘new’ roles & functions will stay relevant, strengthen their roles, and increase their value in the campus community & the society
• Technology is the tool, content & services are the focus, creativity is the limit
• Academic libraries should enhance their existence as:
  – Public space
  – Information and content gallery
  – Hub for information and knowledge cross-fertilization

Q & A

DIVo’s Contents

• Local content
  – Link to campus servers (library, Puskom, BAA, BAUK, etc.)
  – Showcasing students’/faculty’s works
  – Domain/department-specific educational resources
• News
  – Upcoming campus events & programs
  – Campus community’s achievements
  – National & World news (RSS feed from Internet)
• Campus information
  – General campus information & facilities
  – Department-specific information & facilities
  – Academic calendar
  – How-to information for students, faculties, and staff

DIVo’s Contents (cont’d)

• Campaigns
  – Smoking-free campus, AIDS awareness, environmental awareness, etc.
  – Inspirational quotations & religious verses
• Research & Projects
  – DKV: media for showcasing students’ works and create effective layouts & designs for communicating information/messages
  – Ilkom: audience measurements, effectiveness of the media for communicating information/messages
• Building outside links (corporate/company CSR)

DIVo’s Contents (cont’d)

• Library
  – General information (service hours, collection, services, memberships, etc.)
  – Promoting new arrivals, library events, etc.
  – Link to Desa Informasi digital collections & iSPEKTRA
• BAA
  – Class schedule (link to BAA’s server)
  – Important dates & deadlines (academic calendar)
  – Announcements for students
• BAUK
  – Lecturers & Staff’s Birthdays (with consent)

DIVo’s Contents (cont’d)

• Public Relations Office
  – Campus events (digital posters)
  – Educating campus communities to equip them to do PR activities on their own
• Rectorate
  – Short messages & pictures of campus officials
  – Welcoming university guests
• UKK
  – Local (Siwalankerto) Traffic Information
  – Emergency Alert Systems
• Others