

# Digital Librarianship & Emerging Technologies for Libraries

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



## 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 supports 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

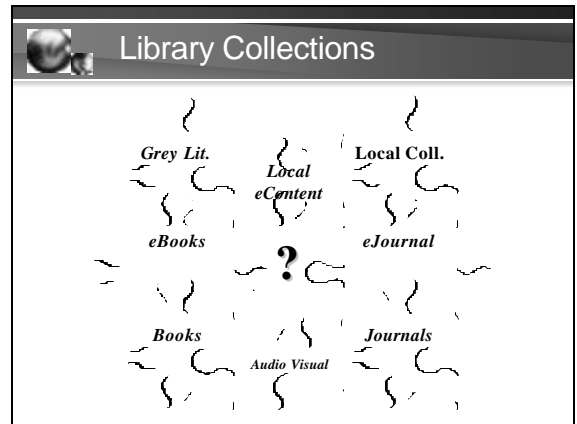


## Institutional Repository

- 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

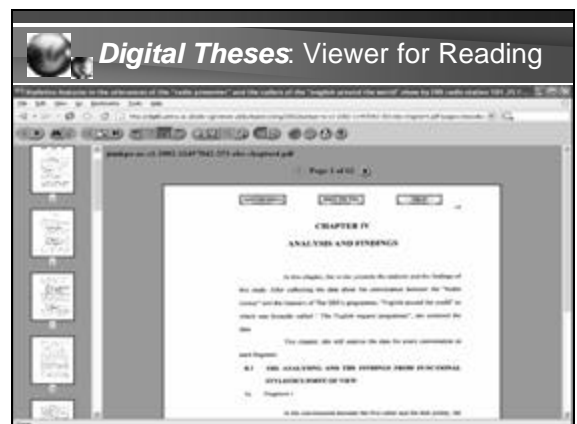
- **Digital Theses:** theses documents (including multimedia resources)
- **eDIMENSI:** journal articles (textual documents only)
- **Petra@rt Gallery:** mixed media resources
- **Petra iPoster:** digital posters
- **Petra Chronicle:** historical documents
- **Surabaya Memory:** historical and cultural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

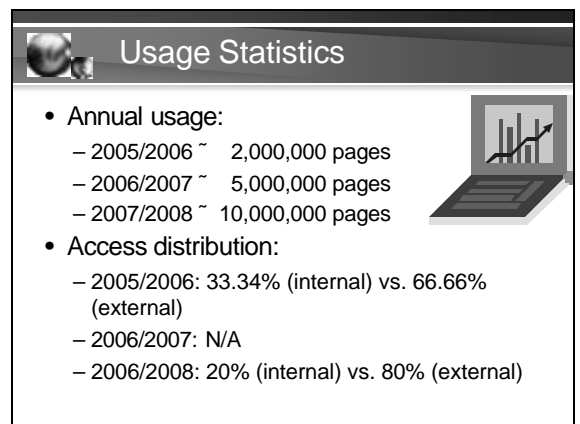
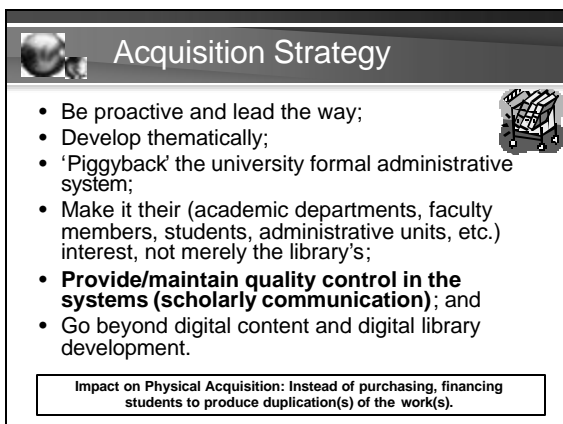
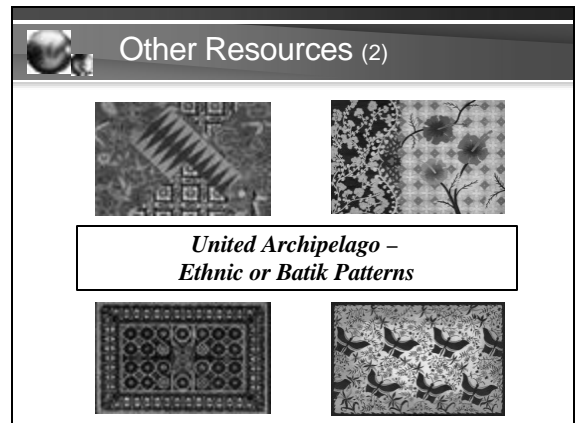


## Desa Informasi Collections

Collection Name	# of Record	# of Digital Objects	File Size (bytes)
Digital Theses	7,266	71,861	77,866,272,879
eDIMENSI	654	654	208,569,490
Petra iPoster	116	238	336,640,137
Petra@rt Gallery	104	551	3,262,629,706
Surabaya Memory	202	512	367,587,640
Petra Chronicle	179	604	1,479,506,895
<b>TOTAL</b>	<b>8,521</b>	<b>74,420</b>	<b>83,521,206,747</b>

As of Oct 14, 2008







## 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.



## 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



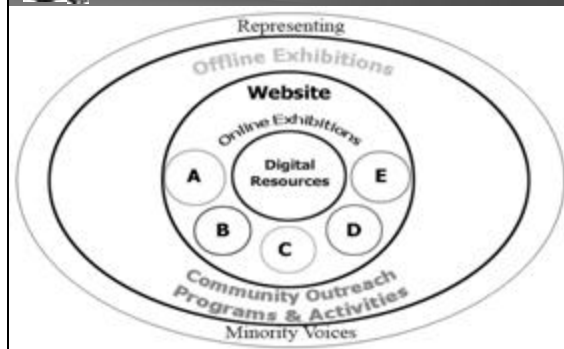
## Empowerment of Local Communities

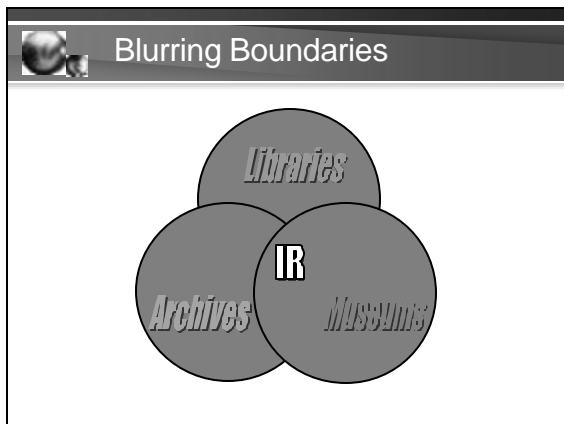
- Positive impacts to campus communities
  - motivation to produce better works;
  - increase awareness and commitment to quality for lecturers & academic departments;
  - increase awareness in copyright and plagiarism issues
  - increase collaborations between the library and academic departments & 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





## Q & A

### **Digital Librarianship & Emerging Technologies for Libraries**

#### **Part 2**

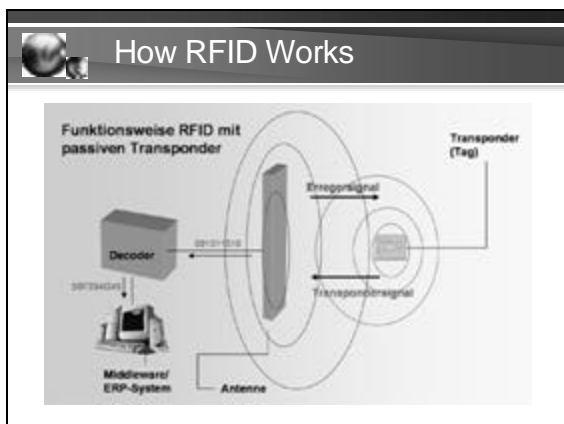
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## RFID

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

The image shows a hand holding a small, rectangular RFID tag next to a book. To the right, there is a collection of various RFID tags, including a circular one and several rectangular ones of different sizes.



## 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

The image shows four small illustrations: a student reading a book, a stack of books, a person at a library desk, and a security guard.




### RFID Benefits for Other Sectors

Area	Activity	Benefits of RFID over Barcode	Cost Reduction %
Warehouse	Storage	Automated, accurate inventory management	28%
Warehouse	Dispatch	Automated checking process	26%
Trailer	Claim Management	Automated, accurate claim processing	98.5%
Hub	Cross Docking	Automated checking, reduced paperwork	98%
Retail	Receipt	Reduced paperwork	3.8%
Retail	Storage	Automated inventory management	16.3%
Retail	Replenishment	Improved efficiency	4.5%
Retail	Losses	Reduced loss (lost of order, overstocking) from inventory stability	9%

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





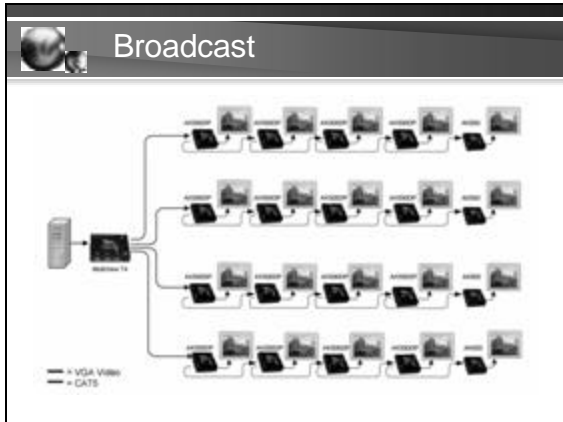
### Information

#### Flight Information




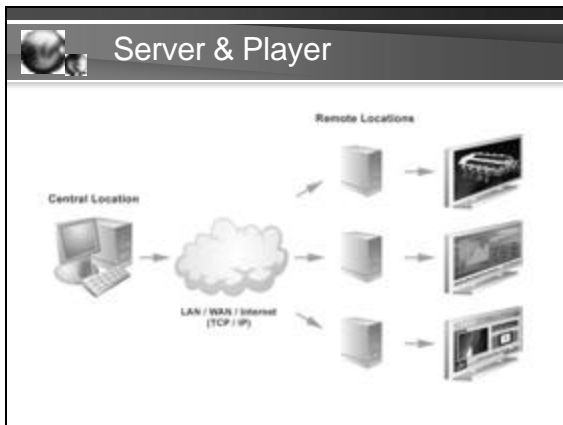
#### Hotel Information






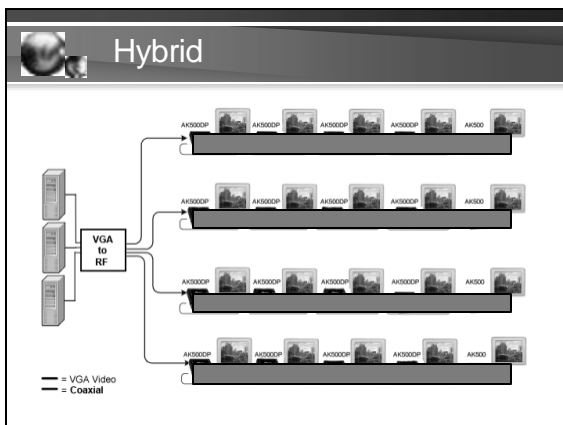
### Broadcast

- 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



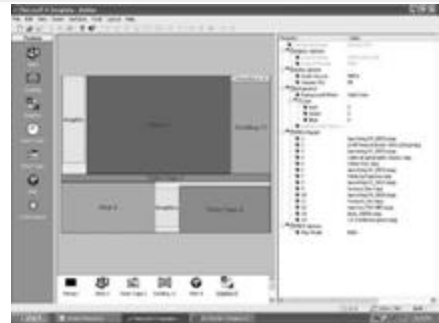


## Software

- 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

### Bookmark & Share

Add This ...

Select a Service:

- |   |   |  |
|---|---|--|
| <ul style="list-style-type: none"> <li>Adi</li> <li>Backflip</li> <li>Bookmark</li> <li>Del.icio.us</li> <li>Digg</li> <li>Diigo</li> <li>Facebook</li> <li>Fark</li> <li>Flickr</li> <li>FriendFeed</li> <li>FriendFeed</li> </ul> | <ul style="list-style-type: none"> <li>Full</li> <li>Google Bookmarks</li> <li>Instapaper</li> <li>Link-a-Gogo</li> <li>Live</li> <li>Magister</li> <li>Master Wong</li> <li>Mix</li> <li>Multiply</li> <li>myAOL</li> <li>MySpace</li> <li>Netvlog</li> <li>Newsline</li> <li>Propeller</li> </ul> | <ul style="list-style-type: none"> <li>Reddit</li> <li>Seznam</li> <li>Simple</li> <li>Slashdot</li> <li>Squid</li> <li>StumbleUpon</li> <li>Talari</li> <li>Technorati</li> <li>Twitter</li> <li>Yahoo! Bookmarks</li> <li>Yahoo! Buzz</li> <li>Yahoo! MyWeb</li> <li>Yandex</li> </ul> |
|---|---|--|

Get your own AddThis button: [AddThis](#) [AddThis](#) [AddThis](#)



## 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/faculties' 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

