<table>
<thead>
<tr>
<th>Title</th>
<th>Institutional Repository at National Taiwan University</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author(s)</td>
<td>Chen, Kuang-hua</td>
</tr>
<tr>
<td>Citation</td>
<td></td>
</tr>
<tr>
<td>Version Type</td>
<td></td>
</tr>
<tr>
<td>URL</td>
<td><a href="https://hdl.handle.net/11094/14147">https://hdl.handle.net/11094/14147</a></td>
</tr>
<tr>
<td>rights</td>
<td></td>
</tr>
<tr>
<td>Note</td>
<td></td>
</tr>
</tbody>
</table>

Osaka University Knowledge Archive : OUKA

https://ir.library.osaka-u.ac.jp/

Osaka University
Institutional Repository at National Taiwan University

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Outline

- Background
  - Overview of IR
  - Research Archiving in Taiwan
  - Overview of development of IR in Taiwan
- NTU’s experiences in IR
  - NTU Repository (NTUR)
  - System architecture and features
  - Contents of NTUR
  - Promotion for NTUR
- Copyrights in IR
  - Separation of copyrights
- TAIR and IR30 project
  - Goals and Visions
  - Current state and Participating Institutions
- Conclusions
Essence of Institutional Repository

- IR system has to try its best to display full texts of data items for users
- IR system can preserve research histories and results
- IR system is an excellent platform for knowledge preservation and sharing

Necessities of IR – Researchers’ Viewpoints

- Traditional academic publishing models are too slow to keep up with fast-paced outputs of scientific researches
- Papers with full text available on web will have wide readership and citation rates
  - Take computer science for example
    - Offline paper cited times: 2.74
    - Online paper cited times: 7.03
    - Increase by 157%
- Open access will increase cited times from 50 % to 250%
- As the Internet gains even wider usage, citation rates for online papers will continue growing quickly
Necessities of IR – Institutions’ Viewpoints

- Possible to analyze and evaluate research categories, trends, and results
- Demonstrate research capacity via a single gateway
- Strengthen academic influence and raise visibility

- Cost to publish by publishers still increase, universities will need an alternative to disseminate research results
  - ArXiv (http://arxiv.org) as a dissemination system, it operates at a factor of 100-1000 lower cost than a conventional peer-reviewed system.


Current State of IR’s Development

- Many universities around the world have already launched IR systems.
- Most IRs have a collection of thousands items, few have that of ten thousands items.

- Currently only small number of countries have official policies to support IR development at the government level.
- However, the support is very active at the university level

- Few universities in Taiwan have installed their IRs; many have started planning IR; some have started deploying IR systems
Higher Education in Taiwan

- 163 universities and colleges including polytechnics

<table>
<thead>
<tr>
<th></th>
<th>Junior Colleges</th>
<th>Independent Colleges</th>
<th>Universities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>3</td>
<td>11</td>
<td>41</td>
</tr>
<tr>
<td>Private</td>
<td>13</td>
<td>42</td>
<td>53</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
<td><strong>53</strong></td>
<td><strong>94</strong></td>
</tr>
</tbody>
</table>

- Universities have to find ways to demonstrate academic or practical research results in terms of one identity

Research Archiving in Taiwan

- Journal articles
  - National library is responsible for services of table of contents and document delivery

- Conference papers
  - No systematic archiving plan

- Technical reports
  - No systematic archiving plan except few funding organizations

- Theses & Dissertations
  - Some universities have archived their own theses and dissertations with full texts
  - National library has archived printed theses and dissertations with digital abstracts for both. Some have digital full texts as well.
Why Need Institutional Repository
- especially for Taiwan or Asian Countries

- The number of published papers is large, but the citation rate is comparatively lower
- The following table shows statistics of paper published by the top ten universities in Taiwan from 1996 to 2006

<table>
<thead>
<tr>
<th>University</th>
<th>Number of papers published</th>
<th>Paper cited</th>
<th>Highly cited papers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Numbers</td>
<td>Rank of the world</td>
<td>Cited times</td>
</tr>
<tr>
<td>NTU</td>
<td>22,623</td>
<td>83</td>
<td>138,819</td>
</tr>
<tr>
<td>NCKU</td>
<td>12,574</td>
<td>218</td>
<td>60,292</td>
</tr>
<tr>
<td>NTHU</td>
<td>9,076</td>
<td>323</td>
<td>45,976</td>
</tr>
<tr>
<td>NCTU</td>
<td>8,706</td>
<td>331</td>
<td>31,168</td>
</tr>
<tr>
<td>YMU</td>
<td>5,724</td>
<td>486</td>
<td>44,975</td>
</tr>
<tr>
<td>NCU</td>
<td>5,268</td>
<td>508</td>
<td>25,563</td>
</tr>
<tr>
<td>NSYSU</td>
<td>4,858</td>
<td>534</td>
<td>18,066</td>
</tr>
<tr>
<td>NCHU</td>
<td>4,116</td>
<td>619</td>
<td>16,452</td>
</tr>
<tr>
<td>NTUST</td>
<td>3,424</td>
<td>727</td>
<td>12,518</td>
</tr>
<tr>
<td>CGU</td>
<td>3,000</td>
<td>800</td>
<td>15,541</td>
</tr>
</tbody>
</table>


Building IR to Solve Problems

- Research outputs in Taiwan are scattered without information systems to present a whole picture of research achievements and to feature searching and browsing functions for potential users.
- Many operational information services provide only metadata and abstracts rather than full texts.
- No systematic way to deposit important digital materials such as conference papers and technical reports
- Institution's self-consciousness makes it to host a system as a persistent repository and an exchange platform for research results.
Possible Solutions to IR Systems

- Purchase commercial software or services
  - Columbia University purchases the services provided by ProQuest, i.e., the Digital Commons.
  - However, Columbia University has decided to use DSpace in the near future.
- Use open-source packages
  - University of Michigan at Ann Arbor uses DSpace.
  - University of Southampton uses EPrints.
- Modify open-source packages
  - NTU Library modifies DSpace based on the local requirements to develop NTUR
### System Architecture of NTUR

- Modules with thick line are modified by NTUR developing team
- Modules with thin line are remained the same as the original DSpace's design

#### NTUR System Functions (1/2)

- **Community & Collection**
  - Community is defined as the department of NTU
  - Collection can be defined by each community

- **Main functions**
  - Browsing by community & collection, date, title, and author
  - Full-text search with rich features for post processing
  - Language switch on the fly
    - traditional Chinese, simplified Chinese, and English
  - Upload & download ranking by author and community
  - Single sign on to NTUR
  - Data Submission
NTUR System Functions (2/2)

- No need to login for data browsing, searching and downloading
- Need to login for data uploading
  - Single sign on policy
  - Interactive mode
    - Faculty and Ph.D. students can upload data by themselves or ask contact staff to help
    - Master students and undergraduates have to ask contact staff to help
  - Batch mode
    - Only open to contact staff of departments or subject specialists of library

Potential Items in IR

- Journal articles
- Conference papers
- Dissertations and Theses
- Teaching or training materials
- Technical Reports
- Speech materials
- Preprints and postprints
- Any digital object
Items Acquisition

- Collect items from Internet and other databases
- Cooperate with interested departments first
- Consider different methods for different departments
- Hold promoting activities and workshops
- Explain the copyright issues
- Do not force faulty to participate but persuade them of advantages of IR
- Do not bother faculty but expect staff

Number of Registered Items in NTUR

- Over 45,000 metadata records
  - Technical reports: 23,000
  - Journal papers: 4,000
  - Conference papers: 1,500
  - Theses and dissertations: 13,000
  - Others: 3,500 (from NTU press and websites)
- About 27,000 with searchable full texts
  - Technical reports: 9,000
  - Journal papers: 3,700
  - Conference papers: 1,300
  - Theses and dissertations: 11,000 (full-text indexing only)
  - Others: 2,000
Promoting Strategy

- Procedural level
  - The priority of archiving
  - Rights and mandatory
  - Interoperability among existent information systems
  - Users community
    - Setup contact window
    - Compile name list of faculty and graduates
  - Mechanism for long-term operation of IR
  - Cooperation with other unions or consortiums

- Administrative level
  - Administrative regulation for IR
  - Encouraging measures
Communities in NTUR (20665/45095) [items with full text/total items]

- College of Liberal Arts (1164/1826)
  - College of Science (2022/4488)
    - Global Change Research Center (32/41)
    - Department of Chemistry (394/1035)
    - Department of Geography (317/392)
    - Department of Geosciences (264/536)
    - Institute of Atmospheric Sciences (71/11)
    - Department of Psychology (215/411)
    - Department of Sociology (246/526)
    - Oceanography (31/1)
    - Department of Physics (811/1109)
    - College of Social Science (655/1094)
    - College of Medicine (3197/4590)
    - National Hospital (540/941)
    - College of Engineering (4345/4440)
    - College of Environmental and Architecture (2412/4216)
    - College of Management (1064/2156)

- Department of Chinese Literature (253/434)
  - Dissertations and Theses (97/98)
  - NRC Project (153/158)
  - Periodical Articles (42/92)

- Department of History (131/216)
  - Dissertations and Theses (59/168)
  - NRC Project (142/62)
  - Periodical Articles (26/46)
  - Speeches (4/8)
  - Research Report (2/2)

- Department of Philosophy (109/166)
  - Dissertations and Theses (19/62)
  - NRC Project (36/95)
  - Periodical Articles (15/21)

- Department of Anthropology (46/95)
  - Dissertations and Theses (30/62)
  - NRC Project (37/43)
  - Periodical Articles (3/11)

- Department of Library and Information Science (231/283)
  - Dissertations and Theses (58/94)
  - NRC Project (47/87)
  - Technical Assemblies (10/20)
  - Proceedings (5/3)
  - Periodical Articles (79/81)
  - Course References (17/87)

- Department of Japanese Language and Literature (40/37)
  - NRC Project (6/6)
  - Periodical Articles (2/2)
行政院國家科學委員會專題研究計畫 成果報告

新富雇主、跨國移工、認同政治(2/2)

計畫編號：假冒型計畫
計畫編號：Y309-2412-H-002-004-SSS
執行期間：93年01月01日 至 95年01月31日
執行單位：國立臺灣大學社會學系分研究所

計畫主持人：聞家奇
計畫參與人員：蘇範

2008-01-30

DRFIC2008 - Presented by Kuang-hua Chen 27/43
Copyrights in IR

Why can Archive Published Papers

- Separation of copyrights
  - Self-archiving right
  - Full-text indexing right
  - Access right

- Most publishers allow the first two rights at least according to the survey of SHERPA/ROMEO project

- If institutions have access right to some journals, IR systems should provide full texts for papers published in those journals
- Otherwise, IR systems have to carry out full-text indexes and then feature full-text search functionality for users
- If there are no full texts, IR systems have to provide metadata and informative links
Separation of Copyrights

- Self-archiving right
- Full-text indexing right
- Access right

**Author**
- Archiving
- Self-archiving

**Institutional Repository**
- Archiving
- Full Text Indexing
- Access

**Publisher**
- Access

*Copyright has been transferred to the publisher*

*Author retain the copyright*

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Most Publishers Allow Self-Archiving in IR

- 93% publishers allow authors self-archive their papers in institutional repository based on the investigation of SHERPA/ROMEO project

**Pie Chart**

- 7% (627/9214), Author cannot archive preprint & postprint
- 23% (2113/9214), Author can archive preprint
- 70% (6458/9214), Author can archive postprint, or preprint

Source: [http://www.sherpa.ac.uk/romeo.php](http://www.sherpa.ac.uk/romeo.php)
### Policies of Copyrights of Publishers

<table>
<thead>
<tr>
<th>Publisher</th>
<th>Full-text index</th>
<th>Personal website</th>
<th>IR</th>
<th>Free public servers</th>
<th>Embargo period</th>
<th>Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blackwell Publishing</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Varying by journal</td>
<td>Author can post their version of the Article on their personal website, their employer’s website/repository and on free public servers in their subject area.</td>
</tr>
<tr>
<td>Elsevier</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
<td></td>
<td>Authors of articles may also post the final version of their manuscript publicly on their personal website or their institution’s website (including institutional repository).</td>
</tr>
<tr>
<td>Nature</td>
<td>Y</td>
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<td>Y</td>
<td></td>
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<td>Authors are encouraged to archive their version of the manuscript in their institution’s repositories and on their personal web sites.</td>
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<td>Oxford</td>
<td>Y</td>
<td></td>
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<td></td>
<td></td>
<td>Authors have the right to deposit the postprint and/or URL or PDF of the finally published version of the article into an institutional or centrally organized repository.</td>
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<tr>
<td>IEE/IEEE</td>
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<td></td>
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<td>Authors and/or their companies shall have the right to post their IEEE-copyrighted material on their own servers without permission.</td>
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<tr>
<td>Springer-Verlag</td>
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<td>Y</td>
<td>Y</td>
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<td>An author may self-archive an author-created version of his/her article on his/her own website and his/her institution’s repository.</td>
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<td>ACM</td>
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<td>Y</td>
<td>Y</td>
<td></td>
<td>Authors retain the right to post author-prepared versions of the work in a personal collection on their own Home Page and on a publicly accessible server of their employer.</td>
</tr>
</tbody>
</table>

### Copyrights in Taiwan - Situations

- 10% of academic publications are published by international publishers

- The copyright of 15% of academic publications was transferred to domestic publisher

- The copyright of 25% of academic publications was reserved by authors (non-exclusive license, or open access)

- The copyright of 50% of publishers was not specified owner
Copyrights in Taiwan - Solutions

- Papers collected in the domain of NTU
  - Send email to authors to get non-exclusive license
- Papers published by international publishers
  - Clarify the policies of publishers
- Papers with copyright transferred to domestic publishers
  - Discuss with these publishers
- Papers with copyright retained by authors
  - Get the non-exclusive license from authors when they upload papers to IR systems
- Papers with unspecified copyright owners
  - Discuss with publishers and get the non-exclusive license from authors when they upload papers to IR systems

Taiwan Academic Institutional Repository (TAIR) & IR30 Project

http://ir.lib.ntu.edu.tw/
TAIR

- Reach a consensus of “many institutional repositories, a centralized gateway”
- Raise visibility and respectability of Taiwan’s researches
- Present Taiwan’s research capacity as a whole
- Contribute to research communities all over the world

Goals and Visions of TAIR

- Build a mechanism for “many institutional repositories, a centralized gateway”
  - “Many institutional repositories” will remain the specialty of each institution and demonstrate its research outputs
  - “A centralized gateway” will present achievements of researches of Taiwan as a whole

- A gateway for IRs in Taiwan
  - Short-term goal
    - Federated search for metadata via OAI-PMH
  - Long-term goal
    - Federated search for full texts via centralized indexes or meta-search
IR30 project (1/2)

- Conform to “many institutional repositories, a centralized gateway” to push institutions in Taiwan to construct their own IR systems

- Help at least 30 institutions to build their own IR systems by May 2008
  - NTU selects 6 seed institutions with qualified IT technology based on the regional distribution and helps them to deploy IR systems
  - Each seed institution helps other institutions near by to deploy IR systems
  - Invite institutions with deployed IR systems to join TAIR

- Up to Dec. 2007, 22 universities and 36 polytechnics join IR30 project

IR30 Project (2/2)

- NTU release NTUR package with comprehensive manuals and training materials
  - Free IR software, NTUR, (DSpace enhancement)
  - Technical documents and user’s guides
  - System functional requirements
  - Standard Operating Procedure (SOP)
  - User’s FAQ
  - Training materials

- Hold workshops for promotion of IR concepts and construction of IR systems
Conclusions

- Government funds construction of IR
  - NTU is responsible for implementation of IR package
  - NTU will release IR package and help other institutions
- Implement our own IR package based on open-source software
- We have effective development strategy
  - Seed institutions go first
  - Participating institutions follow up
  - A tree scheme for effective and efficient development
- Polytechnics are interested in IR particularly
  - IR systems can demonstrate the specialties of polytechnics
- TAIR will be a gateway with federated search for full texts via centralized indexes or meta-search
Thank you

Please visit NTUR at
http://ntur.lib.ntu.edu.tw/
for our institutional repository