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A User-centered Collaborative Framework for Integrated Information Services in China

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Outline

- Background
 - Current Information Service Practices in China
- Integrated Information Service Models
- Hubei Science and Technology Information Sharing Service: A Case Study
- A Collaborative Framework for Information Resource Services
- Summary and Future Work



Background

- Chinese corporate users: individuals or corporations that seek for and employ a variety of information resources for business purposes
- The continuous increment of investment on information resources by the government to accommodate China's growing economics
- The demand for relevant information from corporate users in order to gain/keep business competitive advantage.



Chinese Information Services Providers

- National information institutions
- Provincial information institutions
- Chinese science and technology information institutions
- Industrial information institutions/ associations;
- Commercial information providers



Challenges

- However, information resources are organized and preserved by different institutions using different standards, and based on different access policies
 - Duplicate resource organization
 - Information resource sharing is not realized nationwide



Efforts to Share Resources

- Government efforts to share information resources
 - Started in 1990's
 - Integrated Information services system co-developed by Chinese Academy of Sciences and the Ministry of Education of China
 - Scientific Information Service System:
<http://sdb.csd.ac.cn>



Still, Issues Faced by Users

- Still, users are challenged by
 - Cost of needed services;
 - Choose appropriate databases/institutions for their needs;
 - Poorly designed databases/information systems;



The Purposes of This Study

- Review existing models for integrated information services;
- Describe and analyze an integrated information service (IIS) system in Hubei Province
- Propose a user-centered collaborative IIS framework



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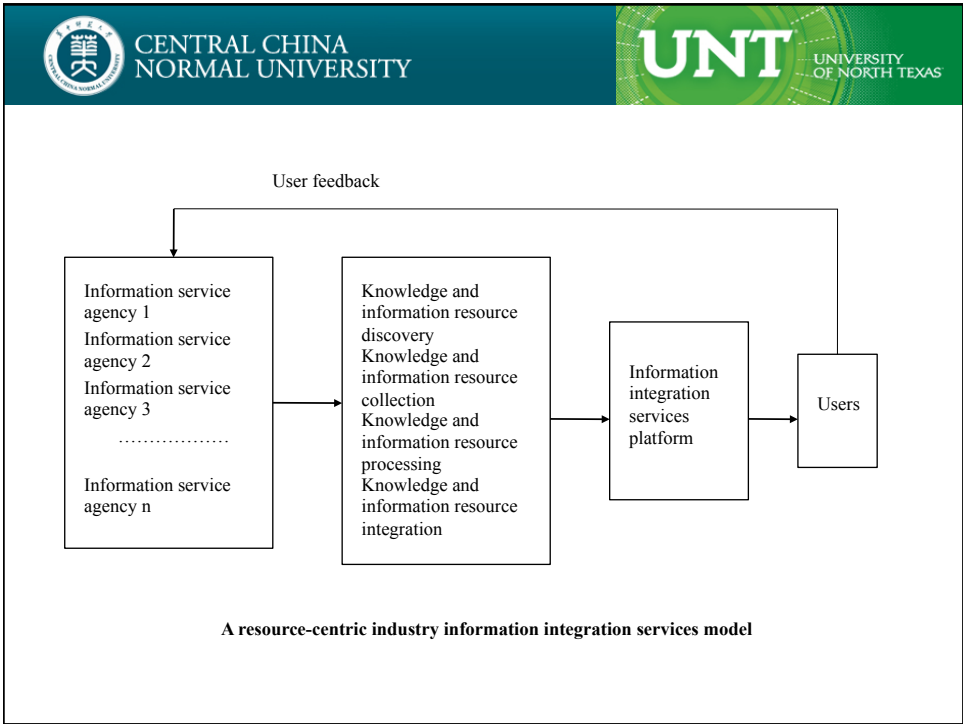


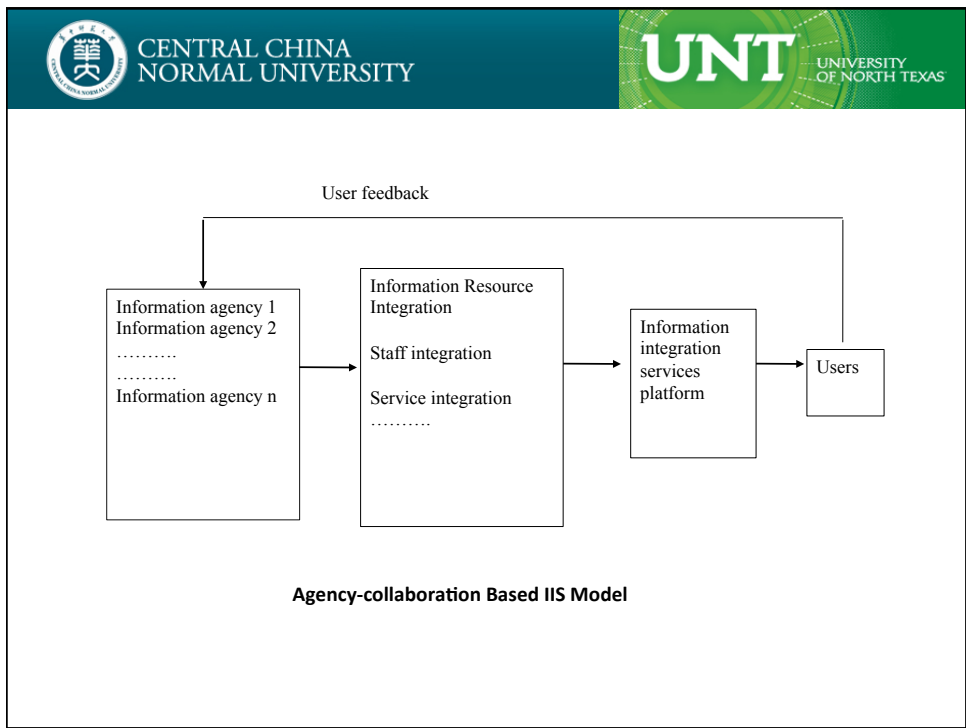
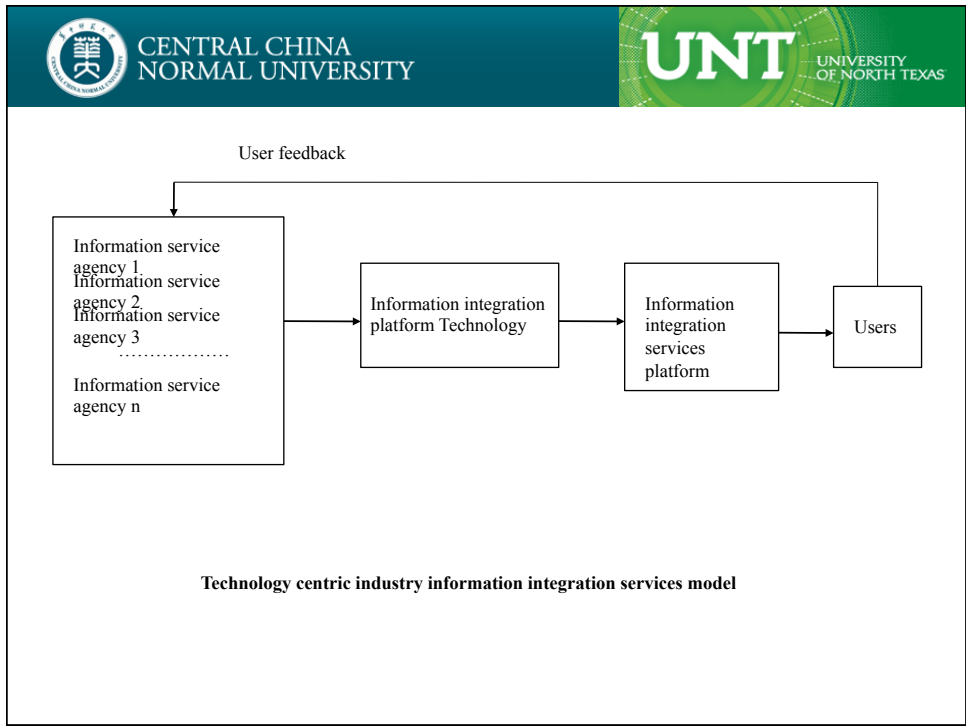
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Integrated Information Services Research

- Chinese scholars have realized the importance of resource sharing through integrated information services (IIS)
- Scholars proposed different models and solutions for developing IIS systems.
 - Resource-centric, technology-centric, Agency collaboration based, and user-centered

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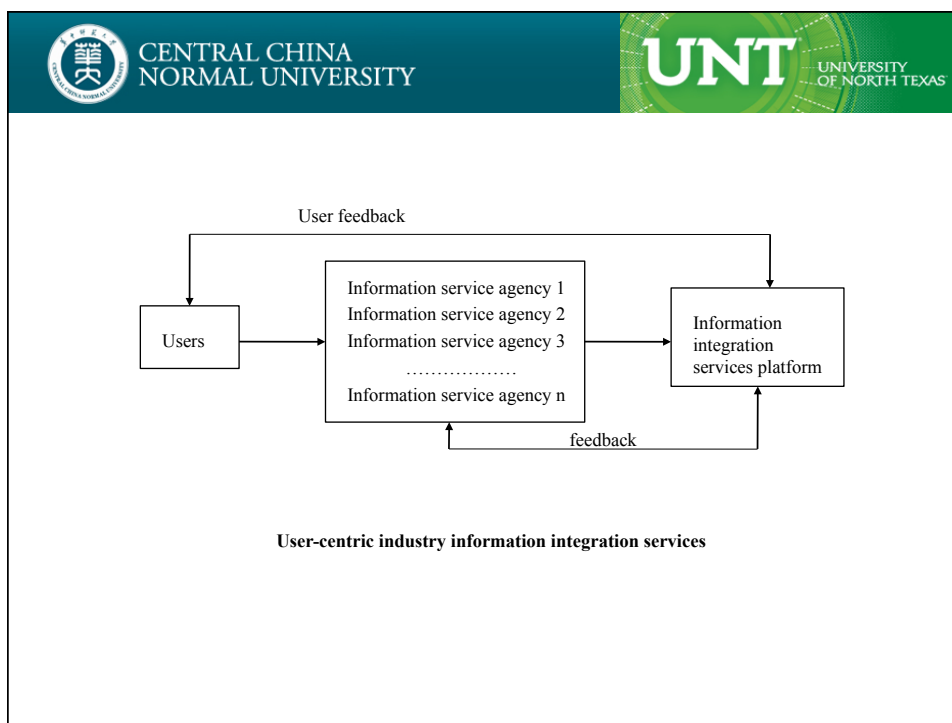
Agency-collaboration based IIS Model

- Better accepted than resource-centric and technology-centric model
- System implemented based on this model: Chinese Academy Library and Information System (CALIS)
<http://www.calis.edu.cn/educhina/pages/portal.jsp>

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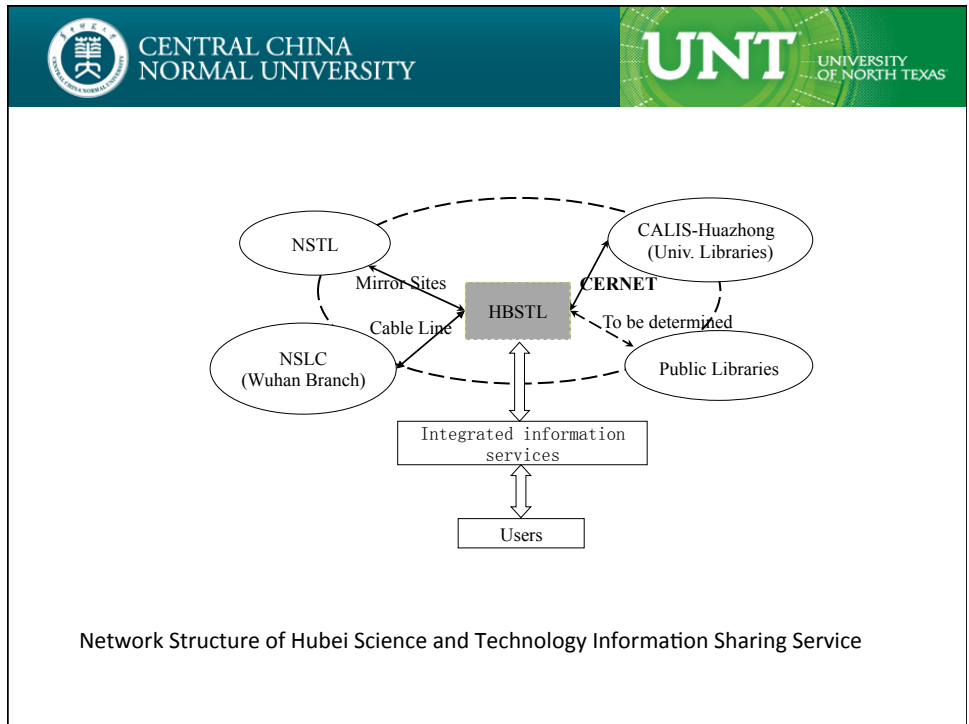
The screenshot shows the homepage of the eduChina website (http://www.calis.edu.cn/educhina/pages/portal.jsp). The page features a search bar with the text "查找全国高校图书馆资料" and a navigation menu with options like "首页", "资源检索", "期刊服务", "e文献获取", "个人空间", "我要提问", and "用户反馈". A prominent banner at the top right announces "新增 36万册电子书 免费在线阅读!". The main content area includes a "服务 /SERVICE" section with links to various services and a "动态新闻 /NEWS" section with a list of recent news items.



Hubei Science and Technology Information Sharing Service: A Case Study

- Designed to provide integrated information services to all users in Hubei Province
- Initial participating members
 - Hubei Science and Technology Information Institute
 - Huazhong University of Science and Technology Library
 - CALIS Huazhong Center (Wuhan University Library)
 - Hubei Science and Technology Library (HBSTL), and
 - NSTL (National Science and Technology Library)

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Network Structure of Hubei Science and Technology Information Sharing Service

The screenshot shows the homepage of the **湖北省科技信息共享服务平台** (Hubei Science and Technology Information Sharing Service Platform). The website features a navigation menu with categories like **首页** (Home), **动态信息** (Dynamic Information), **特色资源** (Special Resources), **统一检索** (Unified Search), **服务指南** (Service Guide), **成员单位** (Member Units), **市州服务站** (City/State Service Stations), and **资源征集** (Resource Collection).

The main content area includes:

- 平台资讯 科技动态** (Platform News, Science and Technology Dynamics) with a list of recent news items.
- 资源搜索** (Resource Search) with a search bar and filters for resource types such as **科技期刊** (Science Journals), **学位论文** (Dissertations), **科技成果** (Scientific Achievements), **标准** (Standards), **专利** (Patents), **行业资讯** (Industry News), **研究报告** (Research Reports), **政策法规** (Policies and Regulations), **报纸** (Newspapers), and **年鉴** (Yearbooks).
- 共建单位** (Joint Construction Units) featuring logos for **湖北省科技信息研究院**, **华中科技大学图书馆**, **CALIS华中地区中心**, **中科院国家科技图书馆武汉分馆**, **NSTL 武汉服务站**, and **湖北省知识产权局**.
- 用户登录** (User Login) section with fields for **用户名** (Username), **密码** (Password), and **验证码** (Captcha), along with **登录** (Login), **注册** (Register), and **忘记密码** (Forgot Password) buttons.
- 用户指南** (User Guide) section with links to **原文下载须知** (Original Download Notice), **用户必读之用户计费方式** (User Must-Read on User Billing Method), **用户必读之用户对象分类** (User Must-Read on User Object Classification), **用户必读之资源支付** (User Must-Read on Resource Payment), and **如何获取资源库的原文文章** (How to Get Original Articles from Resource Databases).

At the bottom, there is a **资源推荐** (Resource Recommendation) section with a grid of database links, and a prominent blue banner for **湖北省科技信息共享服务平台 共建资源及服务馆员应征表** (Hubei Science and Technology Information Sharing Service Platform Joint Construction Resource and Service Librarian Recruitment Form).



Use and Access the Services: A Survey

- Conducted an exploratory survey in 2009
- Twenty three questions covering demographic information, general information needs for corporate innovation, and information needs as related to the Service
- In total we received 19 responses from various corporations.



Survey Results (1)

- In general, corporations need all kinds of information, not only scientific publications, but also business and market information.
- The channel to obtain needed information was mainly the Internet.
- Books and domain-specific databases were also used by most of the participants.
- The major challenges for corporations to obtain needed information
 - the high cost of purchasing or leasing desired information resources
 - low quality information on the Internet
 - limited information workers or their skills
 - the quality of high-level information services.



Survey Results (2) – Current Service

- Most participants accessed the Technology Dynamics and the Information Resources areas of its homepage.
- Users desired to access information through the online databases and the resources on the Internet.
- Printed documents including books were less accessed than databases and resources on the Internet.
- Users need mostly business and market information, science and technological achievements or results
- Majority users were willing to pay reasonable charge for desired service.



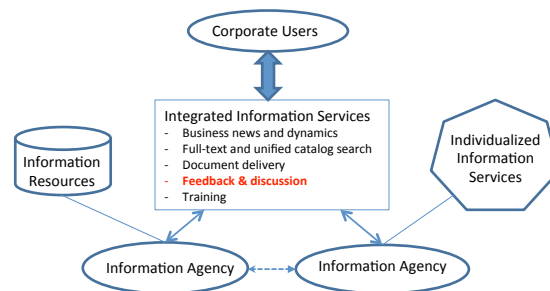
Issues/Problems/Challenges

- Small user based as compared to the number of companies in Hubei Province;
- No social media or instant user interaction mechanism;
- Nine of the 40 databases listed on the homepage are not active links;
- Not all registered users can access the unified search function;
- Staffs have no experience communicating with users;
- The Service provides hardly any advanced information services.



A Collaborative Framework for Information Resource Services (UCIIS)

- Based on the idea of the user-centered integrated information service (IIS) model that the construction of IIS should start from understanding the users of the services (Hu, 2005).
- Include important characteristics from the agency-collaboration based IIS model.



**User-centered Collaborative Integrated Information Service (UCIIS)
Framework**



UCIIS Entities

- Corporate Information Users;
- Information Agencies;
- Information Resources;
- Individualized information services, or advanced information services;
- Platform of the Integrated Information Services.
 - The core of the UCIIS framework is the integrated information services platform. It serves as the interface between users and information services provided by the information agencies. It also provide feedback & discussion service, which will allow users and agencies to communicate with each other.



UCIIS Features

- User centered;
- Collaborative;
- Multiple functional and multi-layer services;
- Interactive;
- Instructive.



Accordingly, implementation suggestions

- Involve users in the design and development team;
- Conduct systematic user needs investigation as part of the system needs analysis;
- Use open-source technologies for system integration;
- Investigate and apply latest computational technologies to enable knowledge discovery and data mining from available information resources;
- Test the systems functionalities and usability with real users;
- Collaborate with higher education institutions to produce qualified information staff and knowledge workers who possess user study methods.



Future Research

- Systematic investigation of corporate information users' needs;
- Examining current library and information science curriculum to produce qualified information professionals who can carry out user experience studies;
- Exploring advanced services or high-level knowledge discovery tasks using various advanced computational technologies.



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Thank you!

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have any questions