

A MULTI-INSTITUTION COLLABORATIVE PROJECT

Filling Vital Information Needs
of Biomedical Research Community
in the Czech Republic

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The aim of the paper is to describe preliminary results of a 5-year national project launched in 2004 and funded as part of of the Information Research Infrastructure Scheme. Charles University Central Library in Prague is the principal project manager working together with a team of another 3 large medical libraries to satisfy information needs of thousands of end users.

Before we started in 2003

- **Project goal**
- **Negotiations to establish consortium**
 - Selection of e-resources Technological solution
- **Sharing international experience**
 - for project success

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We are now in the middle of the project. Let me share with you some preliminary results.

Before we started work on the project proposal we first formulated the project goal, negotiated the conditions for establishing a consortium, and studied relevant literature to get a broader background for our future project.

Literature:

Barnett L., Cmor D., Morgan P. Mediated computer search services relative to instruction services: a survey of one health sciences library. Med Ref Serv Quart 2001; 20(2):9-21.

Crumley ET. et al. Which resources should be used to identify RCT/CCTs for systematic reviews: a systematic review. BMC Med Res Methodol. 2005;10;5:24.

Haines M. Libraries and the R&D strategy: a way forward. Health Libr Rev 1996;13:196-201.

Information Technology Training Survey, University of Miami, Available at: <http://it.med.miami.edu.x1088.xml>. 2006.

Sen B.A. Research governance: implications for health library and information professionals. Health Info Libr J 2003;20:3-14.

Project goal

- **Cost-effective and integrated access to electronic information resources to support biomedical research** in the Czech Republic
- **Time span:** 2004-2008
- **Funding:** Ministry of Education Grant Agency (1N)

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The project goal had to comply with the *Czech Ministry of Education Grant Agency* intention to secure a cost-effective, seamless and integrated access to electronic information resources to support biomedical research in the Czech Republic in the period of 2004-2008.

Partnership negotiations

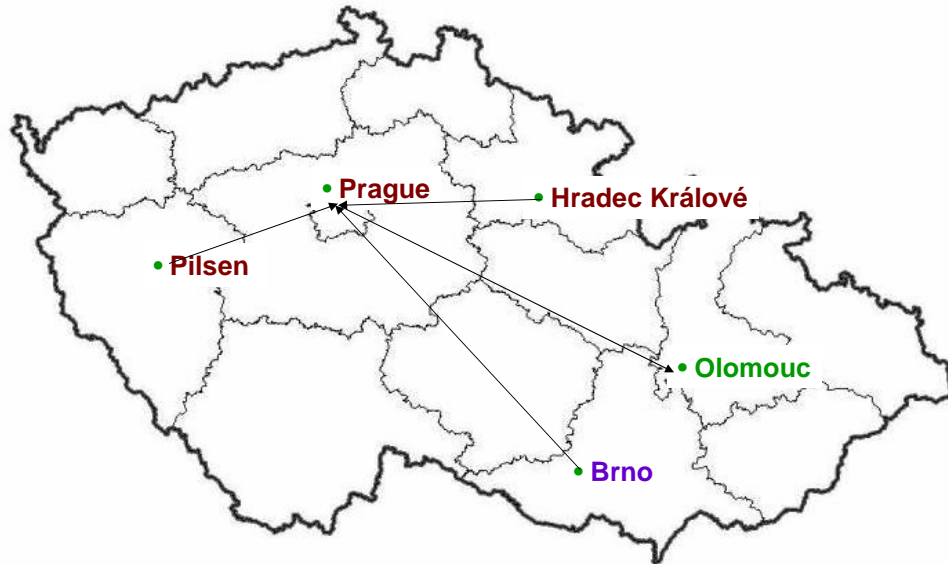
□ Establishment of multi-institutional, inter-regional library consortium

- **Charles University** (Prague)
 - 8 faculties (5-medical, 1-science, 1-sports, 1-pharmaceutical)
- **Masaryk University** (Brno)
 - 4 faculties (1-medical, 1-science, 1-social studies, 1-sports)
- **Palacky University** (Olomouc)
 - 3 faculties (1-medical, 1-science, 1-sports)
- **National Medical Library** (Prague)

□ Estimated number of potential users: **20,000**⁴

The next step was to set up the partnerships. The negotiations were led by the project leader – Charles University Central Library (Prague) with future partners, namely 2 Czech universities and the National Medical Library, which resulted in the establishment of a multi-institutional, inter-regional consortium. The project budget was worked out to satisfy the information needs of about 20,000 potential users.

INTER-REGIONAL COLLABORATION



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A map of the Czech Republic demonstrates an inter-regional collaborative network of medical faculties of Charles University (based in Prague, Pilsen, Hradec Kralove), Masaryk University (Brno) and Palacky University (Olomouc).

Selection of e-resources

□ Databases

- **MEDLINE** – „Gold Standard“
 - „Move beyond MEDLINE“ philosophy
- **EMBASE**
 - EMBASE complements MEDLINE and vice versa
 - It is essential to use both databases in searches done for comprehensive reviews or to find rare cases
 - Average overlapping of records around 30%
- **COCHRANE LIBRARY** – Evidence Based Meicine
- **MICROMEDEX** – fulltext drug and substance information
 - Spans drugs, diseases, acute care, toxicology, alternative medicine and patient education

□ E Journals

- Lippincott-Williams-Wilkins high Impact Collection

Crumley ET. et al. Which resources should be used to identify RCT/CCTs for systematic reviews: a systematic review. BMC Med Res Methodol. 2005;10;5:24.

The selection of e-resources was closely related to potential users' requirements looking for best evidence. Search for best evidence is dependent on access to multiple resources, even if MEDLINE has been long considered a gold standard. From the very beginning, our project was based on „move beyond MEDLINE“ philosophy, that means usage of other complementary databases, in particular EMBASE. The overlap of journals in the two databases could be up to 30-40% . Despite this, EMBASE seems to be underused. On the assumption that the words MEDLINE and EMBASE would be used in many publications to describe the search strategy, it seemed inevitable to offer users the access.

Technological solution

□ Retrieval systems

- WEBSPIRS 5.1
- OVID WEB GATEWAY

□ Priorities

- See library holdings within National Network of Health & Medical Libraries
- Link directly to full contents of electronic journals
- Perform multifile searches and remove duplicates

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Project team members agreed upon access to e-resources with respect to their end-users' habits and they decided to implement two retrieval systems, namely WEBSPIRS for Charles University and National Medical Librar, and Ovid Web gateway for Masaryk University and Palacky University.

Both systems enable (1) to see library holdings information for cited documents among Czech medical libraries; (2) to link directly to full content of electronic journals in dependence on institutional licences; (3) to select databases for multifile searches followed by removal of duplicates and identification of preferred duplicates and unique records.

Librarian skills to support clinical research needs

- „**There are skills librarians possess** to support clinicians´ research needs, and to become more active in health information management.
- Such involvement enables to contribute to the knowledgebase, **supporting professional practice...**“

Haines M. Libraries and the R&D strategy: a way forward. Health Libr Rev 1996;13:196-201.

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As early as in 1996, Haines concluded that there were skills librarians possessed to support clinicians´ research needs so that we could become more active in health information management. Such involvement enables to contribute to the knowledgebase, supporting professional practice.

Sharing experience for project success

- „Research within the healthcare sector should be carried out to high scientific and ethical standards with appropriate use of finance, clear allocation of roles and responsibilities, review and evaluation process“

Sen B.A. Research governance: implications for health library and information professionals. Health Info Libr J 2003;20: 3-14.

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Based on international experience, research within the healthcare sector should be carried out to high scientific and ethical standards with appropriate use of finance, clear allocation of roles and responsibilities, review and evaluation process

Biomedical research & development in Czech Republic : Running projects 2006

<p>Charles University (Prague)</p> <ul style="list-style-type: none"> ▣ R&D Projects 210 ▣ R&D Intentions 10 	<p>Masaryk University (Brno)</p> <ul style="list-style-type: none"> ▣ R&D Projects 45 ▣ R&D Intentions 3
<p>Palacky University (Olomouc)</p> <ul style="list-style-type: none"> ▣ R&D Projects 50 ▣ R&D Intentions 2 <p><i>Source: Central Register of Projects</i> http://www.vyzkum.cz</p>	<p>Other Organizations</p> <ul style="list-style-type: none"> ▣ R&D Projects 687 ▣ R&D Intentions 17 <hr/> <p>TOTAL</p> <ul style="list-style-type: none"> ▣ R&D Projects 992 ▣ R&D Intentions 32¹⁰

Our activities are primarily oriented on supporting biomedical and healthcare research projects in the Czech Republic. You can see the figures for current number of running national biomedical research projects. The institutions participating in the information resources project account for approximately 30% of all the research projects and intentions.

According to the official R&D database, there are a total of 992 running research projects and 32 intentions in the Czech Republic.

Biomedical research & development in Czech Republic : Projects & Intentions

□ **Project**

- „Improvement of coronary heart disease risk profile by treatment of latent depression“

□ **Intention**

- „Early diagnosis and treatment of cardiovascular disease“

□ **Central Register of Projects & Intentions**

- Free access (English version)
- <http://www.vyzkum.cz>

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This slide explains the terminology and elucidates the differences between research projects and intentions. Research intentions are broader in scope as compared to research projects that are more specific. The detailed information about research and development in the Czech Republic is available from the Central Register of Projects and Intentions.

A MULTI-INSTITUTION COLLABORATIVE PROJECT

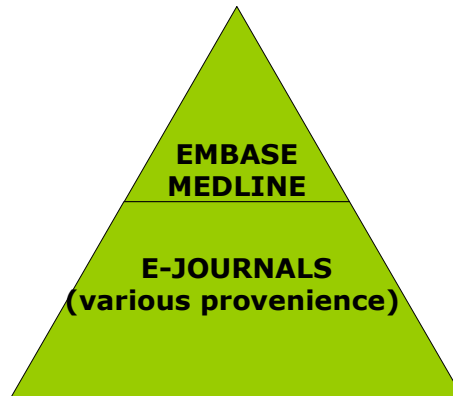


2-YEAR-PRELIMINARY RESULTS

Integration of biomedical electronic resources

E-JOURNAL CONSORTIA *„outside project“*

- Blackwell-Synergy
- EBSCO
- Journals@Ovid
- LWW Current Opinion Series
- Proquest
- ScienceDirect
- SpringerLink
- WileyInterscience



Retain print subscription
of **hundreds** + pay consortial
fee = get **thousands** online

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There are various e-journal consortia outside the project, offering an excellent opportunity for broad integration of all available electronic resources. If a library retains eg. hundreds of print subscriptions, it can gain access to thousands of electronic journals of the respective provider including the archives.

Registered users of information resources : 2004 -2005

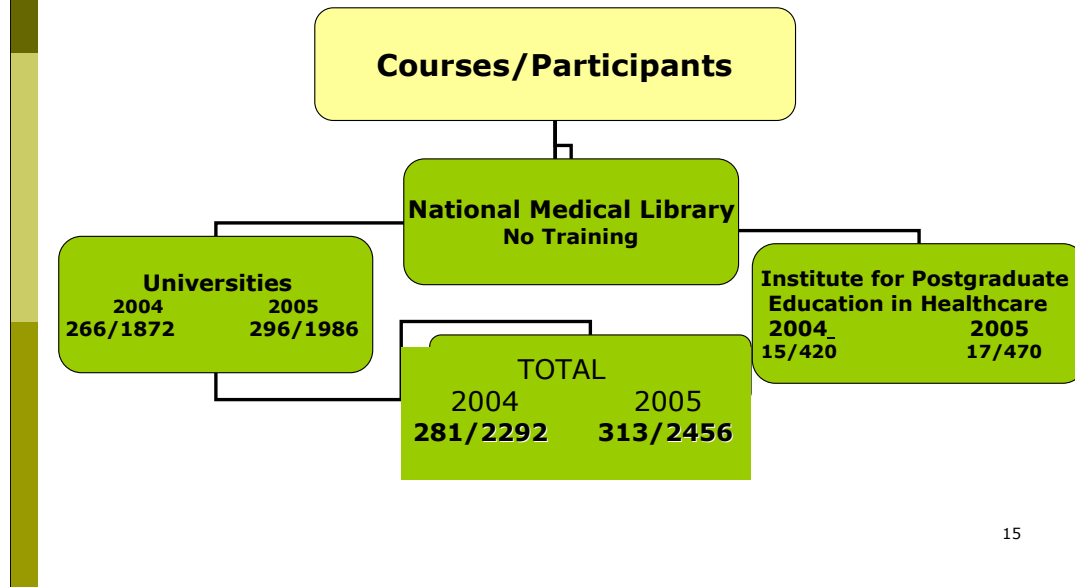
<p>Charles University (Prague) 8 faculties (general medicine & dentistry, sports, science, pharmaceutical)</p> <table style="width: 100%; text-align: center;"> <tr> <td><u>2004</u></td> <td><u>2005</u></td> </tr> <tr> <td>11,969</td> <td>11,692</td> </tr> </table>	<u>2004</u>	<u>2005</u>	11,969	11,692	<p>Masaryk University (Brno) 4 faculties (general medicine & dentistry, science, social studies, sports)</p> <table style="width: 100%; text-align: center;"> <tr> <td><u>2004</u></td> <td><u>2005</u></td> </tr> <tr> <td>2,515</td> <td>2,720</td> </tr> </table>	<u>2004</u>	<u>2005</u>	2,515	2,720				
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In accordance with our expectations, the average number of end users of the e-resources funded by the project exceeded 20 thousand, including academic staff, scientists, clinicians and students of different study programmes. Across all project members the amount of students is representing approximately 60% of the registered library users.

Training of information users

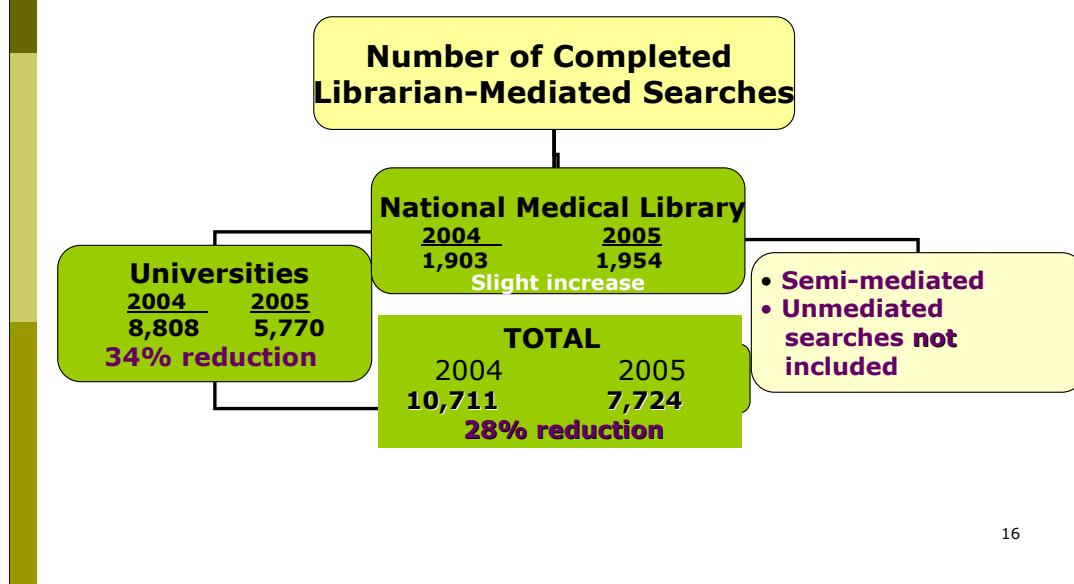
2004 - 2005



The statistical data on user training organized by the project team clearly show a slight increase in the number of training courses as well as trainees. Training of information users is an important step how to increase the cost-effectiveness of information resources. There have been various types of training opportunities provided by librarians, eg. one-on-one sessions, small-group classes, web-based tutorials and search skills classes integrated into medical school curricula. It should be emphasized that the National Medical Library has provided no training due to working contacts with the Institute for Postgraduate Education in Healthcare that has long been offering these services at the national level. The institute has much experience in organizing searching skills classes for mixed audience (librarians, clinicians, epidemiologists, nurses and other allied health professions).

Librarian-mediated search services

2004 -2005



Main users' requirements for medical knowledge retrieval include transparent access to a wide selection of information resources and efficient tools how to get the best evidence. It may be said that one of the most important tools is professional information retrieval that can be librarian-mediated, semi-mediated or unmediated. The figures show an overall decreasing trend in completed librarian-mediated searches, particularly in academic settings. On the contrary, there has been a slight increase in the amount of mediated searches performed by the National Medical Library. Also, there may be an impact of the increasing number of training sessions organized by the academic libraries on the reduction of librarian-mediated searches.

Trends in computer search and instruction services

- **Revival of librarian mediated searching with advent of**
 - evidence-based healthcare (EBHC)
- **Search skills training integration in undergraduate medical curricula**
- **Librarian's role in EBHC process**
 - **Not only search, but also** interpretation of results

Barnett L., Cmor D., Morgan P. Mediated computer search services relative to instruction services: a survey of one health sciences library. Med. Ref. Serv. Quart. 2001; 20(2):9-21.

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In medicine, there has been a revival of librarian-mediated searches with the advent of evidence-based healthcare which is now being embedded in numerous health sciences curricula.

Evidence based healthcare needs a knowledgeable staff to phrase a question, identify relevant resources for current material and interpret the results appropriately. It is now much easier for healthcare professionals to do their own searching. Most probably, this has led to a steep decline of mediated search requests handled by medical librarians as shown by our results.

At the same time, the need to navigate medical information on the internet and identify current and reliable sources has re-established a role of expert searchers who may or may not be medical librarians.

Search for best evidence

- **Go beyond MEDLINE“ philosophy**
 - EMBASE may return up to **40%** unique records

- **Multifile searching** (Ovid,WebSpirs) allows to search multiple databases as if they were one database.
 - Having entered one search statement, the query is carried across all databases of the multifile, retrieving results from each.
 - **Deduplication** functionality helps remove duplicate records before viewing, saving, or printing records.

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Searching for „best evidence“ requires „a go beyond MEDLINE“ approach, because eg. EMBASE may return up to 40% unique records.

Librarian-mediated search
Palacky University case study

Clinical Question:

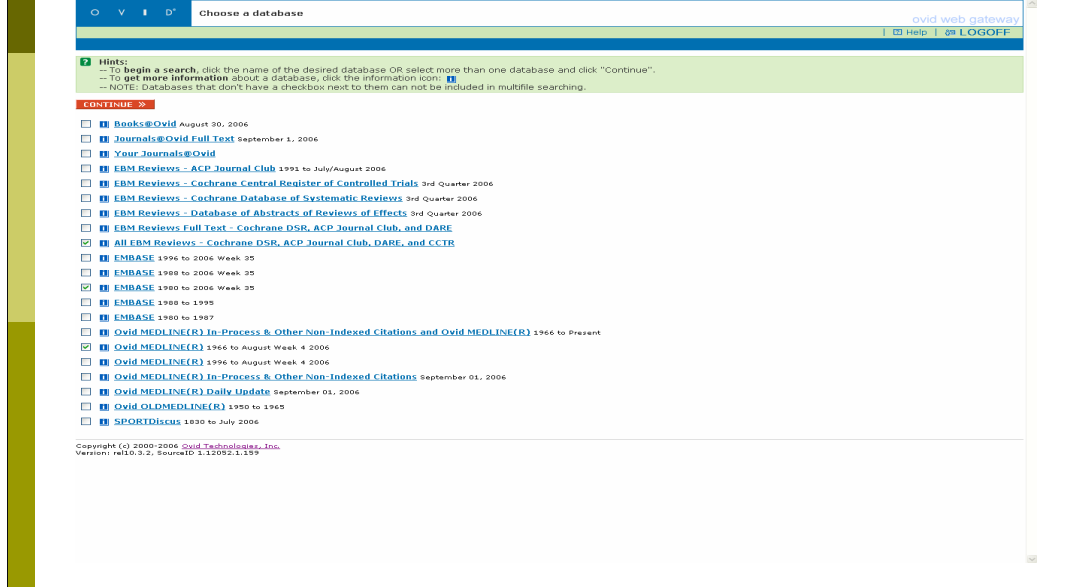
Is glucosamine sulfate safe and effective for osteoarthritis?

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We are demonstrating a case of one librarian-mediated search performed on request of the Department of Orthopaedic Surgery (Palacky University Olomouc) that had been asked to prepare an invited review on the effectiveness and safety of glucosamine for arthritis.

Case study

Multifile search : Choose databases



In OVID portal we chose 3 databases for multiple search, i.e. COCHRANE LIBRARY, EMBASE (from 1980 on) and OVID MEDLINE (from 1966 on).

Case study

Perform search, remove duplicates

Search History	Results	Display
1 (nutraceutic\$ or glucosamine or chondroitin).m_titl.	6905	DISPLAY
2 (osteoarthritis\$ or arthritis\$ or cartilag\$).m_titl.	130747	DISPLAY
3 1 and 2	724	DISPLAY
remove duplicates from 3	447	

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We performed a federated search and removed the duplicates.

Case study

Federated search results

- **TOTAL : 447 records**
 - 103 fulltext (**24 %**)
- **Cochrane Library: 13 records**
 - Cochrane Database of Systematic Reviews (2)
 - ACP Journal Club (2)
 - Database of Abstracts of Reviews of Effects (5)
 - Cochrane Central Register of Controlled Trials (4)
- **EMBASE: 69 records (16 %)**
 - 4 preferred duplicates
 - 65 unique records
- **Ovid MEDLINE® : 365 records**

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A sample multifile search across 6 databases (COCHRANE Reviews + ACP Journal Club + COCHRANE Central Register + EMBASE + MEDLINE) to answer a clinical question dealing with the therapeutic effect of nutraceuticals on osteoarthritis returned a total of 767 records. Having removed the duplicates the resulting number of documents equalled 447. Out of these, there were 16% of the records retrieved from EMBASE including preferred duplicates and unique records). The example is good evidence of the importance of „moving beyond MEDLINE“ because if we had not used the comprehensive multifile search we would have failed to locate up to 16 percent of the documents.

Case study

Practical usage of search results

□ **Invited review**

**„DO GLUCOSAMINE AND CHONDROITIN
HELP PREVENT OSTEOARTHRITIS AND
MAINTAIN HEALTHY JOINTS?“**

for publication in



□ **Authors:** Gallo J. (orthopaedic surgeon);
Horak P. (internist); Simanek V. (biochemist);
Potomkova J.(librarian).

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The purpose of the librarian-mediated search was to support a team of Palacky University clinician-researchers that had been addressed by the editorial board of the international journal Current Topics in Nutraceutical Research to prepare an invited review. Instructions for authors recommended to include the chapter „Literature search“ into the article outline. Having completed the task the librarian was invited to become a co-author of the paper that has already been submitted for publication.

FOR ACTION : YEAR 3

□ Focus on

- Analysis of search habits
 - Librarian-mediated, semi-mediated, unmediated retrieval
- User training survey
- Cost-effectiveness, quality

Barnett L.,Cmor D.,Morgan P. Mediated Computer Search Services Relative to Instruction Services: A Survey of One Health Sciences Library. Med. Ref. Serv.Quart. 2001;20(2):9-21.

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To assess the quality and usefulness of library-mediated computer search services, a survey will be undertaken to determine satisfaction rates, why users do or do not use the service, and how useful the service is perceived to be in comparison to instructional services. Besides satisfaction rates, the users will be asked about the level of librarian expertise and time/cost savings which could be the main reason for using the service. We will then try to interpret the behaviour of non-users, why they prefer to do their own searching. May there be some unaware of the service?

User training survey

□ Preferences to various training modes:

- Classroom training
- Computer- or Web-based tutorials
- Reading manuals
 - paper, online
- Get training from a colleague
- One´s own practice
 - Trial-and-error.....

*Information Technology Training Survey, University of Miami, Available at:
<http://it.med.miami.edu.x1088.xml>. 2006.*

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We are planning another survey to demonstrate the users´attitudes towards search skills training. Respondents will be asked to indicate their preferences to various training modes by „dislike-neutral-like“ as rating dimensions, and whether they use these modes „rarely–sometimes – often“. The training options will comprise the following alternatives: classroom training (lecture, seminar, interactive class), computer- or web-based tutorials, reading manuals (paper or online), getting training from a colleague, practising on one´s own – trial-and-error).

CONCLUSIONS

□ ***Future Need***

- It is critical to libraries and the constituents they serve that permanent **archival access** to information be available, especially if that information exists only in electronic form.
- **Libraries cannot rely solely on external providers to be their archival source.**
- Agreements to procure **e information** must include provisions to purchase and not just to lease or provide temporary access.

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