

The Future of the Academic Library and the Academic Librarian.  
A DELPHI study reloaded.

### Abstract

At the 20<sup>th</sup> IATUL Conference held in 1999 in Chania, Greece, the authors presented a paper *The Future of the Academic Library and the Academic Librarian. A DELPHI Study*<sup>3</sup>. The aim of that study was to identify trends and present a probable scenario for the year 2005.

After six years that have passed since the Conference in Chania, we live in a different world. Different not only because of terrorism and the latest natural disasters, but also because of changes in technology (e.g. the boom of mobile communication, transition from CD/DVD to online services, ease of digitization, etc.), internationalization of studies or changes in scholarly communication and publishing models, which in turn have imposed new law regulations. All these factors have strongly influenced libraries and changed the library image in a way hardly to be predicted 6 years ago.

This paper presents the results of a new study conducted in 2005. It had two main objectives:

- to verify the results of the previous study (comparison of the experts' predictions with the reality as of the year 2005)
- to make further extrapolation, focused on competencies that librarians should develop as professional information suppliers and experts, to meet future needs.

A Delphi method of forecasting involves two consecutive rounds of questions, subsequent analysis of the responses to the open and closed questions and a development of the expert consensus about the topic of the study. The panel of experts was composed of the librarians and information professionals many of who were also involved in the previous study.

### The method

A Delphi method can be defined as a *technique to arrive at a group position regarding an issue under investigation. The Delphi method consists of a series of repeated interrogations, usually by means of questionnaires, of a group of individuals whose opinions or judgments are of interest. After the initial interrogation of each individual, each subsequent interrogation is accompanied by information regarding the preceding round of replies, usually presented anonymously. The individual is thus encouraged to reconsider and, if appropriate, to change his previous reply in light of the replies of other members of the group. After two or three rounds, the group position is determined by averaging.* (IIASA)<sup>4</sup>

The classical Delphi technique is based on the assumption that the validity and credibility of forecast can be strengthened if a group of experts is involved. The experts act anonymously. They can know the names of the participants of the study but all the opinions, comments and

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<sup>3</sup> <http://www.iatul.org/conference/proceedings/vol09/papers/feret.html>

<sup>4</sup> Web Dictionary of Cybernetics and Systems [<http://pespmc1.vub.ac.be/ASC/indexASC.html>; read on 6 May 2004]

forecasts presented by individual experts remain anonymous and are presented to the experts in such a way as to suppress any identification.

## **The research**

The objective of most Delphi applications is the creative exploration of ideas leading to the reliable forecast for the future of a given subject. The selection of a Delphi method for the study on the future of academic libraries and librarians was implied by the fact that one of the objectives of the study was also to compare the reality of the year 2005 with the predictions made in 1999 within another Delphi research conducted by the authors 6 years ago. The authors invited experts involved in 1999 study to participate in the present research. However, in the meantime some professionals moved to another business, a few retired and one died. Thus the new panel has been strengthened by other professionals in the field of library management and information science. They represented 20 countries and four continents [see Appendix 1].

The present study was conducted from March to May 2005 and involved the following steps:

- Formation of a panel of experts
- Development of the first round Delphi questionnaire
- Distribution of the first questionnaires to the panelists
- Analysis of the first round responses
- Preparation of the second round questionnaires and their distribution, analysis of the results
- Clarification of viewpoints through the third round questionnaires
- Analysis and presentation of the results

Timelines adopted did not allow for the implementation of testing procedures before each round of the survey. It resulted in some ambiguities and vagueness in the questionnaires followed by further e-mail consultations with experts. Elimination or limitation of these ambiguities was achieved in the surveys of the third round.

Questionnaires for each round consisted of open and closed questions [Appendix 2].

In the first round the questions concerned libraries today and in 2015. For the closed questions the experts were asked to rate the statements reflecting categories defined in the study of 1999. Presentation of the results required statistical methods to be applied.

Questions of the second and third round focused on the future of academic libraries and librarians. Closed questions concerned four main areas: *the Internet as a competitor to the library, local versus remote access, printed versus electronic media, staff and user training*. Open questions were based on the controversial opinions presented by the panelists in previous rounds.

## **Results of the study – first round.**

The first round of the study comprised four tasks / questions. They were identical to those asked in the first round of the Delphi study in 1999 [see Appendix 2]. The Experts were asked to reply to these questions twice:

- *in the context of libraries today (the reality check)*
- *in the context of the future - trying to predict the scenario for the year 2015*

Each of four questions required from the Expert to identify four or five features of a library / librarian and list them in the order of their importance. To make the comparison easier, the Experts were asked to use the categories defined in the study of 1996. For the purpose of the statistical analysis the most important factors were ranked “5”, less important “4” and so on. Factors listed on the fifth place or further (or the ones from the previous study not mentioned this time) were ranked „0”. There were two values calculated for each factor in all tasks:

- the **arithmetic mean** of the ranks given by all experts
- the **median** calculated for each factor from the ranks given by all experts.

*Today – the “reality check”*

The four figures below (Fig. 1 - 4) show a distribution of the experts’ opinions (ranks) in the case of four questions related to the libraries and librarians today.

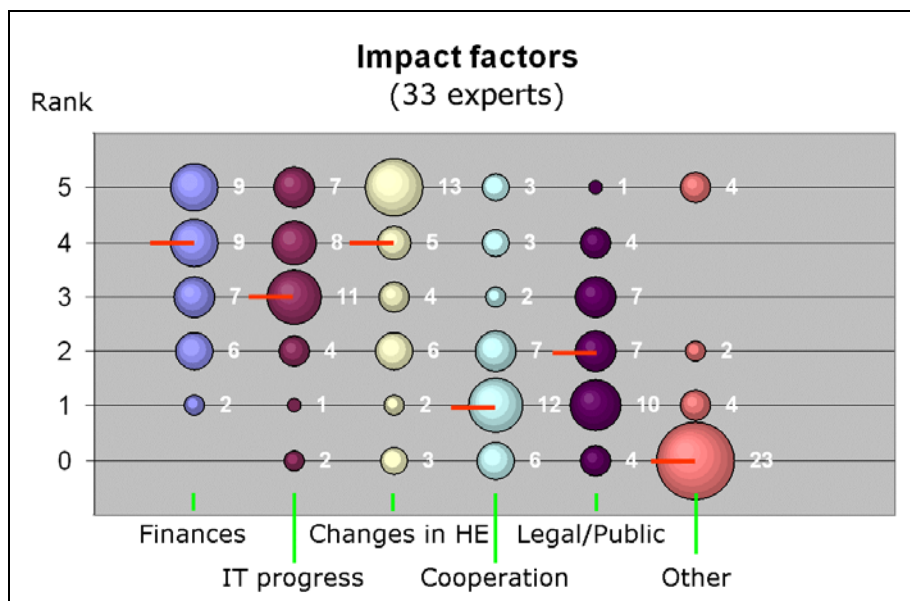


Figure 1

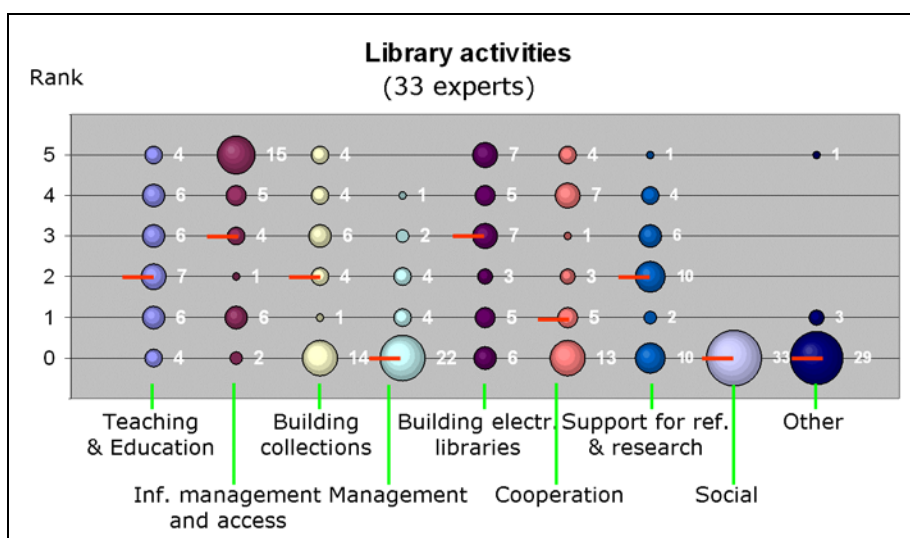


Figure 2

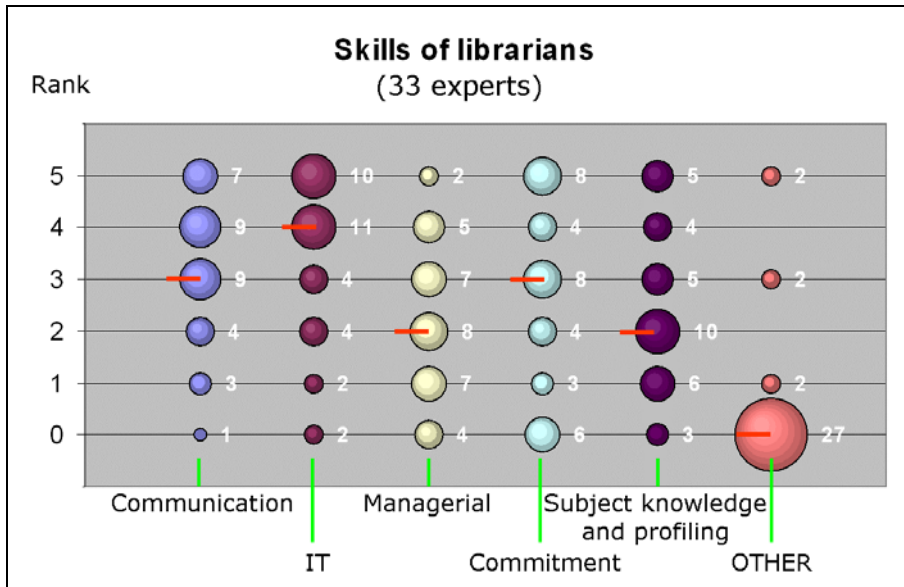


Figure 3

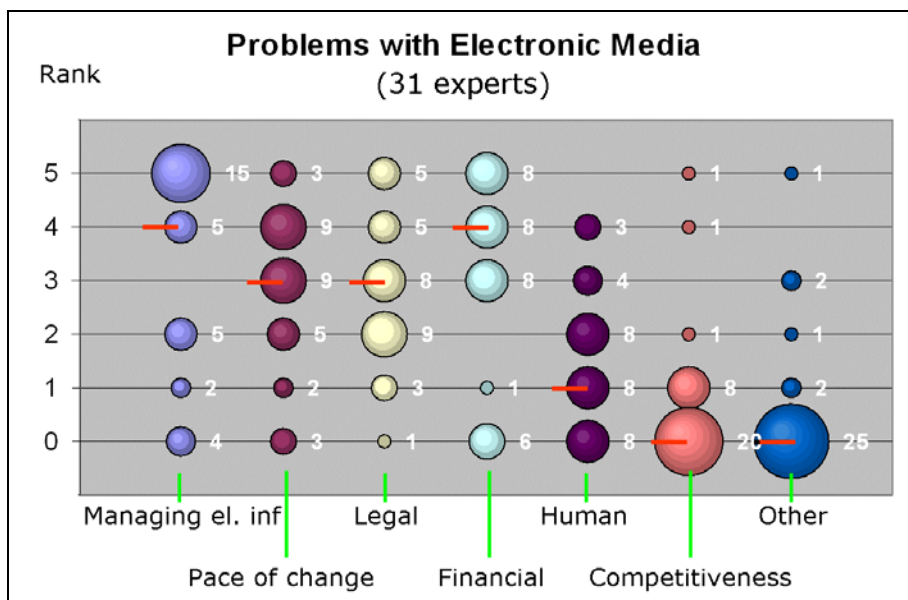
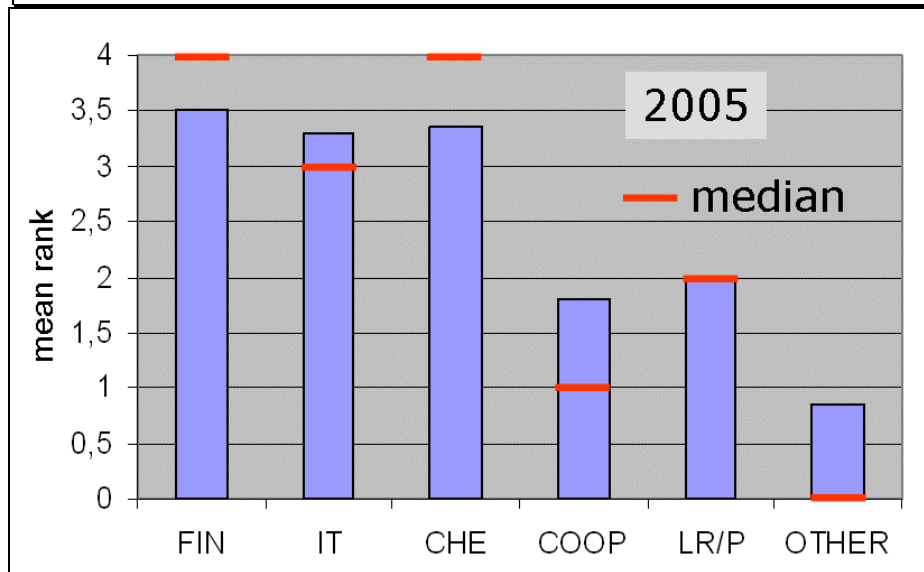
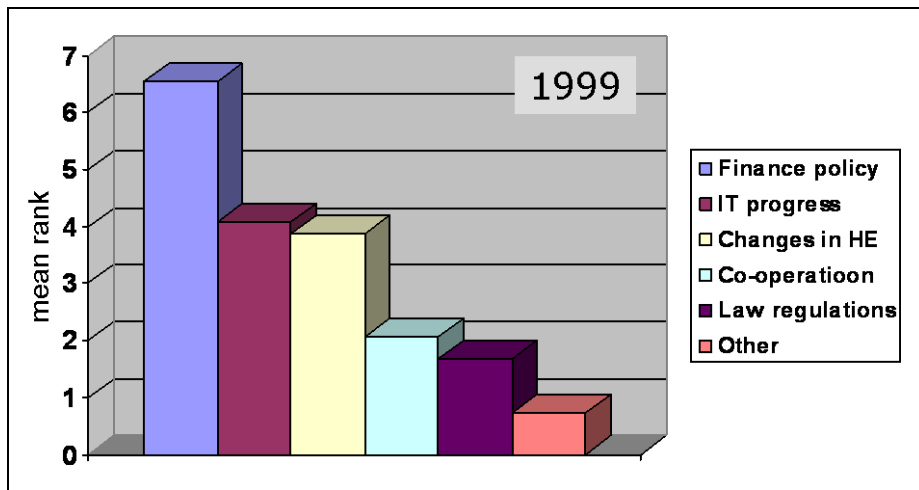


Figure 4

The following four pairs of the pictures (Fig. 5-12) compare the results of the current study with the predictions made 6 years ago for all four questions/tasks. They could not have been placed in common graphs, because the values of the mean ranks in the two studies are incomparable. However, the order and the relative importance of factors can well be compared.

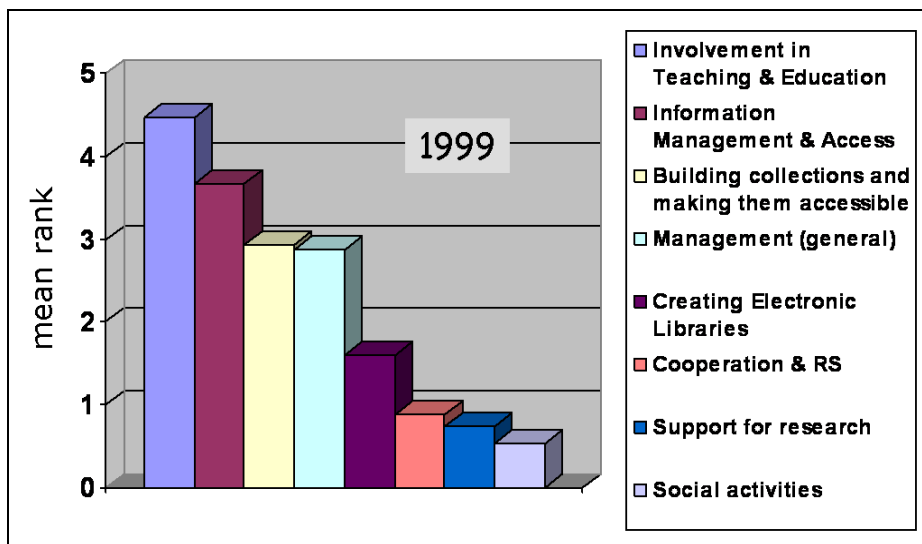
In the subsequent analysis the authors have used the median of the ranks for all the comparisons.

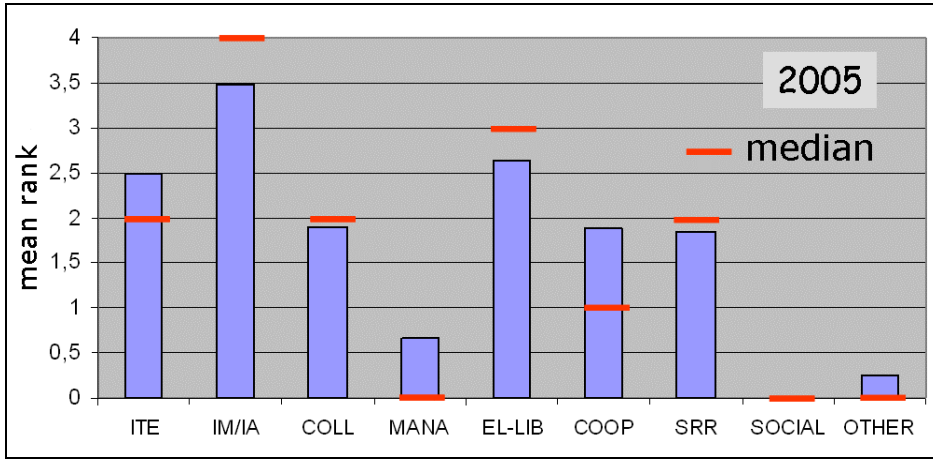
### Impact factors:



Figures 5-6

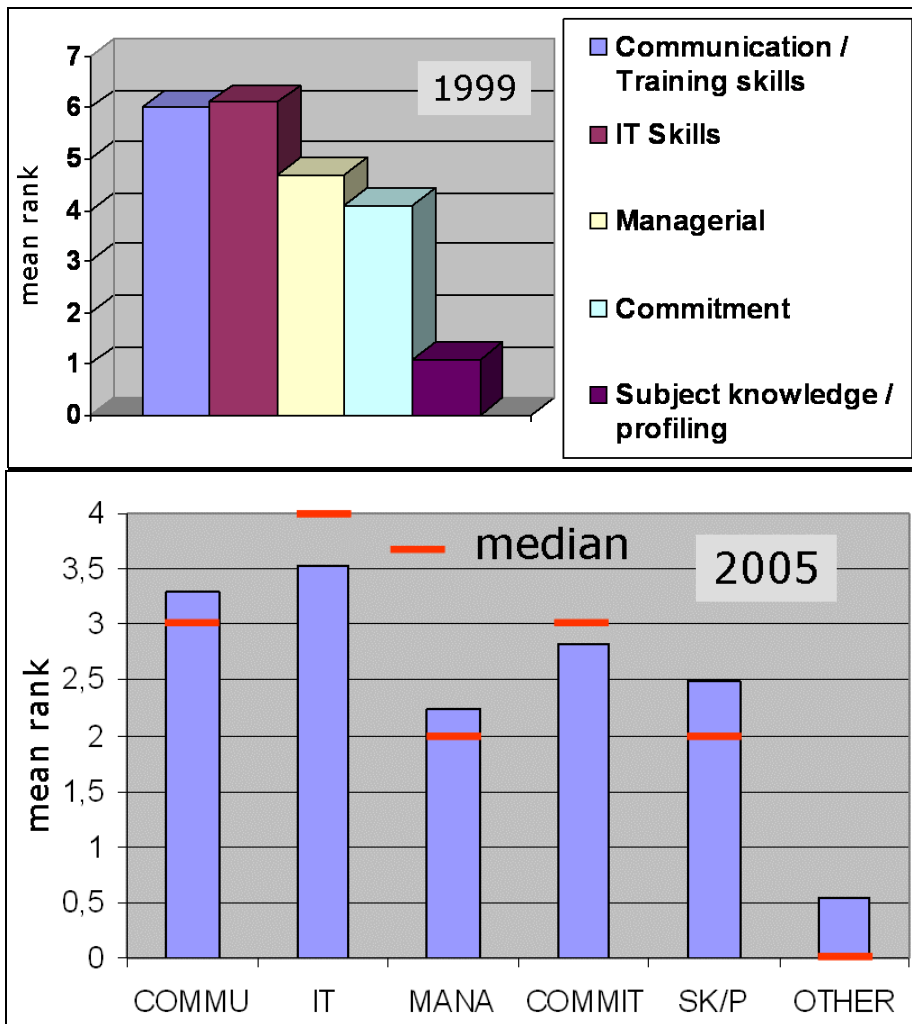
### Library activities:





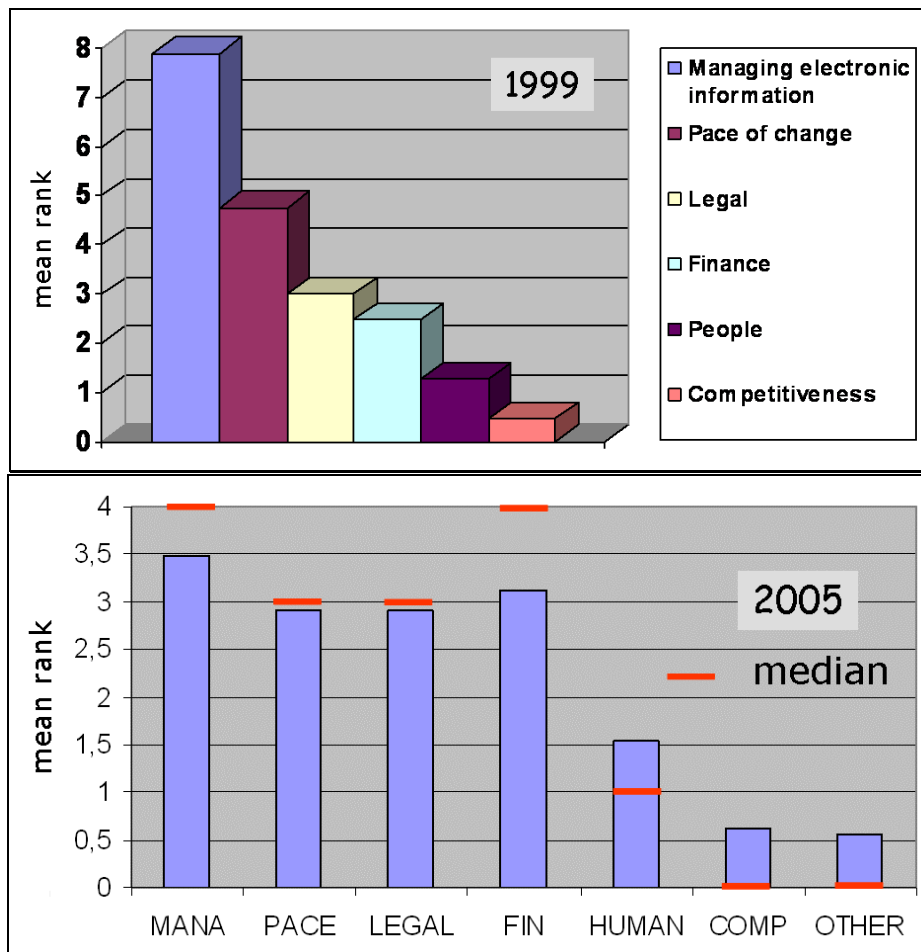
Figures 7-8

Skills of librarian:



Figures 9-10

## Problems with electronic media



Figures 11-12

### Observations and remarks concerning **impact factors**:

- As it had been predicted, the financial policy is the most important factor shaping the image of libraries.
- Changes in higher education, IT progress and law/public issues have influenced libraries much more than it had been expected 6 years ago
- New factors identified by the experts (not mentioned in the previous study) include:
  - a raise of users expectations
  - a constant pressure on the quality and evaluation of services drives library evolution
  - the Internet tools (e.g. Google and other search engines) become a competitor to the library
  - a bad quality of staff (as a result of inadequate salaries that prevent from hiring the highest quality professionals) implies outsourcing of services
  - standardization is becoming more and more important

#### Observations and remarks concerning **library activities**:

- Information access and management turned out much more important than the involvement in teaching and education, which had been predicted as the most important activity.
- Creating electronic libraries is much more time-consuming and important activity than had been predicted
- Libraries of today do not fulfill social functions as much as they were expected
- Other activities mentioned by the experts:
  - Opening hours: 24/7
  - Reorganization works (e.g. to create space for group learning, digitize collections etc.)
  - **Finding ways and solutions to provide access to information, complying with the growing legal limitations**

#### Observations and remarks concerning **skills of librarians**:

- IT and communication skills on top, as predicted
- Subject knowledge (profiling) is as much important as commitment and managerial skills – much more important than it had been predicted
- Other required skills:
  - **Ability to adapt changes, flexibility, creativity, innovative thinking**
  - Professional curriculum to comply with the government standards, indicators, evaluations.
  - **Ability to find additional money/savings/sponsors (fundraising abilities)**
  - Professionalism
  - Integrity with and understanding the organization (the library)
  - Good understanding of both: print and electronic resources, and the nature of the Internet

#### Observations and remarks concerning **problems with electronic media**:

- Electronic information management, as it had been predicted, is the greatest problem
- Financing electronic resources turned to be much more complicated than it had been expected (please note, how optimistic the experts were regarding this issue six years ago...)
- Legal aspects – more important than it had been expected
- Other problems mentioned by the experts:
  - Consortium deals need sacrifices
  - **Risk of dependence on external providers**
  - **Preservation and archiving issues**
  - Legal contracts dictated by providers
  - Poor interfaces and documentation

#### *Prediction for the year 2015*

The four diagrams below (Fig. 13-16) show distribution of the experts' opinions (ranks) in the case of four questions related to the libraries and librarians in the year 2015.

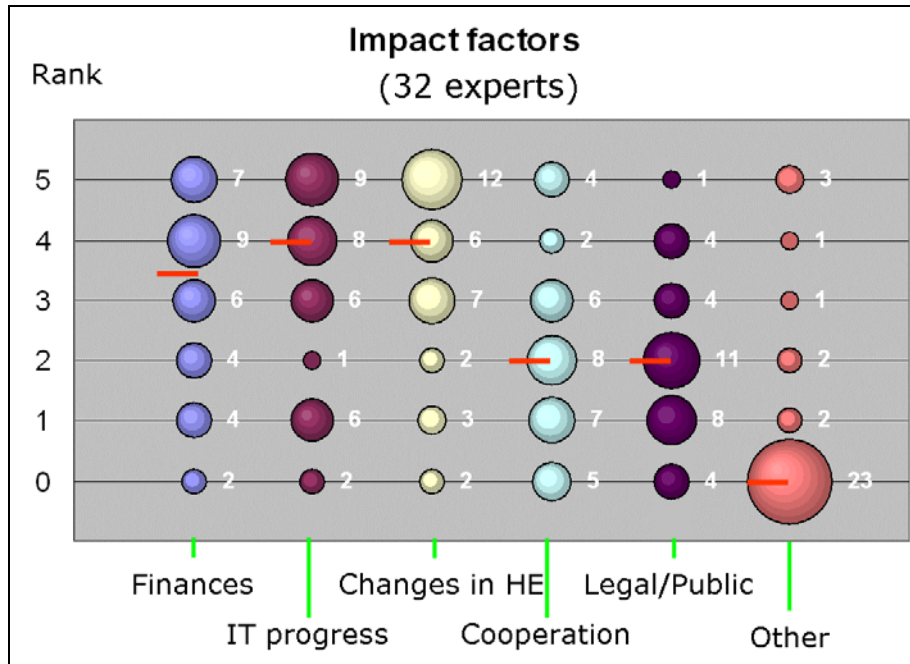


Figure 13

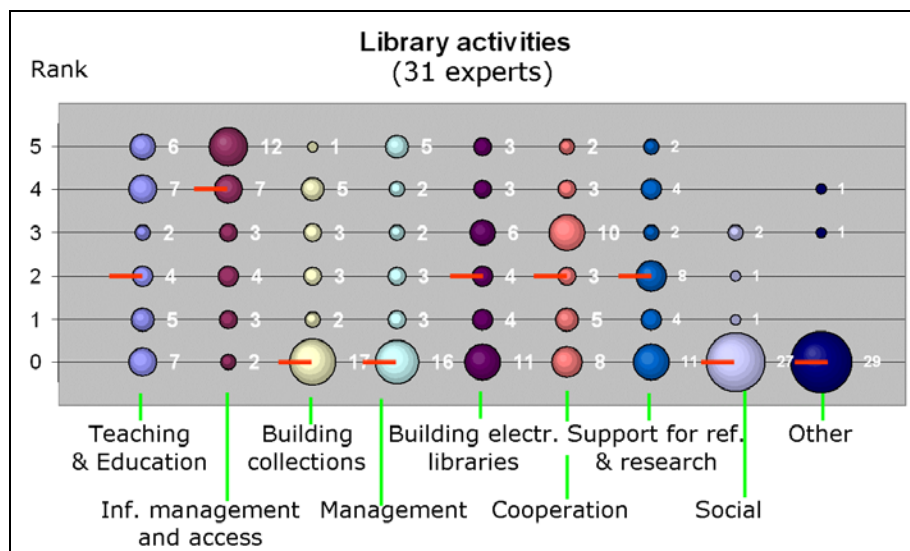


Figure 14

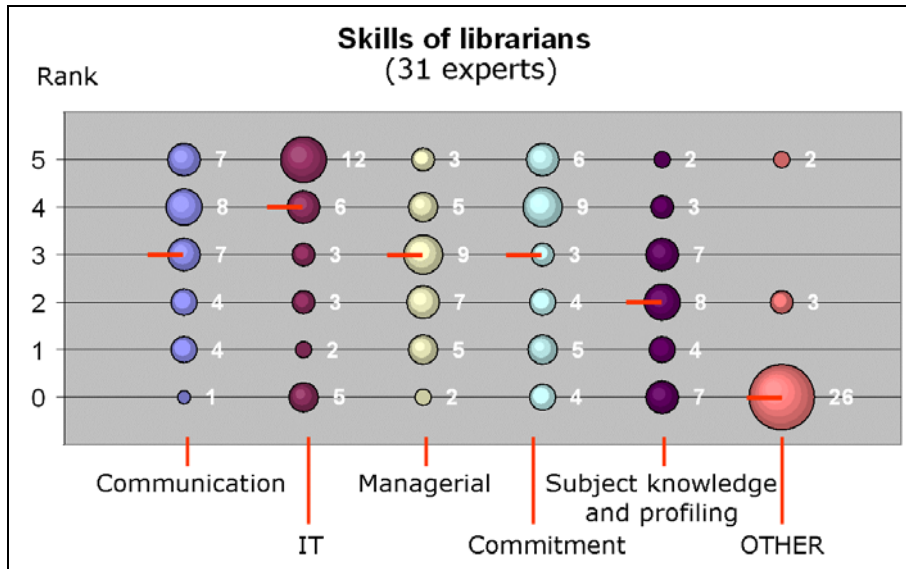


Figure 15

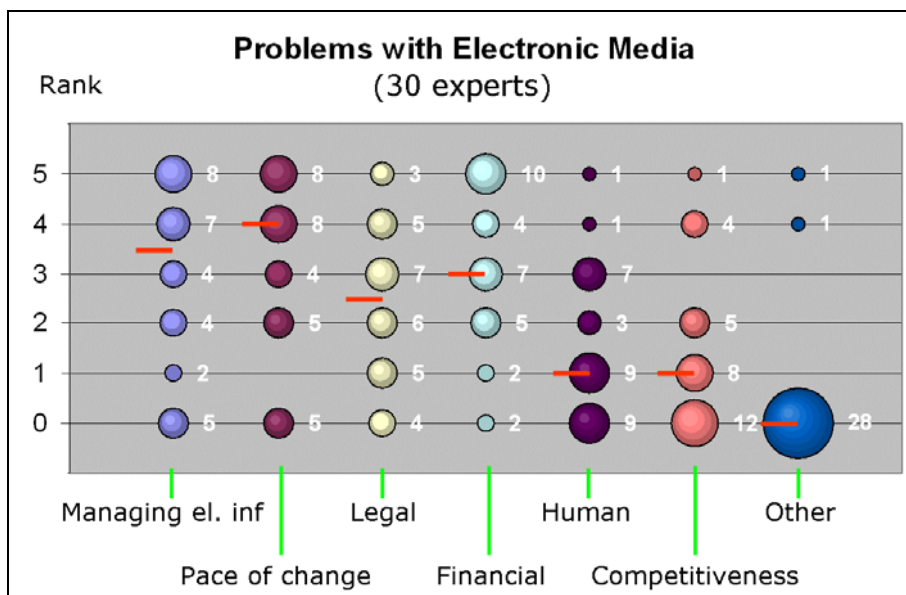


Figure 16

The following four graphs (Fig. 17-20) show the experts' prediction for the year 2015, compared to the respective results for "today" for the four study questions. The comparison was made with the use of median values of ranks given by experts'.

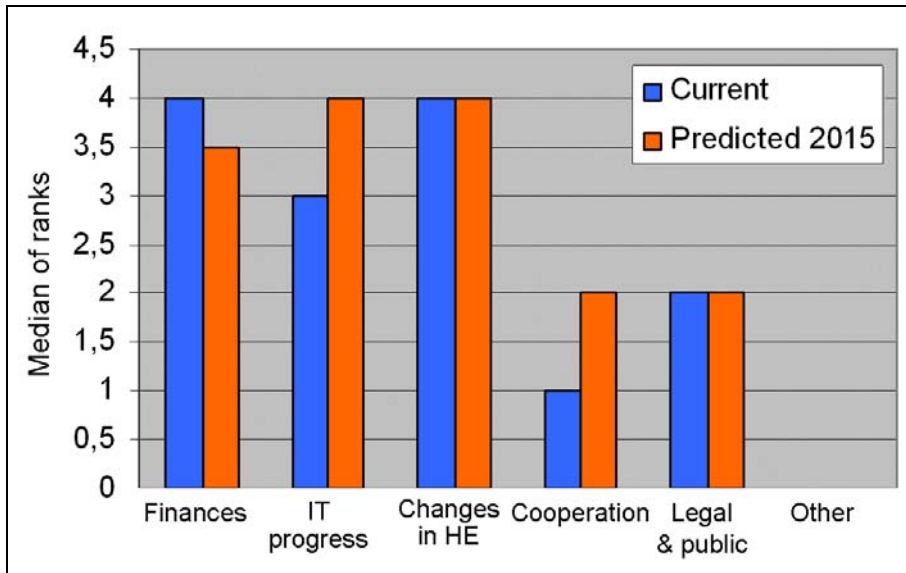


Figure 17. Impact factors

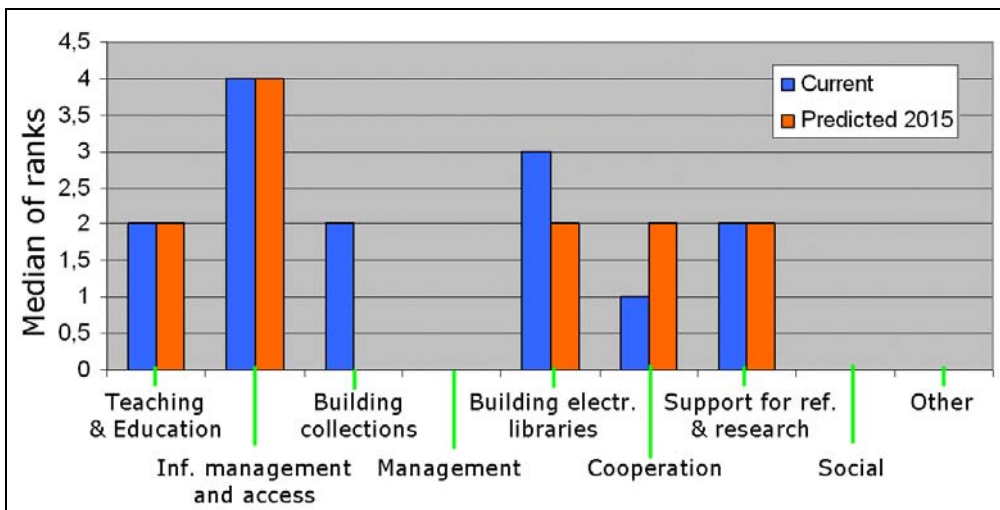


Figure 18. Library activities

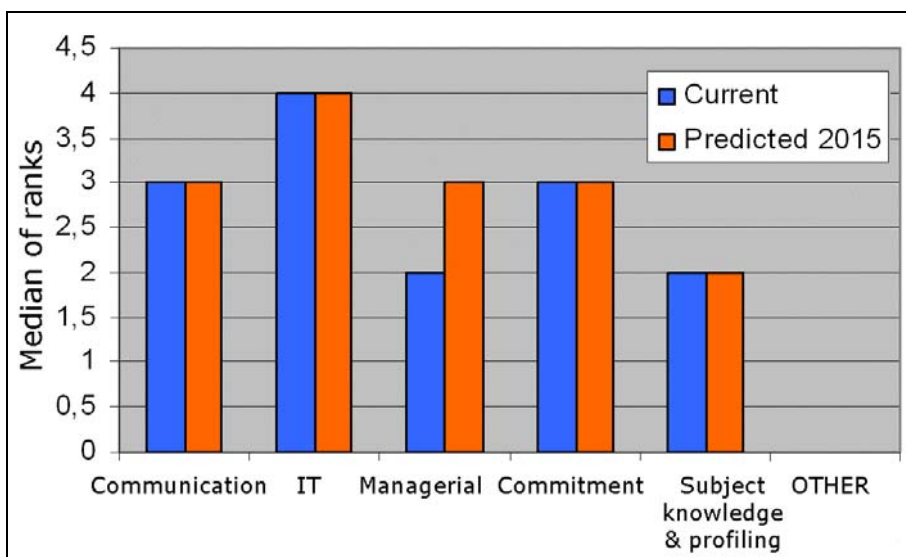


Figure 19. Skills of librarian

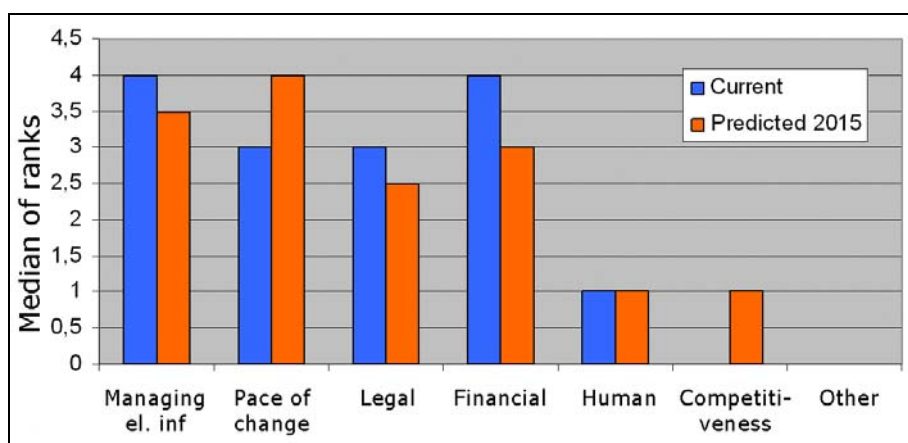


Figure 20. Problems with electronic media

Observations and remarks concerning **impact factors**:

- IT progress and changes in higher education will play a predominant role in shaping the image of future libraries.
- Funds for academic libraries will depend on the funds for higher education in general. Libraries should support their parent institutions in their bids for funds. Financial issues in electronic resources development will be crucial .
- The role of library cooperation in 2015 will increase significantly.

Observations and remarks concerning **library activities**:

- Information access and management have the highest rank as the future library activities.
- The role of library in teaching and education will remain at the present relatively high level.
- Support for research and reference will still belong to basic library activities.
- Judging by the experts' assessment, building library collection (excluding e-resources) as a traditional library activity will almost vanish. Such a forecast should imply graduate shift from library technicians to information professionals education.

Observations and remarks concerning **skills of librarians**:

- IT and communication skills remain on the top;
- Commitment to work will be one of the most desired features of a librarian.
- The role of managerial skills, especially fundraising abilities, will significantly grow.
- Subject knowledge will remain an important characteristics of a future librarian – probably that forecast results from the opinion that academic libraries, through their highly specialized collections, will strongly support education and research at their parent institutions

Observations and remarks concerning **problems with electronic media**:

- Keeping up with the pace of change will be most important
- Managerial, financial and legal issues will require permanent care
- Competitiveness will play significantly higher role than now.

## Results of the study – second and third round.

Questions of the second and third round resulted from the analysis of the first round and from the remarks provided by the experts. The questions focused on the future of academic libraries and librarians in the light of the most important factors, which seem to shape the future library image.

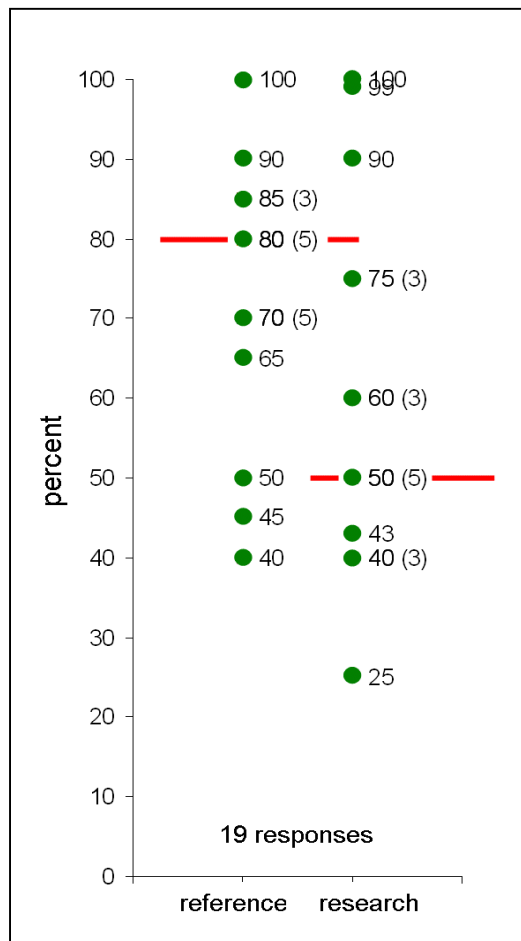


Figure 21

Closed questions concerned four main areas:

- *The “open” Internet as a competitor to the library electronic services*
- *Local versus remote access to the library (will the library buildings be needed at all?)*
- *Printed versus electronic media*
- *Staff and user training*

Open questions were based on the controversial opinions presented by the panelists in preceding rounds. The complete set of questions asked in the second and third round can be found in Appendix 2<sup>5</sup>.

### *Internet vs. library*

Figure 21 presents the experts answers to the following question: *What percentage of queries asked by the academic library users, related to the (a) reference, (b) research information will be in the year 2015 directed to the Internet instead of their university library?*

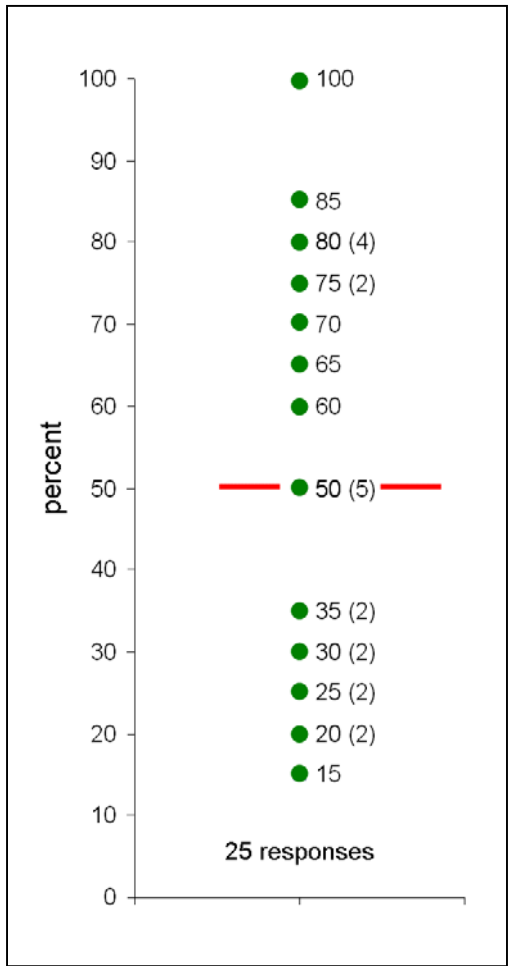
The “Internet” was for the purpose of this question defined as “all non-library electronic resources available on the Web”. Red lines represent median values for each category.

Although the dispersion of the results was quite high, it can be observed that according to the expert panel, roughly 80% of the reference questions will be directed to non-library websites, while as much as 50% of research information will be also looked for at the other-than-library web resources. *Physical vs. remote access*

Figure 22 shows the experts replies to the question: *What percentage of library users will visit their library in person at least once a year in the university of 2015?*

It is interesting to see that there are basically two groups of answers: those between 60 and 85 percent and those between 15 and 35 percent. It appeared in the replies that the experts tried to distinguish between the physical presence in the library to satisfy information needs (lower percentage), and the presence for other reasons, of which the most important was visiting the library as a social place (higher percentage). The single opinion that the 100% of library users

<sup>5</sup> The third round was in fact the clarification by the authors of the meaning of selected terms used in questions of the second round.



will visit the library at least once a year has been explained as “for any administrative reasons”.

*Printed vs. electronic media*

The next figure (fig. 23) presents the distribution of the experts’ answers to the following question:

*What percentage of information will be accommodated by people via electronic, and not by printed media, making distinction between:*

- *book reading*
- *book distribution*
- *journal article reading*
- *journal article distribution*
- *electronic information reading*
- *electronic information distribution*

The median value for each part of the question is presented in the form of a bar.

Figure 22

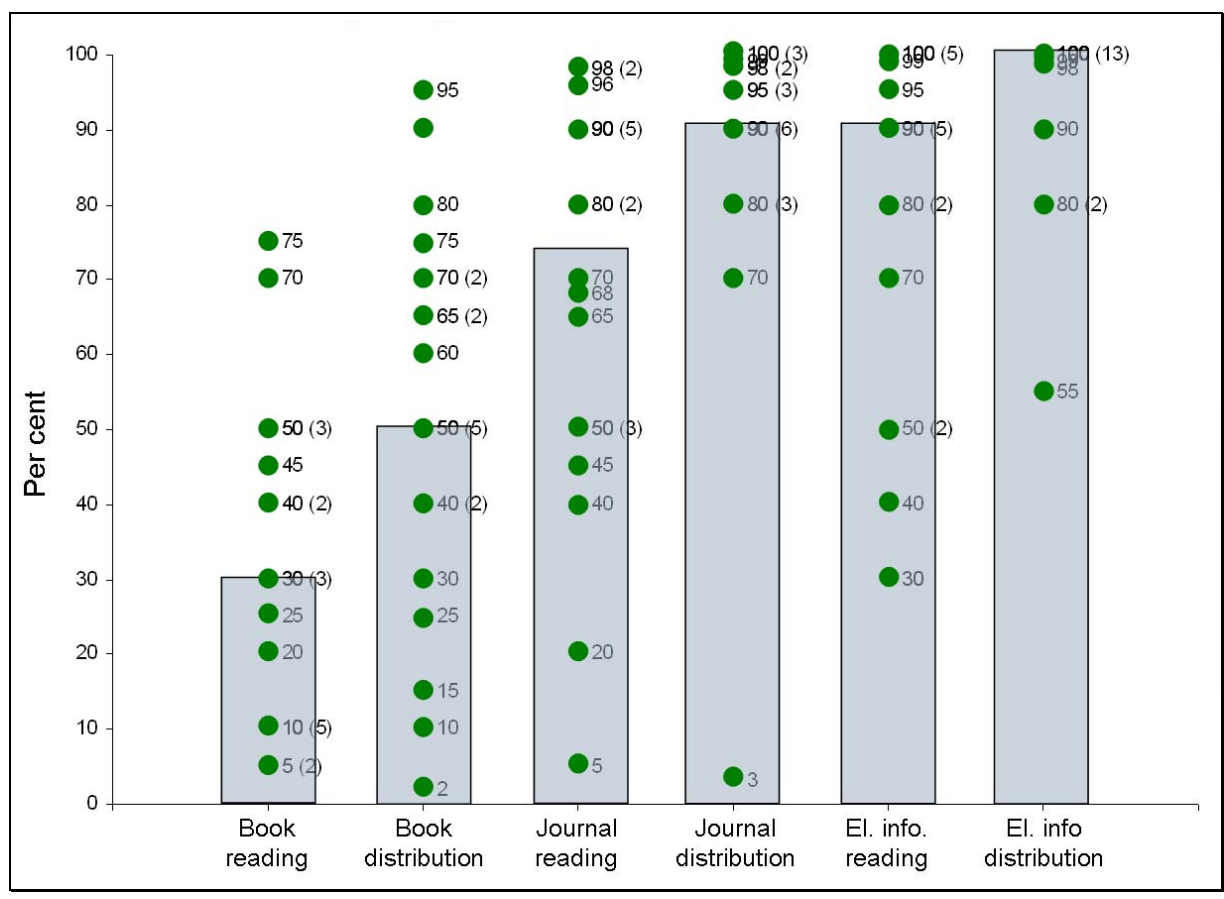


Figure 23

While book reading in 2015 will still be mostly based on printed materials (70%), journal reading will be based mostly on the electronic form (75%). It is interesting that according to the experts both publication forms: books and journals will be much more frequently distributed in the electronic form than it is today (respectively 50% and 90%). Therefore, library managers should already start thinking how to manage this amount of electronic information within libraries.

*Adequate staff and user training*

The last figure (Fig. 24) presents the aggregated results of the experts’ answer to the following question:

- A. *how much time will user training require*
  - B. *how much time (as a percent of the overall working hours) will an average librarian spent on:*
    - *self training*
    - *training others*
- with respect to three groups of librarians: a) average librarian involved in direct services to library users (e.g. reference and circulation), b) average librarian responsible for staff and user training, c) other “average librarians”*

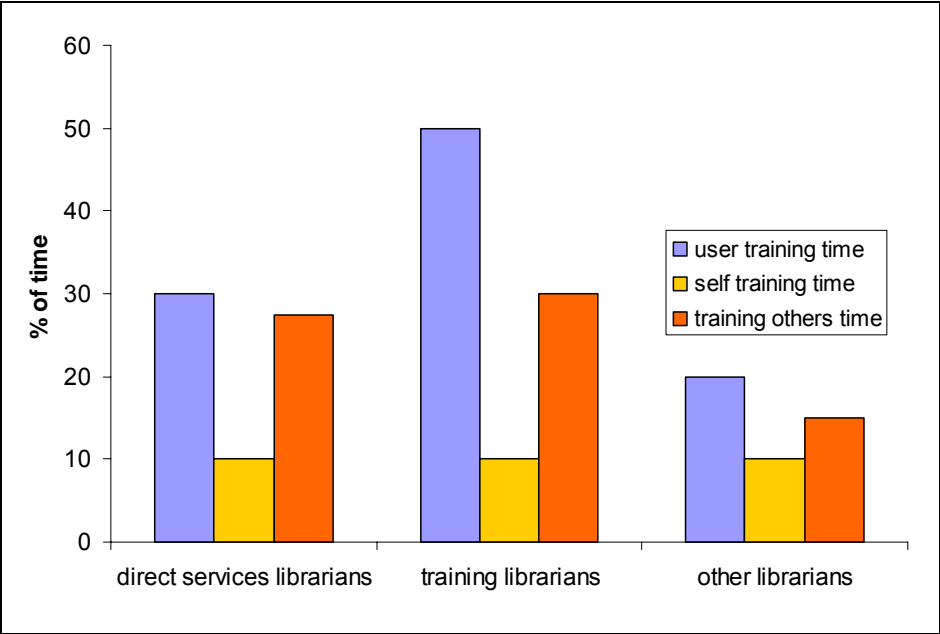


Figure 24

Permanent self training will take up to 10% of total working time regardless staff category and its position in the library. The likelihood is that the bulk of time actually accounted for both library staff and user training lie in group training. In the context of the staff supervision, however, it seems virtually impossible to separate supervision from training. User training in turn more and more often requires one-to-one-instruction. It means that in the future the time percentage of time library staff will spend on training mayl be even higher.

## Open questions and their analysis

There were two open questions directed to the experts in the second round of the study:

Regarding research collections: *“Are we as a profession only consumers or also producers of information? Is it our task to provide networked content?”*

Regarding competitiveness: *“The net and the ‘googling’ of books are driving us to homogeneous library collections. When there is one netbased collection what will make each library distinctive and competitive and perceived as giving value?”*

The aggregated answer to the first question could be summarized in the following way:

Library is everything: producer, repackager (manager) and consumer of information.

It produces the information by:

- producing networked bibliographic databases
- keeping institutional repositories of research output
- providing results of digitization projects
- contributing to teaching and learning

The most important role of the library will be to select and „repackage” information (adding value).

The aggregated answer to the second question is:

Libraries will be distinctive by:

- adding value in selecting, managing and providing the most relevant and the best quality information to users, including their specific print collections
- being user-driven and being close to the study and research subjects and needs
- providing comfortable space for individual and group learning, social and cultural activities with the human touch.

## Selected quotes from the experts opinions

Both: comments to the closed questions and the answers to the open questions included many interesting sentences, which (though not to be methodically analysed) seem interesting enough to share them with readers of this paper:

*Libraries will continue to be sanctuaries for meditation, social centers, and escapes from the grind of the real world. (Ed Valauskas)*

*I think we need to move on from the mindset of the local 'library' as the core supplemented by digital resources from external providers and the wider internet – to a different mindset where the 'library' is a value-added overlay on the wider canvas of readily available digital information content, which provides value-added presentation and personalised delivery of information resources to match the specific needs of researchers, students and staff in the University, integrated with their other working/study materials (Di Martin).*

*The level of library usage remains the same over time (Robert Hayes)*

*Internet in the current model will NOT survive until 2015. Wake up and smell the coffee. What we know as the Internet will be an ancient joke. There will be pervasive information technologies in abundance, and like electricity or water, will largely be available almost every and anywhere. (Ed Valauskas).*

## Conclusions

- Most probably libraries will still exist in 2015 (it is worth pointing out, however, that opposite opinion was also expressed: libraries may be replaced altogether by a single net collection operated by government or other institution).
- Their prior activities will be information management and access, teaching, support for research and cooperation.
- The most important factors to influence libraries will be changes in higher education, IT progress and finance.
- Apart from IT and communication skills, managerial abilities will be the most desirable feature of a librarian in 2015.
- At least 50% of users will visit the academic library once a year or more, not only to get information but also for social purposes
- Academic librarian as an information facilitator will be adding value to netbased resources
- Libraries will be distinctive and competitive thanks to their special and local collections, providing content in local languages.
- Libraries will become more study and social places than a place to find information. The true value of work done by librarians will be hidden „behind the scenes”.

## Final remarks

The Delphi method has got criticism as well as support. The authors are well aware not only of the strengths but also of the weaknesses of the method, eg. the dependency of forecasts on the particular judges selected or the sensitivity of results to ambiguity in the questionnaires used for data collection.

The outcome of a Delphi sequence is nothing but opinion. However, that opinion results from structured communication of carefully selected professionals in the field, involved in a study applying certain defined rules and procedures. Therefore its credibility can be regarded as higher than just opinions of individuals. The results of the 1999 study seem to confirm that point.

## Acknowledgements

The authors express their special gratitude to all the respected Experts, who kindly agreed both to devote their time and share their professional knowledge and experience. Without their invaluable contribution this study would not be possible at all.

## References

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Passig, D. Sharbat, A. *Variations to the Imen-Delphi Procedure* <http://www.passig.com/pic/Imen-DelphiProcedure.htm> [read on 16 May 04]

The Delphi Method, <http://www.iit.edu/~it/delphi.html> [read on 16 May 04]

## Appendix 1. List of Experts

Stephanie ATKINS	Prof. Assistant, Circulation Librarian, University of Illinois at Urbana-Champaign
Gaynor AUSTEN	Director, Library Services, Queensland University of Technology, Queensland, Australia
Toby BAINTON	SCONUL (Standing Conference of National and University Libraries) Secretary, London, UK
Michael BREAKS	University Librarian, Heriot Watt University, Riccarton, Edinburgh, UK
Michel DAGENAIS	Head of the Science Library, Université Laval, Quebec, Canada
Ainslie DEWE	University Librarian, Auckland University of Technology, New Zealand
Gena DUOBINIENE	Library Director, Kaunas University of Technology, Lithuania
Johan ENGELBRECHT	Director, Library Services, University of Stellenbosch, South Africa
Mirosław GÓRNY	Professor of Library Information Sciences, Adam Mickiewicz University, Poznan, Poland
Arja-Riitta HAARALA	Director, Tampere University of Technology, Finland
Robert HALL	Head of Library Services, University of Surrey, UK
Robert HAYES	Professor Emeritus, Dept. of Library and Information Science, UCLA, Los Angeles CA, USA
Maria HEIJNE	Librarian, Delft University of Technology, The Netherlands
Maimunah KADIR	Chief Librarian, University Kebangsaan Malaysia Hospital, Kuala Lumpur, Malaysia
Bulent KARASOZEN	Prof. Library Director, Middle East Technical University, Ankara, Turkey
Ewa KRYSIAK	IT Executive Manager and Coordinator, National Library, Warsaw, Poland
Derek LAW	Head of Information Resources Directorate, University of Strathclyde, Glasgow, UK
Nigel MACARTNEY	Director of Information Services, University of Ulster, UK
Elena MACEVICIUTE	Professor in the Faculty of Communication, Vilnius University, Vilnius, Lithuania
Marta MACHYTKOVA	Director, Czech Technical University Central Library FEE, Prague, Czech Republic
Di MARTIN	Director of Learning & Information Services, University of Hertfordshire, UK
Milena MATASOVSKA- TETREVOVA	Head of Information Department, Technical University, Kosice, Slovak Republik
Mersini MORELELI-KAKOURIS	Assistant Prof. Technological Educational Institution of Thessaloniki, Greece
Paul NIEUWENHUYSEN	Prof. Vrije Universiteit Brussel, Belgium
Irma PASANEN	Associate Library Director for Information Services, Helsinki University of Technology Library, Finland
Alasdair PATERSON	University Librarian, University of Exeter, UK
Margaret ROUSE-JONES	University Librarian, The Campus Libraries, The University of the West Indies, St. Augustine, Trinidad, Trinidad and Tobago
Hannie SANDER	Chief Librarian, Library and Information Centre, University of Johannesburg, South Africa
Heiner SCHNELLING	Head Librarian, Universitas und Landesbibliothek Sachsen-Anhalt, Halle, Germany
Anja SMIT	Executive Consultant, Library Administration & Management, Nelinet Consortium, Southborough MA , USA
Jolanta STEPNIAK	Director, Main Library, Warsaw University of Technology, Poland
Adriaan SWANEPOEL	Deputy Director, Library and Information Service, Tshwane University of Technology, Pretoria, South Afrika
Alice TRUSSEL	Prof. Director, Fiedler Engineering Library, Kansas State University, US
Edward VALAUSKAS	Chief Editor, First Monday, Chicago IL, USA
Terry WEECH	Associate Professor, GSLIS, University of Illinois, Urbana-Champaign, USA
Matjaz ZAUCER	Director, Central Technological Library, University of Ljubljana, Slovenia

## Appendix 2. Questions of the 1,2 and 3-rd round of the study.

### ROUND 1:

#### *Task 1 – today*

#### 1. Key public policies, information strategies and ongoing projects as the context for libraries

List five factors, which **currently** have the biggest impact on the picture of an academic library in your country, starting with the most important ones. If a factor needs explanation or further subdivision – please include it. Indicate the way each factor influences academic libraries.

If it's possible, please refer to the following categories of factors:

- Changes in higher education
- IT progress (development)
- Law regulations/public issues
- Finance policies
- Cooperation
- Other

#### 2. Library activities

Discuss briefly five main areas of library activities **as of today**. Arrange them in order, starting with the most important ones.

If it's possible, please refer to the following categories:

- Information management and information access
- Co-operation and resource sharing
- Social activities
- Building collections and making them accessible
- Involvement in teaching and education
- Managing in general
- Creating electronic libraries
- Support for research and reference
- Other

#### 3. Present and future staff training

List at least four characteristics (or/and skills) of a person **to be employed today** in the academic library, in the order of their importance.

If it's possible, please refer to the following categories:

- IT skills
- Commitment
- Subject knowledge / profiling
- Communication/training skills
- Managerial
- Other

#### 4. Library without walls

List five the most difficult problems when dealing with electronic media **today**.

If possible, please refer to the following categories:

- Competitiveness

- Legal
- Dealing with pace of change
- Finance
- Managing electronic information
- People (human factor)
- Other

## *Task 2 – the future*

### 1. Key public policies, information strategies and ongoing projects as the context for libraries;

List five factors, which **will** have the biggest impact on the picture of an academic library in your country **in 10 years perspective**, starting with the most important ones. If a factor needs explanation or further subdivision – please include it. Indicate the way each factor influences academic libraries.

If it's possible, please refer to the following categories of factors:

- Changes in higher education
- IT progress (development)
- Law regulations/public issues
- Finance policies
- Cooperation
- Other

### 2. Library activities

Discuss briefly five main areas of library activities **as predicted in 10 years from now**. Arrange them in order, starting with the most important ones.

If it's possible, please refer to the following categories:

- Information management and information access
- Co-operation and resource sharing
- Social activities
- Building collections and making them accessible
- Involvement in teaching and education
- Managing in general
- Creating electronic libraries
- Support for research and reference
- Other

### 3. Present and future staff training

List at least four characteristics (or/and skills) of a person to be employed **in the academic library of 2015**, in the order of their importance.

If it's possible, please refer to the following categories:

- IT skills
- Commitment
- Subject knowledge / profiling
- Communication/training skills
- Managerial
- Other

### 4. Library without walls

List five the most difficult problems to be considered when dealing with electronic media **10 years in the future from now**.

If possible, please refer to the following categories:

- Competitiveness
- Legal
- Dealing with pace of change
- Finance
- Managing electronic information
- People (human factor)
- Other

**Any further comments are welcome and will be highly appreciated.**

## **ROUND 2 and 3 combined:**

### **1. Internet as a competitor to library**

The Internet is more and more often considered as panacea for all information needs of people. They tend to use the results of Google and other search engines as the basic information resource, regardless of quality and credibility of websites returned in the search. Credibility of library information resources is less important than the speed of access to the required information, which seems higher on the Internet, than in the library. The same happens in the academic environment. Students come to the library to search the Internet instead of the shelves. Imagine that 20 years ago, when there was no internet, 100% of the information needs was (or should be) satisfied by libraries. According to the report by Pew Internet<sup>6</sup>, based on research in 2002, the average of 65% of Americans think the Internet will satisfy their information needs in different topic areas. When the search is done, the average of 30% of searchers say they are “always” satisfied with the search results, and another 50% are “mostly” satisfied with the search results. Taking this image into consideration please try to estimate the following:

- a. what percentage of queries asked by academic library users and related to the **reference** information, will be in the year 2015 directed to the Internet instead of their university library?
- b. what percentage of queries asked by academic library users and related to the **research** information, will be in the year 2015 directed to the Internet instead of their library?

*Added in the third round:* In our questionnaire we assume (what may turn out to be a completely wrong assumption) that the Internet will still do exist in 2015. By “the Internet” we mean the “open web” i.e. the totality of publicly available and searchable websites (digital resources), accessible not only by means of traditional web browsers, but also by any other mechanisms available in the future. “The library” in turn, involves traditional library plus library catalogues and computer-browsed digital information that has been produced or purchased/subscribed by the library. Therefore a query to the library catalogue, or to the electronic resources subscribed by the library, we treat as a query to the library, not to the Internet.

### **2. Print vs. electronic**

Human work and life are getting more “mobile”, and technologies favor the mobility and flexibility of the electronic media. Traditional books are being now digitized to be computer-readable, where “computer” more and more often means palmtops, mobile phones and other devices, even of the “wearable” size. The electronic content is easy to access, though not always easy to read. To improve that, there are advanced works on the electronic paper, which can be wirelessly loaded with the information, and which will be comfortable to read.

*Added in the third round:* We understand that the word “accommodated” used in the below question (in the second round) might have been understood both as “the form in which information is read” and “the form in which information is distributed”.

Given this, please **imagine the world in 2015 and try to estimate what percentage of information will be accommodated by people via electronic, and not by printed media, making distinction between:**

- a. book reading
- b. book distribution
- c. journal article reading
- d. journal article distribution
- e. electronic information reading
- f. electronic information distribution

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<sup>6</sup> [http://www.pewinternet.org/pdfs/PIP\\_Expectations.pdf](http://www.pewinternet.org/pdfs/PIP_Expectations.pdf)

### 3. Local vs. remote

Librarianship is getting “dehumanized”. Personal contact with the human librarian is being substituted by electronic services, websites, email communication etc. Libraries also tend to provide information and services at the workplace of the end-user, which further decreases the need of personal contact or visit to the library. Electronic information is available on the campus, books are transported to the departments to be closer to the borrowers, even signing-on to the library is being “computerized” either via global university procedures, or electronic verification/signatures. This trend is also visible in the first round results: we build the electronic collections, and despite the predictions the libraries neglect their social role. **Please try to estimate what percentage of library users will in fact visit the library in person at least once a year, in the university of 2015?**

### 4. Training

It seems that the future library activities will not include user training in IT skills – such skills will become common to everyone. Almost inborn. However, information literacy, including information management and specific product training, will remain an important issue. Despite that fact, it may be difficult for libraries to become involved in the regular teaching process.

It seems, for the purpose of the question, to be useful to differentiate between

- a. average librarian involved in direct services to library users (e.g. reference and circulation)
- b. average librarian responsible for staff and user training
- c. other “average librarians”

Do you think you could try to estimate, referring to the above groups of library staff:

- A. how much time will user training require (as a percentage of the overall activities in groups a, b, and c)**
- B. how much time (as a percent of the overall working hours) will an average (a, b or c) librarian spent on :**
  - self training
  - training others

In this question we do not distinguish between time spent on group training and one-to-one instruction. Could you please comment on that.

**Finally, let us quote here questions posed by one of our Experts. Please give your answers in two-three sentences.**

### 5. Research collections

*“Are we as a profession only consumers or also producers of information? Is it our task to provide networked content?”*

### 6. Competitiveness

*“The net and the ‘googling’ of books are driving us to homogeneous library collections. When there is one netbased collection what will make each library distinctive and competitive and perceived as giving value?”*