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## The evaluation of the quality of web-based library information services

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This article was translated thanks to the grant received from the Open Society Institute

### The quality of information service - definitions

When speaking about the quality of information service we must consider both the quality of the information provided (the data) and the quality of information provision to the client.

**Information.** In this paper information will be perceived as a collection of data (figures, facts, notions) provided to the end-user for their further processing and knowledge building.

**Quality.** It is defined as the totality of characteristics of an entity that bear on its ability to satisfy stated and implied needs. Needs may change with time, which implies a permanent review of requirements for quality. It is crucial that these requirements fully reflect the customer's needs. Quality is often equated with usability ("fitness for use"), functionality, customer satisfaction, or conformity with generally accepted standards and requirements.

**Service.** It is the result of direct cooperation of the supplier and the customer, as well as internal activities of the supplier directed to meet the customer needs. Services may be provided by means of personnel or equipment. In case of information services we deal with an intangible intellectual product which is created and provided to a specific customer. <sup>[1]</sup>

Thus, when speaking about information service and its quality, we mean the cooperation between the creator or provider of information and the user of this information, as well as the quality of the data provided. Moreover, in the case of an internet service we can state that this service is provided with the use of new technology and technological advances used for data transmission, as well as the personnel who organize and manage information. In order to evaluate a few information services, it is necessary to check systematically how these services meet the requirements of users and conform to the standards, using uniform criteria and evaluation indexes.

### Evaluating the quality of information

Modern information managers stress that it is very difficult to evaluate the quality of information services, because the evaluation criteria may be changeable, and the essence of "information" (I mean the multitude and inaccuracy of definitions) as well as the human factor are difficult to define in each individual case. The data that are informative to some people, may seem to be superfluous to others. So, if our aim, as librarians, is to select and evaluate information, we have to bear in mind how important it is to apply objective evaluation criteria and to know how to use them when gathering information materials according to the client's needs.

I Why should librarians evaluate information found on the web? The answers are as follows:

- Librarians have always selected, gathered, stored and provided information, and they are doing it now.
- With growth of information, there is a need for selecting and evaluating it.
- Selection is necessary when creating libraries' own electronic information resources.
- Users ask for the and level of information they need.
- Library clients have no time to seek for and retrieve information on their own.
- The future of libraries will be connected with information and modern technology.

### Methods and criteria for evaluating websites

Until quite recently, when speaking about the Internet and the vast possibilities of information transmission it allows for, we were often thrilled by the speed of information flow, the huge amount of data, diversity of formats, the possibilities of web design, as well as search tools. There was not much reflection on the quality of information found on the web. Now, when perceiving the problem of the abundance of information, we tend to assess the quality more and more frequently. There are many publications on this subject that discuss in detail the criteria for evaluating information, for example Information Quality WWW Virtual Library, The Internet Guide to Construction of Quality Online Resources, <http://www.ciolek.com/WWWVL-InfoQuality.html> - T. Matthew Ciolek, Irena M. Goltz.

Both the methods used when evaluating web sites and the evaluation criteria are very diversified, depending on

who is making the evaluation, for whom it is being made, and at what level. We need to be aware of the existence of the Internet information transmission standards which enable us to set evaluation criteria. The methods and criteria presented below have been suggested by librarians and for the academic librarians.

The methods of evaluating web sites proposed by Helga Clausen:

- The method of using automatic procedures, such as "Doctor HTML".
- Statistical method - analysing the type and the amount of information (counting of links).
- Qualitative-heuristic method - evaluating selected range of website features (form or content).

The last one of these methods is often connected with the expert appraisal.

The main evaluation criteria according to Alistair Smith:

1. The scope (chronological, formal, subject coverage).
2. The content (objectivity, author/creator, currency, originality, links, spelling).
3. Graphics and multimedia (audio, video, colours, design).
4. The intended purpose of the service (specified, clear).
5. The user (useability, user-friendliness).
6. Review (were the sites evaluated and how).
7. The technique used (efficiency, hardware, search tools, the organization of the service, interactivity, speed of downloading, use of standard solutions).
8. The cost (fee-based or free service).

Both set of criteria were defined differently. However, the cited elements of evaluation are similar. The same concerns other proposals that one can find on the internet, especially on the website dealing with this question: <http://www.vlib.org>. The criteria laid down below which I have worked out and recommend are selected from a number of other internet sources and compiled to benefit Polish librarians.

## Criteria for web site evaluation

When evaluating the quality of an information service it is important to work out and agree on the crucial elements that should be analysed for an evaluation to be sensible and to benefit not only the receivers, but also the creators of services. Librarians can evaluate the services they intend to use in their work according to the criteria laid down below. Whereas the librarians - the creators of library services may consider these criteria when developing their own information resources or when updating the ones that already exist. The criteria were selected on the basis of the accepted standards set for the creation of websites.

There are no set rules when considering the importance and the number of criteria used for evaluation. The evaluator makes the choice, and it should depend on the current and immediate needs and the purpose of evaluating a given service.

On starting an evaluation consider which main criteria (in bold type) to choose, and then begin to analyse the individual elements that are to be reviewed and evaluated according to a given criterion.

### Purpose statement

- What is the purpose of the service? Does it meet your requirements?
- What is the acting strategy? Is it being worked out?
- Is the target audience defined? If not, you have to define whether you are the target user.

### Author, publisher

- Analyse URLs - the first thing to do is to analyse the web address since it contains some very important information that allows checking for conformity of the address with the page content.
- Check where the document is published - country codes: pl, de, uk...
- Identify the institution that publishes the document - whether it is a reputable publisher:
  - governmental institutions: gov, mil;
  - educational institutions: edu, uni ([www.bu.uni.torun.pl](http://www.bu.uni.torun.pl));
  - non-profit organizations: org ([batory.org.pl](http://batory.org.pl));
  - commercial companies: ([aol.com](http://aol.com), [geocities.com](http://geocities.com), [poland.com](http://poland.com)).
- Identify the owner/publisher of the web site. Generally, the publisher and the one who is responsible for the content are individuals or entities - the owners of the server: the name of the owner is usually placed in the first part of the web address, between <http://> and the first slash, for example: <http://bn.org.pl/> or <http://www.oss.wroc.pl/>.
- Be aware that the owner, publisher, editor, webmaster are not always four different individuals.
- Make sure whether the document is copyrighted. It proves how seriously the document is treated.
- Identify the institution that publishes the document: whether the publisher is a familiar name; whether the institution is a reputable publisher.
- Look for: About Us statement, Biographical note, Biogram, Our Philosophy, Contact persons, Webmaster, Mission statement - the institution profile, author's point of view, or the goals of the institution.

- Determine whether an email, postal address, National Tax Number, Company Registration Number are listed.
- Look up the institution (if it is unfamiliar) in reference books, encyclopaedias, articles.
- Verify an anonymous page. If there is not any information on the page, you can learn a lot by cutting off from the web address (URL) the consecutive signs starting from the slash until the next slash, until you reach an institution responsible for the server, and you will learn who they make their pages available to and why; you will know the nature of this institution. Anonymity disqualifies the pages.
- Know the identity of the author:
  - look up in biographical indexes, reference books, bibliographies, encyclopaedias;
  - find out whether the author is renowned, what is the opinion of him;
  - verify his credentials, other works, organizational affiliation.

## Currency

- Find out how frequently the information is updated.
- Examine the footnote on home page or on other pages; not all pages have the same updates, sometimes it is not necessary.
- Read "What's new", news - dates of last documents.
- Check Page Info, Page Source, File/Properties. It is possible to find out the information about the site and when it was last revised in browsers.
- Determine if date first created and date last revised are given.
- Ascertain whether the dates correspond to the content (substance); whether the information is not outdated:
  - news or statistics should be often updated, the history of a given institution - not necessarily;
  - lack of updates disqualifies the pages.

## Completeness and accuracy of resources

- Examine the amount of data, whether they fall within your information needs:
  - balance should be maintained between primary and secondary sources;
  - random data selection diminishes the value of pages;
  - abundance of data causes disinformation;
  - scarcity of data causes dissatisfaction.
- Ascertain whether the significance of content is related to the goals of the service:
  - priorities should be set for specific data;
  - data should be analysed and selected;
  - quantitative criteria should be applied.

## Data citation and copying

- Look for citation data:
  - check for the domain of the source and the publishers of the cited pages, as well as the quality of these pages;
  - verify the authenticity of data (copyright).
- Check for proper referencing:
  - appropriate use of references/citations is crucial;
  - lack of citation referencing or wrong description proves that the quality of information is poor.
- Find out whether data, banners, logo and images are copied from other pages:
  - check whether they are modified and updated;
  - check the authenticity of the copy (the source);
  - make sure that copyright is respected; the owners consent should be cited.

## Credibility

- Identify the ultimate goal set by the creators of web pages and whether it is important:
  - providing information;
  - instructing, giving advice;
  - promoting something or somebody;
  - selling of goods;
  - discovering mysteries;
  - communicating ones' own ideas;
  - attracting the customers ... etc.
- Find out what is the opinion about the web pages. Maybe you will learn something about:
  - web pages promotion;
  - awards received and their prestige;
  - reviews of web pages in professional journals, for example *Internet*, *WWW Magazyn*, *Chip*;
  - references in catalogues (created by librarians), reference books; popularity and citation of pages; the number of citations is not always connected with quality.
- Evaluate the credibility of information:
  - verify data, if possible (encyclopaedias, reference books, dictionaries);
  - find out and analyse some related sources that deal with similar information.
- Check whether the website interface is tailored to its owner's needs.
- Know the possibilities of browsing and navigating:

- find out whether there is a map or a page index - it makes it easier to manoeuvre through the pages;
- examine the length of pages - it is burdensome if they are too long
- check whether navigation elements can be found on each page (keys, bottom or top navigation bars);
- make sure whether navigation is simple (easy multi-level navigation, a link to a higher/home page on every page); search tools make it easier to browse the content.
- Find out what are the printing options:
  - ease of printing to the file and to the printer;
  - economical printing (alternative printout formats).
- Evaluate the page interactivity (two way communication capabilities between the end-user and the site owner):
  - FAQs;
  - evaluation / opinion forms;
  - query forms;
  - questionnaires.
- Check for the quality of the server (speed, capacity, reliability).
- Look for the counters, statistics.
- Make sure whether software standards are used (unobstructed access to pages from different browsers, for example old versions).
- Find out mirror sites.
- Ascertain whether the newest technological advances are used for information provision and enriching the offer (databases, search tools, e-mail software, etc.).

### **Useability and userfriendliness**

- Examine whether the content is well suited to the site owner's needs.
- Ascertain whether the web pages are logical and clearly divided.
- Evaluate the graphics.
- Check to see if help information is available; whether it is simple, clear and concise.
- Find out what languages are covered, whether there is an English version (it proves the authors' capabilities and competence, and allows for worldwide access).
- Evaluate communication capabilities between the end-user and the website owner:
  - efficiency;
  - reliability;
  - speed of information flow;
  - quality of forms and questionnaires;
  - level and language of communicating.
- Check whether the site is accessible to sight impaired people.

### **Cost**

- Make sure whether the service is free or fee-based.
- Consider what is more important (sometimes fee-based services are of better quality).
- Check whether a fee-based service offers any enhanced features.
- Look for any promotions, reductions for a given category of users.

### **Objectivity of content**

- Know the organisations sponsoring the web sites:
  - recognise sponsor's intention, philosophy and mission - whether it is covert;
  - identify the advertisers and the kind of advertisements - whether they are pushy, aggressive, biased;
  - determine the number of sponsoring organisations, advertisers, donors, whether they are equal.
- Check whether there are links to other competitive web sites.
- Determine whether there is a fair commentary on other pages.
- Make sure whether a balance is being maintained between different points of view;
- Recognise different points of view, the way they are being presented, and the evaluator's, i.e. your, attitude (bias, preferences):
  - applying the same evaluation criteria for print and electronic sources;
  - adjusting the assessment to one's own views and expectations.

### **Site layout and design**

- Look at the home page architecture; whether it fits on one screen.
- Decide whether a balance between the content and the form is maintained (the seriousness of content vs the humour of graphics, pompousness vs humour).
- Examine the amount of text and images (excess, insufficiency):
  - decide whether too much graphics detract from the content;
  - decide whether too much text causes confusion.
- Evaluate the professionalism and originality of graphics:
  - authorisation of form, copyright;
  - artistic references;
  - standard, automatic solutions and graphics (templates).
- See how the information is organised (divisions, subdivisions, sections):

- clear site mapping;
- clear and logical layout (chronological, geographical, logical );
- divisions headings and annotations;
- identification of subpages (headers and footers).
- Evaluate the multimedia effects on the web site.
- Make sure that crucial information stands out (address, urgent announcement):
  - type face and size (too many fonts);
  - frame design.

### **Text editing and grammatical correctness**

- Examine the text editing:
  - see how the text is organised (headings, subheadings, footnotes, bibliography);
  - check whether the rules of proper text editing have been applied: paragraphs, setting up in columns, fonts, margins, etc.;
  - see whether there is some extra blank space in the text at the end of each line;
  - find out the layout of images, charts, pictures.
- Make sure that the text is free of stylistic, grammatical, spelling and punctuation errors.

### **Technique**

The above evaluation criteria may be modified, selected and changed, since in the world of modern information technologies standards undergo change as the techniques applied develop. The most important of them, however, are such criteria as: authorship, currentness, technique, credibility, completeness, design, and correctness. They should always be taken under consideration.

### **Quality of services**

If we, as the creators of library services, chose to think not only about evaluating the web sites alone and the information they provide, but also about some additional evaluation of the quality of information service offered (for example writing the library software, printing conference materials, building web sites, conducting discussion forums, managing email accounts ), then we should apply a number of additional criteria pertaining directly to services and meeting the customer's expectations. Usually the customers evaluate the quality of our services, so they are the ones who would make this assessment. Our task would be to define criteria, then to compile them and publish in a questionnaire.

Although services, as stated above, are difficult to measure, nevertheless there are certain elements that are suitable for measurement. The bigger "technicising" of services, the easier process of evaluation. However, the human factor is perceived as more friendly and important, and here the assessment is very difficult.

Let me present a set of such universal criteria:

- accessibility of the service (convenience, speed of delivery);
- informing about the service (accuracy and simplicity);
- the level of customer service provided (competence, kindness);
- trustworthiness and honesty (reliability of staff members);
- accountability;
- the safety of service provision (eliminating the risk);
- material infrastructure of the service (materials, tools, software); professionalism.

### **Selected portals and library services**

The review of worldwide portals and information services designed for and focused on librarians shows how diversified they are. Even though they usually focus on one type of user, a librarian or an information provider, the goals of each of these services are different. When the creators of services state the purpose for which their services were created and define the mission, it is easy to assign a category to such a service and organise it, so that it could be a useful tool for librarians. However, when there are no such statements, , the problem of analysing on one's own emerges, which is time-consuming, and sometimes the final conclusion is that the service is not useful. According to the survey (Clyde), the best web sites are the ones that precisely define the user, have a definite goal (mission statement), and pursue the adopted strategy.

Library resources on the net are plentiful, and it requires some effort to organise them, since the services and information are often interrelated and get mixed up. Hence the emerging terminological problems. It is not always clear what should be called a library service, a portal, a vortal, or a virtual library.

### **General portals for librarians:**

- ALA URL: <http://www.ala.org/>
- BSZ - Bibliotheksangebote im Internet URL: <http://www.bsz-bw.de/bibldienste/>
- IFLA URL: <http://www.ifla.org>
- Internet Library for Librarians URL: <http://www.itcompany.com/info retriever/>

- IPL Services for Librarians URL: <http://www.ipl.org/svcs>
- LIB! Librarians and Librarianship URL: <http://members.aol.com/dcrof/lib/>
- LibraryHQ.com URL: <http://www.libraryhq.com/>
- Library Link URL: <http://www.emeraldinsight.com/librarylink/>
- LibrayWorld URL: <http://www.libraryworld.co.uk/>
- NordInfo, Finland URL: <http://www.nordinfo.helsinki.fi/index.htm>

### **Job opportunities for librarians:**

- ALA URL: <http://www.ala.org/education/>
- Library Job Postings URL: <http://webhost.bridgew.edu/snesbeitt/libraryjobs.htm>
- Lisjobs.com URL: <http://www.lisjobs.com/>
- LITA Jobs in Library URL: <http://www.lita.org/jobs/index.html>
- SLA Career Service Online URL: <http://sla.jobcontrolcenter.com/ccn/sla/>

### **Information resources for librarians:**

- BUBL Information Service URL: <http://bubl.ac.uk> (British centre for scientific information)
- Librarians' Index to the Internet URL: <http://www.lii.org/> (a list of information sources useful in libraries; created and assessed by librarians)
- LibrarySpot URL: <http://www.libraryspot.com/> (US service, partly commercial)
- Library Land - Index to Resources for Librarians URL: <http://sunsite.berkeley.edu/LibraryLand/>
- The Virtual Library - Libraries and Information URL: <http://vlib.org/InformationManagement.html>

### **News and updates for librarians:**

- Information Today URL: <http://www.infotoday.com/>
- LISNews URL: <http://www.lisnews.com/>

### **Lists of libraries:**

- Australian libraries gateway URL: <http://www.nla.gov.au/libraries/>
- European public libraries URL: <http://dSPACE.dial.pipex.com/town/square/ac940/eurolib.html>
- Gabriel URL: <http://www.kb.nl/gabriel/en/>
- Hytelnet URL: <http://www.lights.com/hytelnet/>
- Libweb URL: <http://sunsite.berkeley.edu/Libweb>
- LibDex - The Library Index URL: <http://www.libdex.com/>
- National Library Catalogues Worldwide URL: <http://www.library.uq.edu.au/natlibs/>
- Japan Libraries URL: [http://www.libra.titech.ac.jp/libraries\\_Japan\\_e.html](http://www.libra.titech.ac.jp/libraries_Japan_e.html)
- School Libraries on the Web URL: <http://www.sldirectory.com/>
- The WWW Library Directory URL: <http://www.webpan.com/msauers/libdir/>

### **Library web resources directories on portals:**

- Google URL: <http://directory.google.com/Top/Reference/Libraries/>
- Yahoo URL: <http://dir.yahoo.com/Reference/Libraries/>

The above web-based library information services had been checked for their usefulness to librarians, and it turned out that the most valuable resources were built in the U.S., the U.K. and Germany. They have been created and maintained by the staff of library institutions and organisations, and also by commercial firms.

### **Library Link, U.K.**

URL: <http://www.emeraldinsight.com/librarylink/>

A British commercial portal sponsored by Emerald, The Management Research Database, created for librarians and information specialists. It specialises mostly in the management of resources, information and institutions, as well as in the dissemination of cutting-edge information technologies. It has been operating for over eight years, and its mission is to provide librarians with professional information. This portal makes available in a limited scope the journal databases comprising journals published by Emerald, some library journals in full version and tables of content for many others, information on workshops and conferences, on information technologies, and the latest news. There are eight members on the editorial staff, all highly qualified information workers - lecturers and experienced information professionals coming from different countries. This portal does not place advertisements; it sells its products - databases and printed journals. Its especially valuable feature is providing access to full-text articles on library management.

Address: MCB UP Ltd 60/62 Toller Lane, Bradford, England, BD8 9BY, tel: +44(0)1274 777700, fax: +44(0)1274 785200.

### **LibraryHQ.com, US**

URL: <http://www.LibraryHQ.com>

A US portal for librarians developed and managed by Katharine Garstka, who has worked in American libraries and for IT firms Intergraph Corporation and Sirsi Corporation. This portal contains library web resources, classified ads (find a job, buy and sell), the professionals database, a discussion forum, technologies, info on the latest titles,

conferences, news. SiteSource resources are catalogued, and they provide over 40 thousand links to library-related sites. The portal is developed by a team of librarians and education professionals under the leadership of Jim Veatch, Ph.D., former library director of Nashville State Technical Institute Library. LibraryHQ.com is a joint venture of CEA Capital Partners and Sirsi Corporation. The portal holds a limited number of banners. It also sells its products, such as: IT services, web site databases, MARC records of web sites, training courses. Its especially valuable feature is providing libraries with cutting-edge information technologies (tools for website cataloguing). Address: One Seaport Plaza, 199 Water Street, 20th Floor, New York, NY, 10038, tel.1-877-401-9535 (toll free).

### Internet Library for Librarians, US

URL: <http://www.itcompany.com/info retriever/>

A US information resources service for librarians operating since 1994 and managed by InfoWorks Technology Company, an American firm that offers new information solutions and technologies. There are 200.000 visitors to its pages and 26.000 users a month. It provides over 3000 links to library resources. The resources are grouped into three categories: Reference, Librarianship, Accessories. Especially valuable feature - rich information resources.

Address: InfoWorks Technology Company, P.O.Box 2261, 240 Executive Drive, Cranberry Twp, PA, 16066, tel. (724) 772-3403, fax: (724)772-3125.

### ALA - American Library Association

URL: <http://www.ala.org/>

The service managed by the biggest library organization in the US. Apart from describing all its activities and ventures, it gives additional information on conferences, projects, awards, journals, statistics, education, job opportunities for librarians, and networked resources. Especially valuable features - currency, reliability and completeness of library services.

Address: ALA Washington Office, 1301 Pennsylvania Avenue, N.W.Suite 403, Washington, D.C. 20004.

### NordInfo, Finland

URL: <http://www.nordinfo.helsinki.fi/index.htm>

This web site was created by The Nordic Council for Scientific Information to promote international cooperation in scientific information and documentation, and also to promote Nordic solutions worldwide. It contains news, information on organisations, libraries, grants, projects, conferences, discussion lists, a directory of databases based in Scandinavian countries. Especially valuable feature - access to Scandinavian information resources.

Address: P.O.Box 237, FIN-00171 Helsingfors, Finland, Visits: Fabiansgatan 34, tel. +358-9-1800480, fax. +358-9-1800482.

### BSZ - Bibliotheksangebote im Internet

URL: <http://www.bsz-bw.de/bibldienste/>

German information resources designed for librarians and created by the staff members of Bibliotheksservice-Zentrum Baden-Württemberg from Konstanz and Stuttgart. This information service contains the following: the latest info on librarianship, news, library statistics, discussion lists, library-related resources, databases, address directories and library catalogues, German periodicals and bibliographies. Especially valuable feature - an electronic journals kiosk (online access to journals).

Address: Bibliotheksservice-Zentrum Baden-Württemberg, Universität Konstanz, Fritz-Arnold-Straße 4a, 78457 Konstanz, tel. 07531/88-2929.

### EBIB - Elektroniczna BIBlioteka

URL: <http://ebib.oss.wroc.pl/index.html>

A Polish portal designed for librarians. It contains news, a fulltext journal (a monthly), links to the catalogues of Polish libraries, info on library law, schools, professional journals, organisations, discussion lists, Polish and worldwide library services, and conferences. It manages the website of the Polish Librarians' Association. The service is free. EBIB's editorial team consists of 25 volunteers: librarians, information professionals, and researchers. The portal has banners. It also offers fee-based services - printing of conference proceedings. Especially valuable feature - a fulltext journal with abstracts in English.

Address: Komisja Wydawnictw Elektronicznych Stowarzyszenia Bibliotekarzy Polskich, Biblioteka Narodowa, Al. Niepodległości 213, 02-086 Warsaw, tel. +22-529-29-57 or +56-611-44-17 (tel. in Torun).

### An attempt at evaluating library services\*

Criteria	Library Link, UK	Library HQ.com, US	Internet Library for librarians, US	ALA, US	NordInfo, Finland	BSZ, Germany	EBIB, Poland
1. URL	com	com	com	org	org	edu	org
2. Authorship	+2	+2	+2	+2	+2	+2	+2
3. Mission	+1	-1	+1	+2	+1	+1	+2
4. Currency	+1	+1	-1	+2	+1	+2	+1
5. Reliability	+1	+1	+1	+2	+1	+2	+1
6. Completeness	+1	+1	+1	+1	0	+2	0
7. Objectivity	0	+2	+1	+2	+2	+1	+2



8. Citation	+1	+1	+2	+2	+1	+1	+1
9. Edition	+2	+2	+1	+1	+1	+2	0
10. Design	+2	+2	+1	+1	+1	+1	-1
11. Technique	+2	+2	+2	+2	+1	+2	-1
12. Usefulness	+1	+1	+2	+1	+1	+2	+1
13. Costs	-1	-1	+2	+2	+2	+2	+2
Total	13	13	15	20	14	20	10
Grade	1	1	1,15	1,53	1,07	1,53	0,76

\* A scale of five grades, from -2 to +2, was used in the assessment.

## Polish information services

The quality of Polish web-based information services created by different types of institutions is very diversified and does not always correspond with the rank of the institution that maintains them. There is still great freedom, and even amateurishness, in producing electronic information. I think it is due to budgetary constraints and lack of training in electronic publishing and information management. Information services are often created by people who learn on their own, in a random way, and they usually copy ready-made patterns, basing on professional literature or their own observations. There are very few schools in Poland that teach how to produce, evaluate and manage information. I do not mean such reputable institutions as Polska Agencja Prasowa (Polish Press Agency) or Polska Agencja Informacyjna (Polish Information Agency), who accomplish their tasks in a professional way. However, the mere reviewing of some government web sites shows how far we are from understanding the importance of the quality of networked information provision, and how disrespectfully we treat it.

One of the reasons for the services being trashy is also the fact that electronic editing is a newly emerging branch, and we all feel qualified to produce electronic information. The technical possibilities and their accessibility make us think that everything is fairly easy and simple. The view is generally taken that creating a web-based information service does not require skills and knowledge, since even a high school student can create it. There is nothing more confusing than such a conviction, because wrongly produced information may cause financial and educational harm, or, in the case of medical information, also medical harm.

Finally, the most important reason for not following the quality standards while creating information services is not being familiar with web-accessible professional literature; it requires some effort to gain access to it.

## Information and standards

All the cutting-edge solutions connected with creating information resources that have been introduced worldwide are not unfamiliar in Poland. So let us hope the situation will change. Apparently, during the last few years, a number of standards that we can now follow have been established in other countries; see Conventions, Guidelines & Standards for Internet Resources, URL:  
<http://www.ciolek.com/WWWVLPages/QltyPages/QltyConventions.html>

These standards apply to the Internet, to the organisation and electronic editing of information and knowledge, their technological applications and their quality. Librarians should not only contribute to establishing these standards, but they should also apply them while creating their own resources. Libraries are a part of a whole educational system in which knowledge, i.e. information that has been processed, plays a key role. It is an open, unlimited system that opens a window on the world. We can see how important information is when monitoring the money that come from the budgets of various countries and organisations, and are allotted to the building of an open information society worldwide.

The application of standards involves expenses, the ones connected with employing highly qualified staff, as well as the ones connected with the use of cutting-edge technologies, and this is difficult to accomplish in Poland, although possible. Joining the European Union and making the most of all the possibilities that this integration offers, i.e. intellectual (know-how), financial, and technological possibilities, is a great chance for Poland.

Information services for librarians should be carefully created, since they will be used by information professionals and wide circles of users who enjoy the benefits of life-long education. The above paper that reviews the solutions applied worldwide may prove useful to those who perceive the quality of information as very important and worth complying with.

## Footnotes

[1] The definitions of quality and service come from the Polish Standard, PN-ISO 8402, July 1996.



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Translated by Michalina Byra