



# Library web OPACs in Pakistan: an overview

Library web  
OPACs in  
Pakistan

Khalid Mahmood

*Department of Library and Information Science, University of the Punjab,  
Lahore, Pakistan*

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## Abstract

**Purpose** – This paper aims to analyse features and functions of indigenously developed web-based catalogues of academic, special and national libraries of Pakistan.

**Design/methodology/approach** – The assessment of 16 OPACs is based on a 91-item checklist developed with the help of previous studies conducted in other countries.

**Findings** – The paper finds that indigenous web OPACs are at an initial stage of development and only offer basic facilities to their users. They do not offer facilities many OPACs in advanced countries already offer. Their shortcomings include the absence of MARC format and Z39.50 protocol, which are indispensable for shared cataloguing. A very few catalogues can accommodate non-Roman scripts like Urdu and other local languages.

**Originality/value** – The comparison of features and functions of web OPACs can be useful to understand the level of OPAC development in Pakistan. It can also be helpful for future improvements in this regard.

**Keywords** Online catalogues, Pakistan, Academic libraries, Special libraries, National libraries

**Paper type** General review

## 1. Introduction

The computerisation of libraries in Pakistan was started in the mid-1980s. Cataloguing has always been a popular area for automation in Pakistan. Some libraries use expensive imported software packages while others have developed their own in-house programs. To provide users access to library collections online public access catalogues (OPACs) have been developed that can be defined as computerised systems to catalogue and organise materials in a library. OPACs have replaced card-based catalogues in many libraries. With the advent of the twenty-first century, libraries in Pakistan have developed web-based OPACs. These are an advanced generation of traditional OPACs serving as a gateway to the resources, not only held by a particular library, but also to the holdings of other linked libraries (Harmsen, 2000). The important features of web-based OPACs are:

- Graphical user interface (GUI), which is typically thought of as a combination of windows with pull-down or drop-down menus, icons and a pointing device such as mouse or trackball to manipulate information.
- The usual features of traditional OPACs, such as storing bibliographic and sometimes full-text databases; providing direct access to a library's bibliographic database by means of a terminal or PC; providing instructional help; display of search results in readily understandable form; sometimes remote access from the library's location; information about community events; providing links to circulation files, reference help etc.; providing searches



through a variety of access points such as author, title, keyword, subject, periodical title, series, class number, ISSN or ISBN, etc.

- The ability to use hypertext links to facilitate navigation through bibliographic records.
- A move towards emulation of the appearance and search features similar to those found in search engines.
- Linking to full text when available.
- Ability to help bring a convergence in searching of all electronic information available through one interface, e.g. catalogues, CD-ROMS, internet sources etc. (Babu and O'Brien, 2000).

According to Wells (2007):

The library OPAC has at least three distinct functions. First it acts as a bibliographic database, an electronic version of the card catalogue that it replaced, acting as an index for the user in search, for example, of a particular book. As a logical extension of this, the OPAC increasingly also provides links to electronic texts, freeing the user from the necessity of physically locating material on the library's shelves. Second, it functions as a "portal" in a way not dissimilar to a library homepage, providing links to non-bibliographical data, either relating to users themselves – information about overdue books, fines, etc. – or to other library information such as opening hours. In principle this portal function could be extended indefinitely to connect to a variety of data considered to be of interest to library users. Third, the OPAC functions as a promotional artefact, advertising the presence of the library and the services it can provide, and at the same time making a statement of authority about the communicative links that are supported and facilitated (p. 387).

Despite the abundance of literature on the topic of OPACs generally, there is no documentation on library OPACs or web-based OPACs in Pakistan. This study was conducted to assess the features and functions of indigenous web-based OPACs in the libraries of Pakistan.

## 2. Methodology

The approach taken for data collection was to survey and analyse web-based catalogues accessible via the internet in Pakistan. The first task was to find out indigenous library OPACs on the internet. In the absence of an authorised web directory of such OPACs in Pakistan the author depended mainly on the Google search engine to access websites of local institutions. A list of universities and degree awarding institutions, published by the Higher Education Commission of Pakistan on its website ([www.hec.gov.pk/new/main/ourinstitutes.htm](http://www.hec.gov.pk/new/main/ourinstitutes.htm)), was also used. Once at the site, then access could be made to the library pages and finally to the web-based OPAC of that particular institution. Consequently, 16 web-based OPACs were accessed via the internet that were working properly. These comprise the subjects of the study. As this study focused on the library OPACs developed indigenously, one library, Lahore University of Management Sciences (LUMS), using American software, was not included in the study. Similarly, the following 11 OPACs of Pakistani libraries that were available through the Library of Congress Z39.50 Gateway ([www.loc.gov/z3950/](http://www.loc.gov/z3950/)) were not included:

- (1) Bahria University, Islamabad.
- (2) Hailey College of Banking and Finance, University of the Punjab, Lahore.

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- (3) Institute of Communication Technologies, Islamabad.
  - (4) Iqra University, Islamabad.
  - (5) Lahore University of Management Sciences, Lahore.
  - (6) Mehran University of Engineering and Technology, Jamshoro.
  - (7) National Library of Pakistan, Islamabad.
  - (8) National University of Computer and Emerging Sciences, Lahore.
  - (9) National University of Computer and Emerging Sciences, Union Catalog.
  - (10) Planning Commission of Pakistan, Islamabad.
  - (11) Shaheed Zulfiqar Ali Bhutto Institute of Science and Technology (SZABIST), Islamabad.

Two other libraries, whose web servers remained down most of the time during data collection, were also excluded. To examine the features and facilities of OPACs sample searches were performed. The subjects of the study comprise 12 academic libraries, three special libraries and one national library. The libraries belong to six big cities of Pakistan, i.e. Faisalabad, Gujranwala, Karachi, Islamabad, Lahore and Multan. The names of the institutions and the URLs of their web OPACs are given in Table I.

The next step was to decide on the items for evaluation and make up a checklist. The author wished to adopt an evaluation checklist that was already familiar to, and generally accepted by, library and information science professionals. Cherry (1998) developed guidelines to evaluate OPAC display designs for web-based OPACs in Canadian academic and public libraries. This checklist was limited to four aspects of display design and covered labels, layout, text and instructional information. It is worth saying that Cherry's guidelines are the most popular and frequently applied guidelines (e.g. Herrero-Solana and Moya-Anegon, 2001). This list, does, however, lack some substantial features of web-based OPACs such as search types, search methods, provision for exporting/downloading retrieved records, links to Z39.50 and external e-sources. Babu and O'Brien (2000) developed a checklist more pertinent to the functions and capabilities of present day web-based OPACs. The checklist covers interface and searching capabilities such as search types, search strategies, access points, display options, entry structure, external links, services/facilities, output capabilities, and layout. Surprisingly, this checklist pays no attention to display aspects such as labels, text, and instruction. With the merger of Cherry's (1998) and Babu and O'Brien's (2000) checklists, Ibrahim (2005) reproduced a rather comprehensive checklist useful for evaluating not only display designs, but also features of web-based catalogues. With minor modifications this paper reports on the use of Ibrahim's (2005) checklist to assess the features of web OPACs of libraries in Pakistan. The International Federation of Library Associations and Institution's (IFLA) (2005) guidelines for OPAC displays were also consulted in making a new checklist. This checklist (given in Table II) includes 91 items categorised into ten areas. A tick mark shows the existence of a particular feature in the catalogue.

### 3. Findings

It can be seen from the results shown in Table II that no indigenous Web OPAC has all features and facilities that are provided by the catalogues in advanced countries. Of the

**Table I.**  
List of library web-based  
OPACs in Pakistan

No.	Institution	City	Type	Web OPAC URL
1	University of Central Punjab	Lahore	Academic	library.ucp.edu.pk/online_catalouge.asp
2	Government College University	Lahore	Academic	www.thetowertech.com/gculms/search.asp
3	National Library of Pakistan	Islamabad	National	nlp.gov.pk/asp/Searchlarge.htm
4	University of the Punjab	Lahore	Academic	www.qal.org.pk/QAL_Net.php
5	United Nations Reference Library at the National University of Modern Languages	Islamabad	Academic	library.un.org.pk/isis/UN-Cat/form.htm
6	Bahauddin Zakariya University	Multan	Academic	bzu.edu.pk/library.asp
7	University of Agriculture	Faisalabad	Academic	www.uaf.edu.pk/lib.htm
8	Pakistan Agricultural Research Council	Islamabad	Special	www.parc.gov.pk/data/catalog/catalog.asp
9	National Rural Support Program, Institute of Rural Management	Islamabad	Special	http://210.56.25.21.8080/index.jsp
10	Aga Khan University	Karachi	Academic	www.aku.edu/akulibrary/bkjoursearch.asp
11	GIFT University	Gujranwala	Academic	202.147.170.2/search.php
12	Lahore School of Economics	Lahore	Academic	www.lahoreschoolofeconomics.edu.pk/catalogue.htm
13	Iqra University	Islamabad	Academic	sic.iuic.net.pk/library/
14	Khadim Ali Shah Bukhari Institute of Technology	Karachi	Academic	http://library.kasbit.edu.pk/Booksearch.aspx
15	Shaheed Zulfikar Ali Bhutto Institute of Science and Technology (SZABIST)	Karachi	Academic	zablis.szabist.edu.pk/
16	Pakistan Library Automation Group	Lahore	Special	paklag.org/paklag/webopac/

Web OPAC No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	%
<i>Search types and methods</i>																	
Offers several types of searches such as simple (basic), general, complex or advanced/expanded	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	44
Has full search capability on conventional access points, such as title, keyword, author, subject, class number, ISBN, ISSN, etc.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	100
Provision for Boolean search	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	31
Provision for truncation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	31
Provision for exact matching	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	88
Provision for phrase searching	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	81
Provision for word adjacency/ proximity	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	6
Hypertext links in full bibliographic record display	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0
<i>Search limits and strategy</i>																	
Displays search strategy	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	25
Provides examples under each type of search	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	6
Option for search history	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0
Provision for comprehensive search limits such as year, language, type of publication, location, publication status, etc.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	38
Facility for sorting records	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	6
Ranks output by relevance	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0
<i>Access points</i>																	
Author	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	100
Title	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	100
Keyword	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	31
Subject heading	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	75
Keyword in title	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	100
Keyword in subject	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	75
Combined search such as author/title, author/keyword	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	56
Class number	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	56
ISBN/ISSN	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	44
Series	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	13

(continued)

**Table II.**  
Evaluation checklist of  
web OPAC interfaces

Table II.

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PROG  
42,2

Web OPAC No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	%
Barcode/accession number	✓	✓	✓		✓					✓	✓			✓	✓		50
Provides name authority control					✓					✓		✓					13
Provides subject authority control					✓												6
Supports cross-references																	0
Provision for the copy location		✓	✓		✓	✓	✓	✓	✓			✓		✓	✓	✓	63
<i>Bibliographic display</i>																	
Provision for brief (short)/long bibliographic displays or both	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				69
Different display levels	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				69
Limiting the number for the display of records (output control)																✓	6
Support for MARC formats																	0
Provision for library structured format	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				88
Labelled format	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				88
<i>Output/services/facilities/external links</i>																	
Provision for exporting/downloading of retrieved records																	0
Provision for the transmission of retrieved records through e-mail																	0
Provision for storing retrieved records				✓	✓	✓	✓	✓	✓	✓				✓	✓		6
Provision of next/previous	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓		94
Access to Z39.50																	0
Links to external sources																	0
Interface with the circulation system														✓			31
Provision for options such as ILL, renewal, reservations, etc.	✓						✓										0
Provision of online mailboxes for user comments or suggestions																	0
<i>User assistance (instructional information)</i>																	
Textual information simple, clear, free of typographical errors	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	94

(continued)

Web OPAC No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	%
Provision of online help					✓												13
Provision for procedural learning/training																	0
User-friendly, requires little staff assistance	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	100
Abbreviations avoided in textual information?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	94
Instructional information free of jargon	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	94
Provide options to the user listed near both the top and bottom of page	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	94
Provide options clearly separated from the information	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	94
Display system messages (such as error messages) by using contrasting display features (e.g.) bolding, colour	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	100
<i>Layout</i>																	
Instructions on the screen are simple, clear and inviting?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	100
Less use of technical jargon and codes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	100
Wording/terminology consistent	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	100
Layout is left justified	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	94
Search strategy is displayed near the top of the page?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	25
Related fields in the bibliographic data grouped together and separated from other data	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	81
Highlighting techniques used (bolding, font size, underline)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	100
Labels, text, and instructional information displayed in consistent locations, formats throughout the display	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	88
Call number displayed closed to the top of the bibliographic display	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	31
Provision for drop-down or pull-down menu	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	69
<i>Labels</i>																	
All variable fields labelled	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	88
All labels full words (not abbreviated)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	88
All labels free of library jargon	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	88
Labels accurate, appropriate, meaningful	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	88
All labels located to the left of corresponding fields	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	81
All labels are right justified	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	19

(continued)

Table II.

Table II.

Web OPAC No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	%
All labels separated from corresponding fields by a colon	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	31
Holding information displayed in tabular format	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	44
Other highlighting techniques used (e.g.) colour: bold	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	100
Column labels located immediately above the column of fields, i.e. no blank line	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	81
<i>Text</i>																	
Text arranged logically with related fields (author, added author)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	100
Holding location information included in the full display	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	75
Text vertically aligned and left justified	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	100
Redundant/repeated text avoided	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	100
Call number display	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	94
Circulation status information included in the full display	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	31
Copies listed in recognisable order	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	31
Provision of hypertext links in the record through:																	
Class number									✓								13
Authors									✓								19
Title									✓								19
Subjects									✓								6
Holdings									✓								13
Location									✓								0
<i>General</i>																	
Show in every display the name of the catalogue and the owning library or other organisation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	75
Has time out feature, if desired										✓							6
Explains the contents and coverage in the OPAC										✓							0
Provides log in/log off instruction, if desired	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	19
Provision to accommodate non-Roman scripts																	13
Total	52	50	54	48	59	44	42	41	51	48	41	41	30	42	36	53	
%	57	55	59	53	65	48	46	45	56	53	45	45	33	46	40	58	



91 features, 13 were not found in any Pakistani catalogue. The highest scoring OPAC was that of the United Nations Reference Library at the National University of Modern Languages, Islamabad that included 65 per cent of the tested features. This OPAC was locally developed by using Unesco's WWWISIS software (Buxton, 2006). Figure 1 shows a screenshot of the opening page of this OPAC.

The next best OPAC, having 59 per cent of the features, was developed by the National Library of Pakistan and its homepage is shown in Figure 2.

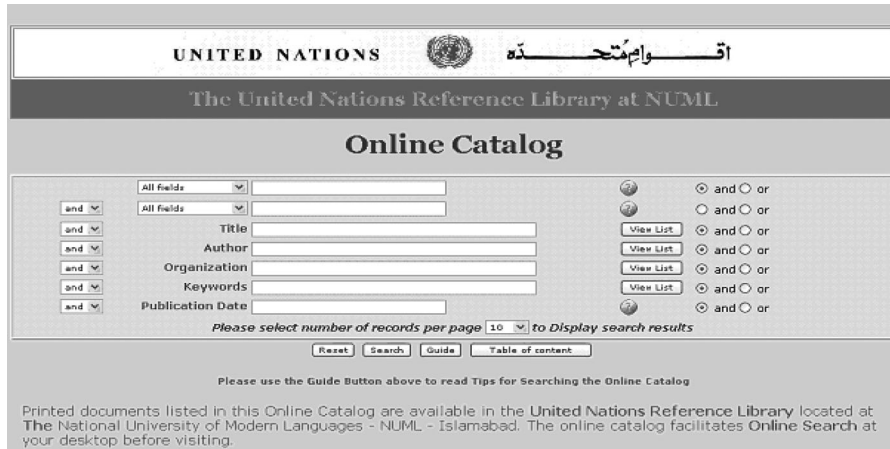


Figure 1.  
The "best" web-based  
OPAC in Pakistan



Figure 2.  
Web-based OPAC of the  
National Library of  
Pakistan

The multilingual OPAC developed by the Pakistan Library Automation Group for training and free distribution scored 58 per cent and its homepage is shown in Figure 3. The pull-down menu of language options shows that Pushto, Sindhi and Urdu are available as well as the default language of English.

### 3.1 Search types and methods

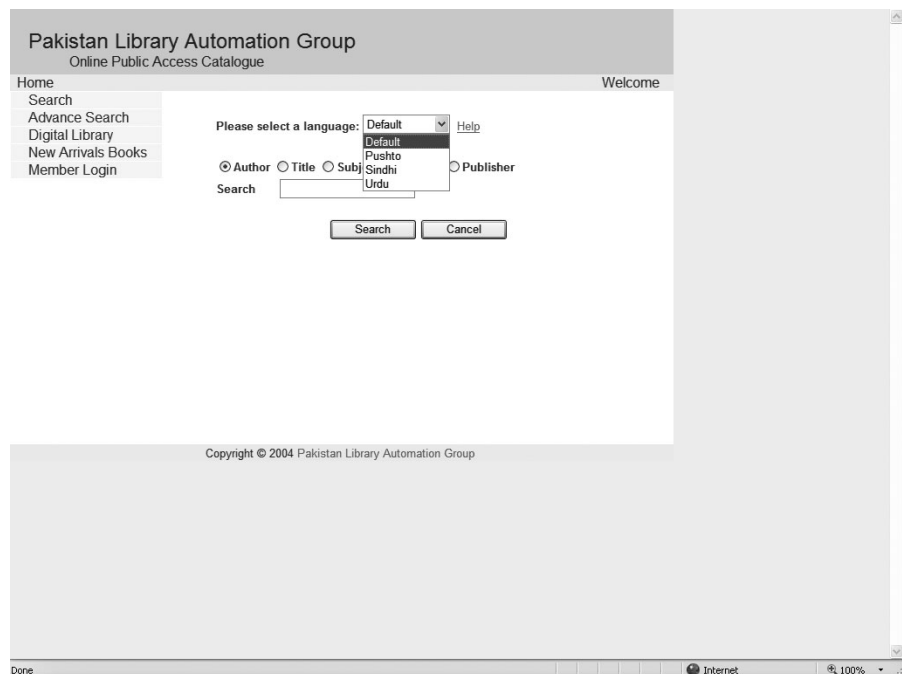
Simple, quick, general, and advanced searches are vital search features provided by web-based OPACs. In this study it was found that all the OPACs provided search facilities using conventional access points but only 44 per cent offered various other levels of searching. Exact matching and phrase searching are very common but Boolean and truncation facilities are rare. Only one OPAC offers proximity search facilities. Hypertext links are not found in any of the OPACs surveyed.

### 3.2 Search limits and strategy

Provision for comprehensive search limits such as year, language, type of publication, location, publication status, etc. is poor (38 per cent). Only 25 per cent of the OPACs display the search strategy during searching. Provision of examples and record sorting is found only in one OPAC each. No OPAC displays search history and record ranking by relevance.

### 3.3 Access points

All surveyed catalogues offer author, title and keyword in title as access points for searching. Other more popular access points include subject headings (75 per cent),



**Figure 3.**  
Homepage of the  
web-based OPAC of the  
Pakistan Library  
Automation Group

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keyword in subject (75 per cent), class number (56 per cent) and accession number (50 per cent). Combined search facility is provided by 56 per cent of the OPACs. The poorest frequency is found to be in provision of name and subject authority control and cross-references. Copy location information is provided in 63 per cent of the OPACs surveyed.

### *3.4 Bibliographic display*

Most of the OPACs display bibliographic records according to a locally structured labelled format, and 69 per cent of the catalogues offer different display levels, i.e. short and long. Only one catalogue offers output control, i.e. limiting the number for display of records. It was surprisingly found that no catalogue was available following the MARC standard.

### *3.5 Output, services, facilities and external links*

Most of the surveyed catalogues (94 per cent) offer next/previous option for record output. Only 31 per cent of the catalogues have an interface with the circulation system. Only one OPAC provides a facility to store retrieved records. Facilities that are completely non-existent in Pakistani OPACs include the export of retrieved records, transmission of records through e-mail, access to Z39.50, links to external sources, options for interlibrary loan, renewal, reservations, and provision of online mailboxes for comments or suggestions.

### *3.6 User assistance (instructional information)*

Most of the OPACs surveyed are simple, clear and free of typographical errors, and have textual information on their user interfaces (94 per cent). There is consistency in the surveyed catalogues to offer user-friendly interfaces, requiring limited staff assistance, and free of jargon and abbreviations. On the other hand, they lack online help or tutorials.

### *3.7 Layout, labels and text*

Screen instructions of all OPACs are clear, free of jargon and consistent in wording. Related fields are grouped together and highlighting techniques (colour, bold, italic, etc.) are also used. Labels, text, and instructional information are displayed in consistent locations and formats throughout the display. Labels in most of the catalogues are also clear and user-friendly. Provision of hypertext links in records is rare.

### *3.8 General points*

Most of the catalogues (75 per cent) show in every display the name of the catalogue and the owning library. Time out and log in/log out features are very rare. Only two OPACs can accommodate non-Roman scripts, i.e. Urdu and other regional languages.

## **4. Conclusion**

This study shows that libraries in Pakistan are at the initial stage of developing web-based catalogues. Although the indigenous OPACs offer basic facilities, the evaluation with an international checklist revealed their shortcomings and the under-utilisation of services offered by the state-of-the-art web technology. It is

interesting to note that many of the findings of the present study are similar to that of another study conducted in India (Babu and Tamizhchelvan, 2003). The study highlights the absence of MARC format and Z39.50 protocol, which are necessary for shared cataloguing. Due to lack of training and awareness for librarians MARC standards are not well-known in Pakistan. A more recent study of OPACs in Indian academic libraries shows that bibliographic records now follow MARC standards (Kapoor and Goyal, 2007). Provision of Urdu and other local scripts is a good sign in the web-based OPAC but it is found only in a very small number of those surveyed. As Pakistani libraries have local language collections in a reasonable size, the accommodation of non-Roman scripts is indispensable for future OPACs. Providing access to full-text internal and external resources is another feature that is not covered in Pakistani catalogues. Use of web-based OPACs is an area in Pakistan that needs the attention of the future library service providers as well as library and information science researchers. Studies should be undertaken to assess the use behaviour of the users of online catalogues. Their problems should be addressed in designing future OPACs. Future designers will have to incorporate recent trends in library web-based OPACs which include good relevance ranking, faceted navigation, search result clustering, breadcrumb trails, federated search, visual search, spelling correction facilities, browsing, entry vocabularies and recommender features (Antelman *et al.*, 2006; Breeding, 2007; Brisco, 2006). Library web-based OPACs in a developing country, like Pakistan, are far behind the functional improvements of online catalogues which Hildreth (1995) anticipated, i.e. natural language query expressions; automatic term conversion/matching aids; closest, best-match retrieval; ranked retrieval output; relevance feedback methods; hypertext, related-record searching and browsing; integration of keywords; controlled vocabulary; classification-based search approaches; and expanded coverage and scope.

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**Corresponding author**

Khalid Mahmood can be contacted at: [khalid@dlis.pu.edu.pk](mailto:khalid@dlis.pu.edu.pk)