Performance of OPACs in South Indian Libraries

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Abstract

The study was conducted on the various features of library automation software in general and the performance of OPACs interface features in particular. There were 141 questionnaires received from South Indian Libraries. Relative Performance Matrix applied to identify the best OPAC features and best libraries under the study.

Keywords

OPAC, Relative Performance Matrix, South India, Libraries.

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Introduction

The development of ICT and its application has seen a lot of changes in technical practices of Library and Information Centres (LICs). It has generated a number of changes in patterns of information collection, processing, storing and dissemination. The Information Processing and Retrieval made the cataloguing vast changes. The modern form is the Online Public Access Catalogue (OPAC). OPACs were first introduced in India in the early 1990s, while web OPACs appeared at the beginning of the 21st century.

Relative Research Literature

On reviewing the literature, only a few studies on OPACs in India in general and Tamil Nadu in particular have been noted. Ramesh Babu and Kaliyaperuaml (1995, 1996a, 1999) conducted a series of surveys on users' attitude towards OPACs in the British Council Library, Chennai; Madras Institute of Technology Library; Anna University, Chennai; and the Regional Engineering College, Tiruchirappalli. An (at the time) state-of-the-art research paper on the design and development of OPACs in technical libraries in Madras (now Chennai) was presented by Ramesh Babu and Kaliyaperumal (1996b). Tamizhchelvan and Ramesh Babu (2001) have examined four major Web OPACs in India. Further to this Ramesh Babu and Tamizhchelvan (2002) investigated the features of 15 Web OPACs in India.

Arant and Payne (2001) dreamt a common user interface to all the library's online information services of academic libraries and users are increasingly demanding it as a way of searching and retrieving information from the OPAC, citations from periodical indexes and full text information from electronic resources.

Jia and Cathy (2008) studied behavior of academic library users has drastically changed in recent years. Internet search engines have become the preferred tool over the library online public access catalog (OPAC) for finding information. Libraries are losing ground to online search engines. In this paper, two aspects of OPAC use are studied: (1) the current OPAC interface and searching capabilities, and (2) the OPAC bibliographic display.

Griffis, Patrick and Ford, Cyrus (2009) proposes adding keywords and descriptors to the catalog records of electronic databases and media items to enhance their discovery. The authors contend that subject liaisons can add value to OPAC records and enhance discovery of electronic databases and media items by providing searchable keywords and resource descriptions.

Yang and Hofmann (2011) described in their paper aims to identify the progress made in the efforts to model current online public access catalogs (OPACs) after the next generation catalog (NGC) in academic libraries in the USA and Canada.

Objectives

The study has been conducted with the following objectives:

- To identify the Libraries maintaining OPACs in South India.
- To study the interface features of the OPACs.
- To derive the RPM of OPACs in South India

Methodology

Based on the review of literature, a questionnaire was prepared. In this connection, the checklist of features and functions of a web OPAC interface developed by Ramesh Babu and O'Brien (2000), has also been considered. The questionnaire consists of *nine* sections such as Access Points, Subject Access, Search strategy, Bibliographic display, Conversion features, Physical features, Linguistic capabilities, User Assistance, External Links. The questionnaire was administrated among 200 libraries in South India, out of which 141 have responded and the response rate is 70.5%.

Data Analysis

Classification of Respondents by State wise in South India

The questionnaires were distributed among 200 libraries in South India, where OPACs are designed, developed and operational. Out of 200 distributed, 141 were returned, and the response rate is 70.5%. ***Table 1*** presents the data pertaining to the distribution of questionnaires and responses received from the sample.

Frequency of OPACs features

OPAC features has been grouped under nine categories and presented in the Table 2. The table shows, that available features and the number of libraries with their percentage.

Table 1
Classification of Respondents by State wise in South India

S.No.	State	Questionnaires distributed	Responses Received	Percentage
1.	Andhra Pradesh	40	20	**10.00**
2.	Karnataka	50	41	**20.50**
3.	Kerala	40	24	**12.00**
4.	Pondicherry	3	3	**1.50**
5.	Tamilnadu	67	53	**26.50**
Total		**200**	**141**	**70.50**

Table 2
OPACs features Grouped under Nine categories

S.No.	OPAC Features	Total n = 141	
		No.	**%**
	I. Access Points		
1.	Accession Number	135	95.7
2.	Author	141	100.0
3.	Title	141	100.0
4.	Keywords	121	85.8
5.	Subject Headings	98	69.5
6.	Keywords in Title	133	94.3
7.	Class Number	128	90.8
8.	ISBN/ISSN	72	51.1
9.	Series	51	36.2
10.	Place of Publication	109	77.3
11.	Publishers	122	86.5
12.	Notes/Abstracts	20	14.2
	II. Subject Access		
1.	Keywords	121	85.8
2.	Keywords in Title	133	94.3
3.	Class Number	128	90.8
4.	Subject Headings List	34	24.1
5.	In-house headings	90	63.8
6.	Combination of both 4&5	20	14.2
7.	Support Cross References	16	11.3
	III. Search Strategy		
1	Simple	134	95.7
2	Advanced	123	87.2
3.	Boolean Logic	124	87.9
4.	Truncation	67	47.5
5.	Word proximity	62	44.0
6.	Phrase Searching	55	39.0
7.	Exact Searching	105	74.5

8.	Examples under each type of search	53	37.6
9.	Search History	41	29.1
10.	Sorting records	67	47.5
11.	Ranks output by relevance	36	25.5
	IV. Bibliographic Display		
1.	Circulation display	137	97.2
2.	Location display	126	89.4
3.	Standard Bibliographic record display	111	78.7
4.	Customisable display	141	100.0
5.	Card form display	106	75.2
6.	Labeled display	98	69.5
7.	Browsing facility	92	65.2
	V. Conversion Feature		
1.	Support of MARC format	111	78.7
2.	Local structural format	141	100.0
3.	Export and download facility for retrieved records	112	79.4
4.	Transmitting of retrieved records through e-mail	62	44.0
5.	Provision for sorting retrieved records	63	44.7
	VI. Physical Feature		
1.	Frames version	49	34.8
2.	Non-frames version	92	65.2
	VII. Linguistic capabilities		
2.	Indian Languages	12	8.5
3.	Non-Roman scripts	15	10.6
	VIII. User Assistance		
1.	Provision for contextual help messages	74	52.5
2.	Provision for procedural learning/training	69	48.9
3.	Provision for online mail boxes for user comments and suggestions	34	24.1
4.	Requires little intervention by library staff	105	74.5
	IX. External Links		
1.	Link to external sources	13	9.2
2.	Link to electronic sources	17	12.1

Relative Performance Matrix (RPM)

The Relative Performance Matrix (RPM) has been employed to measure the effectiveness of various features of OPACs. The Relative Performance Matrix is for evaluating features of OPACs. RPM assessment considers how well OPAC performs relative to expectations, accounting for its circumstances and how well it performs relative to the average performance.

In order to study the Relative Performance Matrix, the various features of OPAC are grouped into nine key performance measure variables as shown above.

Key Definitions in Relative Performance Matrix

1. **Performance Relative to Expectations**: Actual percentage compared to expected percentage of OPAC users that meet or exceed minimum standards on the Palmetto Achievement Challenge Test (PACT)[5]. "Expectation" value is determined by statistically modeling the effects of intervening variables on PACT achievement.

2. **Performance Relative to Standards**: OPAC-level performance compared to average performance on PACT, measured by percentage of users meeting or exceeding minimum standards on PACT.

3. **Significantly Higher**: OPAC performance (relative to expectations and / or standards) is statistically higher than the average on the performance measure at 0.1 level of significance (two-tailed).

4. **Meets**: OPAC performance (relative to expectations and / or standards) is not statistically different than the average on the performance measure at 0.1 level of significance (two-tailed).

5. **Significantly Lower**: OPAC performance (relative to expectations and / or standards) is statistically lower than the average on the performance measure at 0.1 level of significance (two-tailed).

Matrix Interpretation Guidelines

The libraries were grouped into the following nine groups which act as guidelines for matrix interpretation:

1. Fully-capitalized asset Libraries
2. Good Libraries
3. Fail-to-Fully-Capitalized on assets Library
4. Over Achieving / Value-adding Libraries
5. Adequate Libraries
6. Laggard Libraries
7. High-Performing / Hindered Libraries
8. Hindered Libraries
9. Failing Libraries

The above stated are explained as follows:

1. Fully-capitalized asset Libraries: Libraries exhibiting significantly higher than expected performance and a significantly higher than average percentage of users meeting or exceeding minimum standards on PACT. These Libraries may overcome substantial barriers to success.

2. Good Libraries: Libraries that are expected to show high-level performance, given their circumstances, and that perform at expected levels. They exhibit higher than average performance, but do not appear to excite exceptional effort or performance beyond what one may expect. These libraries should recognize for high-level performance.

3. Fail-to-Fully-Capitalized on assets Libraries: OPACs that exceed average performance, but do not satisfy expectations.

4. Over Achieving / Value-adding Libraries: OPAC that perform well beyond expectations, but that do not significantly differ from the average performance. These OPACs typically overcome performance barriers to approximate average performance, exciting laudable levels of effort from users and librarian, and are worthy of high praise, award, and possibility additional support.

Table 3
Relative Performance Matrix for Detailed Features and facilities of OPACs
Performance Relative to features of OPAC

Performance Relative to States in South India

	Significantly Higher	**Meets**	**Significantly Lower**
Significantly Higher	***Access Points*** Accession Number Author Title Keywords Subject Headings Keyword in Title Class Number ISBN/ISSN Series Place of publication Publishers Notes/Abstracts	***Search Strategy*** Boolean logic Truncation Word proximity Phrase searching Exact searching Display search strategy Examples under each type of search Search history Sorting records Ranks output by relevance	***Bibliographic display*** Circulation display Location display Standard display Customisable display Card form display Labeled display Hypertext links Browsing
Meets	***Subject Access*** Keywords Keyword in Title Class Number Subject Heading List In-house heading List Combination of both Support Cross References	***Conversion features*** Support of MARC format Local structural format Export and download facility for records retrieved Transmission of retrieved records through e-mail Provision for sorting retrieved records	***Physical features*** Frames version Non-frames version
Significantly Lower	***User Assistance*** Provision for contextual help messages Provision for procedural learning/training Provision for online mail box for user comments and suggestions Requires little intervention by library staff	***Linguistic Capabilities*** Indian Language Non-Roman scripts	***External links*** Links to external sources Links to electronic sources

Table 4
Relative Performance Matrix for Performance of OPACs
Performance Relative to Expectations

Performance Relative to Standards

	Significantly Higher	Meets	Significantly Lower
Significantly Higher	Fully-capitalize asset Libraries (1.4% of all libraries)	Good Libraries (5% of all libraries)	Fail-to-Fully-Capitalize on assets Library (10.6% of all libraries)
Meets	Over-Achieving / Value-adding Libraries (26.2% of all Libraries)	Adequate Libraries (19.2% of all Libraries)	Laggard Libraries (23.4 % of all Libraries)
Significantly Lower	High-Performing / Hindered Libraries (5.7% of all Libraries)	Hindered Libraries (5 % of all Libraries)	Failing Libraries (3.5 % of all Libraries)

5. Adequate Libraries: OPACs that meet expectations and show performance comparable to average performance. They are neither over-nor under-achieve.

6. Laggard Libraries: While performing at levels comparable to the average, these OPACs are under-performing. These OPACs typically have favourable circumstances, but do not generate users performing at expected levels

7. High-Performing / Hindered Libraries: OPACs that show performance levels significantly below the average, but significantly higher than expected given their circumstances. These OPACs typically face substantial barriers to high-level performance, but exhibit high levels of effort and possibly, highly effective.

8. Hindered Libraries: OPACs that score significantly below the average performance, but that meet performance expectations given their circumstances. These circumstances are highly debilitating such as very high level performance, however these users and librarians do not appear successful in overcoming these hindrances. Attention should be directed toward encouraging and mitigation of performance barriers.

9. Failing Libraries: OPACs that score significantly below the average performance and significantly below expectations. There is little or no reason or excuse for such dismal performance, as the effects of unfavourable circumstances have been largely accounted for. Even accounting for performance barriers, these OPACs are under-performing.

Relative Performance Matrix has been calculated for those nine categories using Relative Performance Matrix software. The output obtained through Relative Performance Matrix is shown in ***Table 3***. Out of the nine major categories, Access Points, Search Strategy, Bibliographic display are highly significant. Most of the OPAC interfaces fulfill Subject access, conversion features and physical features. Other features such as User assistance, Linguistic capabilities and External links are with lower significance. However, a few of the interfaces perform relatively high on User assistance.

Based on the opinions on the features, the relative performance of the library are measured, as per the matrix interpretation guidelines and the detailed features belonging to each category are shown in ***Table 4.***

From the ***Table 4***, it is observed that, while 1.4% of the libraries fully-capitalize on their assets, 5% of the libraries moderately capitalize on their assets, and 10.6% of the libraries Fail-to-fully-capitalize on assets. On the other hand, while 26.2% add value to their libraries, 19.2% of the libraries adequately meet their requirements, nearly 14% of the libraries fall in the category of Hindered libraries, out of which 5.7% libraries are highly performing/Hindered on their assets.

Relative Performance Matrix: Inferences

From the application of RPM, the following inferences could be drawn:

i. Access Points, Search Strategy, Bibliographic display are considered as significantly higher performed OPAC features (***Table 3***).

ii. External links considered as least priority in OPAC features (***Table 3***). Further 'User Assistance' and 'Linguistic capabilities' are also considered as lower performance variables.

iii. Features such as 'Subject access', 'Conversion features' and 'Physical features' are met out by most of the OPAC interfaces. (***Table 3***), which infers that both higher and lower significant interfaces do meet by almost all the interfaces.

iv. Only a meager percent age (1.4%) libraries are 'fully-capitalized on assets', with higher performance standards, on other hand 10.6 % of libraries are 'fail to fully capitalize' their assets.

v. 17% of libraries meet the requirement of OPAC – highly significance.

vi. 86% of libraries meet of the required component, with relatively higher performance standards.

Conclusion

This paper presented the OPAC interface features in South India Libraries. There is much cause for optimism about the impact of the technology on information provision in countries with an initially less advanced provision - the gap can be bridged very much faster than one might think. The studies concentrate on aspects such as OPAC interface feature, display feature, search capabilities, subject access provision.

References

Griffis, Patrick and Ford, Cyrus. (2009). Enhancing OPAC Records for Discovery. *Information Technology & Libraries*, 28(4), 191-193.

Hawkins, H. G. (2001). Understanding 'Poor' Performance: Palmetto Achievement Challenge Test (PACT) Scores and Poverty, Jim Self Centre on the Future, Clemson University. *http://www.scfuture.clemson.edu/education/pact/pact2001.pdf*

Jia, Mi and Cathy, Weng. (2008). Revitalizing the Library OPAC: Interlace, Searching, and Display Challenges. *Information Technology & Libraries*, 27(1), 5-22.

Ramesh Babu, B., Kaliyaperumal, K. (1995). User behaviour towards on-line public access catalogue: a case study of Anna University (MIT) Library. *Information Technology Products of 1990s and Library and Information Centres, XX IASLIC Seminar Papers*, IASLIC, Calcutta, 123-7.

Ramesh Babu, B., Kaliyaperumal, K. (1996a). Design and development of OPACs in the technical libraries in Madras: state-of-the-art. *Library Automation and Networking: Problems and Prospects, National Seminar Papers*, Sri Venkateswara University Library, Tirupati.

Ramesh Babu, B., Kaliyaperumal, K. (1996b). Thus spake the OPAC user: quantitative analysis. In Kumar, P.S.G., Vashishth, C.P. (Eds.), *Human relations in Librarianship, 41st All India Library Conference Papers*, ILA, Delhi, 225-65.

Ramesh Babu, B., Kaliyaperumal, K. (1999). User perception of OPAC service: s case study of Regional Engineering College Library, Tiruchirapalli. In Sardana, J.L., *Libraries and Information services in the Electronic Information Era, 44th All India Library Conference*, ILA, Delhi, 358-65.

Ramesh Babu, B. and O'Brien, A. (2000). Web OPAC interfaces: an overview. *The Electronic Library*, 18(5), 316-27.

Ramish Babu, B. and Tamizhchelvan, M. (2002). An investigation in to the features of Web OPACs in India. *CALIBER 2002, INTERNET Technologies for Libraries and Information Centres, National Convention Papers*, INFLIBNET Centre, Ahmedabad, 130-38.

Tamizhchelvan, M. and Ramesh Babu, B. (2001). Web OPACs in India: a study. In Manoharan, A., Allysornam, S. & Manalan, J. (Ed.), *Modernisation of Academic Libraries: Seminar Papers*, Bishop Heber College, Tiruchirapalli, 284-90.

Yang, Sharon Q and Hofmann, Melissa A. (2011). Next generation or current generation: A study of the OPACs of 260 academic libraries in the USA and Canada, *Library Hi Tech*, 29(2), 266-300.