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# Use of Integrated Library Software: A Survey of Engineering College Libraries in Karnataka

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## Abstract

This study intended to carry out a survey of engineering college libraries that have computerized their operations and services. It provides an implicit view of the professional experiences of the engineering college librarians in computerizing their house keeping operations. Information was collected using a structured questionnaire mailed to 128 engineering college librarians, of which 102 (79.69%) were received duly filled with all the relevant information requested in the questionnaire. It was observed that 13.73% of the libraries were not automated for reasons which varied from library to library such as lack of computer facility, financial problems, lack of trained manpower and inadequate library collection. The study was limited to the automated libraries of engineering college in Karnataka which gives a status view of the software packages used by different libraries and the opinion of the librarians and library staff about the performance of the software they use. No comprehensive survey has been conducted at national or local level to reveal the status of the software and related problems faced by engineering college libraries in India. The current study, although focusing only on libraries in the Karnataka state, results could perhaps be generalized to the country as a whole and should prove useful as an indication of issues and problems with library software.

**Keywords**: Integrated Library Software (ILS), Library Automation, Engineering Colleges, College Libraries, Karnataka, India.

## Introduction

Computers are used in libraries to increase the efficiency and effectiveness of their operation and services; they have also provided information management for taking effective decisions. Development and use of information and communication technology (ICT) enable the libraries not only to offer their clientele the appropriate information available within their libraries but also gain access to catalogues of other libraries, both local and outstations (Anil Singh, 2003). Library automation in India started in the late 1970s in few specialized libraries has now reached most of the academic libraries. Today, there is a greater responsibility on the part of the library and information centers to provide the latest and timely information to their users to facilitate improving the quality of

education. This can not be achieved without each institution having an efficient library and information system at its command (Koneru, 2005). Library automation systems are elaborately designed, and crafted computer applications require considerable programming skills together with an extensive knowledge of the functional needs of libraries and standards that are applied in such systems. Software technologies used in library automation systems include database management systems, client-server architectures, search engine technology, and, increasingly, software used in web-based applications (Ravichandra Rao & Sainul, 1999).

## Review of Literature

With no doubt, much of the literature in this area speculates on the integrated library software and their effective use in libraries. It is interestingly noted that designed and developed activity of library software packages began during the mid 1980s in India, with the promotion of UNESCO's CDS/ISIS by the National Information System on Science and Technology (NISSAT). Making use of this experience, some libraries and information centers subsequently developed their own software. However, selections of suitable packages are now problematic due to lack of good and up-to-date comparative studies. Saxena and Srivastava (1998) recommend Sanjay for smaller libraries, and Suchika, Granthalaya and Libsys for larger ones (Saxena & Srivastava, 1998). Another literature provides an understanding of the challenges confronted by the NIC in the scale and scope of the deployment of e-Granthalaya. The authors' proposed end-product is a web-based online library service connecting public libraries in India and integrating library services in a "single window access". There is need for a useful model for the automation, networking and federating of resources for other groups of libraries in India (Matoria, Upadhyay & Moni, 2007).

Another survey mainly covers various aspects of library automation such as information technology infrastructure, in-house activities, information services and their application. Suku and Mini (2005) briefly describe the role of INFLIBNET Centre in accelerating the automation activities of university libraries, especially in the context of the recently introduced UGC-Infonet programme (Suku & Mini, 2005). Yogendra Singh (2003) tries to analyze the various factors that directly or indirectly affect the progress of library automation such as management issues, resources available to the libraries, level of skill of staff, availability of suitable software, and geographic location area. He also discusses the areas in which automation has taken place and why. The role of INFLIBNET has also been discussed. He concludes that those things were changing for the better as library automation in academic institutions is now being regarded as an urgent need (Yogendra Singh, 2003).

A study was conducted by Harinarayana and Raghavan (2008) who examined the comparative retrieval effectiveness of the two packages, viz., CDS/ISIS and LibSys. A set

of eight well-defined parameters were employed to compare the two packages. The result shows that neither of the two packages provides support for all the features that may be expected of ideal retrieval software. There appears to be some significant difference between CDS/ISIS and LibSys in terms of their ability to provide desirable features. There is a difference of 9.34% in the levels of performance of the two packages (Harinarayana. & Raghavan, 2008). Another study was carried out by Bansode and Periera (2008) on the status of automation in the colleges of Goa similar to that of college libraries throughout India. Libraries, librarians, and college administrators must start automation to provide effective and efficient services to users. The authors suggest that library professionals must upgrade their skills to meet the growing expectations of users from libraries. Library automation began in the late 1970s in a few special libraries and has now reached most of the university libraries. Automation has yet to be introduced to college libraries in India to solve their various problems. Many studies on library automation have been undertaken in the West, but few have been undertaken in India. The authors try to identify the status of library automation in college libraries of Goa State (Bansode & Periera, 2008).

Finally, there were many similar findings in the studies reviewed in this paper. However, we should keep in mind that difference among different studies can be attributed to different sampling methods or to the methodology adapted.

## Objectives of the Study

Objectives of the study are as follows:

To find out which integrated library software packages are being used by engineering college libraries in Karnataka;

1. To identify the influence factor for selection of library software.
2. To find out reasons behind not automating library house keeping operations.
3. Areas of computerization and the different modules & functions for which they are being used.
4. To suggest appropriate measures to be taken to enhance the use of software for improving library services.

It was observed that there is no detailed study carried out on the library software packages in the relatively large number of engineering college libraries. It was however observed that some of the libraries are well-equipped and are providing better library services to the user community including modern library software packages. This review of literature initiated some interest in the investigator to undertake the present study to collect first hand data from all engineering colleges in Karnataka and present the status of their library software. The study focuses on the adequacy of library management software and reveals the inadequacies. It also suggests measures to overcome inadequacies.

## Method

The survey is based on interviews, questionnaire, and personal visits. The opinions of librarians regarding library software were acquired using a structured questionnaire. The interview was carried out on the basis of the questionnaire. Opinions on different issues pertaining to the library house keeping operations among the respondent librarians were sought. The questionnaires were mailed to 128 engineering college libraries in the state, of which 102 (79.68%) were received duly filled with all the relevant information requested in the questionnaire. However, geographically the scope of the study was limited to colleges located in the state of Karnataka only.

A five-point scale was used to measure the opinions of the respondent librarians. Hierarchical cluster for Variables-cluster method-Ward's method, Dendogram were also used, and Chi-Square Test was used for analyzing the data.

## Analysis of Data and Discussion

### *Details of Questionnaires Distributed to Librarians and Responses Received*

The current study received 102 completed responses from librarians of engineering colleges in Karnataka, which constitutes the primary data for analysis and interpretation. The distribution of responses is shown in Table 1.

Table 1

*Details of questionnaires distributed to librarians and responses received*

| Sl.No. | Types of college | No. of questionnaires distributed | No. of questionnaires received | Percentage of responses |
|---|---|---|---|---|
| 1 | Government colleges | 2 | 0 | 0.00 |
| 2 | Private aided colleges | 11 | 9 | 8.82 |
| 3 | Private unaided colleges | 97 | 78 | 76.47 |
| 4 | University constituent colleges | 5 | 4 | 3.92 |
| 5 | Minority institutions | 13 | 11 | 10.79 |
| **Total** | | **128** | **102** | **100.00** |

Table 1 shows that 78 out of 102 are from private colleges, 11 from minority institutions, 9 from private aided colleges, 4 from university constituent colleges, representing respectively 76.47 percent, 10.79 percent, 8.82 percent and 3.92 percent of the total respondents. It may be observed that the majority of the responses are from private unaided colleges.

### *Status of Library Automation in Engineering College Libraries*

Automation may provide the means to offer new improved services to its patrons. The

automated library functions are acquisition, cataloguing, classification, circulation, serials control, bill payment, budgeting, reminders and reference services. The status of library automation in engineering colleges of Karnataka is shown in Figure 1.

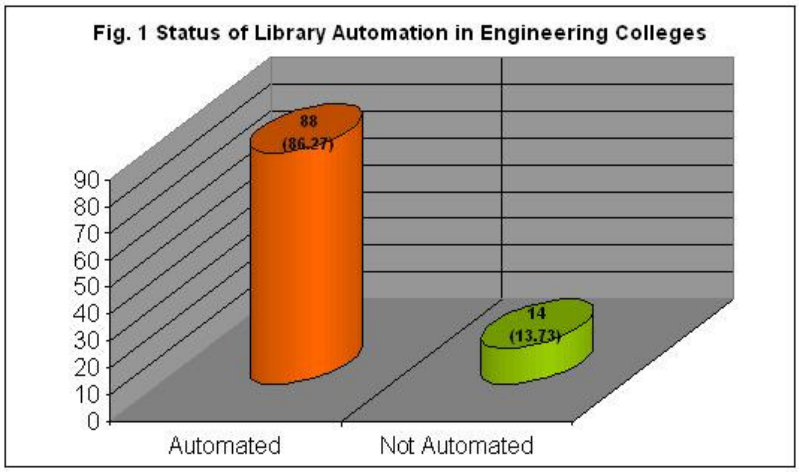



*Figure 1*. reveals that, out of 102 respondent libraries 88 (86.27%) are automated and the remaining 14 (13.73%) are not automated.

### *Influence Factor for Selection of Library Software*

To select library software for automation, librarians have to take some measures. The influence factors are summarized and presented in Tables 2 & 3.

Table 1

*Factors of influence for the selection of the library software*

| Sl. No. | Reason and measures | No. of Librarians | Percentage n=88 |
|---|---|---|---|
| 1 | Evaluation of each module | 55 | 62.50 |
| 2 | Seeing demo of the software | 50 | 56.82 |
| 3 | By reference of other college librarians | 48 | 54.55 |
| 4 | Vendor approaches | 45 | 51.14 |
| 5 | Cost effectiveness of software | 44 | 50.00 |
| 6 | software origin based | 38 | 43.18 |

**Note: Total percentage will not be hundred because responses are more than one**

The above table shows that, 55 (62.50%) respondents have given influence factor for selection of library software for evaluation of each module. 50 (56.82%) respondents have selected their library software on seeing demo of the software. 48 (54.55%) respondents are referred by the other college librarians, 45 (51.14%) respondents have selected their library software by vendor approach, 44 (50.00%) respondents selected existing software in their library because of cost effectiveness of the software. 38 (43.18%) respondents have

selected the software because of software origin based.

Table 3

*Selection of library software*

| Sl.No. | Selection of software | No. of Librarians | Percentage |
|---|---|---|---|
| 1 | By the Librarians | 69 | 78.41 |
| 2 | By the Principals | 15 | 17.05 |
| 3 | By the Management | 4 | 4.54 |
| **Total** | | **88** | **100.00** |

The above table shows that, 69 (78.41%) respondent libraries have selected library software by the librarians, whereas 15 (17.05%) respondent libraries have selected library software by the principal, followed by 4 (4.54%) respondents who felt that their library software was selected by the management.

***Reasons for not Automating the Library***

Library automation is an important step for giving better services to the users. The investigator asked the question on the reasons for delay to start automation projects in 14 libraries that have not yet started automation work. The information so collected is presented in Table 4.

Table 4

*Reasons for not automating the library*

| Sl. No. | Reasons | No. of Library | Percentage n=14 |
|---|---|---|---|
| 1 | Lack of computer facilities | 14 | 100.00 |
| 2 | Inadequate of finance | 9 | 64.29 |
| 3 | Management is not interested | 6 | 42.86 |
| 4 | Lack of trained manpower | 2 | 14.29 |
| 5 | Library collection is very less | 2 | 14.29 |

**Note: Total percentage will not be hundred because responses are more than one**

It is seen from the above table that the majority of 14 libraries were lacking computer facilities, and similarly 9 (64.29%) libraries were facing financial problems. However, 6 (42.86%) libraries' management was not interested in spending money for automation. There are 2 (14.29%) libraries which are suffering from lack of trained manpower, another 2 (14.29%) say that their library collection is insignificant.

### *Region-wise Distribution of Engineering Colleges*

The increase in availability of affordable library software, and the resulting increase in features & customization facility in ILS, the libraries in engineering colleges have started value added services through their ILS irrespective of geographical location and region. The summarized data is presented in Table 5.

Table 5

*Region-wise distribution of engineering colleges*

| Sl.No. | Region | Geographical | | | Total |
|---|---|---|---|---|---|
| | | Urban | Suburban | Rural | |
| 1 | Bangalore region | 35 (39.76) | 10 (11.37) | 5 (5.68) | 50 (56.81) |
| 2 | Mysore region | 10 (11.37) | 7 (7.95) | 3 (3.41) | 20 (22.73) |
| 3 | Belgaum region | 6 (6.82) | 3 (3.41) | 1 (1.14) | 10 (11.37) |
| 4 | Gulbarga region | 5 (5.68) | 2 (2.27) | 1 (1.14) | 8 (9.09) |
| **Total** | | **56 (63.63)** | **22 (25.00)** | **10 (11.37)** | **88 (100.00)** |

**Note: Figures given in parentheses indicate percentage of respective respondent**
**Chi-square calculated value =23.672; P< .000**

The above table shows that, 50 (56.81%) colleges are in Bangalore region, out of which 35 (39.76%) colleges are urban, 10 (11.37%) are suburban and 5 (5.68%) are rural. Similarly 20 (22.73%) colleges are in Mysore region, out of which 10 (11.37%) colleges are urban, 7 (7.95%) are suburban and 3 (3.41%) are rural. Moreover, 10 (11.37%) colleges are in Belgaum region, out of which 6 (6.82%) colleges are urban, 3 (3.41%) suburban, 1 (1.14%) rural. Finally, in Gulbarga region there are 8 (9.09%) colleges, out of which 5 (5.68%) are urban, 2 (2.27%) are suburban, and 1 (1.14%) is rural. The Chi-square calculated value 23.672; P< .000 is found significant.

### *Details about Library Software used for Library Automation*

Here the investigator has made an attempt to collect the data relating to the library software packages used by the libraries of engineering college in Karnataka coming under this study. The data so collected is analyzed and presented in Table 6.

Table 6

*Details of library software used for automation*

| Sl. No. | Name of the software | No. of libraries | Percentage |
|---|---|---|---|
| 1 | Libsoft | 32 | 36.36 |
| 2 | EasyLib | 20 | 22.72 |
| 3 | In-house | 8 | 9.09 |
| 4 | Netlib | 5 | 5.68 |
| 5 | Smart Campus | 5 | 5.68 |
| 6 | LiMS | 3 | 3.40 |
| 7 | ie-Lib | 2 | 2.27 |
| 8 | E-Granthalaya | 2 | 2.27 |
| 9 | SOUL | 2 | 2.27 |
| 10 | Libsuite | 1 | 1.14 |
| 11 | SLIM ++ | 1 | 1.14 |
| 12 | Chancellor | 1 | 1.14 |
| 13 | Pal Pup | 1 | 1.14 |
| 14 | NewGenLib | 1 | 1.14 |
| 15 | Libsys | 1 | 1.14 |
| 16 | YLAS | 1 | 1.14 |
| 17 | IOZEN | 1 | 1.14 |
| 18 | Lib-Manager | 1 | 1.14 |
| **Total** | | **88** | **100.00** |

The above table shows that, out of 102 libraries, 88 were automated, out of which 32 (36.36%) libraries are using Libsoft, while 20 (22.72%) libraries are using EasyLib. It is interestingly observed that 8 (9.09%) libraries are using in-house software, 5 (5.68%) libraries are using NetLib and 5 (5.68%) libraries are using Smart Campus. Similarly, 3 (3.40%) libraries are using LiMs software, followed by ie-Lib, E-Granthalaya, and SOUL software packages used by each 2 (2.27%) libraries. The remaining software which are single installations are Libsuite, SLIM++, Chancellor, Pal Pup, NewGenLib, Libsys, YLAS, IOZEN and Lib-Manager and represent 10.26 percent of the total respondents. It is observed from the study that a large majority of respondents are using Libsoft for library automation.

### *Integration of All Modules*

Figure 2 indicates that, 80 (90.91%) library software are integrated with all modules and 8 (9.09%) library software are not integrated to all modules.

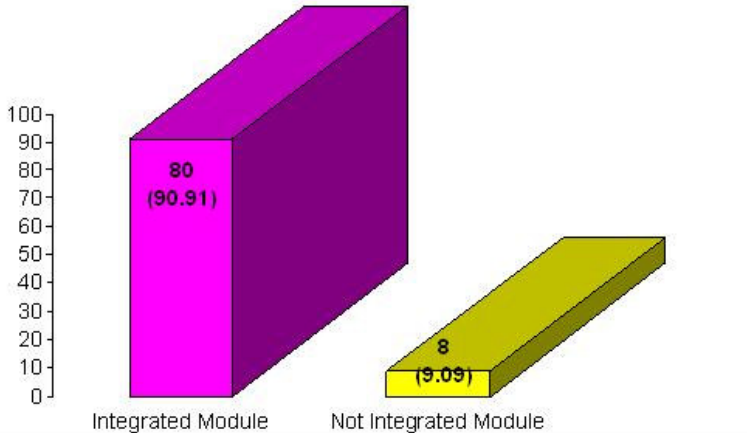



*Figure 1.* Integration of all modules

### *Status of Functioning Software Modules*

Library automation means not only entering and reading the data onto computer, but also different functional areas of library should be automated. Hence the investigator made an attempt to collect data from automating functional areas of library. The information obtained is presented in Table 7.

Table 7

*Status of functioning software modules*

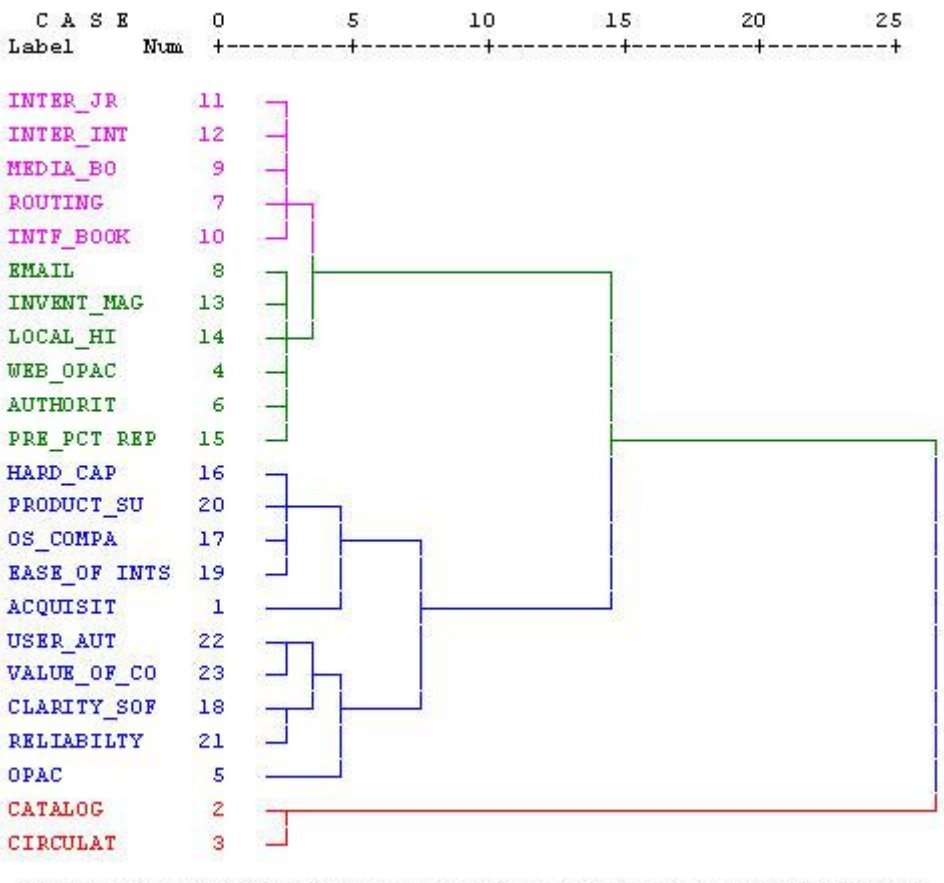
| Sl. No. | Modules | No. of Colleges | Percentage n=88 |
|---|---|---|---|
| 1 | Administrative module | 88 | 100.00 |
| 2 | Catalogue | 88 | 100.00 |
| 3 | Circulation | 88 | 100.00 |
| 4 | OPAC | 80 | 90.91 |
| 5 | Web OPAC | 23 | 26.14 |
| 6 | Acquisition | 22 | 25.00 |
| 7 | Serials control | 19 | 21.59 |

Table 7 exhibits that the Administrative module, Cataloguing and Circulation modules are functioning 100% in respondent libraries. 80 (90.91%) libraries are using OPAC module functions and 23 (26.14%) libraries are using WEB OPAC module functions. Of the other automated module functions like acquisition, 22 (25.00%) libraries are using Serials control modules 19 (21.59%) libraries are using it. The reasons could be attributed to different practices followed by respondent libraries.

***Opinion on Usage & Performance of Library Software***

Opinion among respondents on different areas of usage and performance of software modules were sought out and responses were weighted based on the scale for usage, like 5 = 30 (High usage), 4 = 25 (Good use), 3 = 20 (Fair use), 2 = 15 (Average-use) and 1 = 10 (Least usage). Scale for performance, 5 = 30 (excellent), 4 = 25 (very good), 3 = 20 (good), 2 = 15 (average) and 1 = 10 (below average) and scales were equally distributed in order to calculate weights. Then, these weights were subjected to cluster analysis (Ward's method with interval squared Euclidian method) and a dendogram was drawn which is depicted in Figure 3.

**FIGURE 3 USAGE OF LIBRARY SOFTWARE MODULE (USAGE AND PERFORMANCE)**




From the above dendogram the parameters on usage and performance of software modules are clustered into four groups. The 1st group consists of catalogue and circulation which are of high usage among the users. The 2nd group comprises user authentication, value relative to cost, reliability (crashes, lost data, etc.), and clarity of documentation in software & OPAC without web interface. The 3rd group comprises hardware compatibility, product support, operating system compatibility, ease of installation, acquisition. And the

4th group consists of routing list management, interfaces to book vendors, email notification, inventory management, and local history files. The remaining parameters (strings) consist of interfaces to serials distributors, interfaces to internet resources, media booking, OPAC with web interface, authority control, pre-packaged reports, which are independent modules. More parameters are clustered in the $4^{th}$ group, which signifies the usage of the software modules among the respondents.

## Findings and Suggestions

- It was observed that 14 libraries lacked computer facilities, and similarly 9 libraries were facing financial problems. Likewise, 6 libraries' management were not interested in spending money for automation. Only 2 libraries were suffering from lack of trained manpower, and document collection was quite inadequate.
- It was revealed that many colleges were automated around urban areas and Bangalore region due to the presence of IT influenced institutes and thus competition to get admission to these colleges are high.
- Librarians should conduct a survey of different automated libraries to exchange experiences before selecting software for their library.
- Librarians should evaluate each module before selection of library software, through receiving a demo of the software.
- Librarians should select software by cost effectiveness for their parental institution.
- To assure the greatest degree of user satisfaction and effective services, library staff members' and users' opinions should be considered in selecting foreign or local software, or developing software in-house.
- Standard library software should be chosen from among the available sources, which will facilitate the exchange of data among libraries through computer networking which can be helpful for future resource sharing.
- Majority of libraries are using local software. It may be observed that large majority of installation and used software is Libsoft among respondent libraries.
- The collected responses from the engineering college libraries revealed that popular modules among the respondents were cataloguing and circulation module.
- To be the part and parcel of library information system development process, library staff should respond to the developments in technology at a number of levels - they must keep abreast of the technologies available, they must evaluate technologies so that they can make informed decisions about using those technologies, and they must develop practical plans for implementing those technologies.
- Upgrading the core competencies of staff alongside library automation system not only enhances the professional competencies of the staff, but also thwarts the intrusion of alternative information providers into the information profession.

## Conclusion

This research work was undertaken to study the effective use of integrated library software in the engineering college libraries in Karnataka. The researcher mailed 128 questionnaires to the engineering college librarians, out of which 102 (79.69%) were responded duly filled with all the relevant information requested in the questionnaires. The findings of this study reveal that a wide variety of software is being used by the libraries of engineering colleges in Karnataka. The trends of effective use of integrated library software in the selected area of research revealed that a big number of libraries in Bangalore region were automated. This may be due to the existence of an intense competition by the authorities to attract students to their colleges. It is suggested that the other regional colleges which have not automated their library activities yet, should look forward and adopt Open Source Software (OSS). It is also seen from the study that a large majority of private unaided colleges are active in Karnataka whose management should consider library staff's opinion on the selection of the library software. The popular functions that are automated by the respondent libraries are Bar-code supported circulation, OPAC, acquisition, and classification. The other automated functions, which are not so frequently used, include serials control, references, reminders, Web-OPAC, and bills payment. This could be due to the different practices and systems prevailing in individual organizations, even though the remaining functions are important in using effective integrated library software.

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