

# CASE STUDY OF SKUAST-K, SHALIMAR-LIBRARY AUTOMATION USING SOUL SOFTWARE

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## **Abstract:**

This review article share our experiences of dealing with the process of automation of a traditional library using manual means to the automated library at the SKUASTK-Shalimar. The automation process as well as choices of ILMS at SKUASTK ;Various challenges faced during process of automation; and to share experiences of SKUAST-K that represent various technical problems and challenges that are likely to be faced by academic libraries while executing automation projects. By this study learners would learn through case study of library automation at SKUAST-K, Shalimar using SOUL Software. The learner would also study the experiences of dealing with the process of automation of a traditional library, i.e. SKUAST-K. They would also learn processes involved in academic libraries while executing automation projects.

## **1.0 Introduction**

The existence of library system in India is as old as the country itself. Over last forty years, the use of computers, information and communication technology has made the biggest changes in the library services. The libraries in India have along history, starting with the chained and closed access libraries of earlier times to the present day hybrid, digital and virtual libraries that use the latest technology for offering information services through various means .Most of the library automation projects in India started with free and easy availability of software called Computerized Documentation Services/Integrated Set of Information Systems (CDS/ISIS)developed by UNESCO in 1985 and distributed by the National Information System on Science and Technology (NISSAT) with support for training. Soon after, several integrated library management software started appearing in the Indian market that were developed by commercial enterprises and as a result of institutional efforts by organization such as DESIDOC, INSDOC, INFLIBNET, etc. From the experience of using CDS/ISIS, etc. some of the Indian libraries and information centers developed their own software. One such example was the Defense Library Management System (DELMS) developed by DESIDOC during 1988 using COBOL under a multi-user environment and implemented at the Defense Science Library (DSL). Another package was Catman,developed by the Indian National Scientific Documentation Centre (INSDOC) and implemented at the National Science Library (NSL ) in INSDOC, now known as NISCAIR. The Sanjay package was developed for small libraries by DESIDOC under a NISSAT project to popularize CDS/ISIS and to develop a model automated library. . These software can be categorized as commercial software (i.e. LibSys, NewGenLib, VTLS, Alice for Windows, Liberty and SLIM++), software with organizational support (i.e. SOUL, SANJAY, DELMS, e-Granthalaya) and open source software such as KOHA, NewGenLib, Evergreen..However, libraries and librarians keep facing challenge of acquiring the best and most suitable software for automation of their libraries in India. Academic libraries like university libraries and college libraries are making consistent efforts to automate libraries using allocated budget, so as to provide automated services such as OPAC, circulation, serial control, etc. Skuast-K Kashmir University was one of the first universities in J&K to start automation project way back in 1999-2000 with creation of database of theses and serial with the help of CDS/ISIS software.

## **2.0 Brief History of Library**

The SKUASTK Library system, the largest University Library System in the J&K after Kashmir University, originated from collection donated by a great patriotic leader Jenab Sheikh Mohammad Abdullah popularly known as Sher-e-Kashmir in 1982.The library system of Sheri-e-Kashmir university of Agricultural Sciences and Technology of Kashmir, comprises of 'Central library (CL) at the main campus Shalimar and 06 Faculty /College libraries ,ten Station libraries and 08 KVK Libraries all across the Kashmir Division . At present, the university library system is serving more than 15,000 students, 1,000 teachers and about 5,000 non-teaching staff members. Besides, the library is also open for outside users for consultation.

**3.0 Collection:**

The Sher-e-Kashmir University of Agricultural Sciences and Technology of Kashmir undertakes on priority the development of Library and Information Sources/Services at these 24 Libraries spread across the valley of Kashmir and Division of Laddakh. Efforts have been made to ensure online access to this invaluable information base through the development of the infrastructure and establishment of Campus Area Networks and Internet facility at almost each of these campuses. As of now the Library System has over 79639 accessions of books, periodical back files, theses and CD- Rom data bases. Accessions are being bar coded to automate the Library Services viz. circulation, retrieval, physical verification etc.

Skuast-K University Library has a unique collection of Manuscripts, Books, Thesis, Periodicals and Journals (hard copies and on-line) ranging almost all disciplines from to Modern Science and Technology to Ancient Indian Culture, Philosophy, Religion, Arts, Humanities. SKUASTK Library system has more than 1.5 lakhs volumes of documents, which include the following:

Document Type	No. of Document
Books	150000
Journals (Bound Vols.)	40000
Current Journals	550
Online Journals	400
E-Books	1500
Theses	12000
Manuscripts	230
UN & Govt. Collection	5000(approx.)

**Table 1: Collection @ SKUAST Library System****4.0 Automation of Library:**

The library operations, which involve functions such as charging and discharging of books, acquisition of materials, cataloguing and classification including typing of catalogue cards, and filling of cards in cabinets, were being done manually. The whole operation was quite tedious for both library staff and users because of huge collection of documents distributed across several departmental libraries, it was very difficult to locate and find the required documents by the users. In spite of the challenges automation brings, its benefits outweigh its initial discomfort. It is a known fact that automation enables easy access to library materials, and allows staff to dedicate their time to serve users and facilitate a multitude of tasks such as acquisition, cataloguing, circulation, and reference. In 1998, Central Library decided to automate its system to provide quick search facility to the users. At that time, CDS/ISIS was the only software that was freely available, easily customizable.

**4.1 Hardware**

The Skuast-k Central Library is equipped with optical fiber-based network, which provides high speed Internet and Intranet connectivity. At present, the whole premises of the Central Library is enabled with Wi-Fi and Ethernet connected to campus Wide network and Internet with broadband leased line connectivity from NKN with a speed of 1 Gbps to connect the devices in all corners of the library building. Department and faculty libraries also have Internet connectivity. The hardware used in the Central Library are given below in Table 2:

Devices	Quantity Specifications
Personal Computers	200+2GB RAM, 140-500GB HD drive, 2.6 GHz processor
Windows	7 OS
Printer	50+
Scanners	5+
Server	48 GB RAM, 2.13 GHz X2 Intel Xeon
CPU	64 bit system type, 140GB
Connectivity	948 port CISCO Switches interconnected
Core Switch and Cisco Firewall	2
Barcode Machine	5
Sato Thermal Printer	5
Barcode Scanner	5

**Table 2: Hardware @ Skuast-k Central Library**

**4.2 Software**

Software for University Libraries (SOUL) is state-of-the-art integrated library management software designed and developed by the INFLIBNET Centre, based on requirements of college and university libraries. It is user-friendly software developed to work under client-server environment. The software is compliant to international standards for bibliographic formats, networking and circulation protocols. Different standards and software used by Central Library to provide automated services to the user are as follows in table 3.

<b>Software &amp;Standards</b>	<b>Name Specification</b>
Operating System	Windows Server2008,Windows Server 2008 is Used as Server Soul software
RDBMS	MS-SQL server
Protocol NCIP	2.0 NISO Circulation Interchange Protocol published as ANSI/NISO Z39.83 in 2002.
Standards	CCF, AACR2, MARC21Communication for cataloguing rule, machine
Library Management	SOUL 2.0State-of-the-art integrated library Management Software developed by the INFLIBNET Centre

**Table 3: Software and Standards @ Skuast-k Library****5.0 Selection of Software**

The Skuast-k Central Library started using CDS/ISIS software from 1999 onwards for creating databases of theses and serials. CDS / ISIS software was highly efficient for handling small bibliographic databases, storage and search and browse facilities. The database of 5,000 theses and 1500 serials was created using CDS/ISIS. In 2003, SOUL software developed by INFLIBNET was installed in the Central Library of Skuast-k University for creation of database of books. However, due to some technical problems, data entry work could not be started. After that, D Space Software was installed in 2009 as commercial software, which was used up to 2010. Database of about 10,000documents were created using D-space, yet computerized circulation of the documents could not be started due to technical problems. As such, the Library decided to switch over to some other software. After prolonged discussions and deliberations amongst senior library staff, the SKUAST-K Library decided to purchase SOUL software for automating its library. Therefore, Library opted SOUL, which is non-commercial and low-cost software developed by INFLIBNET Centre having low maintenance costs, advance features, and co-operative attitude of personnel from the INFLIBNET Centre.

**5.1 SOUL 2.0**

SOUL 2.0 has provisions for all library operations including acquisitions, cataloguing, serial control, circulation modules and OPAC. It is suitable for academic institutions, especially university libraries, as it facilitates design and processes used in academic libraries. The SOUL software was ranked first amongst ten ILMS in terms of features and functionalities that it supports. The ILMS packages were ranked on the basis of their salient features and functionalities. SOUL software was ranked 1stwith 90 points, followed by Libman which ranked

2ndwith 84 points and LibSys was ranked 3rdwith 83 points .While NewGenLib and LibSys are designed as general library management software, Soul is designed specifically to cater to the needs of Indian academic libraries. As such, SOUL is more suitable for university and college libraries with minimum customization. Soul is available at a nominal cost in comparison of commercial software. It provides more freedom to users for generating reports of their choice and format along with template and query parameters that are quite helpful for academic libraries.

**5.2 Architecture**

The fundamental architecture used for providing the services to the different Libraries and users through SOUL software is as follows:

<b>SOUL Server at central library</b>	<b>Number</b>
Institute Library	01
Department Library	05
Faculty Library	06
Research Station	10

The SOUL server is set-up and installed at the Computer Unit of the Central Library of SKUASTK, which provides access to the institute libraries, departmental libraries, faculty libraries and users through clients installed on PCs in Client–Server architecture. Client software is installed at each workstation, which allows entering of bibliographic records of documents, updating of records, generation of reports, printing of barcode, printing of catalogue cards, and circulation of documents. Users can access the OPAC from the Central Library as well as from other libraries through their clients as well as through web interface. Bibliographic transaction and related records from different libraries are saved on the server indifferent databases whereas integrated search results are provided to the users with indication about availability of documents and its location. This integrated search approach is of immense value for the users because it saves the time and manpower. The department library, institute library and faculty libraries are given privileges to access and alter the records in database of their particular libraries for different purposes. They cannot, however, alter the records of other libraries while the staffs of Central Library has privilege to enter, maintain, and modify the data of the any library due to central processing of documents at university.

### **5.3 SOUL Software Modules**

#### **5.3.1 Acquisition Module:**

Acquisition is a complex process that includes vendor management, request of documents, approval, grant management, ordering, reminder, book receipt accessioning, invoice processing, payment processing, refund claims, account maintenance, report generation, etc. In SKUASTK Library, acquisition process is used for all the processes mentioned above. Sub-modules for gratis item, direct approval, and accessioning are frequently used for the acquisition process of the documents. Some of the problems are being taken up for appropriate solution with developers at INFLIBNET.

#### **5.3.2 Catalogue Module**

The Catalogue Module provides the following three options of cataloguing books that are already available in its stock, acquired or gifted to a library

- “Title in Process” for book acquired through acquisition module;
- “Direct entry” using Predefined Entry Sheets / Template-base Data Entry sheets/ or “Customizable Data Entry Sheets”; and
- “Export/ Import” for bulk bibliographical records.

“Title in Process” and “Predefined Entry Sheets” are frequently used to enter bibliographic data of books, theses and journals by technical Processing Section for both English and Hindi language documents. DeskJet and other Ordinary printers generate Barcode for documents, book card, label and spine through this module. Due to poor quality of the Desk Jet printed barcode, SKUAST-K library prefers to generate barcode with the help of Bartender software and Thermal printers. Since SOUL software did not have capabilities to handle Universal decimal classification, software was customized for SKUAST-K to handle UDC Classification enabling class number based search. Due to frequent power cut and breakdown, Central Library decided to print the catalogue card for each record. A new sub-module was designed to print catalogue card in the cataloguing module which is quite effective. The SOUL software was customized for library to facilitate effective handling of data entry for theses and journals.

#### **5.3.3 Serials Control Module**

Suggestion, record keeping, serial control, order placing, receiving of ordering, invoicing, reminder, payment processing, etc., are the major activities which are done by Central Library using SOUL software. Bibliographic details of more than 500 unique titles of print journals are entered in SOUL. However, problems were encountered in retrieving the data properly. SOUL Development Team of the INFLIBNET Centre resolved some of these problems and others are being attended to. Some of the problems that need rectification include subscription order format, provision for journals with seasonal frequency, i.e. winter, summer, fall, etc. Problem

in generation of schedule of journals whose frequency is fortnightly, managing life membership, pricing issues, generation schedule of serials in check in module while moving from Subscription Module to Check-in Module leaving Payment Module, etc. These problems are being attended to.

#### **5.3.4 Circulation Module**

Circulation Module provides for membership record keeping, membership transaction management, reservation of books, circulation maintenance and stock verification. The member registration and member ID generation is the fully computerized process at SKUAST-K Library. The SOUL software is being use for circulation of documents since 2010. No dues list generation, calculation of overdue charges and other report generation works are also done using SOUL software. Members can see their status online through OPAC and Web OPAC module. Reminder to users for overdue books can be sent through SOUL software, however, it requires third party integration for SMS alerts.

#### **5.3.5 OPAC**

SOUL software provides a robust Online Public Access Catalogue with simple and advanced search facility using author, title, corporate body, conference name, subject headings, keywords, class number, series name, accession number or combination of any of two or more fields of bibliographic records. Major functions provided in the module are Simple Search, Boolean Search, Advanced Boolean Search, Displaying and Downloading of records in MS Excel, PDF or MARCXML, SOUL software also supports search for the items that are under acquisition process in the library. It also provides facility to arrange the search result in different orders such as alphabetical i.e. A to Z or Z to A, ascending and descending order for numerical fields, classified order for call number search, etc., which is of immense value for quick search. Web OPAC is provided in Intranet and Internet in SKUAST-K.

#### **5.3.6 Administration Module**

Administrative Module is the master of all modules, which has provision to administrate all the modules and system settings. This module consists of three major sub modules i.e. User Settings, System Settings and Masters. The User Settings provides for setting privilege to the users while system settings are used to administer the rule, regulations, security measures and policies to run the system in proper way. Masters are acquisition master, catalogue master, circulation master, serial master, and general master. These masters are used to set the privilege and settings to the sections. Features of these modules are grouping of users based on the policy, transaction rights over the systems, transaction level security to users, various configuration settings such as labels, e-mail and other parameters related to the software use, and common master databases being used in most of the modules.

#### **6.0 Data Conversion**

In January 2012, more than 40 thousands unique titles were successfully imported from D-space to the SOUL software. However, more than 6,000 unique titles entered in LibSys during its trial were lost due to unavailability of export interface in LibSys software. At present, more than 1 lakhs unique titles and more than 1 lakhs records including multiple copies have been successfully ported into the database of SOUL software by Central Library and different allied libraries jointly. These records can be accessed through OPAC and Web OPAC with data on exact location of the document.

#### **7.0 Services**

SOUL software is used at SKUASTK Library System to provide following services:

- i. **Computerized Issue/ Return:** Automatic charging and discharging of the documents are done through SOUL software which is fast and accurate.
- ii. **Automatic Calculation of Overdue charge:** Accurate overdue charges are calculated automatically by the software which is collected by the staff at the time of return of the document.
- iii. **OPAC/ Web OPAC:** Holdings of the BHU Library System can be searched with the help of OPAC and Web OPAC. Member status can be searched with the help of member OPAC.
- iv. **CAS & SDI:** Current Awareness Service and Selective Dissemination of Information Service can also be provided with the help of SOUL software. SKUASTK Library provides these services on demand from the users.
- v. **New Arrival List:** The List of new arrivals can be generated with the help of SOUL software. SKUAST-K Library provides this service on demand from the users.
- vi. **Reports:** SOUL software provides facility to generate various types of report with the help of different modules. These reports are of immense value for the users and staff. Bibliography on a specific subject can be prepared easily using SOUL software.

**8.0 Future Planning**

SKUASTK Library System is looking for the next generation of library automation software. The SKUAST-K Library is looking forward to implementation of self-charging /discharging system, anti-theft mechanism, m-OPAC and availability of dedicated Web OPAC for institute and faculty libraries which have its own server. Implementation of RFID is the solution of both self-charging/ discharging system and anti- theft mechanism. As SKUAST-K Library has dedicated mobile site, it is the demand of the time that there should be a fast, simple, and easily accessible OPAC, i.e. m-OPAC designed especially for the mobile users.

**9.0 Summary**

There is no doubt that library automation enhances the operations and services of the library. Automation can effectively improve the library's relevance to the academic community. It also observed that library staff enjoys working in an automated environment and the patrons enjoy services rendered using an OPAC instead of card catalogue. Library automation, however, requires adequate planning as well as availability of technical support. Many challenges are faced by SKUASTK Library during its automation project such as lack of expertise, frequent advancement in the technology, continuing upgrades of hardware and software, lack of updated and standard software, local variation generally used in traditional libraries, frequent power cut, staff reluctance to use new technology, staff anxiety and lack of desire to change of software, lack of proper training to staff to apply new standards in old library, greater expectancy of user from OPAC, unsatisfactory search results and its rendering. In spite of these limitations, students, faculty and staffs are enjoying services offered by the automation library such as fast search of the holdings, correct location of the document, speed and accuracy in circulation due to implementation of barcode technology, catalogue anywhere through Web OPAC, etc.

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