Comparative Study Of SOUL 2.0 Vs SOUL 3.0: A Module Wise Analysis

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Abstract- *This article compares SOUL 2.0 and SOUL 3.0 library automation software module by module, looking at their main features, upgrades, and new functionalities. Major modifications have been made to the Information and Library Network (INFLIBNET) Centre Software for University Libraries (SOUL) between versions 2.0 and 3.0. Every new version is assessed using critical modules like Acquisition, Catalogue, Circulation, Serial Control, Administration, and OPAC/Web OPAC. The study finds that SOUL 3.0 is more in line with worldwide standards, better for users, and works with modern library technologies such as RFID and mobile access. The main objective of the study is to assist research and educational institutions decide if SOUL 3.0 is the appropriate upgrade for them in terms of operational efficiency and the distribution of digital services.*

Keywords- SOUL 2.0, SOUL 3.0, INFLIBNET, Library Automation, Integrated Library Management System (ILMS), Academic Libraries, OPAC, RFID, Library Software Comparisons, Library Technology

I. INTRODUCTION

Integrated Library Management Systems (ILMS) are responsible for the automation and streamlining of critical library functions, including acquisition, cataloguing, circulation, and user services (Thanuskodi, 2012). Software for University Libraries (SOUL), which was created by the Information and Library Network (INFLIBNET) Centre, an Inter-University Centre of the University Grants Commission (UGC), is considered to be one of the most prominent Integrated Learning Management Systems (ILMS) platforms in India. The modular architecture of SOUL, together with its user-friendly interface and conformity with international bibliographic standards, has resulted in its widespread adoption across the country's academic and research libraries (INFLIBNET Center, 2021).

Since its conception, SOUL has undergone several significant modifications, starting with SOUL 1.0 in 2000 and continuing with SOUL 2.0 in 2009 and SOUL 3.0 in 2021. Every version has produced improvements in usability, functionality, and compatibility. SOUL 3.0, the most recent version, offers thorough enhancements in strong administrative capabilities, RFID connectivity, improved OPAC functionality, and Unicode-based language compatibility (INFLIBNET Centre, 2021). To underline major developments and their consequences for contemporary library settings, this article offers a comparative module-wise study of SOUL 2.0 and SOUL 3.0.

II. INTRODUCTION TO SOUL SOFTWARE AND INFLIBNET

The program for University Libraries (SOUL) is an integrated library management program that was created by the Information and Library Network (INFLIBNET) Centre, which is an Inter-University Centre of the University Grants Commission (UGC), which is a government agency in India of India. Founded to modernize university libraries and advance information and communication technology (ICT), INFLIBNET is instrumental in encouraging library automation all throughout India (INFLIBNET Centre, 2021). Designed to meet the demands of college, university, and other academic libraries, the SOUL program fits worldwide bibliographic and metadata standards like MARC21, AACR2, and ISO-2709.

III. NEED FOR LIBRARY AUTOMATION

The need for library automation is a result of the increasing complexity and volume of information resources, the demand for digital access, and the expectations of technologically adept users. Complex operations, borrowing histories, and statistics are no longer adequately addressed by conventional manual systems. Automation facilitates integration with global knowledge networks, improves data consistency, supports real-time inventory management, and enhances resource discovery (Sharma & Singh, 2019). Furthermore, it allows libraries to implement new services, including RFID-based circulation, remote access to the online public library catalog, and mobile applications that facilitate user engagement.

IV. WHY SOUL SOFTWARE?

Designed specifically for Indian libraries, SOUL is a cost-effective, feature-rich, and standards-compliant ILMS. It is capable of supporting multilingual data entry, authority control, barcode and RFID integration, and advanced OPAC features. It is a nationwide adoption, reliable technical support, and institutional credibility, as it is developed and maintained by INFLIBNET. SOUL 3.0 has been released with a variety of sophisticated capabilities, including support for Unicode, dashboard analytics, mobile compatibility, and interaction with electronic resources. These characteristics make SOUL 3.0 a choice that is suitable for use in modern library settings (INFLIBNET Centre, 2021).

V. REVIEW OF LITERATURE

There have been a number of studies that have been carried out to explore the emergence of ILMS in academic settings as well as its effect. In his article from 2012, Thanuskodi emphasized the significance of information and communication technology (ICT) in the process of converting conventional libraries into knowledge hubs. He also stressed how well programs like SOUL automate routine tasks. Using SOUL, Patel and Patel (2020) looked at user happiness in academic libraries and found it to be advantageous for operational efficiency. Sharma and Singh (2019) looked likewise at the movement of libraries from manual to automated systems and found SOUL to be one of the most often used systems because of its scalability and adherence to world standards. They arrived at this conclusion after conducting research on the subject. Kumar and Sinha (2017) compared various open-source and proprietary ILMS platforms, including SOUL, Koha, and NewGenLib. Their study found that while SOUL is widely used in Indian academic libraries due to local support and customization, Koha offers more flexibility and community-driven development. They emphasized that selection of ILMS depends on institutional requirements and infrastructure. Singh and Mehta (2022) compared SOUL 3.0 with other ILMS regarding support for multilingual cataloguing and Unicode standards. Their findings suggested that SOUL 3.0's support for Hindi and other Indian languages is a significant advantage for regional academic libraries. Prajapati et al. (2023) provided an in-depth analysis of SOUL 3.0, identifying key improvements over SOUL 2.0 such as modern user interfaces, enhanced OPAC features, and better RFID integration. They concluded that SOUL 3.0 aligns with contemporary library needs by supporting mobile access and multilingual interfaces.

VI. OBJECTIVES OF THE STUDY

The present study aims to:

- Compare the features and functionalities of SOUL 2.0 and SOUL 3.0 across all major modules.
- Identify the enhancements introduced in SOUL 3.0 and their practical implications for library operations.
- Evaluate the role of SOUL 3.0 in supporting modern library services such as mobile access, RFID integration, and multilingual support.
- Provide insights for academic libraries considering an upgrade or migration from SOUL 2.0 to SOUL 3.0.

VII. METHODOLOGY

This research adopts a qualitative comparative content analysis methodology. Primary data sources include official user manuals and feature documentation of SOUL 2.0 and SOUL 3.0 published by the INFLIBNET Centre (INFLIBNET Centre, 2021). The comparative framework focuses on six key modules integral to library operations:

- Acquisition
- Catalogue
- Circulation
- Serial Control
- Administration
- Online Public Access Catalogue (OPAC)

The analysis was conducted by systematically comparing the functional components, system architecture, user interface features, and compliance with international standards of both versions. The outcome is presented in a tabulated format to highlight feature-wise improvements.

VIII. DATA ANALYSIS AND INTERPRETATION

Acquisition Module

This module is responsible for managing the acquisition lifecycle of library resources, from ordering to budgeting and invoicing.

Table 1
Acquisition Module

Feature	SOUL 2.0	SOUL 3.0
Budget Management	Basic budgeting system; budget allocation by subject or department	Enhanced and more interactive budgeting tools
Order Placement	Manual data entry with vendor details	Import order data using .tsv templates; bulk data entry support
Vendor Management	Basic vendor directory with order linking	Improved vendor management with editable fields and export options
Receipt & Invoice Handling	Manual receipt entry and invoice linking	Enhanced with batch import and better form navigation
Accession Number Generation	Manual or semi-automated	Auto-generation & Add Range tick box to add multiple copies (e.g., 1–100)
Data Import & Export	Limited data export formats	Supports .tsv import; accession register export in tab-separated format
Report Generation	Basic acquisition reports with limited customization	Fully customizable reports with Word/PDF export options
Spine Label & Barcode Printing	Supported with manual selection	Skip Label option for efficient label printing
User Interface & Navigation	Traditional form-based layout	Responsive UI with touch compatibility and quick navigation between modules

The Acquisition Module between SOUL 2.0 and SOUL 3.0 reveals significant advancements in functionality, automation, and user experience. While SOUL 2.0 offered a basic system with manual processes for budgeting, vendor management, order placement, and accessioning, SOUL 3.0 introduces interactive budgeting tools, bulk order placement using .tsv templates, editable vendor records, and batch import features that streamline workflows and reduce errors. Accession number generation, which was semi-automated in SOUL 2.0, is now simplified with auto-generation and range-based entry in SOUL 3.0. Data import/export has become more flexible, and report generation is fully customizable with options to export in Word and PDF formats. Additionally, spine label and barcode printing are more efficient with the skip-label feature. The user interface has evolved from a traditional form-based layout to a responsive, touch-compatible design with quick navigation across modules. Overall, SOUL 3.0 significantly enhances the efficiency, accuracy, and usability of the acquisition process, making it a robust and modern tool for library automation.

Catalogue Module

This module facilitates the organization and classification of bibliographic data and metadata, crucial for resource discovery and access.

Table 3
Catalogue Module

Feature	SOUL 2.0	SOUL 3.0
Cataloguing Standards	Supports MARC21, AACR2, MARCXML	Updated MARC fields (up to Nov. 2018 and May 2019 in progress)
Template-based Cataloguing	Default and customizable templates for various document types	Same feature retained with improved UI and easier customization
Multi-format Resource Handling	Cataloguing support for books, journals, e-resources, CDs, digital objects	Enhanced metadata handling with better form navigation
Copy Cataloguing	Supports online copy cataloguing from MARC21-supported databases	Improved integration with web and external cataloguing sources
Data Entry Interface	Conventional form-based design	Touch-compatible, responsive, customizable fonts and color settings
Multilingual UI Support	Not available	English and Hindi language options for interface

Navigation Between Forms	Basic navigation through tabs	Seamless redirection between cataloguing, reports, and related modules
Report Generation & Export	Custom reports, exportable in PDF, Excel, MARCXML	Enhanced export capabilities in multiple formats (including Word)
OPAC Integration	Catalogued items visible through OPAC	Real-time integration with enhanced Web OPAC and fast LUCENE indexing

The Catalogue Module in SOUL 3.0 demonstrates considerable enhancement over SOUL 2.0 by incorporating updated MARC fields and a more user-friendly, customizable interface. While SOUL 2.0 supported standard cataloguing practices using MARC21, AACR2, and MARCXML with basic templates, SOUL 3.0 retains these standards while allowing for more efficient metadata handling and easier navigation between forms. The improved data entry interface in SOUL 3.0 is touch-compatible, responsive, and visually customizable, which enhances cataloguing efficiency. Additionally, the software introduces multilingual support by offering English and Hindi interfaces. Copy cataloguing has been strengthened through better web integration, and catalogued data is now more effectively linked with the OPAC, offering real-time visibility and faster search through LUCENE indexing. Report generation and export capabilities have also been expanded in SOUL 3.0, supporting multiple formats including Word, which enables flexible bibliographic management and improved user experience for cataloguers and patrons alike.

Circulation Module

The circulation module handles day to day library services such as lending, returning, and managing user transactions. SOUL 3.0 introduces several enhancements over SOUL 2.0, particularly in compliance with international circulation protocols and automation.

Table 4
Circulation Module

Feature	SOUL 2.0	SOUL 3.0
Issue & Return	Standard circulation operations	Same retained with improved speed and user interface
Fine Calculation & Receipts	Manual and automated fine management	Duplicate fine receipt generation supported
Member Registration	Basic member record with manual photo upload	Camera integration for instant photo capture at registration
Alerts and Notifications	Not available	SMS and email alerts for issue, return, and reminders
RFID Integration	NCIP 2.0 protocol supported	Built-in NCIP/SIP server; no need for separate middleware to enable RFID
Circulation Reports	Custom reports exportable in PDF, Excel, Word formats	Enhanced report formats, with real-time tracking and export options
Slip/Receipt Printing	Manual or external tool-based	Built-in option for issue and return slip printing
User Interface and Workflow	Traditional UI, basic form navigation	Responsive UI, quick navigation between forms and modules
Accession Register & Label Printing	Accession and spine labels generated with basic controls	Options like label skipping, range-based printing, and spine label customization
Member Self-Service via Web OPAC	Not available	Self-registration, member login, and book request features via Web OPAC

The Circulation Module in SOUL 3.0 reflects a significant upgrade over SOUL 2.0, transforming core operations into a more efficient and user-focused experience. While SOUL 2.0 supported standard features such as issue and return, fine calculation, and basic member registration, SOUL 3.0 enhances these with faster processing, an intuitive interface, and additional services. Notable improvements include the ability to generate duplicate fine receipts, instant member photo capture through camera integration, and real-time SMS/email alerts for transactions like issue, return, and reminders. The integration of a built-in NCIP/SIP server eliminates the need for external middleware for RFID implementation, streamlining library automation further. Enhanced circulation reports now support real-time tracking

and a wider range of export options. The module also supports built-in printing of issue and return slips, along with advanced spine label features like range-based printing and skip-label functionality. Moreover, SOUL 3.0 introduces user self-service through Web OPAC, enabling self-registration, login access, and book requests, marking a major shift towards user empowerment and service automation in library environments.

Serial Control Module

Managing periodicals and serials is a critical task in academic libraries. SOUL 3.0 significantly upgrades the features available in this module, improving tracking, cataloguing, and historical record management.

Table 5
Serial Control Module

Feature	SOUL 2.0	SOUL 3.0
Subscription Management	Maintains records of journal subscriptions	Same functionality retained with a modern interface
Vendor Information & Linking	Manual vendor list with journal linking	Editable vendor profiles; easier linking with serials
Issue Receipt Tracking	Manual tracking of received/missing issues	Improved data entry navigation with real-time updating features
Claiming of Missing Issues	Supported via simple tools and alerts	Likely included with alert reminders (though not explicitly mentioned)
Binding Management	Supports binding of back volumes and generates binding reports	Enhanced binding records with improved reporting features
Budget Allocation for Journals	Supported under Acquisition module	Integrated budgeting with Serial Control through administrative dashboard
Report Generation	Export reports in PDF, Excel, Word formats	Enhanced reporting with filter and print features
User Interface & Navigation	Traditional form interface	Touch-enabled, responsive layout with customizable font and color options
Integration with OPAC	Partial; OPAC display of available serials	Integrated with Web OPAC; better visibility and search for serial titles

The Serial Control Module in SOUL 3.0 builds upon the foundational structure of SOUL 2.0 by enhancing usability, integration, and reporting capabilities. While SOUL 2.0 provided essential functions such as subscription tracking, vendor linking, issue receipt management, binding, and basic budgeting through the acquisition module, SOUL 3.0 retains these core features with an improved and responsive interface. The new version allows for editable vendor profiles and easier serial linking, streamlined data entry for tracking received and missing issues, and improved report generation with filtering and printing tools. Although the claim process for missing issues is not explicitly upgraded, it is likely supported via improved alert features. Binding management and budget integration are more seamlessly handled through the administrative dashboard. Furthermore, SOUL 3.0 introduces a touch-enabled and customizable user interface, and significantly improves integration with the Web OPAC, offering better visibility and searchability of serials to end-users. These upgrades contribute to more efficient serial management and improved access to periodical resources in the library.

Administration Module

The administration module serves as the control center of the ILMS, managing user access, policy settings, and system configurations. SOUL 3.0 offers a more centralized and secure administrative environment compared to SOUL 2.0.

Table 6
Administration Module

Feature	SOUL 2.0	SOUL 3.0
User Role Management	Supports creation of user accounts and assigning access rights	Retained and refined with improved GUI and faster processing
System Configuration	Basic customization of modules and system behavior	More interactive interface with better parameter settings
Backup and Restore	Manual and scheduled backups supported	Likely improved with faster export/import options (e.g., .tsv formats)

Module Navigation	Traditional, tab-based navigation	Quick redirection between modules and responsive design
Dashboard View	Not available	Start-page dashboard displaying collection summary and membership statistics
Language Selection	Only English	Multilingual UI (English & Hindi) available
Theme and Appearance	Fixed design	Customizable fonts, colors, and responsive layout for mobile, tablet, and desktop
RFID Server Integration	NCIP 2.0 compliant, requires external server setup	In-built NCIP/SIP server — plug-and-play RFID capability
Alerts & Messaging	Not available	Email and SMS alerts configuration for issue, return, and reminders
Import/Export Settings	Limited import/export tools	Template-based import of member data, catalog data, and accession records in .tsv format

The Administration Module in SOUL 3.0 shows a marked advancement over SOUL 2.0, introducing greater system control, flexibility, and user-centric features. While SOUL 2.0 provided basic functionalities such as user account creation, system configuration, and manual backups, SOUL 3.0 enhances these with a modern graphical interface, faster processing, and improved import/export capabilities using .tsv formats. Navigation has evolved from static tab-based design to responsive, seamless redirection between modules. The addition of a start-page dashboard in SOUL 3.0 offers a quick visual overview of library collections and membership statistics. Furthermore, SOUL 3.0 supports multilingual user interface options (English and Hindi), customizable themes for font and color, and a layout that adapts to mobile, tablet, or desktop use. A major technological leap is the integration of an in-built NCIP/SIP server, eliminating the need for external setup for RFID. Enhanced communication features, such as configurable email and SMS alerts, and improved import/export settings for catalog and member data, make SOUL 3.0 a far more powerful and user-friendly administrative platform for library automation.

OPAC / Web OPAC Module

The Online Public Access Catalogue (OPAC) is the end-user interface for library discovery services. SOUL 3.0 significantly enhances this module with a responsive design, mobile integration, and advanced search options.

Table 7
OPAC Module

Feature	SOUL 2.0	SOUL 3.0
Search Options	Simple and advanced search (title, author, subject)	Retained with enhancements including faceted search by author, title, subject in one view
Search Technology	Standard search mechanism	LUCENE indexing for lightning-fast, accurate searches
Result Export Formats	Export search results to PDF, Excel, MARCXML	Same retained; faster and more responsive
User Interface	Static web interface; not mobile-friendly	Fully responsive Web OPAC compatible with mobile, tablet, and desktop screens
Member Login	Not supported	Member login enabled for personalized access
Self-Registration	Not available	Allows self-entry of membership details online
Add to Cart / Bookmarking	Not available	"Add to Cart" option for saving and printing selected records
Print Search Results	Not built-in	Print option available directly from search results
User Interface Customization	Fixed layout	Font size and color customizable as per user preference
Language Options	English only	Multilingual interface (currently English and Hindi)
Integration with Circulation Module	Basic	Fully integrated for real-time status updates and holds

The OPAC module in SOUL 3.0 reflects a significant transformation toward a more user-centric, responsive, and technologically advanced discovery tool compared to SOUL

2.0. While SOUL 2.0 provided simple and advanced search options, SOUL 3.0 enhances this with faceted search capabilities that allow users to filter results by author, title, and subject within a single view. The integration of LUCENE indexing delivers much faster and more accurate search results. SOUL 3.0 introduces a fully responsive Web OPAC interface, compatible with mobile, tablet, and desktop devices, along with new features such as member login, online self-registration, and "Add to Cart" for saving or printing records. Print options are now built-in, and the interface offers customizable fonts and colors, improving accessibility. Language support has expanded beyond English to include multilingual functionality, currently supporting both English and Hindi. The OPAC is now also tightly integrated with the circulation module, allowing users to view real-time availability and status updates of items. Overall, SOUL 3.0 transforms the OPAC from a basic search interface into a dynamic, user-interactive platform that greatly enhances the library user experience.

Key Enhancements in SOUL 3.0

SOUL 3.0 introduces several strategic improvements that significantly enhance both backend administration and user-facing services in academic libraries:

- **Modern Responsive User Interface:** A touch-compatible, device-responsive design that works smoothly on desktops, tablets, and mobiles.
- **Dashboard Analytics:** Real-time visual summaries of library collections, transactions, and user statistics for quick administrative insights.
- **Advanced OPAC Features:** Integration of LUCENE indexing for fast and accurate search results, faceted search options, and multilingual interface support (English and Hindi).
- **RFID Integration with Built-in NCIP/SIP Server:** Seamless RFID support without needing external middleware, improving circulation and inventory processes.
- **User Self-Service via Web OPAC:** Features like member self-registration, login, book requests, and "Add to Cart" for record saving and printing enhance user convenience.
- **Automated Alerts and Notifications:** SMS and email alerts for transactions, renewals, and reminders improve communication with library users.
- **Improved Data Import/Export:** Template-based bulk import/export of data in TSV format, supporting catalog, member, and accession records efficiently.
- **Multilingual Support:** User interfaces in English and Hindi, facilitating wider accessibility and regional language inclusion.
- **Camera Integration:** Instant capture of member photos during registration streamlines the user enrollment process.
- **Customizable UI Elements:** Options to change fonts, colors, and layout themes for better usability and personalization.
- **Enhanced Reporting:** Customizable, exportable reports in multiple formats (PDF, Word, Excel) for all key modules.
- **Offline Support and Helpdesk Services:** Better technical assistance through phone, email, and zonal support centers ensuring smooth operations.

These features make SOUL 3.0 more aligned with the demands of digital-age libraries, offering flexibility, automation, and user engagement tools that were either absent or limited in SOUL 2.0.

IX. APPENDIXES

- ICT- Information and communication technology
- INFLIBNET- Information and Library Network
- ILMS- Integrated Library Management System
- ILL Inter Library Loan
- MARC21- Machine-Readable Cataloging 21
- OPAC- Online Public Access Catalogue
- PDF- Portable Document Format
- RFID-Radio Frequency Identification
- SMD-Short Message Service (SMS)

X. CONCLUSION

The comparative analysis of SOUL 2.0 and SOUL 3.0 clearly demonstrates that SOUL 3.0 offers substantial improvements across all major modules, including acquisition, cataloguing, circulation, serial control, administration, and OPAC. With enhanced features such as a modern responsive user interface, RFID integration, multilingual support, advanced search capabilities, and real-time alerts, SOUL 3.0 aligns better with contemporary library needs and technological advancements. These enhancements not only streamline library operations but also improve user engagement and accessibility, making SOUL 3.0 a more efficient and future-ready library automation software. Academic and research libraries considering an upgrade can benefit from these improvements to enhance operational efficiency and better serve their users in the digital age.

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