Online Legal Information System (OLIS) Leveraging Access to Legal Information Resources in Indian Environment

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ABSTRACT

The study illustrates the functionality of Online Legal Information System (OLIS) developed to suit the Indian environment. The OLIS perpetrates numerous types of legal information resources in a single window search so that lawyers, research scholars, students and the common masses can get the information expeditiously. The OLIS is accessible online at (http://www.olisindia.in). It has provision of citation search facility, filtering of retrieved records and, online account to keep the selected record. It is also compliant with Web 2.0 tools and empowers users to contribute their own contents in the system. The architecture of the system is in five layers. Data layer handles metadata associated with the contents while storage layer manages full text contents. Network layer perpetually connects the users and source institutions to build the system. Presentation layer facilitates display of the retrieved results in clusters. Business layer consolidates the operation of the system. A number of operations such as, latest news, online help FAQ, query submission, online discussion form for help and video tutorials have been created under this layer.

Keywords: Legal information system, lawyers, courts, system design, testing, India

1. INTRODUCTION

Legal information resources in India can be categorised into primary, secondary and tertiary sources. Primary sources of information are being generated by Courts, Parliament, and State Assemblies in the form of judgments, acts, bills and rules. Secondary and tertiary sources such as, commentaries, digests, directories, directory of directories, etc., are published mainly by the Government press and corporate publishers. The Government of India has also initiated several projects such as, India Code Information System (INCODIS), Judgment Information System (JUDIS), Supreme Court Judges Library (SUPLIS), etc., in this context to organise the legal information produced by courts and allied organisations. However, systematic access to legal information could not be achieved. These projects sponsored by the Government do not have a comprehensive search facility. Unless users know exactly which contents they want to locate, it is very cumbersome to retrieve records. A free text search facility is totally ineffective. Thus, it is not possible to do legal research with the help of existing open access legal information resources which are incomplete and not at all user-friendly.

Indian courts are prodigious compared to other countries. Moreover, each court's database has to be searched separately for a comprehensive search of Indian law[1]. Besides this, state acts are difficult to locate. No complete search is available comprising state and central acts in India. Objects and reasons mentioned in bills are not easily available to the public. Moreover, none of the open access legal information systems has developed a service to search all types of contents in a single shot. A web based online legal information system is developed to plug the above lacunae. It is expected that the online legal information system (OLIS), accessible online (http://www.olisindia.in), will bridge the gap and highlight the nuances of online legal information.

2. LITERATURE REVIEW

Various studies have been conducted on the design and development of information systems. Cheng[2] postulates that to symbolise various laws and precedent, an apt fundamental logic system is required to develop information system. Another study by Shrivastava, Srivastava, Khare & Pai[3] found that legal research, in general, involves tasks such as, (i) locating primary sources of law, (ii) searching

secondary authority, and (iii) identifying non-legal sources to investigate or support information. Major legal databases in India were evaluated in the study, and it was found that there was no uniformity in contents and converge, and in the format of search results.

Thanuskodi[4] in another study conducted at Salem and Erode in Tamilnadu found that using lawyers face hurdles in finding the information using digital libraries and majority of respondents are not aware of e-resources. Kadli & Hanchinal[5] studied the information seeking behaviours of law students in two colleges of Mumbai. The study recommended that training programme should be organised on frequent basis for law students. Rai[6] in her study stated that in developed countries several initiatives have been taken related to institutional repositories to support the legal scholarship. However, in India no institution has started open access publishing through building a repository.

Henver[7] illustrates the three cycle view of science research, i.e., relevance cycle, rigor cycle and central design cycle. Relevance cycle inputs the conceptual environment input, while rigor cycle provides grounding theories and methods. Central design cycle assists in the construction and evaluation of design artifacts and processes. In another study Henver[8] opined that behavioral science and design science are two major characteristics of information systems. Zhu[9] conducted a seminal study on LexisNexis and found that legal information is entirely different from other types of resources.

Chou[10] studies the role of trusts, and the risks in information-oriented online legal services using an integrated model. Bhardwaj & Madhusudan[11] and found that (97.77 %) respondents are aware of open access resources, however only (71 %) frequently use the resources and (15.55 %) rarely use these resources. The main purpose of using these resources have been case law searching (nearly 39 %), followed by project and assignments (26.66 %) and study and update (24.44 %). Majority of respondents 40 (21.73 %) revealed that arrangement of legal information is the main hindrance they face while using these resources.

3. ARCHITECTURE OF THE ONLINE LEGAL INFORMATION SYSTEMS (OLIS)

Web based information systems deliver varied contents to a large number of heterogeneous user groups. The integration between the interface and the back-end becomes more complex. In recent days, because of web based information systems, the expectations of users have increased many folds. Therefore, design and development of online legal information system has become more complex and cumbersome. It is seen that a majority of web based information systems are being developed in an unplanned way[12].

The architecture of the system is in five layers. The data layer handles the metadata associated with the contents while storage layer mainly does full text contents management. Network layer perpetually connects the users and sources institutions to build the system. Presentation layer facilitates the users to display the retrieved results in clusters (Figure 1).
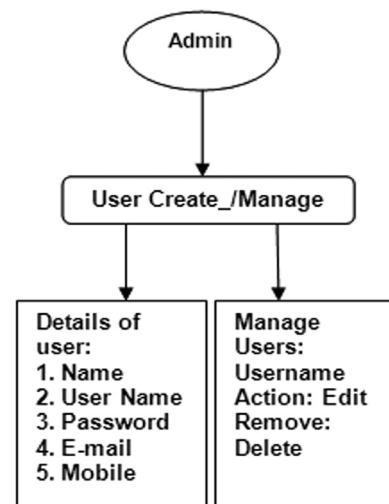

Figure 1. Data flow diagram of user creation and managing.

(a) Data Management/submission layer

A division of authorities' enables personnel to enter metadata in a variety of modules in OLIS. The ultimate authority remains with the administrator to manage the functioning of operators. In order to enter the module, operator has to enter a user ID and password. In each module some of the fields are mandatory and some are optional (Fig. 1). In addition, any number of operators can enter metadata in OLIS. The division of authority among operators has to be decided prior to starting metadata entry. Therefore, it is recommended to assign the entry of each module to individual operator. Besides, this while entering data, operator has to choose the category of information, i.e., judicial or legislative.

The administrative module (Fig. 2) entry is permissible through the admin when user name and password are entered. In order to submit documents user must login through the contribute link on the header. Once the entries are authenticated and validated, a new page will be opened to perform the data entry process. Each court and allied institutes can upload contents in OLIS. Respective institute has to choose the type of institute, type of information, type of format, i.e., text, video or audio, prior to beginning the metadata entry. Nineteen types of

records can be submitted in OLIS. The contents contributed by users are added only after approval of the administrator.

In addition, administrator supervises all activities of OLIS including the selection of open access resources, adding these resources in OLIS, updating the website, news update, online help services, etc. Moreover, policy regarding inclusion of online resources, and conducting training and help services to use OLIS, has to be handled by the manager. A team each at each High Court, District Court, Supreme Court, Tribunals and Ministries shall be solely responsible to perform this task.

Figure 2 shows the provision of various modules in OLIS. The sources of information are indicated such as judicial information origin i.e., Courts, Events, Report and world wide web (www). The source of legislative information is Parliament and State Assemblies for bills and acts. Gazette and Ministry's websites are sources of circulars, notifications and various treaties. Besides this, circulars issued and published in newspapers are indicated as well. In the end of each module a note can be added to understand the gist. The contents can be edited in the admin module. Some of the fields can be selected in each resource through combo box.
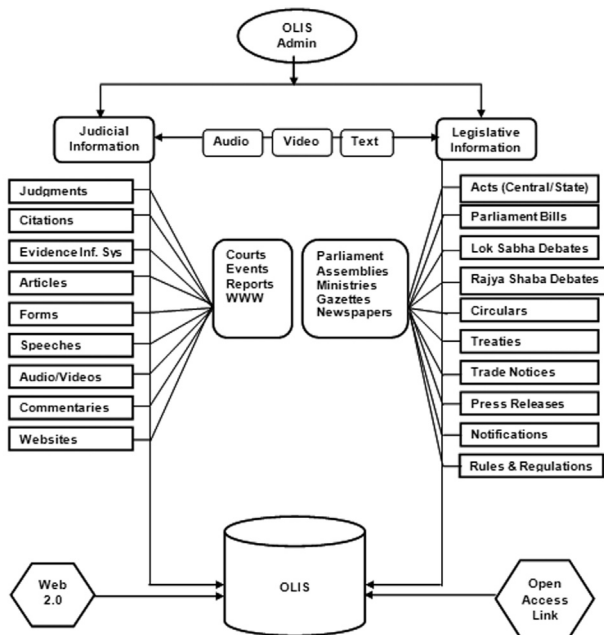

Figure 2. Architecture of the administrative module in OLIS.

(b) Presentation Layer

This layer is responsible for the interface of OLIS. Presentation layer aids the users to navigate and use various modules, helping them to access the relevant contents using search windows. The header contains the links of OLIS search, judicial

search and legislative search. In order to start a search, user may click on OLIS search. Judicial search facilitates choosing the relevant database. Similarly, in case user needs legislative information, search may be begun either by OLIS search or legislative search (Fig. 3).

(c) Business Layer

This layer is mainly responsible for the functionality of OLIS. It consolidates the operation of the system. A number of operations such as, latest news, online help FAQ, query submission, online discussion form for help and video tutorials come under this layer. To ensure best use of OLIS resources and to utilise its services, user can login into OLIS. Numbers of discussion forms, useful websites, equal citation tables, online journals,etc., are listed to provide best legal information to legal community.

(d) Storage Layer

OLIS uses the Relational Database Management System (RDBMS), with My SQL to store the metadata. For each record, different worksheets are provided and stored in separate tables. A number of tables have been created in My SQL to store the data, such as ss_cases, ss_loksabhadebate, ss_rajyasabhadebate, ss_article etc. In addition, a separate table is created for common fields in each database.

(e) Network Layer

It moves the information in the form of bit and bytes over the network medium. The functionality of network layer in OLIS shall remain hidden to the user. However, the working of this layer is very crucial for OLIS to deliver best results. This layer does not confine to information transfer over network, but a number of Web 2.0 tools applications come under its preview. The Web 2.0 tools (such as, Facebook, Twitter, Discus etc.) facilitate the users to share their views with other users. Figure 4 shows the icon of Web 2.0 tools below the metadata of content. The system has a provision to submit the contents by 21 High Courts, 10 tribunals, district courts and Supreme Court of India. In addition, institutions dealing with legislative information can also submit contents using the legislative module. Therefore, it facilitates the network of all the institutions to submit the contents in OLIS. Administrator module available at http://olisindia.in/manager/ allows the personnel of each institution to accomplish the task to develop a networked online legal information system. Furthermore, users can also contribute the articles, forms, speech, audio-video contents in the system.

4. FEATURES OF ONLINE LEGAL INFORMATION SYSTEM

In legal text, a Natural Language Query is

Figure 3. Snapshot of OLIS search form.

Figure 4. Integration of Web 2.0 tools in case law database.

one that is expressed using normal conversational syntax. The benefit of using natural language queries is that it takes less time than traditional Boolean queries. The search operators can be helpful in finding word variants or misspellings in the database. The system has sample collection of 550 full text contents including the case laws (222), articles (13), legal forms (5), speeches (11), audio-video contents (12), commentaries (5), acts (73), bills (33), Lok Sabha debates (32), Rajya Sabha debates (25), circulars (21), treaties (10), trade notices (10), press release (23), notifications (17), rules and regulations (38).

4.1 OLIS Search: Basic, Advanced and Additional

OLIS search is categorised into three sections,(i) OLIS search, (ii) Judicial search, and (iii) Legislative search. The search is further divided into three types, (i) Basic search, (ii) Advanced search, and (iii) Additional search. OLIS search is an integrated search service of all the 19 databases namely, (a) case law, (b) citation search, (c) evidence information system, (d) legal articles, (e) forms, (f) speech, (g) audio-video, (h) commentaries, (i) acts, (j) Parliamentary bills, (k) Lok Sabha debate, (l) Rajya Sabha debate, (m) circulars, (n) treaties, (o) trade notices, (p) press releases, (q) notifications, (r) rules and regulations, and (s) law related websites.

In OLIS search service, contents can be retrieved out of all the databases using a single search. Besides this, separate search for judicial and legislative information can also be performed. Judicial information contains nine databases and legislative search covers ten databases. In addition, OLIS search results sorting can be performed for a number of parameters selecting individual databases.

Sorting can be in alphabetical order of results i.e., A to Z or Z to A. Similarly, order of contents from latest to oldest and vice versa can be opted in retrieval of results. In basic search, data can be retrieved using keywords. In case law, user of basic search can confine the search to (i) Trial Court, (ii)

High Court, (iii) Supreme Court, and (iv) Tribunals. Keyword search is the main focus in such type of search. Figure 2 shows the basic search form of OLIS. Sometimes, the terms generated by the user may not appear in an OLIS index. In advance search, combination of parameters can be used to retrieve contents. Use of Boolean operators (and, or, not), and range operator can be used to cull the results. Using a combination of two keywords, improved results can be achieved. Some of the fields which are not covered in basic and advance search are included in additional search.

4.2 Access to Judicial and Legislative Information

Judicial information empowers the user to search the judicial contents. Such type of information is used in the daily routine work of the judiciary. Research by lawyers, judges and academic community is largely dependent on such information. However, it is advised to prioritise terms at the time of search[13].

4.3 Case Law Search

Judgments of all courts can be searched with a single click. All the 21 High Courts are mentioned in the drop down menu while Tribunals' dropdown list covers seven tribunals in India. Users can limit the results to party name, judge name, advocate and case note. The retrieved results can be filtered by the following fields: judge, subject, bench strength, court type, case type and advocate. The results retrieved can be downloaded and printed. Besides this, records can be sent through e-mail. A check box is provided on each record to send the individual record or list of records. The case note mentioned under each case law can be printed for one record or many in a list. Case law advance search has provision to use combination search. Using Boolean operators 'and', 'or', 'not', records can be retrieved out of the database. The fields which can be used with Boolean operators are: (i) name of parties, (ii) name of judge, (iii) name of advocate, and (iv) case note. In addition, there is provision for fields such as,(i) applicant, (ii) respondent, (iii) case no, (iv) judge name, and (v) subject. Besides this, the act referred in the judgment can also be used in the advance search to identify the relevant records. The section referred in case can also be included to search the case law. The bench strength, i.e., single bench, double bench, full bench constitutional bench or bench with chief justice, can also be used in advance search. These are displayed in the advance search window.

4.4 Citations Search

Lawyers often use citation to identify the relevant case law. Citations are mentioned in judgments by

judges as well. Work of research scholars largely depends on identifying the relevant citations. However, identifying the case law based on citation is a tedious task in legal research. Therefore, OLIS includes the citation search facility for the benefit of users. In a single search, multiple citations can be identified. The elements of search are: (i) Title, (ii) Circular no, (iii) Subject, (iv) Sub-subject, (v) Statute/act, (vi) Ministry, (vii) Department, (viii) State, and (ix) Abstract. The filtering parameters in the circular database include, (i) Subject, (ii) Ministry, (iii) Circular state, and (iv) Year. A field specific search form is also included in legislative search.

4.5 Evidence Information Search

Evidence governs the proof of facts and can have vital impact in the decision of any case. Evidence law is also concerned with quantity, quality and type of proof, to influence the decision of litigation. Many types of evidence exist such as, oral and written statements, documentary material or demonstrative evidence. In OLIS there is provision to include text, video evidence file. Information related to evidence can be searched by title of evidence, party name, witness name and note.

4.6 Legal Articles

Judges, advocates, teachers and research scholars are dependent on legal articles to understand the progress in any specific area of law. These legal articles address the conflicts in law. Sometime these legal articles propose solution to the problem. Besides this, they explore the relationship between different disciplines. However, the quality of article depends on several aspects such as, author expertise, reputation of the journal, research and analysis component, etc. These legal articles are published in magazines, journals and law reports. A numbers of online journals have started publications in open access mode. These journal articles are freely available. However, legal community is not aware of these legal articles published in open access journals. Using the special search form articles can be searched based on keyword, journal name, subject (drop down), volume and page number.

4.7 Forms

A number of forms are used in courts' proceedings. Lawyers depend heavily on these forms to perform daily work. These forms have been assigned particular numbers. Therefore, all the forms in the database can be searched using title, form number, form agency, subject and description.

4.8 Speech Database

This database contains speeches of eminent legal personalities -judges, senior advocates, teachers

and scholars. Speakers sometime refer statute and particular section. Therefore, all these parameters have been kept in mind in developing this database. Each record in the database contains abstract, event where speech held, date of speech and statutes referred in the speech. Besides this, date on which speech was delivered is also mentioned.

4.9 Audio/Video Contents

In view of the importance of multimedia contents, OLIS has provision to include audio/video contents. These audio/video contents could be a group discussion or a debate on a specific topic. Besides, this interviews of legal experts may also be included in this module since such types of contents are helpful for researchers. Search elements include, (i) title, (ii) event place, (iii) speaker, (iv) subject, (v) sub-subject, (vi) sponsor, (vii) statute referred, (viii) section, and (ix) description.

4.10 Commentaries

Commentaries have been included in OLIS. The following search parameters are given to explore the contents:(i) title, (ii) author, (iii) subject, (iv) sub-subject, and (v) contents. In addition, keyword search, date wise search are also included in the database.

4.11 Treaties Search

Treaties that help to resolve international disputes are also included in OLIS. Indian treaties with other countries such as, bilateral, multilateral, are included in OLIS. The search fields include: keyword search, title of treaty, country, date of treaty, subject, sub-subject, statute/act referred in treaty, ministry, department, state, note and description, etc.

4.12 Trade Notice Search

Trade notices are instruction issued by various Ministries and Departments. Such information is useful for traders as well as for general public. The search fields in the database include: (i) keyword, (ii) trade notice no, (iii) file no, (iv) date, (v) subject, (vi) statute/act, (vii) laws, (viii) industry, (ix) ministry, (ix) department, (x) state, and note.

4.13 Press Release Search

Press releases by Ministries and Departments are also incorporated in OLIS. This database can be searched using the following fields: (i) keyword, (ii) news title, (iii) date of press release, (iv)subject, (v) laws, (vi) state, (vii) description. Similar to other databases, Boolean operators can also be used to explore the database. It also has provision to share the results on social networking sites, and start discussion with users on a particular record using Web 2.0 tools.

4.14 Notifications

The Acts passed by Parliament after President's assent must be notified in Gazette of India. Therefore, notifications have utmost importance for lawyers to defend cases in court. Notifications are published in the Gazette which is unorganised and it is a tedious task to locate the relevant one. Identifying the appropriate search field was a difficult task. Discussions with experts in the field helped to identify the following search fields: (i) title of notification, (ii) date of notification, (iii) subject, (iv)acts, (v) Ministry and its department, (vi) Central act or state act. Besides this, each record has provision of note and description.

4.15 Acts (State and Central)

A law passed by the Parliament comes into force after President's assent. These laws are chronologically published by the Government. Since these acts are not arranged subject wise, researcher face hurdles in accessing them when required. OLIS has included central and state acts. These acts can be searched using the following fields: (i) title of act, (ii) act number, (iii) amendment under the act, (iv) law, (v) industry, (vi) state (centre or state), and (viii) note of the act.

4.16 Bills Information Search

To make any law, a bill is proposed in Parliament. A bill proposed by Government is called Government Bill. When a Member of Parliament proposes a bill, it is called a Private Bill. Bill could be pending in Parliament, passed by Parliament and withdrawn, negative, or lapsed. Besides this, bill can be ordinary bill, constitutional amendment bill, financial bill, money bill etc. Records can be searched using the following search parameters: (i) date of Presidential assent,(ii) date of enforcement, (iii) bill no, (iv) bill introduced in house, (v) bill type, (vi) bill status, (vii) Ministry in charge of bill, (viii) Member type, (ix) act state, (x) bill date, and (xi) objects and reasons.

4.17 Lok Sabha Debates

Lok Sabha is the lower house of the Parliament of India. Several suggestions are made during debates in Parliament. These debates are important for researchers to enrich their research. OLIS contains the following parameters to search the contents: (i) debate title, (ii) member name, (iii) debate type, (iv) session, and (v) note. Further, results sets can be filtered by, (i) member name, (ii) Lok Sabha debate type, and (iii) Lok Sabha Session.

4.18 Rajya Sabha Debates

Debates in the upper house of Parliament, Rajya Sabha, are equally vital for researchers. To

search this database, in basic search, seven field search elements are specified: (i) title, (ii) member participated, (iii) debate type, (iv) debate subject, (v) debate title, and (vi) description.

4.19 Rules and Regulations

Rules and regulation framed under the law are guiding lights for lawyers to defend their cases. OLIS has provision to search the contents with the following fields: (i) title of rules, (ii) rule number, (iii) date, (iv) subject, (v) sub-subject, (vi) industry, (vii) state, and (viii) note/description.

4.20 Circular Search

Ministries and Department also issue circulars from time to time. These circulars are a useful source of information, not only in court's proceedings but also in research work. Common man also needs these circulars. The elements of circulars search are: (i) title, (ii) circular no, (iii) subject, (iv) sub-subject, (v) statute/act, (vi) ministry, (vii) department, (viii) state, and (ix) abstract.

4.21 Provision of Useful Websites in OLIS

The database includes websites which give access to judicial contents and legislative contents. This database can be explored using keyword, title of website, creator of website, Uniform Resource Locator (URL) and subject of website.

4.22 Contribution of Contents by Users

OLIS has the special feature to allow users to create contents. Users can submit five types of contents in the form of legal articles, legal forms, speech, audio-video contents and websites. Judges, advocates, research scholars often write articles based on their judicial philosophy and offer their opinions. Their write-ups may help others to understand complex legal issues. Similarly, other types of contents may have tremendous impact to build relationships in different legal issues. In order to submit contents user needs to sign-in to OLIS. Subsequently, user can choose the appropriate form which has a number of fields. Some of the fields are mandatory to be filled in. However, the administrator of OLIS can edit the metadata prior to amalgamating the contents in the OLIS database.

5. WEB 2.0 TOOLS IN OLIS

Web 2.0 tools provide a virtual platform to share ideas, thoughts, spirit and to review various resources. In addition, Web 2.0 tools also help users to locate and share information among other users[14]. A study conducted by Tyagi[15] found that a large number of respondents have knowledge of social networking tools and are inclined to use them. Another study by Mahajan[16] explained that

Social Networking Sites (SNs) have a vital impact on the culturally rich India and that Web 2.0 tools are being used to raise voices against corruption.

5.1 Facebook, Twitter, Google+ and LinkedIn

OLIS has integrated these social networking tools in each module. Social networking tools applications help to share contents on Facebook, Twitter, Google+ and LinkedIn. All content pages in OLIS display icon of these tools. All content in OLIS can be shared on social networking sites using this utility. These tools have completely changed the functioning of OLIS. The respondents in the needs assessment survey were asked which SNS tools they prefer most. In view of responses in survey and keeping in mind the popularity of Facebook, Twitter, LinkdIn, and Google+, it was decided to include these tools in OLIS.

5.2 DISQUS

This tool enables users to start discussions with other users. The discussion panel is embedded in each page. Each record has the facility of interaction of this tool. Using this tool, discussions can be shared on Facebook and Twitter. Comments can be sorted by the following: (i) best, (ii) newest, and (iii) oldest comments.

5.3 Blog

A blog titled OLIS India is also built up to share information widely. The blog has a variety of features and its contents are arranged in chronological order. It also maintains archives of all posts. Posts may be categorised. RSS (Rich Site Summary) helps to track new posts on a regular basis.

5.4 Online Discussion Forums

Discussion forums have advantages in teaching, learning and research. At the same time, it is a platform to discuss new ideas with others. It has a number of benefits. On the discussion forum students can clarify all their doubts. In a class, among others, some students may not feel confident or may be unmotivated to speak. However, through online discussion forum, students can send their messages to everybody on the forum. Lawyers sometime also find it difficult to identify the appropriate rule applicable to the client's problem.

6. ONLINE HELP FEATURES

Numbers of online help features are added in OLIS for optimum use of resources. Following are the help features embedded in the system:

6.1 Online Chat

It is a medium through which users can chat online anytime, anywhere. The online chat section

helps users in technical matters as well as in learning the nuances of OLIS. A chat box is embedded in the HTML page so that any user can visit and start chat with technical staff for help.

6.2 Tutorials

Keeping of respondents' preference and its popularity, this method is adopted in OLIS for online help. Four Tutorials are developed to clear doubts and resolve the queries of users, available online at <http://www.olisindia.in/tutorial.php>. The three types of search, OLIS search, judicial search and legislative search, are elaborated in the video tutorials.

7. METADATA ENCODING STANDARD

Courts, Parliament, State Assembly and other institutes yield huge amount of legal and legislative information and management of information is a herculean task. Dublin Core (DC) metadata standard is the most popular schema to manage electronic resources. The standard facilitates high level searching of textual documents. The metadata schema has simplicity in metadata creation and maintenance. It helps in interoperability, multilingual description. Undoubtedly, the simplicity of DC eases the interoperability among repositories. In all modules, metadata entry worksheets have been made to accommodate the Dublin metadata schema[17].

8. DISCUSSION

A numbers of frequently asked questions (FAQ) are prepared so that users can benefit. The dichotomous questions cover conceptual and technical queries. These questions are prepared on anticipation. OLIS user can create an account. The registration form has some fields such as,(i) Name, (ii) User ID, (iii) Password, (iv) E-mail ID, (v) Address etc. Once the user submits the registration form, login-in system is possible. Once the user logs into the system, it is possible to save the searches in the account. User can search the system and save the list with any title. Any number of searches can be saved in OLIS.

OLIS has provision to indicate ruled out and dissent judgments. The ruled out judgments will be seen in red colour and dissent judgments title will appear in orange. It will help lawyers, research scholars to cite the appropriate case law. This indication has to be given in case law metadata entry module manually by the operator. The text refereeing act, rules, section etc. are hyperlinked in OLIS. The embedded hyperlink navigates the user to the full text document. Therefore, user is able to find pertinent rules, act etc. along with the retrieved record. A number of useful websites such as, law dictionaries, encyclopedia, year book,

statistical sources, educational resources, theses and dissertation, patents and standards, indexing and abstracting sources, geographical information sources, e-books, subject gateways, current information, are linked to OLIS. In addition, open access electronic journals such Directory of Open Access Resources (DOAJ), Electronic journals library, etc. are hyper linked so that user can benefit using these public domain resources.

OLIS was tested to verify that all modules function according to expectations defined by the respondents in the needs assessment survey. Each module in OLIS functions as per the specifications. The search results were recorded to observe precision as well as recall ratio of results. Black box testing methods have been used in the testing without bothering the internal coding of OLIS. Moreover, designing a system according to the needs of the legal community was a major hurdle in the study. Besides this, maintaining standards and sustainability was another major task. The testing process of OLIS included, (i) planning for testing, (ii) defining for testing objectives, (iii) appropriate test design, (iv) testing preparation, (v) debugging, (vi) executing, and (vii) evaluating[18]. The major purpose of the test plan was to overcome limitations and accomplish testing in an organised way[19]. A combination of techniques was applied in the process of OLIS testing.

9. CONCLUSIONS

Undoubtedly, OLIS is useful for law students, research scholars, teachers, lawyers, judges, legislators, civil servants, government officials, library professionals and the general public. It certainly benefits instructors to teach the subjects. OLIS provides case laws of Supreme Court, High Courts, District Courts and Tribunals. In addition, acts (State and Central), ordinances, rules, bills, notifications, circulars, Parliamentary debates (Lok Sabha and Rajya Sabha), commentaries, speeches, video/audio contents, research articles, legal news, trade notices, press releases, evidences, citations, legal forms etc., are made available to students, lawyers, judges and research scholars. OLIS contents will tremendously help in study, research and practice. In addition, the legal fraternity would be able to contribute their research papers, speech, legal form and audio/video contents. This will help and foster interdisciplinary research and learning. OLIS can be used as a tool for learning the basic concepts as well as to deliberate on the emerging areas in the field of law.

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