

COMPUTER ASSISTED LEGAL RESEARCH WITH SPECIAL REFERENCE TO INDIAN LEGAL CONTENTS: RETROSPECT AND PROSPECT

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Legal research is “the process of identifying and retrieving information necessary to support legal decision-making. In its broadest sense, legal research includes each step of a course of action that begins with an analysis of the facts of a problem and concludes with the application and communication of the results of the investigation.”¹

The processes of legal research vary according to the country and the legal system involved. However, legal research generally involves tasks such as: **(1) finding primary source of law**, or primary authority, in a given jurisdiction (cases, statutes, regulations, etc.); **(2) searching secondary authority** (for example, law reviews, legal dictionaries, legal treatise, and legal encyclopaedias such as American Jurisprudence and Corpus Juris Secundum), for background information about a legal topic; and **(3) searching non-legal sources** for investigative or supporting information.

Legal research is performed by anyone with a need for legal information, including lawyers, law librarians, and paralegals. Sources of legal information range from printed books, to free legal research websites (**open sources**) and information portals to fee database vendors.

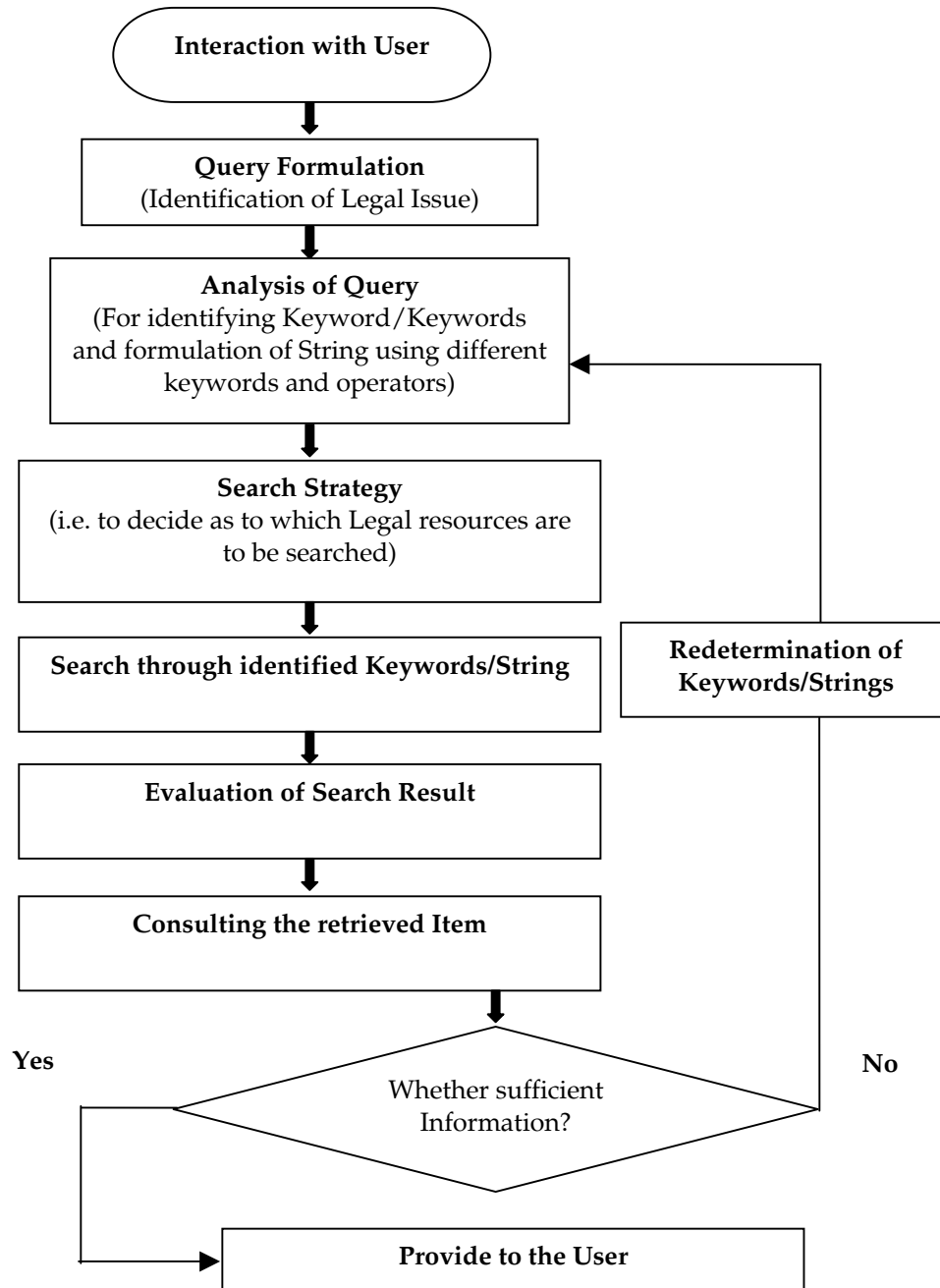
1. Computer Assisted Legal Research: Historical Perspective

Information explosion resulted in exponential growth of published information almost in every academic field. The huge volume of published literature has created problems in the information handling for the Librarians and it is because of this reason Librarians were compelled to use computers for information handling. Use of computers for information handling resulted in many Information Technology Products, such as, “**Bibliographic**” and “**Textual**” databases on CD-ROM. **CD-ROM** technology has revolutionized the field of information handling and the huge databases on CD-ROM became available to the Libraries for subscription resulting in a boon to the user community. “**Internet**” has furthered the revolution in the field of information management and an era of “**On-Line Databases**” started with the increasing use of internet. Information retrieval through **computerized databases** resulted in speedy

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retrieval of information and made the research on specific topics much easier than that of manual research through the **printed resources**. But the basic research techniques through the conventional sources of information and the electronic sources of information remains the same.

FLOW CHART: STEPS INVOLVED IN LEGAL RESEARCH



Computer Assisted Legal Research started in the early 1960's. It is because of exponential growth in volume of published information. Computerized Information Management has become a necessity and efforts were being made by Library & Information Specialists for application of information technology to record, store, process & retrieve the information so that the relevant information may be retrieved for users. The Computer Assisted Legal Research is also one manifestation of information management technology.

1.1 Efforts For Computer Assisted Legal Research Ins USA

By the early 1960's, it was a general feeling among the lawyers in the USA that due to the geometric rate of increase in the amount of material, a lawyer has to do a comprehensive job of Legal Research and that Legal Research has become almost an intolerable burden. Legal community started thinking about feasibility using of huge, mysterious & temperamental machines known as computers for legal research by programming the same in some manner. Numerous committees were formed, seminars were held and panels were organised for finding out the ways & means for using Computer Assisted Legal Research.

Professor John Harty, has created an electronic library of the public health statutes of 50 states in the University of Pittsburg (USA).

Inspired by the success of this project, professor Harty's team began to put US Supreme Court Cases on tape and demonstrated that the Computer system could also cope with longer documents. Presently one may rate the work of Harty as primitive by today's standard but there is no doubt that it was the beginning of Computer Assisted Legal Research and for that, Prof. John Harty and his group deserve major credit.

The success of Harty and his team given impetus to many other organizations and group for exploring the ways and means of developing a more effective and efficient system for computer assisted research in the filed of law. "Ohio State Bar Association has taken the initiative for the same in the year 1965-66 and at the first instance this group has formulated a set of definitions. The definition formulated by the Ohio group was the most important achievement of the Ohio project which is yet the basic definitions used by LEXIS and Westlaw, the world's most comprehensive legal databases to this day. In the year 1967 Ohio group joined hands with the Data Corporation and the joint group worked towards the development of a legal research system which resulted in the creation of **OBAR (Ohio Bar Automated Research)**. This system was created by modifying the data corporation software to make it suitable. To begin with, it was capable of Boolean searches but only on AND, OR and NOT basis; there was no proximity connector. OBAR regarded proximity searching as essential.

"During the year 1967-70, while OBAR was being developed and tested, visitors from all over the United Sates and from many foreign countries travelled to Ohio to see it. Prominent among these were two men who subsequently would play important roles in making **LEXIS** a nationwide service – Thomas Plowden –

Wardlaw of New York and Judge David Dixon of Missouri. Both of them became enthusiasts for computer assisted legal research and return to their State Bar Association with optimistic reports. Many other visitors came, including delegations from France, Belgium, Germany and Scandinavia."

The work done by the OBAR has given the basis to many other organizations, which has resulted in the development of two most comprehensive computer assisted legal research databases in the world namely the "LEXIS-NEXIS" and the "Westlaw".

1.2 Efforts in India

As early in the year 1988, "the Law commission of India felt the necessity of computerization in Library & Information Centres in the Courts due to the explosion of legal literature and recommended that "Computerization of Library is a high priority necessity. The Court's time is wasted in collecting judgments bearing on the same subject. A push button system should be available to make handy all judgments on the subjects."

Chief Justice's conference held in 1991 took a decision to request **National Informatics Centre(NIC)** to take up the project of computerization of Supreme Court and High Courts & inter connect them through NIC-NET. Since then **National Informatics Centre (NIC)** a nation wide satellite based computer communication Network, is looking after the computerization of various activities in the Supreme Court and the High Courts. The two information systems namely **COURTNIC & JUDIS** had been conceptualized by the NIC. COURTNIC is now renamed as "Case Status".

Taking clue from the development of JUDIS and COURTNIC, many commercial vendors also thought of developing the legal databases in India for facilitating Computer Assisted Legal Research in the country. Many legal databases having coverage of Indian legal contents thus came into existence such as SCC Online, Manupatra, AIR Infotech, Indlaw, Grand Judis etc. In addition to these databases some legal databases confining itself to the specialized legal field also came into existence such as ITR, Excus, Tax India Online, Taxmann etc. Thus an era of Computer Assisted Legal Research in the country began.

Right to Information Act, 2005 enacted by the Parliament has also brought out a silent revolution in Computer Assisted Legal Research as Sec 4 of the Act makes it mandatory for every Governmental Authority to make available the information produced in the respective Governmental Department on their website for the access and use of the general public. This has resulted in availability of **Acts, Statutes, Bills, Rules , Regulations, Bylaws, Statutory Notifications, Consultation Papers, Committee & Commission Reports**, various orders of the different Governmental Departments and Parliament Debates on the Governmental website of the different departments, which otherwise was difficult to procure. This has also facilitated the Computer Assisted Legal Research because such documents are frequently needed by the legal fraternity.

2. Computerised Legal Research

Legal reference materials are both well-organized and highly interconnected. Computerized data bases and research techniques are available to help researchers in finding primary and secondary legal authorities. Computerized legal research does not replace traditional research, although it can supplement manual techniques. Computerized legal research is conducted much differently from manual research, and patrons generally must undergo special training.

Computerized legal research can have several advantages over manual research. One advantage is time efficiency i.e. a great deal of material can be examined in a relatively short time. A second advantage is the rapid availability of documents. For example, the full text of Supreme Court decisions is available within 24 hours of a decision on website, whereas days often pass before printed copies can be acquired. Finally computerized data bases offer greater accessibility than traditional reference materials because they use many different ways to identify information- such as judges' names, the dates of case decisions, and the use of key words and phrases – that may not be available in other legal indexes.

2.1 Information Retrieval Through Computerized Databases

Information retrieval involves many steps such as **Query Formulation, Query Analysis, Formulation of Search Strategy and Search through the database**. After interaction with the user, query should be formulated for effective information retrieval. Sometimes users are not very specific about their information requirements then a librarian has to enter into a dialogue with the user to understand his/her information requirements accurately. This phenomenon is known as "**Query formulation**".

The second step for effective information retrieval is analysis of the query. In analysis of the query, most appropriate search term is to be identified through which search is to be carried out. It is important that the "**search term**" so selected should match with the term used in database to ensure relevancy and accuracy.

For Example:

A query came for finding out the case law in which the apex court directed that garbage should not be dumped near religious institutions. Search terms "**Religious institutions**" near "**Garbage**" was given which yielded only **one result** but that too was not relevant to the query. Then another search term "**Temple**" near "**Garbage**" was given and in this case also search result was only one case law **but it was very specific and to the point**.

Thus it is very much necessary that more appropriate term should be used as search term. If the database is using any particular "**thesaurus**", search term used in that thesaurus should be used to ensure relevancy, pertinency and accuracy.

2.2 Need For Vocabulary Control

Vocabulary control is one of the most important aspect in information retrieval. "**Homonyms**" in information retrieval create problems in effective retrieval. If a concept can be denoted by more than one term or phrase, one standard term should be opted as an "**Indexing Term**" or "**Descriptor**" so that all available information on that particular aspect may be retrieved otherwise the information will be scattered under different homonyms and different search results will occur.

For example "**Capital Punishment**", "**Death Penalty**" and "**Death Sentence**" are homonymous terms and when the search in the different databases by these terms were made, different search results have come. The search term "**Death Sentence**" yielded substantially higher number of cases than the "**Death Penalty**" and "**Capital Punishment**" as is evident from the table-1:-

TABLE 1

Search Terms	SCC Online	Manupatra	Westlaw India	Lexis India
Capital Punishment	132 Cases	140 Cases	132 Cases	134 Cases
Death Penalty	267 Cases	293 Cases	389 Cases	264 Cases
Death Sentence	643 cases	652 Cases	615 Cases	563 Cases

Thus when the search term "**Death Penalty**" or "**Capital Punishment**" will be given, it will not yield all the cases relating to that aspect.

Similarly table-2 also reveal that the search through the term "**Preventive Detention**" yields much higher number of cases than the search result of Homonymous terms "**Public Safety**" and "**Detention Laws**".

TABLE 2

Search Terms	SCC Online	Manupatra	Westlaw India	Lexis India
Public Safety	220 Cases	223 Cases	226 Cases	230 Cases
Detention Law	61 Cases	50 Cases	83 Cases	47 Cases
Preventive Detention	832 cases	543 Cases	539 Cases	521 Cases

It is therefore, important in a indexing database to use a "**Thesaurus**" for vocabulary control which will ensure **consistency** and **uniformity** in indexing as well as maximum search results. It is because of this reason all major indexing and abstracting services in the field of science and technology at International level use some thesaurus. Unfortunately no legal thesaurus is being used by any of the legal databases.

It is, therefore, suggested that legal data bases must develop their own “thesaurus” in which the most appropriate word among the homonyms should be denoted as “Descriptor” and there must be provision in the software of the data base that whenever any user gives any search term, if that search term is not “descriptor”, cross-reference of the descriptor of that term used in the data base should appear on the screen so that user may use that “descriptor” to retrieve all the relevant information available in the database. **For example: For “Detention Laws” search under “Preventive Detention”.** Alternatively (till such a thesaurus is not prepared and used), provision by data bases should be made for a separate search results from the “Head-notes” and “judgment” because search results of the “Head-notes” are mostly “precise” and “relevant”. SCC Online provides this facility which may be followed by the other legal bases also.

2.3 Evaluation of Major Legal Databases in India

Presently there are four important legal databases in the country, namely, **SCC Online, Manupatra, West Law India, Lexis India**. All these databases are being used frequently by the legal fraternity in the country. They differ in format and coverage. An attempt is being made in this study to evaluate the performance of these legal databases. Evaluation of **Information Retrieval System** essentially means measuring the performance of the system, success or failure, in terms of its retrieval efficiency i.e ease of approach, speed and accuracy. The very purpose of evaluation is to judge the efficiency of a system in relation to retrieval, identifying the short-comings, if any, rectify them and improve upon the system. This study is aimed at comparing the performance of these legal databases and to show their level of performance.

2.4 Criteria for Evaluation of IRS

Different authorities have given a different criteria for evaluation of any information retrieval system. **Perry and Kent**² in 1950 brought out the concept of evaluation of Information Retrieval system (IRS) on the basis of following criteria:

- (i) **Resolution factor:** The proportion of total items retrieved over a total number of items in the collection.
- (ii) **Pertinency factor:** The proportion of relevant items retrieved over a total number of retrieved items. This factor is popularly named as the *precision ratio* in the subsequent evaluation studies.
- (iii) **Recall factor:** The proportion of relevant items retrieved over a total number of relevant items in the collection.
- (iv) **Elimination factor:** The proportion of non-retrieved items (both relevant and non-relevant) over the total items in the collection.
- (v) **Noise factor:** The proportion of retrieved items which are not relevant. This factor is considered as the complement of the *pertinency factor*.

- (vi) **Omission factor:** The proportion of non-relevant items retrieved over the total number of non-retrieved items in the collection.

C.W. Cleverdon³ identified six criteria for the evaluation of information retrieval system as under:

- (i) **Recall:** It refers to the ability of the system to retrieve all the relevant items.
- (ii) **Precision:** It refers to the ability of the system to retrieve only those items that are relevant;
- (iii) **Time Lag:** It refers to the time gap between the submission of a request by the user and his receipt of the search results.
- (iv) **User Effort:** It refers to the intellectual as well as physical effort required from the user in obtaining answers to the search requests. The effort is measured by the amount of time user spends in conducting the search or negotiating his enquiry with the system. Sometimes, response time may be good, but user effort may be poor.
- (v) **Form of presentation** of the search output, which affects the user's ability to make use of the retrieved items, and
- (vi) **Coverage of the collection:** It refers to the extent to which the system includes relevant matter. It is a measure of the completeness of the collection.

Vickery⁴ identified two sets consisting of 3 criteria each, as follows:

Set 1

- (i) **Coverage:** the proportion of the total potentially useful literature that has been analyzed;
- (ii) **Recall:** the proportion of such references that are retrieved in a search, and
- (iii) **Response time:** the average time needed to obtain a response from the system.

These three criteria are related to the availability of information, while the following three are related to the selectivity of output:

Set 2

- (i) **Precision:** the ability of the system to screen out irrelevant references,
- (ii) **Usability:** the value of the references retrieved, in terms of such factors as their reliability, comprehensibility, currency, etc., and
- (iii) **Presentation:** the form in which search results are presented to the user.

In this study, evaluation of four major legal databases in India – **SCC Online, Manupatra, Westlaw India** and **Lexis India** have been done on parameters of “**Contents & Coverage**”, **Recall** and **Relevance** and **uptodateness**.

2.5 Check Points for Selection Of Database

Many factors are to be considered at the time of making selection of a legal database for subscription. Some of the points which should be kept in mind at the time of selection of a legal database are as under :

- Cost
 - Ascertaining authenticity of the Contents.
 - Whether vender is using any Source journal?
 - Whether Data Auditing is being done by the Vendor?
 - Whether the Judgments reported by the Database have some Editorial Notes.
 - Whether list of Cases – dissented, followed, relied upon etc are given in the judgements.
 - Recall and Relevance.
 - Quality of the Headnotes.
 - Up -to -dateness of the Contents.
 - Cross Referencing.
 - Whether Hyperlinks are given or not?
 - Whether mechanism for Data protection is available so that Contents cannot be altered?
 - Highlighting of search term, i.e., whether such term is highlighted in the body of Judgment.
 - Provisions for advance search.
- Whether search options by Case No. , Date of Judgment and Judge Name are available?
 - Whether Copyright Issues have been taken care of?

2.6 Contents and Coverage

Contents and coverage of legal database play a very important role in its success or failure. A legal database must have coverage of:- Supreme Court decisions, High Court decisions, decision of Tribunals, Central and State legislations, Statutory Rules and Notifications, Legal Articles published in the Journals. In addition to this a legal data base may have as “value addition” decisions of the Federal Court, Privy Council and other Courts such as Burma,

Rangoon, Lahore etc., Commission and Committee Reports, Parliamentary Bills, Constitutional Assembly Debates, Parliamentary Debates etc.

TABLE 3: CONTENT COVERAGE OF MAJOR LEGAL DATA BASES

Sl. No.	Coverage/ Features	SCC Online	Manupatra	Westlaw India	Lexis India
1.	Supreme Court of India	1950 till date	1950 till date	1950 till date	1950 till date
2.	High Courts	21 High Courts (Not covering complete data)	21 High Courts	20 High Courts	5 High Courts
3.	Tribunals	4 Tribunals (Not covering complete data)	24 Tribunals along with decision of its benches if any.	14 Tribunals along with decision of its benches if any.	No coverage
4.	Other Courts	1 Privy Council	8 including Privy Council and Federal Court	1 Federal Court	No coverage
5.	Legislation	Central Acts Only (Not covering complete data)	Central Acts State Acts (Not covering complete data)	Central Acts State Acts of 11 states. (Not covering complete data)	No coverage
6.	Corporate Law & Taxation	No separate option for search	Covered. Separate option for search	No separate option for search	No coverage
7.	Notifications & Circulars	No coverage	Central & States Notifications	Covered	No coverage

8.	Ordinance, Pending Bills, Committee Reports, Drafts, Stamp duty	Covers only constituent assembly debates, Reports of Law Commission	Having coverage of Ordinance, Pending Bills, Committee Reports, Drafts, Stamp duty	Covers some ordinances	No coverage
9.	Forms	No coverage	Covered. Separate option for search.	No coverage	Covered. Linked with E-books.
10.	E-books	No coverage	7 E-books	No coverage	34 E-books retrievable
11.	Articles	Covers articles published in SCC, Practical Lawyer	Covers articles on selective topics	No coverage	Few articles published in MLJ only

Table-3 reflects the coverage of different items by these databases. This table shows that Supreme Court Judgments from 1950 till date are covered by all the databases but only **Manupatra** and **West Law India** have comprehensively covered the judgments of High Courts by covering 21 and 20 High Courts respectively. In SCC Online, though all 21 High Courts have been covered but as per its online version the judgments from 2009 onwards only have been covered in case of most of the High Courts. **Lexis India** covered only 5 High Courts.

This Table also depicts that decision of the Tribunals are very comprehensively covered by the Manupatra as it is providing the judgments of 24 Tribunals along with the decision of all the Benches of the Tribunals followed by West Law, which is covering 14 Tribunals. SCC Online is covering only 4 Tribunals and only latest decisions of the Tribunals are provided. Lexis Nexis has no coverage of decisions of the Tribunal.

So far as the decisions of Courts other than the Supreme Court, High Courts and the Tribunals are concerned, **Manupatra** has been found to be more comprehensive in coverage as it is covering decision of 8 other Courts namely: **Federal Court, Lahore, Nagpur, Oudh, Peshawar, Privy Council, Rangoon, Sindh**, whereas, West Law is covering only the decision of **Federal Court** and SCC Online is covering the decision of **Privy Council**. **Lexis India do not cover decisions of any other court.**

On examining the coverage of legislations in the legal databases under study SCC Online and West Law were found to be covering only Central Acts whereas Manupatra provides text of both the Central Acts and the State Acts. Lexis India has no coverage of legislation.

Notifications and Circulars of both the Central and State Govt. have been covered both by **Manupatra** and **Westlaw**. But the Coverage of the same is **partial**. It appears that whatever notifications and circulars that can database vendor could lay hand, those notifications and circulars has been made available on the database. On the other hand SCC Online and Lexis India have no coverage of the same.

Manupatra also provides information relating to the ordinances, bills etc. where as no other database provides such information. West Law covers only few ordinances.

A very useful link providing access to statutory "**forms**" has been provided by the **Manupatra** which may be very helpful to the legal fraternity to download the form pre-prescribed in respective statutes. No such link/facility has been given by any other database. However, in **Lexis India** few forms could be downloaded which are available in the "**e-books**" provided by them.

2.7 Recall and Precision

The most important parameters used for evaluating the Indexing System are "**Recall and Precision**". The term "**Recall**" refers to a measure of whether or not a particular item is retrieved or the extent to which the retrieval of wanted items occur. "**Recall ratio**" is nothing but the proportion of relevant items retrieved.

The term "**Precision**" relates to the ability of an indexing system not to retrieve irrelevant items. "**Precision ratio**" is nothing but the proportion of retrieved items that are relevant. "**Recall**" and "**Precision**" in the databases under study is depicted by the following examples:

Example 1:

Search term "**dying declaration**" near "**conviction**" 2005-2011 has been given to retrieve the cases in which accused has been convicted on the basis of dying declaration of the deceased.

Search: "Dying Declaration" Near "Conviction".

TABLE 4

	SCC Online	Manupatra	Westlaw India	Lexis India
No. of Cases Retrieved	84	60	64	61
No. of Cases Relevant	84	60	30	61

Table-4 shows that **SCC Online** and **Manupatra** retrieved **84** and **60** cases respectively and all the cases retrieved by these two data bases were found to be **relevant**, whereas, **Westlaw India** retrieved **64** cases out of which only **30** cases were found to be relevant. Thus, "**Recall**" in **SCC Online** is better than **Manupatra** and **Westlaw India** whereas "**Precision**" in both **SCC Online** and **Manupatra** has been found well up to the mark but the "**Precision**" is to be substantially improved in the **Westlaw India**. In case of **Lexis India** "**Recall**" is also very poor.

Example 2:

Another query was to find out the Supreme Court case law in which the word "**for**" has been interpreted by the Court. Search term "**proposition**" near "**for**" 2005-2011 was given to limit the search between 2005-2011.

Search: "Proposition" Near "for" 2005-2011.

TABLE 5

	SCC Online	Manupatra	Westlaw India	Lexis India
No. of Cases Retrieved	Nil	2	26	3
No. of Cases Relevant	--	2	2	2

As per table-5 no case law was retrieved by the **SCC Online**, in spite of the fact that two judgments on this point have been reported by their **source Journal** Supreme Court Cases (SCC). **Manupatra** has retrieved **2** cases, whereas, **Westlaw India** retrieved **20** cases. All the cases retrieved by the **Manupatra** were found to be relevant whereas only **2 out of 20** cases retrieved by the **Westlaw India** were relevant. Thus, in this search "**Recall**" of **SCC Online** is **nil**, whereas "**Recall**" and "**Precision**" of **Manupatra** is to be highly appreciated being cent per cent, whereas, "**Precision**" of **Westlaw India** is only 10 per cent.

Example 3:

Search expression "**adverse remarks**" near "**expunction**" **High Court** was given. **SCC Online** and **Manupatra** retrieved **53** and **25** cases, respectively and all of them were found to be relevant. **West Law** has retrieved 21 cases, all relevant. In this search, "**Recall**" in the case of **SCC Online** is **substantially higher** than that of **Manupatra** and **Westlaw India** but "**Precision**" of all the three data bases is well up to the mark being cent per cent.

2.8 Up-To-Dateness of Legislation

Keeping a Legislation **up-to-date** by incorporating the amendments brought out in a particular legislation is very important for legal data bases, because, if any particular amendment has not been incorporated in it and any judgment by any Court has been delivered by relying on the unamended Act, (on

the basis of legislation downloaded from the data base), then it will not be a good law. It is because of this reason up-to-dateness of databases with regard to Central legislation, has been examined in this Study. Twelve Central Acts of 2010 and 2011 have been randomly selected as sample and were examined. It is significant to note that **Westlaw India has incorporated amendments in all the 12 Central Acts**, whereas, **Manupatra has incorporated amendments in 9 out of 12 Central Acts**. On the contrary, **SCC Online (CD- Version) has not incorporated amendments** in any of the 12 Central Acts and its Web Version has incorporated amendments in only 8 Central Acts (Table-6). Thus, the **Westlaw India, is the most up to date legal data base with regard to Central Legislation**.

TABLE 6: COVERAGE OF RECENT CENTRAL ACTS/AMENDMENTS IN SCC ONLINE, MANUPATRA, WESTLAW INDIA DATABASE

Sl. No.	Title of Central Act	SCC Online		Manupatra	Westlaw India
		CD	Web		
1.	Appropriation (Railways) Act, 2011	✗	✗	✗	✓
2.	State Bank of India (Subsidiary Banks) Amendment Act, 2011	✗	✓	✓	✓
3.	Finance Act, 2011	✗	✓	✓	✓
4.	Juvenile Justice (Care & Protection of Children) Amendment Act, 2011	✗	✓	✓	✓
5.	Transplantation of Human Organs (Amendment) Act, 2011	✗	✗	✗	✓
6.	National Council of Teacher Education (Amendment) Act, 2011	✗	✗	✗	✓
7.	Civil Defence (Amendment) Act, 2009 (3 of 2010)	✗	✗	✓	✓
8.	Code of Criminal Procedure (Amendment) Act 2010 (41 of 2010)	✗	✓	✓	✓
9.	Essential Commodities (Amendment) Act, 2010 (35 of 2010)	✗	✓	✓	✓
10.	Industrial Dispute (Amendment) Act, 2010 (24 of 2010)	✗	✓	✓	✓
11.	Land Ports Authority of India Act, 2010 (31 of 2010)	✗	✓	✓	✓
12.	National Green Tribunal Act, 2010 (19 of 2010)	✗	✓	✓	✓

3. Conclusions

Findings of this study reveal that:

- I. There is no uniformity in **contents** and **coverage** in the databases evaluated in this study.
- II. There is also no uniformity in '**format**' of the '**search results**'. Except **SCC Online** no database provides '**one liner subject**' indicator of the retrieved case.
- III. There is **no comprehensive coverage of legal articles** published in law journals in any of the database. SCC Online covers only the articles published in their own journals viz. "Supreme Court Cases" and "Practical Lawyer".
- IV. In spite of the fact that "**State Legislations**" are most desired material to be made available on legal databases, **no database is providing comprehensive coverage to the State Legislations**. Manupatra and Westlaw India have covered legislations of some of the States but that is also partial.
- V. Judgments of the **courts of pre-independence period (Federal Court, Lahore, Nagpur, Oudh, Peshawar, Privy Council, Rangoon, Sindh)** contain important legal information but except **Manupatra** no legal database under study has comprehensive coverage of judgments of the court.
- VI. There is no provision in any of the database **to identify** either all **the Constitution bench decisions** of Supreme Court or Constitution bench decision on a particular subject or during a particular period.
- VII. There is no provision of "**case number wise search**" in any of the database.
- VIII. There is no provision in any of the database to retrieve the judgments "**Delivered by**" a particular judge.
- IX. In Online legal databases, though the full text of the judgment is uploaded immediately after pronouncement of the judgment in the database but the "**Head-Notes**" and the "**citations**" are uploaded much after its publication in the Law Reports.
- X. Some database vendors are replacing the references/ citations given in the text of the judgment by their own citations. It amounts to editing of the text of the judgment and such practice should be discouraged.

4. Suggestions

An Online Legal Database should be **authentic, up-to-date, accurate** and **reliable**, otherwise it will lose its relevance and usefulness. In order to make an

Online Legal Database sufficiently trustworthy, efforts should be made by the Database Vendors to make its contents **up-to-date** and **accurate** so that the Database may be treated as authentic and reliable. Though, "**Central Legislations**" are now being provided by most of the Legal Databases but amendments are not being incorporated by most of them promptly and in such cases the legislation without the amended provision becomes obsolete. It is, therefore, suggested that **amendments in the legislations should be promptly and accurately incorporated by the Database Vendors with proper referencing and citation of the amending act in the Govt. Gazette. If the amended act has been enforced, date of enforcement should also be indicated in the 'foot note'** and if the same has not been enforced even after the Presidential assent, there must be some indication in the text (where the amendment has been incorporated) that amending provisions have not yet been enforced.

State Legislations are very difficult to procure and Law Librarians and the legal fraternity find it extremely difficult to procure the State Legislations. It is because of this reason "**State Legislations**" are the most sought legal material and, hence, **Legal Database Vendors should attempt to provide full coverage to State Legislations in their Databases.**

Though, Online Legal Databases make available the judgments of the Courts immediately after its pronouncement but "**Head Notes**" and the "**Citations**" of the Journals in which they are published, are uploaded after much lapse of time. Some times, Head Notes are not proper and, hence, it becomes difficult for the user to determine the relevance of the case law retrieved. It is, therefore, suggested that **proper Head Notes prepared by the persons having expertise in preparing the Head Notes should be got prepared as expeditiously as is possible and uploaded in the Databases.**

"Provision for Case No. wise Search", provisions for retrieval of Constitution Bench decisions on a subject and provision for generating the list of judgments delivered by a particular Judge should also be made by the Database Vendor. Coverage of decisions of pre-independence Courts such as Federal Court, Lahour, Nagpur, Audh, Peshawar, Privy Council, Rangoon, and Sindh should also be done by the Legal Databases as decisions of these Courts contain very important decisions, especially on procedural law.

5. Future Of Computer Assisted Legal Research

With the increasing use of computerized research through the CD-ROM, Data Bases and the Internet, not only in the field of Law but also in all fields of knowledge, there has been much hue and cry about the future of the Libraries and Librarians. Authorities like Lancaster in his famous book namely the "**Paperless Society**" predicted as early as in 1970 that by the year 2000 there will be completely paperless society and again in 1991 he has predicted in a paper published in "Herald of Library Science", that by the year 2005 Libraries will be manned by the "**Robots**" and there will be no Librarians. There is no doubt that

electronic Libraries will continue to expand and there will be more cheaper ways of using them but it is also true that print publication will not disappear. Electronic publication may be the principal way for the law profession to obtain information but the print publications are not going to lose their relevance. So far as the future of Libraries and Librarians are concerned, it becomes more important with the increasing use of electronic resources.

“The function of a Librarian, after all, is not just to act as the custodian of an information warehouse; it is to make information useful, which of course means being able to call it out when it is needed. Already there are professionals who specialize in helping people to select the right electronic library and retrieve information from it. These specialists know what each library contains and how to use the various search protocols to retrieve it. With more and more information being created and stored, finding it and bringing it out becomes an increasingly important specialty. Rather than making librarians obsolete, the development of computer-assisted legal research makes librarians even more valuable.”⁵

Endnotes

1. Myron, J et. al. *Fundamentals of Legal Research*, Fountain Press, 2002, p.1
2. Perry & Kent quoted in ML-II-103, Course Material UNITS, IGNOU, New Delhi.
3. Cleverdon, C.W.: *Report on testing and analysis of an Investigation into the comparative efficiency of indexing systems*. Cranfield: College of Aeronautics.
4. Vickery, B.C.: *Techniques of Information Retrieval*, London, Butterworths, 1970.
5. Harrington, William G.: *A brief history of Computer Assisted Legal Research*. 1985 (Vol. 77), *Law Library Journal* p. 556.