

# Treasure of Electronic Resource and its Management System at Central Library, IIT, Kharagpur: A Preview

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## Abstract

*We all know that the technology sector is in the top preference of the authority and Indian Institute of Technology (IIT), Kharagpur is considered as one of the remarkable outcome. The central library of IIT, Kharagpur has carrying out valuable role to impart education by equipping with the latest changes of the technology in the library field. Now, electronic resources are the essential part of the collection of any libraries and hence the management of e-resources is the main challenge to the library professionals. The present paper is an attempt to explore the access facilities of e-resource, electronic resource management systems and the present practice followed by the central library, IIT, Kharagpur for its successful dissemination among the users to meet their requirements.*

**Keywords:** E-resource, E-database, E-resource Management, E-resource Management System

## 1. Introduction

In late 20<sup>th</sup> and early 21<sup>st</sup> centuries, library automation and the internet revolutionized information access and library operations around the world. Electronic resources are becoming a major factor in information activities not only in developed countries but also in develop in countries. The concept of “electronic resources are being used interchangeably” synonymous with online resources, digital resource, e-resource and web resources. But in simple connotations e-resource can be regarded as the resource, document or information available on the internet / World Wide Web or in any electronic form. From the existence (i.e.1951) of the Central Library, IIT KGP has grown in size and content along with the well equipped modern facilities and resources in the forms of CD-ROMs, online databases, micro-documents, video cassettes, books, journals, patents, standards, theses reports etc. The central

library initiated a modern in-house electronic library in 1994 which includes EiTech index, IEEE / IEE journals in full text, Inspect, Current Contents, Chemical Abstracts, Biotechnology Abstracts and ABI. Also the video courses, Proquest CDROM database of IEEE/IEE journals in full text is also available on the Campus LAN.

## 2. Electronic Resource

‘E-resource’ or ‘Electronic resources’ means “These are collections of information (example: games, stories, articles from magazines, encyclopedias, pamphlets or other published resources) that are accessed on an electronic device, such as a computer and the user can access electronically via computer network from inside or outside library.

There are several different types of electronic resources are available. These are;

- ❖ E-Database
- ❖ E-Books (Electronic Books)
- ❖ E-Journals (Electronic Journals or online Journals)



### 2.1. E-database

A database is a collection of related items of information. E-database or electronic database is an organized collection of electronic records that can be easily searched. There are different kinds of databases they are as follows;

- 1) **Bibliographic Databases** (e.g. Ei Compendex, INSPEC, Web of Science, CAB Abstracts, etc.).
- 2) **Full-Text Databases** (e.g. Elsevier Science Direct, EBSCO etc.).
- 3) **Numeric Databases** (e.g. Jupiter communications, The World Face book, Table Base).
- 4) **Multimedia Databases** (e.g. photographs, graphs, charts, maps, diagrams and illustrations, and even representations of works of art etc.).
- 5) **Other Databases** (e.g. Dictionary, Encyclopedia of Britannica).

### 2.2. E-Books

An electronic book (variously, e-book, digital book) is a book-length publication in digital form, consisting of text, images, or both, and produced on, published through, and readable on computers or other electronic devices. The Oxford Dictionary of English defines the e-book as “an electronic version of a printed book,” but e-books can and do exist without any printed equivalent. E-books are usually read on dedicated e-book readers. Personal computers and some mobile phones can also be used to read e-books.

### 2.3. E-Journals

Electronic journals, also known as e-journals, e-journals, and electronic serials, are scholarly journals or intellectual magazines that can be accessed via electronic transmission. In practice, this means that they are usually published on the Web. They are a specialized form of electronic document: they have the purpose of providing material for academic research and study, and they are formatted approximately like journal articles in traditional printed journals. Being in electronic form, articles sometimes contain metadata that can be entered into specialized databases.

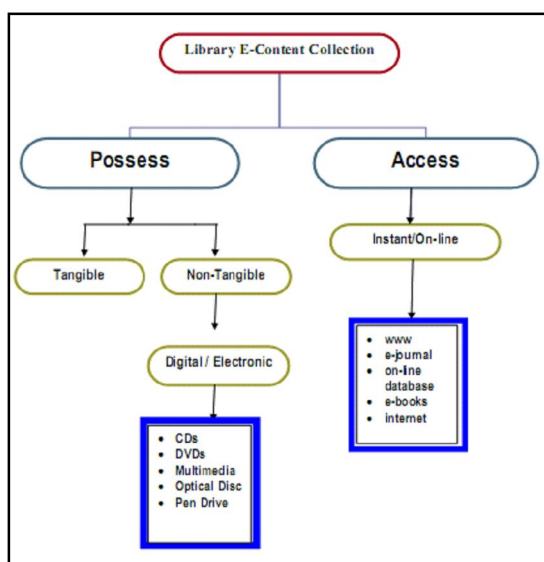
### 2.4. Why e-resources?

Electronic information resources are essential both for the professionals and students to upgrade their knowledge how in order to keep pace with changing scenario in the digital era. Electronic resource enables-

- ❖ Resolving space challenges.
- ❖ Searching e-resources is more easy and speedy than other traditional resource.
- ❖ It is easy to download, copy, save and print or send by mail.
- ❖ To access the same topic in various ways to get it and can get cross references for further search.
- ❖ Publishers frequently update e-resources, so everyone can get up to date information.
- ❖ Providing multiply and also remote access i.e. access to information from anywhere at any time

### 3. E-Contents and its Merits in Technological Library

E-contents are the scholarly resources available in digitized formats and accessible from anywhere in the globe through internet with minimum time involvement.



#### 4. Sources of e-content

##### 4.1. Subscribed E-resources

Following e-resources are subscribed by the Central Library:

##### i. E - Database (Full Text)

- ❖ ACS Archival Access
- ❖ ASTM Journals
- ❖ Cambridge Law Journals
- ❖ CMIE Database
- ❖ EBSCO Communication & Mass Media
- ❖ EBSCO Magillion Literature Plus
- ❖ Hein Online (Law Journals)

- ❖ IET
- ❖ JSTOR
- ❖ RSC Archives Access SAGE
- ❖ Taylor & Francis
- ❖ Manupatra
- ❖ WIPS
- ❖ West law International

##### ii. E - Database (Abstracts)

- ❖ SCOPUS

##### iii. E - Books

- ❖ Springer
- ❖ Wiley
- ❖ Elsevier (Chemistry Series)
- ❖ CRC Press Hand Books
- ❖ Elsevier Reference Books

#### 4.2. E-Databases (Full Text) through INDEST-AICTE Consortium

##### Full Text Databases

- ABI
- ACM Digital Library
- ASCE
- ASME
- ASTM Standards
- ASTP
- BIS Standards
- Capitaline
- Elsevier's Science Direct
- EBSCO Databases
- Emerald Full Text
- IEEE/IEE Electronic library online

Indian standards

Nature

ProQuest science

Springer Link

### **Bibliographic Database**

COMPENDEX and INSPEC on EI Village

ISI Web of Science

MathScienceNet

J-Gate (JCCC)

SCOPUS

SciFinder Scholar

## **5. Electronic Resource Management (ERM)**

Electronic Resource Management (ERM) describes software used to manage digital subscriptions in libraries. Typically, the routines include subscription product names, descriptions, producer, aggregator, license start and end dates, renewal alerts, images of contracts, price and payment terms, payment records, access URLs, usernames and passwords, interface administrative URLs, verification access methods, access restrictions, vendor contacts, contact history, and links to usage reports.

**ERM** is defined as it is by the Digital Library Federation's Electronic Resource Management Initiative (DLF ERMI): "tools for managing the license agreements, related administrative information, and internal processes associated with collections of licensed electronic resources," including ability to present terms of use at the point of access to an e-resource.

### **5.1. E-Resources Management System (ERMS)**

A system that supports management of the information and workflows necessary to efficiently

select, evaluate, acquire, maintain, renew/cancel and provide informed access to e-resources in accordance with their business and license terms. An ERMS is a software module that assists the library in managing all the details related to its subscriptions to electronic content. It focuses primarily on article content delivered in electronic journals and databases that aggregate collections of e-journals. In recent years libraries have become more involved in licensing e-books. ERMS products are likewise expanding to help manage this type of material."

### **5.2. Why ERMS?**

- ❖ Most ILS cannot manage license and administrative information for e-resources
- ❖ Ability to combine usage data with payment information to produce cost per use reports easily
- ❖ The volume of information is hard to manage manually
- ❖ A-Z list of titles and subjects as an alternative to the catalog
- ❖ Overlap analysis/statistical reports
- ❖ Push out information to users.

### **5.3. Features of ERMS**

- ❖ Supporting acquisition and management of licensed e-resources
- ❖ May be integrated into other library system modules or may be a standalone system
- ❖ May have a public interface, either separate or integrated into the OPAC
- ❖ Providing descriptions of resources at the package (database) level and relate package contents (e.g. e-journals) to the package record

- ❖ Encoding and perhaps publicly displaying licensed rights such as e-reserves, coursepacks, and interlibrary loan
- ❖ Tracking electronic resources from point of order through licensing and final access
- ❖ Providing information about the data providers, consortial arrangements, access platform
- ❖ Providing contact information for all content providers
- ❖ Logging problems with resources and providers
- ❖ Providing customizable e-mail alerting systems (e.g. notices to managers when actions are expected or required)
- ❖ Linking license documents to resource records
- ❖ Enabling access to SUSHI usage statistics (SUSHI-Standardized Usage Statistics Harvesting Initiative)

#### 5.4. Requirements of ERMS

Electronic Resource Management Systems (ERMS) have their roots in ad hoc systems built by libraries to managing information about the vendors, technical specifications for the product, statistics, license parameters and numerous other issues related to electronic resources. The following information is required for good management of electronic resources:

- ❖ **Name of the electronic resource:** The name should be that on the license, but variants of the name, including the name of the print version, if any, should be included.

- ❖ **Content:** A description of the content should include the breadth and length of coverage. The extent of the back file that is available, but not included in the license, should be identified.
- ❖ **Producer, licensor, and aggregator:** The producer (e.g., the creator) of the electronic resource should be identified, as should the licensor (e.g., the party controlling the terms of use) and aggregator (e.g., the party who combines various products into a package or suite).
- ❖ **Packaging:** Electronic resources that come from a single source may be combined in packages. Titles from multiple sources are also frequently packaged. A library needs to be able to access records by either the name of the electronic resource or the package of which it is a part. As packages, especially packages of journal titles, can have a great number of resources, it is important that it be possible to import information from external sources that itemize package content.
- ❖ **License duration and renewal alert:** The beginning and ending dates of the license need to be included, and there should be a renewal alerts a fixed number of days prior to expiration. Ninety days is the minimum.
- ❖ **Copy of contract:** An electronic copy of the vendor's license should be part of the record, preferably a machine-searchable version that can be searched by keyword. That makes it possible to determine whether something the library wishes to do is allowed under the terms of the contract, promptly respond to questions about the contract, and edit the contract prior to entering into negotiation for a contract extension or revision
- ❖ **Price and payment terms:** The subscription price (or other basis for pricing) should be

included, along with the payment schedule. The field should permit a description of the terms on which the price is based: single site license, site license for each branch or unit, population-based price, charge per use, charge based on overall budget, tie-in with print material, charge per concurrent user, etc.

❖ **Payment history:** Payment dates, amounts, invoice numbers, and voucher or check numbers should be part of the record. A library should have the option to record internal fund code data so that electronic resources can be properly charged to the appropriate units from year to year.

❖ **Access Method(s) and resource link:** The access method(s) should be spelled out, and the URL should be included. Separate URLs or a URL and a referring URL and access method descriptions may be needed for resources accessed both locally and remotely.

❖ **Access Restrictions:** Is anyone in the library able to access the electronic resource from a workstation? Either registered IP address or through a server? Is the library limited to a specific number of simultaneous users and, if so, how is the number measured? Are remote users who have library ID numbers able to access the electronic resources? It may be necessary to have a field where IP addresses for servers or individual authorized in-library branches or units can be listed.

❖ **Authentication Methods:** Since vendors and libraries sometimes share authentication responsibilities, it is important to indicate all of the authentication methods in use for the database, such as: local users by IP address, remote users authenticated by the vendor using patron barcode

number, or by the library using patron barcode number.

❖ **Vendor contacts:** Names, addresses, phone numbers, and e-mail addresses of sales, customer service, and technical support contacts should be listed with fields to add names for each category, where necessary.

❖ **Contact history:** All contacts regarding a database or the license should be recorded, including date, issue, and resolution.

❖ **ERM administrator's record:** It must be possible for the ERM administrator to record decisions with regard to the library profile, display preferences, statistical compilation preferences, and other local options that may be offered by the vendor and exercised by the library.

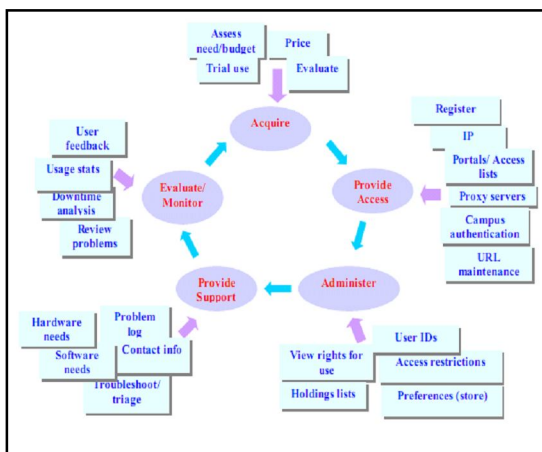
❖ **Statistics:** The ERM product must accommodate the fact that vendors provide use statistics in a variety of ways, including hits, page views, searches, sessions, length of time users were connected to the database, searches per periodical or resource title, items viewed, items printed or e-mailed, and other indicators, including local and remote usage. In preparing reports that compare database usage statistics, it is important to compare all electronic resources using the same indicator and to footnote numbers that do not represent the indicator used elsewhere in the report.

❖ **Use statistics and cost per use:** It should be possible to calculate the cost per use of an electronic resource by dividing the annual subscription price by the number of uses of an electronic resource. While that does not show whether the database was useful, it does help to identify expensive electronic resources.

❖ **Who sees what?:** The person(s) responsible for managing the licenses for electronic resources must have access to all of the foregoing information, but parts of the information should be available to others. Public services staff and patrons should be able to see journal holdings statements, access URLs, printing permissions, interlibrary loan policies, and other information that will help them access electronic resources. Multiple layers of security should be provided through pass wording.

### 5.5. Work Flow of ERMS

An ERMS streamlines workflows by centralizing, recording and facilitating communication about the many financial, legal and access aspects of electronic resources. The diagram below addresses just some of the tasks required to maintain an electronic resource throughout the entirety of its life cycle



Flow Chart of E-Resources Management System

### 5.6. Benefit of ERM

❖ Innovative ERM saves staff time, improves collection analysis, and makes the most of scarce budgetary resources.

❖ ERM makes it easy for patrons to find the e-resources they need, elegantly presenting important information such as renewal dates, authentication, proxy data, and complete content descriptions.

❖ Libraries can use Electronic Resource Management as a stand-alone solution.

❖ As a stand-alone system, libraries can enjoy the benefits of ERM's ability to maintain resources, track licenses, and manage coverage data.

❖ ERM is tailor-made to take advantage of innovative quick start implementation program that includes hundreds of ready-to-use e-resource records.

❖ Innovative's ELECTRONIC Asset Management tools offer the most sophisticated collection-building and discovery tools available and make it easy to boost visibility of all kinds of content.

### 6. Present Practice of E-resources Management

The growth of reliance on electronic resources in libraries has led to the recognition of electronic resource management as a new problem area and specialty within librarianship and to the development of a variety of electronic resource management systems and services that have been widely adopted by libraries. These developments are outlined and discussed, followed by some discussion of emerging functions and standards.

E-journals are major information disseminating media since inception; the work of the Current Periodical Section assumes great magnitude and importance in libraries of IIT's, research institutions and other learned bodies. Specific

process is involved in the selection of e-journals which are also followed by Central Library, IIT, Kharagpur. These processes are the

- ❖ Sending List Of Subscribed Journals (Current Year) (Dept Wise) For Renewal/Deletion/Addition Of Journals
- ❖ Collecting Departmental Requisition/s
- ❖ Budget Availability (Dept Wise)
- ❖ Calling A Meeting With HOD's, Senate Library Advisory Committee, And Librarians (Assistant Librarians, Dy Librarians, Librarian)
- ❖ Taking A Final Decision About Renewal/Deletion/Addition Of Journals (Dept Wise) As Per Budget Availability
- ❖ Discussing This Matter In Joint Meeting Of Senate Library Advisory Committee And Library Purchase Committee & Finalizing The Order Value (Vendor Wise)
- ❖ Sending The File For Director's Approval
- ❖ Placing The Order To Respective Publishers / Exclusive Agents/Vendors
- ❖ Processing The Invoices
- ❖ Agreement With Respective Publishers
- ❖ Activation Of The Subscribed E-Journals (Ip Based Access)
- ❖ Website Updatation & Informing User Community
- ❖ Regular Follow Up
  - ◆ Links To Be Checked
  - ◆ Proxy To Be Checked
  - ◆ User Services

### 6.1. Deficiency of the Existing ERM Practice

The Central Library, IIT, Kharagpur which processes followed to manage the e-resources there have many deficiency, So many difficulties are faced to maintain for provide access to the patrons which is listed below:

- ❖ Do not support overlap analysis/statistical reports
- ❖ Not able to combine usage data with payment information to produce cost per use reports easily
- ❖ Difficult to make awareness among the users about subscribed push out information to users.
- ❖ Difficult to harvest, calculate, apply user and financial statistics
- ❖ Don't support to manage lifecycle events for e-products
- ❖ Don't support financial management and audit-ability
- ❖ Not able to Search, retrieve, report across management attributes
- ❖ Don't support consistent workflows to support data quality
- ❖ Not able to ensure compliance with license terms

### 7. Findings

Electronic resource management is the practices and software systems used by libraries to keep track of important information about electronic information resources, especially internet-based resources such as electronic journals, databases, and electronic books.



This study focused on management of e-resource in the Central Library, IIT Kharagpur. At present a defined method (with some location variation) is involved in management of subscribed e-resources (including full text databases + bibliographic databases) by Central Library, IIT Kharagpur and access provided by INDEST-AICTE Consortium for various e-resources. These are

- ❖ E-resources are increasing year to year and becoming more popular among research community. So it has now become a basic research tool for them. It is found during the study that the present ERM system faces some deficiency these are
- ❖ Difficult for end user to know how many journals being subscribed on a particular subject
- ❖ It does not provide a public interface, which either separate or integrated into the Web OPAC
- ❖ It does not provide any information about how many e-databases/journals are having perpetual access and not listed any where at least in the library website
- ❖ It is revealed that present Electronic Resource Management is not professional and there are many lacunas.
- ❖ It does not provide A to Z list of journals on a specific subject
- ❖ It does not provide contact information for all content providers
- ❖ It does not inform about holdings of current subscription / e-archives package
- ❖ Users can not access to the entire e-database at single platform/window Not able to combine

usage data with payment information to produce cost per use reports easily

- ❖ It may not be as a stand-alone solution
- ❖ No serious efforts in present system to make awareness among the users about subscribed e-resources to users.
- ❖ No information about dropped e-journals/e-databases on Library website.
- ❖ Managing the e-journals/e-databases is not centralized at present
- ❖ Library webpage for e-resources is not organized. It may be managed by respective section only.

## 8. Conclusion and Suggestion

Several factors have rendered the job of librarians who deal with electronic resources extremely challenging the amazing growth of electronic collections, the increasingly central role that these collections play in libraries, the large budgets that are involved in their acquisition, the endless variation in the packages offered by the hundreds of players in the market (such as publishers, interface providers, and subscription agencies), the frequent changes in business models, and, above all, the lack of automated tools to deal with the complexity of e-resource management.

E-resources are increasing year to year and becoming more popular among user community. As present Electronic Resource Management followed in Central Library is not professional and there are many lacunas. There are very few Library and Information Science Professional in Central Library to manage subscribed e-resources. Infect responsibility of managing e-resources is not

defined. There is an urgency to clearly define who will manage the subscribed e-resources as because managing e-resources requires expertise working in e-environment and Library Information Science background. So It can be through discussed and be implemented any of the standard ERM method to make system more transparent.

It is suggested that a good ERM system which has ability to manage lifecycle events for e-products, tool to centrally store and maintain contracts, licenses, other raw documents and related procedures and also to Search, retrieve, report across management attributes may be implemented in Central Library, IIT Kharagpur.

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