ACQUISITION OF E-BOOKS IN ENGINEERING COLLEGE LIBRARIES: WITH A SPECIAL REFERENCE TO MUMBAI METROPOLITAN REGION

A Thesis

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By

Ms. Deepali V Kuberkar

(Registration No. 16113007744)

UNDER THE GUIDANCE OF

Dr. Ranjit Kumar Das

DEPARTMENT OF LIBRARY AND INFORMATION SCIENCE

2020

DECLARATION

I hereby declare that the thesis entitled "Acquisition of E-books in Engineering College Libraries: with a special reference to Mumbai Metropolitan Region" completed and written by me has not previously formed the basis for the award of any degree or other similar title upon me of this or any other Vidyapeeth or examining body.

Place: Pune

Date: _____

Ms. Deepali V Kuberkar

Research Scholar

CERTIFICATE

This is to certify that the thesis entitled "**Acquisition of E-books in Engineering College Libraries: with a special reference to Mumbai Metropolitan Region**" which is being submitted herewith for the award of the Degree of Vidyavachaspati (Ph.D.) in Library and Information Science, Faculty of Moral and Social Sciences, of Tilak Maharashtra Vidyapeeth, Pune is the result of original research work completed by **Ms. Deepali V Kuberkar** under my supervision and guidance. To the best of my knowledge and belief the work incorporated in this thesis has not formed the basis for the award of any Degree or similar title of this or any other University or examining body upon her.

Place : _____ Dr. Ranjit Kumar Das

Date : _____ Research Guide

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Abstract

E-book is an electronic version of a print book. E-book can be read on electronic devices like dedicated eBook reader, computer, tablets, smart phone, etc. It has advantages over print books like portability, instant access, search ability, multimedia features, etc. And some disadvantages of eBooks are it requires a suitable electronic device, screen glare, eyestrain while reading, etc. E-books are available from more than two decades, but libraries are not acquiring them. Only few engineering college libraries have incorporated eBooks in their collection and mainly those which are made mandatory by governing body like AICTE.

This research work is an attempt to study acquisition of eBooks in engineering college libraries in Mumbai metropolitan region. The main objective of the study was to assess the existing eBook pricing models available for the engineering college libraries, to examine e-book acquiring policies adopted in the engineering college libraries, to identify factors influencing procurement of eBooks in the engineering college libraries and to develop the model for the procurement of eBooks.

The present study includes two surveys i.e. survey of engineering college libraries of Mumbai metropolitan region (MMR) and survey of vendors offering eBooks in engineering disciplines. Questionnaire technique was used to collect the data from engineering college libraries. The questionnaire was developed in both hard copy and online format for the convenience of the respondents. Google form was used to develop online questionnaire. The data collection included queries regarding collection development policy, library advisory committee, IT infrastructure, library automation, eBook acquisition, percentage in the collection, factors influencing eBooks procurement, business models, eBook formats, librarian opinion about eBooks, etc.

Interview was conducted to collect data from eBook providers using a structured outline for interaction to maintain consistency. The questions included were to acquire information regarding disciplines in which eBooks are offered, current percentage of eBooks as compared to print counterparts, business models offered, access models, annual maintenance fees, formats & features, opinion about eBooks, etc.

The present study has been carried out by surveying fifty-two engineering college libraries of MMR and interviewing fifteen eBooks providers of engineering subjects. The study is collaborated into five chapters. The concise information about these chapters is presented in following paragraphs.

Chapter 1- Introduction

This chapter dealt with transformation of libraries in aspects of resources and services, eBook evolution and its impact on libraries. It highlights the rationale and need of the study. It also provides information about objectives of the study, hypothesis assumptions, scope of the study, its limitations, adoption of research methodology with details of two surveys conducted, etc.

Chapter 2 - Review of Literature

In this chapter researcher reviewed the relevant literature published and available related to the scope of study. The literature published in various formats of resources are collected from various resources, analyzed and systematically reported under various facets of the study. Three broad facets under which literature is reviewed are e-resources in libraries, consortium approaches to e- resources and eBooks and its sub facets. Literature review helped researcher in better understanding, developing appropriate research plan and building up the study.

Chapter 3- E-books in Engineering College Libraries of Mumbai Metropolitan Region

This chapters deals with all aspects of eBooks. It discusses about various types of eBooks, hardware and software used, different formats and its feature compatibility, advantages of eBooks and its disadvantages, etc. Acquisition of eBooks through publishers, Vendors and aggregators is explored. Detailed evaluation criteria to be considered before acquisition is composed. Considerations pertaining to content, access, hardware/software, budget, legal, interface, etc. are also discussed. Brief information, functioning and role of various governing bodies like Bureau of Technical Education, Directorate of Technical Education, All India Council for Technical Education, etc. are also discussed.

Chapter 4 – Data Analysis & Interpretation

This chapter has two major parts. Part A presents the research findings based on analysis of the survey conducted of engineering college libraries affiliated to University of Mumbai and

SNDT Women's University located in MMR. It examines various facets like IT infrastructure, eBooks, librarian's opinion about eBooks, etc. Part B presents findings based on the analysis of interview conducted of representatives of major publishers, aggregators and consortium pertaining to engineering. The data analysis is presented using various graphical representation tools like tables and charts.

Chapter 5 - Findings, Suggestions & Conclusion

Findings of the data analysed from the questionnaire of engineering college libraries, survey of eBook providers and its interpretations are in accordance with the objectives of the study discussed in the chapter Introduction.

Few remarkable findings of the study of engineering college libraries are mentioned below:

- Majority of libraries i.e. 98% are using Library Management Software (LMS) to automate the library operations. Only one college was in the process completing the automation.
- All of them i.e. 100% libraries provided Internet facility to access digital resources and search information.
- It was found that 61% libraries have Wi-Fi facility for users to connect to Internet for accessing library resources online with their own devices.
- Data revealed that only 39% libraries have eBooks in their collection and 61% have not procured eBooks.
- Majority of libraries (70%) procure McGraw Hill Access Engineering, followed by METCon by 30%, ASTM Digital Library by 15%, etc. McGraw Hill Access Engineering & ASTM Digital Library are mandate by AICTE norms.
- Most preferred license model for procurement of eBooks was mentioned as multiple user license by 90% libraries.
- Only one college library (5%) offered Kindle Paper White eBook readers six in number to its users to access eBooks.
- It was found that most (74%) of the libraries cited lack of funds as the major reason for not procuring eBooks, followed by 65% stated lack of demand by users, 29% mentioned lack of support by college authorities, 26 % found lack of suitable business model, 26% mentioned lack of suitable access model and so on.

- Disadvantages of eBooks were explored too. It was found that majority of them (86%) felt they are costly, 76% found it cause strain to eyes, 41% mentioned there is a rapid change in the technology and so on.
- Preference of users to read print books over eBooks was backed by all of them (100%).
- Increase of demand of eBooks in near future was backed by majority (90%) of them and only 10% of them are uncertain.

Major findings of the study of eBook providers are mentioned below:

- Cambridge University Press was the first to initiate eBooks, followed by Elsevier India Pvt. Ltd, Oxford University Press, etc.
- Amongst publishers, only two of them have 100% print equivalents of eBooks, namely Springer Verlag and IEEE.
- Springer Verlag was first publisher to have 100% eBooks, and all new books are first published in eBook format and later print on demand only.
- It was found that all new books published are available in eBook format as well and some of them are published in eBook format only and is available in print on demand.
- Subject Package as business model was offered by majority (80%) and Pick & Choose option was offered by 67%.
- Minimum purchase criterion varies from publisher to publisher. Some preferred to fix a minimum number of eBooks, whiles others preferred to have minimum purchase order value.
- Every eBook provider has different set of policy for annual maintenance fee and in certain cases they are waived off upon procuring any journal or eBook.
- Most preferred format of eBooks was PDF and was offered by all i.e. 100% providers. EBSCO provided eBooks in audio format as well.
- Printing facility of whole eBook was provided by 66.67% and downloading of eBooks was provided by 73.33%.
- Main factor restricting libraries from procuring eBooks was found to be lack of funds (100%) and was followed by lack of infrastructure (67%).

Major suggestions of the study:

- To develop a collection development plan for libraries and to formulate a strategy for next five years to develop eBooks collections.
- Budget planning is important in libraries. Identify appropriate budget head for eBooks and to ensure that the fund is used for eBook collection development.
- Keeping abreast about the latest eBook market trends, improvising the selection criteria and procuring eBooks accordingly.
- Involving the stake holders i.e. faculties and users and understanding their needs.
- Developing cordial relationship with all eBook providers.
- Maintaining the log of standardised usage statistics for year wise.
- Developing appropriate strategy for promoting eBooks.

In this chapter researcher proposed a guideline for eBook acquisition process. After studying various business models analysed in the research study, a guideline is developed; which provides insight about the process of eBook acquisition. Each step of the acquisition process is narrated in detail with all possible variable considerations. This guideline will be helpful for library professionals to get acquainted to the procurement process of eBooks.

The study proves all hypothesis true and also satisfies all objectives laid. Due to emergence of eBook market and availability of eBooks in various subject areas coupled with user demands; it is important for libraries to develop eBook collection. It concludes by providing direction for further scope of research.

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List of Abbreviations

Short form	Full form
ADA	Americans with Disabilities Act
AICTE	All India Council for Technical Education
ALA	American Library Association
ASCE	American Society of Civil Engineers
ASCII	American Standard Code for Information Interchange
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AZW	AmaZon Word
BR	Book Report
BTE	Bureau of Technical Education
CAD	Computer-Aided Design
CD	Compact Disc
CDP	Collection Development Policy
CD-ROM	Compact Disc Read-Only Memory
COUNTER	Counting Online Usage of NeTworked Electronic Resources
DD	Demand Draft
DESIDOC	Defence Scientific Information & Documentation Centre
DL	Digital Library
DOI	Digital Object Identifier
DRM	Digital Rights Management
DST	Department of Science and Technology
DTE	Directorate of Technical Education
DVD	Digital Versatile Disc
EBA	Evidence Based Acquisition
eBook	Electronic Book
e-book	Electronic Book

E-book	Electronic Book
EBSCO	Elton B. Stephens Co
EPUB	Electronic PUBlication
HOD	Head of the Department
HTML	Hyper Text Markup Language
ICT	Information and Communication technology
IEEE	Institute of Electrical and Electronics Engineers
IIM	Indian Institutes of Management
IISC	Indian Institute of Science
IISER	Indian Institute of Science Education and Research
IIT	Indian Institutes of Technology
INDEST	Indian National Digital Library in Engineering Sciences and Technology
ISBN	International Standard Book Number
JET	J-Gate Engineering Technology
LAC	Library Advisory Committee
LAN	Local Area Network
LMS	Library Management System
MCA	Master of Computer Application
MMR	Mumbai Metropolitan Region
MMRDA	Mumbai Metropolitan Region Development Authority
NBA	National Board of Accreditation
NIT	National Institutes of Technology
NPE	National Policy on Education
OASIS	Organization for the Advancement of Structured Information Standards
ODLIS	Online Dictionary of Library and Information Science
OPAC	Online Public Access Catalogue
PC	Personal Computer
PCMCIA	Personal Computer Memory Card International Association

PDA	Personal Digital Assistant
PDA	Patron Driven Acquisition
PDF	Portable Document Format
PG	Post graduate
PURSE	Promotion of University Research and Scientific Excellence
RFID	Radio Frequency IDentification
ROI	Return on Investment
RTF	Rich Text Format
RTGS	Real-Time Gross Settlement
SD	Science Direct
SGML	Standard Generalized Markup Language
SNDT	Shreemati Nathibai Damodar Thackersey
SPA	School of Planning and Architecture
TXT	TeXT
UG	Under graduate
UGC	University Grants Commission
UK	United Kingdom of Great Britain
UPE	University with Potential for Excellence
URL	Uniform Resource Locator
US	United States of America
WebOPAC	Web Online Public Access Catalogue
XML	Extensible Markup Language

Chapter 1
Introduction

1.1 Introduction

This introductory chapter highlights the rationale of the thesis and then it presents its research objectives and hypothesis. Its contribution to the knowledge and practice is presented afterward followed by the methodological approach and methods employed for the purpose of this research. Finally, this chapter concludes outlining the thesis structure.

1.2 Rationale of the study

This section provides background information regarding the changing role of academic libraries in a context where the importance of electronic books (eBooks) are growing significantly. The eBook revolution and the rapid eBook market expansion are illustrated here. It ends with highlighting the variety of issues and challenges faced by academic librarians in eBook management and predictions for the near future of eBooks in libraries.

1.21 Transformation of library services

The role of academic libraries is changing given that the context in which they operate is in transition. While in the past they did primarily served their users as repositories, the role now has been extended to facilitate access to e-resources including electronic books. The emergence of eBooks has drawn excitement and dispute amongst the users, publishers, and librarians. Research indicates the willingness of academic libraries to include eBooks into their collection. Besides, it is reported widely across the publishing industry about the growth of eBooks in the academic community. Various genres of eBooks are available in the market. Nevertheless, the future of eBooks in academic libraries has been explored to a very limited extent.

1.22 Evolution of E-books and its expansion in the market

The existence of eBook can be traced back in the 1940's but still, it is a new concept for engineering college libraries. The eBook revolution started in 1970 with the free

eBooks of Project Gutenberg (2010). During the next two decades, commercial eBook publishing emerged and developed with eBook publishers entering the market in the 1980s and eBook aggregators in the 1990s who focused on the academic market. Constant change and development are observed in the global eBook market. The growth in the market size of the eBook is considerable and the trend is witnessed globally, especially in 2009 and 2010. In the near future, eBook growth is predicted to be even higher than the existing growth. At present, there are several eBook formats available as well as portable devices, which are designed to read eBooks only called as eBook readers. Also, there are other readers which are multi-purpose devices and can double as eBooks readers to read eBooks.

1.23 Issues and challenges for academic libraries

The emergence of eBooks and their inclusion into the holdings of academic libraries have impacted in various ways. Librarians have received opportunities to offer new collection but it has also put forth challenges and issues which were not foreseen. The entire procurement process of eBook selection, procurement, and management right from collection development policy, formulation of the budget, choosing a best suited model, marketing-promoting, monitoring the usage till the point of making a final decision for renewal or termination. It is important for libraries to understand Digital rights Management pertaining to eBooks. License agreement and terms of use should be carefully dealt with. Nevertheless, many libraries are still not prepared for these challenges.

1.3 Research problem and need of the study

E-books are available for more than two decades, but only few engineering college libraries are acquiring them. And mainly those which are made mandatory by a governing body like AICTE. There is a need to find out the existence of eBooks in the engineering college libraries where print books are still predominant. It is important to find out the factors influencing the procurement of eBook in the engineering college libraries. Major factors influencing the acquisition of eBooks can be existing eBook business models, no written eBook acquisition policies, budgeting, licensing issues, etc.

This study has tried to answer the questions which have arisen with need:

a) What are the various eBook business methods of acquisition available for engineering college libraries?

b) What are the different types of policies set by the engineering college libraries for eBook acquisition?

c) What are the factors influencing the acquisition of eBooks in the engineering college libraries?

1.4 Research title and explanation of terms

This study has used an apt title for study as "Acquisition of E-books in Engineering College Libraries: with a special reference to Mumbai Metropolitan Region".

1.41 Explanation of the terms used in the title

The terms used in the research study title are explained in detail and the context of its use in the study is also elaborated.

Acquisition: An asset or object bought or obtained, typically by a library or museum. Acquisitions or Library Acquisitions is the process in which the library professionals identify the user requirement, check the availability of the required resource, get the selections done and make formal procurement orders. The required resource can be of any nature like print material, digital material, audio material, etc. Library also maintains records of records relating to the acquisition process.

E-books: plural form of an eBook. The E-book is similar to print books except it is in electronic format, also it requires a device specially designed to read it or it can also be read through a computer. Many eBooks exist without its print equivalent.

Engineering: The term engineering is very well defined by the American Engineers' Council for Professional Development. It mentions that engineering is putting the scientific principles into action for developing creative applications. It can be

developing structures, or processes for manufacture, or formation of an apparatus or assembling a machine that can be used individually or with combinations to perform operations with full cognizance. And also ensures all aspects regarding economics, its functions in the specific condition of operations and most importantly considering the safety of life and asset.

Library: There are various definitions given for term library, but the definition given by the ALA in the Online Dictionary of Library and Information Science (ODLIS) is more effective. It is defined as a collection of materials in various formats like print monographs, other printed resources, and non-printed materials in a very organized order to be easily retrieved by the users for consultation, general reading, studying or conducting research. Organizational libraries promote access for specific users, which are managed by library science professionals who are trained to facilitate access to resources and satisfy the information needs of users. It can also be mentioned as a space like building, room or center to stock resources.

Engineering College libraries: Plural form of an engineering college library. An engineering college library is a library that is attached to an engineering institution and serves two main purposes to support the curriculum and to support research.

Mumbai: It is a city or port on the western coast of India and is the capital of the state of Maharashtra. The former name was (until 1995) Bombay. Mumbai extends from Colaba in the south to Mulund and Dahisar in north, and Mankhurd in the east. Mumbai coordinates are 18°58′30″N 72°49′33″E.

Mumbai Metropolitan Region (MMR): MMR is spread over 4,355 sq. Km. It has eight Municipal Corporations and nine Municipal Councils under its jurisdiction. These municipal corporations are of Thane, Greater Mumbai, Navi Mumbai, Kalyan-Dombivili, Bhiwandi-Niamapur, Ulhasnagar, Vasai-Virar, and Mira-Bhayandar. The municipal councils under MMR are of cities Karjat, Panvel, Khopoli, Ambarnath, Kulgoan-Badlapur, Matheran, Pen, Uran, and Alibaug. It also has around 1,000 villages in Thane and Raigad Districts.

1.5 Research design

For the purpose of the study, a descriptive research methodology is adopted. A qualitative approach and non-probability sampling technique is considered in this study. Study covered all engineering college libraries which are affiliated to University of Mumbai and SNDT Women's University, duly approved by AICTE and geographically located in Mumbai Metropolitan Region. In this region, there are two state Universities which run engineering courses duly approved by AICTE. University of Mumbai is one amongst the largest universities of the world and it has provided affiliations to most of the institutions of the Mumbai city and its suburbs. Few institutions of Mumbai City have affiliation with SNDT Women's University. Various eBook packages available in the market for engineering college libraries are also to be studied.

1.51 Aims and Objectives of the study

Research is aimed research is to identify the reasons for non-acquisition of eBooks in the engineering college libraries. The study is carried out with certain objectives to be achieved and are mentioned as below:

a) To assess the existing eBook acquisition business methods for the engineering college libraries.

b) To examine eBook acquiring policies adopted in the engineering college libraries.

c) To identify factors influencing procurement of eBooks in the engineering college libraries.

d) To develop the guideline for the procurement of eBooks.

1.52 Hypothesis

Hypothesis of the study are mentioned below:

a) Most of the engineering college libraries are not acquiring eBooks.

b) Most of the engineering college libraries do not have any written policy for acquiring e-books.

1.53 Research methodology

This section presents the methodological approaches employed for the purpose of the two studies conducted. There are various steps involved in research methodology such as identifying a research method, tools to use for collecting data and selecting a technique for processing and analyzing the collected data. The methodology chosen for the study is descriptive research methodology. Survey approach for research study is one of the predominant research strategies in Library and Information Science. Survey research is a process in which various pieces of information is collected, by using a different way, ranging over various cases and received information from the cases are arranged logically as variables. Best method for this study found was survey method as the sample was scattered. The study is divided into two parts; hence two separate surveys are conducted to collect the data.

Survey 1: Survey of Engineering college libraries of Mumbai Metropolitan Region
The data collection tool used was questionnaire. Respondents were given a choice to either fill the data in hard copy format sent by post or the same questionnaire was also made available online. Web questionnaire was created with the help of a survey tool google forms. Web based survey was chosen as it has many advantages like the rapid return of data, reduces effort of handling data, high response rate and lowers the study cost.

Survey 2: A structured interview of Vendors offering eBooks in engineering disciplines
A structured face to face interview with vendor representative's offering eBooks in engineering disciplines was be conducted. Publishers and eBook aggregators were contacted for this study. Data was also be collected by gathering information from websites, printed brochures and promotional materials.

1.6 Scope and Limitation of the study

Following are the scope and limitation of the study

a) The study covers all libraries of engineering college which falls under geographical area of Mumbai Metropolitan Region.

b) The study covers all libraries of engineering college which are affiliated with state government universities and are under purview of AICTE.

c) The study covers licensed eBooks acquired from commercial vendors - publishers and aggregators in engineering discipline.

1.7 Significance of the study

This is study is undertaken to identify the issues related to acquisition of eBooks in Engineering college libraries of Mumbai Metropolitan Region. A guideline has been proposed that includes the following stages in the eBook management process: collection development policy, discoverability of eBooks by various means, process of selection and evaluation, dealing with negotiations with eBooks providers, cataloguing of procured eBooks in LMS using MARC records, marketing eBooks, monitoring periodically usage and deciding upon renewal or termination.

It is envisaged that this research study will benefit various stakeholders of academic field:

Librarians: As the head of the library this study will be helpful for them to understand and follow the acquisition process of eBooks. This study may serve as a preliminary guideline for those librarians who are planning to acquire eBooks for the first time.

Administrators: This research study will be helpful for defining collection development policies for eBook acquisition.

Vendors: This research study will also be helpful to vendors particularly eBook publisher or an aggregator to understand the requirement of engineering college libraries and develop a best suited business model.

Governing Bodies: It is envisaged that governing bodies formulating norms for colleges, may take note of suggestions made in the study for better collection development of college libraries.

Society: It is hoped that the study will be helpful for the community of research students of academic field. This research study also provides scope for further studies, which will be helpful for researches to carry out similar study with other geographical area and settings.

1.8 Chapter-wise Research Plan

The organization of the study is divided into five chapters. The chapter plan includes the follows:

Chapter 1 Introduction

It deals with the introduction part of the study. It contains the design of the study, statement of problem, need of the study, aim & objectives, hypothesis, methodology, scope & limitation, etc.

Chapter 2 Review of Literature

This chapter will include review of literature related to subject of the study. The main subject of the study is divided into sub topics and related literature is reviewed. It gives overview of recent research conducted in the subject area for better understanding of the conducted study.

Chapter 3 E-books in Engineering College Libraries in Mumbai Metropolitan Region

This chapter provides information on various facets of eBooks. It elaborates details of eBooks from its history, evolution and development in market, its available different formats, readers, advantages & disadvantages, etc. It will also include status of eBooks in India and global market. A brief information about the higher education pattern including technical education like engineering is provided.

Chapter 4 Data Analysis & Interpretation

This chapter presents results from the data collected from all AICTE recognized engineering college libraries located in Mumbai Metropolitan Region, affiliated to University of Mumbai & SNDT Women's University. The results are arranged in

systematic manner and analysis is drawn from results in a logical way. It also presents data collected from eBook vendors. It provides information on various available types of eBook business methods, various Sources of eBook sales, licensing terms, etc.

Chapter 5 Findings, Suggestions & Conclusion

This chapter outlines the findings emerged from the two studies conducted during the research. It presents the proposed guidelines for eBook acquisition with all the stages described at length for better understanding. It also offers recommendations for researchers for future research work. It also points out the novelties of the study.

1.9 Summary

E-books as a part collection of libraries is still evolving and is yet to become a core part of the library's collection. Although, it provides a wide range of benefits it is fairly used. Libraries also face certain issues and challenges in its acquisition process. This chapter ends by illustrating the need and significance of the study.

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Chapter 2

Review of Literature

2.1 Introduction

This chapter aims to review previously published literature regarding various aspects of eBooks and issues in the eBook acquisition and collection development of libraries. The information for the previous research and literature review was conducted through Library Information Science and Technology Abstracts (LISTA), Emerald and Taylor & Francis, Google Scholar etc. Journal browsing and citation tracing led to the discovery of additional papers relevant to this research. The aim was to review the latest publications on the subject, thus, the majority of the works cited in this thesis were published in the last ten years, but some older publications were also used to get a historical perspective on certain issues.

The facets under which the literature is reviewed are:

- E-resources in Libraries
- Consortium approaches to e- resources
- E-books and its sub facets

2.2 E-resources in Libraries

Under this facet, various parameters like Electronic information resources and their reliability and usages are captured.

Kaur & Kathuria (2016) conducted a study to assess the level of awareness, use of the e-resources and purpose of use. The study was conducted with users of the university library of Mohinder Singh Randhawa Punjab Agricultural University Library. Dues fast searching and because of the ease access, fast download & searching; the e-resources have been popular amongst the users and have become an integral part of the library collection. It also shows that the respondents are not only aware of Consortium of e-

Resources in Agriculture (CeRA) but also tops in the usage as compared to other resources. Even though e-resources have eased the task of research, respondents still prefer information in both print as well as electronic formats. The study gave recommendations of training the staff, mandatory user education programme, consortia services, advocacy of various e-resources, infrastructural needs and use of web2.0 services.

Tamrakar & Garg (2016) executed a study at Indian Instituteof Technology – Guwahati Library on the perception of users towards services and electronic resources of the library. The study was conducted with an aim to find awareness of the electronic resources, to what extent these resources are used, the purpose of use, services offered by the library staff and the quality of these service at IIT Guwahati. Questionnaire for data collection of this survey was distributed amongst the PG students, research scholars and faculty members of IIT- Guwahati. Findings revealed that e-journals are given high preferences than Print journals, users are informed about new e-resources and services, library offer users the facility of alert services, users of IIT-Guwahati are benefiting with the services offered by updating their knowledge and archiving the required information for future studies and research. Co-operation and courteous attitude by the library staff were observed with the users. The positive influence was observed on the users of IIT Guwahati library was found with the user of e-resources for their academic endeavours.

Kumar (2016) conducted a study at M M University with the clinical students on their behaviour for using electronic resources. The study was conducted to assess need, periodicity of use, the purpose of using these electronic resources. Questionnaire for data collection of this survey were distributed to 100 medical students. The findings of the study state that PG and UG students use e-resources for updating medical knowledge. UG students responded that e-resources are more informative are time-saving and more useful. Medical students are not much satisfied with regards to e-resources. The study also finds out the significant problems' PG students stated issues of low download speed and thereby consuming time. In contrast, UG students face virus, slow downloading and feel that using e-resources makes it more expensive.

A Case Study was conducted (Baikady, Jessy & Bhat 2014) on Off-Campus Access to Licensed E-resources of the Health Sciences Library of Kasturba Medical College,

Manipal University. The KMC Health Sciences Library makes available subscribed e-resources to its users through the library portal. Increase in demand from the users staying outside the campus for the remote login access of library subscribed e-resources, was an essential aspect of library services. KMC Health Sciences library identified EZproxy remote access software and subscribed EZProxy software to provide remote login access solution. EZproxy remote access benefits off-campus access through continuous and reliable access of licensed resources for 24x7 and 365 days, and new databases access in short time, translation of multiple languages, generation of usage reports for identification of popular resources outside the library environment. The article describes various steps for installation and implementation of EZproxy. It was concluded that the implementation of EZproxy remote login access program at the KMC Health Sciences Library, Manipal is a working model for providing the users with the convenient and efficient interfaces to access e-resources.

Tripathi & Kumar (2014) carried out a study at Jawaharlal Nehru University (JNU) to find out the usage of UGC-INFONET and other e-resources. The investigation reflected that there is an increase in the number of downloads, and all resources were used, showing no popularity for one particular resource.

Tripathi & Jeevan (2013) reported a study on academic libraries e-resource usage of selected few. It highlighted the analysis of qualitative and quantitative usage and user behaviour towards e-resources in academic libraries. To know how much and where the e-resources are used, usage statistics was used. To enhance the use of e-resources information literacy programmes and user awareness programmes should be conducted. The data analysis indicated that to evaluate the users' behaviour in a digital environment, the usage statistics will be helpful. For different groups of users, library services should be planned according.

Min & Yi (2010) studied the overview of e-resources, services and user surveys in Tsinghua University Library, Beijing. Based on the history of Tsinghua University, Library has overgrown & adjusted and reformed the resources to support the mission of education and research. Library provides abundant information resources for users. The library made significant progress in automation and networking. Series of user survey was conducted. These user surveys greatly improved the communication and understanding between the library and its users. Constant user surveys have played an

essential role in quality enhancement and resource development. Feedback gathered from user surveys provided vital information for improving library services.

Flatley & Prock (2009) conducted a study to demonstrate the processes for e-resource selection and evaluation in the academic libraries through a survey of current practices in academic libraries in Pennsylvania. The time to dedicate to the creation of the collection development process and selection criteria was mentioned as a problem for many librarians. Consortia play a significant role in the selection process. It was found that a structured process with consistent selection criteria is necessary for electronic resource collection development.

Mirza & Mahmood (2009) conducted a study on Web-based services provided in general university libraries in Pakistan. The methodology used is a content analysis of the websites of the university libraries depending upon the checklist which included the name of the university library, links used on the website homepage, the web presence of library website, services offered by library department and information provided by the library on the website pertaining to users. Findings highlighted that more than two-thirds of the libraries examined have a dedicated or partial website. There is an urgent need to develop dynamic websites with a direct hyperlink on the university's homepage. It was also mentioned about the importance of recognising the need for web presence of libraries and marketing library resource availability and services. Steps to initiate the action in this regard is also urged.

2.3 Consortium approaches to e- resources

Under this facet, the researcher intended to ascertain the present-day consortium approaches by the Libraries in general and Engineering College Libraries in particular. Efforts are on to analyze the secondary researches done in the specific domain. Further, it is intended to illustrate the prevailing situation upon collecting the data from the variables.

Bhat & Ganaie (2016) conducted a survey at Dr Y S Parmar University of Horticulture and Forestry to assess the use of electronic information resources by the academic user community of the university. The study reflected that the resources used are both in print and electronic format. The most preferred access mode for using electronic

resources found was Online access mode. Preference of access mode did not significantly vary with different users. Databases and e-journals available through consortium are most commonly used. E-books and e-thesis are not used very often, although few used CAB eBooks and KrishiPrabha.

Singh & Kumar (2015) conducted a study on the results of a survey assessing the utilization of CeRA by faculty of Guru Angad Dev Veterinary and Animal Sciences University (GADVASU), Ludhiana (Punjab), India. Data was collected via a questionnaire with a response rate of 95%. The factors assessed in the study are user awareness of CeRA, the purpose of use, sources of information about the consortium, search strategies used to access articles, users' opinion about the usefulness of consortium, and problems faced by them in using CeRA. The study recommended to adopt suitable measures for promoting utilization of CeRA, so as to maximize the utilization of the resources.

Prakashe & Tayade (2015) conducted a study in Indian Institute of Management libraries with an attempt to study e-resources used in the library collection. The study aimed to know the availability of digital resources viz., subscribed E-resources through the consortium, memberships of library networks and collaboration with libraries. The study gave the recommendation for strengthening the services pertaining to e-resources has been given. To maximize the availability of e-resources and also to increases their reach and access, a resource-sharing model has been proposed.

Londhe & Deshpande (2013) conducted a user study to find trends in the usage of e-resources and which e-resources are used to the maximum. UGC-INFONET Digital Library Consortium e-resources usage is studied. The Consortia provides current as well as archival access to more than 7000 core and peer-reviewed journals, and ten bibliographic databases from twenty-six publishers and aggregators in different disciplines. The study revealed that user awareness about the availability of e-databases and e-resources is high. Also, the usage of e-resources is increasing. Most active users were from the chemistry field. Although some databases have a smaller number of titles but its usage recorded is high. The high usage of UGC-INFONET Digital Library Consortium indicates that it not only benefits users and their information needs to get satisfied.

Francis (2012) conducted a study with masters and research scholars of Kerala Agricultural University, Thrissur. It was attempted to assess usage of e-resources of consortium. It was found that all users are aware of the use of e-resources, and its availability and more than 80% are using CeRA. It was found that users possess the required skills to access these resources. These e-resources are used for all academic purpose, research, and for their academic curriculum. It was suggested to increase the number of resources in the existing studied consortium model, thereby strengthening its services which found to be very useful for users, supports all information needs, and extension programmes.

Study conducted (Pradhan, Rai & Arora, 2012) gives brief implication of SUSHI for creating a usage statistics portal at the INFLIBNET Centre for monitoring the usage of the member universities. The important parameters of the utilisation of e-resources are to judge the effectiveness of a consortium. Consortium like UGC-INFONET Digital Library Consortium where it has 180 core members, manually downloading and analysis of usage of statistics is a time-consuming process. COUNTER and SUSHI standards can simplify the work of consortium administrator by minimizing the time involved in manual downloading of usage statistics allowing more time for analysing the usage statistics to take a better decision.

Sohail & Ahmed (2011) did a study on the Use of E-Resources and UGC-Infonet Consortium by the Teachers and Research Scholars in Aligarh Muslim University. The data was collected by questionnaire and informal interviews. It was found that e-journals are widely popular and accepted by users. E-resources are made available to the academicians and research scholars through INFONET, and they are found to be useful. Regularly orientation programmes and feedbacks were the recommendations given by the study. This will ensure users do not encounter any problems, and the user's requirement is met. It was emphasised to upgrade the infrastructural facility for the better utilization of UGC-INFONET E-Journals.

Visakhi (2009) conducted a study on Consortium for e-Resources in Agriculture (CeRA). CeRA Libraries under the Indian Council of Agricultural Research for National Agricultural Research System libraries. The paper highlighted and discussed the background, main features, and advantages of the consortium for e-resources in Agriculture. Access to CeRA was provided to ICAR deemed universities, ICAR Head

Quarters, ICAR Institutes, National Bureaus, National Research Centres, Project Directorates and State Agricultural Universities. It included resources from Springer Link, Annual Reviews, CSIRO Australia, Elsevier Science Direct and Open-jGate. CeRA helped to get access to world class R&D information.

2.4 E-books in Libraries

Under this facet, various parameters mentioned below of eBooks and their reliability and usages are captured. Attempts are also made to explore research work done in the field and papers have been sourced from various publications for the present study.

- About eBooks
- eBooks in libraries
- eBooks acquisition
- eBooks models
- eBook readers
- eBooks usage studies
- eBook status in Global Market and India

2.41 About eBooks

Ramaiah (2012) studied the overview of eBooks: Past, Present and Future which states that an eBook is a computer file/electronic copy of the printed book that needs a device such as PC or PDA or web, to access and read. Publishers started publishing and selling eBooks along with their print versions & marketed their services directly to end-users promoting institutional accounts to librarians, with mixed results. E-books production has increased in all categories including in college books, in high school books, in trade books & in corporate books. Newer devices can download and store thousands of full-length novels from a variety of sources, including online eBook stores, like Amazon.com or Barnes and Noble, literary sites, and also public domain titles in EPUB and PDF form. E-readers and tablets have become so popular as they are available at

an affordable cost to middle-class people. Since a lot of digital content is available on these readers. Benefits of eBooks are many, which includes easy to carry, saving space, convenience, saving money and time, and ease-of-use.

Rao (2012) questioned on eBooks in a national workshop on the use of e-books and its future. In the digital generation, people are curious, passionate and sometimes reluctant about e-books. Every system has good and bad; need comfort and benefit out of it. eBook costs go beyond production, including the cost to acquire content from a writer, promote the book, and sell the book. E-readers make the rise from paper books to e-books and eventually it satisfies and benefits users eBook formats (starting from text to html to pdf to epub) used to create and publish eBooks. Formats in which the material is delivered to end-users. Business models are moving towards the online environment with little or no change or development of a printed book. The eBook can be issued online at any time from lending websites for a stipulated period. Laws are framed to prevent unauthorized duplication and distribution of copyrighted digital works. Anything written in a fixed form such as an eBook is automatically copyrighted. The Open eBook Forum is finding a unified format to protect the e-books from being pirated. Web-based e-books may stand forever in future everything will be available and delivered through in an electronic form.

Gray & Copeland (2012) examined the circulation rate of print books and eBooks in a public library. The study also made an attempt to compare the usage and cost of both eBooks and print books. The library identified for the study has provided circulation data and budget sanctioned data for comparison. Highly used books were identified, and the first 50 books were compared. No significant cost-benefit was found in the highly used print book and eBook. However, the cost per use of eBook appeared to be a bit less than its print counterpart.

Polanka (2012) in the article on ungluing open access ebooks describes that Open-access (OA) literature is digital, online, free of charge, and free of most copyright and licensing restrictions. The support and interest in OA business model from libraries, researchers and users are notable. OA models for ebooks provide equal admission to content. Costing is the challenge when applying OA business models to ebooks. Unglue is the solution for funding OA ebooks. It is where individuals to institutions come together to share their ebooks. Libraries can promote the service to their patrons

involved in ungluing titles that would be relevant to their community by supporting Unglue. Creation of OA ebooks and libraries can provide access to content on a variety of platforms, devices and interfaces.

Lebert (2009) describes a short history of ebooks from 1971 till 2008. The first ebook was available as etext of Project Gutenberg in 1971. The Online Books Page came into existence in 1993 is a list of free ebooks which aims to encourage the development of online books, for the benefit and education of all. The U.S., NAP (National Academy Press) was the first publisher in 1994 to post the full text of some books, for free, with the authors' consent. Digitization accelerated the publication process. For educational, academic and scientific publications, digital publishing was a cheaper solution than print books, with regular updates to include the latest information. Online bookstore Amazon.com was launched by Jeff Bezos in July 1995 to sell books on the internet. The first library website was created in 1994 by the Helsinki City Library in Finland. By networking computers, the internet gave a boost to union catalogues and made things simpler for interlibrary loan. Publishers began to sell digital versions of their books online, on their websites or the new eBookstores of Amazon.com and Barnes & Noble.com. The public was getting used to reading ebooks on computers, laptops, phones, smartphones and reading devices.

Sinha & Tucker (2008) discuss the library collection development from print into eBooks collection and electronic books usage at the University of Nevada, Las Vegas Libraries (UNLV). Introduction of electronic books has brought a change in the book collection policy. Both formats are examined to study the trends that have emerged related to use and the benefits of each format. Various methods are used to evaluate the print & electronic format collection assessment. E-books had a significant impact on a number of workflows in libraries, but selection, acquisitions and cataloguing are affected the most. E-book supplier sends usage statistics for individual books. There is a need for librarians, to work together with publishers and vendors, to develop efficient and effective methods to build and manage collections that include books in both print and electronic formats for decades to come. The article concludes with an overview of the future of eBooks.

Vassiliou & Rowley (2008) gave an analysis of the various definition of eBooks. As per National Information Standards Organization (NISO, 2005) data dictionary for

libraries and information providers defines eBooks as, "digital documents, licenced or not, where the searchable text is prevalent, and which can be seen in analogy to a print book (monograph). The use of eBooks is, in many cases, dependent on a dedicated device and/or a special reader or viewing software." In simple terms it is same as the print book, the only difference it is available in digital format with additional features. These features include ability to search full-text like searching, audio, video, bookmarking, dictionary, etc.

Armstrong (2008) in the research used term eBook as, "any piece of electronic text regardless of size or composition (a digital object), but excluding journal publications, made available electronically (or optically) for any device (handheld or desk-bound) that includes a screen." The article highlights genesis of eBooks, level of acceptance and adoption of eBooks and brief about the latest available 3rd generation eBook readers in the market.

Gold Leaf (2003) this confusion in acceptance of the definition of what an eBook is. H highlighted that "conventionally speaking, there are two major types of eBook: the electronic version of a whole text (for example, of a book that already exists in print); or a database of linked materials, some but not all of which may exist in a print version (for example, scientific encyclopaedias which include interactive tables)."

Landoni, Wilson & Gibb (2003) mentioned that "the result of integrating the classical book structure with features which can be provided within an electronic environment constitutes a generally accepted definition of an electronic book." This paper discusses about the studies conducted which has influenced the design of the most effective eBook. Template of the book should be used to display the content, pagination, typographical aspects should be carefully designed considering the flow of the content of the book. It highlights that the design of the page is very important to have a better learning experience.

Armstrong, Edwards & Lonsdale (2002) define eBooks as, "any piece of electronic text regardless of size or composition (a digital object), but excluding journal publications, made available electronically (or optically) for any device (handheld or desk-bound) that includes a screen." The article presents the results of survey conducted on eBook provisions and electronic information services. It reported that librarians hold positive approach for potential of eBooks and are enthusiastic about allocating funds of books.

As the budget is heavily controlled by faculty, it is import to build stronger academic partnership with them.

2.42 eBooks in libraries

Bailey, Scott & Best (2015) conducted a survey at Auburn University at Montgomery (AUM) on cost differentials between eBooks and print in academic libraries. The principal objective was to determine if there is a sufficient cost differential between eBooks and print. Survey analysis shows that the data appear to support Gray and Copeland's assertion that print books are cheaper than eBooks, not only for public libraries but also for academic libraries. Libraries must measure the physical processing as well as storage costs for print against the ongoing maintenance costs for continued access to the electronic versions and libraries must be funded adequately to support the convenience costs associated with acquiring and making eBooks accessible to the user community.

Lopatovska , et al. (2013) describes the expectations and challenges of ebooks in academia. This paper describes the initial phase of an ongoing research project conducted in partnership with several academic libraries on the adoption of eBooks and e-readers in academia. This study focused on the investigation of the user expectations and the challenges relating to the use of eBooks for scholarly searches. The study used a purposive sample of faculty and students who had experience using academic eBooks. Results revealed that trends in participants' habits of using eBooks as well as in their use of e-readers, a large percentage of students and faculty use eBooks not only for leisure but also academic purposes and that they access them through their academic library.

Konrad (2013) conducted doctoral study on the eBook purchasing models, its effects on the patrons and the library professional perceptions of the academic libraries. It also attempted to understand the techniques used by the Uppsala University Library to manage eBooks. The study explored and analyzed the social interaction surrounding eBook management techniques at Uppsala University library as a form of case study analysis. Qualitative research methodology by using Pierre Bourdieu's field theory was adopted for the study. Various research methods are used in this study like analysis of documents, interviews and contextual analysis. The study revealed that some

techniques used for procurement of print books are also used for eBook procurement management. Also, due to the digital form of the books, specific additional methods are used for the management of eBooks. The analysis showed that librarians in both similar and different subject libraries employ both unique and complementary techniques to eBook collection management.

Kahn & Underwood (2013) highlighted the issues related to the adoption of eBooks in academic libraries. E-books have not been successfully integrated into the academic library collection as ejournals do them. The literature of the English language published between 2007 to 2013 are used for review in this paper. Issues related to the procurement of eBooks like copyrights, licenses format consideration and electronic devices required, etc. are discussed. It also highlighted that libraries would face changes and roles of libraries will also change in the near future. For the growth of library collection is very crucial to choose the best-suited business model of eBooks considering the need of users.

O'Brien, Gasser & Palfrey (2012) in this paper discussed various business models available in the market for libraries and individuals. It highlighted that eBooks demand and revenue reported during the period 2008 to 2010 is approximately triples as per the report by the Association of American Publishers. It highlighted that eBooks collection has increased in American libraries. Demand by patrons is also risen but found that few popular titles are not available in digital forms. Lending agreements by eBook providers like publishers, distributors impose some restrictions for libraries on access and terms of the agreement.

Polanka (2011) highlighted more benefits of eBooks other than accessing anywhere and anytime. It also increases virtual reference services, provides full-text searching, avoiding pilferage as compared to its print part, just in time content availability, easy sharing of content and easy discovery of its availability. Although its availability is for more than four decades, it is still at an early stage and has room to improve as well grow. Advanced enhanced eBooks with multimedia components embedded within will increase its demand. It cited that a biography of a musician may include some of his/her memorable musical pieces, and it will enhance the quality of the eBooks, thereby making it more appealing. Appropriate gadgets to access eBooks are still a reality and required in libraries to increase eBooks in its collection.

Faraks (2011) mentioned her individual usage experience as an early adopter of the Kindle device. By and large, libraries do have eBooks in its collection. Multiple students can access the same particular title, which is required without waiting for it to be returned physically in the library, thereby saving users time. Interoperability between the devices is a hindrance found as specific eBooks have a different format and special devices are required to access the same. The standard eBook format or at least interoperable formats which can be accessed by any devices is needed. For deduplication and interlibrary loan, cooperative consortia models should have opted. It also mentions that as patrons are coming with their personal eBook readers, libraries need to enhance eBook collection in the libraries.

Kastenbaum (2011) made an observation that many bus/train commuters are seen with eReaders. As per American Association of Publishers eBooks have accounted for 6.4% of the publishing in 2010 and 114 millions of eBooks were sold. Newyork Public Libraries eBook lending has significantly increased. More and more libraries in America are growing eBook collection. It also stated fear for less physical footfalls in libraries, as the growth of eBooks popularity is seen. However, it is also argued with a calm and quiet place to study and still smell of print books are appealed and draws users to libraries.

Slater (2010) reviewed published literature and research on eBook use and perceptions and why ebooks are not gaining popularity in academic libraries. E-books are yet to achieve a significant foothold in academic library collections, accounting for only a fraction of academic collections and budgets. This article emphases on extracting common themes from the literature that illustrates why ebooks have not yet become the cornerstone of the academic library. Patrons do not use eBooks because of usage restrictions, inability to use eBooks in ways they expect, to take them away from the library and use them wherever they may happen to be. Digital rights management causes compatibility problems that sharply limit eBook potential. Insufficient training in how to use eBooks is a common complaint cited in the literature. Lack of available academic eBook content may be the largest limiting factor in the growth of eBook market share in academic libraries. The titles the library wanted to purchase are available, the process of ordering and acquiring, licensing restrictions makes it impossible for libraries to buy individual titles because of restrictive purchasing models.

Martin (2007) conducted a study on Issues and Challenges of Cataloging eBooks at the University of North Carolina at Chapel Hill University Libraries. The objective of this study was to provide the best access to the growing number of eBook collections by adding eBook records to their catalogues. Cataloguing standards for electronic resources have been subject to multiple revisions, making libraries unwilling to spend time and resources, creating catalogue records that will need to be updated. Availability of MARC records for individual titles often provided from the vendor. Vendor-supplied records provide title-by title cataloguing and may be loaded quickly into the catalogue carefully for quality and ensure the records correctly represent the titles the library purchased.

Jantz (2001) analyzes the impacts of ebook technology on library service model in academic libraries of the United States. It is observed that library services are impacted by the evolution of eBooks into a library collection, standards, formats, pricing/business models, IT infrastructure, etc. The study focuses on facilities and limitations with respect to publishers, libraries & users and also merits and demerits of eBook technology. The study prompts library professionals to assess trends in innovations of the eBook industry and adopt policies as per the requirement of the institution to cater to the present and future needs of the users.

Chrzastowski (n.d.) researched the Lib-Value IMLS Grant and in cooperation with Elsevier Publishing on Assessing the Value of Ebooks to Academic Libraries and Users of the University of Illinois at Urbana-Champaign (UIUC) Library in 2010. Data were collected to measure the size, cost and use of the UIUC ebook collection. Total 129 UIUC faculty, PhD students and graduate students participated. This study examined that value of ebooks to UICC libraries & users and eBook collection assessment with regards to cost and use statistics. Elsevier ebooks were used by researcher mostly for their research. As comparing the cost of activities like processing, circulation, cataloguing, storage & preservation, ebook collection is more valuable & cost effective than printed book.

2.43 E-books acquisition

SOAS Library (2019) considering the users requirement, financial capability, authentication and license access issues developed Electronic Resource Policy. It

includes policy for all electronic resources viz, eBooks, e-Journals, e-Databases, etc. E-books policy mentions, Electronic versions of books are purchased as additional copies for books which are high in demand. Some of the set of preferences are to purchase from a single vendor, so that library users have to learn only one interface. Considering legal rights over the ownership, one-time purchase is considered instead of leasing, as it is associated recurrent costs. Vendors should be selected who allows to print and download with minimal restrictions. Electronic versions of reference works should be purchased to support the teaching and research needs of users. The procured eBooks should be added to the Library catalogue.

Johnson (2018) described the collection development policy in detail. It mentions that collection development is important and should aim for meeting information needs of the user population and should be developed considering the library budget and human resources. All areas of the collection should be given equal importance and development should be consistent and should aim to satisfy the library mission, and also users need. The paper also highlights the historical view of collection development policies of various types of libraries.

A study was conducted to find the applicability of evidence-based acquisition (EBA) model to collection development in engineering subjects (Solomon & Gray, 2018). Due to budget constraints library have experimented with EBA model and found that it significantly enhanced access to needed content, increased current campus needs and raised efficiency level of library collection development.

Bhat & Ganaie (2017) conducted a study on the status of the collection in agricultural libraries of Northern India and assessed the magnitude of the impact of the advent of electronic information resources (EIRs) on the contemporary acquisition. To collect data from university librarians' questionnaire was used as a data collection tool. To clear doubts, remove ambiguities and obtain data of higher significance from the respondent's Telephonic interaction and e-mail correspondence were also used. Findings show that the majority of the agricultural libraries in Northern India have a sound collection of information resources in the print form, which may continue to act as a source of attraction for users. E-books have not yet been fully incorporated into the library collection. That e-journal collection "CeRA" (Consortium for Electronic Resources in Agriculture) seems to gratify the needs of

users of these libraries, as no additional e-journals are seen to be subscribed to at present. The study was limited to seven agricultural libraries. The study will help the librarians and the library advisory committees decide on logical grounds about the proportion at which the print and electronic forms of information resources need to be acquired.

Song (2017) presented a report in the conference, and it explains as the eBook market is growing there are various challenges arising and it also explores how a mix of proprietary and open-source systems can be used to manage eBook collections. To evoke an interlocking approach to eBook management, the author has used an analogy of building with Legos. The discussion addresses functionality and pain points of the mainstream, commercial systems. It explores the ways that open source tools can be used alongside traditional software to create a fuller featured environment.

Westervelt (2017) conducted a study on to lead to learning, not to madness: ebooks and e-serials at the library of congress. The growth of eBooks and e-serials over the past decade has been phenomenal. The Library of Congress (LOC) has actively pursued the acquisition and management of eBooks and e-serials in its permanent collection. This article surveys how the LOC has taken advantage of existing structures and how it has pursued new paths to succeed in this undertaking. The study also addresses problems that the LOC faces as it attempts to build a digital equivalent to its print collection for benefits of its patrons.

Comparison between evidence-based acquisition (EBA) and patron driven acquisition (PDA) is presented in this paper (Spratt, et al., 2017). The University of Colorado (CU) have five separate libraries and they share e-resources with cooperative purchasing. An evidence-based acquisition (EBA) for collection of streaming videos for CU libraries was opted through Alexander street. They also had PDA model for streaming videos with Kanopy. In PDA content was purchased only when it was used, EBA usage statistics were monitored and then purchases are done. Usage statistics were disconcerting as showed some discrepancies, and procurement only on usage statistics was not considered as an option. CU libraries mentioned making patrons aware about the programs was very important and recommended for EBA model for libraries ownership and PDA for those who value licensed access.

Krishnamurthy & Stovall (2016) conducted a study on Nursing and Allied Health Resources–Patron Driven Acquisition, a Pilot at The University of Alabama Libraries. The library always keeps up with trends and advances in technology. The library is examined in every aspect like the scope of modernising and improving patron's interaction with the spaces, services & collection. Becker also collected literature within the field of Library and information science which shows these changes. E-book research is restricted to the type of libraries, types of patrons and types of usage. The study revealed a factor of preference to consider the eBook. The author concluded as print circulation declines, the eBook debate triggers the extreme response. The research suggests avoiding making major collection decision based on any data other than current & specific institution.

Tovstiadi & Wiersma (2016) conducted a study on comparing digital apples and oranges. This study is a comparison of eBooks which are available on different platforms. The study indicated the availability of eBooks on various platforms. The analysis was based on metadata information, content presentation or layout of eBook content and search result variation. The study highlighted the impact on patron's usage of eBooks over various platforms due to variation of presentation of the content of eBooks.

Lukes, Markgren & Thorpe (2016) did a study on eBook collection development: formalizing a policy for smaller libraries. For revising the policy for collection development, two points of views are expressed in this paper for developing a proper workflow. New acquisition model driven by patron's usage, eBooks business models and the importance of collaborative efforts is highlighted. To formularize a suitable model which will allow library professional to ascertain the needs of users and aptly choose e-resources, along with the shift in roles and responsibilities of library staff are discussed. Issues regarding budget constraints, access control, etc. are also addressed in this paper.

Li (2016) conducted a study to compare usage of library collection by the users of the University of South Alabama Biomedical Library. Both print and digital collection of the library was compared. A four-year study was conducted to understand the preference of format, i.e. print or digital. It was found that in case of availability of a title in both electronic format and print format, most of the users preferred print

versions. COUNTER statistics reports were to obtain usage statistics in case of eBooks. Further, the need to maintain title in both print and electronic format necessity and cost-effectiveness was assessed.

Haugh (2016) conducted a usage study at the Graduate School of Education. This study included all library holding print and digital. The study reflected that due to penetration of digital resources into the publication industry, this had impacted the library collection making it hybrid form. Also, the impact is seen on the budget allocation; the shift of a considerable chunk of the budget is towards digital resources. It included e-databases, e-journals and very recently eBooks are also added up. Transformation is seen in the acquiring policies of libraries. It was concluded by highlighting the importance of both print and digital collection of libraries for catering user information needs of present and future.

Oliva (2016) did a study in social science and humanities subject on removing print books. This research study aims to cover the reasons why this should be undertaken and how it can be accomplished in the humanities and social sciences. Adelphi University Libraries, a conservative approach was used to identify and carefully review monograph titles that were published more than fifty years ago, and, in most cases, this resulted in their deselection without significantly affecting the collection. A literature review was prepared. It included a review of deselection at small-, medium- and large-sized college and university libraries. The pros and cons of print versus eBooks for collection development were reviewed, including four case studies.

Dash (2016) conducted a study in an attempt to understand the organization and collection development policy at M. S University of Baroda library. Definition of collection development is explained in detail, highlighting its importance of formulation to have a roadmap to build the collection over the years. Change in the collection development policy for a period of five years was studied. It found and highlighted various challenges faced during this five-year period by the library in terms of collection building. Suggestions are also provided in this study to upgrade the library space, collection, recent ICT techniques for library services and skill development of library professionals. Latest ICT techniques like RFID for inventory control, stock verification and security are also mentioned.

Rai, Bakshi & Singh (2016) did a detailed study on an experiment carried out to weave these eBooks into the library catalogue through LIBSYS. These eBooks were available to the faculty and students through different publisher platforms and it was difficult to find them subject-wise. The library is currently using LIBSYS-7 automation software. E-books can be searched through OPAC. The technical process is explained step by step. The eBooks can be searched subject-wise along-with print books, and their full text can be downloaded through OPAC. The study establishes library catalogue as the main source of information of all library resources. Users gain eBooks as they desire from the library catalogue.

Schmetzke (2015) study about accessibility of e-resources for all people, including those with disabilities, in the context of collection development (CD). The author explores the extent to which the needs of people with disabilities are considered. The research methodology used in this study is policy analysis, content analysis, and phone survey. It was found that a lot of professional library organizations recommend accessibility-sensitive selection and procurement procedures. In future researcher, conducting similar survey have to not only select a statistically more representative sample of academic libraries but also widen their focus and include both accessibility and usability in their investigations. Practical implications like in the area of collection development, textbook, authors and course instructors have address accessibility and usability for people with disabilities. The data collected provides a broad discussion of the extent to which the needs of people with disabilities are considered in connection with CD.

Lamothe (2015) conducted a study on e-reference collection to identify its usage in both terms of quality and quantity. It was found that as the e-reference collection was growing both in quality and quantity, there was a considerable increase in usage as well. Where the e-reference remained static, there was a decline in usage.

Moore (2015) did a study on moving to an electronic-only collection development policy for Books. The study also includes a review of the literature on motivations for moving to an e-preferred collection development policy, information on user preferences and behaviour with eBooks, and technological barriers and other obstacles that still impede library uptake of eBooks. The study is concluded with a list of items to consider when incorporating eBooks into a collection development policy.

Abrams (2014) did a study on an analysis of ebrary Academic Complete at Adelphi University. The primary purpose of the study is to examine the educational and financial value of ebrary Academic Complete package to the Adelphi University Libraries. The research design used in the study is ebrary provided statistics and this sample are used to analyse subject usage and overlap with the print collection. The findings of the study are that although there was overlap with the print collection, the usage statistics are high enough to warrant a continued subscription. This paper case study of Adelphi's issues regarding subscribing to a backfile of eBooks including subject usage, print overlap, and information management

Dahl (2013) conducted a study on patron-driven acquisition (PDA) and the humanities: Assessing the fit through an examination of the literature on humanists and e-resources. As PDA is increasing popularity, we all should consider its impact on academic libraries and their communities of researchers. A study was conducted on humanities researcher usage pattern and their information-seeking behaviour and availability of eBooks on that subject and mentioned disconnect. The author also highlighted that still print material were predominant in usage by scholars of humanities and social sciences as compared with its digital version.

Jindal & Pant (2013) conducted a study on the availability of eBooks in science at the University of Delhi. The aim to assess the adequacy of the collection of eBooks in the science discipline to satisfy users information need. Also, a policy of eBook collection development is discussed. The study conducts through qualitative analysis, which included a comparison of syllabus recommendations with the availability of eBooks with prominent international publications. The study found out that less than 20 percent collection is available in electronic format and it covers less than 15 percent of syllabus requirement of various courses of the University of Delhi. This study suggested formulating appropriate collection development policy for eBooks considering user requirements. Growth of eBooks in the publishing industry is also explained in this paper. Suggestion for eBooks collection development with alternative methods are also described.

Anderson & Pham (2013) conducted a study to find out the perception amongst the users about diminishing requirement of print books due to availability and penetration of eBooks in the reading collection of the libraries and majorly due to its open access

or free access. Titles of few eBooks of the library collection were used to find out if the free versions are available in digital formats over the Internet. It was found that around 25% of titles selected for the study were available in eBook format. These eBooks were available over the Internet for ready access.

Carrico, Cataldo, Botero & Shelton (2013) conducted study on how eBook acquisitions might affect future collection development decisions, a team of librarians from the University of Florida (UF) launched a project to assess cost and usage of eBooks purchased using three different acquisitions methods: eBooks acquired in large publisher packages; single-title eBooks selected through firm orders; and eBooks obtained through two patron-driven acquisitions (PDA) plans. The cost-usage data were then sorted into three broad areas of subject disciplines—humanities and social sciences (HSS); science-technology-engineering-mathematics (STEM); and medicine (MED)—and the results were reviewed and summarized. The authors compared the cost-usage data of eBooks acquired by the acquisition's methods across the three subject areas and describe how the findings are affecting current and future acquisitions, traditional collection management, and budgeting at UF.

IFLA Acquisition and Collection Development Section (2001) developed a guide for writing collection development policies. It mentioned that the main function of the collection development policy could be put under four broad topics, namely Selection, Planning, Public relations and broader context. Major Collection development policy elements discussed are General statements, Narrative statements, Subject profiles, Collection evaluation methods, Collection depth indicators and Language codes. It is also identified to be useful in budgeting, management of gratis, collection management activities for print and digital formats, and withdrawals of both monographs and periodicals.

Bryant (1980) explained about collection development Policies in medium-sized academic libraries. Definition by Edward Evans was cited, about collection development statement as "the written statement of the process of assessing the strengths and weaknesses in a collection, and then creating a plan to correct the weaknesses and maintain the strengths". Proper description including the proportion of monographs against serials, materials of various subject groups and appropriate level of collection intensity. As per the conducted studies, it was mentioned that very few

medium-sized academic libraries have written collection development policies as compared to more extensive libraries.

2.44 eBooks Models

Polanka (2013) focused on the business model for subscription services on ebook access stating that will libraries, publishers and book distributers be affected with access based subscription services. Safari books online were launched in 2001, libraries and users benefited by paying an annual subscription fee in order to access continuously refreshed technical content. Publishers launched their ebook subscription services following safari model. However, some issues are highlighted which may not help work this business model such as content curation, challenges faced by publishers. Still, for libraries, this would be beneficial to attract it users.

Kaczorowski (2013) conducted a study on an annotated bibliography, which covers patron-driven acquisition and issues faced by academic libraries when devising a PDA program. This model allows procuring books which are required to users immediately, as user does not have to wait for the library to intervene. For this study, peer-reviewed articles were selected that gave the latest information on this topic. This article focused on print PDA as well as ebook PDA. It is also found that teachers prefer to choose scholarly books using this business model. Libraries can adopt just in time PDA model to improve customer service and collection development as the demand for ebooks is growing.

Li (2013) conducted a study on the impact of ebooks on print book sales receiving increasing attention in the publishing industry. This study estimates a dynamic structural model using individual-level purchase panel data on book purchase and e-Reader device adoption. This paper use representative individual-level observations of actual purchasing data and structurally estimate the degree of cannibalization and market expansion. Data were collected from 3 different data sets: consumer's book purchase history, publicly available book from the Amazon website & device adoption record gathered by ComScore. Ebook serves as a lower-priced and higher-quality option hence ebooks cannibalize print book sales because they are cheaper and convenient to read. There is significant growth in the ebook market as it gives instant

delivery, low maintenance & storage, cost, 24/7 availability, and comfortable to read & carry.

Chiarizio (2013) mentioned that in the United States, public libraries play a very critical role in making material available to everyone regardless of their status or income. As there is a surge in eBooks publication, libraries have to play an important role. Methods of lending eBooks by libraries and developing systems needs government intervention. Libraries should embrace the new form of digital media along with traditional one and get benfit of both. Digital Rights Management, Copyright issues regarding digitised material from the analogue version are to be considered for preservation. The eBook industry is still in its infancy stage and facing growing problems, which needs urgent attention.

Proctor (2013) asserted that libraries should consider other options for older eBook content, namely Back Lists which are offered by publishers as 'big deal' monographs. Major eBook backlist provided during the year 2012 and 2013 were evaluated. Weeding out of old issues were backed by back list eBook titles. Patron driven acquisition is opted by libraries considering that eBooks will receive use. It was observed that in patron-driven acquisition back list titles are used often. Various business models like Patron Driven Acquisition(PDA), evidence based eBook Selection(EBS), Build Your Own Collection, etc. are discussed. It is important for libraries to weigh the backlist titles for its usage and requirement; and should not procure only to Clear Your Shelves policy.

Aptara (2012) fourth publishing survey revealed that there had been a growth of 30% in the production of eBooks in the last three years. At least 50% of titles are produced as eBooks by major publishers. Revenue of eBooks as per the year 2011 survey indicates 100% increase. A transition is observed to a new digital paradigm from centuries-old print collection. It also states that still it is not fully digital publication, as 86% of eBook publishers are also producing print versions and very few are having complete digital collection. It highlights eBook trends, strategies, business models and challenges faced by the eBook publishing industry.

Tian & Martin (2012) discussed that the eBook publishing industry has to face many challenges to sustain the growing global phenomena of corporate social responsibility and organisation sustainability. The primary vital concepts, namely corporate social

responsibility, Corporate measurement, Corporate governance, corporate sustainability and reporting of the publishing industry, are discussed. It highlights business models implications of design and challenges of sustainability. It is predicted that a generic business model with latest development more web-centric will emerged by academic publishing sector.

Tucker (2012) evaluates the ebook collection in the University of Nevada libraries (UNL) based on subject and publisher. The UNLV Libraries has purchased electronic book collections from individual publishers and third-party vendors. This study focuses on the usage of ebook by subject and which publisher ebook was most often used. NetLibrary and Ebrary usage report were accessed for this study. The assessment period allowed the UNLV Libraries to identify trends for subjects and publishers. The findings revealed that subjet analysis of ebook allowed the collection management department to identify subject areas that have high users of electronic books. Thus, emphasis can be done on select subject areas. And the analysis of use, also provided a list of publishers that had been highest use and these publisher collections should be included in both formats including electronic book.

Jiang & Katsamakas (2010) conducted a study on ebook technology and its impact on book markets. E-book technology offers an important channel for delivering books to consumers through book readers. The object of this study is to analyze how eBook technology affects strategic interaction in the book market. A stylized game-theoretic model was developed for the study. The findings revealed that several factors have to be considered to manage the entry of ebook technology such as the differentiation & intensity of competition in the physical book market, cost difference in ebook & physical books, preference for ebooks purchased by consumers.

Polanka (2008) undergone a study on eBook aggregators usage, which provides a portal which allows libraries to procure eBooks and also to disseminate it to users. It manages the complete process of eBook management right from identifying the availability of eBooks, sending the order, initiating the access and for end-user to get it downloaded at their terminals. The study was focussed on three such aggregators, namely MyiLibrary, Electronic Book Library(EBL) and eBrary. EBL gives the convenience of developing content as per courses offered, which may be full eBooks or even eBook chapters which may be purchased or library may already have stocked in its collections.

An interface is provided by eBrary, which allows individuals as well as institutions. It also offers a certain level of customisation on its platform by allowing meta-tagging, the various format of eBooks including PDF and XML, and also provides usage statistics. MyiLibrary stocks vast content which is proprietary in nature and is not available on any other platform. Not all titles displayed on the portal for sale, and it focuses on the demand driven acquisition model. The study also highlighted the benefits of using eBook aggregator platform for eBooks procurements, like availability of various international level eBooks on one single platform, the vast number of titles are available and requires no special technical / infrastructural assistance being on the cloud.

Price & McDonald (2008) mentioned NetLibrary then only eBook aggregator of their library made ebooks unpopular amongst the students for concurrent usage restriction of the same eBook pages. Availability of titles was compared of major four aggregators viz. EBook Library, EBrary, MyLibrary and NetLibrary. It was found that NetLibrary had the highest number of titles and EBrary has a more in-depth collection. There was quite a good number of overlap between the aggregators, thereby making libraries to choose amongst. It was found that close 70% of print titles of libraries were not available as eBooks. Libraries bought print books which are not available in eBook formats and avoids duplication.

Nauman & Miller (2000) reported that the advent of ebooks had presented an excellent challenge for librarians, booksellers and publishers. Some prominent issues are addressed in this article like encroachment, change, royalties and sub-rights for easing publisher concern and that they can participate in the development of new business practices. Digital rights management and terms of use of eBooks are also important factor. The increased utility of ebooks makes it as valuable as print versions. However, for the development of new business, the publisher will have to partner with print-on-demand to avoid encroachment, will have to change the method of bookselling and expand business through electronic publishing. Appropriate measures are required in this direction. Hence, the key for making ebook work for traditional publisher/ library market is to find a middle ground that meets all of the needs & the customer demand will drive the sale of ebooks.

2.45 eBook readers

Torres, Johnson & Imhonde (2014) used the Technology Acceptance Model (TAM) to explore the factors that influence eBook reader adoption. It was found that the most preferred device was iPad followed by Kindle. Although having major advantages of eBooks over traditional books; still traditional books were mostly preferred for both pleasure and work/school reading.

NextBigWhat (2014) did post an article of eBooks & E-Readers in India: What Readers Want [Report]. Due to the emergence of IT giants like Google, Apple, commercial sites like Flipkart, Amazon, etc. eBooks have gaining importance and are being used more. A survey was done by India Book Store to find out what will make a reader buy an eBook. The findings of the survey were more than 40% of light readers & serious readers are waiting for eBook price to come down. Around 52% of readers prefer print over the electronic link, 53% of reader prefers to read on an electronic medium, 61% of participants haven't bought eBook reader yet because of inhibitive price whereas 43% would buy if the price goes down. Majority of them mentioned kindle would be their preference in case if they had to buy an eBook reading device. Some of the population who are serious about their readers preferred Kindle, whereas tiny population prefer to look up for some cheaper available options in the market.

Heerden & Belle (2013) conducted a study on the usage of e-readers and tablets by the students in higher education. The study was conducted to assess the perspective of students about the educational use of tablets and e-readers in the University of Cape Town. Data was collected by distributing questionnaire which inquired about preferences, awareness and conditions about the usage of e-readers in an academic setting. It was found that students are fascinated and willing to try out new technology and put to use in academic study. Advantage of accessing eBooks from anywhere and instantly on the e-readers was the most appreciated. Students opined that in near future eBooks may replace print books completely. Ability to carry a small personal library in the form of the e-reader in their bag was found to beneficial.

Polanka (2013) did survey on lending E-readers: legal, ethical or practical. Libraries have the hardback, paperback, large print, audio and eBook collections. Many libraries have e-readers on hand to demonstrate how to download from their eBook collections or for other training purposes. There are just as many reasons not to offer e-readers,

however. First is the cost. Devices aren't cheap, and they require peripherals, ongoing maintenance, and an assortment of content. The ability to read a print book via text-to-speech (TTS) does not make an e-reader fully accessible. E-readers must have audio-controlled menus as well. Lending e-readers is a complicated service for libraries, one that has a host of legal, ethical, and practical considerations. Lending devices will be a local decision, based on local needs

Reuter (2012) mentioned that in the United States of America, eBook popularity is increasing. As per the Pew Research Centre, there has been a 23% increase in usage amongst 16-year-old e-readers. It is also found that it is co-related to increase in e-reading devices ownership. In 2012, ownership of e-readers, either a tablet or eBook reading device had risen to 33%. It was also found that well-educated around the age of 30 to 49 with considerable income read eBooks. And as the age of people increases, the e-readers number is reduced. In comparison with men, it was found that women read more. E-books borrowers in libraries have seen a 5% increase.

Broadhurst & Watson (2012) investigated the usage pattern of MBA students at the Manchester Business School of the University of Manchester. Some of the advantages identified were aesthetically pleasing to the eye, robust, quick to start, easy to navigate, easy to download library articles, etc. Disadvantages mentioned were no backlight or contrast control, no keyboard, slow to load, screen too small, change in document view, expensive, etc. Some technological shortcomings need to be addressed in tandem to legal issues related to access.

Schomisch, Zens & Mayr (2012) offered insights on e-readers for acceptance, usability and limitations. A group of students were provided two different file formats on four different e-reading devices and evaluation on performance were summarised. It concluded that e-readers encountered usability issues. Display of text on e-readers was legible and readable. EPUB3 format and Kindle Format 8 were potentially advance and accepted well by e-readers from the scientific community. The reading behaviour showed that Print function was important and few parts were printed to read the same highlighting there is no intense onscreen reading. It concluded that dedicated eBook readers couldn’t compete for the all-purpose devices like tablets, notebooks, laptops or PCs.

Weisberg (2011) examines e-textbooks in the context of the classroom and concludes that cost, perceived benefit in the classroom, and recommendation of the instructor are significant predictors of adoption behaviours. It also notes that the use of e-textbooks has no apparent impact on learning outcomes. However, others have drawn alternative conclusions.

Chou, Stu & Lin (2010) did study the Comparison of Pre-Adoption and Post-Adoption Beliefs Determinants of eBook Readers Adoption and Continuation. Users adopt and continue using eBook readers (e.g. eReaders and digital devices equipped with reader software) become essential design issues for related scholars and practitioners. Due to the rapid pace of development and innovation in information technology, critical design factors are still obscure. There is two research method used in this study, i.e. customer observation and individual depth interview to reveal user behavioural intention toward the latest eBook readers. The findings of the study were that intention to adopt is solely determined by normative pressures. In contrast, user intention is exclusively determined by attitude, which refers to the perception of content enrichment, reading servicisation, and device personalization. Based on the result of the study, it was suggested that not only researchers can give guidance to develop eBook but also service provider can help in advancing eBook reader.

Gupta & Scaggs (2010) conducted a study that explore benefits in any obtained by eBook reader usage in academic programmes. The study also analyses the usage of eBook and usage of eReaders. E-readers are devices which are required to use eBooks. There are dedicated eBook readers available in the market and some multifunction devices which has an application to read eBooks. The eReaders in the survey also includes desktop computers, personal laptop, notebooks, palmtops, etc. Management undergraduate students were identified as variables in the study. It was found that the existing eReaders are not complimenting the academic studies and need further improvement and development to best suit user's expectation. The study has also formulated a framework for evaluating the eReaders on various parameters to best suit the user's expectation.

2.46 E-books usage studies

A study to compare the usage of pBooks and eBooks received at University of Manitoba's preferred YBP approval plan was conducted (Horner, 2017) to examine cost per use for the approval pBooks and eBooks. It was found that overall eBooks were used more than pBooks but when examined by subject discipline, no significant difference was found.

Nwagwu & Okafur (2014) conducted a study on the usage of eBooks amongst the master's students of the University of Ibadan, Nigeria. The E-book is becoming popular day by day. But adoption & use of eBook is not clearly understood by many institutions. The study had used a sample survey research method. The sample included 1500 plus master's students from arts discipline and technology discipline and tool used to collect this data was an interview schedule and questionnaire. The findings of the study indicated usage of eBooks by both discipline students; the internet was used very often specifically to access the Google search engine. It was also indicated that most of the recommended titles are behind a paywall and are not freely available, those which are available as open access and not related to their curriculum. Use of eBooks is to gain more insight into a particular subject. Changing dynamics of the collection in libraries by inclusion of electronic resources in general and eBooks in specific provides scope for an enhanced and wide range of new library services.

Percy (2013) conducted a study to know the opinion about the eBooks by the staff of the New Zealand Public library. It is found that various studies are conducted to understand the opinion about eBooks, but very few studies are done considering public libraries. The aim of the study is to understand features approve and averse about eBooks and also to know about their endurance about eBooks. The staff of libraries of Wellington City were encouraged to participate in the survey by sending an invite through email on two discussions list. For library staff of New Zealand public library, PUBSIG discussion list was provided whereas, for library staff of New Zealand library, Newviz discussion list was provided. The questionnaire included a statement which was developed used a Likert scale. The survey was sent online to the library staff. The number of variables involved were around 200, of which one third from New Zealand public library mentioned that at least one eBook was read by them in the past year. Two-third of them mentioned that they feel pleasure helping the patrons in technical

difficulties associated with accessing eBooks. They also opined stocking good eBook collection in their libraries. They also mentioned that libraries are going to include more eBooks into their collection and staff are more than happy to serve users and provide assistance in eBook usage.

Lai & Li (2013) did a study on university student behaviour in using eBooks in Hong Kong. The adoption rate of eBook is increasing in university libraries. E-book is low cost and also easier to store that's why libraries option for buying eBook than imprint books. Therefore, it leads to a bad match between the user & expectation of the user. The primary purpose of the study is to investigate the usage of eBook in universities in Hong Kong. Usage behaviour will be observed & examined in order to identify & discover a more sustainable system for the future development of eBook in University in Hong Kong. The methodology used in the study is a questionnaire. To collect experience of the student using the eBook questionnaire was used as a data tool. The findings of the study revealed that student had preferred choice of printed books. Students are willing to accept eBooks as a substitute for a printed book. This study can benefit academic libraries as it provides valuable assistance to enhance & refine their services & development their collection of eBooks through understanding & appreciating behaviour of a student who uses eBooks.

Gedeon & Meyer (2013) did a study on eBooks at Western Michigan University: A Case Study. Western Michigan University (WMU) intake of students is around 28,000. University is ranked by the Carnegie Foundation for the Advancement of Teaching in the category of Doctoral/Research Universities-extensive. There are some eBook collection and services offered by University Libraries include American Council of learned societies (ACLS) E-History books collection, ebrary, Early English Books Online (EEBO), Gutenberg-e, Project Gutenberg, National Academies Press, NetLibrary. E-books meet the needs of many users, provide e-reserves and references updated long before new print editions become available. The work towards standardization and possibilities of new acquisitions models promises continuing development in the world of eBooks.

Marques (2012) conducted a study on e-Textbooks Usage by Students at Andrews University. E-books are procured into the academic library's collection for over a decade now. Literature reveals that many kinds of research indicate that patrons still

prefer the printed format over the electronic version. The primary purpose of the study was to investigate usage patterns of and attitudes towards eBooks by students at Andrews University and how the use of eBooks impacts student's learning. There were two questionnaires distributed to students, one questionnaire for students who opted for purchasing and using eBook. The other questionnaire was for the student who went with the traditional print book. Results are tabulated and compared to the results of 2001. The methodology used here is a questionnaire. The study revealed that preference was still on print monographs. The possible reason cited were lack of awareness about the availability, the strain on eyes with gadgets, and difficulty in adjusting with technology.

Library Journal (2012) conducted a survey on eBook usage in U.S. Academic Libraries. Academic Library is one of the types of library. Academic library serves colleges, universities, and other institutes of higher learning, have two essential mandates: to serve the student body, which requires comprehensive research materials to complete class papers, dissertations, and other projects, and to serve the faculty, who are also heavily immersed in their own primary research projects, many of which (they hope) end up published in the professional academic journals the library may carry. Ebrary and EBSCO host (the latter mainly via its acquisition of Net Library) is the most preferred eBook vendors, to the extent that academic librarians have a preference, which they increasingly do not. In academia, however, eBooks can have that same definition, but the term can also refer to reference books, textbooks electronic reference materials that may not even resemble a book as we know it, academic journals, scholarly monographs, e-textbooks, even long documents available solely as web pages.

Egberongbe (2011) conducted a study that shows the use and impact of e-resource that are very common among the lecturers and research scholars of the university of Logas. To get desired and relevant information most of the teachers and research scholars are dependent on e-resource. The study reveals that investment made in acquiring these resources and in the practical use of e-resources is not worth it. The study suggestions like infrastructure and training programmes are essential for better use of electronic resource campus-wide. From the analysis of the findings, it was evident that because of poor infrastructure users are unable to use e-resources.

Wu & Chen (2011) did a study on graduate students' usage of and attitude towards eBooks: experiences from Taiwan. The purpose of the study is to investigate graduate student's usage of, and attitudes towards eBooks at National Taiwan University. Total twenty graduate students were interviewed from the field of humanities, social sciences, science and technology and medicine. It was found that graduate students used eBook mostly for study and research. Students mainly used monograph more often and also textbooks and reference tools. Students praised the convenience of using an eBook, but they also mentioned several limitations. They did like the keyword search function of eBook, which is very convenient and found helpful. Students also borrowed the corresponding paper version of an eBook from the library. Student preferred both print & electronic version of the book from the library. The study also highlights multiple aspects of graduate students use behaviour to enhance eBook collection development in the university library.

Library Journal (2011) did a study on eBook penetration & use in U.S. School Libraries. School libraries needs are different from higher-level academic libraries & public libraries. School libraries have many different roles, amongst them are lower grades students gaining their interest in reading is one of the tasks & higher grades students, teaching them to use research material and completing academic assignment is an important role. Last year it was found that school was at still an initial stage of procuring eBooks for students. Nine hundred five respondents have experienced an expansion in that direction this year survey. This survey was done to measure current and projected eBook availability in libraries; it also shows user preferences in terms of access, subjects, library purchasing terms, and influences. Library journal developed programmed hosted and tabulated the survey. In this survey report, the data collected was cleaned to eliminate duplicates from the same library and to include U.S. School Library.

University libraries & users have accepted eBooks & e-Journals (University of Liverpool, 2010). There is growth in acceptance of eBook & e-journals due to variety of reasons. Since there is a rapid acquisition of eBook, it has changed the character of the library catalogue, providing patrons with access to much more information. As part of its 2010 eBook acquisition agreement with Springer, the University of Liverpool agreed to undertake a comprehensive study of eBook usage and perceptions among its students and faculty. The project is divided into three parts an analysis of usage reports,

an in-depth survey of user habits and opinions, and a series of focus groups covering eBooks and related topics. The main purpose of the article is the second portion of the project, a review and analysis of the results collected by the University of Liverpool in their survey of users' habits and opinions in using eBooks. Library patrons from the student and faculty population were surveyed as to their awareness and usage of eBooks as well as their opinions about the utility of eBooks. The survey results can draw a fair number of conclusions about the awareness and usage of eBooks at the University of Liverpool. More than 80% of respondents knew that they had access to eBooks through the library. The vast majority of users found eBooks to be useful, with convenience and the ability to quickly access information the major reasons for preferring eBooks print. Overall, there seems to be a consensus that eBooks will complement, but not completely replace printed books for the foreseeable future.

Chong, Lim & Ling (2008) conducted a case-study on eBooks Scenario in Malaysia Tertiary Education. The origin of internet technology has made many things accessible. Previous researches indicated slow adoption of eBooks in the library. The aim of the study was to assess the usage of eBooks by the student users of Multimedia University. A survey using an online questionnaire tool was conducted inviting student users to participate. The queries included were to find out the acceptance and perception of users about eBooks. The study highlighted constraints of visibility of content on screen causing eye strain and some hardware issues which causes hindrance in the inclusion of eBooks in the library collection.

2.47 eBook status in the Global Market and India

Bookboon (2013), an eBook publisher, conducted a three-month survey of thirteen countries of the world having a potential eBook market during the period December 2012 to February 2013. With the availability of advanced e-readers, it is expected a 50% increase in eBook consumption. USA is leading in reading on e-readers followed by Netherlands and UK. It was found that e-reader ownership was high among US, Netherlands, UK, Belgium, Germany followed by a few others. Price perception of eBooks was analysed and was found that Indian readers were most unsatisfied with eBooks price. And the most cited reason for not using the eBook was non-ownership of an e-reader and cost factor.

Wischenbart (2013) in global report 2013 offers the status of eBooks in the US, UK, Europe, Brazil, China, Indi, Russia and Arab countries. It highlights the growth in eBooks in the global publishing market. Two largest eBook markets are the USA and UK. In Europe, eBooks are adopted by readers, specifically fiction genre. In Germany, 15% revenue of fiction is from eBooks. In China, publisher and domestic bookseller have strong consortia. Leading global giants are Amazon and Apple. Kobo has recently started partnering with local book chains to provide an alternative to Amazon and Apple.

Chang (2013) mentioned that acceptance of eBooks is late as compared to the rest of the world, although being highly developed and have a wide range of computer-based technologies. Smartphones played a significant role in the development of the eBook market in Korea. Page store, like KAKO's provide users to view the content for free. There is a high change rate of smartphones among users. Also, 1500 new eBook content is created online per day.

Costa-Knufinke (2012) illustrated that eBook acceptance in the Spanish publishing industry is slow but growing. Launch of Amazon Spain will bring new dynamic pricing and new business models. Due to the availability of one-click devices, dedicated eBook readers are underdeveloped in Spanish eBook market. Discounts of 20 to 40% are provided to eBooks as compared to traditional books. The Spanish government is also acting as a catalyst agent for change and adoption of eBooks in the country.

Next Big What (2012) wrote an article on whether Indians will buy eBook. Amazon launched its eBook store in India, and they conducted a poll to understand the preference for eBook vs dead tree edition. The findings of the poll were 45% to physical copies only, and 20% of preferences were to buy eBook edition only, and 35% were switching from physical to eBook edition if they get a major discount. If eBook is priced well unlike to U.S market, which adopted eBook for many other reasons than India is still a price-sensitive market. Amazon is trying to bring down the price point of eBook to a level where a customer may evaluate the physical book vs eBook.

Jayadevan (2012) conducted a study in an attempt to find out pricing difference between the same titles in both formats, i.e. print and electronic. Commercial platform likes Flipkart and amazon hosting books in both formats were analysed in this study. The paper also cited amazon study statistics which mentioned users are willing to procure

eBooks if heavy discounts or offers are provided. However, there few users who preferred print books over eBooks. Book of a famous and popular novelist of India was identified, and the pricing was compared in both formats. It was found that the lowest rates of eBooks and print books were provided by book stores and Flipkart.

Mehta (2012) did a study on eBook sale explosion. Printed books or eBook is still a debatable topic. Recently, Amazon UK said that the sale of digital editions had crossed the sales numbers of print books. For every 100 printed copies being sold, 114 digital books are sold in the UK. This massive change has happened in a short period of time. And this is despite the fact that digital books in the UK are 70% costlier than their US counterparts. There is a reason for not including eBook in India like the high price of the device, rampant piracy and mindset. According to Bowker, there were nearly 25 million Indian eBook buyers in February 2012 and almost 15 million Brazilian eBook buyers, making them the second- and third-largest eBook markets in the world behind the U.S. at nearly 60 million eBook buyers.

Ramaiah (2012) did a study on users' perception about eBook in India. The survey was conducted using a questionnaire as a tool to find out the user's view on using eBook & printed document. The study covers samples of different age groups, class cadre, background, domains and acquaintance level with computer. The study indicated the willingness of citizen of India to use eBooks. However, the predominant print book is still preferred. It was also found that most of the users are very much aware of the benefits of using eBooks and certain constraints regarding the medium required to use eBook. Users were ready to pay equivalent or little extra price to a book in electronic format.

Loan (2011) identified open access eBook collection, particularly in Central Asia related to social sciences subject. It was found that there is a rich collection of open access digital repositories, namely Google Books, World Bank, California Digital Library, International Monetary fund, etc. These resources were accessed by many Central Asian Countries, namely Kazakhstan, Pakistan, Afghanistan, Mongolia, Iran, India, etc. As there is an excellent collection of open access eBooks available, but there is a need to make the user community aware of the same. Library personnel here should take the initiative and play the role of educator for bringing awareness amongst the users.

Ramaiah (2006) conducted a study of electronic publishing (e-publishing) trends in India. This study will be compared to another survey did in Singapore to identify the challenges; opportunities & problems area faced by the publishing industry in Asia. The study findings show that one third (35%) of Indian & about three quarters (74%) of the Singapore publishers are engaged in e-publishing. 20% of Indian publishers likely to start e-publishing in three years. E-publishing in the Indian publishing house has not been introduced is because of lack of awareness about new technology & poor acceptability of e-publishing among users.

Shen (2012) conducted a study to give insights into China eBook market. The Chinese market has seen three phases in a decade; the primitive stage, trial-error stage, and developing stage. E-book B2C market in China is still at the infancy stage. Obstacles faced are user's acceptance, copyright issues and reading devices. It is found that APABI eBooks are quite less than both Sursen and Superstar. Behavioural change amongst the user is required for the success of the eBook industry, so as to create best-suited business models. Very less eBook reading devices are available for readers in China. Also, these devices should bring a similar reading experience and should be less expensive.

2.5 Summary

Review of literature has highlighted the following points:

- With the advent of information and communication technology, the format of resources is changed. More and more resources are now available in digital versions.
- Academic libraries role has changed drastically as they no longer have to deal with the only print collection but digital as well. Libraries being in hybrid collection mode, librarians have to equip themselves with the latest skillset required to handle digital collection.
- Although users widely use e-journals, still eBooks are yet to become popular.
- E-books in libraries are slowly finding its place. Various business models are available like subscription, perpetual, pay per use, evidence-based procurement, patron-driven acquisition, etc.

- The vast majority of usage study mentioned that eBooks are found to be useful, for convenience and the ability to quickly access information.
- Students praised the convenience of using an eBook, but they also mentioned several limitations. The print version is still much preferred by some college students. Lack of awareness, not knowing how to get it, eyestrain, and difficulty of reading are the culprits for students not using eBooks more often.
- In the global world, USA, UK, Germany, Netherlands, etc. have seen the eBook sale explosion and better adoption of eBooks in libraries. In India, the progress for eBook is still in the infancy stage.
- Overall, there seems to be a consensus that eBooks will complement, but not completely replace printed books for the foreseeable future.

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Chapter 3
E-books in Engineering College Libraries of Mumbai Metropolitan Region

3.1 Introduction

Education is a form of learning, imparted through training, teaching or reach by one generation to the other in which the set of skill, information, knowledge and habits of a person is transferred. Adam Smith (1776) pointed out that a "man educated at the expense of much labour and time may be compared to one of those expensive machines" (Spalletti, 2014).

3.2 Education in India

Education is a tool to reach sustainability, as intellectual and skillful citizenship is required to build a strong nation. It is important to educate the citizens to meet forthcoming needs of future generation. Higher education system of India is highly developed; it imparts training in all major intellectual endeavors like medicine, agriculture, law, architecture, engineering, science, commerce, computers, languages, arts, etc. As per the Act of Parliament there are various Universities like Central, State, Deemed To Be and Private. There few institutes of National Importance. In India, for higher education system there exists three levels of qualification viz. Graduation level, Post-graduation level and Doctoral level. one to three-year duration diploma courses are imparted at Under graduation level. University Grant Commission (UGC) is the body who designs the programmes and implement at both under graduation or post-graduation level.

3.3 Technical Education

Technical education means a programme that offers skills and information required in manufacturing and service industries. Institutions imparting such skills, training and offers programmes like engineering and technology, management, hotel management, pharmacy, architecture and such others are called as technical institutions. Enormous growth is seen in last two decades in the technical and management education system in India. India stands second after China for having largest education system in the

world. Due to the launch of Five-Year Plans by Indian government and major emphasis on education, the growth of technical education was phenomenal.

3.31 Engineering Education in India

The Government of India considering the future growth in industry and economy, identified the need of imparting technical education. University Education Commission was set up and upon its recommendations engineering and technical institution were upgraded or newly set up. Indian Institute of Technology and Regional Engineering Colleges (now NIT) were setup in cooperation with central and state governments for providing world-class engineering education. There are good number of central autonomous and state government engineering colleges.

Due to increase in demand for engineering education in 1980's few private engineering institutions were started. For many students after 12th (i.e. 10+2), engineering is the most preferred choice. As a result, heavy competition is seen to get admission in top institutions. the entrance exams for such institution are very intense. Many coaching classes are imparting education on cracking such entrance exams. As there is huge demand for engineering education, many self-financing private engineering colleges are mushrooming and more than half engineering graduates are from such institutes.

3.4 Governing bodies of Higher Education

All universities in India come under the jurisdiction of the University Grants Commission (UGC) and all institutions of technical education (IITs, IIMs, IISCs, IISERs, NITs, SPAs) are regulated by All India Council for Technical Education (AICTE). It is mandatory for all institutions to be recognized by the appropriate national level statutory bodies established by the Government of India for compliance to quality standards.

3.41 Bureau of Technical Education (BTE)

The BTE in the Ministry of Human Resource Development provides grants to centrally funded institutions such as the Indian Institutes of Technology (IITs), Indian Institutes of Management (IIMs), School of Planning and Architecture (SPA), New Delhi, Technical Teachers Training Institutes (TTTIs), Indian School of Mines (ISM), Dhanbad, and Indian Institutes of Information Technology (IIITs). BTE processes the

programmes of these centrally funded institutions, monitors and evaluates them (MHRD official website).

3.42 Directorate of Technical Education (DTE)

DTE is responsible for ensuring that trained and technically qualified hands are groomed to serve the Industry and Society. The Directorate has six regional offices at Mumbai, Pune, Nashik, Aurangabad, Amravati and Nagpur; each headed by a Joint Director (DTE official website).

3.42 1 Mission of DTE:

- Enhance the quality of Technical Education Institutions, programs and systems towards achieving international standards.
- Efficiently and effectively manage the Technical Education System, ensuring transparency and integrity.
- Develop Technical manpower to meet the needs of the industry and growth of economy.
- Elevating research levels in Technical Education system.

3.42 2 Directorate of Technical Education in Maharashtra

The DTE-Maharashtra has been established to ensure that technical institutions catering to Engineering, Architecture, Pharmacy and Hotel Management & Catering Technology courses across the State of Maharashtra confirm with the policies, rules, guidelines and strategies formulated by the Central and State governments. Maharashtra is a pioneer state in technical education and contributes half of educational achievement towards technological sector. Significant growth in technical education in Maharashtra state is observed after the establishment of a School of Engineering in 1854 at Pune. Today the state has a total of 360 engineering colleges with a total intake of 1,38,226 seats.

3.42 3 Maharashtra State Board of Technical Education (MSBTE)

A significant increase in the number of institutions in Maharashtra was observed, thus a separate body in 1963 for state was formed. MSBTE has been autonomous since 1999

and is key responsible to advise the government on policy matters pertaining to technical education in Maharashtra state.

The following table gives an idea about development of technical education since 1978; in terms of type of courses, No. of institute and the sanctioned intake (DTE Official Website).

Table 3.1: Growth of Engineering Institutes in Maharashtra & Sanctioned Intake

Sr.	Type of Courses	Year	No. of Institutes	Sanctioned Intake
1	Post Graduate Degree Course in Engineering & Technology	1978	9	584
		1988	11	700
		1995	14	750
		2000	15	770
		2005	41	2789
		2010	88	6081
		2015	236	19338
		2017	218	16559
2	Degree Course in Engineering & Technology	1978	16	2642
		1988	76	14275
		1995	94	22740
		2000	129	38939
		2005	154	46325
		2010	309	114268
		2015	367	153867
		2017	360	138226
3	Diploma in Engineering & Technology	1978	28	5145
		1988	127	23436
		1995	160	30000
		2000	170	34295
		2005	174	68685
		2010	387	132632
		2015	490	173310
		2017	447	142719

3.43 All India Council for Technical Education (AICTE)

The All India Council for Technical Education (AICTE) was set up in 1945 as an advisory body and later on in 1987 given the statutory status by an Act of Parliament. The AICTE grants approval for starting new technical institutions, for introduction of new courses and for variation in intake capacity in technical institutions. The purview of AICTE (the Council) covers programmes of technical education including training and research in Engineering, Technology, Architecture, Town Planning, Management, Pharmacy, Applied Arts and Crafts, Hotel Management and Catering Technology etc. at different levels (AICTE Official Website).

3.43 1 Functions of AICTE

The All India Council for Technical Education (AICTE) was set up in 1945 as an advisory body and later in 1987 given the statutory status by an Act of Parliament. The AICTE grants approval for starting new technical institutions, for introduction of new courses and for variation in intake capacity in technical institutions. The AICTE has delegated to the concerned state governments powers to process and grant approval of new institutions, starting new courses and variations in the intake capacity for diploma level technical institutions. It also lays down norms and standards for such institutions. It also ensures quality development of technical education through accreditation of technical institutions or programmes (AICTE Official Website).

3.44 National Board of Accreditation (NBA)

As per National Policy of Education (NPE)- 1986, it is a mandate to carry out the Periodic Evaluation through a National Board of Accreditation (NBA). Its mission is to promote international quality standards for technical education in India. NBA was initially established by the AICTE in the year 1994, in order to assess the qualitative competence of the programs offered by educational institution from diploma level to post-graduate level in engineering and technology, management, pharmacy, architecture and related disciplines, which are approved by AICTE.

NBA came into existence as an independent autonomous body with effect from 7th January 2010 with the objectives of assurance of quality and relevance to technical education, especially of the programs in professional and technical disciplines, i.e., Engineering and Technology, Management, Architecture, Pharmacy and Hotel

Management and Catering Technology, through the mechanism of accreditation of programs offered by technical institutions (NBA Official Website).

3.5 Engineering Education in Mumbai Metropolitan Region

A number of students from rural or semi-urban areas seek admission to institutes in the Mumbai region. About 80% of the engineering graduates are taught at private engineering colleges. Most of the private colleges does not fall under top fifty engineering colleges. Maximum number of private engineering colleges do not have any academic autonomy as they are affiliated colleges and are under purview of AICTE or other governing body. However, they have little financial autonomy. Engineering institutes are affiliated to the State University i.e. University of Mumbai or SNDT Women's University.

The University of Mumbai is one of the oldest and premier Universities in India. It was established in 1857 consequent upon "Wood's Education Dispatch", and it is one amongst the first three Universities in India. The University was accorded 5-star status in 2001 & 'A' grade status in April 2012 by the National Assessment and Accreditation Council. It has been granted University with Potential for Excellence (UPE) status by UGC and PURSE Scheme by DST (Official Website of University of Mumbai).

3.51 Engineering Institutions in Mumbai Metropolitan Region

The following is a brief profile of the engineering institutions in Mumbai. There are 52 engineering institution falling under MMR, affiliated to the SNDT Women's University (No.1) or University of Mumbai (No.51) (DTE Official Website).

Table 3.2: Engineering Institutes in Mumbai Metropolitan Region

Sr	University	Total No. of Engg. Institutions under MMR
1	SNDT Women's University	1
2	University of Mumbai	51
Total		**52**

3.6 Engineering College Libraries

It is any library that is affiliated with engineering institution and contribute towards the teaching and learning process by providing access to engineering learning resources and offers other library services. The library is sanctum of sanctorum of knowledge, it has occupied a prominent place in the academic institution and plays important role in dissemination of information. AICTE a governing body for technical education have framed norms for libraries of engineering institution.

As per the norms, an engineering library should have one librarian, one assistant librarian, four technical library assistants and other support staff as per requirement. Regarding library infrastructure, AICTE has recommended that the engineering college library for admission of two hundred and forty students per year will have a carpet area of 400 sq. mts. There shall be a seating capacity for 25% of total students admitted in the institute.

3.61 Objectives of Engineering college libraries

Any successful engineering institute, always counts library's crucial role along with others. Libraries strive to provide information to patrons, encourage to inculcate lifelong reading habits and scholarly pursuit.

Engineering college libraries are established with following objectives:

- Preservation of knowledge
- Dissemination of knowledge
- Extended support towards research
- Assistance to patron specifically students to attain their technical degree

3.62 Basic functions of Engineering college libraries

Following are broad function of any engineering college library and may extend to specific functions:

- to collect, collate and organize various reading materials
- to provide assistance to students with appropriate resources
- to keep faculty abreast of latest development in their field of interest

- to optimize the use of resources by awareness and information literacy programs
- to make budgetary provision for resources and financial plans

3.63 Resources in Engineering College Libraries

The resources in any engineering college library can be broadly grouped into two i.e. print and electronic formats. The following are the some of the examples of Print Form-Books, Print Periodicals, Archives or Back Volumes of Periodicals, Question Papers, Reports, etc. Due to advent of Information and Communication Technology many engineering college libraries are procuring electronic resources alongside of print formats. E-resources are also used to satisfy the users need by the libraries. It has been utmost important to procure electronic resources like eBooks, e-journals, e-databases, av materials, etc. To counter the budget constraints many libraries come together for common procurement forming a consortium. Engineering college libraries are also equipped with latest IT infrastructure to disseminate information from electronic resources available in the library.

3.64 INDEST Consortium

The INDEST-AICTE Consortium started in 2003, which provides access to more than ten thousand of electronic journals and six bibliographic databases from a number of publishers and aggregators to government and government-aided engineering colleges, centrally-funded technical institutions, private engineering colleges, and other organizations (Arora and Agarwal, 2003).

3.64 1 AICTE Mandate Norms for Engineering Libraries Resources

AICTE have framed norms for library resources to be procure for any new engineering colleges or for annual increment. It has given statistical calculations/formula as per number of divisions available in a particular engineering college.

Every library has to calculate and identify number of titles, volumes, print national, print international journals to be procured. Statistical calculations for both Engineering college for Undergraduate and Post graduates are different.

Following are the tables of norms for library resources from AICTE Approval Process Handbook 2015-2016 (AICTE Official Website).

Table 3.3: AICTE Mandate Norms for Engineering Libraries Resources

Program	Division	Type	Titles	Volumes	National Journals	E-Journals
Engineering & Technology (UG)	B	Increment	100	500XB	6XB	Mandatory as mentioned below
		New	50 per course	250 per course		
Engineering & Technology (PG)	B	Increment	50	200	5XB	
		New	As required	100		

Table 3.4: Mandatory Subscription of e-journal Packages for all Engineering Institutions Conducting UG/PG Courses:

S. No		Publisher	Subject Areas
1	a	IEEE	Computer Engineering + Computer Science + Electrical and Electronics Engineering + Telecommunications and related disciplines
2	a	Springer	Electrical and Electronics and Computer Science Engineering
		OR	
	a	Wiley-Blackwell	Computer Science + Data System+ Telecommunication and related Discipline
3	a	ASME	Mechanical Engineering
		OR	
	a	Springer	Mechanical Engineering
		OR	
	a	Wiley-Blackwell	Mechanical, Electrical and Electronics Engineering
4	a	ASCE	Civil Engineering
		OR	
	a	Wiley-Blackwell	Civil Engineering
5	a	McGraw Hill	General Engineering and Reference

6	a	J-GATE	J-GATE Engineering and Technology (JET)
7	a	ELSEVIER	Engineering + Comp Sci (Electrical+ Electronics + Mech + Civil and Structural+ Aerospace + Biomedical + Industrial and Manufacturing + Ocean Engg + Computational Mechanics and Safety Risk, Reliability and Quality + Comp Network and Comm., Artificial Intelligence, Computer Science, Computational Theory and Mathematics, Computer Graphics and CAD, Info Sys Control and System Engg and Software
8	a	ASTM DIGITAL LIBRARY (DL) ONLINE VERSION	Online dictionary of Engineering Science and Technology, Electrical & Electronics Engineering Mechanical Engineering, Civil, Metallurgical, Petroleum, Instrumentation

It is mandatory for new institutions having only 1st and 2nd year UG students to subscribe to IEEE, J-GATE and ASTM digital library packages. Rest all institutions have to subscribe to all the packages. Institutions not offering Civil Engineering courses need not subscribe to Civil Engineering package and institutions not offering Mechanical Engineering courses need not subscribe to Mechanical Engineering package. Also, note McGraw Hill provides eBooks on general and reference engineering subject. ASTM Digital Library has eBook i.e. Online Dictionary of engineering science and technology.

AICTE has mentioned that print national journals are required as per formula, however print international journals are desirable. Library should also provide multimedia facility. Engineering colleges offering both under and post graduate programs have to calculate the norms and procure resources. In 2015, AICTE have mentioned that of total number of titles and volumes both, 25% can be in eBook format. Official print equivalent acceptance was received to eBooks in engineering college libraries by AICTE.

3.7 E-books

Electronic books popularly known as eBooks, are merely books that are available in electronic format, can be accessed electronically, requires supporting hardware and software to read it. Libraries have always been eager in offering new services and formats of collection to its users. Addition of eBooks into its collections have brought various concerns along with it right from planning of procurement. Pros-cons of a business model, license agreements, cataloguing to marketing and management of eBook collections.

3.71 Definition of eBooks

There are various definitions given by researchers in the area, following are some of them:

E-Books: A generic term for products of electronic and multimedia publishing, particularly those optical disc products such as CD-ROM, CD-I and DVD. (Harrods Librarians Glossary)

An eBook is based both on emulating the basic characteristics of traditional books in an electronic format, as well as leveraging Internet technology to make an eBook easy and efficient to use. (Hyatt & Connaway, 2002)

Morgan (1999) defines eBooks as a combination of both software-hardware, a specific dedicated designed portable device is used to read electronic data.

"An eBook is a term used to describe a text analogous to a book that is in digital form to be displayed on a computer screen". (Cox & Mohammed, 2001)

E-Books are nothing but a computer file format of a print book and it can be accessed by all types of computers, including specially designed handheld devices to read books; it is also referred as the counterparts of their print or sometimes it may be exclusive as the electronic medium itself, it contains multimedia features like audio, video or live hyperlinks; it can be downloaded as an attachment or on CD-ROM disk or sold in bookstores. (Brooker, 2000)

'E-book' is also referred as digital or electronic content available. It could be digital audio books, images, or simple text which is converted into digital form and content that has been created in digital form itself. eBooks all includes everything right from the text to software used in creation and also the coding used to develop the same (Hyatt, 2003).

3.72 History of E-books

History of eBooks is traced much before one may think. In 1930, Bob Brown had an idea of having an electronic device which could read text faster in speed as compared to print books and to convert print books in digital format. This idea to have an electronic device was termed as 'Readies'. The idea to read faster was not invented but to read books in digital format is seen by todays eBook readers.

In 1949, in order to reduce the number of books carried by the students, Spanish teacher Angela Ruiz Robles invented a device. It was the first prototype of eBook, which was an 'Enciciopedia Mecanica' - Mechanical Encyclopedia. It included texts and graphics and was patented.

Around 1970's, Robert Busa has developed an eBook on Index Thomisticus, which was electronic index of works of Thomas Aquinas. In 1989, it was distributed in CD-ROMs and in 2005, it was also published online.

In 1971, Michael Hart created first modern day electronic eBook, adapted the 'United States Declaration of Independence' in text format. Project Gutenberg was eventually launched to create more digital books (Manley & Holley, 2012).

In 1980's commercial eBook publishers started emerging in market. Major works were the digital versions of existing eBooks and only small quantity were digitally born eBooks (Armstrong, 2008)

3.73 Types of E-books

E-books are not attached to a single medium like DVDs or CDs, they constitute a large type of medium. Hawkins (2000) has classified four types of eBooks based on content availability and access, and Crawford (2000) has classified nine types based on proprietary formats, standards, media form, length of contents and access.

According to Hawkins (2000) and Crawford (2000), eBooks by access availability types are mentioned below:

- **Downloadable eBooks**: No special reading device is required and the content can be downloaded directly from internet onto the user's any device e.g. palmtop, notebook, smartphone, PC's, etc. It is also called as Open eBooks as it allows any content reside on any reader.

- **Dedicated e-book reader eBooks**: Special hardware i.e. a device designed to read eBooks is required having good high-quality screen display and other searching capabilities. Content of books are downloaded on such devices. It may also be called as proprietary e-books, as the content locked to a single reader with proprietary format.

- **Instabooks/Print on demand books**: High speed system is used to store the contents and has high speed. It can be directly accessed by getting connected to the system or it is also connected to high quality printer and only upon demand a copy is produced.

- **Web accessible e-books**: Content is available on cloud on the publisher's platform. User can access the same with a fee or can purchase perpetually for indefinite access.

- **Public domain or Free eBooks**: Content made available on public platform to use freely for sharing, circulation or printing.

- **Pseudobooks**: These are the eBooks procured by library or consortia and available for access on loan or may retain access till it is being subscribed by the libraries. It is available for lending to users for access through a reader and is automatically expired as per due date.

- **E-Vanity**: These are eBooks published by an individual on the web.

- **Not quite an eBook**: Content is mid-length text and may not be considered for printing as a print book is converted in pdf format and e-distributed. Generally small guides, protocols, etc.

- **Extended eBooks**: These are eBooks which were published before web and were made available in CD-ROM which offered searchable text, multimedia and other interactive elements.

3.73 1 Types of eBooks as per traditional way of classification by libraries

These is hardly or very little difference in the content types of eBooks. It has enhanced the type of print books with addition or attractive features.

- **E-Reference**: Includes all digital format of biographies, encyclopedia, dictionary, handbooks, guides, yearbooks, atlases, maps, etc. Updates in these forms will be very quick and also interactive atlases and map will make it more interesting.

- **E-Textbooks**: It is mostly used by students; a single device carries many textbooks. Fully searchable text is very helpful, also latest edition available will made available at a nominal rate as per contract.

- **E-Literature**: It includes various fictions, non-fiction content. It is also very popular form of eBook widely used.

- **E-Monographs-in-Series**: Different volumes procurement and updating in library collection is faster.

3.74 Hardware and Software

Unlike printed books E-books require a suitable device in order to view and read electronic medium.

3.74 1 Hardware

The hardware is important since it provides what readers may require to exploit with the software available and then further link to the specific requirement. Various portable e-book devices are available in a range of size, price and shape in the market. There is evidence that younger generation or students find it easier to adjust to reading on the screen. With the availability of eBooks, many companies have started manufacturing dedicated eBook reading devices.

Two types of eBook readers made available were small palm-sized device and full-paper length reader. Dedicated eBook reader comes with its proprietary file formats. There are multiuse devices which allow to read eBooks in eBook reader mode. This is not found practical to read a long monograph. The eBook reading devices market is still evolving (Connaway, 2003).

Some of the first-generation eBook readers available in early 2000's are mentioned below:

- **Rocket book**: It was launched by NuvoMedia. RocketLibrarian Software was used to download eBooks directly onto this device. To download eBooks these devices needed to get connected to a computer. Personalization of document was user friendly.

- **SoftBook**: This reader was launched by SoftBook Press. These devices needed to be plugged into broad band modem of a phone line. It being a multipurpose

  Device, one could write or draw using stylus. It could work standalone and computer was not required.

- **EveryBook Dedicated reader**: It was launched by EveryBook Inc. PCMCIA removable cards were used to store eBooks and one such card could store half a million of pages. PDF documents were used into this and was available in professional and personal models.

- **Millennium E-Book**: The Millennium eBook reader was the lightest in the market. It could get connected to computer. It has 10,000 titles in its collection which included many genres of books like fiction, non-fiction, education, etc. (Rao, 2001)

Electronic ink (e-ink) electronic paper display technology used to read page at proper viewing angle and with low power requirements is used in modern day eBook readers. Some of the latest eBook readers available in market and been widely used are mentioned below:

- **Kindle**: It is Amazon's designed E Ink - eBook reader. First Kindle was launched in 2007 and later series of new upgraded devices like Kindle2, Kindle DX, Kindle Graphite, Kindle Fire, Kindle Paperwhite, etc. Latest is Kindle Oasis also known as third generation eBook reading device. Kindle uses proprietary AZW3 format and eBooks can be purchased by Amazon store.

- **Kobo**: It is an eBook reader by Kobo Inc. It was released in year 2010 and later had various upgraded versions like Kobo Libra, Kobo Clara, Kobo Glo, etc. Latest available device is Kobo Auro H2O. Kobo supports Epub, PDF, HTML and Mobi format eBooks.

- **Nook**: It is a device from Barnes & Noble on Android platform. It was first released in 2009. Various version of Nook where Nook Simple Touch, Nook Tablet, Nook HD, Nook GlowLight and latest is Nook Tablet7. Nook supports Epub or PDF format eBooks.

3.74 2 Software

One does not necessarily need to buy a special dedicated handheld device to read eBook titles. One may also download and read eBook titles software on a desktop or notebook or handheld computer/tablet. Use of eBook readers applications on personal computers was found helpful as it provided extra features of larger screen and inbuilt keyboards (Lynch, 2001).

Microsoft launched two versions of Microsoft readers which was made available for free. Laptop/Desktop version could read books found on publishers' sites which were in encrypted format. Pocket PC version was used to read only unencrypted eBooks (Shiratuddin, et al., 2003).

Till recently, there was a lack interoperable eBook format. Many vendors were using HTML, XML or PDF as defaults. In early 2000's, following were the most used eBook reader software:

- **Adobe Acrobat reader**: Most eBooks were created in this format using text and graphic with high resolution for better quality viewing. It also provided encryption facility as well easy navigation within the document. To access these

eBooks, one has to download free version of Adobe Acrobat Reader on laptop and PC.

- **Microsoft Word**: It may not be considered as a software to read eBooks, still it read many different versions of files.
- **HTML Compilers**: It used self-executing files and provided content via html pages.
- **DocAble**: It was launched by EveryBook and it is PC based document management software. It gave flexibility of viewing two pages and looked more similar to print book. It also allowed multipage view upto 10 pages at a time or two different documents at one view. (Rao, 2001)

To serve a large and varied academic clientele and to build a strong scholarly collection for long-term access, it was utmost required that eBooks must be provided in a standards-based format that includes:

- Non-proprietary software and hardware for interoperability of files
- Identifiers
- Metadata
- ADA compliance

Most libraries have multiusers eBook licenses, and it is expected that users to get their own eBook reader devices. Most popular eBook reading devices are Amazon's Kindle, Sony Reader and Barnes & Noble's Nook. Many universities have initiated projects of lending eReaders preloaded with eBooks. Most popular multifunction tablets with eReader app are Apple's iPad, Lenovo Tab, Samsung Galaxy Tab, etc.

3.74 3 Formats and Types of eBooks

E-books are available in a various format; the most commonly found format is the ASCII- standard text. However, reading on this kind of format seemed to be very difficult for eBook readers. Also, it does not preserve formatting and cannot manage graphics (Shiratuddin, et al., 2003).

Dawson & Wallis (2005) mentioned different types of formats used by the readers most as below:

- Portable Document Format by Adobe Acrobat (PDF)
- Microsoft Reader's Literature (LIT)
- Rich Text Format (RTF);
- Night Kitchen's Tool Kit 3 (TK3)
- Markup Language (e.g. HTML, SGML, XML)
- Pocket Digital Assistant (PDA)
- Palm Doc.

Wahl (2018) described latest and most widely used top five eBook formats are mentioned below:

- **TXT (.txt) format**

  These are simple text & image files and does not support graphs.

- **EPUB (.epub) format**

  Electronic publication i.e. EPUB is most popular format of eBooks. Most of these devices supports the same, except Kindle.

- **MOBI (.mobi) format**

  Mobipocket format was launched by Amazon and dedicated to Kindle eBook reading device. Although these are no longer supported and are replaced by AZW files.

- **AZW (.azw) and AZW3 (. azw3) formats**

  These are Kindle files launched by Amazon for Kindle eBook readers.

- **PDF (.pdf) format**

  Portable document format is a very common file format, but it isn't exactly an eBook format. However, eBooks may come in these formats.

To evaluate an eBook format specific features used can be its ability reflow the text, fixed layout. Digital right management and interactivity. Following table give quick idea about how these eBook formats work on various platforms.

Table 3.5: E-book Formats Supporting Features and Compatibility on Platform

Format	**Platform**	**Features supported**			
		Reflowable	**Fixed layout**	**DRM**	**Interactivity**
.txt	All	Yes	No	No	No
.azw	Kindle	Yes	Yes	Yes	Yes
.epub	All except Kindle	Yes	Yes	Yes	Yes
.mobi	All except Nook & Sony	Yes	Yes	Yes	Yes
.pdf	All	No	Yes	Yes	Yes

3.75 Advantages and Disadvantages of eBooks

Any new technological advancement is accepted only if it provides certain advantages over existing system or process. However, it is always noticed that any new advancement also comes with certain disadvantages.

3.75 1 Advantages

Following are some of the well-defined advantages about the eBooks:

- **Method of publication**: It can be easily distributed worldwide at the instant upon its creation. Also, it is delivered via Internet thereby having no fear of damage. It can be updated and, stored very easily. Contain the latest and most updated information.

- **Environment friendliness**: It does not require any paper nor there is any paper wastage.

- **Economic advantages**: The overall publication cost of eBook is quite low as compared to print publication. Distribution cost, printing cost, binding cost, etc. of print books is not required in case of an eBook.

- **Increasing capabilities of hardware**: Many eBooks gets stored in one single eBook reader and may potentially store one big collection of a library. Additional features of advance searching, inbuilt dictionary, highlighting in text, adding notes, etc are provided. E-books have background music and animations too. Easy to share with others.

- **Business applications**: It's a cost saving product, as there is no cost of paper, courier/delivery charges, etc. Users can use carry a small device loaded with both for recreational travel or business tours.

- **Convenience**: They are never out of stock, 24/7 available in stock. With online books, there are no worries of works being out of print, no waiting forever to getting materials, no inventory storage worries. It can used 24/7-365 days.

- **Portability**: Due to portability, eBooks can be carried even in a small bag or purse.

- **Errors**: E-books save human resources for shelving and rectification. Users can- not misplace eBooks. No risk of book theft and tearing and mutilation of pages.

- **Instantly access**: Instantly available through downloads.

- **Disable friendly**: Audible eBooks can be used by disabled users.

3.75 2 Disadvantages:

Following are some of the disadvantages about the eBooks:

- **Durability**: With all new technology/hardware being too fragile, preservation is not guaranteed.

- **Expense**: As eBooks can't be read without a device and the same is an additional cost and expensive too.
- **Technological change**: By each passing year new technological update happen and the current version becomes defunct.
- **Screen resolution**: Experience of using of a print book with very little or no harm to human eye is not possible. The long duration staring at screen causes strain on eyes.
- **Limited availability of titles**: Still not all titles are available in eBook format.
- **Availability**: Major developing countries have introduced eBook readers, still it has not yet reached across the globe.
- **Compatibility**: Due to non-availability of interoperable standards and format, one may have to buy different readers to read eBooks.
- **Bibliographic data**: Few eBook titles does not provide required bibliographic data, which makes cataloguing process difficult in libraries.
- **Licensing**: Suitable licensing terms are not available. Licenses should suit individual libraries.
- **Printing**: The users cannot directly get copies printed from eBook readers.
- **Limited rights**: Dues to tight encryption, resale right is very limited with user.
- **Interoperability**: It lacks interoperable standardized file formats amongst the publishers and vendors. (Rao, 2003)

3.76 E-Books Acquisitions and Major Publishers:

The rise of eBooks has created challenges for publishers. It is important to get permission clearance, rights of the content and format identification. E-book metadata maintenance and delivery and compositor and eBook file delivery are new publisher venues that require additional resources. It is required to develop new practices, revise

existing marketing plans and publicizes the eBook. It is observed that despite of many challenges, there has been growth in the production & distribution of eBooks.

Acquisition of books can be done by direct publisher, Vendors, Aggregators, or freely available eBooks projects.

3.76 1 Direct Publishers

Major publishers sell their eBooks directly online through their platform. Certain publishers also provide packages in various format as per the type of documents, language, subject area, etc. They also provide MARC records to library for easy cataloguing. Various options of to procure eBooks in the form of front list titles, reference package, bundle packages, subject specific packages etc. are offered. Some of the notable publishers are Oxford, Cambridge, Springer, Elsevier, Wiley, Taylor & Francis, Blackwell, etc.

3.76 2 Vendor

These vendors ideally just act as a distributor either for publishers or eBook aggregators. They are the same vendors who also provides print books at times. For a single billing process and ease of accounting, libraries prefer to procure eBooks from the same vendor. Vendor is found helpful for a single title procurement, which at times is difficult to deal with direct publishers.

3.76 3 Aggregators of eBooks

Aggregators acts as a single point of access to procure eBooks of various publishers on one single platform. Single license agreement is required in case of acquisition through aggregator. Also, it is ease of access for users as they don’t have to land on many publishers site. Some of them are mentioned below.

3.76 31 Ebrary

It was launched in 1999 in Palo, California and has online collection of over 1,00000 eBooks. Major customers of this site where academic libraries. It allowed to copy search, print the documents from their computers. Proquest have combined EBL and

ebrary as MyiLibrary on OASIS platform. In 2016, it is now made available on new platform called Proquest Ebook Central.

3. 76 32 Ebooks.com

It was launched in 2000 and is a eBook retailer offering services in US, UK, Europe, Canada and Australia. This site offers millions of eBook titles. Many of these are out-of-copyright titles that are offered at no charge. The site is in Australia, but the prices are in US dollars. Among a broad variety of categories, Business, popular fiction and travel are the largest. Adobe Acrobat Reader and Microsoft Reader formats are offered. Book description and online experts are offered but there does not seem to be any author information, and there are no reviews.

3.76 33 netLibrary

To provide eBooks to library community in year 1998 netLibrary was established. It provided digital documents eBooks in particular to a variety of users. Its major clients were libraries-college, school, public and corporate. Now it is named as eBooks on EBSCOhost. It offers variety of services and also allows personalization through GALILEO interface. It offers millions of eBooks from over 1500 major academic publishers.

3.76 4 Free eBook projects

Few initiatives have been taken place to provide DRM free eBooks to the users at free of cost. Common aim of such projects is to share knowledge and to reach out to wide range of users. Few notable such projects are mentioned below:

3.76 41 Project Gutenberg

It is the Internet's oldest producer of FREE electronic books (eBooks or e-Texts). It was initiated by Michael Hart in 1971. There are 60,000 plus free eBooks available on this site. Major US collection with expired copyright are added on this website. It supports ePub and Kindle format. No special application or device is required to read the eBooks on this platform. It supports Author, Title, Language and Recently added searching.

It also holds audio books, music records, moving pictures, images, human read compilations, etc. It supports search engine Yahoo’s Content Acquisition program,

which keeps data updated weekly. It also supports Google Nearly Full Text search which is updated monthly. Project Gutenberg Australia have over 4000 eBooks posted so far by Project Gutenberg of Australia. (Ghosh, 2004)

3.76 42 Google Book Search Project (eBooks)

The Google Book Search project was initiated in 2004 to make the content online by scanning literary print documents of libraries. Some of the partner libraries in this project are University of Michigan, University of Texas, University of California and University of Wisconsin-Madison.

It allows different views of the collection like full view, limited preview, snippet view and no preview. It links directly to publishers' site or popular retailers online shopping site. You can also locate the book in OCLC WorldCat.

3.76 43 Open Library

Internet Archive is a non-profit library which stocks millions of free resources including eBooks. Open Library is a project of Internet Archive aimed to have one webpage for every book. It is funded by California State Library and Kahle/Austin Foundation. It provides access to open domain books and out of print books.

3.8 Evaluation of eBooks

Any new system or collection, such as eBooks should be assessed for its usability before procurement. Evaluation is required to be done with an aim to find an efficient way of meeting the users need. Evaluation method used for e-resources may not be applicable to this new resource, as it has different standard and formats. (Natarajan, 2003 & Diaz, 2003). Evaluation framework should include four major process: objective, selection of the technique/ criteria to be used and elaborating the data.

3.81 Evaluation objective

Main objective of evaluating eBooks should be to identify the usefulness of the product for users and test the interface to find out its user-friendliness.

3.82 Techniques and criteria to evaluate eBooks

Certain primary and secondary criteria should be used to evaluate eBooks, as per the need of the institution and user's requirement.

3.82 1 Content Consideration

Following are the content related information to be considered during evaluating the eBooks.

- **Scope:** Users should be able to find what the source covers from the source itself, without relying on external documentation. Thus, selectors should note whether the electronic version of a print source contains everything that was in the print version. Some of the electronic encyclopedias have been slow to include most of the illustrations that make up the print sets so valuable. Since E-books are published quickly than print books there are chances that the latest editions do come up. The question is within what amount of time are the eBooks made available in the market? (Sottong, 2001)

- **Archiving and back-files:** Related to the years of coverage, what happens to the older editions upon new editions are available? Does it allow archival backup?

- **Access Considerations**: It is important to consider how the eBooks will be accessed and what are the implications will be for the other library services. Is it perpetual or on leased model? Does the library own the data once purchased, or is this only a lease? If the annual fee covers access only, selectors must carefully consider what they will do if circumstances cause the cancellation of a subscription. For instance, if a print title was cancelled for an electronic version but the electronic version becomes too expensive and is cancelled, the library will have nothing to show for those years after the print title was stopped. (Natarajan, 2003)

- **Reviews available:** Published reviews should be checked before purchasing an eBook. However, if no reviews are available feedback and experiences of other librarians using that particular eBook should be considered. (Nolan, 1999)

3.82 2 Technical considerations

Following are the considerations related to the technical aspect of eBooks, including both hardware and software part.

- **Hardware**: It is important to know if the eBook is encrypted and can be used only on proprietary device. It is advised to look for eBooks that can work on existing IT Infrastructure available in library.

- **Software**: It is also important to know in which format the eBooks will be made available, preference should be given to interoperable standard formats.

3.82 3 Access Considerations

Following are the different approaches to access of eBooks which highlights seamless access and secure authentication.

- **Simultaneous users:** The number of users that can access the eBook at one time is important feature. In case of few numbers of users are allowed, then there should be some method of disconnecting users after a period of inactivity. However, it is advised to go for multiuser licenses. (Nolan, 1999)

- **User authentication provided:** If an online service requires verification that a user is connecting from an authorized account, there should be a simple way to do this. Many eBook databases currently available via the Internet permit users into system based on their workstations IP numbers, which revel whether the user belong to a subscribing institution. Some eBook databases require users to sign in with an ID and a password, where plugins can be used to have same credentials. (Nolan, 1999 & Natarajan, 2003)

- **Lending eBooks:** It allows libraries to lend eBooks to users for a stipulated period to read online. It depends upon the Digital Right Management agreement. Many western country libraries use e-lending service like OverDrive. This application allows to login to multiple libraries, download books, sync with all devices, even dedicated readers like Kindle, Libby, etc. In India, few International schools have adopted this service. One may return the eBook or it will automatically expire as per due date. Amazon Prime USA allows, Kindle

owner to lend eBooks (as per the license) to other users. It also allows to borrow huge collection to read without any due date. Adobe Digital Editions eBook reader software is also used by many aggregators to provide eBook library collection for libraries.

3.82 4 Budget considerations

Various business/pricing models are offered by eBook providers, one should choose the best suited business model after doing cost-benefit analysis. Some of the business models available in the market are mentioned below.

- **Subscription:** It usually allows libraries to subscribe a large number of eBooks for a set period of time. These models are usually offered by eBook aggregator. In a small cost, libraries get wide range of eBook access. However, upon discontinuation of subscription access is not provided.

- **Perpetual Ownership:** It allows libraries to get perpetual access of eBooks. This works similar to procurement of print books. Once purchased, access is provided forever. It is usually found useful in single title procurements. But it is also worth noting that the price of eBook is always higher than its print counterpart.

- **Pay-per-view:** This business model is usually offered by aggregators. As it was observed that in package deals many eBooks remain unused, this model was found useful to pay only for what is getting used.

- **Patron-driven Acquisition/Selection (PDA):** In this model access to all eBook content is provided by the aggregator. A particular title is selected by library, only upon reaching a predetermined number of visits by any users. This ensures that only those eBooks are selected which are getting used most.

- **Evidence-Based Acquisition/Selection (EBA):** In this model access to a wide range of eBooks collection is provided by publisher/aggregator upon an initial minimum access fee. Usage is generally Digital Right Management free. And at the end of term generally a year, based upon the usage statistics, titles costing equivalent/ as per agreement can be chosen for perpetual access.

3.82 5 Legal Considerations:

An agreement of license is required to be signed by both parties with terms and conditions acceptable by both. It is important to note archival clause, post termination clause, usages terms, etc. Since eBooks are available on a medium which can be easily copied or can be easily downloaded, online usage policy acceptance should be taken by individual user. (Natarajan, 2003)

3.82 6 Content provider Considerations:

Librarians have to choose an eBook content provider (publisher/vendor/aggregator) that provides with additional support, including technical assistance with installation and maintenance and improvements or corrections to software. (Nolan, 1999)

- **Financial stability:** Vendors that appear to be doing business effectively are more likely to enhance and upgrade their products, provide appropriate support and develop additional products. This issue may be a critical one when a library changes its most heavily used reference titles to digital versions. A vendor's poor performance can lead to serious problems with the eBook delivery, which can cast a negative light on the libraries. (Nolan, 1999)

- **Technical Support:** The quality and responsiveness of the technical support of the vendor is important for the library. Most libraries will run into occasional unsolvable problems with eBooks. A vendor that supplies limited support hours or is unable to answer technical questions in a timely manner can be problematic for a library. (Natarajan, 2003)

- **Perceived ease of working:** Vendor should have worked with many publishers of eBooks and have develop a sense for the ones that are most likely to ensure satisfied librarians and library users. These vendors are responsive to reports of problems, listen seriously to suggestions for improvements in their products. (Nolan, 1999 & Natarajan, 2003)

3.82 7 Interface Considerations

The quality of screen displays is one of the characteristics that should be reviewed for e-Books. Users not only read from the screens but also like to download and print information from these titles.

- **Clear screen displays:** The screen displays should be highly legible, directing users to the important information. A graphical user interface has the potential to be very clear and attractive, as well as cluttered and confusing. (Sottong, 2001)

- **User changeable displays:** The user should have the option to change the display as per his/her preference. Changeable fonts and sizes of typefaces can make the screen easier to read for some patrons, including those with vision difficulties. (Sottong, 2001)

- **Downloading Option:** The ability to download can provide users with the opportunity to take the results and manipulate them further on their own workstations, while also saving printing costs. The data should be downloadable in formats that are easily accessible for the users. (Nolan, 1999)

- **General printing capabilities:** Even with more and more information being displayed on video screens, users still want to print out the citations, data, or article text retrieved results or merely screens. Furthermore, the users still sometimes want to configure what prints and how they look on the page, so the ability to change these options suits many users. (Nolan, 1999 & Natarajan, 2003)

3.9 Summary

In India, Engineering education is most sought-after program amongst the technical education. AICTE is taking necessary step to maintain the standards of excellence by conducting accreditation process mandatory. AICTE have developed approval process handbook and set certain norms and standards to be followed by an upcoming new institution or for renewal of existing institution, to ensure no substandard services are offered to students.

Engineering libraries have to follow norm cited by AICTE for procurement of resources print and digital, so that uniform basic library resources are made available to all engineering students. Official print equivalent acceptance was received to eBooks in engineering college libraries by AICTE.

Advancement of technology, penetration of Internet and emergence of eBooks, coupled with high demands from users, have made way for eBooks in library collections. Although eBooks comes with many advantages, there are certain concerns. Also, the procurement process is tedious. Thus, one has to carefully select the kind of e-books that are required by the users and then evaluate the before purchasing.

Library professionals should take lead in evaluating the resources that are required by the users. The eBook should be analyzed in terms of its usability and educational usefulness and relevance in library's collection development. There is a need to develop a sustainable and workable guideline for procurement of eBooks in libraries.

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Chapter 4
Data Analysis and Interpretation

A – Data Analysis of Engineering College Libraries

4.1 Introduction

This chapter presents the research findings based on analysis of the survey conducted of engineering college libraries affiliated to University of Mumbai and SNDT Women's University located in geographical area of Mumbai Metropolitan Region (MMR). It examines various facets like IT infrastructure, eBooks and librarian's opinion about eBooks. Respondent were asked to provide details about procurement of eBooks, genre of eBooks offered, business model chosen, access licensing, etc. The data analysis is presented in the following paragraphs using various graphical representation tools like tables and graphs.

4.11 Data Collection Methodology and Sampling

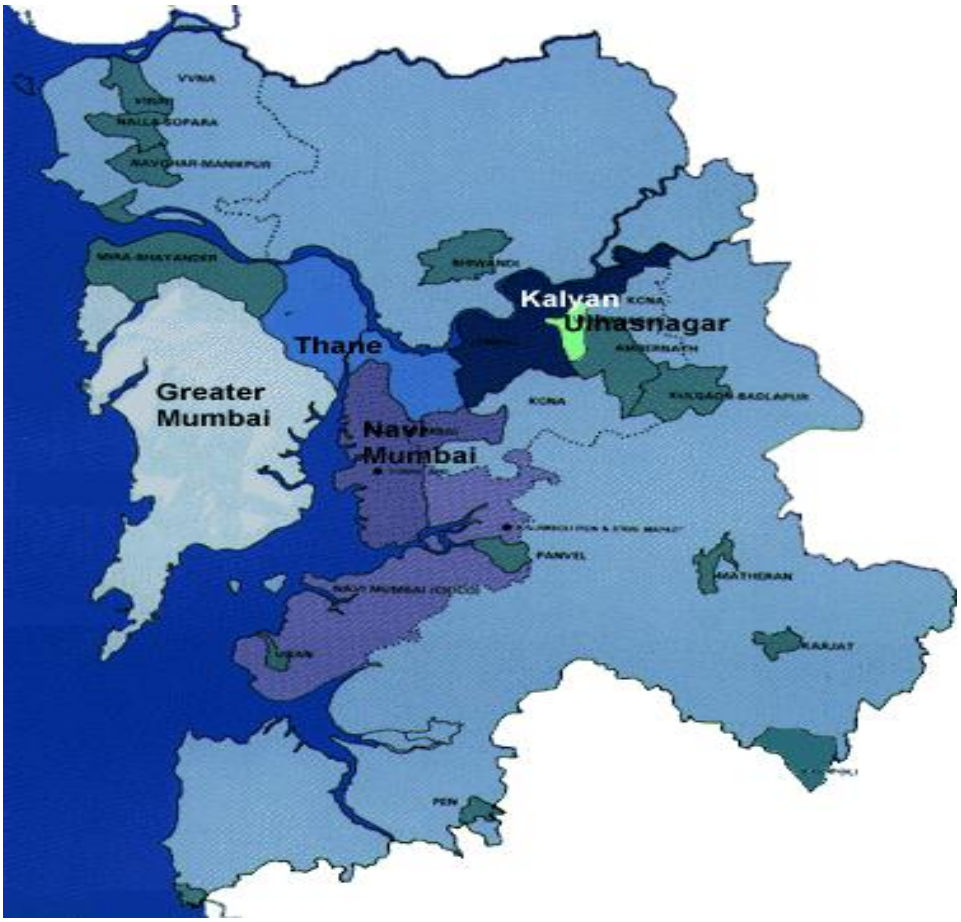
Survey approach for research study is one of the predominant research strategies in Library and Information Science. Best method for this study found was survey method as the sample was scattered.

In Mumbai, engineering colleges are affiliated to either SNDT Women's University or University of Mumbai. The researcher obtained list of engineering colleges affiliated to state universities i.e. SNDT Women's University and University of Mumbai from DTE and AICTE websites. Admissions for all technical studies including engineering are held by DTE. The investigator referred the list of colleges mentioned on the DTE website for its accuracy.

As the scope of the research area was restricted to MMR, colleges under this region was to be identified. To mark/identify the geographical study area, investigator explored Thane map and Grid showing village-wise sheet from Mumbai Metropolitan Region Development Authority (MMRDA) official website. It was found that Ratnagiri District, Sindhudurg District, Shahpur taluka of Thane District, few talukas of Palghar District-Wada, Boisar, Vevoor and few takulas of Raigad District-

Khandgoan, Tala are not included in MMRDA region. Engineering colleges under this region are excluded from the study. Number of engineering colleges affiliated to SNDT Women's University is 1 and 51 are affiliated to University of Mumbai under MMR.

Fig. 4.1: Map of Mumbai Metropolitan Region



With the help of the above, the investigator identified colleges covered under the study area. During the course it was found that 4 colleges under University of Mumbai are closed, some of them are reintroduced with another name and one college was added. Following are the colleges affiliated to University of Mumbai which have been closed or have applied for closure and no longer takes admissions as per notice of governing bodies.

1. Narayan NaguPatil Engineering College, Pen, Raigad

   Status: permanently closed in November 2009.

2. Parshvanath College of Engineering, Thane

Status: Reopened by new management/trust as AP Shah Institute of Technology

3. Leelavati Awhad Institute of Technology Management Studies and Research, Badlapur

   Status: Reopened by new management/trust as Bharat College of Engineering, Badlapur

4. St. Wilfred Institute of Technology, Panvel

   Status: Reopened by new management/trust as Chhatrapati Shivaji Maharaj Institute of Technology

It was observed that a new college was introduced in this geographical region as below:

1. New Horizon Institute of Technology & Management (Women's College), Thane

Hence, for the study permanently closed college was excluded, newly opened and reopened colleges were included in the study. Total 52 colleges (1 affiliated with SNDT women's University + 51 affiliated with University of Mumbai) were investigated.

4.12 Pilot Study

The drafted questionnaire was given to librarian and other academician to check for correctness. For pilot study, roughly 10% of sample i.e. five librarians were approached and their view regarding questionnaire was obtained. As there were very few ambiguities found, the corrected questionnaire was sent out for collection of data to the libraries under the scope.

4.13 Data Collection Tool

The data collection tool used was questionnaire. Respondents were given a choice to either fill the data in hard copy format sent by post or the same questionnaire was also available online. Web questionnaire was created with the help of a survey tool google forms. Web based survey was chosen as it has many advantages like the rapid

return of data, reduces effort of handling data, high response rate and lowers the study cost.

Emails requesting to appear for online questionnaire were sent to many of the samples and persistent follow up was also done for the same. Investigator personally visited some libraries and also met other during academic events and got offline print questionnaire filled.

4.14 Sample Response Recorded

Off total 52 libraries, 51 have responded. Sincere efforts were made to collect response from the remaining one college library, so as to get 100% response. But, due to some administrative reason, researcher couldn't collect the data.

Table 4.1 Responses received from Engineering College Libraries of MMR

Sr. No.	Details of responses	Mode	No. of Colleges in MMRDA region	Percentage
1	Numbers of questionnaire distributed	Print 31 Online 21	52	100%
2	Number of responses received	Print 31 Online 20	51	98%

4.2 Analysis of Data

After collecting the data in offline and online format by the college librarians, this data was collated. The remaining offline form were filled in google form and all the data was exported in MS-Excel spreadsheet for analysis. It was observed that most of the samples have not provided statistical data. Emails were sent to all such variables but only two responded in online format. Vigorous attempts were made to collect statistical data from the samples for furthering the research processes, but it was noticed that there was some reluctance in providing this data.

The data was analysed and is presented in form of tables and graph. Following is the detailed analysis of data.

4.3 Profile of Engineering College Libraries

General details about the college was enquired like its contact details, establishment year, courses offered, details about library patrons, etc. List of colleges covered in study are mentioned along with details in Appendix II. Following table gives university affiliation details of the variables of the study.

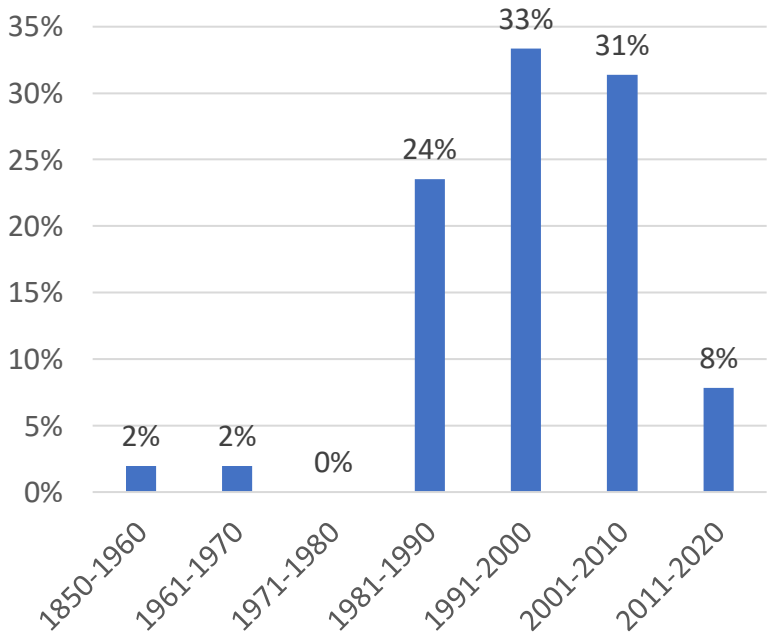
Table 4.2 University Affiliation of Engineering Colleges under MMR

Sr	University	Nos. (n=51)
1	SNDT Women's University	1
2	University of Mumbai	50
Total		**51**

4.31 Establishment of College

It was found that majority of the engineering college were established during the period of 1981 to 2000. As per Fig. 4.2, maximum number of engineering colleges were established during the decade of 1991 to 2000.

Fig. 4.2 Engineering Colleges Establishment Year



The oldest engineering college in Mumbai is Veermata Jijabai Technological Institute (VJTI) dating back to pre-independence period i.e. year1853. It was followed by Sardar Patel College of Engineering in post-independence period i.e. year 1962. These are the only two colleges which receive government aid. As per Fig. 4.3, rest all colleges are un-aided.

Fig. 4.3 Colleges with Government Aid

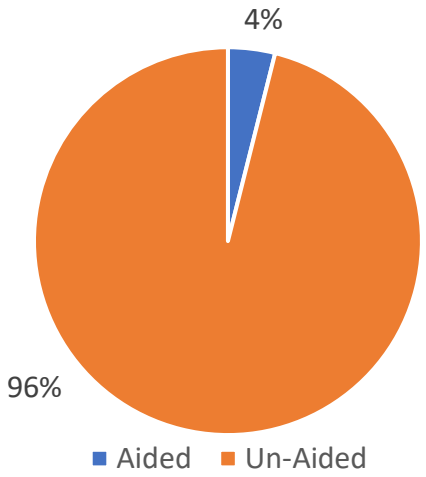
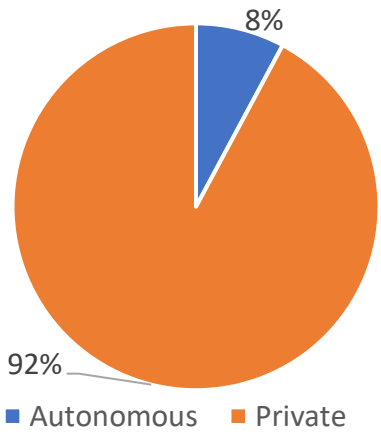


Figure 4.4 indicates that 92% engineering colleges are private affiliated with a state university. Only four colleges are autonomous, viz. Veermata Jijabai Technological Institute (VJTI), Sardar Patel College of Engineering, Usha Mittal Institute of Technology (UMIT) and K. J. Somaiya College of Engineering (KJSCE).

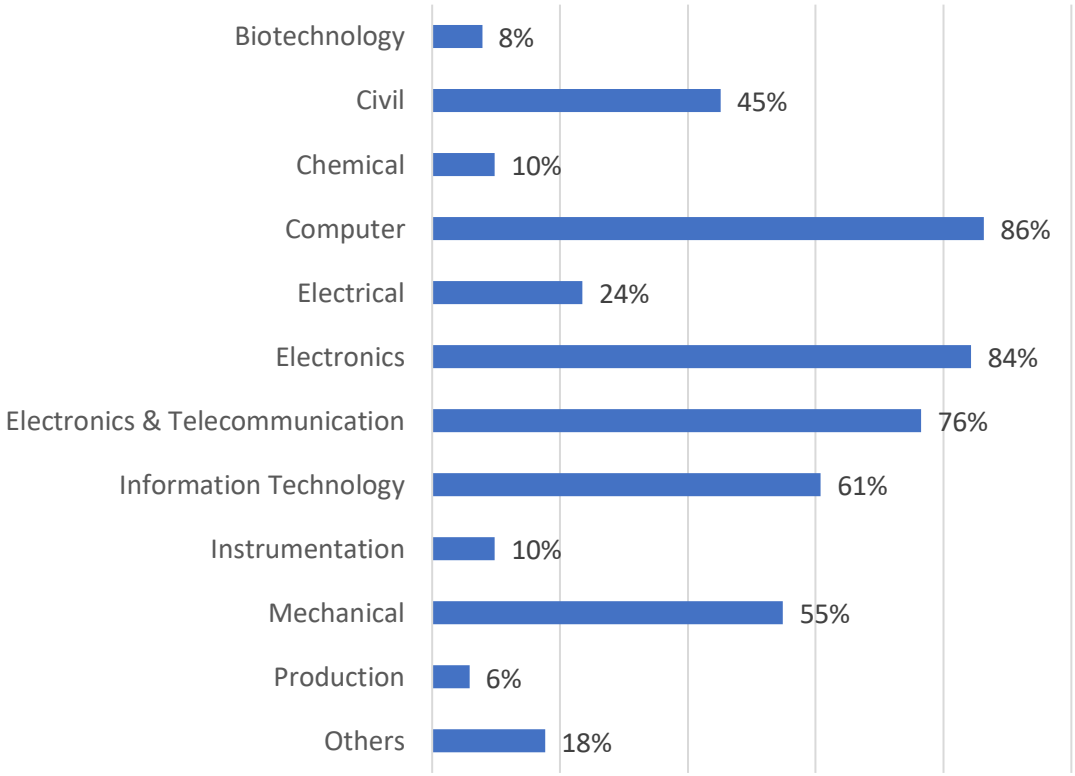
Fig. 4.4 Colleges with Autonomy



4.32 Programmes Offered by Engineering Colleges

Researcher made an attempt to find out programmes offered by the engineering colleges. From Fig. 4.5, it was found that majority of the college i.e. 86% were offering programmes in Computer, followed by Electronics, Electronics & Telecommunication, Information Technology, etc.

Fig. 4.5 Programmes Offered by Colleges



Other than regular programmes, some colleges mentioned few other programmes they offered like Automobile, MCA, Biomedical, Management studies, Computer Science & Technology and Textile.

4.33 Student Intake and Staff of the Colleges

The researcher asked respondents about total number of student and staff in their institute. Tables 4.3 & 4.4, indicates that 35.29% of institutes had students in the range of 1001-1500 and 41.18% of institute were having staff in the range of 51-100.

Table 4.3 Total Intake of Students in College

Total Students	No. of Colleges (n=51)	No. of Colleges (n=51) in %
0-500	5	9.80%
501-1000	5	9.80%
1001-1500	18	35.29%
1501-2000	11	21.57%
2001-2500	4	7.84%
2501-3000	6	11.76%
3001 and above	2	3.92%

Table 4.4 Total Number of Staff in College

Total Staff	No. of Colleges (n=51)	No. of Colleges (n=51) in %
0-50	8	15.69%
51-100	21	41.18%
101-150	10	19.61%
151-200	6	11.76%
201-250	5	9.80%
251 and above	1	1.96%

4.34 Annual Collection and Budget of Library

Researcher enquired about the library collection in their institute from academic year 2010 onwards. Out of total 51 respondents only 17 responded. Researcher made several attempts by personally visiting and by emails to collect the said data, but efforts was little successful. Data from year 2010 to 2015 and 2017 is collected and appropriate average is calculated. Table 4.5 provides tabulation of the data of respondents. It was found that print books, print journals and to certain extent e-journals are regularly

procured annually in the library collection. However, eBooks and e-databases are procured need based.

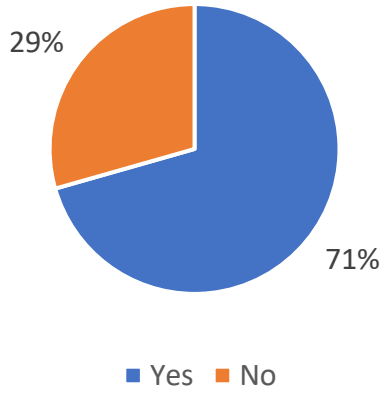
Table 4.5 Annual Collection and Budget of Library

Colleges	Print Books		Print Journals		E-Journals		eBooks		Databases	
	Avg Number	EXP (In Lakhs)	Avg Number	EXP (In Lakhs)	Avg Number	EXP (In Lakhs)	Avg Number	EXP (In Lakhs)	Avg Number	EXP (In Lakhs)
SP College of Eng	468	5	46	4	280	4	340	1	0	0
Rajiv Gandhi Institute of Technology	616	3	71	1	799	5	0	0	0	0
Shah & Anchor Kuctchhi Eng College	798	6	44	2	4	17	446	1	5	17
Thadomal Shahani Engineering College	2580	6	44	1	0	0	0	0	3	6
Bharati Vidyapeeth College of Engineering	2073	9	70	2	2494	8	167	1	646	1
Pd. Vasantdada Patil Pratishthan Col of Eng	2424	8	59	1	3	8	19	0	0	0
Fr C Rodrigues College of Engineering	968	3	48	0.4	245	5	972	0	0	0
Fr C Rodirgues Institute of Tech	430	11	48	1	128	4	407	0	0	0
Shivajirao S Jondhale College of Engineering	2065	6	64	2	70	2	0	0	0	0
Kokan Gyanpeeth College of Engineering	2418	8	34	1	0	2	0	0	0	0
D G Sanghvi College of Engineering	1144	5	66	2	6	8	0	0	0	0
Yadvrao Tasgaonkar College of Eng & Mgt	735	2	46	1	3	1	20	1	0	0
Pillai HOC College of Eng & Tech	2782	12	62	1	1319	1	250	0.1	0	0
G V Acharya Institue Of Eng & Tech	547	1	34	1	0	0	0	0	1	1
Sardar Patel Institute of Technology	753	4	36	1	170	3	1650	1	0	0
B R Harne College of Engineering	1329	6	55	0.2	0	0	0	0	0	0
Viva Institute of Tech	981	4	42	1	857	4	0	0	0	0

4.35 Library Advisory Committee

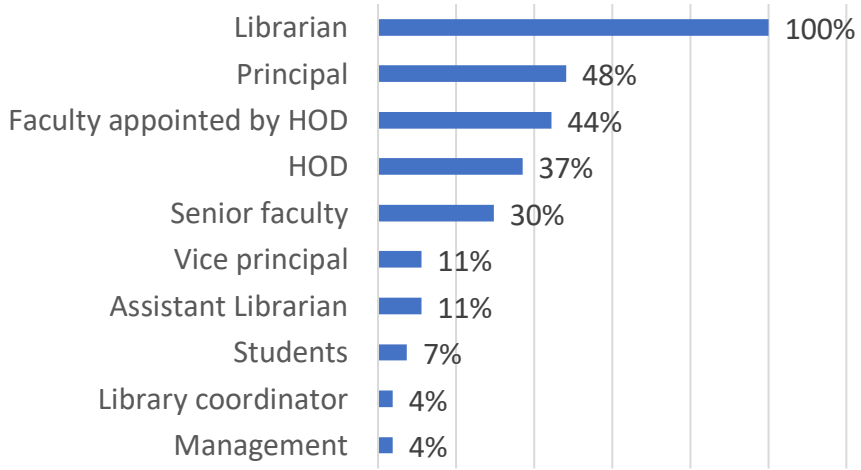
An attempt to find out the presence of Library Advisory Committee and its composition was done by the researcher. Data is represented in Fig. 4.6 as below.

Fig. 4.6 Availability of Library Advisory Committee



It was found that 71% of library have the presence of library advisory committee. Further composition of this committee in 71% libraries was explored. From Fig. 4.7 it is clear that all these formations include librarians. The composition included a combination of Librarian, Principal, Head of the Departments, Faculty appointed by Head of the Department, Senior Faculty, etc. Few compositions also included, Vice Principal, Assistant Librarians, Students, Library coordinator and Management personnel.

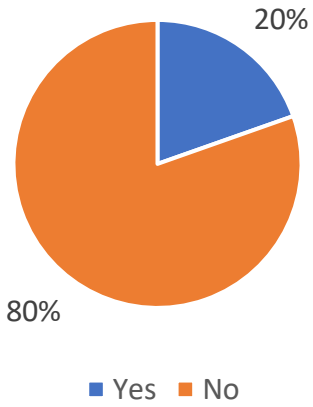
Fig. 4.7 Composition of Library Advisory Committee



4.36 Collection Development Policy

Researcher also asked about the availability of written collection development policy for library. The response is presented in Fig. 4.8 and Table 4.6 as below.

Fig. 4.8 Written Collection Development Policy Availability



It was found that majority of libraries (80%) did not have written collection development policy. Researcher tried to investigate the criteria considered to procure the print books to develop the collection.

Table 4.6 Criterion for Procuring Print Books

Criterion for procurement	Response (n=51)	Response (n=51) in %
To fulfill AICTE Norms	40	78%
Requisition by faculty	42	82%
Suggestion by students	26	51%
Books recommended in the syllabus by university	41	80%
Books in demand	26	51%
Others: Book exhibition, Research oriented	2	4%

It was found that most important criteria for print book collection development is requisition by faculty (82%), followed by recommended books of syllabus (80%) and followed by adhering to AICTE Norms (78%). Equal response (51%) was received for

books in demand and books suggested by students. Some of the other criteria considered for book collection were research-oriented collection and book exhibition.

4.4 Information Technology Infrastructure

As per AICTE norm, engineering college libraries should have multimedia facility. It is required to have sufficient number of computers with multimedia facility, networking and Internet facility in libraries for users. Researcher made an attempt to find out the library Information Technology (IT) infrastructure availability. Responses received in this category are presented below in the form of tables and chart.

4.41 Library Automation

All the library functions are automated using library management software (LMS), which eases the day to day operations in libraries and also benefits users of library by saving time. Various LMS software are available in market, some of them are open sources and some proprietary software are also available. Researcher enquired about the status of library automation in the libraries.

Table 4.7 Library Automation Status

Library automation	Response (n=51)	Response (n=51) in %
Yes	50	98%
No	1	2%

Table 4.8 Type of Library Software

Type of Library software	Response (n=50)	Response (n=50) in %
Commercial	34	68%
In house	7	14%
Open source	9	18%

From Table 4.7, it was found that majority of libraries (98%) are using some library management software. Only one college library i.e. Usha Mittal Institute of Technology (UMIT) library was under process of getting into automation. Commercial Software is

used by 68%, the next popular is Open source software by 18% and there are 14% respondents using Inhouse software.

4.42 Library Management Software

Researcher enquired about which library software is being used to all libraries using library management software. Researchers also tried to investigate the type of the library management software is used. It was found that majority of the libraries are (68%) are using commercial software, some of them (14%) are using In-house software and only one library (9%) is using open source software.

Table 4.9 List of Library Management Software

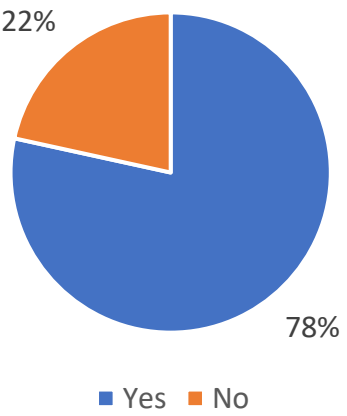
Library Management software	Type	Response (n=50)	Response (n=50) In %
AutoLib	Commercial	1	2%
Biyani Technology	Commercial	1	2%
Bookworm	Commercial	2	4%
E-Granthalaya	Commercial	5	10%
ERP InHouse Software	In house	2	4%
E-Vidya	Commercial	1	2%
iMeet Software	In house	1	2%
Koha	Open source	9	18%
Library Software	In house	3	6%
LIBSUITE	Commercial	5	10%
LIBSYS	Commercial	1	2%
LRMS	In house	1	2%
MICM Library Management Software	Commercial	2	4%
SLIM	Commercial	2	4%
SLIM 21	Commercial	5	10%
SOUL	Commercial	6	12%
SOUL 2.0	Commercial	1	2%
Vasundhara	Commercial	2	4%

List of software used by the libraries are mentioned in Table 4.9. Out of commercial software SLIM (14%), SOUL (14%) and LIBSUITE (10%) are used most. Majority of libraries are using Koha (18%) open source library management software used.

4.42 1 WebOPAC Facility

Further, researcher explored whether WebOPAC facility is provided along with software. It was found that majority of them (78%) provided WebOPAC facility.

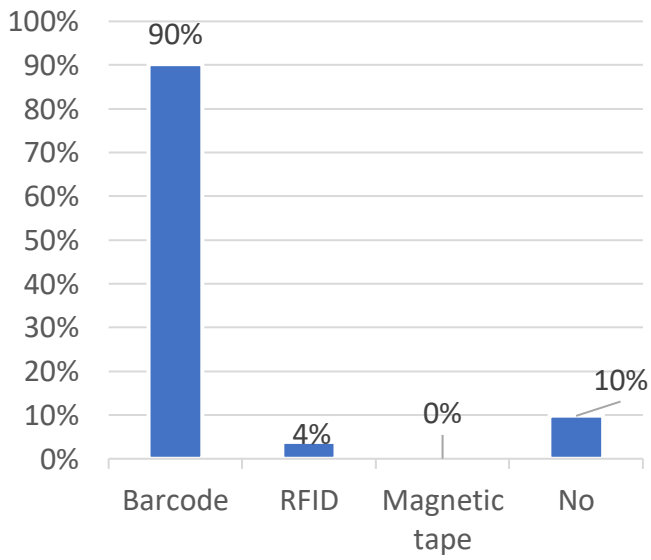
Fig. 4.9 WebOPAC Facility



4.42 2 Latest IT Tools & Technologies used along with Library Automation

Researcher found that majority of libraries (90%) are using barcode facility, few libraries (4%) are using RFID technology and some libraries (10%) are yet to adopt new IT techniques for library management system. None of them (0%) are using magnetic tape used for security purpose. It has been observed that some engineering college libraries are using both RFID and barcode technology.

Fig. 4.10 Latest IT Tools Used in Libraries



4.43 Computer Terminals in Libraries

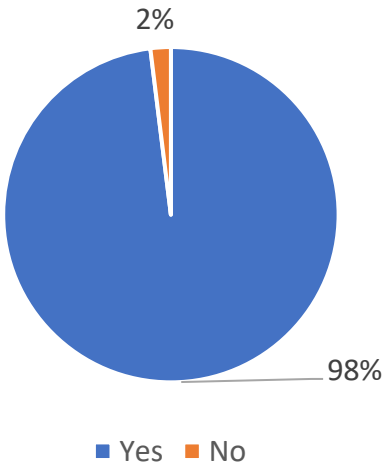
Computer terminals are made available to access digital library resources and search information. In response to availability of computer terminals in the library, researcher found that majority of libraries (31.37%) have computers in the range of 16 to 20, followed by 29.41% libraries have 5 to 10 computers and so on. Only one library i.e. Thakur College of Engineering and Technology library had more than 30 computers.

Table 4.10 Computer Terminals in Library

Computer Terminals	Response (n=51)	Response (n=51) in %
5-10	15	29.41%
11-15	14	27.45%
16-20	16	31.37%
21-25	1	1.96%
26-30	4	7.84%
More than 30	1	1.96%

Further, libraries were asked for Local Area Networking (LAN) amongst the library computer terminals for sharing of data locally. From Fig. 4.11 it is found that almost all libraries i.e. 98% have LAN facility.

Fig. 4.11 LAN Facility in Library



4.44 Internet Facility in Libraries

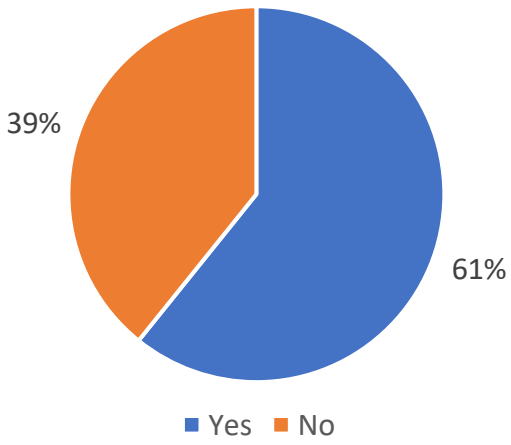
As the libraries are in hybrid state, collections are available in both print and digital format. For accessing these digital or electronic resources it is very important to have considerable IT infrastructure and better Internet connectivity. Researcher made an attempt to find the Internet facility provided in the library. It was found that all libraries (100%) libraries provide Internet facility for its users.

The responses received in regards with computer terminals with broad band Internet connection and Wi-Fi are presented below in the Table 4.11 and Fig. 4.12.

Table 4.11 Computer Terminals with Broad Band Internet

Computer Terminals with Internet	Response (n=51)	Response (n=51) in %
5-10	16	31.37%
11-15	13	25.49%
16-20	16	31.37%
21-25	1	1.96%
26-30	4	7.84%
More than 30	1s	1.96%

Fig. 4.12 Wi-Fi Facility Availability in Library



It was found that, nearly all computers in libraries have Internet facility. The data of number of computer terminals resembled more or less similar as number of computers

with Internet facility. It was found that 61% libraries have Wi-Fi facility for users to connect to Internet for accessing library resources online.

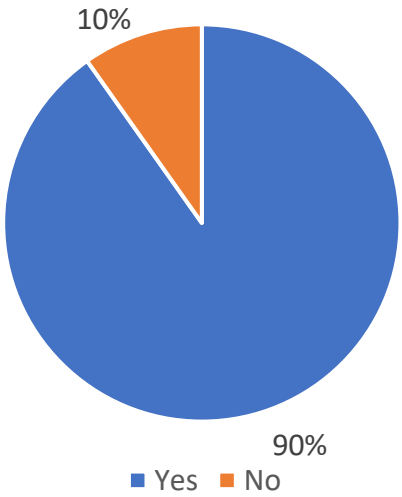
4.5 E-Books

E-Books are electronic version of the traditional print books. To access eBooks, an electronic device is required. Researcher have made an attempt to find out the availability of eBooks in the library collection. An attempt is made to find out responses towards various facets of eBooks used by the libraries like publication, subjects considered, type of eBooks, business model, mode of access, etc. The responses are presented further in the form of tables and figures for better presentation.

4.51 AICTE Norms

In beginning, the researcher tried to investigate the awareness of the library professionals about the AICTE norm (2015-2016), which indicates that 25% of the total number of titles and volumes can be in the form eBooks. This norm was found useful when extensive backlog was to be cleared. Also, being in digital version processing time was also saved.

Fig. 4.13 Awareness of AICTE Norm of eBooks

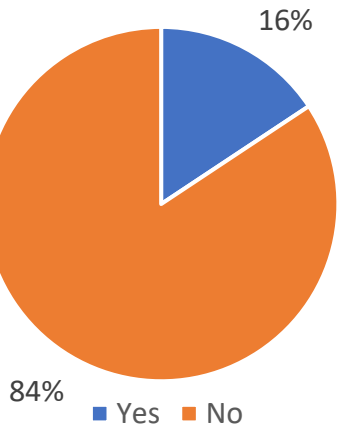


It was found from Fig. 4.13 that 90% of the librarian are aware about this AICTE norm and very few librarians (10%) were unaware of this new norm of AICTE.

4.52 Collection Development Policy for eBooks

Researcher tried to investigate that whether any collection development policy is developed for procurement of eBooks. It was found from Fig. 4.14 that majority (84%) libraries do not have any specific collection development policy for procuring eBooks.

Fig. 4.14 Availability of Collection Development Policy for eBooks



Researcher tried to corelate this with the responses received for collection development policy for print books. Out of 10 libraries, where collection development for print books exists only 5 libraries also have collection development policy specifically for eBooks. Also, it was observed that there were 3 libraries where collection development policy for eBooks exists but not for print books.

4.53 Availability of eBooks in Libraries

Researcher asked librarians about the availability of eBooks in their library collection. From Table 4.12, it is noticed that on 39% libraries have eBooks in their collection and 61% have not procured eBooks.

Table 4.12 Availability of eBooks

Availability of eBooks	Response (n=51)	Response (n=51) in %
Yes	20	39%
No	31	61%

4.54 Libraries Procuring eBooks

Researcher investigated in details with the libraries procuring eBooks (39%) about the acquisition policies of libraries pertaining to eBooks like business model, access model, budget considerations, criterion considered for procuring eBooks, preferred medium, format, license, disciplines, etc.

Further in this section, data is represented of responses collected from libraries (n=20) procuring eBooks

4.54 1 Procurement Criteria for eBooks

In this regard, researcher found that majority of the libraries (60%) procure eBooks based on mandatory norms of AICTE along with Need-Demand of users. It was also noted that 20% libraries procured eBooks only as per norms of AICTE and 20% libraries procured eBooks only as per user's needs and demands.

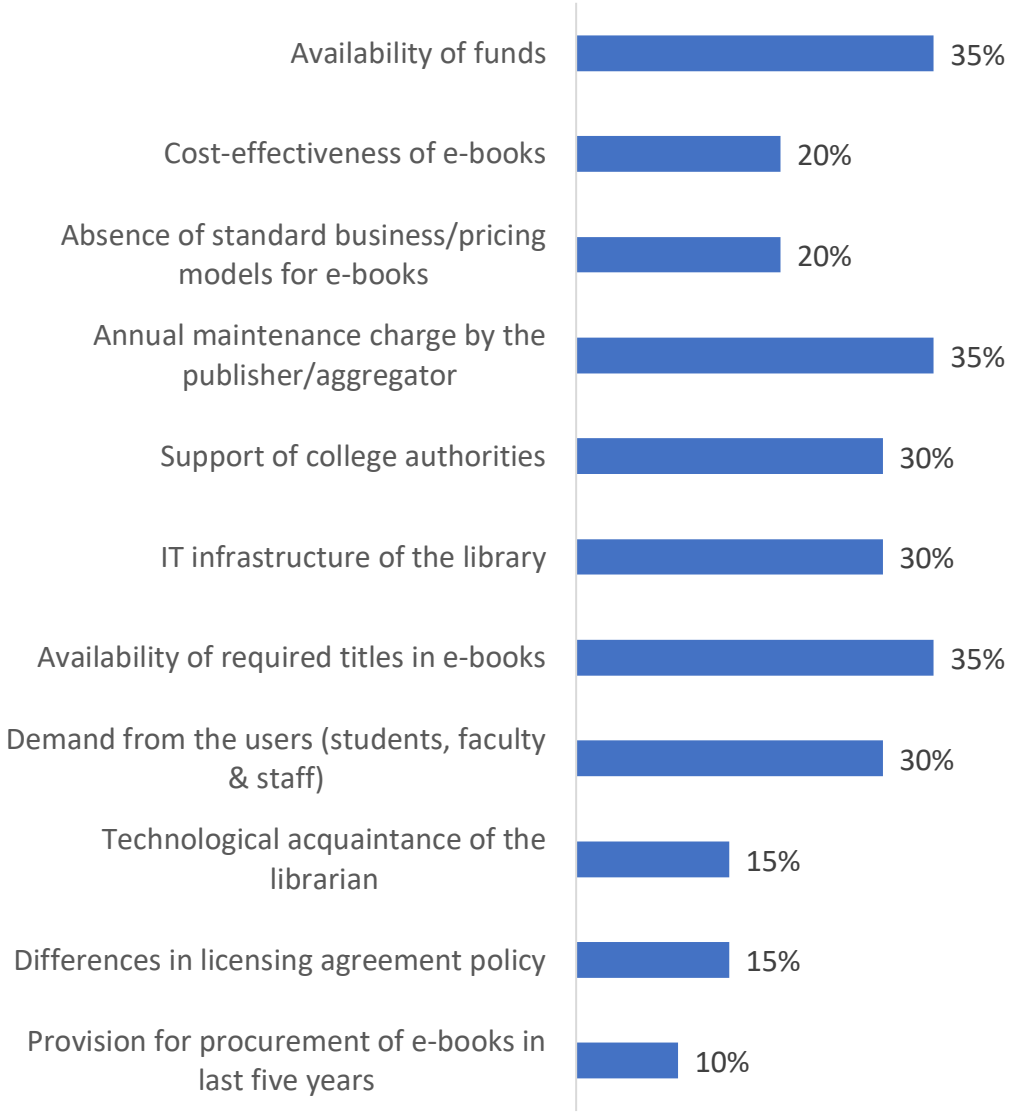
Table 4.13 Procurement Criteria for eBooks

Criterion for eBook procurement	Response (n=20)	Response (n=20) in %
Mandate by AICTE + Need-Demand based	12	60%
Mandate by AICTE	4	20%
Need-Demand based	4	20%

4.54 2 Factors Influencing eBooks Procurement

Researcher tried to explore the factors which influenced procurement of eBooks in library collection. It was found that there are many factors which are found equally important in this regard.

Fig. 4.15 Factors Influencing the Procurement of eBooks

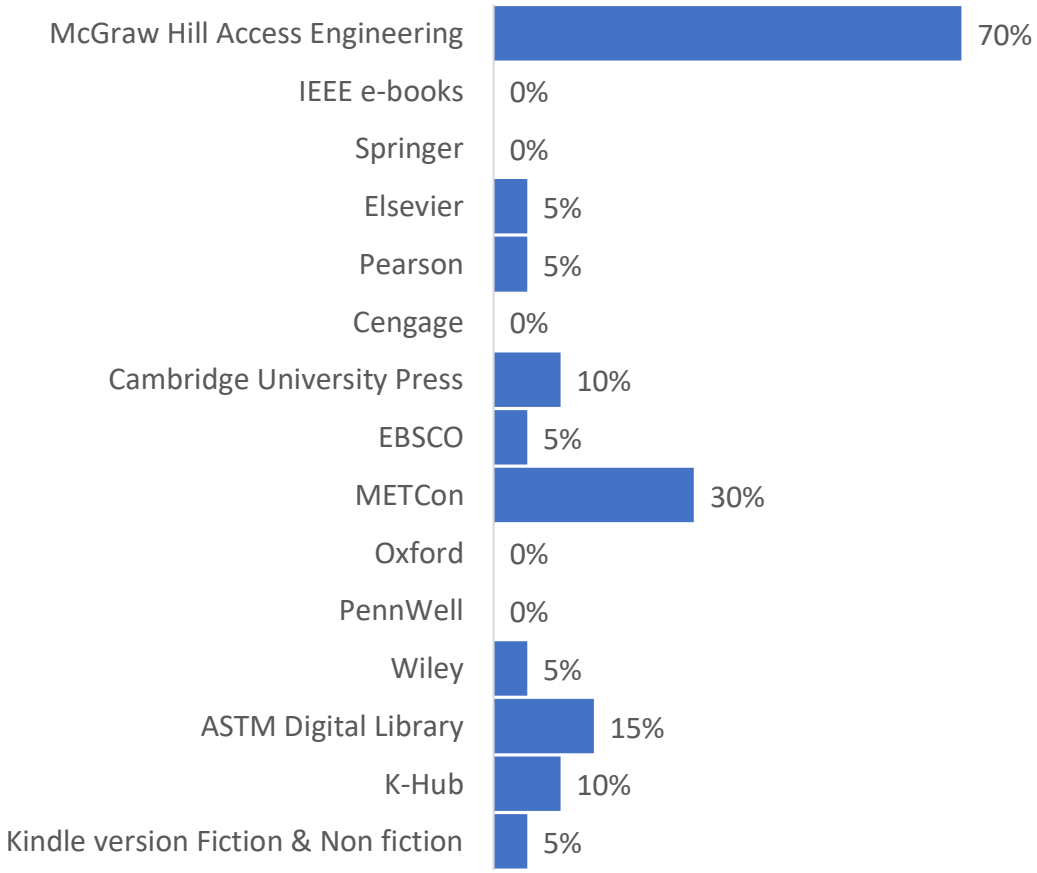


Factors like fund availability, required title availability and maintenance charge by publishers/vendor was found equally important by 35% of libraries. Support from college authorities, IT infrastructure and users demand were found important by 30% of libraries. And 20% found eBooks are not cos effective and lack of standard business/pricing models for eBooks. Other factors are depicted in the Fig. 4.15.

4.54 3 Publication of Procured eBook

In this context researcher tried to find out if any preference towards publication is given by the libraries. As per AICTE norms, McGraw Hill Access Engineering (General & Reference package) and ASTM Digital Library (Online dictionary of Engineering Science and Technology and eBooks) are mandatory for all engineering college libraries. Procurement of eBooks is represented in following chart.

Fig. 4.16 Publication of Procured eBooks



It is found that majority (70%) of libraries procure McGraw Hill Access Engineering, followed by METCon by 30%, ASTM Digital Library by 15%, etc. METCon is a consortium model developed by Springer specifically designed for engineering college libraries. Some of other eBooks were K-Hub eBooks offered by Infotrack Library Solution platform, an aggregator and Kindle Version Fiction & Non-Fiction are also procured. Kindle version eBooks are made available in dedicated format by Amazon commercial website designed specifically for Kindle device.

4.54 4 Number of eBooks Procured

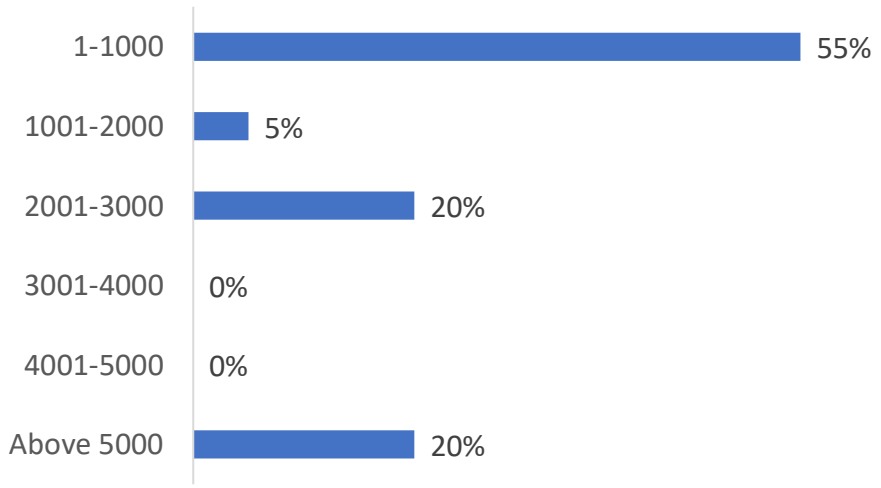
Researcher tried to find out number of eBooks procured in the library. Following is the list of eBooks procured by libraries along with details of publication and number of eBooks.

Table 4.14 Number of eBooks Procured

Sr. No.	Respondents	No. of eBooks	Details of number of eBooks
1	Fr. Conceicao Rodrigues Institute of Technology	39	K-Hub (39)
2	Fr. Conceicao Rodrigues College of Engineering	167	Infotrack- K hub (167)
3	Pillai Institute of Information Technology, Engineering Media Studies & Research	600	McGraw Hill Access Engineering package (600)
4	Pillai HOC College of Engineering & Technology	600	McGraw Hill Access Engineering package (600)
5	A. C. Patil College of Engineering	600	McGraw Hill Access Engineering package (600)
6	Shah & Anchor Kutchhi Engineering College	600	McGraw Hill Access Engineering package (600)
7	Saraswati College of Engineering	600	McGraw Hill Access Engineering package (600)
8	Thakur College of Engineering and Technology	600	McGraw Hill Access Engineering package (600)
9	SIES Graduate School of Technology	600	McGraw Hill Access Engineering package (600)
10	A. P. Shah Institute of Technology	600	McGraw Hill Access Engineering package (600)
11	Bharati Vidyapeeth College of Engineering	1000	McGraw Hill Access Engineering package (600), EBSCO (400)
12	Universal College of Engineering	1500	ASTM Digital Library (1500+)
13	St. Francis Institute of Technology	2100	McGraw Hill Access Engineering package (600), ASTM Digital Library (1500+)
14	M.H. Saboo Siddik College of Engineering	2165	McGraw Hill Access Engineering package (600), Elsevier (30), Cambridge University Press (35), Springer METCon (1500+)

15	K. J. Somaiya College of Engineering	2253	McGraw Hill Access Engineering package (600), ASTM Digital Library (1500+), Mc Graw Hill Xpress (132), General Reading Kindle version-fiction & Non-Fiction (21)
16	Veermata Jijabai Technological Institute (VJTI)	2281	McGraw Hill Access Engineering package (600), Springer METCon (1600+), Cambridge University Press (81)
17	Sardar Patel Institute of Technology	8214	Springer METCon (8000+), Wiley (214)
18	Sardar Patel College of Engineering (SPCE)	9400	McGraw Hill Access Engineering package (600), Pearson (800), Springer METCon (8000+)
19	Ramrao Adik Institute of Technology (RAIT)	10000	Springer METCon (10000+)
20	Lokmanya Tilak College of Engineering	10480	Springer METCon (10480)

Fig. 4.17 Distribution of eBooks

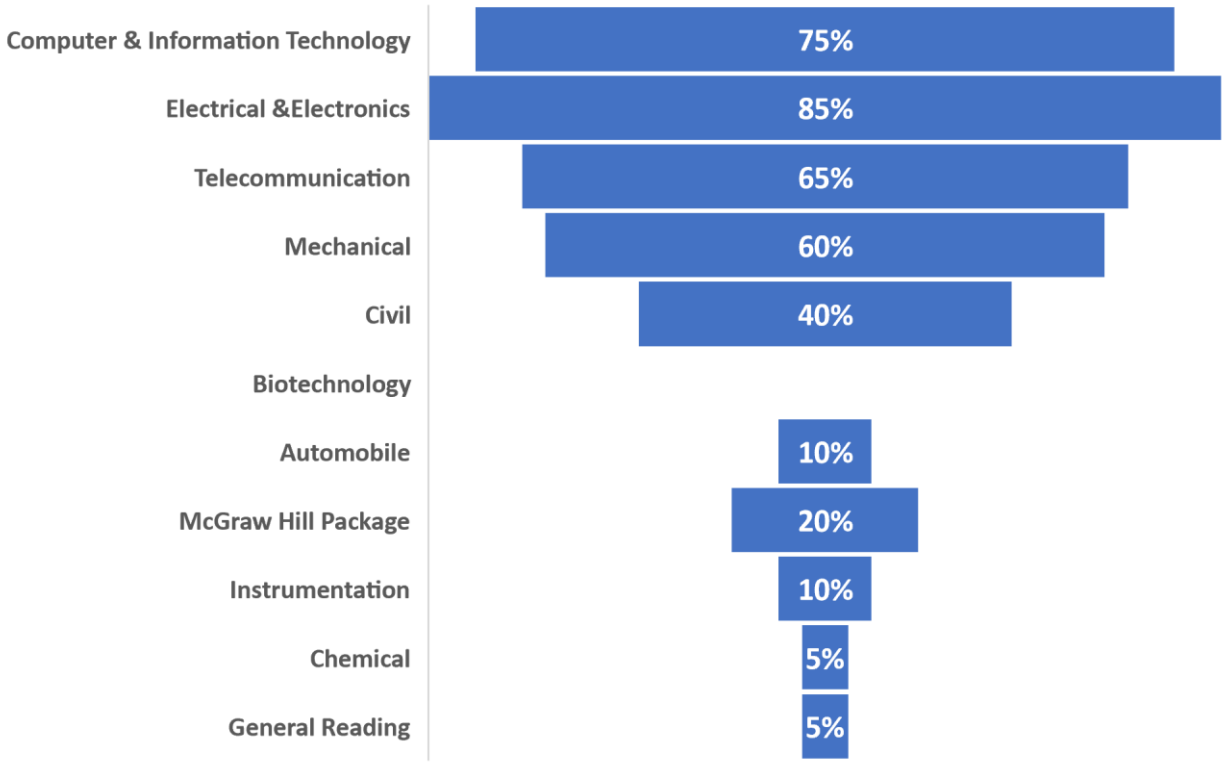


It was found majority (55%) of libraries have eBooks procured in the range of 1 to 1000, followed by 20% in range of 2001 to 3000 and another 20% have eBooks more than 5000. Maximum procurement is done of McGraw Hill Access Engineering which has 600 eBooks in the package and METCon provide various options including more than 10000 eBooks.

4.54 5 Discipline of eBooks Procured

Researcher tried to know which discipline eBooks are procured by the libraries. From Fig. 4.17, it was evident that discipline Electrical & Electronics eBooks were procured by majority (85%) of libraries, followed by Computer & Information Technology (75%) and Telecommunication (65%). It was noted that there no takers for discipline Biotechnology (0%).

Fig. 4.18 Discipline of eBooks Procured



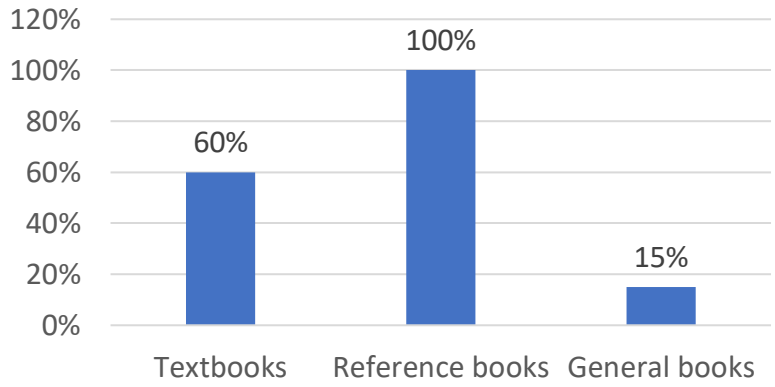
Some of the other disciplines mentioned were Automobile, Instrumentation, Chemical, General reading and McGraw Hill Package. It was found that 20% libraries mentioned McGraw Hill package under discipline as it is a subscription package and offers eBooks in particular disciplines and libraries do not have a choice to swap titles.

Mc-Graw Hill Access Engineering is a mandatory eBook package by AICTE under AICTE-INDEST Consortium. It includes General Engineering Books offered by McGraw Hill.

4.54 6 Category of eBooks Procured

Respondents were asked about the type of the eBooks procured. It was found that all libraries (100%) procured reference books, 60% procured textbooks as well and only 15% libraries procured general reading book. It was found that preference was given for academic books than general reading books.

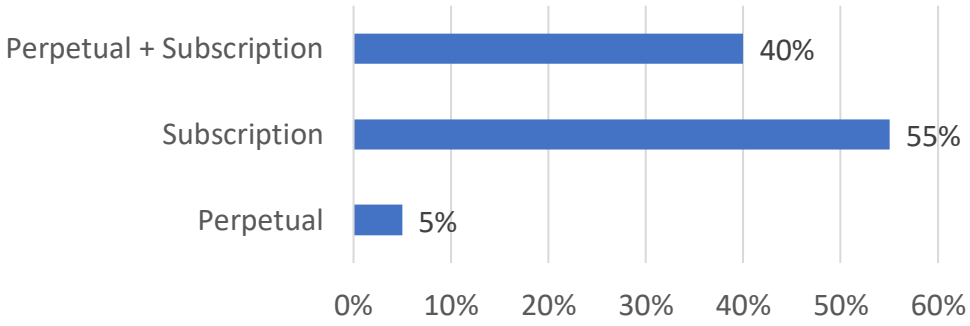
Fig. 4.19 Category of eBooks Procured



4.54 7 Access Model Preferred for Procuring eBooks

There various access models available most common of them are two i.e. subscription – in which every year annual subscription is paid and other is Perpetual – in which payment is done only one time. In this regard, researcher has asked about the access model preferred while procuring eBooks. It was found that majority of libraries (55%) are using subscription model, 40% libraries preferred both subscription + perpetual access model and 5% libraries used only perpetual access model.

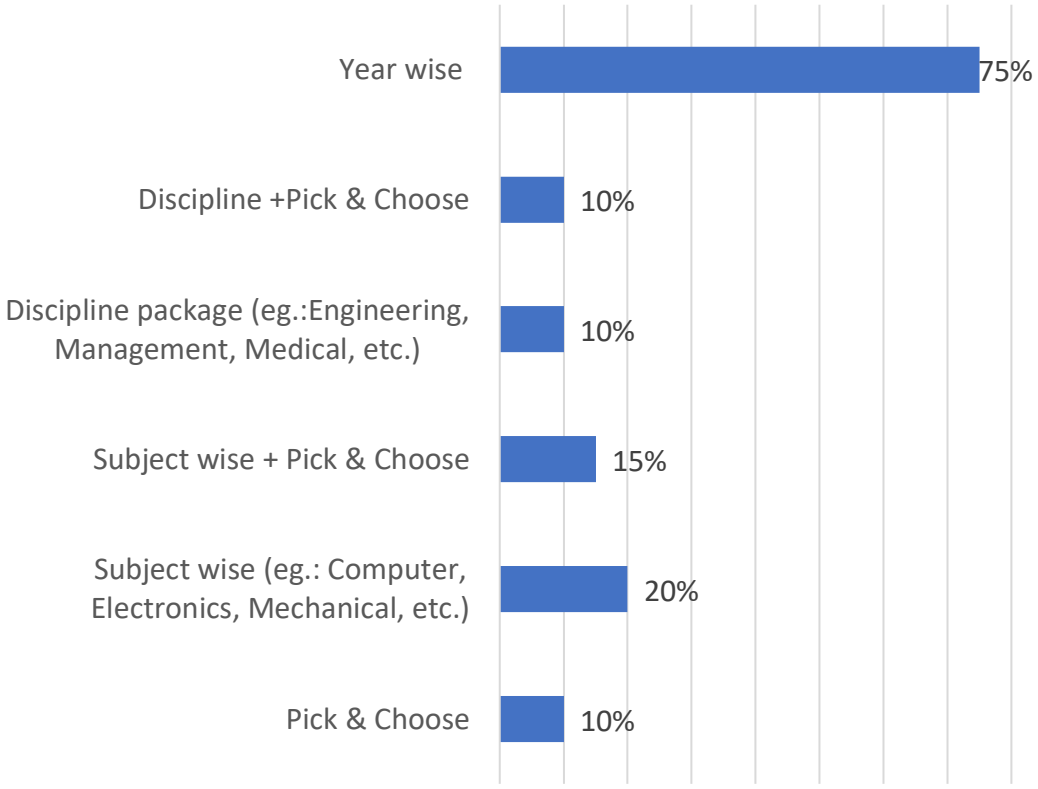
Fig. 4.20 Access Model Preferred for Procuring eBooks



4.54 8 Business Model Used for Procuring eBooks

There are various business models available in the market offered by publishers, vendors and aggregators. Researcher made an attempt to find out the business model used to procure eBooks in the libraries. It was found that majority of the libraries are (75%) opting for year wise packages offered. This goes with the findings that majority of the libraries have procured McGraw Hill Access Engineering package which is available only in subscription model.

Fig. 4.21 Business Model Used for Procuring eBooks



4.54 9 License Model Preferred for Procurement of eBooks

There are various access models like single user, limited and multiple access model. Single user access model allows only one user to access the information. In limited access model, number of users are predefined it is more than one license e.g. 3 users, 5 users, 10 users, etc. In multiple users' access model, any number of bonafide users are

allowed to access the information. In this context, researcher made an attempt to find which is the most preferred license model used by the libraries. It was found that majority of libraries (90%) preferred multiple user license model and 10% preferred both single and multiple users license model.

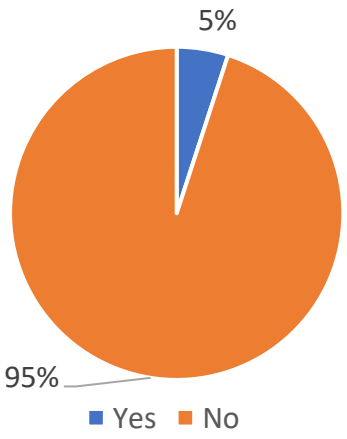
Table 4.15 License Model Preferred for Procurement of eBooks

License Model	Response (n=20)	Response (n=20) in %
Single user	0	0%
Multiple user	18	90%
Both	2	10%

4.54 10 Availability of eBook Reader

To access eBooks, a device compatible to it is required. There are various eBook readers available in the market e.g. Kindle, Kobo, Nook, etc. In this connection, researcher tried to investigate whether libraries also provide eBook readers to users to access eBooks and which eBook reader was offered if available. It was found that 95% of libraries do not have any dedicated eBook reader. Only 5% libraries i.e. one library mentioned availability of eBook reader. It was K J Somaiya College of Engineering who offered Kindle Paper White eBook readers six in number to its users to access eBooks.

Fig. 4.22 Availability of eBook Readers in Library



4.54 11 Preference of Device to Access eBooks

To access an eBook a device is required, there are various devices along with eBook Reader like Tablet, Laptop, Computer, smartphone, etc. In this connection, researcher tried to find out the preferred devices to access eBooks in libraries. It was found that most preferred device to access eBooks is computer/desktop (90%), followed by laptop (70%), smartphone was preferred by 35%, tablet was preferred by 20% and only 5% preferred to use eBook reader.

Table 4.16 Preference of Device to Access eBooks

Devices Used to access eBooks	Response (n=20)	Response (n=20) in %
E-book reader	1	5%
Tablet	4	20%
Laptop	14	70%
Computer/Desktop	18	90%
Smartphone	7	35%

4.54 12 Preference of Format of eBook

There are various formats of eBooks available some them are general and compatible with many devices and some are device specific. Researcher has tried to explore which eBook formats are preferred. It was found that portable document format (pdf) is the most preferred format as it is compatible with most of the electronic devices, followed by Hypertext mark-up language by 30%, electronic publishing (ePub) an open file format was preferred by 10% and only 5% responded for dedicated format of the device.

Table 4.17 Preference of Format of eBook

Preferred eBook format	Response (n=20)	Response (n=20) in %
HTML	6	30%
PDF	20	100%
ePub	2	10%
Dedicated format of the device	1	5%
Don’t Know	0	0%

4.54 13 Current Percentage of Annual Library Budget for eBooks

Researcher tried to find out the percentage of Annual Library Budget utilised for procuring eBooks. It was found that 35% of libraries are utilising in the range of 1 to 5% of their annual budget, another 35% are using 6 to 10% of their annual budget, and so on.

Table 4.18 Current Percentage of Annual Library Budget for eBooks

Annual Budget %	Response (n=20)	Response (n=20) in %
1 to 5%	7	35%
6 to 10%	7	35%
11 to 15%	2	10%
16 to 20%	2	10%
More than 20%	2	10%

Further, researcher also asked respondents about their expectation about increase in the budget for procuring eBooks in libraries. Majority (75%) of them felt that there will be increase in the current eBook Budget. However, few (25%) were in doubt about the increase in the existing eBook annual budget.

Table 4.19 Expected Increase in eBook Budget in Following Years

Expected Increase in eBook Budget	Response (n=20)	Response (n=20) in %
Yes	15	75%
No	0	0%
Don't Know	5	25%

4.54 14 User Experience about eBooks Access

Libraries have always made it important to make the users aware about the resources available in the library, provided training if required and address queries/difficulties faced by users if any. Many electronic resources are designed in way that they are found to be very user friendly. In this regard, researcher have tried to check if libraries make users aware about eBooks, provide training and find out if any difficulties are faced by users.

4.54 15 Awareness about Availability of eBooks in Libraries

Researcher made an attempt to find out whether libraries created awareness amongst its users about the availability of eBooks in its collection. It was found that all of them (100%) created awareness about the eBook's availability.

Table 4.20 Awareness about Availability of eBooks in Libraries

Creating awareness about eBooks	Response (n=20)	Response (n=20) in %
Yes	20	100%
No	0	0%

4.54 16 Training Provided to Users for Accessing eBooks

For optimum utilisation of any resource, it is important to provide training about it. Researcher enquired if any training is provided to users for accessing eBooks. From Table 4.21, it is found that majority (75%) provided training to its users, 10 % did not provide any training and 15% felt that there is no need to provide training for accessing eBooks.

Table 4.21 Training Provided to Users for Accessing eBooks

Training for eBooks	Response (n=20)	Response (n=20) in %
Yes	15	75%
No	2	10%
Not required	3	15%

4.54 17 Difficulties Faced by Users while Accessing eBooks

Researcher tried to find out whether any difficulties faced by users are reported to libraries. Majority (75%) respondents mentioned that users do not face any difficulties while accessing eBooks, 20% mentioned that users did face difficulty while accessing eBooks and 5% mentioned that they are unaware about difficulties faced by users while accessing eBooks.

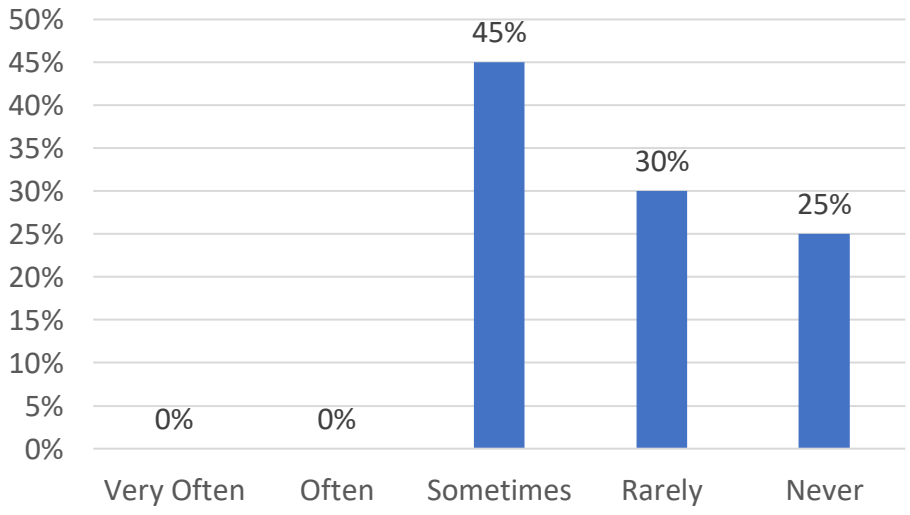
Table 4.22 Difficulties Faced by Users while Accessing eBooks

Difficulties faced while using eBooks	Response (n=20)	Response (n=20) in %
Yes	4	20%
No	15	75%
Don't Know	1	5%

4.54 18 Occurrence of Difficulties Faced by eBook Users

In regards to previous question, researcher further tried to find out occurrence of difficulties faced by eBooks users. From Fig. 4.23, it is found that majority (45%) mentioned only sometimes difficulties are faced, 30% felt rarely users felt any difficulties and 25% mentioned users never felt any difficulties while accessing eBooks.

Fig. 4.23 Occurrence of Difficulties Faced by eBook Users



4.55 Libraries Not Procuring eBooks

The libraries which are not procuring eBooks were asked to jump to this section. Researcher tried to find out possible reasons and future plan about eBooks. Off total 51, 20 libraries have procured eBooks and 30 libraries have not procured any eBooks. This section will provide data representation of only 30 libraries who have not procured eBooks.

4.55 1 Reason for Not Procuring eBooks

Researcher enquired about possible reasons for not procuring eBooks in the library. It was observed that majority (74%) of the libraries found that lack of funds is the major reason for not procuring eBooks, followed by 65% stated lack of demand by users, 29% mentioned lack of support by college authorities, 26 % found lack of suitable business model, 26% mentioned lack of suitable access model and so on.

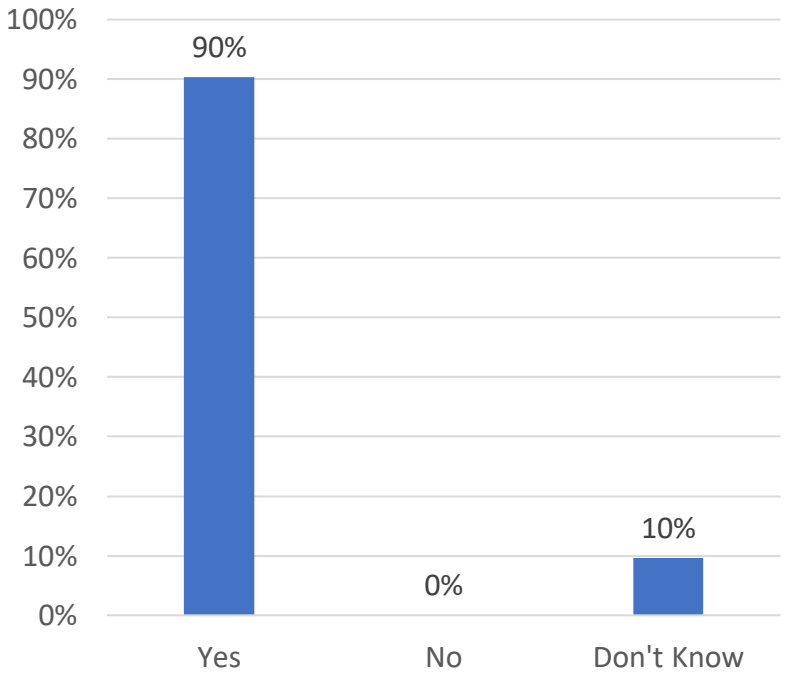
Table 4.23 Reasons Stated for Not Procuring eBooks

Reasons	Response (n=31)	Response (n=31) in %
Complicated handling and maintenance	3	10%
Inadequate IT infrastructure	5	16%
Lack of awareness	6	19%
Lack of demand	20	65%
Lack of funds	23	74%
Lack of suitable access model (e.g. Perpetual, subscription, etc.)	8	26%
Lack of suitable business model (e.g. discipline, year wise, pick &choose, etc.)	8	26%
Lack of suitable license model (e.g. Single, multiple, concurrent, etc.)	6	19%
Lack of support from college authorities	9	29%
Non availability of required titles in eBook	5	16%
Not cost effective	5	16%
So far, e-books were not considered as a part of the collection by AICTE	6	19%

4.55 2 Near Future Plan to Procure eBooks

Researcher tried to find out if these libraries have any near future plan to procure eBooks. It was found that majority of the libraries (90%) positively answered to procure eBooks in near future however 10% are still in doubt about eBook procurement.

Fig. 4.24 Near Future Plan to Procure eBooks



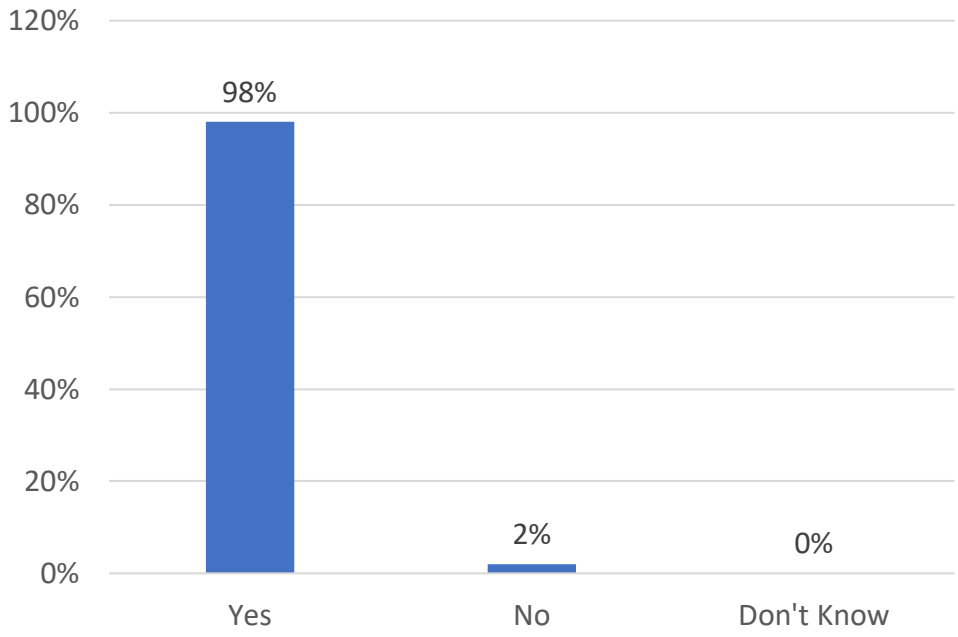
4.6 Opinion about eBooks

Researcher made an attempt to find out the opinion of library personnel about the eBooks, its cost effectiveness, preference over print, opinion about its demand, acquaintance of eBook procurement process, etc. These questions were enquired to all libraries and the received opinion is presented below.

4.61 Importance of eBook in Library Collection

Researcher tried to know that if libraries find eBooks are important to be added into the library collection. It was found that majority of them (98%) opined eBooks should be a part of library collection and 2% felt it is not required to be a part of the collection.

Fig. 4.25 Importance of eBook in Library Collection



4.62 Advantages of eBooks

Researcher tried to know advantages of eBooks, it was found that majority of them (92%) mentioned instant access, 76% mentioned 24/7 access, 75% mentioned searchable, 75% mentioned cannot be lost, 73% mentioned portable, 61% mentioned simultaneous access, 51% mentioned multimedia features and so on. Table 4.24 is tabulation of advantages of eBooks. Some of the other advantages cited by the library professionals were manpower input is required less, no physical space is required, storage issue is solved, saves space and there is no question of binding and preservation.

Table 4.24 Advantages of eBooks

Advantages of eBooks	Response (n=51)	Response (n=51) in %
Instant access	47	92%
Portable	37	73%
Searchable	38	75%
24/7 access	39	76%
Simultaneous access	31	61%

Multimedia features	26	51%
Can highlight text	17	33%
Take notes	15	29%
Easy sharing	27	53%
No repairs required	23	45%
Cannot be lost	38	75%
Cannot be defaced / mutilated	21	41%
Environment friendly	25	49%
Manpower input is required less	1	2%
No physical space required	1	2%
Storage issue is solved	1	2%
Saves space	1	2%
No question of binding and preservation	1	2%

4.63 Disadvantages of eBooks

Researcher tried to know disadvantage of using eBooks. It was found that majority of them (86%) felt they are costly, 76% found it cause strain to eyes, 41% mentioned there is a rapid change in the technology and so on. Some of the other disadvantages mentioned by the respondents were no feel of print books and maintaining procurement document & usage reports.

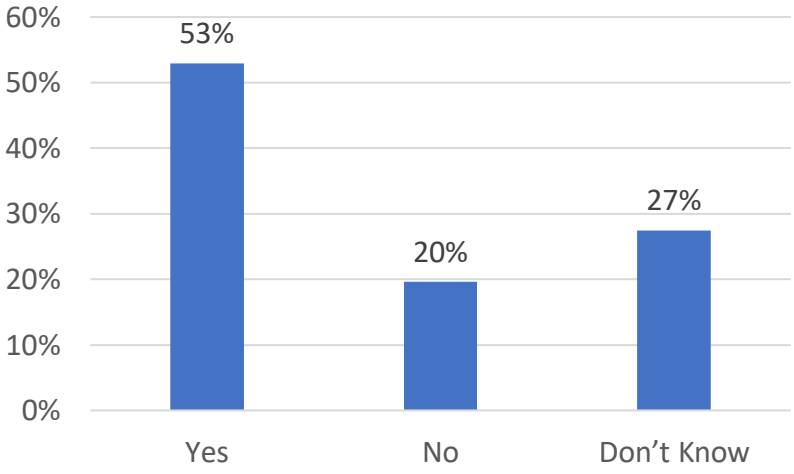
Table 4.25 Disadvantages of eBooks

Disadvantages of eBooks	**Response (n=51)**	**Response (n=51) in %**
Costly	44	86%
Not user-friendly	7	14%
Eye strains' while reading	39	76%
Variety of devices are available	10	20%
Rapid change in technology	21	41%
Security and maintenance	13	25%
No feel of Print book	1	2%
Procurement document and usage report	1	2%

4.64 Licensing Terms Restricts Libraries to Stock eBooks

Researcher tried to find the opinion of respondents whether licensing terms is a reason for not stocking eBooks. Majority (53%) felt licensing terms are hindrance, 20% mentioned they are not and 27% are unsure of it.

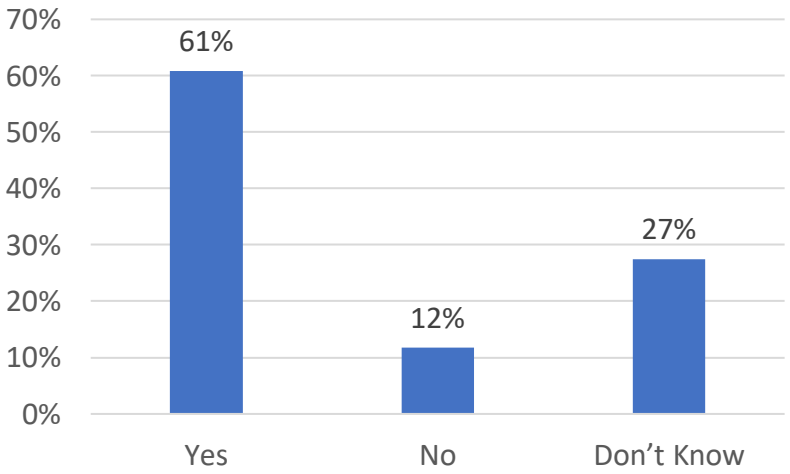
Fig. 4.26 Licensing Terms Restricts Libraries to Stock eBooks



4.65 E-book Business/Pricing Model Restricts Libraries to Stock eBooks

Researcher tried to find the opinion of respondents whether eBook business/pricing model is a reason for not stocking eBooks. Majority (61%) felt business/pricing models are key factors while procurement of eBooks, 12% mentioned they are not and 27% are unsure of it.

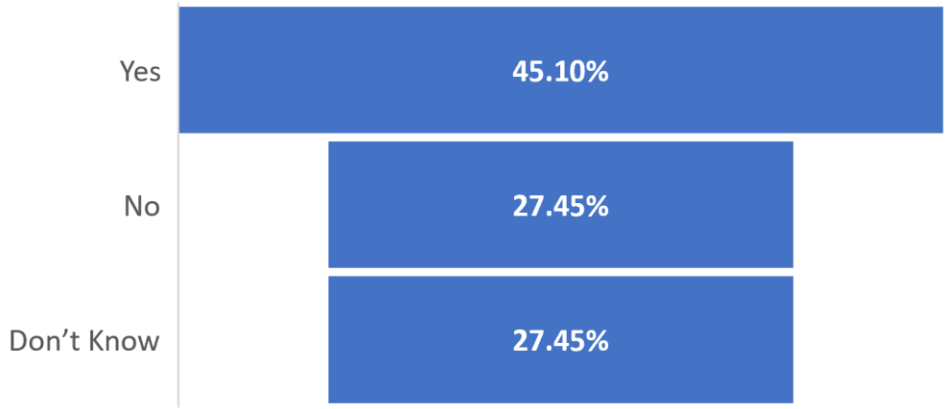
Fig. 4.27 E-book Business/Pricing Model Restricts Libraries to Stock eBooks



4.66 Accessing Terms Restricts Libraries to Stock eBooks

Researcher tried to find the opinion of respondents whether accessing terms are reason for not stocking eBooks. Majority (45.1%) felt accessing terms are important during decision making for procurement of eBooks, 27.45% mentioned they are not and 27.45% are unsure of it.

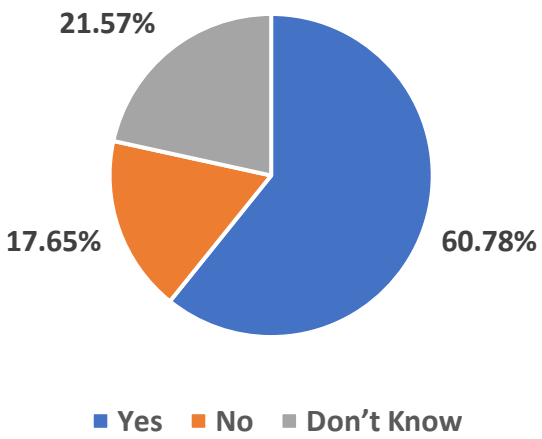
Fig. 4.28 Accessing Terms Restricts Libraries to Stock eBooks



4.67 Cost-effectiveness of eBooks

Researcher tried to know the opinion of respondents about eBooks being cost-effectiveness. It was found that majority (60.78%) found that eBooks are cost-effective, 17.65% mentioned they are not and 21.57% are in doubt about its cost effectiveness.

Fig. 4.29 Cost-effectiveness of eBooks



4.68 Users Preference Over Print Books

Researcher made an attempt find the opinion of libraries, whether users prefer to read print books over eBooks. It was found that all of them i.e. 100% opined that users still preferred to read print books over eBooks.

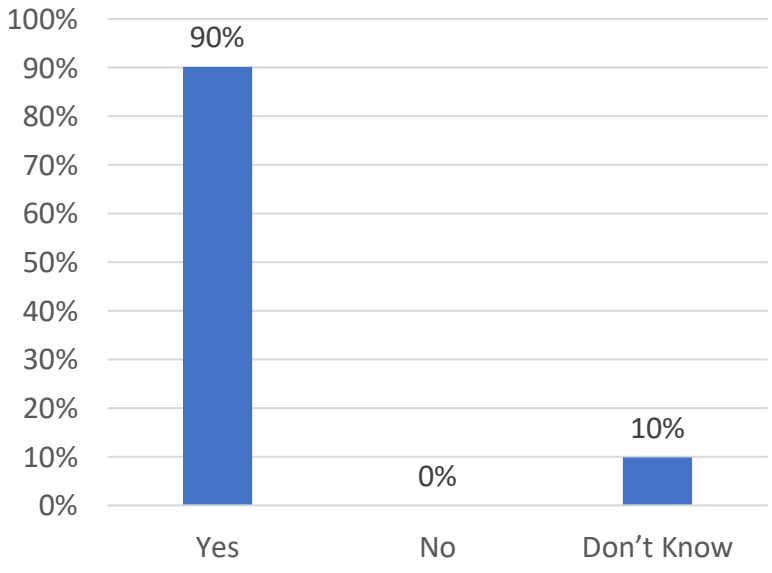
Table 4.26 Users Preference Over Print Books

Users still prefer to read print books	Response (n=51)	Response (n=51) in %
Yes	51	100%
No	0	0%
Don't Know	0	0%

4.69 Demand for eBooks in Near Future

Opinion about increase in demand for eBooks in near future was asked by researcher. It was found that majority (90%) of them felt there is a positive potential for increase in demand for eBooks by users but 10% still are in doubt about demand surge for eBooks.

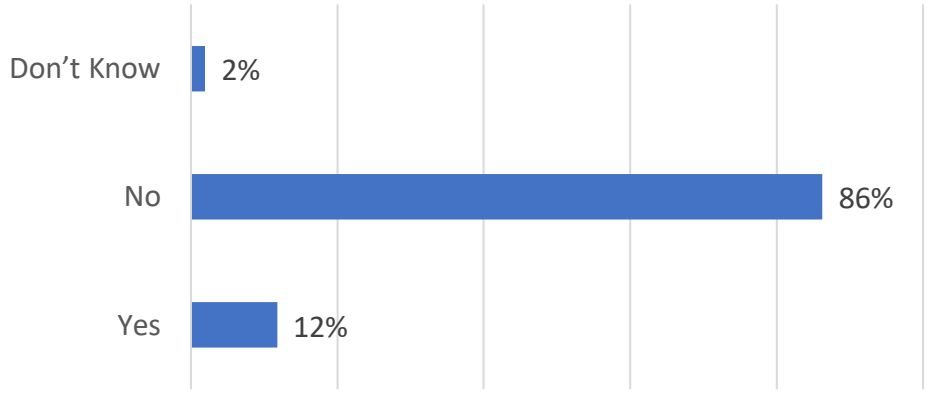
Fig. 4.30 Demand for eBooks in Near Future



4.6 10 E-books as a Threat to Print Books

Respondents were asked about their perception for eBooks as threat to print books. The analysis of data regarding the same shows that majority (86%) of them do not find eBooks as threat to print books, 12% perceives eBooks as threat to print books and 2% are doubtful and cannot form any opinion on the same.

Fig. 4.31 E-books as a Threat to Print Books



4.6 11 Acquaintance of eBook Procurement Process

Researcher tried to find out about acquaintance of eBook procurement process of the respondents. The collected data showed that 65% respondents mentioned they are acquainted about eBook procurement process and 35% mentioned that they are yet to get acquainted with the same.

Table 4.27 Acquaintance of eBook Procurement Process

Acquaintance of eBook procurement process	Response (n=51)	Response (n=51) in %
Yes	33	65%
No	18	35%

Upon asking to elaborate the process, of 33 responses, only 12 respondents elaborated the process of eBook procurement. Details are present in the tabular format. Of which only 7 respondents i.e. 14% were observed little relevant to the eBook procurement process.

Table 4.28 Elaboration of eBook Procurement Process

Elaboration of eBook procurement process	Response (n=51)	Response (n=51) in %
Relevant	7	14
Irrelevant	5	10
Not elaborated process	39	76

Table 4.29 Process of eBook Procurement as mentioned by Respondents

Sr.	Process of eBook procurement as mentioned by respondents
1	Ask for quotation, compare various package deals, ask for trial access, get feedback from patron, put up to library committee and decided.
2	Comparative Study in terms of cost, usefulness, type of procurement and no. of users at a time.
3	Demo, Committee, Principal
4	Selection, negotiation with publisher, aggregator, Endnote, Revised invoice sent to accounts, who do RTGS/DD for after payment
5	Through comparative study of various vendor or trial version view.
6	User request, availability, approval, trial, Purchase order, bill, marketing-promotion
7	Identify requirement, locate availability of resources, compare with publishers/vendors/aggregator, trail, upon usage Lib Comm take decision, negotiate license and business model, Purchase, training, Model framework is required.
8	Subscription, Pick and Choose
9	Publisher Approach
10	1.Procuring through GIST (McGraw Hill Package), 2. Pearson Think Tank 3. McGraw Hill Express Library
11	Through advance payment in the form of DD or cheque to the supplier
12	Because of mandatory

4.6 12 Comments

Researcher asked to provide any additional comment respondents intend to provide. Only 9 respondents provided comment and it is represented in the following table.

Table 4.30 Additional Comments on eBooks

Sr.	Additional Comments on eBooks
1	E-Books are complimentary to print books and not a threat and no question of replacing print editions. But eBooks have added multimedia features which encourages the reader for reading. Both will survive.
2	eBooks free up shelf space, increases title number instantly thereby filling the backlog, but one needs to be careful with bulk purchases as unwanted eBooks are also offered in package.
3	In future, eBooks will be mostly recommended by future generations and they would like to carry books anywhere by E-form.
4	It's difficult to change the thought process of higher authorities to get sanction for procurement of books.
5	If there is shortage of titles and volumes as per AICTE norms, eBooks can full fill that norm.
6	Need of awareness, consortium, pricing models.
7	Awareness
8	Maximum useful for faculty and students.
9	Though working as a librarian but prefer or go for the print book.

B – Data Analysis of eBook Providers

4.7 Introduction

This chapter section presents the findings based on the analysis of interview conducted of representatives of major publishers, aggregators and consortium. Consortium pertaining to engineering subjects are considered. It investigates about eBooks availability, its print equivalent, disciplines offered, subjects offered, purchase models, business models, licensing terms, etc. The data analysis is presented in the form of various graphs and tables.

4.71 Data Collection Methodology and Sampling

Structured Interview method was adopted to collect inputs from the representatives. It was found best method for this study as the sample was not scattered and small in number. Major reputed publishers are chosen for this study publishing books in various disciplines. Well know aggregators of good repute are also considered for the study. There are various consortium models available in various disciplines, however the study includes only models offered for engineering discipline.

4.72 Data Collection Tool

The data collection tool for structured interview was interview guide/questionnaire, which had questions already written in order. Researcher asked each respondents the same series of questions. Prior to interview these questions were designed along with limited response set for ease. To get more clarification probing was done, if the answers were found vague. Researcher played a neutral role and refrain inserting any personal opinion in the interview.

Interviews were recorded using following but are not limited to:

- Face-to-face interview
- Email to collect inputs
- Telephone interview
- Self-reporting

4.73 Responses Recorded

Researcher identified major publishers and aggregators of the Publication industry. Approached their representatives and the responses were recorded. Representatives of consortium offered by AICTE-NDEST and other publisher in the engineering disciplines were approached. Total 9 publishers, 3 consortium Vendors and 3 aggregators are included in the study.

Table 4.31 Interview Response Received

Sr. No.	Responses	Numbers	Percentage (n=15)
1	Publishers	9	60%
2	Consortium Vendors	3	20%
3	Aggregators	3	20%

4.74 Brief Profile of the Respondents

General details about the publishers/consortium vendor/aggregator like name, representative name, address, contact, etc. was enquired. Few respondents have also provided their visiting cards. List of eBook providers along with details is included in Appendix III.

4.74 1 Establishment Year

It was found that majority of the publishers studied were established during the period of 1801-1900. Cambridge University Press and Oxford University Press are the two oldest publishers dating back from period 1501-1600.

Fig. 4.32 Establishment Year of eBook Providers

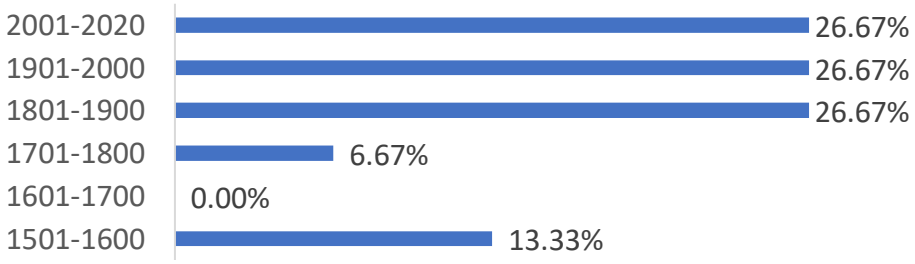


Table 4.32 Establishment Year of eBook Providers

Name of the Publication	Year of establishment of Publication
Cambridge University Press	1534
Oxford University Press	1586
Pearson India Education Services Pvt. Ltd.	1725
Springer Verlag	1842
Elsevier India Pvt. Ltd.	1880
McGraw hill Education	1888
Taylor and Francis	1900
ProQuest	1938
EBSCO Information Services Pvt Ltd	1944
IEEE Xplore digital Library	1963
Sage Publishing India pvt Ltd	1965
ASTM Digital Library	2006
McGraw Hill Access Engineering Package	2009
METCon Springer	2014
Videeya eBooks	2016

Consortiums are the latest addition in the period of 2001-2020, whereas aggregators ProQuest and EBSCO are in the range of 1930-50.

4.75 Book Titles in Print

Researcher enquired to publisher's representatives about availability of print titles. It was found that Taylor and Francis have maximum number of print books. IEEE have least number of print books. They have major books published in collaboration with Wiley. Titles in Print format of all publishers is represented in the following table.

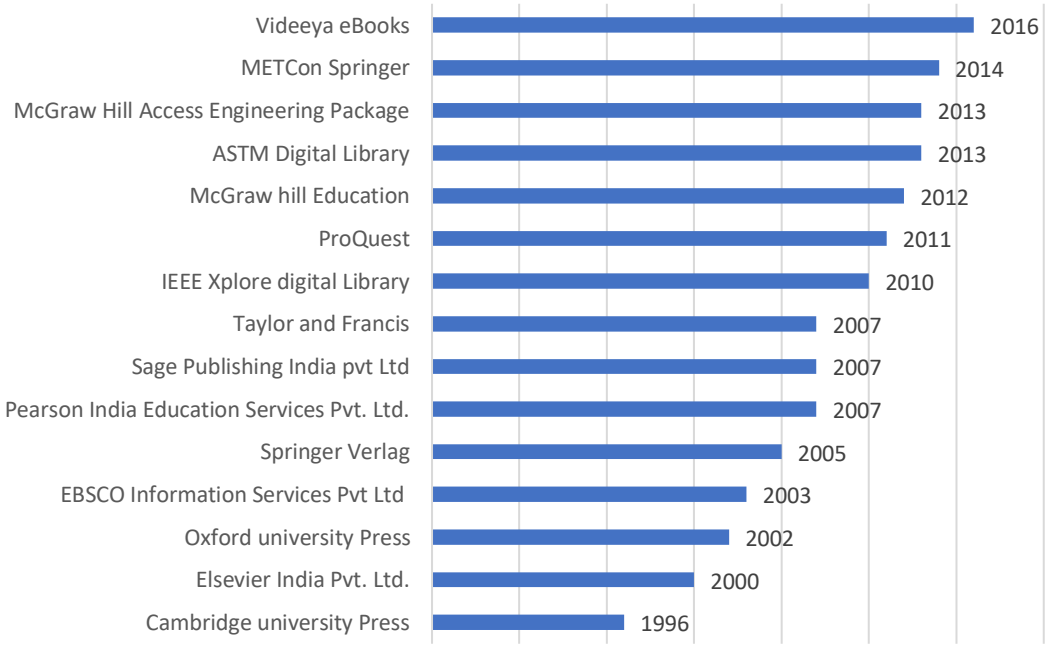
Table 4.33 Book Titles in Print

Name of the Publication	Titles in Print (n=9)
IEEE Xplore Digital Library	900
McGraw Hill Education	3500
Pearson India Education Services Pvt. Ltd.	10000
Sage Publishing India Pvt. Ltd.	14000
Cambridge University Press	40000
Oxford University Press	50000
Springer Verlag	52000
Elsevier India Pvt. Ltd.	100000
Taylor and Francis	150000

4.76 Establishment Year of eBook Publications

Researcher enquired about the establishment of eBook publications. It was found that amongst all the respondents, Cambridge was the first to initiate the eBook access in the year 1996 and rest all initiated in 2000's. The latest one was Videeya eBooks platform in year 2016.

Fig. 4.33 Establishment Year of eBook Publications



4.77 Number of eBooks

Researched tried to find out total number of eBooks published or offered. Following is the tabulation of data received during the interview. However, researcher also checked the website of respective publishers/aggregator/consortium website for revalidation and updated data. Updated data is considered for tabulation and is presented below.

Table 4.34 Number of eBooks

Name of the Publication	No. of eBooks
EBSCO Information Services Pvt Ltd	15000000
ProQuest	810000
Springer Verlag	150000
Taylor and Francis	90000
Elsevier India Pvt. Ltd.	47482
Cambridge university Press	34000
Videeya eBooks	11000
METCon Springer	10000
Oxford university Press	6000
Sage Publishing India pvt Ltd	5000
McGraw hill Education	5000
IEEE Xplore digital Library	4087
Pearson India Education Services Pvt. Ltd.	4000
ASTM Digital Library	1500
McGraw Hill Access Engineering Package	600

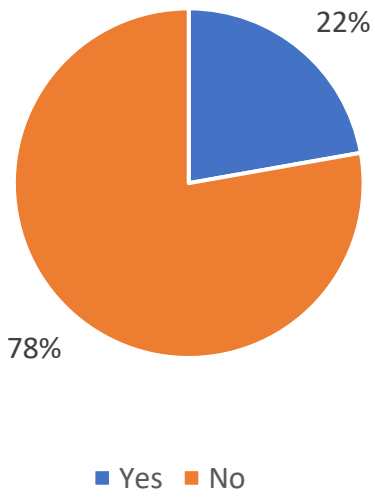
It was found that maximum number of eBooks were offered by leading aggregators EBSCO Information Services (1.5 Million eBooks), followed by another aggregator

ProQuest (8.1 Lakhs eBooks). Amongst the publishers, Springer Verlag offered large number of eBooks, followed by Taylor and Francis. Least number of eBooks were offered by McGraw Hill Access Engineering Package and followed by ASTM Digital Library. McGraw Hill Access Engineering Package is specially designed economic package by AICTE-INDEST consortium.

4.78 Availability of all Print Books in eBook Format

Aggregators and consortium vendor collate various eBooks to form packages. Researcher enquired with only publishers about the availability of print books in eBook format.

Fig. 4.34 Availability of all Print Books in eBook Format



It was found that only two publishers have 100% print equivalents of eBooks, namely Springer Verlag and IEEE.

Further, researcher enquired to all those who don't have 100% print equivalent eBooks about the present percentage of print equivalent, expected increase in the same and number of years required to achieve 100% equivalence.

Table 4.35 Achieving 100% Print Equivalence

Name of the Publication	Print equivalents of eBooks	Expected increase in % of print equivalents of eBooks	Expected number of years required to have 100% print equivalents of eBooks
Sage Publishing India Pvt. Ltd.	21 to 30%	Yes	3 to 5 years
Elsevier India Pvt. Ltd.	31 to 40%	No	8 to 10 years
Pearson India Education Services Pvt. Ltd.	31 to 40%	Maybe	3 to 5 years
McGraw Hill Education	51 to 60%	Yes	3 to 5 years
Oxford University Press	61 to 70%	Yes	3 to 5 years
Cambridge University Press	71 to 80%	Yes	1 to 2 years
Taylor and Francis	81 to 99%	Maybe	Can't predict

It was found that, Taylor and Francis have maximum number of print equivalence, but is uncertain about achieving the 100%. It was noted that 57% expected to increase the print equivalence, 14% mentioned that, there won't be any increase and 29% were uncertain about the increase in print equivalence.

Majority of them felt in less than 5 years they except to achieve 100% equivalence. It was also mentioned that all new books published are available in eBook format as well and some of them are published in eBook format only and is available in print on demand.

4.79 E-book Publishing Criteria

Researcher investigated about the criteria used to publish eBooks. Responses received are tabulated in the below table.

Table 4.36 E-book Publishing Criteria

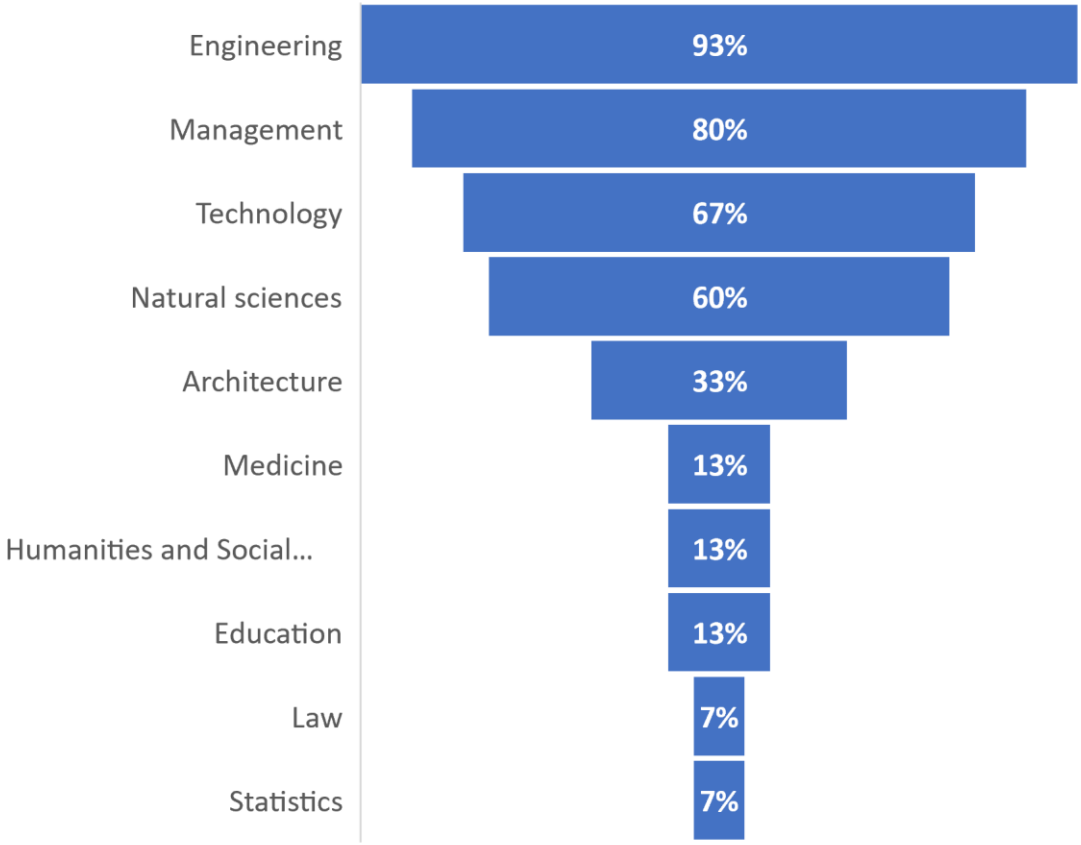
Name of the Publication	E-book Publishing Criteria
Cambridge University Press	First eBooks publisher, accepted technological Changes & User requirements
Elsevier India Pvt. Ltd.	Reference book, Textbook
IEEE Xplore Digital Library	Textbook
McGraw Hill Education	Maximum sale of a book
Oxford University Press	Maximum sale of a book
Pearson India Education Services Pvt. Ltd.	All new books
Sage Publishing India Pvt. Ltd.	All print books are converted into eBooks except those for which author doesn't provide permission.
Springer Verlag	All books irrespective of specialty and sale criteria. Are the first publisher to have 100% eBooks and print on demand
Taylor and Francis	Publication decision

It was found that Cambridge University Press is the first eBook publisher, accepted technological changes and as per user requirements eBooks are published. Pearson, Springer and Sage mentioned all books are converted to eBooks, however sage mentioned for few books' authors permission was received. Springer Verlag was first publisher to have 100% eBooks, and all new books are first published in eBook format and later print on demand only. McGraw Hill and Oxford preferred eBooks only which on high demand, IEEE prefers textbooks and Elsevier prefers both textbooks and reference books.

4.7 10 Availability of eBooks in Various Disciplines

Researcher investigated about the disciplines of eBooks offered by publishers. It was found that majority (93%) of respondents offer eBooks in Engineering discipline, followed by 80% in Management, 67% in Technology, 60% in Natural/Pure Sciences, so on. It was found that only Sage publications do not offer eBooks in Engineering discipline.

Fig. 4.35 Availability of eBooks in Various Disciplines



4.7 11 Availability of eBooks in Engineering Subjects

Researcher tried get an insight about subjects of engineering in which eBooks are offered. It was found that majority of the respondents (80%) offer eBooks in Electrical & Electronics, Mechanical and Civil subjects; also, many respondents (73%) offers eBooks in Computer & Information Technology, Telecommunication and Biotechnology subjects. Other subjects mentioned were Petroleum, Material Science,

Automobiles, Instrumentation, etc. Sage publication does not offer eBooks in engineering discipline and hence subject distribution was not provided. Distribution of engineering subjects offered is tabulated and presented in the below table.

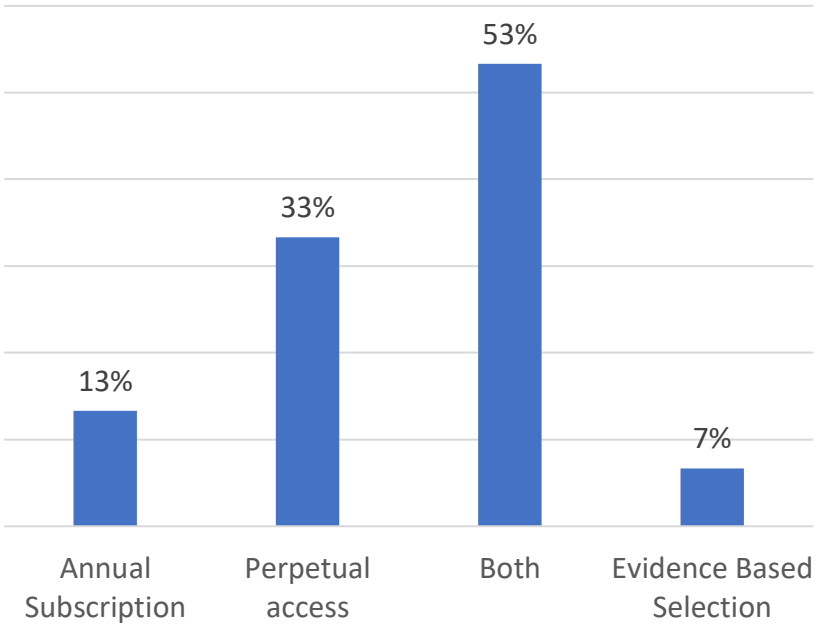
Table 4.37 Availability of eBooks in Engineering Subjects

Subject of Engineering	Responses (n=15)	Responses (n=15) in %
Computer & Information Technology	11	73%
Electrical & Electronics	12	80%
Telecommunication	11	73%
Mechanical	12	80%
Civil	12	80%
Biotechnology	11	73%
Material Science	1	7%
Automobiles	1	7%
Chemical	1	7%
Metallurgical	1	7%
Petroleum	2	13%
Instrumentation	1	7%
Nanotechnology	1	7%
Biomedical Engineering	1	7%
Energy	1	7%

4.7 12 Purchase Model for Procuring eBooks

Researcher tried to know about the purchase model for procuring eBooks are offered. It found that 53% offers both Annual subscription and Perpetual access, 33% offers only perpetual access and 13% offers only annual subscription and 7% offer evidence-based selection model. AICTE-INDEST Consortium made available packages, i.e. McGraw Hill Access Engineering and ASTM Digital Library are available only in annual subscription format. Elsevier offer evidence-based selection model.

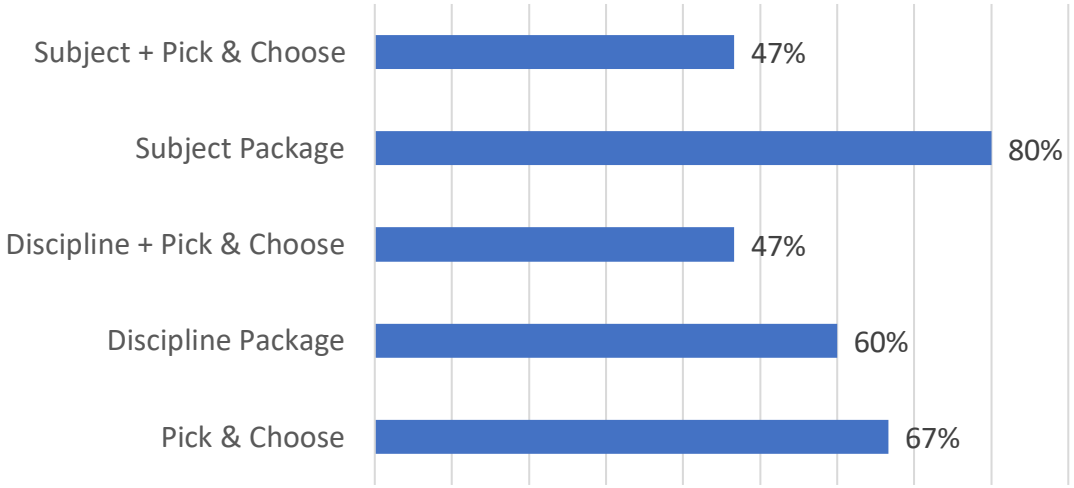
Fig. 4.36 Purchase Model for Procuring eBooks



4.7 13 Business Model for Procuring eBooks

Researcher tried to find out business models offered to procure eBooks. It was found that majority (80%) of them offer subject package, 67% offered Pick & Choose option, 60% offered discipline package and so on. It was noted that pick & choose option altogether or flexibility within subject or discipline was offered by publishers, so as to make the product more viable. AICTE-INDEST Consortium made available packages, i.e. McGraw Hill Access Engineering and ASTM Digital Library are available in Subject Package with no flexibility to choose eBooks within.

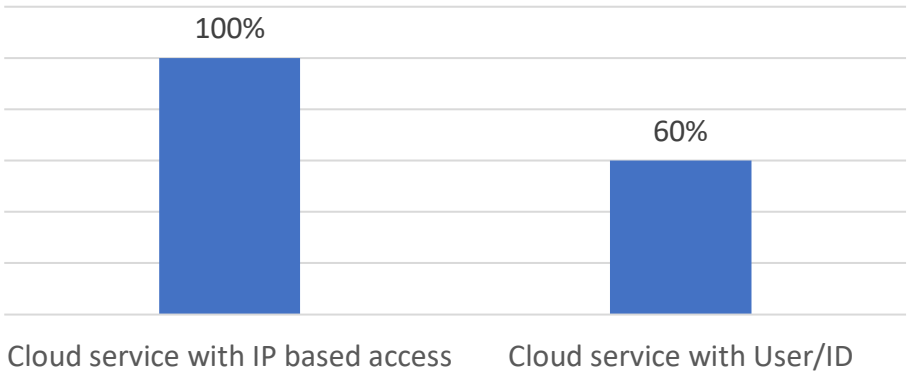
Fig. 4.37 Business Model for Procuring eBooks



4.7 14 Access Model offered for Procuring eBooks

It was attempted to know how the access to eBooks were provided. It was found that all of them (100%) provided Cloud Service with IP based access and 60% of them also provided Cloud based access with login User-ID credentials.

Fig. 4.38 Access Model offered for Procuring eBooks



4.7 15 Minimum Purchase Criteria for eBooks

Researcher tried to investigate, whether any other criteria exists other than purchase and business models. Received responses is tabulated and presented below. It was found that minimum number of eBooks varies from 1 to 1000 and minimum order value

ranges from $1 to $5000. In some instance minimum number of eBooks is a criterion, whereas for few minimum amounts is criterion. It clearly indicates that a considerable amount of business is expected by the publishers unlike print books.

Table 4.38 Minimum Purchase Criteria for eBooks

Name of the Publication	Minimum no. of eBooks to be procured	Minimum purchase order value
Cambridge University Press	25	$3750
Elsevier India Pvt. Ltd.	Its on value of $5000 for non-SD customers	$5000
IEEE Xplore Digital Library	Subject Package	Subject Package
McGraw Hill Education	100	Depends upon selection of titles
Oxford University Press	1	$100
Pearson India Education Services Pvt. Ltd.	1	no limit
Sage Publishing India Pvt. Ltd.	no limit	$5000
Springer Verlag	one copyright year	no minimum amount
Taylor and Francis	50	depends on selection
ASTM Digital Library	Package of 1500+ technical Publications	Subject Package
McGraw Hill Access Engineering Package	Package of 600+ eBooks	Subject Package
METCon Springer	Min. 1890 Package for 1 year	Discipline Package 26 Lakhs (1year package)
EBSCO Information Services Pvt Ltd	1	$30
ProQuest	3	$10
Videeya eBooks	30	Rs.1 Lakhs

4.7 16 Remote Access

Researcher tried to know whether eBook providers allow remote access to the eBooks. It was found that all (100%) free integration for Athens or Shibboleth or Institutions login is provided. Springer provides Athens login with extra charge; EBSCO provides Athens login with extra charge and EZproxy.

Along with EBSCO, Oxford and Sage provides EZProxy service; IEEE offers RemoteXs and Videeya offers Knimbus remote access. It was found that to optimise the usage of eBooks, eBook providers offers remote access service at additional charge and if institution already have a service integration was provided free.

4.7 17 Platform Used to Access eBooks

It was found that all the eBook providers offer their eBooks on their independent publishers' website except for aggregators. Aggregator use their own platform like EBSCO used EBSCO host, ProQuest used Ebrary-ProQuest EBook Central and Videeya used their own platform.

4.7 18 Licensing Access

Researcher found that multiple user license access was provided by all eBook providers except Videeya which allows six concurrent users access. Few providers namely Pearson, Sage, Springer, EBSCO and ProQuest also have option of single user license.

4.7 19 Annual Maintenance Terms

Researcher tried to investigate annual maintenance terms for eBooks access after procurement. It was found that 60% providers charge annual maintenance fee (AMF) and 40% providers do not have any annual maintenance charge/fee. Further researcher tried to find out what are the charge/fee and is there a possibility to get it waived off. Response is tabulated and presented below.

Table 4.39 Annual Maintenance Terms

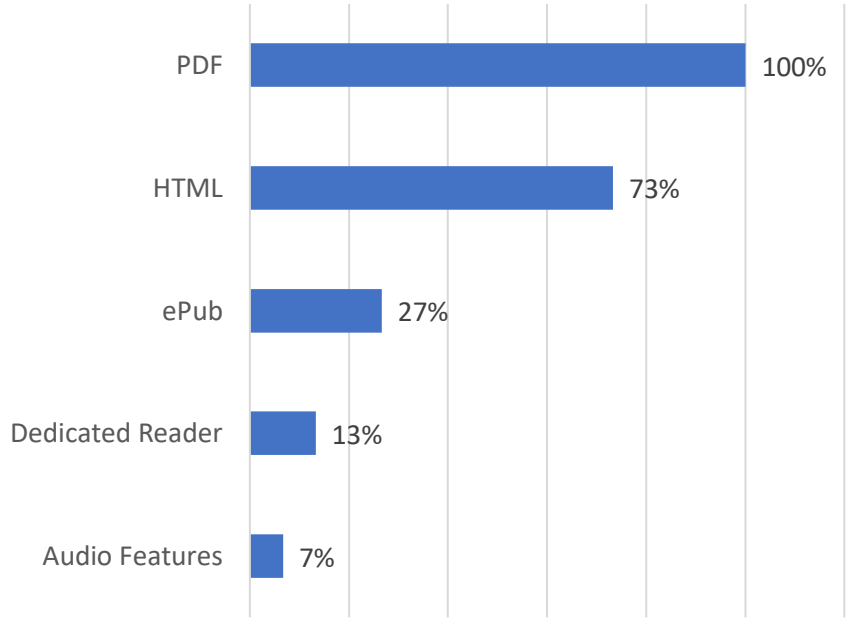
Name of the Publication	AMF is applicable	AMF	Waiving off AMF	Criteria for Waiving Off AMF
Cambridge Univ Press	Yes	Varies	Yes	Either 1 eBook or 1 Online journal
McGraw Hill Education	Yes	In case of perpetual access & for subscription 1-5 years no AMF	Yes	Rs. 10000 after 3 yrs of perpetual access
Sage Publishing	Yes	after 15 years	Yes	after 15 years
Springer Verlag	Yes	Euro 500 but may vary on company policy	Yes	any new purchase of eBooks/journals per year
Taylor & Francis	Yes	Varies	Yes	25 eBooks
METCon Springer	Yes	Euro 500 conditions apply	Yes	Single unit purchase of Springer Content
Videeya eBooks	Yes	Once in three years	Yes	Any number of eBooks
Elsevier India	Yes	Data Not provided	Yes	Data Not provided
ProQuest	Yes	US$ 250	No	-
IEEE Xplore	No	-	-	-
Oxford Univ	No	-	-	-
Pearson India	No	-	-	-
ASTM Dig Lib	No	-	-	-
McGraw Hill Access Eng	No	-	-	-
EBSCO	No	-	-	-

Every eBook provider has different set of policy for annual maintenance fee and in certain cases they are waived off upon procuring any journal or eBook.

4.7 20 Format of eBooks

Researcher investigated to know in which formats eBooks are provided. It was found that all providers (100%) preferred PDF format for its ease of compatibility to access eBooks in various application. HTML format was offered by 73%, ePub format was offered by 27% and dedicated eBook reader was provided by 13%. EBSCO provided audio format of eBooks.

Fig. 4.39 Format of eBooks



4.7 21 Features of eBooks

Researcher tried to find out features provided in eBooks by the providers like facility to print pages of the eBook, downloading options, highlighting the eBook, multimedia features etc. It is always preferred to procure eBooks with more features for better learning experience.

It was found that all (100%) providers eBooks can be accessed by Laptop, Computer or Tablet. Printing of whole book is provided by 66.67%, followed by few pages by 20% and so on. Similarly downloading facility of whole book is provided by 73.33%, followed by few pages by 20% and so on.

Fig. 4.40 Printing Facility

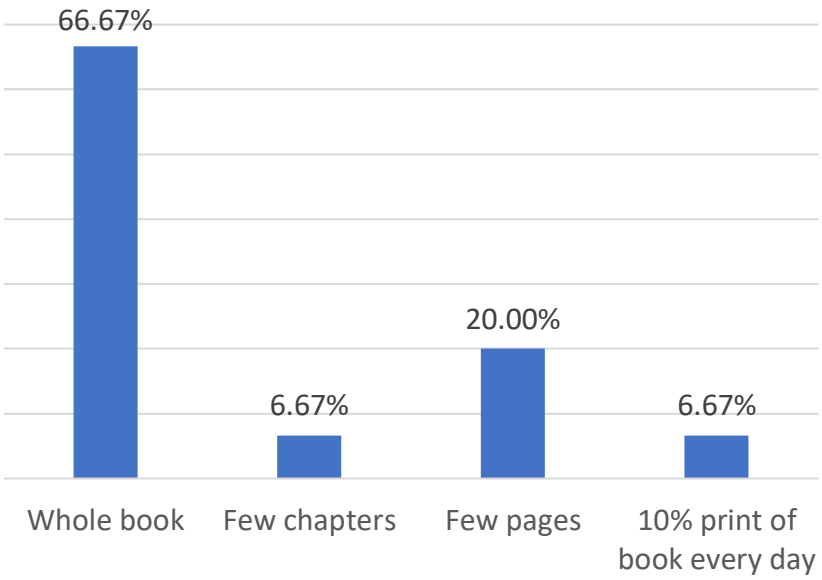
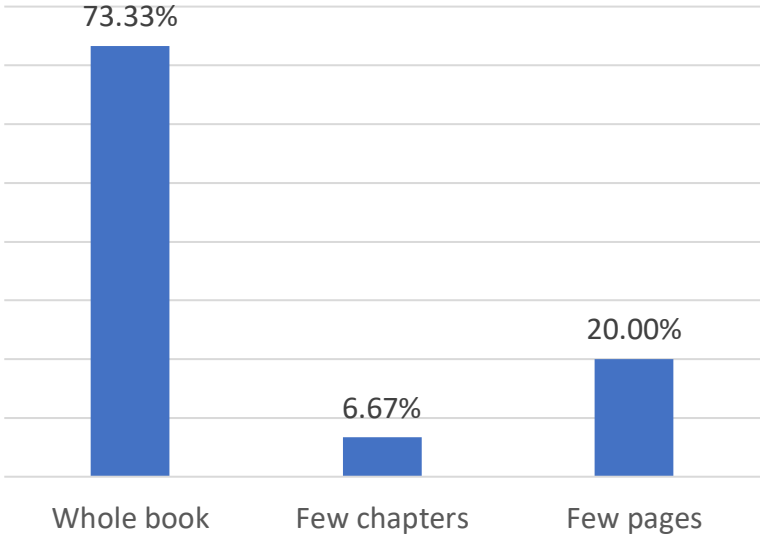


Fig. 4.41 Downloading Facility



Some of the other features of eBooks are presented in below table. It was found that Elsevier provides all features mentioned namely taking notes, highlighting text, multimedia features and facility to directly interact with author. Features of taking notes was provided by 47%, text highlighting by 60%, multimedia features by 53% and interaction with author of an eBook was allowed by 20%.

Table 4.40 Other Features of eBooks

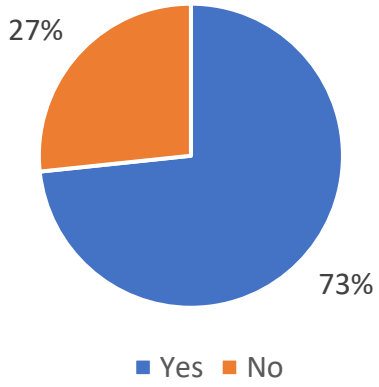
Name of the Publication	Can takes notes	Highlighting text	Multimedia features	interact with author of an eBook
Cambridge University Press	✓	×	×	×
Elsevier India Pvt. Ltd.	✓	✓	✓	✓
IEEE Xplore Digital Library	×	×	×	✓
McGraw Hill Education	×	✓	×	×
Oxford University Press	×	×	×	×
Pearson India Education Services Pvt. Ltd.	×	✓	×	×
Sage Publishing India Pvt. Ltd.	×	×	✓	×
Springer Verlag	×	✓	✓	×
Taylor and Francis	✓	✓	×	×
ASTM Digital Library	×	×	×	×
McGraw Hill Access Engineering Package	✓	✓	✓	×
METCon Springer	×	✓	✓	✓
EBSCO Information Services Pvt Ltd	✓	×	✓	×
ProQuest	✓	✓	✓	×
Videeya eBooks	✓	✓	✓	×

4.7 22 Open for Further Negotiation

Researcher tried to find out that even after sharing the pricing, whether eBook providers are open for further negotiation. It was found that 73% mentioned that, they may negotiate further and 27% (4 in no.) mentioned they are not. Pearson publisher shown

reluctance to negotiate further and remaining three are consortium packages which are already negotiated viz. ASTM Digital Library, McGraw Hill Access Engineering Package and METCon Springer.

Fig. 4.42 Open for Further Negotiation



4.7 23 Sources of eBook Procurement

Researcher enquired about the various sources from where the eBooks can be procured. It was found that majority (73%) mentioned marketing by representatives, followed by 67% mentioned publishers' website and so on. Aggregators and Consortiums also play a role of source in procurement of eBooks. For consortium access of McGraw Hill Access Engineering Package, GIST is the sole official representative and for ASTM Digital Library, BSB Official Representative is the sole official representative.

Table 4.41 Sources of eBook Procurement

Sources	**Responses (n=15)**	**Responses (n=15) in %**
Publisher's website	10	67%
Marketing by representative to prospect customers	11	73%
E-book stores: Flipkart / Amazon / Bookadda	3	20%
Aggregators	1	7%
Consortia such as UGC/DBT	1	7%

4.7 24 Cost Comparison of eBooks with its Print Equivalence

Researcher made an attempt to compare the cost of eBooks with it print equivalent. It was found that cost comparison varies as per publishers and there is no general practice followed in publication industry. Response received are tabulated below.

Table 4.42 Cost Comparison of eBooks with its Print Equivalence

Name of the Publication	**Cost of e-book compared with it print equivalent**
Sage Publishing India Pvt. Ltd.	Varies all three
Elsevier India Pvt. Ltd.	Front list titles prices are higher and backlist titles it is less
Taylor and Francis	Global eBooks Pricing is applicable
McGraw Hill Education	Equivalent to Print
ProQuest	Equivalent to Print
Pearson India Education Services Pvt. Ltd.	Less than Print
Springer Verlag	Less than Print
METCon Springer	Less than Print
EBSCO Information Services Pvt Ltd	Less than Print
Cambridge University Press	More than Print
IEEE Xplore Digital Library	More than Print
Oxford University Press	More than Print
Videeya eBooks	More than Print
ASTM Digital Library	Not applicable as package cost as per AICTE INDEST Consortium
McGraw Hill Access Engineering Package	Not applicable as package cost as per AICTE INDEST Consortium

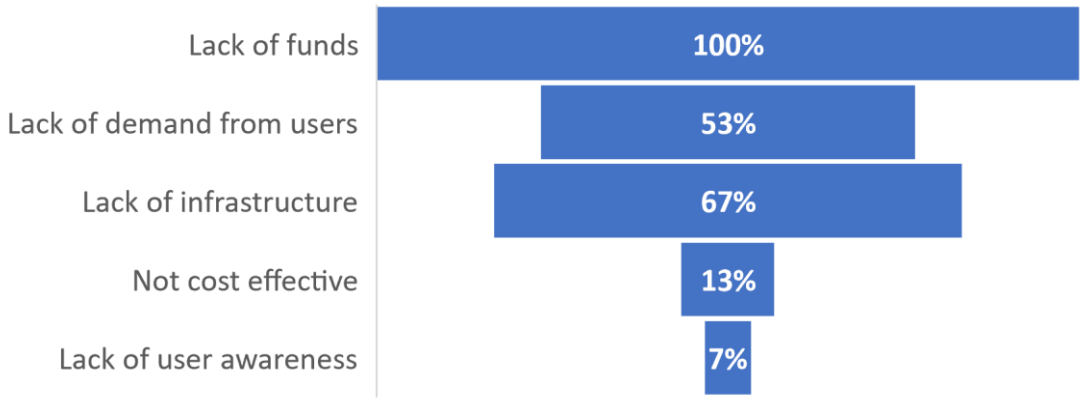
It was found that Sage has no single policy for comparison and has variation. Elsevier has higher price for front list titles and less for back list titles. McGraw Hill, ProQuest

offer equivalent price; Pearson, Springer, EBSCO charge less than print and Cambridge, IEEE, Oxford, Videeya charge more than print.

4.7 25 Factors Restricting Libraries to Procure eBooks

Factors restricting libraries to procure eBooks were enquired to eBooks providers. It was opined that lack of funds was the major factor by all of them (100%), followed by lack of infrastructure (67%), so on.

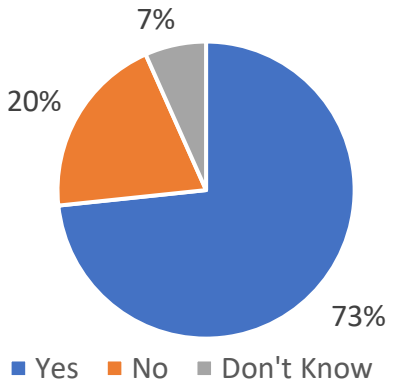
Fig. 4.44 Factors Restricting Libraries to Procure eBooks



4.7 26 Preference of Print Books Over eBooks

Researcher tried to seek the opinion of eBook providers about library user's preference over using print books. It was noted that 73% opined that print books are still preferred over eBooks, while 20% felt otherwise and 7% are uncertain about the same.

Fig. 4.45 Preference of Print Books Over eBooks



4.7 27 Increase in Demand for eBooks in Near Future

Researcher tried to seek the opinion of eBook providers whether eBooks demand will increase in near future. It was noted that all of them i.e.100% mentioned that demand for eBooks will increase in near future.

4.8. Summary

This chapter has analysed the data collected from engineering college libraries falling under jurisdiction of Mumbai Metropolitan Area. E-book providers i.e. Publisher, Aggregator/Vendor and Consortium providers interview is analysed in this chapter. Libraries need to examine various eBook business models before venturing into eBook procurement. Also, awareness amongst the librarians is required about the eBook procurement process.

Chapter 5
Findings, Suggestions and Conclusion

5.1 Introduction

This chapter gives details about the present studies conducted i.e. Survey of the Librarians and Interview of eBooks providers. The present study has been carried out by surveying 52 engineering college libraries and interviewing 15 eBooks providers. This chapter provides the gist of the present study, and findings drawn from the analysis of the data and interpretations. It also presents a guideline for eBook acquisition process and at the end of the chapter hypotheses of study is tested, Suggestions and recommendation for future scope of research is also provided.

5.2 Findings of Survey of Engineering College Libraries

This section provides findings of the data analysed from the questionnaire of engineering college libraries. The interpretations are in accordance with the objectives of the study discussed in the chapter Introduction. Literature review have also provided insights about the study for comparing it with analysed data of this study. The main purpose of the study was to acquisition of eBooks in Engineering college libraries of Mumbai city by and large.

5.21 Responses Received for the Questionnaire

1. Researcher has approached all 52 variables with a choice to opt for Print questionnaire or Online questionnaire using Google forms.
2. Of total 52, researcher received 51 responses (31 Print and 20 online) i.e. 98% responses.

5.22 College Profile

1. There were 24% colleges established during 1981-1990 and there was rise of 64% colleges during next two decades.

2. It was found that only two college receive aid, Sardar Patel College of Engineering and Veermata Jijabai Technological Institute (VJTI) which is the oldest engineering college Mumbai is dating back to pre-independence period i.e. year 1853.

3. Only four colleges i.e. 8% college were provided autonomy, rest 92% were private colleges affiliated with a state university i.e. University of Mumbai.

4. Major programmes offered by the colleges are Computer (86%), Electronics (84%) and Electronics & and Telecommunication (76%).

5. Students intake varies as per the number of programmes offered by the college. Students in the range of 1001-1500 are enrolled in 35.29% of colleges and students in range of 1501-2000 are enrolled by 21.57% of colleges.

6. Nearly half i.e. 41.18% colleges had staff in the range of 51-100. Proportionately number of staff are available in the college to impart education.

5.23 Library Profile

1. It was found that print books, print journals and to certain extent e-journals are regularly procured annually in the library collection. However, eBooks and e-databases are procured need based.

2. Library Advisory Committee presence was found in 71% of college libraries.

3. Composition of these Library Advisory Committee was explored. All of them i.e. 100% had Librarians involved, 48% included Principal, 44% included faculty appointed by HOD, so on. Students were also made a part of the committee by 7% of libraries in the library advisory committee.

4. It was revealed that only 20% had written collection development policy for print books, despite of having majority of them having Library Advisory Committee.

5. Important criteria to procure print books were requisition by faculty (82%), followed by adhering to AICTE Norms (78%) and then followed by AICTE Norms (78%). It was also noted that student's suggestion in procurement process was considered by 51% of libraries.

5.24 Information Technology Infrastructure

1. Library Management Software (LMS) to automate the library operations was used by 98% of the libraries. Only one college was in the process completing the automation.
2. Majority i.e. 68% college libraries are using commercial software, 18% are using open source software and 14% college libraries had their own In-house software developed as per their needs.
3. Amongst the Commercial Software SLIM (14%), SOUL (14%) and LIBSUITE (10%) are used most. Koha (8%) is the only open source library management software used.
4. WebOPAC facility was provided by 78% of college libraries to search library resources over Internet.
5. It was found that majority of libraries (90%) used barcode facility to tag library resources, few libraries (4%) used RFID system and some (10%) used none.
6. To access digital library resources and search information computer were made available. Computers in range of 16-20 were provide by 31.37% of libraries, 5-10 computers were made available by 29.41% of libraries and so on. Only one library had more than 30 computers.
7. Local Area Networking (LAN) to connect amongst the computer terminals within the library was used by 98% of libraries.
8. Internet facility was provided by all libraries (100%) to access digital resources.
9. It was found that majority of libraries had similar number of computers range having Internet facility as per the availability. Computers with range of 16-20 had Internet by 31.37% of libraries, another 31.37% has 5-10 computers with Internet, 25.49% had computers in range of 11-15 computers with Internet, so on. Only one library had more than 30 computers with Internet facility.
10. Data also revealed that 61% libraries have Wi-Fi facility for users to connect to Internet for accessing library resources online.

5.25 E-Books

1. As per AICTE norm (2015-16), 25% of titles and volumes can be in the form of eBooks. It was found that 90% of the librarian are aware about this AICTE norm and very few librarians (10%) were unaware of this norm of AICTE.

2. Data revealed that majority (84%) libraries do not have any specific collection development policy for procuring eBooks.

3. It was seen that only 39% libraries have eBooks in their collection and 61% have not yet procured eBooks.

5.26 Libraries Procuring eBooks

1. It was noticed that 60% of libraries followed mandate by AICTE along with Need-Demand of users, 20% followed only AICTE mandate and another 20% followed only Need-Demand of users to procure eBooks in the library collection.

2. Major factors influencing procurement of eBooks in the library collection were mentioned by 30%-35% college libraries were availability of funds, Annual maintenance charge by the publisher/aggregator, availability of required titles in eBooks, support of college authorities, IT infrastructure of the library and demand from the users. Cost-effectiveness of eBooks and absence of standard business/pricing models of eBooks were found equally important by 20% of libraries, so on.

3. Data revealed that majority (70%) of libraries procure McGraw Hill Access Engineering, followed by METCon by 30%, ASTM Digital Library by 15%, etc. McGraw Hill Access Engineering & ASTM Digital Library are mandate by AICTE norms. METCon is a consortium model developed by Springer specifically designed for engineering college libraries.

4. Number of eBooks procured was similar data as per the availability of eBooks in the packages. It was found majority 55% of libraries have eBooks procured in the range of 1 to 1000, followed by 20% in range of 2001 to 3000 and another 20% have eBooks more than 5000.

5. Data revealed that procurement of eBooks was as per the programmes offered by colleges. Electrical & Electronics discipline eBooks were procured by majority (85%) of libraries, followed by Computer & Information Technology (75%) and Telecommunication (65%). It was found that 20% libraries mentioned McGraw Hill package under discipline as it is a subscription package and offers no flexibility of choosing discipline or titles. Only 5% libraries offered general reading eBooks.

6. It was found that all libraries (100%) procured reference books, 60% procured textbooks as well and only 15% libraries procured general reading book.

7. Access model i.e. subscription or perpetual access are two most widely used eBooks procuring model. Again, the data was in sync with eBooks procured by libraries. It was found that majority of libraries (55%) are using subscription model, 40% libraries preferred both subscription + perpetual access model and 5% libraries used only perpetual access model. McGraw Hill Access Engineering offers only subscription access model.

8. Business model yet again was in sync with eBooks procured by libraries. It was found that majority of the libraries are (75%) opting for year wise packages offered. McGraw Hill Access Engineering offers annual subscription.

9. Most preferred license model for procurement of eBooks was mentioned as multiple user license by 90% libraries and 10% preferred both Multiple + Single user license. No library (0%) opted for single user license.

10. To access eBooks, dedicated eBooks readers are available in the market. It was found that 95% of libraries do not have dedicated eBooks readers. Only one college library (5%) offered Kindle Paper White eBook readers six in number to its users to access eBooks.

11. Most preferred device to access eBooks was found to be Computer/Desktop (90%), followed by Laptop (70%), smartphone (35%), so on.

12. Most preferred format of eBooks was PDF (100%) being very versatile and compatible with many application software. HTML format was preferred by 30%, ePub by 10% and 5% preferred dedicated format of the device.

13. Annual Library Budget utilised for procuring eBooks was found in the range of 1 to 5% of their annual budget by 35% of libraries, 6 to 10% of their annual budget by another 35% of libraries and so on.

14. Majority of libraries (75%) felt that there will be increase in the current eBook Budget. However, few (25%) were in doubt about the increase in the existing eBook annual budget.

5.27 User Experience about eBooks

1. All the libraries (100%) create awareness about availability of eBooks in the library collection to increase its utilisation.

2. It was found that majority (75%) provided training to its users, 10 % did not provide any training and 15% felt that there is no need to provide training for accessing eBooks.

3. Majority (75%) respondents mentioned that users do not face any difficulties while accessing eBooks, 20% mentioned that users did face difficulty while accessing eBooks and 5% mentioned that they are unaware about difficulties faced by users while accessing eBooks.

4. Occurrence of difficulties faced was found out, majority (45%) mentioned only sometimes difficulties are faced, 30% felt rarely users felt any difficulties and 25% mentioned users never felt any difficulties while accessing eBooks.

5.28 Libraries Not Procuring eBooks

1. It was found that most (74%) of the libraries cited lack of funds as the major reason for not procuring eBooks, followed by 65% stated lack of demand by users, 29% mentioned lack of support by college authorities, 26 % found lack of suitable business model and so on.

2. However, 90% libraries are planning to procure eBooks in near future and only 10% are uncertain about eBooks procurement.

5.29 Librarian's Opinion about eBooks

1. Majority of them (98%) opined eBooks should be a part of library collection and 2% felt it is not required to be a part of the collection.

2. Advantages of eBooks were explored. It was found that majority of them (92%) mentioned instant access, 76% mentioned 24/7 access, 75% mentioned searchable, 75% mentioned cannot be lost, 73% mentioned portable, 61% mentioned simultaneous access, 51% mentioned multimedia features and so on.

3. Disadvantages of eBooks were explored too. It was found that majority of them (86%) felt they are costly, 76% found it cause strain to eyes, 41% mentioned there is a rapid change in the technology and so on.

4. Licensing terms were mentioned as hindrance in eBooks procurement by majority of them (53%), while 20% mentioned they are not and 27% were unsure of it.

5. Business/Pricing model were mentioned as hindrance in eBooks procurement by majority (61%), while 12% mentioned they are not and 27% were unsure.

6. Accessing terms were mentioned as hindrance in libraries stocking eBooks in its collection was opined by 45.1% of libraries, while 27.45% each mentioned as they are not or were uncertain about it.

7. Despite of many libraries not procuring eBooks, majority of libraries (60.78%) opined eBooks are Cost-effective, while 17.65% mentioned they are not and 21.57% were in doubt about its cost-effectiveness.

8. Preference of users to read print books over eBooks was backed by all of them (100%).

9. Increase of demand of eBooks in near future was backed by majority (90%) of them and only 10% of them are uncertain.

10. E-books was not seen as a threat to print books was revealed by majority (86%), while 12% felt otherwise and 2% were in doubt.

11. Awareness of acquaintance of eBook procurement process was mentioned by 65% and 35% mentioned being unaware. However, process of eBook procurement was not elaborated properly.

5.3 Findings of Survey of eBook Providers

This section provides findings of the data analysed from the structured interview conducted of Publishers / Consortium Vendors / Aggregators. The interpretations are in accordance with the objectives of the study discussed in the chapter Introduction.

5.31 Responses Recorded

1. Researcher has interviewed total 15 variables, by using methods like face-to-face interview, Email, Telephone interview and Self-reporting.
2. Of total 15, researcher interviewed 9 Publishers (60%), 3 Consortium Vendors (30%) and 3 Aggregators (30%).

5.32 Brief Profile

1. It was found that two publications i.e. Oxford University Press and Cambridge University Press are oldest publishers dating back to range of 1501-1600.
2. It was found that publishers Elsevier and Taylor and Francis have print tiles above 1 Lakh.
3. Cambridge University Press was the first to initiate eBooks, followed by Elsevier India Pvt. Ltd, Oxford University Press, etc.
4. Aggregators EBSCO Information Services offered maximum number of eBooks followed by ProQuest. McGraw Hill Access Engineering Package offered least number of eBooks. It is specially designed economic package by AICTE-INDEST consortium.
5. Amongst publishers, only two of them have 100% print equivalents of eBooks, namely Springer Verlag and IEEE. Taylor and Francis have maximum number of print equivalence, but is uncertain about achieving the 100%. Majority of them felt in less than 5 years they except to achieve 100% equivalence.
6. It was found that all new books published are available in eBook format as well and some of them are published in eBook format only and is available in print on demand.
7. Pearson, Springer and Sage mentioned all books are converted to eBooks except those where copyright is not received. Springer Verlag was first publisher to

have 100% eBooks, and all new books are first published in eBook format and later print on demand only.

8. Engineering discipline eBooks were offered by 93% of respondents, followed by Management by 80%, Technology by 67%, Natural Sciences by 60%.
9. Majority of the respondents (80%) offer eBooks in Electrical & Electronics, Mechanical and Civil subject. And many respondents (73%) offers eBooks in Computer & Information Technology, Telecommunication and Biotechnology subjects.
10. More than half of the respondents 53% offers both annual subscription and perpetual access purchase model for procuring eBooks. Elsevier offer evidence-based selection model.
11. Subject Package as business model was offered by majority (80%) and Pick & Choose option was offered by 67%. McGraw Hill Access Engineering and ASTM Digital Library are available in Subject Package with no flexibility to choose eBooks within.
12. Minimum purchase criterion varies from publisher to publisher. Some preferred to fix a minimum number of eBooks, whiles others preferred to have minimum purchase order value.
13. Access model preferred by all (100%) is cloud service with IP address and 60% also provide cloud service with User/ID.
14. To optimise the usage of eBooks, eBook providers offers remote access service at additional charge and if institution already have a service, integration was provided free. Every eBook provider uses their own website/platform to provide access to eBooks. Multiple user license access was provided by all eBook providers except Videeya which allows six concurrent users access.
15. Every eBook provider has different set of policy for annual maintenance fee and in certain cases they are waived off upon procuring any journal or eBook.
16. Most preferred format of eBooks was PDF and was offered by all i.e. 100% providers. EBSCO provided eBooks in audio format as well.

17. Features provided by the eBook provided includes: 100% can be accessed by Laptop, Computer and Tablet. Printing facility of whole eBook was provided by 66.67% and downloading of eBooks was provided by 73.33%. Other features of taking notes was provided by 47%, text highlighting by 60%, multimedia features by 53% and interaction with author of an eBook was allowed by 20%.

18. Majority 73% agreed for further negotiation. Amongst those who are not open for negotiation are Pearson and three consortium packages which are already negotiated viz. ASTM Digital Library, McGraw Hill Access Engineering Package and METCon Springer.

19. Major source of eBook procurement was found to be marketing representatives (73%), followed by publisher's website (67%). For consortium access of McGraw Hill Access Engineering Package, GIST is the sole official representative and for ASTM Digital Library, Book Supply Bureau is the sole official representative.

20. Comparison of cost eBooks with its print equivalent varies with publishers and there is no general practice followed in publication industry.

21. Main factor restricting libraries from procuring eBooks was found to be lack of funds (100%) and was followed by lack of infrastructure (67%).

22. It was noted that 73% opined that print books are still preferred over eBooks and all of them i.e. 100% mentioned that demand for eBooks will increase in near future.

5.4 Suggestion from the Study

From the current study, suggestions and recommendations can be provided for future practice. It is important for librarians to understand the work process, flow of stages, procedures and policies to embrace and accept eBooks emergence in to library collection. Following are suggestions for practicing librarians.

- To develop a collection development plan for libraries and to formulate a strategy for next five years to develop eBooks collections. The criteria for selection of eBooks, preference for formats, access, etc. should be properly laid down.
- Budget planning is important in libraries. Identify appropriate budget head for eBooks and to ensure the fund is appropriately used for eBook collection development.
- Keeping abreast about the latest eBook market trends, improvising the selection criteria and procuring eBooks accordingly.
- Involving the stake holders i.e. faculties to engage actively in selection process of the eBooks. To connect with them and identify the upcoming and thrust areas of research and develop the eBook collection to satisfy the current and future needs of the users.
- Developing cordial relationship with all eBook providers. To obtain more benefits identify the similar needs of the other libraries and propose consortium model for benefit of both libraries and eBook provider.
- Maintaining the log of standardised usage statistics for year wise. Also, to maintain subject wise eBook usage to know the demand of users based on usage statistics. This help in process of eBook procurement decision making process.
- Updating the library collection records for eBooks in the library management software by using standard MARC records so as to improve the eBook visibility.
- Developing appropriate strategy for promoting eBooks. Continue to promote eBooks using conventional methods like orientation, literacy drives, notices, announcements, etc. Use innovative ways and web 2.0 applications like chat bot, social media to attract users.

5.5 Guideline for eBook Acquisition Process

This section proposes a framework for eBook acquisition process, which will give insight about the process of eBook acquisition and it will help library professionals get acquainted to the procurement process of eBooks. This guideline of eBook acquisition is developed considering various business models from the research study, and is free from any subject restriction. This guideline is developed considering licensed eBooks which are procured commercially from vendor, aggregator or through consortium.

5.51 Academic Libraries

Libraries have been playing a crucial role in any organisation or institution by providing timely and relevant information to the users. Library collection have always been maintained and developed considering the institution's curriculum, core area of research and user's demands and need. Information and Communication Technology (ICT) have brought paradigm shift in nearly all areas of life. Publishing industry have also been impacted with ICT in terms of new digital resources.

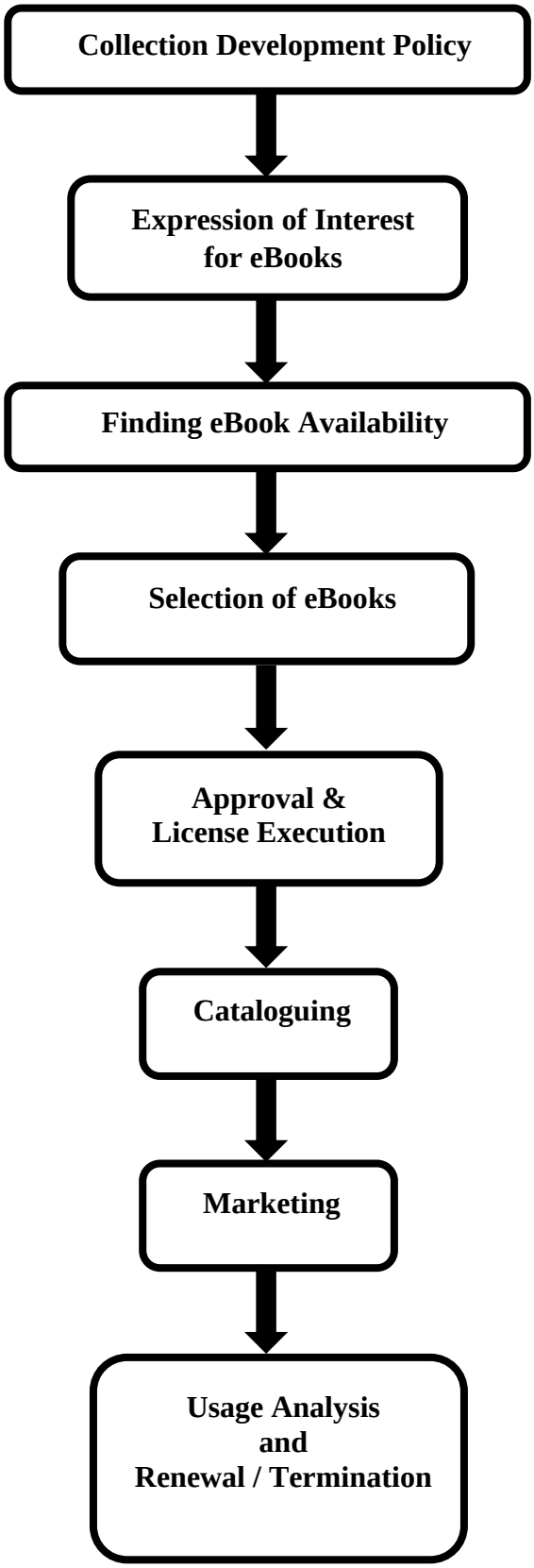
Change is also observed in the academic libraries in terms of resources, services and management. The libraries no longer are in their conventional print resources collection but have included digital resources and have status of 'Hybrid Form'. The library collection has included many electronic/digital resources in its collection which also includes eBooks. Although the market of eBooks is growing, it appears still less when compared with e-journals. Market of eBooks is expanding and various eBook pricing/business models are available. These models are complex in nature and range varies considerably; it poses various collection management challenges to libraries.

5.52 Framework of eBook Acquisition Process

A framework is an analytical tool which helps understand the process easily. The framework may use graphics, flowcharts, tables, etc for better organisation of the ideas and can be implemented easily. The researcher has proposed the following framework for eBook Acquisition which could be used by librarians of engineering college who

are in planning phase of eBook procurement into their library collection. Following is the graphical representation of the process of eBook acquisition process.

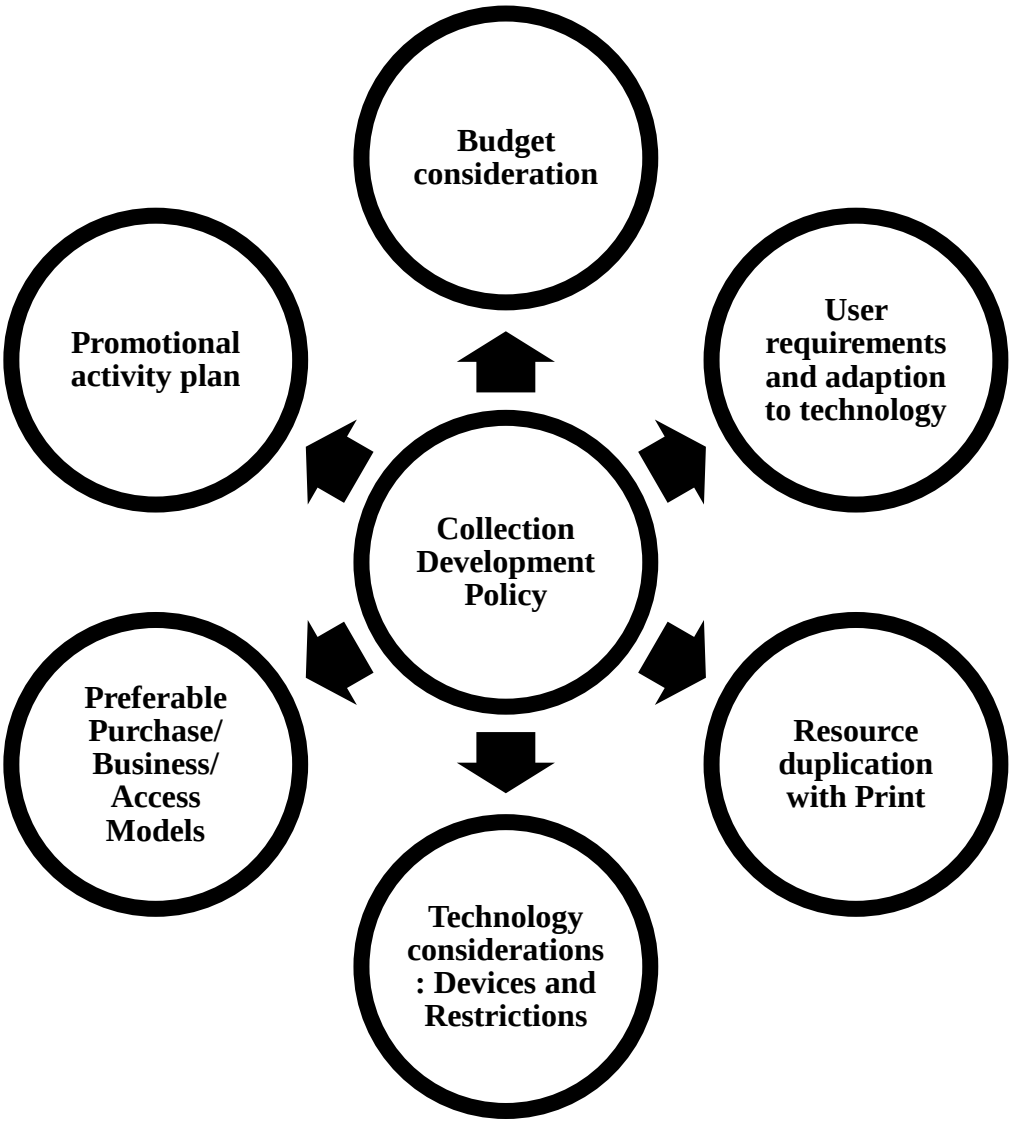
Fig. 5.1 Process of eBook Acquisition



5.52 1 Collection Development Policy for eBooks

Collection development or building includes not only additions or revision in the collection but also formulising plans for selection, fund management, understanding users need, preservation of old archives, weeding out of ephemeral materials, sharing of resources, etc. A collection development policy can be for long-term or short-term planning for the library goals, which considers various aspects like need and demand of the patrons of the library, fiscal planning and existing collection development historical evidence.

Fig. 5.2 Collection Development Policy



Libraries have a practice of framing a collection development policy, which eases the procurement process. It is utmost important to plan before you execute any

development activity. And the first step in this process is to frame a written collection development plan. A well written collection development policy helps the executor to implement the action plan for strengthening and building library collection.

It has been observed during this research study that few libraries do have collection development policy framed for print books, but for eBooks the documentation is unprepared. Also, study findings highlighted that engineering library professionals of MMR are yet to get fully acquainted with process of eBook management.

Following points should be considered in framing the collection development policy:

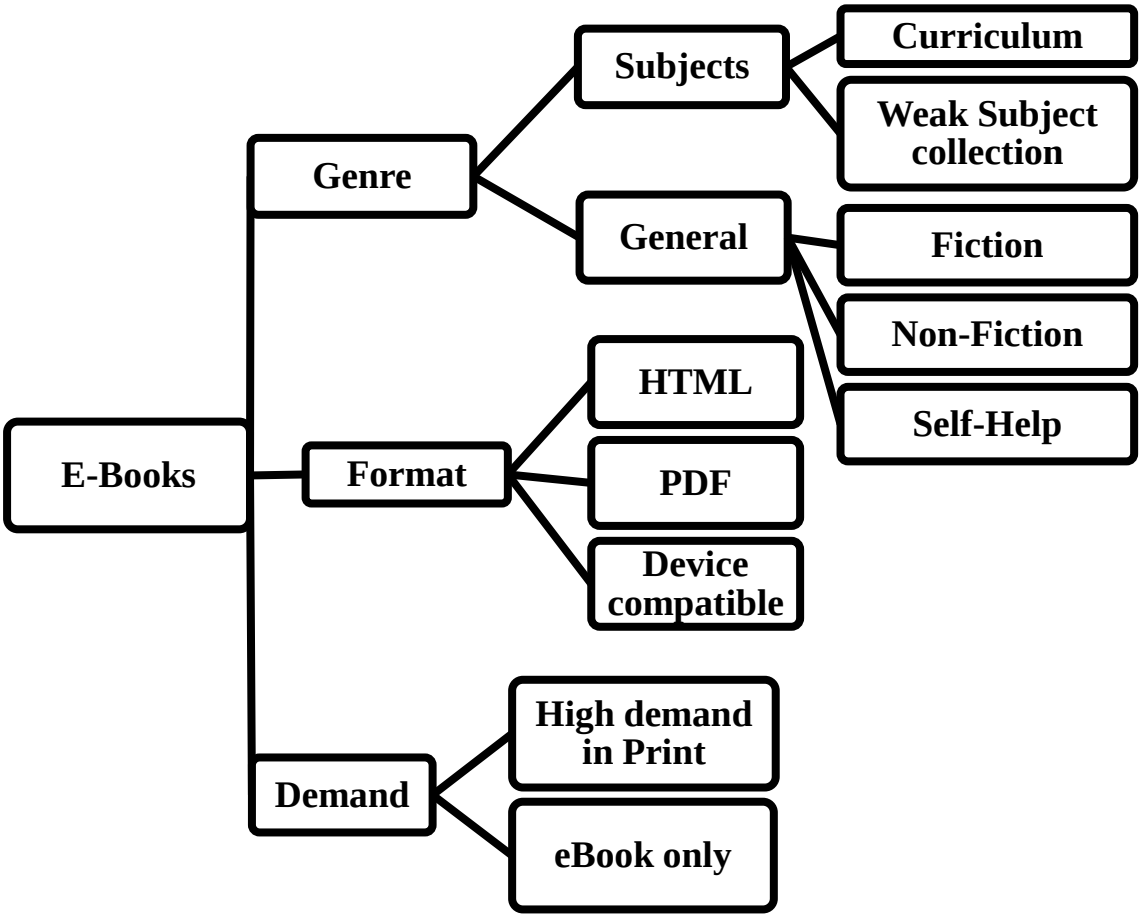
- It can be framed for eBooks separately or can be a part of main part of the existing collection development policy as a sub-section to books along with print books.
- Long-term and short-term planning for eBook collection development should be prepared. Active encouragement for eBook procurement to facilitate access to off-campus students or students doing distance education or research.
- It should include budget consideration, specifying the percentage of the annual budget to be utilised for eBook procurement and it may vary as per the size of the library and requirement. Division of budget within departments can also be thought owing to strengthen particular subject area. Upon receiving any extra grants, same can be proportionately spent more on eBooks. Percentage increase by each passing year for eBook collection.
- Strategic planning for buying eBooks than print books for new collection.
- Policy regarding deduplication with print collection should be considered. In case of high demand print book, instead of increasing number of copies in print, eBook with multiuser license can be opted. In certain cases, a bible (core subject collection book) book, along with print book an eBook copy for reference can be procured.

- Libraries should be equipped with latest technological gadgets like various eBook readers are available in the market. Policy regarding whether to buy device dedicated eBooks should be included in the policy.
- User requirements and their acquaintance with latest equipment should also be considered as some eBooks need dedicated devices.
- Clear preferences for various purchase/business/access model should be laid down to avoid any confusion during the procurement.
- Promotional activities should be planned so as to inform the users about availability of eBooks.

5.52 2 Expression of Interest for eBooks

Library collection remains as long as it is required or used, hence it is important to choose the resources accordingly. Following Figure describes the various factors to be considered while eBook procurement.

Fig. 5.3 Developing eBook Collection



It is important to assess following areas while consideration of eBook procurement for library collection which should also match individual collection development policy.

- **Genre of eBooks**: Whether eBooks to be procured only in core subject area of the institution or collection should be built up where the strength of books is less. It can be e-references like atlas, dictionaries, encyclopaedias, bibliographies, biographies, etc. It may also include e-textbooks which can supplement the edition updates instantly. Also, analyse whether there is a scope of inclusion of general reading books like popular fictions, non-fictions, self-help, dictionary, etc.

- **Format of eBooks**: It is important analyse to know in which format the eBooks are to be procured. Generally, PDF and HTML are most compatible formats and can be used with most of the electronic gadgets. However, device compatible formats of eBooks will demand for availability of e-readers like Kindle, Kobo, Nook etc. which may incur increase in the budget of the library.

- **Demand of Users**: It is also important analyse to user's demands while procurement of eBooks. A particular print book which is high in demand, may be procured in eBook format with multiple license to avoid increase in print copies. In case a book is available only in eBook format and print on demand is available, preference may be given to eBook for fast delivery upon purchase.

5.52 3 Availability of eBooks

It is very important identify the availability of eBooks in the publishing market. Following are the methods from which eBooks availability can be discovered.

- **Publisher:** There are different approaches adopted by publisher to ensure their products including eBooks are brought it to the notice of the potential users and specially to the libraries. Some of the ways are mentioned below.

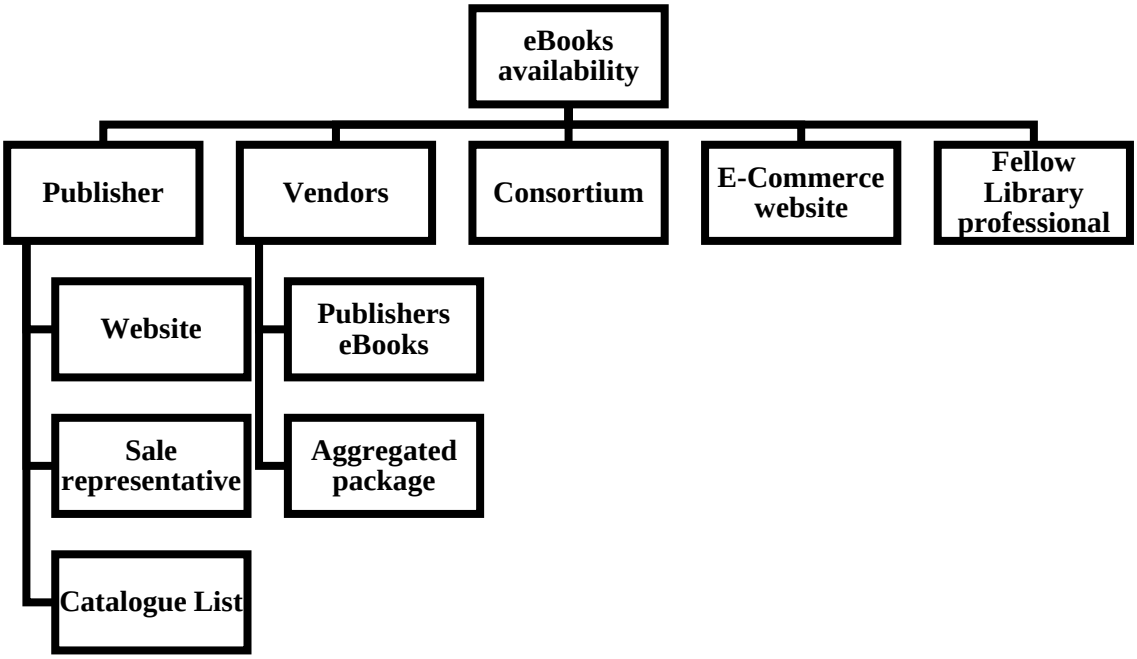
    - **Official Website**: Publishers platform is updated very often and which can provide information regarding availability of eBooks.

    - **Sales Representative**: To keep the librarian's and potential customers aware about eBooks and other collection, sale representatives are hired.

They alert the librarian particularly about availability of any new title or packages.

- **Catalogue List**: Often publisher's mail print or soft copy of new catalogue list of recently published titles. These regularly received list also helps librarian to know about eBooks.

Fig. 5.4 Availability of eBooks



- **Suppliers/Vendors**: Regular suppliers/vendors of libraries are aware about the institutions core subject area and research interest. They also help librarian, know about latest eBooks availability in the institutions specific subject interest and offers package of books of various publications.

- **Consortium**: They generally offers package of eBooks in particular subject/discipline at a very negotiated rate. Three important benefits of the consortium purchasing are large collection can be bought as buying power increase by number of participating libraries, sharing of eBooks is done and every library gets similar and equal access to eBooks. Librarians can approach consortiums od particular subject area to find availability of eBooks. Consortium offer can be from a particular publication or a set of various publications.

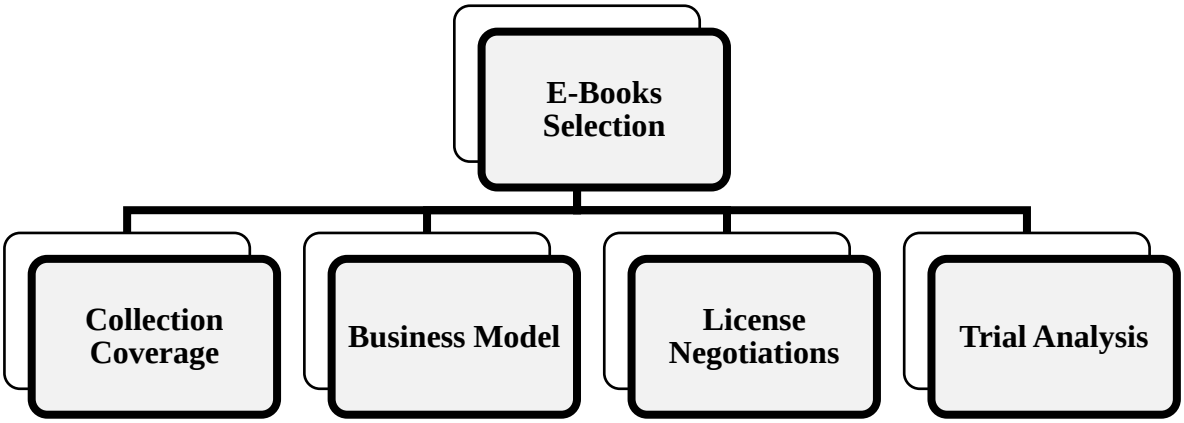
- **E-Commerce Website**: Various e-commerce websites also holds catalogue of popular books, which in turn can give information about availability of eBooks.

- **Fellow Library Professionals**: Other fellow library professionals can share information about procurement of eBooks in their respective libraries. This also makes librarian aware about availability of eBooks in their special interest groups.

5.52 4 Selection of eBooks

Further in the process of eBook procurement comes selection of eBooks. There are various different criteria used which are associated with decision of buying an eBook. The very often used criteria are identified and explained further.

Fig. 5.5 Criteria for Selection of eBooks



5.52 41 Collection Coverage

It is important to know collection content coverage of the eBook or eBook package. It should aim to satisfy the information needs of the students, staff and researchers. This criterion holds more importance when eBooks are procured in bundle of a particular subject, copyright year or publication collection. Majority of bundles are developed on broad subject areas which includes core essential eBooks along with many eBooks which are of allied or periphery subject area of the interest.

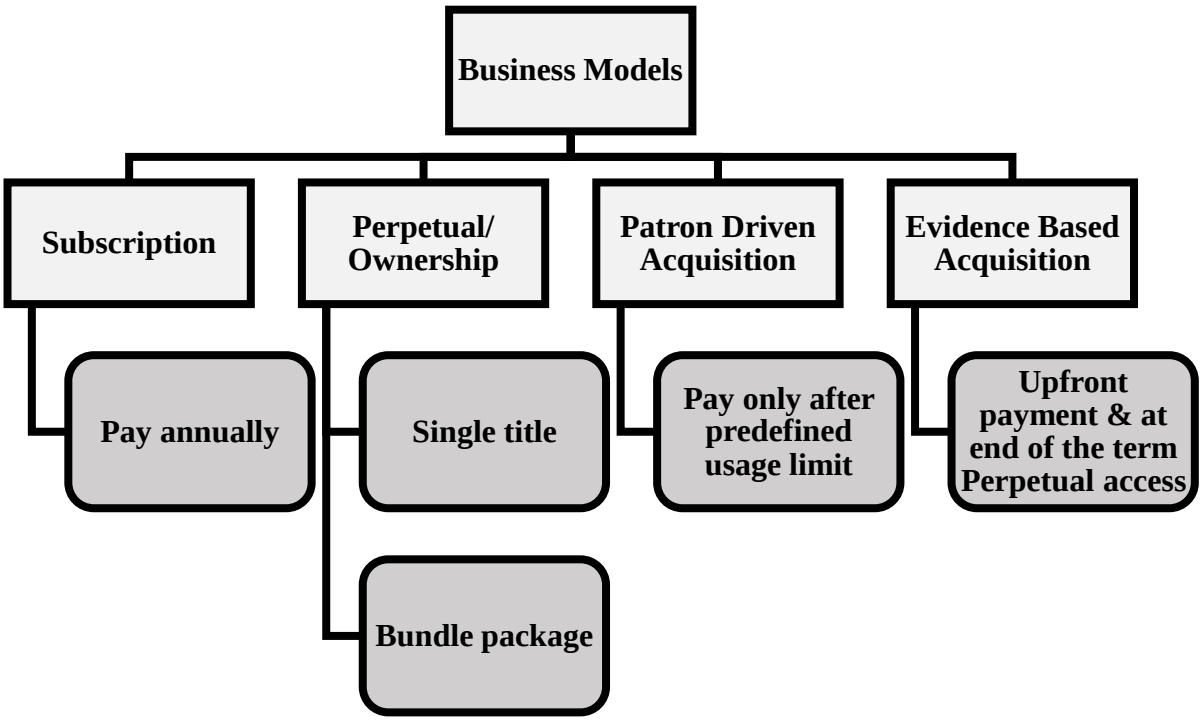
5.52 42 Business Models

The move of digitisation has heavily impacted publishing industry, not only in the terms of products but also in the terms of business models. There are various business models available in the market to choose from, every library opts for the best suited model as per their individual needs of the institution. It is one of the most important criteria used while making a decision of procurement of eBooks.

Following are various business models available in the market for procurement of eBooks.

- **Subscription:** This model allows to subscribe a large number of eBooks in a package for a specific term, generally annual. Libraries looking for large number of eBooks at relatively cheaper cost should adopt this business model. The package is already planned and content included in it is selected by the publisher or vendor, where the library does not have scope to build the collection. Many a times old editions of the eBooks are immediately replaced with new edition and libraries can't do much to it. The price of this subscription package is kept low to attract more sale, but they do not include titles which are fast selling titles in this package.

Fig. 5.6 Business Models for eBooks



- **Perpetual/Ownership**: This model is very similar to the traditional print book purchase. It is also called as one-time purchase model. Libraries can choose the titles or a set of eBooks package. Only few publishers allow single tittle purchase, mostly they encourage on purchase of substantial number of eBooks or revenue often termed as bundle pricing. In this model libraries have right to choose the required titles. Cost of an eBooks as compared to print books is slightly higher and percentage of variation ranges anywhere between from 10 to 100% or even more. Institution pricing is also different form list pricing for few publications. Over and above the cost of eBook/s, few publisher charges annual maintenance fee for hosting eBooks on to their platform. However, few publishers offer to waive off these maintenance charge upon maintaining active relation in the form of procurements annually either by subscribing to print journal/e-journals, eBooks, etc.

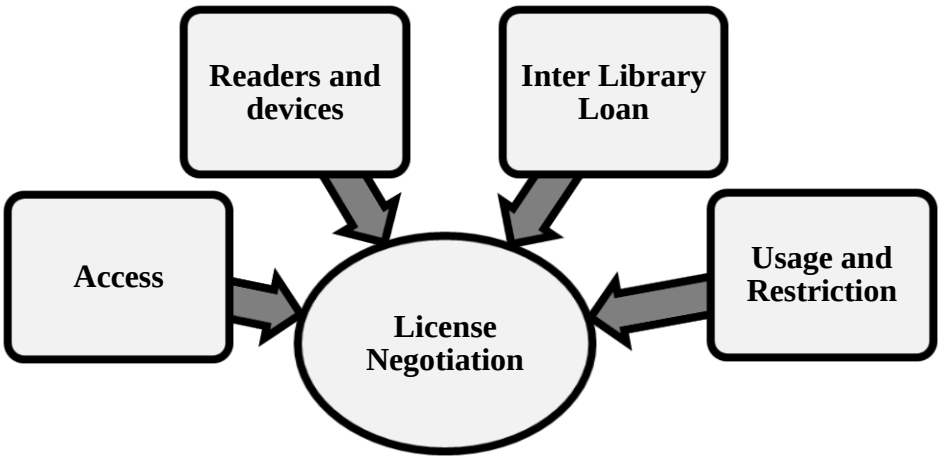
- **Patron Driven Acquisition**: It is also known as Demand Driven Acquisition or Pay Per View Model. This model is offered by publishers or aggregators, which includes eBooks package on a particular discipline or copyright year. Library has pay ongoing fee/rental fee which is a very small percentage of the bundle price and libraries are provided with option of automatic purchasing on a pre-set visit. Library can choose the pre-set visit as five visits, only on the trigger of sixth visit the eBook is automatically procured for library. Pre-set visit can vary as per terms decided with the aggregators/publishers before initiation of this model. In this model eBooks are procured as per the demand of users/patrons.

- **Evidence Based Acquisition**: This model is offered by publishers/ aggregators for bundle of eBooks. This is slightly similar to Patron Driven Acquisition with little variation. This model provides eBooks on particular discipline, or few selected copyright year or combination of both i.e. discipline package of few copyright years. In this library have to make upfront payment for the access for a particular term before initiating the access. The access fee is again a percentage of a bundle price. In this model usage statistics is observed and at near end of the term, and most highly used titles costing equivalent to the access fee are offered to procure for perpetual access. Here libraries still reserve the right to choose eBooks within the package, if found few highly used titles are not very relevant.

5.52 43 License Negotiation

Libraries have been handling many electronic resources and are also dealing with licensing and negotiations. It is a very important part of evaluation of eBook selection process. It allows libraries to know what type of access, rights and restrictions comes with a particular eBook or bundle of eBooks.

Fig. 5.7 Licensing of eBooks



Following are some of the important checkpoints of license negotiations, while selecting eBooks.

- **Access**: Mostly vendors provide access to eBooks with IP authentication and login credentials are also used to avail the access. Various access options were made available by publishers such as single user, simultaneous users/concurrent users and multiple users.
    - **Single User Access**: Earlier publishers offered pricing based on number of users' license obtained. As there was a financial advantage in this, they offered this option. In this only one user was allowed use the eBooks which is similar to accessing a print book by single user. Another user would be turned away and have to wait till first user session is clear or signed out.
    - **Simultaneous User Access**: It is also called as Concurrent User Access. This option allowed access to resources simultaneously by a multiple

user. However, the same eBook could be accessed by set of number of users for which license is obtained. Generally, these would be tier licenses like 5 users, 10 users, 50 users, etc. It varies as per publication policies. Pricing would increase as per the increase in number of users. In this option, again after a set number of users' access eBooks, next users are turned away and does not get access unless a live session is finished.

- **Multi User Access**: This access option allows unlimited number of users to access the eBooks simultaneously. This option is most preferred option by the libraries as users do not have to face any turn away and access is provided seamlessly. Very often majority of publishers provide these options.
- **Remote Access**: Along with the above-mentioned access, few vendors also provides remote access facility as supplementary. They allow users to register on the platform and same credentials can be used even when they are not in the premises of the institution. However, the user has to login through the campus at least once in 3months or as per the term agreed by the publisher.

- **Readers and Devices**: E-books are offered by vendor on their own platform. These platforms use e-reader applications.
  - **Readers**: Different types of e-reader applications are used by different vendors, however most of them are with similar functions. Generally, reader applications are used to restrict downloads and the formats of eBooks are compatible only with specific reader application. Most common features offered are highlighting the text, sharing notes, citation in different styles, etc.
  - **E-book reading devices**: Devices like Kindle, Kobo, Sony, etc are available in the market. These devices to have their own application on which eBooks can be read. These devices have their own eBook collection stores. Format of these eBooks are compatible with these

devices only and they cannot be used in other devices. The eBooks purchased from these stores are downloaded instantly on the device registered to the account. Libraries are being experimenting by stocking devices and lending the same preloaded with eBooks.

- **Inter-Library Loan**: Inter Library Loan has always been debated while procuring eBooks. Publishers ascertains certain limits on excessive sharing but under the realm of fair-use libraries can share eBooks similar to other library resources. To avoid any financial loss publisher puts restriction on sharing of the licensed material. Generally, eBooks portion to be shared is to be printed and shared by means of fax, mail or email.

- **Usage and Restrictions:** Digital Rights Management (DRM) includes copyrights, piracy policies, and ascertains restrictions on usage. DRM are designed in order to protect intellectual property rights. Libraries should insist on certain rights like ability to download eBook or few chapters for personal use, photocopying content of eBooks, copying of content to be used for research pursuit, sharing certain part with research partners, etc. For cataloguing in the library management software, it is important get MARC records. For preservation, libraries can ask for permission to create a backup copy. Post termination of license, archiving rights should also be discussed and negotiated.

5.2 44 Trial Access

In the process of eBook procurement, library have an advantage to get trial for a limited period to assess the usability of the eBooks in the library collection. Very often vendors agree and are willing to offer trail access to libraries. Following is the workflow of conduction of trial access for eBooks.

- **Identification and Selection**: Libraries should be clear about the eBooks to be planned for procurement. A trial of most prospect eBooks to be considered for the addition in the library collection should be considered. Generally, in bundle

purchase of eBooks trial access is initiated as compared to single title purchase. There is no cost involved in running a trail access and no obligations are reserved. It is also possible to hold two or more trials by different publishers/vendors at a time. A comparison of both proves to be beneficial.

Fig. 5.8 Trial Access Process

- **Trial Activation**: Trial is setup for a limited period and access can be made available by login credentials for selected few or via IP authentication. It is important to promote trial activation and encourage users to participate in the trials.

- **Usage Reports**: Counting Online Usage of Networked Electronic Resources (COUNTER) compliant reports are obtained from the publisher or Vendors to find out usage statistics of trial product. COUNTER report helps understand cost per use and other metrics of evaluation for justifying selection or deselection of eBook package. It also provides details of turn away which can also help in understanding users requirement and can also be considered for current or future procurement of eBooks.

- **Feedback**: Library often face issues receiving feedback as participation in conducted trials is less. Feedback is used to know the content coverage in the package, features offered by the application, searchability and user friendliness.

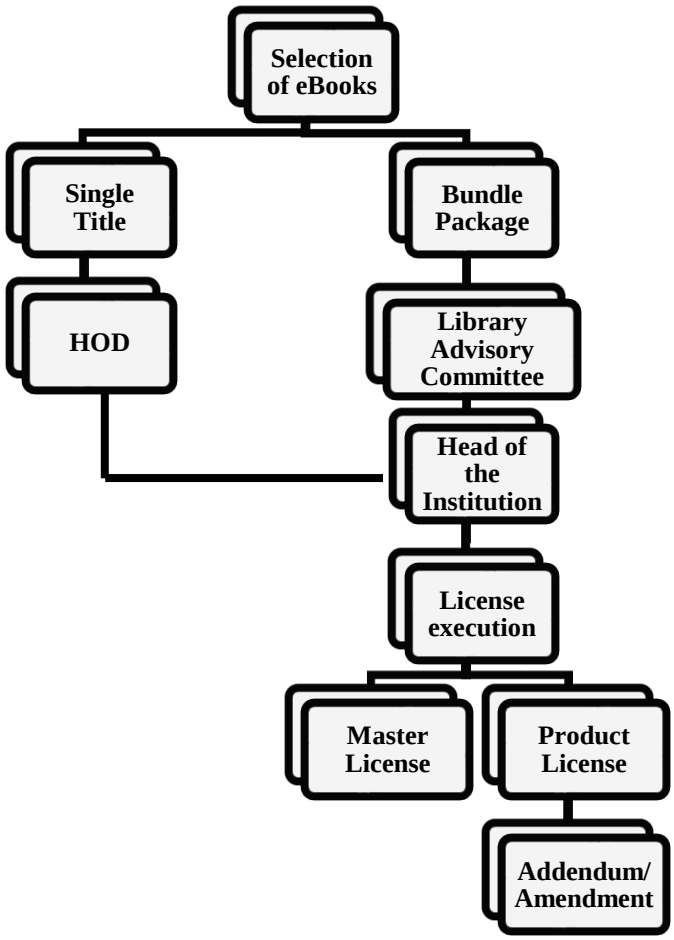
- **Decision**: Analysing the usage metrics and feedback received by users a decision regarding selection of eBooks for library collection is taken. It is also observed that users get used to access the resources and in case it is opted to

purchase it cause a certain level of unhappiness amongst the user and it becomes difficult for librarian to justify the reason why the eBooks are not made a part of library collection.

5.52 5 Approval and License Execution for eBook

Approval for procurement of eBooks similar any other resources of library is important and it is also necessary to initiate the execution of license.

Fig. 5.9 Approval and License Execution for eBook



5.52 51 Approval from competent Authority

Libraries have to approach to the competent authority of the institution to approve and sanction the purchase of eBooks. This activity is similar to any other resource of library.

- **Head of Institution**: For a single title procurement of eBook; head of the department recommendation for which the eBook is procured is requested and

further it is approved by head of institution. Librarian raises an order for the same and license execution is initiated.

- **Library Advisory Committee (LAC)**: Major function of LAC is to support activities and functioning of the library by acting as a channel between its users and the management. LAC is appointed by the head of institution.
    - **Composition**: The composition of LAC is always a combination of department members, head of the institution as the chairperson, user representative (optional) and librarian as member secretary. One member from each department is included in the composition which may be head of the department or senior faculty of the department or faculty assigned by head of the department so as to have proper representation of department.

    - **Role in Purchase Approval**: In case single title purchase of books or eBooks, library need not have to approach LAC, but when bulk quantity books or bundle of eBooks are procured LAC approval is necessary. Upon trails access usage statistics, feedback, budget availability, etc. LAC approves the procurement, which is recorded in the LAC minutes of meeting and finally approved by the head of the institution. Librarian raises an order for the same, license execution is initiated and product is invoiced.

5.52 52 License Execution

It is necessary to have a written agreement signed between the parties with all details of eBooks and negotiations done. It is important to understand details about license agreement and major stakeholders.

- **Licensor**: This is the owner of the product and has all rights reserved. It holds all the legal and financial rights about the product and can provide the services.
- **Licensee**: It is an entity who obtains the right over a product or gets access against a fee. In this case the institution/library obtains permission for accessing eBooks.

- **Indemnity**: It is obligation towards the protection over rights for the said product between the two parties in case of breach of agreement.

5.52 53 Agreement with Publishers

Libraries dealing with publishers generally signs two agreements while procuring eBooks. Even for a single eBook license agreement has to be signed and is to be abided by both parties. Execution of license varies slightly with different publishers. Generally following process is observed by majority of the publishers.

- **Master License**: This is a general master license to be signed by both parties and has general terms and conditions which stand true for all digital products like e-journals, eBooks and e-Databases. This license is signed for the first-time acquisition by an institution, thereafter subsequent purchases this master license is not required to be signed, unless there is any new clause included.
- **Product License**: This license has all the details about the procured product. It includes exclusive rights provided to the licensee, term of the license agreement, number of legible user access, IP details, post-termination clause, archiving policy, inter library loan clause, annual maintenance fees if any, etc.
- **Amendment/Addendum**: This license is used for any additional procurement by the same publisher and same product. In case of eBook procurement, if any new eBook is to be procured addendum will be signed. In case the same eBook access is to be extended to other sites of the same institution amendment to the existing product license is done. These are also used in PDA and EBA business models for final selection of eBooks.

5.52 54 Agreement with Aggregators

Agreement with aggregators is simple as major clauses are been covered by the aggregator. In case of procurement of eBooks of different publishers through an aggregator, libraries need not sign individual agreement with each publisher. Instead, libraries sign single agreement with aggregator. Aggregator signs with each publisher and includes all clause as per negotiation. However, it is important for libraries to insist on inclusion of clause to guarantee that the aggregator has signed all licensee with publishers and all the terms negotiated are included in the same.

5.52 6 Cataloguing

Library Management Software (LMS) is used to manage all the library resources and services. All resources detailed bibliographic details are added into this software. These details include author, title, publication, copyright year, edition, ISBN, etc. Libraries are currently in hybrid state which stocks various format of resources. All the library holdings are discoverable by WebOPAC system. LMS should accommodate details of eBooks procured. Some of the LMS software also provide details from Google books like cover page of the book, content page of the books, even at some place ecommerce website links like Amazon are also provided. However, libraries can make a choice of making it available to the users.

5.52 61 MARC

It has been a standard practice with all eBook suppliers to provide MAchine Readable Catalogue (MARC) with the purchase of every eBook at no cost i.e. free. The MARC records contain general bibliographic details of the book along with the URL. Instances where a particular eBook has multiple access, no separate duplicate entry is required; LMS allows two or more URLS to be added. While searching through webopac, user can view the eBook record along with all URLs.

5.52 62 Perpetual Access eBooks

A single perpetual eBook can be easily added by using MARC record or even by manual entry with all bibliographic details. Similarly package of eBooks owned perpetually are preferably entered using MARC records.

5.52 63 Subscription Access eBooks

There are large number of eBooks in a subscription package and also after the term they may not be a part of the library collection unless renewed. MARC records are used to include it into the library catalogue. Upon termination they have to be removed from the library collection.

5.52 64 WorldCat

OCLC cooperative cataloguing helps locate the record and allows to copy in the catalogue.

Upon updating the record, OCLC automatically sends updated MARC records, which make the resources more discoverable. This helps in not only getting accurate information but also save time of the library professional.

5.52 7 Marketing

Promoting and marketing libraries resources is necessary, as users will not use the services offered by the libraries unless they know its existence. It is important to develop a marketing communication plan for eBooks. Some libraries are already using marketing tools and techniques and the most frequently used tools are mentioned below.

- **Marketing Officer**: Library can have a marketing officer in the library or assign one of the library staff to play the role. This person is supposed to chalk out plan for developing marketing strategies for each part of library. It will have resource promotions plan including eBooks.

- **Conventional Techniques**: Some of the traditional promotional activities are mentioned below, which can be extended for eBooks as well.
    - **Orientation/Induction Session**: Including newly procured eBooks increase its visibility.
    - **Interviews/Informal Meet/Word-of-Mouth with Users**: This is a tried and tested formula and has always worked in passing on information. The availability of eBooks can be spread using this method.
    - **Information Literacy Session**: Encouraging users to use eBooks and informing them about its various advantage in these sessions, will be helpful in transforming users reading habits. This will be increasing usage of eBooks procured by the libraries.
    - **Bookmarks**: Advertising newly procured eBooks with the URL links and other information of eBooks, which increase awareness about the availability of eBooks in the libraries.
    - **Publications**: Institution/Library Newsletter, Flyers, etc can be used to advertise the newly included eBooks in the collection.

- **Posters/Standees**: Adding posters, banners or standees not only in library but also in most visited places by users like cafeteria, staff room, hostels, etc will be helpful in marketing eBooks.
- **Notice Boards/Display Screens**: Adding information of availability on notice boards is one of the most conventional method and can be put to use. Display screens at the entrance and having flashing information always catch the eye of the users and will be helpful in attracting users for using eBooks.
- **Awareness Week**: One of the agenda can in this awareness week can be availability of eBooks in the libraries.
- **Tutorials by Vendors**: Organising tutorials by vendors marketing manager is always effective.

- **Web 2.0 Techniques**: Information and Communication Technology has a capacity to reach out to wide range of users. Some of the web 2.0 techniques can be used to promote eBooks.
  - **Intimation Emails**: Periodic emails about eBooks with direct URL links of eBooks, will be helpful.
  - **Library Website**: Displaying information about eBooks, under recent activity or announcement can catch user's attention.
  - **WebOPAC**: Adding links of eBooks along with other bibliographic details of helps users directly connect to the eBook's platform from webopac. Displaying default search results type wise using eBooks at top in the list and others types below. This will increase eBooks visibility and in turn increase usage.
  - **Library App**: Library application if any can also send PUSH messages at regular intervals about availability of eBooks along with its links.
  - **Library Blog**: Writing one page of eBook announcement and its detailed information and benefits for potentials users, will attract users.

- **Library Handles**: Library social media pages like Facebooks, Twitter account, Instagram if any can also be used to promote launch of eBooks. All increase of use of eBooks can be mentioned by regularly sharing usage analysis, thereby increasing curiosity of non-eBook users to increase eBooks.
- **Online Help/Chat Box**: These have always been helpful for solving user's queries. This can also be helpful in promoting library resources. At the end of each session along with 'Thanks' add a very small information and link to eBooks.
- **Online Quiz with Gifts for Winners**: Young users always gets fascinated with quiz and winning a gift. Having a quiz about eBooks and other library resources can be organised and small gifts which also has library product promotional information can be gifted to the winners.
- **Testimony**: Some of students/ staff who are popular and are regular library users can be used as 'Mascot' and their testimony along with their photographs describing other library products can be used to promote usage on Library notice board, display screen, websites, etc.

- **Course/Subject Co-ordinator Meetings**: By meeting the course or subject coordinator and making them aware about the availability of eBooks in their subject areas is important. They may include it into their course as a recommended book or also inform users about availability of the same in the library.

- **Distance Education Pages**: One of the learning mediums these days is distance education. All the material regarding their studies are made available via a portal. Displaying information about eBooks on this portal will help users know about availability of eBooks in their subject area.

- **Formal Launch of eBooks**: One may plan to have launch of eBooks either independently as a function or it can be a part of some annual function. This will publicise the availability of eBooks amongst the large number of attendees.

5.52 8 Usage Analysis and Renewal / Termination

Monitoring the usage of procured product is important so as know return on investment (ROI) and in case of subscription to decide upon continuing the access by renewing the product or to terminate the access. Same also stands true in case of eBooks.

5.52 81 Usage Analysis

Analysing of data can be done after appropriately marketing eBooks availability in the library and encouraging users to use eBooks. Analysis of usage of eBooks can be done in two ways as mentioned below.

- **Usage Statistics**: Statistic of usage are obtained by the vendors. COUNTER is Counting Online Usage of NeTworked Electronic Resources. COUNTER compliant usage report of eBooks usage is received from the Vendors. Certain code of practice is followed while recording and generating usage statistics. Following are the COUNTER reports obtained by the vendors.
    - **BR1**: This report provides total number of successful requests per month by title. This report is generated and exported only where vendor provides eBook in a single pdf file.
    - **BR2**: This report provides total number of successful sections requests per month by title. This report is generated only where vendor provides eBooks in chapters.
    - **BR7**: This report provides total number of successful unique titles request in a session per month by title. In case same books is used twice or more, it is counted only once.
    - **BR3 & BR4**: These reports provide turnaway reports. BR 3 provides access denied data by month, title and category and BR4 provided access denied report by month, platform and category. This gives report of data

requested by users which is unlicensed/ unsubscribed and may help in future procurement of eBooks.

- **BR5**: This report provides total number of successful searched conducted by month and title.

- **Feedback**: Libraries try to get direct feedback from the users for all the library services. Library satisfaction survey/Library feedback form is used to collect the user's opinion about library. Libraries can always collect feedback from the users for eBooks only. It can be collected immediately after training sessions conducted for the same. Email asking for feedback can be also sent to users identified using eBooks.

5.52 82 Renewals/Termination

The usage statistics reports obtained from the vendors and feedback received from the users helps libraries to take appropriate decision in the interest of collection development of libraries to serve the user community better. These reports are found helpful in different ways for different business models as mentioned below.

- **Perpetual**: In this business model eBooks are already purchased. Monitoring usage of the perpetual eBooks helps identify the cost effectiveness.
  - **Return on Investment**: The usage analysis help find out number of times these eBooks are used and cost per use analysis can be obtained. Less the cost per use better it is and justifies return on investment.
  - **Promotional Activity**: In case, low usage is observed, appropriate promotional activity can be immediately introduced. The turn away reports of the platform, also helps identify new eBooks requirement and can be considered for procurement.

- **Subscription**: In this business model, the usage statistics is used to help know whether this package is cost effective and worth renewing.

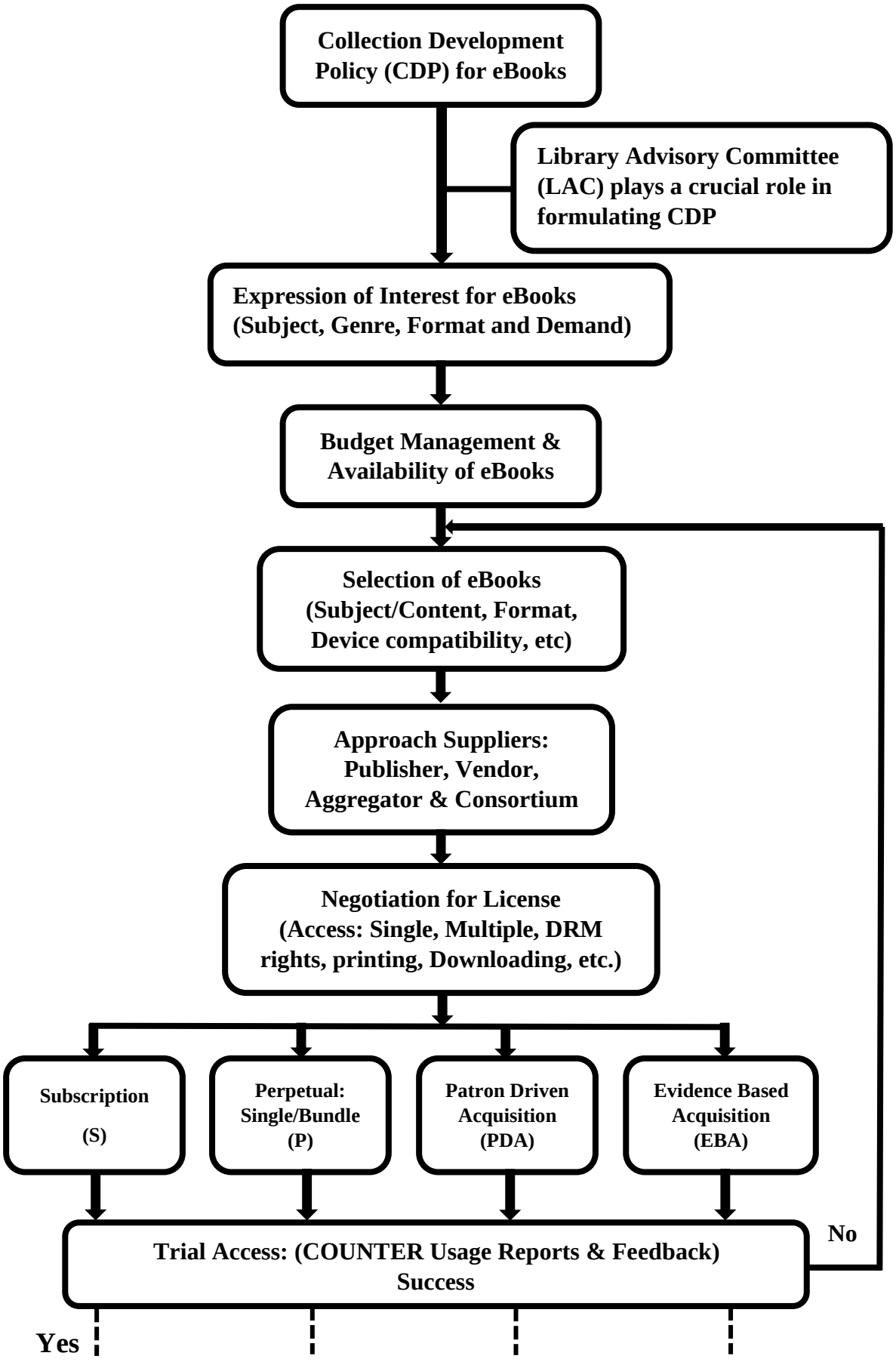
  - **Renewals**: In case of high number of downloads consistently for few titles, library can justify the reason to obtain perpetual access license. High usage also indicates renewal of the product.
  - **Terminations**: Eventually, low usage may trigger termination or cancellation of the product.

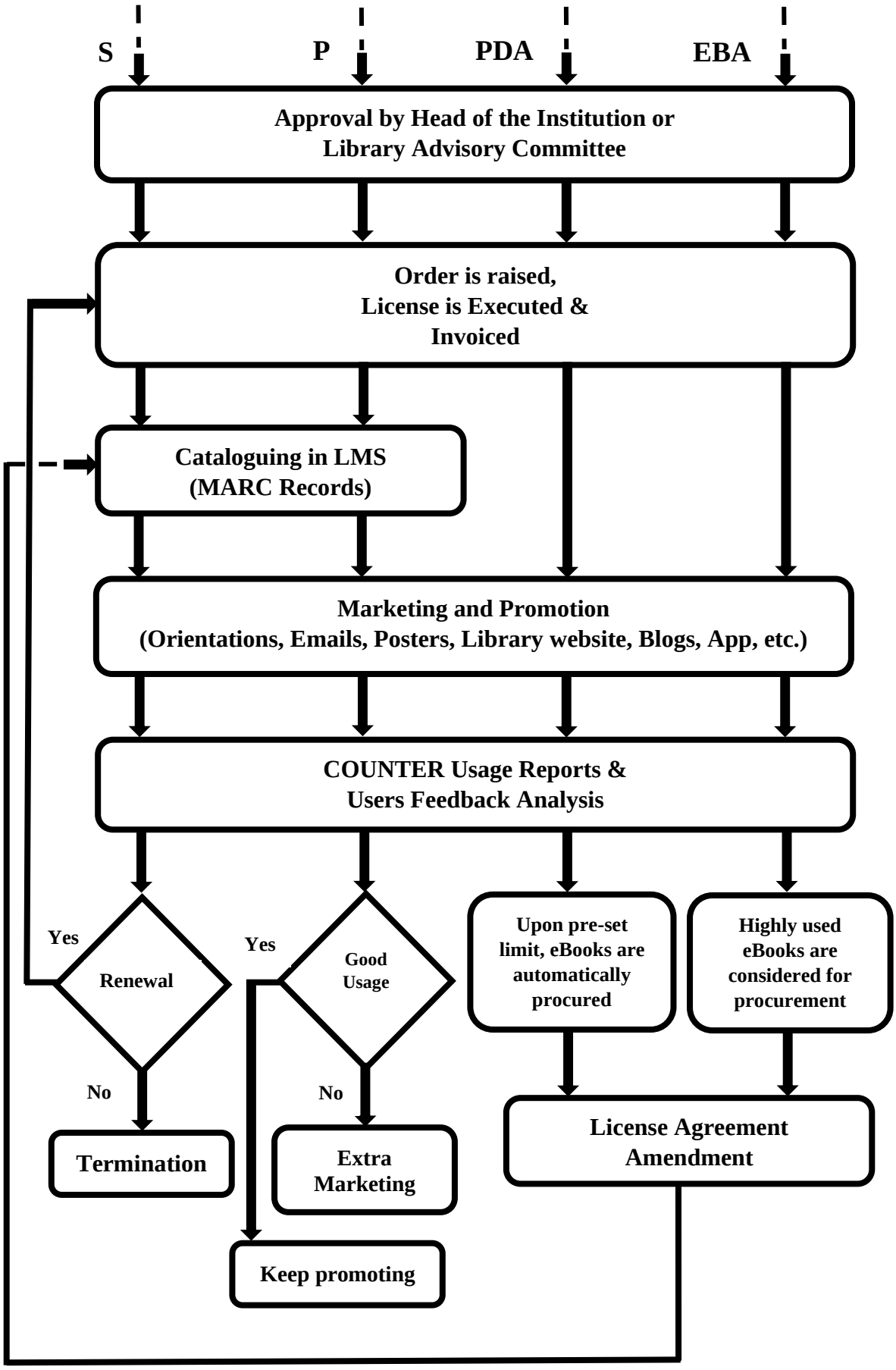
- **Evidence Based Access**: In this business model, usage statistics plays a very important role. As libraries have already paid upfront cost for eBooks to be procure upon the usage. COUNTER complaint usage statistics is obtained and analysed.
  - **Renewals**: In case, of high usage of eBooks and upon finding to be cost effective; library may opt to continue the access by extending it for next term.
  - **Termination**: As a practice at the end of the term, titles which are highly used are identified. The number of eBooks equivalent to cost of base price paid is bought perpetually.

Acquiring eBooks in itself has become complex procedure and it is important follow standard procuring process. Various other constraints of budget, willingness to recommend books/eBooks, availability of the required resources, etc still exists. Librarian have to equipped themselves with new skill to discover eBooks, negotiate with publishers, remain abreast with usage rights under DRM and propose a plan. Only procurement of eBooks does not work, it is important that it gets utilised. And for the same it should be discoverable and users should be aware about it. A very detailed marketing plan is also required. However, challenges are faced by libraries like lack of time to do so, due to budget constraints eBooks are less in stock and constant effort to involve users in marketing plan.

Libraries are going to witness the growth of eBooks in its collections which implies changes in library structure such as technological equipment/devices, rearranging the space in the library, change in work profile of librarians and library staff and improving user educational activities.

Fig. 5.10 Guideline for eBook Acquisition Process




S
P
PDA
EBA
Approval by Head of the Institution or Library Advisory Committee
Order is raised, License is Executed & Invoiced
Cataloguing in LMS (MARC Records)
Marketing and Promotion (Orientations, Emails, Posters, Library website, Blogs, App, etc.)
COUNTER Usage Reports & Users Feedback Analysis
Yes
Renewal
No
Termination
Yes
Good Usage
No
Extra Marketing
Keep promoting
Upon pre-set limit, eBooks are automatically procured
Highly used eBooks are considered for procurement
License Agreement Amendment

5.6 Fulfilment of Objectives and Hypothesis

The objectives and hypothesis set before conducting the study and discussed throughout the chapters of this study and are proved in this chapter.

5.61 Objectives of the Study and its Achievement

The set objectives of this research study are deliberately discussed within the chapters and are fulfilled.

Objective 1: To assess the existing eBook acquisition business methods available for the engineering college libraries is achieved through chapter 3 about eBooks and chapter 4 on data analysis and interpretation. In chapter 3, eBook acquisition business methods are elaborately discussed. And in chapter 4, Fig. 4.36, 4.37 and table 4.38, the researcher has presented the available eBook acquisition methods by the eBook providers. Data analysis of eBooks provider covers in details, all aspects of eBook pricing models available for engineering disciplines.

Objective 2: To examine eBook acquiring policies adopted in the engineering college libraries is achieved through chapter 4. The questionnaire highlighted the policies adopted by libraries to procure eBooks and interview with eBook providers too mentioned the same. In chapter 4, tables 4.13, 4.15 and Fig. 4.19, 4.20, 4.21 researcher presented the acquisition policies aspects of eBooks adopted by the engineering college libraries of the study.

Objective 3: To identify factors influencing procurement of eBooks in the engineering college libraries is achieved in chapter 4 by analysing the collected data from the questionnaire regarding factors and reasons stated by eBook providers. In chapter 4, Fig. 4.15 and 4.44 states the factors influencing eBook procurement in engineering college libraries of the study.

Objective 4: To develop the guideline for the procurement of eBooks is achieved through chapter 5 by developing a guideline for procuring eBooks with various eBook methods studied in this research. Fig. 5.10 presents the guideline process for eBook procurement process.

5.62 Hypothesis of the study and its testing

Hypothesis of the present research study is tested as below:

Hypothesis 1: Most of the engineering college libraries are not acquiring eBooks.

Testing: During analysis of the collected data, it is found that though the ICT infrastructure for the majority of libraries are strong still eBooks as a resource in the library collection is not included by majority of them as recorded in tables 4.10, 4.11, Fig. 4.12 and table 4.12. It is found that 61% of engineering college libraries of the study are not procuring eBooks. Hence, this hypothesis is proved.

Hypothesis 2: Most of the engineering college libraries do not have any written policy for acquiring e-books.

Testing: It is observed from Fig. 4.8 & 4.14 that most of the engineering college libraries of the study do not have a written collection development policy for print books (80%) and also for eBooks (84%). Hence, this hypothesis is proved.

5.7 Further Scope for Research

The present area of the research is geographically constrained to Mumbai Metropolitan Region. The same study can be carried with other geographical settings. Also, the present study covered only engineering colleges and same can be explored with other academic libraries or research libraries. To overcome the limitations, sample size can be increased by adding cities, or states. User study in this area will also be helpful, eBook reading habits can be one of the potential areas of research. Also, usage of and adoption of eBook readers and mobile devices for reading can also be studied. Such studies will be helpful in understanding demands of users and will help in collection development of libraries.

5.8 Conclusion

Expectations of users', students and teacher of engineering college are increasing. Modern day libraries should equip with all latest resources, formats and tools to

disseminate information to its users. With penetration of ICT in publishing industry, various new format of resources specifically in digital format are available.

Publishing industry is changing rapidly with more and more digital versions of resources being available in the market. There has been a surge in eBook market in last decade. With the availability of eBooks coupled with its benefits over print counterpart, publishing market is flooded with different business models.

Libraries still have print books as their main stay in collection. However, since the emergence of eBooks in the market, there is slight development of inclusion of eBooks in the collection. This present study focusses on current practices followed by engineering college libraries of Mumbai Metropolitan Region in eBook collection development. It highlights the issues and problems faced by the librarians during the process in the era of rapid changing technology. It also enumerates the availability of engineering discipline eBooks in the market with various business/pricing models.

It is important for eBooks providers to identify the requirement of libraries and remain flexible to accommodate to required changes. The success of eBook collection development is dependent upon having cordial relation between libraries and eBooks providers. User demand and appropriate supply is the key to success.

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Appendix II List of Colleges Covered in the Study

Sr.	Name of the College	Address	Website
	Affliated to SNDT Women's University		
1	Usha Mittal Institute of Technology (UMIT)	Juhu-Tara Road, Sir Vitthaldas Vidyavihar, Santacruz(W), Mumbai, Maharashtra 400049	http://www.umit.ac.in/
	Affliated to University of Mumbai		
2	A. C. Patil College of Engineering	Sector 4, Kharghar, Navi Mumbai, Maharashtra 410210	https://www.acpce.org/
3	A. P. Shah Institute of Technology	Mall, Ghodbunder Rd, Kasarvadavali, Thane West, Thane, Maharashtra 400615	https://www.apsit.edu.in/home
4	Atharva College of Engineering	Malad, Charkop Naka, Asmita Jyoti Housing Society, Malad West, Mumbai, Maharashtra 400095	http://www.atharvacoe.ac.in/
5	B R Harne College Of Engineering	Karav, Post Vangani (W Tal Ambernath, Mumbai, Maharashtra 421503	http://brharnetc.edu.in/br/
6	Bharat College Of Engineering	Opposite Gajanan Maharaj Temple, Badlapur West, Kanhor, Maharashtra 421503	http://bharatedu.co.in/
7	Bharati Vidyapeeth College of Engineering	Sion-Panvel Expressway, Sector 7, CBD Belapur, Near Kharghar Railway Station, Navi Mumbai, Maharashtra 400614	http://bvcoenm.edu.in/
8	Chhartrapati Shivaji Maharaj Institute of Technology	Mumbai-Pune Highway, Post - Shedung, Taluka Panvel, Dist. Raigad, Navi Mumbai, Maharashtra 410206	http://csmit.in/
9	Datta Meghe College Of Engineering	Plot No. 98, Sector-3, Airoli, Opp Khandoba Temple Sri Sadguru Vanamrao Pai Marg, Navi Mumbai, Maharashtra 400708	https://www.dmce.ac.in/
10	Dilkap Research Institute of Engineering and Management Studies	At Village - Mamdapur, Post - Neral, Tal - Karjat, Dist - Raigad - 410101	http://driems.in/
11	Don Bosco Institute Of Technology	Premier Automobiles Road Opp. HDIL Premier Exotica, Kurla (w, Mumbai, Maharashtra 400070	https://www.dbit.in/

Sr.	Name of the College	Address	Website
12	Dwarkadas Jivanlal Sanghvi College of Engineering	No. U-15, J.V.P.D. Scheme, Bhaktivedanta Swami Rd, Opp.Cooper Hospital, Vile Parle, Mumbai, Maharashtra 400056	http://www.djsce.ac.in/
13	Fr. Conceicao Rodrigues College of Engineering	Bandra (W), Mumbai, Maharashtra 400050	http://www.frcrce.ac.in/
14	Fr. Conceicao Rodrigues Institute of Technology	Father Agnel Technical Education Complex, Near Noor Masjid, Juhu Nagar, Sector 9A, Vashi, Navi Mumbai, Maharashtra 400703	https://fcrit.ac.in/
15	G.V.Acharya Institute of Engineering & Technology (GVAIET)	Shelu, Maharashtra 410201	http://gvaiet.org/
16	K. J. Somaiya College of Engineering	Vidyanagar, Vidya Vihar East, Ghatkopar East, Mumbai, Maharashtra 400077	https://kjsce.somaiya.edu/
17	K. J. Somaiya Institute of Engineering and Information Technology	Somaiya Ayurvihar Complex Eastern Express Highway Near Everard Nagar, Sion East, Mumbai, Maharashtra 400022	https://kjsieit.somaiya.edu/en
18	Engineering and Management Studies & Research	Mith Bunder Road, Near Sadguru Garden, Kopri, Thane (E) 400603.	https://kccemsr.edu.in/
19	Konkan Gyanpeeth College of Engineering	Dist Raigad, Karjat, Maharashtra 410201	https://kgce.edu.in/
20	Lokmanya Tilak College of Engineering	Kopar Khairane, Sector 4, Vikas Nagar, Navi Mumbai, Maharashtra 400709	https://ltce.in/
21	M.H. Saboo Siddik College of Engineering	Byculla, Mumbai, Maharashtra 400008	http://www.mhssce.ac.in/
22	Mission's College of Engineering and Technology (MGM)	Expressway, Sector 18, Kamothe, Navi Mumbai, Maharashtra 410209	http://www.mgmmumbai.ac.in/mgmcet/
23	New Horizon Institute of Technology & Management	New Horizon Education Society's Complex, Off Ghodbunder Road, Anand Nagar, Kavesar, Thane West, Thane, Maharashtra 400615	https://nhitm.ac.in/
24	Padmabhushan VasantDada Patil Pratishthan's College of Engineering	Complex, Eastern Express Highway Near Everard Nagar, Chunabhatti, Sion, Mumbai, Maharashtra 400022	https://www.pvppcoe.ac.in/
25	Engineering & Technology	Taluka, Rasayani, Maharashtra 410207	http://www.phcet.ac.in/

Sr.	Name of the College	Address	Website
26	Information Technology, Engineering Media Studies & Research	Campus, Plot No. 10, Sector 16, New Panvel, Navi Mumbai, Maharashtra 410206	www.piit.ac.in
27	Rajiv Gandhi Institute of Technology (RGIT)	HDFC Bank, Gharkul Society, Bharat Nagar, Versova, Andheri West, Mumbai, Maharashtra 400053	http://mctrgit.ac.in/
28	Ramrao Adik Institute of Technology (RAIT)	Dr. D. Y. Patil Vidyanagar, Sector 7, Nerul, Navi Mumbai, Maharashtra 400706	https://www.rait.ac.in/
29	Rizvi College of Engineering	Rizvi Complex, Off Carter Road, Bandra West, Mumbai, Maharashtra 400050	https://eng.rizvi.edu.in/
30	Saraswati College of Engineering	Plot No. 46, Sector 5 Near MSEB Sub Station, Kharghar, Navi Mumbai, Maharashtra 410210	https://engineering.saraswatikharghar.edu.in/
31	Sardar Patel College of Engineering (SPCE)	Bhavan's Campus, Munshi Nagar, Andheri West, Mumbai, Maharashtra 400058	http://www.spce.ac.in/
32	Sardar Patel Institute of Technology	Bhavans Campus, Old D N Nagar, Munshi Nagar, Andheri West, Mumbai, Maharashtra 400058	https://www.spit.ac.in/
33	Shah & Anchor Kutchhi Engineering College	Mahavir Education Trust Chowk, W.T Patil Marg, Next To Duke's Company, Chembur, Mumbai, Maharashtra 400088	https://www.shahanchor.com/
34	Shivajirao S Jondhale College of Engineering	Sheel-Kalyan Road, Sonarpada, Post-Manpada, Behind Venkatesh Petrol Pump, Dombivli East, Thane, Maharashtra 421204	https://shivajiraojondhalecoe.org.in/
35	Shree L R Tiwari College of Engineering	Road, Mira Bhayandar, Maharashtra 401107	https://www.slrtce.in/
36	SIES Graduate School of Technology	Sri Chandrasekarendra Saraswati Vidyapuram Sector-V, Nerul, Navi Mumbai, Maharashtra 400706	http://www.siesgst.edu.in/
37	Smt. Indira Gandhi College Of Engineering	Ghansoli, Navi Mumbai, Maharashtra 400701	http://sigce.edu.in/
38	St. Francis Institute of Technology	Sardar Vallabhbhai Patel Rd, Near Bhagwati Hospital, Mount Poinsur, Borivali West, Mumbai, Maharashtra 400103	https://www.sfit.ac.in/
39	Terna Engineering College	Plot No 12, Sector-22, opp. Nerul, Phase 2, Nerul West, Navi Mumbai, 400706	https://ternaengg.ac.in/

Sr.	Name of the College	Address	Website
40	Thadomal Shahani Engineering College	Off Linking Rd, TPS III, Bandra West, Mumbai, Maharashtra 400050	https://tsec.edu/
41	Thakur College of Engineering and Technology	Campus, Shyamnarayan Thakur Marg, Thakur Village, Kandivali East, Mumbai, Maharashtra 400101	https://www.tcetmumbai.in/
42	Universal College of Engineering	Near Bhajansons & Punyadham, Kaman Bhiwandi Road, Thane, Vasai-Virar, 401212	https://universalcollegeofengineering.edu.in/
43	Veermata Jijabai Technological Institute (VJTI)	H R Mahajani Rd, Matunga East, Mumbai, Maharashtra 400019	https://www.vjti.ac.in/
44	Vidyalankar Institute of Technology (VIT)	Vidyalankar College Road, Wadala (East), Mumbai, Maharashtra 400037	https://vit.edu.in/
45	Vidyavardhini College of Engineering and Technology	K.T. Marg, Vasai Road (W), Dist-Palghar, Vasai-Virar, Maharashtra 401202	https://www.vcet.edu.in/
46	Vishwaniketan's Institute of Management Entrepreneurship and Engineering Technology	Survey Nos: 52, 54, 55, 56, 57 Kumbhivali, Tal- Khalapur, Raigad, Maharashtra 410202	http://vishwaniketan.edu.in/
47	VIVA Institute of Technology	Virar(East), Tal-Vasai, Chandansar, Virar, Maharashtra 401303	http://www.viva-technology.org/New/
48	Vivekanand Education Society's Institute of Technology	Complex, Collector's Colony, Chembur, Mumbai, Maharashtra 400074	https://ves.ac.in/vesit/
49	Electronics Engineering and Computer Technology	Dr. R.G.Thadani Marg, Worli, Mumbai, Maharashtra 400018	http://watumull.edu/home/
50	Xavier Institute of Engineering	Opposite S.L.Raheja Hospital, Mahim Causeway, Mahim (West), Mumbai, Maharashtra 400016	https://www.xavierengg.com/
51	Yadavrao Tasgaonkar College Of Engineering & Management	Bhivpuri Road Railway Station, Chandhai, Nasrapur, Karjat, Maharashtra 410201	http://tasgaonkartech.com/
52	YadavraoTasgaonkar Institute of Engineering and Technology (YTIET)	Bhivpuri Road Railway Station, Chandhai, Nasrapur, Karjat, Maharashtra 410201	http://ytiet.com/

Appendix III List of eBook Providers covered in the Study

Sr.	Name of the Publication	Address
Publisher		
1	Cambridge University Press	Sec-1, Service Industries, Shirvane, Nerul, Navi Mumbai 400706
2	Elsevier India Pvt. Ltd.	Elsevier, 402, 7/B, Gopal Krishna Park, H. M. Road, Kalyan (E)
3	IEEE Xplore Digital Library	B-116, Sector - 67, Noida 201 301
4	McGraw Hill Education	604-606, Kailash corporate Lounge, Vikhroli-Hiranandani Link road, Vikhroli
5	Oxford University Press	4B-30-33, 4th floor, Phoenix Paragon Plaza, L.B.S. Marg, Kurla (West), Mumbai, Maharashtra 400070.
6	Pearson India Education Services Pvt. Ltd.	B Wing, Tower 2, One India Bulls Centre, 841, Senapati Bapat Marg, Prabhadevi, Mumbai - 400013
7	Sage Publishing India Pvt. Ltd.	B 1/I-1, Mohan Cooperative Industrial area, Mathura Road, New Delhi, Delhi 110044
8	Springer Verlag	371, Solitaire Park, chakala, andheri (E), Mumbai 400093
9	Taylor and Francis	Taylor and Francis Books India Pvt Ltd., The National Council of YMCAs of India, Gate No. 5/1, Jai Singh Road, New Delhi 110001.
Consortium Vendor		
10	ASTM Digital Library	503, 5th Floor, Thacker Tower, Plot No. 86, Sector 17, Vashi Navi Mumbai, Maharashtra - 400705
11	McGraw Hill Access Engineering	McGraw Hill Education, B-4, Sector-63, Dist. Gautam Budh Nagar, Naidu, UP-201 301
12	METCon Springer	Springer (India) Pvt. Ltd., Unit No.371, Bldg. No. 3, Solitare Corporate Park, Guru Hargovindji Marg, Chakala, Andheri, Mumbai-400093.
Aggregator		
13	EBSCO Information Services Pvt Ltd	EBSCO Information Services India Pvt. Ltd., 301,303, Ansal Chamber-II, 6, Bhikaji Cama Place, New Delhi - 110066.
14	ProQuest	ProQuest, 315 AKD Tower, Sector 14, Gurgaon - 122001 India.
15	Videeya eBooks	Unit No.408 B, 4th floor, D-2, Southern Park, Saket District Centre, Saket, New Delhi-110017

Appendix IV Questionnaire

Acquisition of E-books in Engineering College Libraries:

With a special reference to Mumbai Metropolitan Region

A] LIBRARY PROFILE

1. Name of the College : _____

2. Address : _____

_____

3. Year of Established : _____

4. Type of College : Private / Aided / Autonomous

5. Name of the Librarian : _____

6. Mobile No. : _____

7. Email address : _____

8. Total Students : _____ Total Faculty :_____

9. Courses offered (Multiple choices)

□ Biotechnology	□ Civil	□ Chemical
□ Computer	□ Electrical	□ Electronics
□ Electronics & Telecom.	□ Information Tech.	□ Instrumentation
□ Mechanical	□ Production	□ Others _____

10. Library's Annual Collection

Particular	2010 - 11	2011 - 12	2012 - 13	2013 - 14	2014 - 15	2015 - 16	2016 - 17	Total Upto 31-3-2017
Books								
Print Journals								
E-Journals								
E-Books								
Databases								

11. Library's Annual Budget Expenditure (In Lakhs)

Particular	2010-11	2011-12	2012-13	2013-14	2014-15	2015 -16	2016 -17
Books							
Print Journals							
E-Journals							
E-Books							
Databases							

12. Does library have a Library Advisory Committee?

- □ Yes, Mention Composition : _____ □ No
  _____
  _____
  _____

13. Do you have any **written** Collection Development Policy for books?

- □ Yes □ No

14. What criterion is considered while procuring print books? (Multiple choices)

- □ To fulfill AICTE norms
- □ Requisition by faculty
- □ Suggestion by students
- □ Books recommended in the syllabus by university
- □ Books in demand
- □ Other _____

B] IT Infrastructure

1. Is the library automated?

- □ Yes, mention software _____ □ No

2. Do you have Web OPAC?

- □ Yes □ No

3. Do you use any of the following systems? (Multiple choices)

- □ Barcode □ RFID □ Magnetic Tape □ Other_____

4. How many computer terminals are in the library?

□ 5-10 □ 11-15 □ 16-20

□ 21-25 □ 26-30 □ More than 30

5. Are the terminals connected with LAN?

□ Yes □ No

6. Does library provide Internet facility?

□ Yes □ No **(Filter to Question No. 1 of Section C)**

7. If yes, how many terminals have Internet facility?

□ 5-10 □ 11-15 □ 16-20

□ 21-25 □ 26-30 □ More than 30

8. Does library provides Wi-Fi facility?

□ Yes □ No

C] E-BOOKS

1. Are you aware of the AICTE Norm (2015-2016) : 25% of total number of titles and volumes each can be in the form of e-books?

□ Yes □ No

2. Do you have any **written** Collection Development Policy for procuring e-books?

□ Yes □ No

3. Does library procure e-books?

□ Yes □ No **(Filter to Question No. 21)**

4. What criterion is considered while procuring e-books?

- Mandate by AICTE
- Mandate by AICTE + need-Demand based
- Need-Demand based
- Other _____

5. What are the factors influencing the procurement of e-books. (Multiple choices)

- Absence of standard business/pricing models for e-books
- Annual maintenance charge by the publisher/aggregator
- Availability of funds
- Availability of required titles in e-books
- Cost-effectiveness of e-books
- Demand from the users (students, faculty & staff)
- Differences in licensing agreement policy
- IT infrastructure of the library
- Provision for procurement of e-books in last five years
- Support of college authorities
- Technological acquaintance of the librarian
- Others_____

6. Mention the e-books subscribed along with the numbers. (Multiple choices)

- McGraw Hill Access Engineering package
- IEEE e-books_____
- Springer_____
- Elsevier_____
- Pearson_____
- Cengage_____
- Cambridge University Press_____
- EBSCo_____
- METCON _____
- Oxford _____
- PennWell_____
- Others_____

7. Which disciplines e-books are procured by the library? (Multiple choices)

- Computer & Information Technology
- Electrical &Electronics
- Telecommunication
- Mechanical
- Civil
- Biotechnology
- Other_____

8. Which category of e-books is offered by the library? (Multiple choices)

- Textbooks
- Reference books
- General books
- Other_____

9. Which access model of eBooks is procured?

- Perpetual
- Subscription
- Perpetual + Subscription

10. Which business/pricing model of eBooks is procured?

- Pick & Choose
- Subject wise (eg.: Computer, Electronics, Mechanical, etc.)
- Subject wise + Pick & Choose
- Discipline package (eg.:Engineering, Management, Medical, etc.)
- Discipline +Pick & Choose
- Year wise
- AICTE-INDEST Package
- Other_____

11. Which license model is preferred while procuring eBooks?

- Single user
- Multiple user
- Both
- Other_____

12. Does library have dedicated e-book readers?

- Yes, Mention Kindle / Kobo / Nook / other_____
- No

13. Which device is used for reading e-books? (Multiple choices)

- E-book reader
- Tablet
- Laptop
- Computer/Desktop
- Smartphone
- Other _____

14. What is the preferred e-book format? (Multiple choices)

- HTML
- PDF
- ePub
- Dedicated format of the device
- Don't Know
- Other_____

15. What is the current percentage of annual budget used for e-books?

1 to 5% 6 to 10% 11 to 15% 16 to 20% More than 20%

16. Do you expect an increase of budget for e-books in following years?

Yes No Don't Know

17. Do you inform users regarding the availability of e-books?

Yes No

18. Do you provide training to users for using e-books?

Yes No Not required

19. Are difficulties faced by the users while reading e-books?

Yes No Don't Know

20. How often are the difficulties faced by the users?

Very Often Often Sometimes Rarely Never

Filter to Question No. 1 of section D.

21. State the reason/s for not procuring e-books? (Multiple choices)

- Complicated handling and maintenance
- Inadequate IT infrastructure
- Lack of awareness
- Lack of demand
- Lack of funds
- Lack of suitable access model (e.g. Perpetual, subscription, etc.)

- Lack of suitable business model (e.g. discipline, year wise, pick &choose, etc.)
- Lack of suitable license model (e.g. Single, multiple, concurrent, etc.)
- Lack of support from college authorities
- Non availability of required titles in eBook
- Not cost effective
- So far, e-books were not considered as a part of the collection by AICTE
- Other_____

22. Do you plan to procure e-books in near future?

- Yes
- No
- Don't Know

D] OPINION ABOUT E-BOOKS

1. Do you feel it is important for libraries to offer e-books?

- Yes
- No
- Don't Know

2. What are the advantages of e-books over print books? (Multiple choices)

- Instant access
- Portable
- Searchable
- 24/7 access
- Simultaneous access
- Multimedia features
- Can highlight text
- Take notes
- Easy sharing
- No repairs required
- Cannot be lost
- Cannot be defaced / mutilated
- Environment friendly
- Other_____

3. What are the disadvantages of e-books over print books? (Multiple choices)

- Costly
- Not user-friendly
- Eye strains' while reading
- Variety of devices are available
- Rapid change in technology
- Security and maintenance
- Other_____

4. Do you think e-book licensing terms restricts libraries to stock e-books?

□ Yes □ No □ Don't Know

5. Do you think an e-book business/pricing model restricts libraries to stock e-books?

□ Yes □ No □ Don't Know

6. Do you think e-book accessing terms restricts libraries to stock e-books?

□ Yes □ No □ Don't Know

7. Do you think e-books are cost effective?

□ Yes □ No □ Don't Know

8. Do you think users still prefer to read print books?

□ Yes □ No □ Don't Know

9. Do you think demand for e-books will increase in the near future?

□ Yes □ No □ Don't Know

10. Do you think E-books are threat to print books?

□ Yes □ No □ Don't Know

11. Are you acquainted with the process of procurement of e-books? If yes, mention.

□ Yes, Mention:_____ □ No
_____
_____
_____

12. Any other comment you would like to give about e-books.

_____
_____

THANK YOU!

Appendix V Interaction Outline with eBook Provider

1. Name of the Publication:_____

2. Name of the Publisher's Representative:_____

3. Designation:_____

4. Address & Contact No.:_____

_____

5. Email address:_____

6. Year of establishment of Publication:_____

7. Titles in Print till date:_____

8. Mention the year of E-book Publication has been initiated:_____

9. No. of E-book published as on July 2015:_____

10. Print equivalents of e-books:

□ 1 to 10% □ 11 to 20% □ 21 to 30% □ 31 to 40% □ 41 to 50%

□ 51 to 60% □ 61 to 70% □ 71 to 80% □ 81 to 90% □ 91 to 100%

11. If less than 100%, do you expect increase in % of print equivalents of e-books?

□ Yes □ No □ Don’t Know

12. If less than 100%, when do you expect 100% print equivalents of e-books?

□ 1 to 2 years □ 3 to 5 years □ 6 to 7 years
□ 8 to 10 Years □ Can't Predict

13. Criteria decided for publishing e-books of Print books

□ Maximum sale of a book
□ Least sale book
□ Reference book
□ Textbook
□ Particular disciplines
□ Other_____

14. Mention availability of E-books in various disciplines

- Engineering
- Management
- Architecture
- Natural sciences
- Technology
- Other_____

15. Mention availability of E-books in various subjects of engineering discipline

- Computer & Information Technology
- Electrical & Electronics
- Telecommunication
- Mechanical
- Civil
- Biotechnology
- Other_____

16. Mention various Purchases model involved in procuring E-books

- Annual Subscription
- Perpetual access
- Both
- Other_____

17. Mention different Business model offered for procuring of E-books

- Pick & Choose
- Discipline Package
- Discipline + Pick & Choose
- Subject Package
- Subject + Pick & Choose
- Other_____

18. Minimum no. of e-books can be purchased is _____

19. Minimum purchase order should be of _____

20. Mention various Access model offered

- Cloud service with User/ID
- Cloud service with IP based access
- Other_____

21. Do you provide remote access login

- Athens login with extra charge_____
- Athens login free
- Shibboleth login with extra charge_____
- Shibboleth login free
- Virtual Pin Network
- Institution login
- EZproxy
- Other_____

22. Mention the Platform used to provide access

- Publishers website
- Other_____

23. Mention Licensing Agreement policy offered

- Single user
- Multiple user
- Other_____

24. Do you charge annual maintenance fee?

- Yes _____
- No

25. Do you offer waiving off the annual maintenance fee if any new e-book is purchased?

- Yes , how many e-books per year or what amount purchase per year_____
- No

26. In which format e-books are offered?

- HTML
- PDF
- ePub
- Dedicated format of the device (AZW, Lit, Mobi, KF8, etc.)
- Don't Know
- Other_____

27. Features provided in E-books

- Can be read on any e-book reader : Kindle / Nook / Kobo / _____
- Reader for Laptops / Computer / Tablet
- Highlighting
- Printing : few pages_____ / few chapters _____ / Whole book

- Downloading : few pages_____ / few chapters _____ / Whole book
- Take notes
- Multimedia features
- Facility to interact with author of an eBook
- Other_____

28. Can one expect further negotiation/offer? _____

29. Cost of e-book compared with it print equivalent is

- More than print
- Equal with Print
- Less than print
- Other____

30. Major factors restricting libraries procuring e-books?

- Lack of funds
- Lack of demand from users
- Lack of infrastructure
- Not cost effective
- Other _____

31. Mention different sources of E-books for procurement

- Publisher's website
- Marketing by representative to prospect customers
- E-book stores: Flipkart / Amazon / Bookadda / _____
- Other_____

32. Print books are still preferred as compared to e-books : Give your opinion?

- Yes
- No
- Don’t Know

33. Do you think that demand for e-books will increase in near future?

- Yes
- No
- Don’t Know

34. Request for last two years Annual report of Publisher.

35. Request for e-book client list of engineering college libraries of Mumbai city.