CHAPTER 1

Introduction

Introduction:

Humanity has progressed from agricultural revolution to the industrial revolution and is now moving to an information revolution. It is this awesome computing power at continuously falling prices and the computers being networked over global telecom highways that is leading to the use of Information Technology in every sector of human activity be it communication, banking, trading, learning and teaching, entertainment, socializing, government, management and library. Just as machines have extended man's mechanical power and his convenience and comfort, Information Technology as commonly posturized by computers, is extending man's mind or brain or intellectual power. The term information technology has ballooned to encompass many aspects of computing and technology, and the term is more recognizable than ever before.

The advent of information technology and exponential growth of knowledge have strongly influenced the dissemination and storing media to undergo a sea change in the second half of the 20th century. In the process the world has shrunked into a global village. Many reasons are ascribed for this change. Firstly the localization of education and multi directional research output, disappearing borders between different disciplines. Secondly technological innovations influencing the global connectivity through information technology. As a consequence of this the concept of virtual library started gaining momentum. Emergence of Internet increased the use of web-based resources and services. This situation has considerably enforced the print media transform into electronic media. Thirdly recent economic and political developments have caused the fluctuation in the prices of knowledge packages and services.
Path breaking research and innovations:

Globalization has brought about integration of production and investment decisions, breakdown of trading and investment barriers, truly global companies with a large capital base, sharing of international trade, and heightened mobility. The ongoing process of globalization has influenced all the sectors of economy including the agriculture sector. Globalization has offered enormous opportunities but also threats to communities that are not adequately prepared to face its challenges. It has created turbulence, uncertainty, competitiveness, need for adaptation to change and timely adoption and absorption of technologies. As the world is globalizing, a global knowledge and information society is emerging, spreading all regions. Knowledge and information have become significant factors for production of goods and services. They affect the division of labour, determine the competitiveness of economies and corporations, generate new growth patterns and in the process spawn new products, jobs and livelihoods.

Information Technology devices like microprocessors are becoming mass appliances from pace makers for the heart, hearing aids, and efficiency enhancers in automobile engines and devices to steer space vehicles on the moon. Technology is an enabler for more effectively managing the business, but does not solve the problem unless it is tied directly to business and governance objectives. There is an urgent need for IT in underdeveloped areas where access to even the smallest bits of knowledge can have far-reaching, long term effects. The use of technology has a great many effects; these may be separated into intended effects and unintended effects. The implementation of technology influences the values of a society by changing expectations and realities. Technology, throughout history, has allowed people to complete more tasks in less time and with less energy. However, work has continued to be proportional to the amount of energy expended, rather than the quantitative amount of information or material processed.
There had been breath-taking inventions in electronics and photonics, micro-miniaturization, super and mega-scale integration; optical fiber and communication satellite transmissions, electrification and digitization of all information, storage and display devices and the transport of electrified information on worldwide telecommunication networks, increasingly under the control of the sender and the receiver. Information covers voice as in telephony, text as in fax, images as in video and data as between computers. The limitation for transmission and reception of information only from instruments connected to wires and therefore only from particular places, has been dramatically overcome by earth-based cellular mobile, radio telecoms and now by satellite based globe wide mobile systems like the Iridium. In India, government-centered developments since Independence have become obstreperous, taking in the largest fraction of the GDP as taxes and the largest amount of their savings as loans. Government is not confined to its primary role of defense, internal security, justice, primary education, primary health, irrigation and roads, but it encompasses production, industries, services and businesses. It is commonly known that most of government's money is spent very inefficiently and much of it, on the salaries and establishment of the Government servants themselves and yet every service is inefficient. And the delays and the non-transparency and controls breed corruption.

The enormous information available in print sources not only created problems in storing and collection, but also it renders into the paucity of funds allotted for the purchase of books and other materials. Thus it makes the library a weaker organization in dissemination and imparting of information. Hence necessity arose to find a solution to both the problems of cost and space. India is known for the abundance of knowledge from the times immemorial. The literature found in its old texts reflects the know-how of this country’s population. The ever-changing curriculum and the introduction of new subjects every year impose a great demand in the system in general. The inflation has eroded the purchasing power of university libraries. The situation has been
further exacerbated by the need to purchase expensive electronic resources and the static or declining budget allocation to the library. Indian universities need to be given the required scope to enter into the new vistas of the present millennium with a leading edge to higher education and research to achieve a significant contribution to transmission of knowledge and enquiry into the frontiers of science and technology.

The libraries with their traditional activity of extended co-operation set to form library networks with the help of the viable technology. More and more library groups started covering their informal co-operative service to library networks to take care of services with technology applications. Increasing developments in the entire gamut of library profession as well as in computer networking, libraries started playing intermediary role and have caused a shift from a collection based approach to a combination of networked access and more traditional library services. Moreover the paradigm shift from print media to electronic format of the scholarly journals has necessitated the formation of networks of libraries. This has enabled the libraries to inform the users on materials available locally through OPAC and in other libraries through Union catalogues. In addition, libraries started equipping to guide the users to the materials that are published within a specific domain; for example abstract and index databases available online or on CD – ROM and offer services to obtain materials from other locations. Information networking has become important instrument for the development of these services.

**Implications of Information Deluge:**

The phenomenon of information explosion resulted from the rapid advances in all scientific fields has made vital for all scientists to have rapid and easy access to scientific information. However, scientists in developing countries are hampered by the high costs of subscriptions to various journals. Since airmail delivery is prohibitively expensive, the journals that
are received use to be delayed by six to eight months after the publication date thereby hampering the work of scientists even further. Fortunately, the Internet has come to the rescue. Online journals are available immediately after publication anywhere in the world with a few clicks of a mouse. Electronic subscriptions are normally cheaper than print subscriptions. Never the less, the cost to institutions are still extremely high, particularly in view of the fact that any institution has to subscribe to many journals to meet the varied needs of its scientists. In view of this urgent need, it is proposed that all institutions dedicated to the promotion of education and research come together to form an association to subscribe to a core group of international journals, available online, that would benefit all member institutions users community.

A clear distinction can be made among developed and developing nations on the basis of their information richness. There still exists a clear cut east - west and north-south divide among the nations in this aspect. Libraries are repositories of knowledge and knowledge is information in different forms. With the escalating cost of journals and periodicals which are considered carriers of information and knowledge, many libraries have had to cut down the subscription to information sources like journals, databases, etc., thus seriously affecting research and developmental activities.

**Cooperation to Consortia:**

There is sufficient published literature on the topic which indicates that the concept is not new and it refers to “Co-operate, coordination and collaboration between, and amongst, libraries for the purpose of sharing information resources (1). This is mainly because of the following factors;

1. Increase in the output in publication or the information explosion made is practically impossible for any library to fulfill the requirement of its clientele alone.
2. Budget cut became a universal trend and the unjustified increase in the cost of publication especially scientific periodicals made the situation worse.

3. Development of information technology made the transfer of information digitally possible and thus removed the physical barrier of actual transfer of the document.

4. Education, communication and favourable pricing structures are all matters that fall well within the parameters of many types of consortial arrangements,

Libraries - academic, special or public - are main agencies to take information to the end users. The survival and existence of an academic library, its relevance and its suitability to the objectives of the organization it belongs to are totally dependent upon the adoption of latest technology by the libraries. There is no doubt that the information and its retrieval and storage are becoming faster day-by-day, but it should also not be forgotten that it is becoming costlier too. In view of it, libraries require to adopt entrepreneurial approach to the development of library collection and services. Like all other fields and jobs the position of librarian has undergone a dramatic change in the past two decades. Earlier the main task of the librarian was just the material selection but now the same has been extended to the creation and maintenance of web sites, teaching specific references, fund raising and other tasks.

**Library co-operation:**

Co-operation is an essential facet of modern library. Co-operation occurs at many levels, from simple Inter Library Loan (ILL) services and reciprocal access for users, to more direct resource sharing and joint storage facilities, to co-operative collection development and joint licensing agreements with vendors and publishers. These co-operative activities are
becoming increasingly important for service delivery primarily because of the ever expanding availability of electronic data, improvements in telecommunications and rising costs associated with the acquisition of library materials.

``Co-operation'' is the word one most often encounters in library literature when reading about joint projects between libraries. Occasionally the word ``co-ordination'' appears, and recently a few authors employed the word ``collaboration''. The terms are generally used synonymously; however, researchers examining joint venture activities among the non-profit sector organizations view each term as representing a different level of activity.

The term cooperation describes the joint action of two or more parties for mutual benefit. Cooperation among libraries is a term with several meanings. Cooperation can be used as a synonym for system, association, consortium or even network. Libraries can cooperate in exchanging cataloging records, in building complementary collections, in exchanging library materials by interlibrary loan and document delivery services, in joint purchasing of library materials or automated systems, in providing services to each other’s’ readers, etc. Cooperation can consist of voluntary agreements among libraries, or it can be imposed on libraries by library laws or by responsible ministries that fund libraries. It is essential that the participant libraries be willing to work together toward common goals. The purpose of cooperation among libraries is for better availability of materials and services to users and offering those and additional services at the same or lower costs.

Resource Sharing:

Due to spread of information sources available in various forms and financial constraints it has become difficult task for libraries to satisfy their users’ needs. However, resource sharing can overcome the problems of information explosion, ever changing users’ needs, shrinking library budgets
and currency devaluations, to some extent. The stake holders of Library need to explore options to extend users’ access to information sources by forming partnerships with other local libraries having similar collections. With these collaborative arrangements patrons are enabled to access resources otherwise out of their reach. Every participating institution is required to contribute in the network of their extended libraries’ family and do not operate in isolation. It is widely acknowledged that no library, no matter how large and well-funded it is, can be self-sufficient in meeting its users’ demands. Hence modern librarianship is not possible without cooperation between libraries. Libraries working under effective collaborative initiatives in developed countries have achieved tremendous success compared to libraries in developing countries. There is a growing need for libraries in developing countries to redefine their resource sharing strategies so as to benefit from library collaboration that can result in a more effective means of meeting the needs of their library users.

In olden days printed materials resource sharing is practiced. Two or more participating libraries issue their catalogues and union lists of periodicals with archival holdings. The participating libraries also publish union lists. On the basis of these lists of holdings, they share their resources through interlibrary loan arrangements. Gradually Libraries started making use of information and communication technology to further enhance resource sharing initiatives. The advent of electronic formats has increased both the ease and efficiency of finding and producing virtual scholarly documents. This equips libraries to share their information sources to greater extent.

**Convergence of Technology**

The convergence of computing and communication technologies is now impacting significantly on the way in which information is created, managed and used. The library community is beginning to respond to these changes, to improve its own operations and to continue to supply services of relevance to
its users. It has to cope with increased diversity of user requirements, viz., delivery media, information providers, pricing arrangements etc., with suppliers.

Technological convergence is the process by which existing technologies merge into new forms that bring together different types of media and applications. New devices and technology usually handle one medium or accomplish some basic tasks; through technological convergence, devices can interact with a wider array of media types. For example, a new type of media storage often requires new players that only play that format. As the technology advances, however, new models might include additional features like the ability to interface with more devices or play other types of media

The evolution of a hierarchical architecture for integrating natural and human sciences across many scales, dimensions, and data modalities will be required. Half a millennium ago, Renaissance leaders were masters of several fields simultaneously. Today, however, specialization has splintered the arts and engineering, and no one can master more than a tiny fragment of human creativity. The sciences have reached a watershed at which they must unify if they are to continue to advance rapidly. Convergence of the sciences can initiate a new renaissance, embodying a holistic view of technology based on transformative tools.

Co-operation in terms of resource sharing and collection development is one way to satisfy this demand, whether in terms of users' wants or their needs. On the one hand, the universe of information is continuing to expand exponentially, whether traditional publishing, electronic information or Internet resources. These materials never cost less, as libraries are acutely aware. In fact, the increases in costs of subscriptions, database access, and quality publications make well-funded libraries economically disadvantaged in developing countries. Faced with this financial reality, libraries see that co-operation is often the most cost effective response. There seems little doubt, for example, that it is often cheaper for libraries to
obtain individual journal articles on inter-library loan than to subscribe to the journals themselves.

The logic that co-operation helps to achieve these two key aims, yet there are many who continue to resist the reality. Evans, in the third edition of Developing Library and Information Center Collections, deals at length the possible barriers to cooperation under six headings:

1. Institutional;
2. Legal, political and administrative;
3. Technological;
4. Physical;
5. Human and

**Barriers of Library Co-operation:**

These impediments present an unrealistically pessimistic view and tend to give minor problems the same level of significance as major barriers. In addition to the above, there are four major barriers to effective co-operative ventures:

1. Desire for autonomy;
2. Competitive environment;
3. Changing institutional focus;

In many libraries it seems that there is a lack of partial will to succeed in a co-operative activity beyond the most rudimentary because of an underlying desire or need for each library sector or even individual library to remain autonomous, for instance, where administrative realities do not permit the three main library sectors to engage in much meaningful interaction at present (3). This is a powerful reality based in part on the premise that what one has paid for owning and also control; the corollary is that, if one is not the owner, then one cannot control the resource.
These barriers to co-operation are more than matched, by factors that facilitate the development of effective co-operative arrangements. The unending inflationary spiral in the cost of library materials, as already indicated, is probably the principal factor in favour of co-operation. This is accompanied by increased output by publishers, and the escalating introduction of new or improved multimedia formats. Costs and volume will continue to be the principal motivators that push libraries into co-operative arrangements.

**Emergence of Consortia:**

A Co-operative arrangement among groups or institutions is known as library consortia. The term consortium has been defined as “Cooperative arrangement among groups or institutions or libraries”. According to Oxford English Dictionary (4), Consortium means temporary co-operation of a number of powers, companies etc. for a common purpose. It is an association of similar type of organizations / institutions who are engaged for producing and servicing the common things for providing services for a specific purpose of its users. In the context of library, consortium is communities of two or more information agencies that have formally agreed to coordinate co-operate or consolidates certain functions to achieve mutual objectives. It is a joint venture of any group of libraries to fulfill the common goal. Moving from print to digital is essential for libraries to provide the most up-to-date scholarly resources for users. The role of academic libraries is to provide access to information and research Fair and balanced copyright laws are an essential component in providing access to knowledge a consortium provides an effective mechanism for members to share knowledge and develop new skills, especially when faced with limited financial resources and poor infrastructure.

Consortia may be formed on a local, regional, national, international basis; on a functional or format basis; or on a subject basis. Majority of the libraries particularly in developing countries are thinking today about the
cooperative purchasing for any group of libraries, consortia should be formed and are often useful for establishing a formal structure regarding resource sharing with formal agreement for each participant library. In this method of cooperative collection development of each and every participant library can easily access to specific collections. Many academic library consortia were created as part of larger academic cooperative groups, where the universities included libraries in a larger agreement between two or more institutions.

Consortia are commonly formed to increase the purchasing power of the collaborating institutions to expand the resource availability and to offer automated services. The phenomenon of group of libraries coming together willingly and buying e–information is gaining importance since a decade. This new scenario along with new forms of selling and purchasing information has led to new pricing models. Publishers and vendors / aggregators find it convenient to address consortia matters collectively rather than dealing with individually. During the last few years print editions of journals have been converted into e-editions and new ones are emerging in e- form and all are available for subscription with additional costs for e – access. Due to exorbitant costs of e- journals, librarians are forced to create that negotiated bulk discount with publishers and publishers are willing to promote sale of their products under consortia agreements.

UGC – INFLIBNET – INFONET Movement:

INFLIBNET is a computer communication network of libraries and bibliographical information centers. It is a co-operative network programme for pooling, sharing and optimization of resources, facilities and services of Library and Information Centers in the University system as well as in the R&D complex. It provides access to student’s academics and researchers in rendering in various information and documentation services

Technology is a driving force in the present education systems. University Grants Commission has launched an ambitious programme to bring
about a qualitative change in the academic infrastructure, especially for higher education. Under this initiative UGC is modernizing the University Campuses with State of the art Campus wide Networks and setting up its own nationwide communication network named UGC-INFONET.

In the field of traditional subjects of arts and humanities as well as in pure sciences, applied physics and chemistry, mathematics and in areas of technology, the universities and higher institutes have been playing a leading role to transform the country into industrialized countries. The ushering of green revolution and tremendous progress in dairy development on one hand; on the other hand, its development of space technology, production and launching of indigenous satellites, development of peaceful nuclear energy have brought it into the forefront of technologically advanced nations to which a large number of developing countries looks for training and guidance. The UGC-INFONET E-journals Consortium effort is a land mark in the history of higher education with access to more than 4000 full text electronic journals for the first time and it is expected to bring remarkable change in the academic set with the availability of access to scholars and academicians right on to their desktop. The Consortium provides current as well as archival access to more than 7000+ core and peer-reviewed journals and 10 bibliographic databases from 26 publishers and aggregators in different disciplines.(5)

Cost Effectiveness and Benefit analysis:

Efficiency, effectiveness and benefit are the three important things considered in the context of economics of information. Efficiency in the context of the library is how well things are done in all perspective. The value lies in the delivery of service which depends on the value of what is being delivered. The easiest way is to determine the value of information is in terms of monetary gains resulting from access to right information at the right time. Apart from this the value can be the social, political and attitudinal changes the information can bring in an individual or society. Further the value of
information may vary from time to time. The value of information is realized with its use. Generally, cost and price are used interchangeably. The cost is what it costs to do something; whereas, price is a matter of strategic decision. In a ‘for-profit’ situation, the price presumably, with is higher than the cost. In another kind of situation, it can be lower than the cost, if one can figure out how to make up the difference between the cost and price. This can happen in a ‘not–for–profit’ organization. Cost effectiveness analysis is a technique for selecting among competing wants wherever resources are limited. This concept was developed in the military sector, and was first applied to health care in the mid-1960s.

It is a systematic comparison between the cost of carrying out a service or activity and the value of that service or activity quantified as far as possible, all costs and effectiveness being taken into account. It’s a method of finding either the cheapest means of accomplishing a defined objective or the maximum value from a given expenditure. Lancaster (6) resorted to cost effectiveness as one of the criteria for the evaluation of information dissemination and retrieval system. It can be calculated when objective and criteria that can assess the extent of these objectives are being achieved and clearly defined. Cost effectiveness facilitates comparisons across programmes alternatives that share the same objective as well as comparison with status quo to determine the least cost method of attaining the outcome.

Need for the Study:

Cost-effectiveness is a widely used but imprecise term that means different things to various users. It is a method designed to assess the comparative impacts of expenditures on different institutions that provide for information to users cost effective analysis assesses the advantages and disadvantages of alternative interventions to examine the inevitable trade-offs in resource allocation. Even though the definition is seemingly straightforward, cost effective analysis is deceptively difficult to apply.
The concept of cost-effectiveness analysis is now increasing day by day and applied to all the areas of the library. Beside, welfare activity libraries also use the resources of the universities and also see the associated cost and benefits to the universities. The concept of cost effectiveness analysis has now starts taking practical shape in these days. Another problem is that by definition, cost-effectiveness analysis presupposes knowledge regarding the overall effectiveness of a given library consortium, which is often not known. This problem plagues many areas of library consortium,

Cost-effectiveness analysis involves an assessment of both cost and effectiveness. The distribution of each need to be understood. A cost-effectiveness analysis is only as valid as its underlying measures of effectiveness and cost. However, the methods to make these assessments vary considerably. There are standards for cost-effectiveness, but at times, perfectly adhering to these standards is not realistic, and compromises are often made that may be entirely scientifically legitimate.

Cost-effectiveness is, by nature, incremental. Thus, it is necessary to look at the added costs compared with a control group. Selection of the appropriate control group is a challenge itself. At times, the appropriate control is placebo, and at other times, it is active utility of information; the appropriate control is dependent on the consortia question being asked. However, when cost-effectiveness analysis is conducted using data from a library consortium, the selection of the user group will not be a decision that the analyst can affect.

**Evaluation of Cost effectiveness process:**

The evaluation of cost effectiveness is possible only with prior knowledge of performance and the cost of the system. Cost effectiveness shows whether performance can be improved at an increased cost or at no cost or whether costs can be reduced without unduly effecting performance. In any case, it is desirable to define a unit of cost that can be the search profile or the
retrieved reference. However, the most suitable unit of cost is the relevant references found for the user since this takes the system’s performance into account. Generally speaking cost tends to rise with the number of documents processed and particularly with the exhaustivity of the search process. On the other hand, cost can be reduced by a more rigorous acquisition policy based on an examination of the distribution of sources among the retrieved references. As regards the procedures are concerned, one possibility is to recognize the service, either by separating search activities from the other functions of the information unit or on the contrary by seeing that they are effectively integrated. Another is to cut down the time spent on discussing queries with the user or on screening the results.

It is also possible to analyze clerical operations in order to identify the main causes of error such as in the transportation of numbers or intermediate data. Equipment costs generally also include the cost of installation, depreciation and utilization taking into account the type of operation and the type of product the equipment makes possible. For example, a system giving access to abstracts can tolerate a lower precision ratio because the selection of relevant references is much quicker and easier to handle than in the case of a system that provides citations only. It usually transpires that the same performance objective can be attained by different means and accordingly the least expensive should be chosen.

The UGC INFONET e-journals Consortium can be available to the user of University Library only when University library has subscribed for the same. Many e-journals on several disciplines are available over this consortium. The cost effectiveness of its accession is very cheap and there are seldom attempts that try to find out the working and the financial benefits, like management of resources even with deficit financing and management of space to store in print media and hence the need for accessing through consortium. To examine the benefits of accessing e-journal to the University Library, the study based on research helps in India’s socio-economic development as the consortium
related information is available cheap. Thus, making subjects intelligentsia at accessible prices will prosper nation.

**Statement of the Problem:**

In these days university libraries are facing the problem of deficit budget and spatial limitation to store the books and documents. To overcome this novel idea of e-journal has set in. The UGC INFONET e-journal consortium is a helpful mechanism which provides information through its web acting like pay channel. The users can access only in the University campus. The cost effectiveness of this consortium is intended to throw light on cost per download and per user which is cheaper compared to print journals to probe into the problem of non-mobility of the journal and makes it difficult to access the contents of previous years’ journal for the current year when the subscriber becomes a defaulter. It is a proven fact that in the present context information and time are equated with money.

Universities being members of this grouped information accession and retrieval system can be benefited on account of the investment in the accession of the information on the one hand and proper utilization of space used for accommodating the users to get information. Similarly there is another serious threat to the libraries to preserve the data which is also reduced by the consortium idea. Hence the launching of e journals consortium is a boon to the libraries and librarians who hold the responsibility of information dissemination

Enormous arrangements are made all over to make use of the resources optimally in an institution for the creative and developmental works. In such a situation it is wise on the part of the professionals to analyze the cost effectiveness and benefit of the e resources sponsored by the UGC – INFONET programme. Therefore it was planned to undertake the investigation of the topic entitled “Cost effectiveness of UGC INFONET E-Journals Consortium
Accessed by selected three University Libraries of Karnataka State” is selected for investigation.

Over the period of time, it is observed that the indications repeatedly remind the importance of the cost benefit analysis. A national regulatory body is investing a huge sum of money for the good of higher education and research. A systematic analysis of the cost invested in the form of e - journals subscription has to be critically viewed to take note of the benefits derived from the users the result of such an exercise may provide some insight of the policy makers and educational administrators to make the system more effective and efficient. With this positive hope in mind the present research study is undertaken.

Objectives of the Study:

Cost-effectiveness analysis is an approach that can be used to extend the understanding of efficacy data, which often come from library consortia. Appropriately applied, it is more valuable than comparisons of cost alone, sometimes called cost-minimization studies, which implicitly suggest equivalence of efficacy. One approach to seeking value is through the use of cost-effectiveness analysis. Although this science is now several decades old, it has been refined over the last several years, with increasingly sophisticated statistical and standardized methods

The purpose of is to help library teams make the best possible choices, both initially and on an ongoing basis, about which assistive computer technologies will provide the most appropriate strategies for accommodating patrons with disabilities. It draws extensively on writings about library best practices to ensure that assistive technology implementation is a fully integrated part of your services, not an afterthought.

The major objectives of the research study are;
1. To assess the significance of e – journals in the promotion of education and research.

2. To understand the operating mechanism of the UGC – INFONET digital library consortia.

3. To examine the usage pattern of the e – journals made available in the selected university libraries selected for the study

4. To workout the cost effectiveness of the investment made on e – journals subscription and the benefit derived from the users.

5. To formulate a strategy for promoting the greater understanding of the complexities implied in the access to e – journals by the users.

**Hypothesis:**

1. There is a growing trend in the Universities to exploit the e – resources for education and research.

2. Paucity in understanding the cost effectiveness considering subscription investment is prevailing visibly in the INFONET E – Journals Consortia environment.

**Methodology:**

The present study has adopted the discussion method and observation of the activities with regards to the responses of users in all the three selected university libraries of Karnataka State. The personal visit to the UGC–INFLIBNET–INFONET centre and the interaction and concerned professionals as well as collection of usage data maintained in the centre has substantiated the data required for the research purpose. Documentary sources have helped to a considerable extent to analyses the data and also interpret the critical issues involved in the usage of electronic journals provided in the university libraries. Further documentary sources have also enabled to understand the typical task
of working out the cost effectiveness and to manipulate the cost benefit in all the selected samples.

Other than these approaches active participation in various seminars, conferences workshops, orientation and refresher courses including few arranged learned lectures on various occasions on the related issues of the research topic have sufficiently supported for collecting, organizing and interpreting the data in the proper perspective in the research study.

Limitations of the Study:

The study is mainly limited to the UGC–INFONET e-journals consortium facilities and the cost effectiveness with regards to e–journals usage data in the three libraries of Bangalore University, Karnataka University, and Gulbarga University during the period 2004 to 2009.

Profiles of the Three University

Karnatak University S.S. Basavanal Library

The Bombay legislature of the erstwhile Bombay Presidency established the Karnatak University through the Karnatak University Act 1949. It became a statutory University in 1950. The jurisdiction of the University extends to Dharwad, Gadag, Haveri and Uttar Kannada districts with establishment of two independent universities namely Gulbarga University and Rani Chennamma University, Belgaum. The university is offering courses in the faculties of Arts, Commerce, Education, Law, Management, Science and Technology and Social Sciences. There are 43 PG Departments, more than 250 teachers and 5000 students (PG, M. Phil., Ph.D.). The girl students constitute more than 50% of the total strength, including PG Diploma, M. Phil. and Ph.D. courses. 6% of the students are from outside the state. The university library came into being in 1950, with the first installment of 10,000 books and back volumes of periodicals were purchased and housed in some rooms of the main building of
the Government Training College for men in the city. It started serving the readers in October 1951. The library shifted further to the present independent building in August 1981. Prof. S.S. Basavanal Library, Karnatak University devotes itself to the university’s mission of teaching, research and service. The academic community of the university is acclaimed as an outstanding example of information literate and intellectually vibrant community, apart from this library serves the nationwide scholarly community.

The library collection includes journals, reference, special collection, reports, standards, theses and dissertations, maps and microforms, audio-video cassettes and CD’s. Now the library has a total collection of over 4,00,000 books comprising 6856 theses and dissertations, 64,929 books received as donations, 44,700 periodicals bound volumes, 250 microforms, 30,000 UNO publications etc. It is currently subscribing over 400 Indian journals. The University has been provided with ERNET connectivity under the UGC INFONET programme through VSAT accessing over 4500 E-Journals and other e-resources. Though the optical Fiber has been laid down to enhance the speed of the Internet connectivity with 512 KBPS bandwidth for the benefit of teaching and research community, the sincere efforts are being made to enhance the speed of Internet by increasing its bandwidth. Recently local Area Network (LAN) using SOUL has been established in the library for automating in house activities and services. The university has become member of UGC Infonet and leased line connectivity under UGC Infonet consortia.

**Bangalore University Library**

Bangalore University is located in the Garden City of Bangalore aptly hailed as the "I.T. Capital of India", was established in July 1964 as an off shoot of the University of Mysore, primarily to include institutions of higher learning located in the metropolitan city of Bangalore and the districts of Bangalore, Kolar and Tumkur, which eventually became a separate university. Initially, the two premier colleges of the city, the Central College (CC) and the
University Visvesvaraya College of Engineering (UVCE) formed the nucleus of Bangalore University. Since 1964, Bangalore University has grown both in size and strength to include a large number of affiliated colleges, P.G. Centers with a rich diversity of programme options. In consonance with this expansion, in 1973, the University moved into a new campus named 'Jnana Bharath' (JB) located on a sprawling 1100 acres of land and shifted many of its post graduate departments to this newly established campus. The University has also established Gandhi Bhavan, Dr. B.R. Ambedkar Study and Research Centre, and Centre for Study of Social Exclusion and Inclusive policy and also has established schools of Biological Sciences, Social Sciences and Business Studies.

Academically, the University is structured into six faculties- Arts, Science, Commerce & Management, Education, Law and Engineering. It has 43 Post Graduate Departments, One post graduate Centre at Kolar, (Started during 1994-95), three constituent colleges, 665 affiliated colleges (of which 115 have PG Courses) and several other Centres and Directorates of higher learning and research under its purview. At present, the University offers 50 Post Graduate Courses and Employment Oriented Diploma and Certificate Courses. The University Library was established in 1966 and this shifted to the Jnana Bharath Campus in the year. The Library building at Jnana Bharath Campus has Stack room storing 1.5 lakhs of books for Circulation, Reference Section Storing 35000 Reference and Text books and the Periodical Section holding more than 200 current periodicals and 50,000 book volumes of Periodicals. Access to- Electronic Journals and Databases on campus and Remote Access. The library provides the services like Browsing and Reading facility. CD-ROM Search Service,. Document Delivery Services,. E-Mail Services,. Inter Library Loan,. Internet Access, Reference Service, Referral Service and Photocopy Service
Gulbarga University Library

Conversion of the post-graduation centre of Karnataka University, Dharwad at Gulbarga led to establishment of Gulbarga University in 1980. It has jurisdiction of five districts of Gulbarga, Bidar, Raichur, Bellary and Koppal Districts of Hyderabad Karnataka. More than 40 teaching departments and post graduate centres at Bidar, Raichur and Basavakalyan are under the control of this university. More that about 3500 P.G. students are enrolled every year for various post-graduates, M.Phil, Ph.D programmes in various disciplines. There are 350 colleges affiliated to this university which enroll graduate/diploma courses in arts, fine arts, music, social sciences science and technology, commerce, education and law.

The Gulbarga University Library has been providing user focused services by adopting the developments in ICTs to meet the knowledge management needs of the academics. The library has a collection of 2, 50,000 books, 8700 back volumes and 190 current journals with ten professionals and more than thirty nonprofessional staff. Gulbarga University Library is housed in a new building with all ICT infrastructures. The collections and services are widespread and meet the needs of almost all users visiting the library. The Virtual Learning Resource Centre provides computational services to various academic and administrative departments of Gulbarga University and imparts training programme on computer related areas and its applications to faculty, students, researchers and administrative staff of Gulbarga University Local Area Network (LAN) for automating in-house activities and services of the library using Libsys, CD-ROM databases, UGC INFONET e-resources, Internet and e-document delivery, reprographic, SC/ST Book Bank, User instruction, communication skills, career planning, training and research repository are a few unique facilities provided by the Library. To keep pace with time to meet the expectations of the users, Virtual Learning Resource Centre and Digital Library (VLRC and DL) supported by UGC, New Delhi and
Infosys Foundation, Bangalore has been established with the State–of–the-Art computer facilities 155 workstations, three Mainframe DELL servers and CD NAS server to provide excellent access to Internet, CD-ROM Databases and e-learning packages under networked environ that provides access to sixteen CD-ROM databases (Current + Archival), 5500 dissertation/theses and technical reports, and access to 10,000 e-Journals and databases with 8 gbps leased line connectivity under UGC Infonet consortia.

**Chapterization:**

This research study is divided into seven chapters

Chapter one provides the background of the topic of study, need for the study, objectives and hypothesis including methodology, limitations and chapterisation.

Chapter two deals with review of related literature covering all the pertinent aspects of the research problem.

Chapter three gives a historical perspective of the library consortia movement.

Chapter four presents the origin, growth and development of the UGC sponsored INFLIBNET in general and INFONET programme in particular.

Chapter five gives the panoramic picture of the UGC INFONET programme as well as its multifaceted products and services including the growing participation of member libraries of changing circumstances.

Chapter six covers brief outline, significance of cost effectiveness as well as the critical analysis of the e - journals usage data collected from the selected three universities in the Karnataka State

Chapter seven presents the findings of the study based on the analysis of the collected data along with the possible suggestions and end with conclusion.
At the end of the comprehensive bibliography of the literature on the research topic (Both documents, electronic resources, websites etc.) is enlisted.

Conclusion:

Information has become the most important asset in today’s fast and dynamic world, but still many users do not have access to the diverse media of recorded information. It is also becoming almost impossible for any single library to preserve all types of materials and cater to all types of needs of its users/ readers without resource sharing and online facilities. All libraries have limitations in terms of money, space and staff and the same can lead to the frustration of library users. So aspects like information explosion, literature scatter, rising prices, technological evolution and inelastic budgets are the major hurdles in the way of collection development and hence have given rise to collaborative collection development(7). Collaborative collection development in libraries opens up completely new opportunities to bridge the gap between big and small libraries. With the advancement of technology more than one library’s collection can be shared with their mutual cooperation and online facilities. Thus readers can approach the reading material of their interest not available in their own library.

Basically Consortia, which involve groups of libraries cooperating for mutual benefit. Lack of vision hampers planning wisely for the future. In a time of rapid change, libraries and consortia must have a vision of what is truly important and essential in the provision of services to faculty and students. Fortunately for independent academic libraries in most states and regions, library consortia have made some kind of provisions to incorporate the independent academic libraries into the planning processes.

Libraries in state and independent institutions are increasingly forced to make tough decisions about allocation of resources to electronic databases and printed materials. Libraries in such situations are feeling the
effects of cutbacks in funding from state budgets because of economic downturns and growing demands for state funds in the social services areas of government. Economic lean times also cause libraries in many independent institutions to struggle with static or declining budgets.

It is optly stated by Peters (8) that “ Consortia have become sufficiently prominent players in academic librarianship, publishing, and scholarly communication to warrant such sustained and varied scrutiny”. Given the uncertainty of the current economic downturn, libraries and publishers are both struggling for financial viability. The challenges in successfully negotiating package renewals lead some to wonder whether this consortium’s experience was isolated or whether there were in fact emerging trends in Big Deal negotiations. The Big Deal, referring to a publisher’s offering all or many of their journal titles for a reduced rate as a wholesale bundle, emerged in tandem with the acceptance of electronic journals as the new standard medium. Consortia do not negotiate deals holding a crystal ball, and it is difficult to know how business terms decided upon today will affect members in the long run. What many consortia are learning now is that some of the deals made during better economic times may prove to be less sustainable during an economic downturn.

The present study is one such humble effort to work out the viable solutions for maximizing the utility of e–resources by establishing the cost effectiveness results in the selected universities of Karnataka State.
References