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Journal of Information Technology and Education System

Aims and Scope

Journal of Information Technology and Education System aims to provide a platform for the analysis of the latest theories, applications, and services related to developing, managing, using, and evaluating information technologies in administrative, academic, and research, as well as other educational technologies. Publishing research articles detailing the new uses of technology in education, case studies detailing examples of technology applications in higher education; and in-depth analyses of the latest theories, applications and services in this field. The journal provides wide-ranging and independent coverage of the management, use and integration of information resources and learning technologies.

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Contents

Development of E-Resource Consortia for University and Institutional Libraries in India

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ABSTRACT

ICT has brought the revolutionary changes in the functioning of libraries and information centres. The impact of ICT including WWW and Internet is visible in every walk of life. The libraries are not the exception. Due to electronic publishing, many e-resources in the form of e-journals, e-books and on-line / off-line databases are being published. The academic libraries especially colleges and universities libraries have been procuring these resources for their libraries. Due to escalation in the cost of learning resources both printed and e-resources and financial problems the academic libraries are facing , the consortia models are being adopted and experimented for the procurement and access to e-resources by the colleges and universities. UGC-INFONET Digital Library consortium is one of such initiatives of UGC which has been executed by the INFLIBNET Centre, Gandhinagar , Gujarat for the procurement of e-resources for the member libraries and their utilisation by the academic communities across India. Therefore, it is essential to study and understand the various issues and challenges for managing e-resources in consortia environment and also to examine the usage pattern of the e-resources available under this consortium to evaluate its utility for the university community. In the changing scenario, libraries and librarians will have to play a crucial role in handling conventional and electronic resources. Thus the era of electronic publishing has begun affecting producers, distributors, and library and information centres and users community. The first part of paper describes about the e-resources, its characteristics, advantages, formats and issues for managing e-resources in the university and institutional libraries whereas the second part deals with a brief account of UGC-INFONET E-Journals Consortium, INDEST, FORSA, and other consortia for providing access to scholarly journals to the end users of universities and institutions of higher learning for their R& D activities. All universities which are under the purview of UGC have been provided UGC-INFONET Connectivity and access to scholarly e- Journals and Databases. At the end of the paper some suggestions have also been given for the optimum utilization of e-resources.

Key Words: E-Resources, Consortia, UGC-INFONET Digital Library Consortium, AICTE –INDEST Consortium

Introduction

The Library and Information Centre or Learning Resource Centre has been now transforming from its traditional set up to the computerised and digital library system. Some libraries are still in the phase of transition from traditional to modernized libraries. As the libraries have been transforming from manual to computerised / digital library system, the policies and criteria for collection development of learning resources have been changing very fast since last few decades. There has been paradigm shift in the collection development policies for acquiring printed as well as e-resources (both offline and on-line resources. So therefore, there is need for drafting the new collection development policies for accommodating electronic resources in the library collection. There should be balance between the printed and e-resources for acquiring in the libraries as per the demand of the end users. Now due to changing trends of electronic publishing , many online and offline resources are being published as these resources have great demand from the libraries and users community. The e-resources like e-books and e-journals are popular among the end users for their academic and research activities. Internet and WWW makes e-publishing possible for organisation and dissemination e-resources (Sinha 2014).

The concept Electronic resources are regarded as the mines of information that are explored through modern ICT devices, refined and redesigned and more often stored in the cyber space in the most concrete and compact form and can be accessed simultaneously from infinite points by a great number of audience. The phrase "electronic resources", has broadly been defined as, information accessed by a computer, may be useful as bibliographic guides to potential sources but, as of yet, they infrequently appear as cited references in their own right (Graham, 2003, pp. 18-24). Moreover, e-resources refer to that kind of documents in digital formats which are made available to library users through a computer based information retrieval system.

In the changing scenario, libraries and librarians will have to play a crucial role in handling conventional and electronic resources. Thus the era of electronic publishing has begun affecting producers, distributors, library and Information centres and user community. The ultimate goal of electronic publishing is to provide fast & easy access to the information contained in the objective publications with simple, powerful search and retrieval capabilities. Thus, electronic resources can be used effectively in the context of Dr. S.R. Ranganathan Fourth Law of Library Science "Save the time of user" for many purposes. In the present era, information and communication technology is growing in such way that it is not possible for traditional library system to provide information at a speed comparable to e-resources. Thus, today's libraries have not just remained as the traditional libraries, rather they have developed into an Information Centres which are collecting, organising electronic learning resources/ digital objects to provide access to the end users.

Therefore the aim of the present paper is to discuss the brief account of the emerging trends of e-resources in terms of its needs, advantages, disadvantages, its format, the subscription policies, collection development criteria, policies and guidelines, and consortia approach for accessing to digital/ e-resources in any academic and technical libraries of India. Besides this some the challenges and emerging issues like Copyrights and IPR issues, Digital Rights Management Issues , digitization and preservation for the organisation of e-resources have also been discussed. Some suggestions and recommendations have also been made for effective and optimum utilization of e-resources by the academic community for research and development activities.

EMERGENCE OF ELECTRONIC RESOURCES IN CHANGING ENVIRONMENTS

Knowledge resources are changing from printed to electronic format. As a result many libraries are currently experiencing a fast transition from print to electronic format while developing collection of an academic, Technical/ Special Libraries. The collection development method and practices of acquiring library resources have changed in order to cope with the electronic version publications. The role of library and information professionals also needs to be changed to provide best services to the end users. The Internet has given rise to the development of electronic versions of printed library reading materials like books, journals, report, conference proceedings, monographs etc., which have brought changes in the collection development policies of academic libraries and the role of librarians is vital in the selection and procurement of relevant electronic resources judiciously within limited available finance. The electronic resources can be access over Internet, which may be on the basis of ownership or access right for the journals subscribed. On-line access is available along with subscription with printed volumes. Electronic resources include e-journals, e-books, CD-ROM/ DVD Databases, On-Line Databases etc. There has been a trend in academic libraries for adopting consortia model for accessing to electronic resources over Internet. The consortia approach for subscribing to e-journals and databases has been gaining momentum in India also and different models are being coming up and some are running successfully. These e-journals consortia are, UGC-INFONET E-Journals / Digital Library Consortium, INDEST Consortium, FORSA Consortium, CSIR Consortium and IIM Consortium (Sinha, 2010; Sinha, 2011; Sinha 2014).

CONCEPT OF E- RESOURCES (E-JOURNALS / E-BOOKS/ ONLINE DATABASES)

The concept of e-journals/ e-resources has emerged from 1980's onward which were initially made available in CD-ROM formats and then advent of WWW and Internet has accelerated the publication of electronic version of print journals whose number has been increasing by leaps and down. According to

the statistics published in the Seventh edition of the Directory of Electronic Journals, Newsletter and Academic Discussion Lists in 1997, 1049 e-journals were enlisted which rose to 3,915 in its 2000 edition. Now the numbers would might have crossed 10,000 plus. E-Resources are very important source of information for modern community of the world because e-resources have become preferred source of information for the academic community and researchers. In the age of ICT, the traditional concept of acquiring information is gradually replaced by accessing information on-line. During the last decade, e-resources have become an important component of any academic and technical library's collection which results in drafting new collection development policies for including these resources in library collections. With the growing popularity of E-Resources amongst the academic and research communities, the traditional libraries are gradually migrating towards developing e-resource collection where providing access to information is considered more important than owning it. Many formats of e-resources are coming up which includes e-journals, e-books etc. In the present ICT era and age of instant access to information, it has become necessary to convert valuable printed resources into e-resources for future needs or posterity. Therefore, the creation of e-resources, access and its preservation has become the need of the hour (Sinha 2013).

CONSORTIA APPROACH FOR SUBSCRIBING E-RESOURCES FOR UNIVERSITY / INSTITUTIONAL LIBRARIES FOR RESOURCE SHARING (SINHA, 2011)

Universities and institutions are subscribing the printed as well as e-resources as per their requirements. Due to escalation in the price of journals both printed and e-resources, the universities and institutions are facing financial problems for continuing the subscription of printed and e-resources. In view of problems faced by the universities and institutions, UGC and AICTE and other funding agencies have adopted the concept of consortia for the subscription of e-journals , e-books and online/ offline databases and procured the resources for university/ institutional libraries under their jurisdiction which results in emergence of Indian Consortia for Resource Sharing viz., UGC-IFONET Digital Library Consortium, AICTE-INDEST Consortium, , NISCAIR / CSIR Consortium, FORSA, IIM HELINET Consortia etc. which enables the finding agencies to procure e-resources at affordable cost and distribute among the member libraries. These consortia have been successfully running well and funding agencies and publishers both are in win -win situation. It is expected that this would continue in future also.

Goria (2012) in his paper on “Role of consortia for effective use of e-resources in higher education: a practical approach in Indian libraries” discusses that consortia based access of e-resources has been provided in most of the Indian libraries of higher education and research institutes during last decade.

In consortium mode, users are able to access adequate desired scholarly e-journals in Indian libraries. This paper provides brief overview of popular library consortiums of India and also describes the techniques to increase utilization of the e-resources. Various emerging technologies i.e. RSS feeds, Google Reader, Delicious etc have been demonstrated practically for effective utilization of e-resources with minimum efforts. Findings of this paper highlighted emerging technologies and role of consortia for effective use of e-resources in Indian Libraries.

FEATURES OF LIBRARY CONSORTIA FOR E-RESOURCES SUBSCRIPTION

Following are the features of library consortia for subscribing E-Resources for the University and Institutional Libraries in India:

- To advance library services are provided with an emphasis on access to new E- resources including databases and services offered through the internet and www;
- To increasing inter - library searching at less cost is possible;
- Staff development and communication with quality of service;
- It provides each organizations and institutions with the capacity to share their resources without sacrificing the independence of each member library;
- The crowds of the Consortium libraries enable every member library to support scholarly research for its users;
- Helpful for research and development in application of information communication and technology which improves service and appreciates cost effectiveness;
- It is the supportive task to reduce the cost of purchase consortia. As a result, end users can take benefits of more resources than would be available through one library; and
- Uncertainties in legal issues are handled with more self-confidence.

BENEFITS OF E-RESOURCE CONSORTIA

Some of the important advantages of the library consortium are as following below.

- Best utilization of resources.
- Supportive to provide better library services like CAS and SDI
- Budget Sharing for Technical and training support
- A smaller amount of economy growth.
- Accommodations to build up digital libraries

- Consortia-based subscription to electronic resources provides access to wider number of electronic resources at substantially lower cost;
- Electronic Journals mandate neither library space nor shelling costs nor can they be stolen from the library
- The consortium has been accessible better terms of licenses for use, archival access and preservation of funded electronic resources, which would not have been possible for any single institution; and
- Accessible 24/7/365.

LIMITATIONS / DEMERITS OF LIBRARY CONSORTIA

Along with advantages of subscribing e-resources through consortia, many limitations of the of the library consortia are also available which are given below :

- Official document problems;
- Internet Access ID necessary ;
- Shortage of archiving and back files availability;
- Deficiency of a printed copy of journals;
- Have need of training of staffs in handling electronic documents etc.;
- Consortia oblige fast opening reserves in licensees and information and communication technology; and
- Defective telecommunication links and insufficient bandwidth

LIBRARY CONSORTIA/ E-RESOURCES CONSORTIA INITIATIVES IN INDIA (SINHA, MURTHY AND KUMAR K. 2006; SINHA, 2011A; GORIA, 2012)

In Indian scenario the concept of establishing digital libraries is coming –up. The modern computerized libraries, where all library operation are being carried out by the specialized library application software and suitable hardware and software are applying for creating and using library databases. These libraries are also having traditional collections but they are procuring digital resources in the form of e-journal subscriptions, bibliographical and Full Text Databases in CD-ROM/ DVD –ROM format, Online Databases of specialized subjects. These e-resources can be accessed over the Internet on IP based identification of users. There has been a trend in academic as well as technical / special libraries for adopting consortia model for accessing to electronic resources over Internet. The consortia approach for subscribing to e-journals and databases has been gaining momentum in India also and different

models are being coming up ad some are running successfully. UGC & INFLIBNET and MHRD have taken initiatives to give access of scholarly online journals to the academic community of India by establishing e-journals / Digital Library consortium. These e-journals/ digital library / e-resources consortia are, UGC-INFONET E-Journals / Digital Library Consortium, INDEST Consortium, N-LIST Programme of INFLIBNET-INDEST , FORSA Consortium, CSIR Consortium , DELCON Consortium of DST, Govt. of India and IIM Consortium which are described briefly in the subsequent papras (Sinha, 2011).

Goria (2012) also compares the e-resources available under the following consortia which have been running well in Indian context:

Sr. No.	Name of Consortium	Year of Establishment
1	CeRA (Consortium of e-Resources in Agriculture) (http://cera.jccc.in/)	2007
2	DBT e-Library Consortium (DeLCON) (http://delcon.gov.in/)	2009
3	Defence Research and Development (DRDO) E-Consortium (http://dsl.drdo.gov.in/ejournals/)	2009
4	Electronic Resources in Medicine (ERMED) Consortium (http://www.nmlermed.in/)	2008
5	Forum for Resource Sharing in Astronomy & Astrophysics (FORSA)Consortium (http://ncralib1.ncra.tifr.res.in/library/?q=content/forsa)	1982
6	Health Sciences Library & Information Network (HELINET) Consortium (http://www.rguhs.ac.in)	2003
7	INDEST -AICTE Consortium (http://paniit.iitd.ac.in/indest/)	2003
8	Ministry of Communications & Information Technology (MCIT) Library Consortium (http://mcitconsortium.nic.in/)	2005
9	National Knowledge Resource Consortium (NKRC) (http://www.iiap.res.in/library/CSIR-DST)	2009
10	UGC-INFONET Digital Library Consortium (http://www.inflibnet.ac.in/econ/)	2003
11	National Library and Information Services Infrastructure for Scholarly Content (N-LIST)" (http://nlist.inflibnet.ac.in/)	
12	UGC-DAE Consortiums for Scientific Research Library Consortia (Department of Atomic Energy) (http://www.csr.res.in/index.html)	2003

INFLIBNET CENTRE, GNADHINAGAR FOR UGC-INFONET DIGITAL LIBRARY CONSORTIUM

The University Grants Commission is an autonomous organization working under Ministry of Human Resources and Development (MHRD), Govt. of India. It is established by an act of Parliament in 1956 and working for coordination, determination and maintenance of standards of University education. 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 with its nodal agency INFLIBNET Centre, Gnadhinagar. Information and Library Network Centre is an autonomous Inter-University Centre (IUC) of University Grants Commission (UGC) tangled in making frame for sharing information among academic and research and development organization/institutions. Other areas would be taken up subsequently. The aim of this initiative is to make accessible as many journals as possible to the entire Indian academic community through single point administration and subscriptions. INFLIBNET also has planned to make a parallel beginning with the social sciences/humanity in addition to the above.

The UGC-IINFONET Digital Library Consortium was formally launched in December, 2003 by Honourable Dr. A P J Abdul Kalam, the President of India soon after providing the Internet connectivity to the universities in the year 2003 under the UGC-Infonet programme. The Consortium proved to be a recipe to university libraries which have been discontinuing subscription of scholarly journals because of "Serials Crisis". The term "serials crisis" refers to exponential and continuing increase in subscription cost of scholarly journals. The crisis is a result of rise in cost of journals much faster than the rate of inflation, increase in number of journals and the paucity of funds available to the libraries.

The Consortium provides current as well as archival access to more than 7500+ core and peer-reviewed journals and 10 bibliographic databases from 26 publishers and aggregators in different disciplines. The programme has been implemented in phased manner. In the first phase that began in 2004, access to e-resources was provided to 50 universities who had Internet connectivity under the UGC-INFONET Connectivity programme of the UGC. In the second phase, 50 more universities were added to the programme in the year 2005. So far 209 Universities including 14 National Law schools and central universities that come under the purview of UGC, have been provided differential access to subscribed e-resources. These e-resources covers almost all subject disciplines including arts, humanities, social sciences, physical sciences, chemical Sciences, life sciences, computer sciences, mathematics and statistics, etc. The programme is wholly funded by the UGC and executed by the INFLIBNET (Information and Library Network) Centre, Gndhinagar.

The benefit of subscription to e-resources would also be extended to the colleges, to begin with the College for Potential with Excellence (CPE) and autonomous colleges. The Consortium has also launched its "Associate Membership Programme" wherein private universities and other research organizations are welcomed to join the Consortium for selected e-resources.

UGC-INFONET E-Journals consortium initiative was undertaken by the Indian University Grants Commission (UGC) to facilitate free access to scholarly journals and databases in all fields and disciplines by the research and academic community across the country. All universities who are under the purview of UGC have been provided UGC-INFONET Connectivity and access to scholarly e-Journals and Databases. More than 5,000 scholarly journals and databases were made available during 2004 and this number has increased to more than 5,500 full text e-journals since January 2015. As of May 2014, 292 universities are accessing resources from the programme. The access is based on IP range. This effort has had a noticeable impact on the research and academic community (http://www.inflibnet.ac.in).

ACCESS TO E-RESOURCES UNDER UGC-INFONET DIGITAL LIBRARY CONSORTIUM

Thousands of thousands e-journals are going to be made available for seamless access via campus network very shortly under the UGC-INFONET programme. UGC is also exploring the possibilities of alliances with publishers for adapting a consortia-based approach for e-subscription of journals. Much of the new research publications are also available on the net as freeware, thereby, making quality information accessible to a wider academic scholar base spread across the country at an affordable price (http://www.inflibnet.ac.in/econ/).

No of FT Article Downloads since 2012: 59,744,529

No of Member Institutions: 409

Year	No of Full-text Downloads
2012	1,73,71,890
2013	1,94,04,934
2014	2,18,06,467
2015	11,61,238
Total	5,97,44,529

(Source : http://www.inflibnet.ac.in/econ/stat/v4/)

N-LIST PROGRAMME : A JOINT INITIATIVES OF UGC-INFONET DIGITAL LIBRARY CONSORTIUM , INFLIBNET AND AICTEINDEST CONSORTIUM (SINHA, 2011)

The Project entitled "National Library and Information Services Infrastructure for Scholarly Content (N-LIST)", being jointly executed by the UGC-INFONET Digital Library Consortium, INFLIBNET Centre and the INDEST-AICTE Consortium, IIT Delhi provides for i) cross-subscription to e-resources subscribed by the two Consortia, i.e. subscription to INDEST-AICTE resources for universities and UGCINFONET resources for technical institutions; and ii) access to selected e-resources to colleges. The N-LIST project provides access to e-resources to students, researchers and faculty from colleges and other beneficiary institutions through server(s) installed at the INFLIBNET Centre. The authorized users from colleges can now access e-resources and download articles required by them directly from the publisher's website once they are duly authenticated as authorized users through servers deployed at the INFLIBNET Centre.

It is a joint venture of UGC –INFONET and AICTE-INDEST Consortium for bridging the digital divide to provide the facilities of access to e-resources of INFLIBNET to all members under AICTE-INDST Consortia and also extend facilities of access to e-resources subscribed under AICTE-INDEST Consortia to member universities and 6000 registered colleges of India under INFLIBNET Programme to take the benefit of cross subscription. Due to this initiatives , the publications (e-books, e-journals and on-line databases) which were not available to INFLIBNET members are accessed from the AICTE-INDEST and Vice Versa which may give ample opportunity to the academic community of India to have quality information products for carrying out quality higher learning and research (www.inflibnet.ac.in) .

N-LIST: FOUR COMPONENTS

The project has four distinct components, i.e. i) to subscribe and provide access to selected UGC-INFONET e-resources to technical institutions (IITs, IISc, IISERs and NITs) and monitor its usage; ii) to subscribe and provide access to selected INDEST e-resources to selected universities and monitor its usage; iii) to subscribe and provide access to selected e-resources to 6,000 Govt./ Govt.-aided colleges and monitor its usage; and iv) to act as a Monitoring Agency for colleges and evaluate, promote, impart training and monitor all activities involved in the process of providing effective and efficient access to e-resources to colleges.

The INDEST and UGC-INFONET are jointly responsible for activity listed at i) and ii) above. The

INFLIBNET Centre, Ahmedabad is responsible for activities listed at iii) and iv) above. The INFLIBNET Centre is also responsible for developing and deploying appropriate software tools and techniques for authenticating authorized users.

From Year 2014, NLIST Programme is subsumed under UGC-INFONET Digital Library Consortium as college Component. The colleges (except Agriculture, Engineering, Management, Medical, Pharmacy, Dentistry and Nursing) in India are eligible to get access e-resources under NLIST Programm.

CURRENT STATUS

As on Mar 15 2015, a total number of 4459 colleges have registered themselves with the N-LIST programme including 4054 Govt. / Govt.-aided colleges covered under the section 12 B/2F of UGC Act as well as Non-Aided colleges . Log-in ID and password for accessing e-resources has been sent to the authorized users from these 4054 colleges. All e-resources subscribed for colleges under the N-LIST Project are now accessible to these 4054 colleges through the N-LIST website (http://nlist.inflibnet.ac.in)

MHRD INITIATIVES FOR INDEST- AICTE CONSORTIUM (INDIAN NATIONAL DIGITAL
LIBRARY IN ENGINEERING SCIENCES AND TECHNOLOGY)

The Ministry of Human Resource Development (MHRD), Govt. of India organization a consortium named as “Indian National Digital Library in Science and Technology (INDEST) Consortium”. This consortium was formed based on endorsement made by the assemblage of experts appointed by the Ministry for “Consortia-based Subscription to Electronic Resources for Technical Education System in India”. The Ministry of Human Resource Development (MHRD) has set-up the “Indian National Digital Library in Engineering Sciences and Technology (INDEST) Consortium” on the recommendation made by the Expert Group appointed by the ministry under the chairmanship of Prof. N. Balakrishnan. The Ministry provides funds required for subscription to electronic resources for 38 numbers of institutions including IISc, IITs, NITs, IIMs and a few other centrally-funded Government institutions through the consortium headquarters set-up at the IIT Delhi. Besides, 60 numbers of Government or Government-aided engineering colleges and technical departments in universities have joined the Consortium with financial support from the AICTE. The INDEST-AICTE Consortium is the most ambitious initiative taken so far in the country. Altogether 161 engineering colleges and institutions have already joined the consortium on their own. Recently more than 462 engineering colleges and institutions joined under self-support new scheme (http://paniit.iitd.ac.in/indest/).

Sinha and Deb (2014) conducted a study on Use of E-Resources available under INDEST-AICTE Consortium by the NIT Library users which comprises of faculty members, Research Scholars , UG and PG Students perusing Engineering and Management Courses. Altogether 180 questionnaires were distributed to the respondents and 132 responses were received. The study was conducted during the period February to June 2013. The study shows that most of the respondents are aware of the INDEST-Consortium and are using e-resources, mainly the e-journals, frequently for seeking information. While analyzing data, it has been found that maximum users are using equally printed and electronic resources for their academic purposes. It is interesting to note that majority of users under study prefer e-resources while only a few of them prefer printed resources. Majority of respondents have suggested that the authority should provide adequate Internet Terminals with high speed of bandwidth for optimum utilisation of e-resources available under INDEST –AICTE Consortia.

CSIR LIBRARY CONSORTIA (COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH) E-JOURNALS
CONSORTIUM / NISCAIR CONSORTIUM

NISCAIR is the central organization for developing a "Consortium for CSIR Laboratories for Accessing e-journals". The activity shall range from creation to monitoring of the access facility of scientific periodicals published by leading international institutions.

NATIONAL KNOWLEDGE RESOURCE CONSORTIUM (NKRC)
(http://www.iiap.res.in/library/CSIR-DST)
IIA Library is a member of National Knowledge Resource Consortium which was launched recently. Through this consortium, all the libraries of DST are provided online access to additional journals of various publishers, in addition to the regular subscribed journals of each library. From April 2009 , the following database of journals from different publishers can be accessed online from IIA campus at Bangalore, CREST at Hosakote, Vainu Bappu Observatory at Kavalur, Solar Observatory at Kodaikanal and Indian Astronomical Observatory at Leh & Hanle.

FORSA (FORUM FOR RESOURCE SHARING IN ASTRONOMY AND ASTROPHYSICS)

It was established in 1980s, due to proliferation of information, library professionals working in the Institutes where astronomy was one of the main thrust areas of research felt the need to come together and to form a forum, which can act as a springboard for sharing and exchange of information. The sheer necessity brought all likeminded astronomy librarians in the country together and a first meeting was

held on July 29 1981 at Raman Research Institute, Bangalore and informally launched forum for resource sharing in astronomy and astrophysics FORSA with a vision and mission to share resources held in each library. Since 1989, FORSA members meet every year, in conjunction with Annual Meeting of the Astronomical Society of India. A noteworthy feature of such meetings is that FORSA members interact with the astronomers in the Joint Session, in which developments in library and information handling activities in the field of astronomy/astrophysics are presented and comments from users are solicited to improve and expand library services. At present, there are eleven institute members, under this consortium (http://ncralib1.ncra.tifr.res.in/library/?q=content/forsa).

HELINET (HEALTH SCIENCES LIBRARY & INFORMATION NETWORK)

HELINET is the first medical library consortium launched in the country with an objective of networking the libraries affiliated to the University to promote resource sharing, especially with reference to international medical journals and databases. A Health Sciences Library & Information Network hosted by Rajiv Gandhi University of Health Sciences, Bangalore. The formation and role of HELINET, the first resource sharing network and e-journal consortium in the medical education sector. The health science education in India and the status of IT and Internet access infrastructure in the health science colleges. The Digital Library resources and activities at RGUHS are presented in detail (http://www.rguhs.ac.in).

IIM'S LIBRARY CONSORTIA (THE INDIAN INSTITUTE OF MANAGEMENT)

The year 2000 was a landmark in the history of IIMs, with the formation of the IIM Consortia. IIMK took leadership in the formation of the IIM Consortia, and had the first meeting in Calicut. The objective was to ensure among the IIMs, optimum utilization and enhancement of the resources, and to minimise the expenditure by consortia based subscriptions to the commonly subscribed databases and journals. The idea was to approach publishers of CD-ROM Databases to begin with, as consortia, for better pricing and services. Eventually, other digital databases and journals were also planned to be covered by the programme. The meetings were proved to be very productive and successful. During the first meeting itself, a host of databases were jointly purchased at very competitive prices, and a number of others promised supply of their products at a nominal cost.

In the case of journals, all the six IIMs put together subscribes to over 2550 scholarly titles of which around 1200 are duplications (overlapping titles). Among these, 33 titles are being subscribed to by all the IIMs. Having convinced on the dire need for a journals consortia, major publishers such as Elsevier,

Kluwer, Wiley, Blackwell and MCB University Press were approached and they all represented in the second meet which was held at IIM Bangalore in 2001. The end result has been highly praiseworthy, that over 1500 E-journals IIMs are able to get online access, across all the IIMs, by paying a nominal additional amount.

Following information resources are available in the IMM Consortium :

- Sage E-Journals (HSS Collection);
- Springer Online Journals ;
- Taylor & Francis Online Journals ; and
- Wiley Online Journals (HSS Collection)

UGC-DAE CONSORTIUMS FOR SCIENTIFIC RESEARCH LIBRARY CONSORTIA (DEPARTMENT OF ATOMIC ENERGY)

UGC-DAE- Consortium for Scientific Research is an autonomous institute of university grants commission (UGC), which provides specialized training and advanced characterization facilities for university researchers and also making facilities of DAE accessible to them.

Energy Commission has joined hands. Dr. Arun Nigavekar, Chairman, UGC and Dr. Anil Kakodkar, Chairman, Atomic Energy Commission has signed a revised MoU on 10th December, 2003. Earlier both the parties entered into a MoU in July 1989 with a view to make available the facilities of the Department of Atomic Energy to the students and researchers of the university system and to involve them in the design and fabrication of systems and equipment for the setting up of new research facilities. To promote interaction amongst the scientists working in the research centres of the Department of Atomic Energy and the faculty from the universities and other institutions of higher learning, and to enable young students to work on programmes of national importance under the joint guidance of the faculty from universities and the scientists of DAE so as to nurture an organic linkage between the university system and research centres of DAE, the University Grants Commission and Atomic.

As per the present MoU, collaboration between the Department of Atomic Energy and University Grants Commission will be expanded to cover the disciplines of physical sciences, chemical sciences, life sciences and engineering sciences. DAE will continue to make the major research facilities accessible to the researchers from the universities and institutions of higher learning through the consortium. It will also make available the infrastructural and accessorial facilities such as laboratories,

library, workshop etc. necessary to carry on the research work. The UGC, through the Consortium, will continue to make suitable financial provision for the salary of the core scientific, technical and administrative staff, and fellowship to research students, the travel and stay of the visiting faculty, and other recurring and non-recurring expenditure on the functioning of the Consortium. It will also provide adequate grant for equipment and consumables. The DAE institutions and the Consortium would participate in each other's training, education, research and developmental programmes. Both sides will set up mechanisms to arrange discussion meetings, refresher/ orientation programmes, and ensure that there is a free flow of ideas and researchers between the University system and the DAE institutions.

DBT e-Library Consortium (DeLCON) (http://delcon.gov.in/)

DBT e-Library Consortium (DeLCON) is a unique Electronic Journal Consortium which is operational since January 2009. Currently the Consortium includes 16 DBT Institutions including ICGEB, New Delhi and 18 North Eastern Region (NER) Institutions. The Biotechnology Industry Research Assistance Council (BIRAC), New Delhi is also part of DeLCON. Now, the total 'DeLCON Members' are 34. A total of 926 selective Journals and a Database (SCOPUS) are covered under DeLCON. These all are accessible by the DeLCON Consortium Members through the DeLCON Portal (http://delcon.gov.in). Others can also view and access abstracts of papers as free of costs. Logo of DeLCON DBT E-Library Consortium is give below:

DeLCON E-Resources

DelCON E-library Consortium subscribes to the following resources for its member institutions. All electronic resources subscribed are available from the publisher's Web site. Following is the list of E-Resources with link to their brief introduction:

FULL TEXT E-RESOURCES

Consortia Model : A New Trends for Procurement of E-Resources

Therefore, adopting the consortia model for accessing to the peer reviewed scholarly journals has become the trend for subscribing the on-line e-journals/ e-resources which is very much popular

in USA, UK and many western countries. It is also gaining momentum in the developing countries like India with the establishment of INDEST, FORSA, CSIR, IIM, and UGC-INFOENET e-journals/ Digital Library Consortia for higher education, research and development activities. The consortia like INDEST, FORSA, DeLCON DBT E-Library Consortium , and CSIR are running successfully and UGC-INFONET Consortia for e-journals / e-resources access managed by INFLIBNET are under experiment and trials. We hope in near future these consortia will also run successfully and both publishers as well as UGC will be benefited.

These Consortia are procuring e-resources on behalf of the group of libraries under different projects and successfully running. During XII plan period, the few consortia projects perhaps not renewed e-resources subscription on account of financial problem. We hope that appropriate fund will be made available under XII Plan period to continue subscription. As a faculty and research scholars , we are facing problems in getting adequate number of scholarly papers which were earlier made available under UGC-INFONET Digital Library Consortium, but now these subscriptions are closed down. May be new project may come with more number of e-resources in the form of UGC-INFONET 3.0 in coming days to take academic and research activities in India again on the right track. We are very much dependent on theses resources . If theses resources are not available to us , our research progress will be stopped which may caue great loss to the nation. Therefore , the Ministry of HRD , Govt of India should come forward to revive the UGC-INFONET Programme by giving more fund to the INFLIBNET Centre.

CONCLUSION

Now a day's libraries are changing from traditional document oriented environment to electronic environment. The expectations of library users are also changing & they become more dependent upon electronic document than the traditional one. In modern days, more resources are available in electronic formats. So, to keep pace with changing environment and demands libraries should include e-resources on collection development policy. E-Resource building is a new trend in the information world. It has generated a lot of debate over its access, storage, organization, copyright etc. It is still evolving & the future will decides its shape, upon which the future of the libraries also depends. As managing e-resources is very complex process , the LIS professionals must be aware of many issues pertaining to the subscription, payment, licensing, Copyrights, IPR and DRM issues, perpetual access , storage, preservation issues and to deal with the e-resources publishers and aggregators. In order to make e-resources / digital resources service environment library and information professionals have to cope up with the challenges of changing environment and they should have developed the expertise in managing

the e-resources and also conserving & preserving the digital resources for posterity. The library and information professionals in the fast changing electronic world will have to reorient themselves for survival in the 21st century. Gradually academic and technical libraries have to switch over from traditional to hybrid and to digital / paperless library to adopt library 2.0 and even upcoming library 3.0/ web 3.0 technology for making library and learning resource centre as more interactive and virtual environment (Sinha, 2014).

Several factors have rendered the job of such librarians extremely challenging: the amazing growth of electronic collections and the increasingly central role they are playing in libraries, the large budgets that are involved in acquiring these collections, the endless variation in the packages offered by the many publishers, interface providers and subscription agencies in the market , the frequent changes in business models, and, above all, the lack of automated tools to deal with the complexity of e-resource management. While electronic resource clearly allows for the rapid distribution of information at a reduced cost, its use is limited to certain economic sectors because many technical and legal problems must be resolved before its use becomes widespread. The important goal of each library is to provide correct, updated and authentic information to the users, by adopting the 'e-resource acquisition policy' successfully. Thus, by adopting e-resource acquisition policy, all the principles laid down by Dr. S.R. Ranganathan regarding Laws of Library Science are followed.

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Brief Biography of Dr, Manoj Kumar Sinha

Associate Professor & Head of the Department

Department of Library and Information Science, Assam University, Silchar

Dr. Manoj Kumar Sinha (b.1965) did Graduation, Post –Graduation and Ph.D. Degree in Zoology, Library and Information Science from T.M. Bhagalpur University, Bhagalpur. Besides this, he has acquired B. Ed. Degree from Annamalai University in 1995 and also did Post-Graduate Diploma in Higher Education from IGNOU, New Delhi in 2002. At present he has been working as Associate Professor in the Department of Library and Information Science, Assam University, Silchar and he has been appointed as the Head of the Department w. e. f December 11, 2009. Prior to this he served the Assam University, Silchar as Assistant University Librarian from January 30, 1997 to January 30, 2003; Assistant University Librarian (Sr. Scale) from January 31,2003 to November 18, 2009 and as Reader, Department of Library and Information Science from November 19, 2009 to November 18,2012. Before joining Assam University, Silchar , he served as Librarian in Jawahar Navodaya Vidyalaya, Gorakhpur (Navodaya Vidyalaya Samiti, Lucknow Region, Dept of Education, and Ministry of HRD, Govt. of India) from February 15, 1993 to January 28, 1997. Before coming to library profession, he worked as JRF and SRF in Life Sciences under the CSIR Sponsored Research Project entitled "Ecology and Phytochemistry of Biocidal Plants of Santhal Parganas, Bihar" at University Department of Botany, T.M. Bhagalpur University, Bhagalpur.

He has published more than 186 research papers and articles mainly in the areas of Library & Information Sciences and also in his parent subjects Botany, Zoology, Environmental Sciences,. He has keen interest in learning new skills in Information & Communication Technology. His areas of interests pertaining to the Library and Information Science are Traditional Librarianship, Academic Library System, Public Library System, HRD issues, Users Study and Users Education, User Empowerment through ICT, ICT and Internet Literacy , Quality Management, Knowledge Management, Library Automation and Networking, Digital Library, e-learning, etc.

He is life member of ILA, IASLIC, UPLA, SIS, MANLIBNET, JILA, AGLIS, Assam Library Association, FBAI, and actively associated with research and academic works. He has been the Chairman and Member of Board of Post-Graduate Studies (BPGS) in Library and Information Science; Member of School Board of School of Information Sciences; Member of Swami Vivekananda School of Library Sciences (Feb 2011) ; Member of Academic Council; Assam University Court since December 2009; Chairman and Member of Departmental Research Committee (Since 2013) Chairman and Member of Departmental Purchase Committee (Since April 2014).

He has been nominated as a Member of School Board of Economics, Management and Information Science of Mizoram University, Aizawl since April 2014. He has been associated with many universities and institutions as subject experts. He also served as Subject Experts for UGC assignments. His biography has been included in many Biographical Directory of National and International importance. He has been associated with few journals as a Member of Editorial Board.

He has guided six M. Phil. Students and 30 Masters of Library and Information Science students and also nominated as a Subject Expert in sister departments of Assam University. Since 2013 IPP Course Work programme has been introduced in the department and now he has been supervising 08 Ph.D. and 01 M. Phil. research scholars.

He has wide experience in organizing events like Book Fair and Exhibition and also organised PLANNER-2005, Seminar on Digital Library Management (2008), Librarians Day and Organising Orientation Programme for Fresher' regularly since 1997 on behalf of Assam University Library and now on behalf of the Department of Library and Information Science, Assam University, Silchar . Recently he has successfully organised National Seminar on Collection Development (NSCD-2011) in collaboration with Central Reference Library, Kolkata (Ministry of Culture, Govt. of India; National Training Programme-Cum-Workshop on Open Source Library Application Software for Library Services during March 28-31, 2013. He has been actively participating ,contributing and presenting Invited / Contributed Research Papers in National and International Seminar/ Conferences, attended several Training Programmes and Workshops pertaining to ICT Application in Library and Information Services. Besides this he has honour of Chairing Technical Sessions in many Seminars and also acted as Rapporteurs, Rapporteur General in Seminars and Conferences. He may be contacted on

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Digital Information Literacy among MMEC Library Users

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ABSTRACT

Digital literacy is very important right of every citizen in digital era. This study highlights the concept of Digital Information Literacy in among MMEC Library Users. This paper is written to know ICT awareness, Internet Literacy, and purpose of using Electronic Resources. The study had done among MMEC Library Users only. For this study questionnaire had been used as tool for data collection and survey method has been adopted. On the basis of this study it is found that most of the users were aware about digital literacy. The paper revealed that most popular search engine is Google and it is also found that most of the users use E-Resources and Internet for research work.

Keywords: Literacy; Digital Literacy; Information Literacy; Search Engine; Digital Media.

INTRODUCTION

Access to Information is a need for human development. Digital Literacy is very necessary now days. It involves findings, using, and disseminating Information in digital world. Digital literacy is very important for teaching learning and research work. The book "Digital Literacy "published in 1997 popularized the term "Digital Literacy". Digital Information Literacy made of two words digital Information and Literacy. A symbolic representation of data is called Digital Information and second is literacy. Ability of critical evaluation refers literacy. The consciousness, attitude and capability of individuals to appropriately use digital tools and facilities to identify, evaluate, analyze and use digital resources effectively, appropriate and ethically and also construct new knowledge, create media expressions, communicate with others". (Martin 2006). Digital literacy is the awareness, attitude, and ability of individuals to appropriately use digital tools and facilities to identify, access, manage, integrate, manipulate, analyzed and synthesize digital resources and properly use". (Wikipedia and word Press.com). Digital literacy is the knowledge, skills, and behaviors used in a broad range of digital devices such as smart phones, tablets, laptops and desktop PCs, all of which are seen as network rather than computing devices. Digital literacy initially focused on digital skills and stand-alone computers,

but the focus has moved from stand-alone to network devices. Digital literacy is distinct from computer literacy and digital skills. Computer literacy preceded digital literacy, and refers to knowledge and skills in using traditional computers (such as desktop PCs and laptops) with a focus on practical skills in using software application packages. A digitally literate person will possess a range of digital skills, knowledge of the basic principles of computing devices, skills in using computer networks, an ability to engage in online communities and social networks while adhering to behavioral protocols, be able to find, capture and evaluate information, an understanding of the societal issues raised by digital technologies (such as big data), and possess critical thinking skills. Digital literacy does not replace traditional forms of literacy. It builds upon the foundation of traditional forms of literacy. Digital literacy is the marrying of the two terms digital and literacy; however, it is much more than a combination of the two terms. Digital information is a symbolic representation of data, and literacy refers to the ability to read for knowledge, write coherently, and think critically about the written word.

ABOUT MMEC LIBRARY

The Carpet Area of MM Engineering College Library is 1421.56 sq.mt., with seating capacity of 522 users. Total No of books in the library are 62646 with 15661 Titles along with 447 subscribed journals. It is well equipped the sufficient number of reference as well as text books, reports, Theses, back Volumes and E-Resources to cater the needs of the users. Books are classified through DDC Scheme (22nd ed). A good collection of CD-ROMs and Audio Cassettes are available in the library. Library is a member of DELNET (Developing Library Network) a national library network form 2004. NPTEL (National Programme on Technology enhanced learning) Video Courses Database has been purchased by the library from 2006. ASCE, ASME and IEEE/IEE (All the transactions of Institution of Electrical & Electronic Engineers/ Institution of Electrical Engineers) Database has been purchased by the library from 2006. Library has 21 computers have facility of multimedia. For Digital Library Dspace digital library software has been installed in the library which can be used as Intranet. Users can also access syllabus of different branches of Engineering and semester wise the prescribed list of Textbooks and Reference Books through library's Dspace software. The MMEC Library has developed database of its holdings in SOUL 2.0 library Software. Most of the important activities of library are automated with this help of high tech library software which was installed in 2003.

OBJECTIVES OF THE STUDY

- To identify ICT tools used by MMEC Users in accessing information
- To know advantages and disadvantages of Internet from MMEC Users Point of view

- To find which type of ICT tools used by students for accessing Information from Internet
- To find out opinion of MMEC Library Users about E-Resources and Its Usefulness

METHODOLOGY

The present study adopts survey method. The questionnaire method was used to collect data along with observation and Interview technique. A well structured questionnaire designed for data collection on Digital Information literacy and distributed among MMEC library Users. The questionnaires were filled by author going personally to OPAC users. 100 questionnaires were taken and distributed and collected back in users. The collected data analyzed and tabulated. The analyzed data presented through table and graph supported by interpretation.

Data Analysis and Interpretation

Table-1: Distribution of Questionnaires Gender wise:

Gender	No. of respondents
Male	56
Female	44
Total	**100**

This Table shows distribution of questionnaire to respondents. On the basis of this table the author observed that 56% are Male Respondent and 44% are female respondents. It clears that majority of the male respondent in this regard.

Table-2: Awareness about digital literacy:

Awareness	No of Respondents
Fully Aware	52
Partial aware	27
Not aware	12
Any Other	9
Total	**100**

Table Number two revealed that most of the MMEC Library Users were aware about digital literacy. This table shows that 52% users were fully aware, 27% partial aware and 12% user were not aware about digital literacy.

Table No-3: How much time spends on electronic devices in a week:

Expended Time	No of Respondents
1-4 hours	46
5-10 hours	39
More than 10 hour	11
Not specified	4
Total	100

Table 3 indicates that how much time spends on electronic devices by the MMEC Library Users. It is found that majority 46% respondents spends 1-4 hours on electronic devices followed by 39% respondents spends 5-10 hours.

Table-4: Awareness about Social Networking Sites:

Awareness about Social Networking sites	No of Respondents
Yes	59
No	16
Aware but not use	19
Aware but use some time	6
Total	100

Table 4 describe awareness about Social Networking Sites that 59% respondents know about SNS and 16% was not aware, 19% respondents were aware about SNS but not properly used it .

Table No -5: Frequency of Using Social Networking Sites:

Frequency of Using Social Networking Sites	**No of Respondents**
Daily	54
Twice in a Week	22
Once in a Week	13
Once in a Month	7
Occasionally	4
Total	**100**

This table indicates that 54% MMEC Library users uses SNS daily. 22% uses twice in week followed by 13%once in week. It is found that maximum MMEC Library users SNS daily as compare to other frequency.

Table No-6: Purpose and Use of Computer & Internet

Purpose and Use of Computer & Internet	**No of Respondents**	**Percentage**
Word processing/Spreadsheets	29	18%
Job/Career	21	13%
E-mail/Chat/Instant messaging	48	29%
Searching Databases	19	12%
Games/Entertainment	17	10%
Research Works	23	14%
Any Other	7	4%

Note: Respondent could choose more than one options

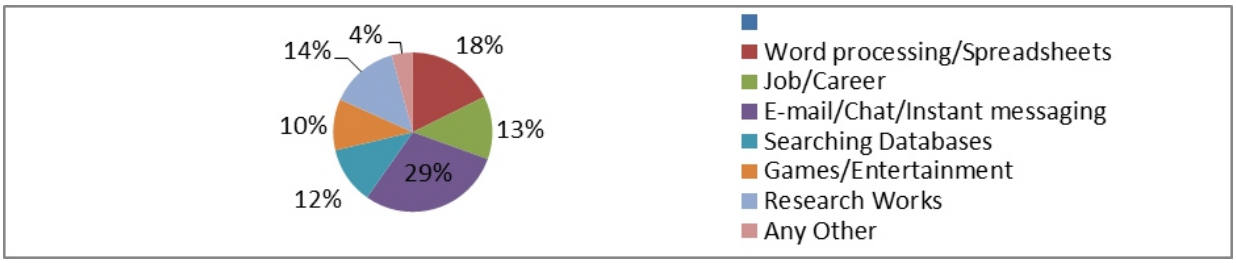

Fig. 1: Purpose and Use of Computer & Internet

It is reveals from the table and chart that majority 48% respondents were using computer and Internet for E-mail/Chat/Instant messaging. 29% were using for Word processing/Spreadsheets. 23% were using for Research Works followed by 21% for Job and Career.

Table No-7: Use of Search Engine

Use of Search Engine	No of Respondents
Google	65
Yahoo	7
Altavista	3
Bing	8
HotBot	4
MSN	7
Any Other	6
Total	**100**

On the basis of Table No.7 I found that 65% respondents were accessing Information through Google Search Engine. 8% respondents were accessing Information through Bing Search Engine followed by 7% Yahoo and MSN.

Table No-8: E-Resources Access Point

E-Resources Access Point	No of Respondents
Desktop/Laptop	55
Smart phone	10
Library	25
Cyber Cafe	4
E-book reader	4
Any other	2
Total	**100**

Table No. 8 gives description about E-Resources Access Point. Out of total respondents it is found 55% respondents were using Desktop/Laptop for accessing E-Resources. 25% respondents were accessing E-Resources in Library and 10% were accessing through Smart phones.

Table No. 9: Comparison between E-Resources and Print Resources

Comparison between E-Resources and Print Resources	No of Respondents	Percentage
E-Resources is more Important rather than Print Resources	89	52%
Print Resources are more Important	10	4%
Both are Important	35	16%
Don't know about E-Resources	11	5%
Known but not use	17	8%
No clear about e-resources	9	4%
Use but very limited	22	10%

Note: Respondent could choose more than one options

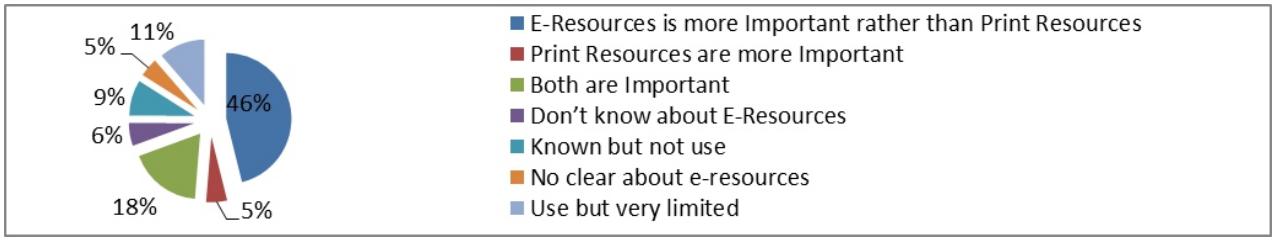

Fig.2: Comparison between E-Resources and Print Resources

The above table and chart shows that majority 53% respondents said E-Resources are more important rather than Print Resources. 18% said both are important. 11% said that they use E-Resources but very limited followed by 9% said they know about E-Resources but not use.

Table No-10: Purpose of Using E-Resources

Purpose of Using E-Resources	No of Respondents
To update Subject Knowledge	24
To Support Research	23
To prepare course material	13
To write for paper of publication	17
For preparing class note	15
Any other purpose	8

Table 10 depicts about purpose of MMEC Library users for using E-Resources. On the basis of table it found that 24 % users use E-resources to update Subject Knowledge and 23% respondents use to Support Research, 17% are using for writing paper. 15% were using for preparing class note followed by 13% for preparing course material.

Table No.11: Use of Web Browser

Use of Web Browser	No of Respondents
Google Chrome	31
Internet Explorer	17
Mozilla	26
Fire Fox	21
None of the above	5
Total	**100**

Table no 11 describes information on use of web browser. It is found that 31% respondents use Google Chrome and 26% respondents use Mozilla. 21% were using Firefox followed by 17% Internet Explorer.

Table No-12: Searching Techniques

Searching Techniques	No of Respondents
Boolean	74
Proximity	14
Truncation	5
Any other	7
Total	**100**

Table no. 12 indicates Searching Techniques used by user for searching Information from the Internet. It is found that 74% respondents were using Boolean Searching Techniques and 14% uses proximity searching technique for searching relevant Information.

Table No-13: Challenges of Digital Literacy

Challenges of Digital Literacy	No of Respondents	Percentage
New Technology Devices	39	28%
No proper Training	24	17%
Limited facilities	17	12%
Limited Time	29	21%
Limited Digital Material	26	19%
Any Other	**4**	**3%**

Note: Respondent could choose more than one options

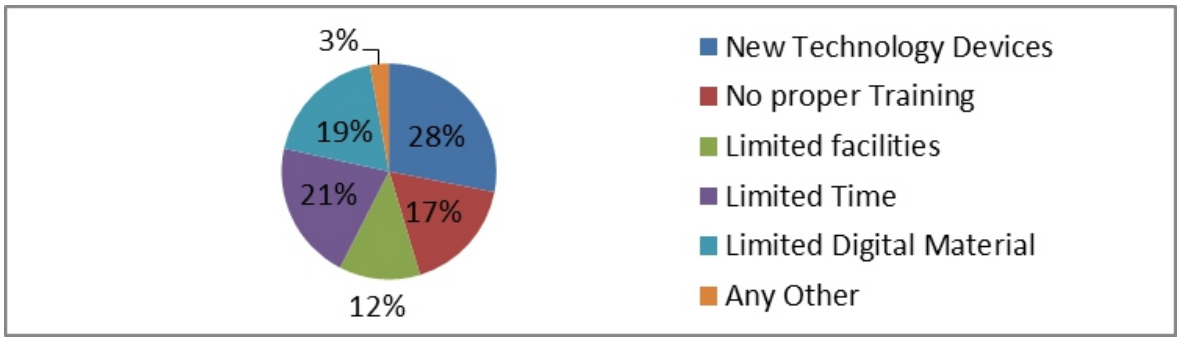

Fig. 3: Challenges of Digital Literacy

The above table and chart describes Challenges of Digital Literacy. On the basis of this study 28% Respondents faced problem related to New Technology Devices. 21% said limited time and 19% said they are facing problems due to Limited Digital Material followed by 17% No proper Training.

FINDINGS

- Majority 52% users were fully aware, 27% partial aware and 12% user were not aware about digital literacy.
- Most of 46% respondents spends 1-4 hours on electronic devices followed by 39% respondents spends 5-10 hours.
- Most of 59% respondents know about SNS and 16% was not aware, 19% respondents were aware about SNS but not properly used it.
- It is found that maximum MMEC Library users SNS daily as compare to other frequency.
- Majority 48% respondents were using computer and Internet for E-mail/Chat/Instant messaging.
- 65% respondents were accessing Information through Google Search Engine.
- Most of respondents were using Desktop/Laptop for accessing E-Resources.
- Majority 53% respondents said E-Resources are more important rather than Print Resources. 18% said both are important. 11% said that they use E-Resources but very limited followed by 9% said they know about E-Resources but not use.
- It found that 24 % users use E-resources to update Subject Knowledge and 23% respondents use to Support Research, 17% are using for writing paper. 15% were using for preparing class note followed by 13% for preparing course material.
- Majority 31% respondents use Google Chrome and 26% respondents use Mozilla. 21% were using Firefox followed by 17% Internet Explorer.
- Majority 74% respondents were using Boolean Searching Techniques.
- 28% Respondents faced problem related to New Technology Devices. 21% said limited time and 19% said they are facing problems due to Limited Digital Material followed by 17% No proper Training.

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Management Education in Digital India

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Our management education is at crossroads in changing scenario of Make-in-India and Digital India when the biggest challenge before the nation is to providing genuine income generating opportunities to the youth. When I say genuine income-generating activities I am sure that the future of Indian youth lies in the large number of lean organizations with zero tolerance standard errors as against the existing hierarchical structures in the organizations facing with policy paralysis. We need result-oriented human resource having enterprising ideations along with the capabilities of fetching the six sigma level of outcomes. In India, All India Council of Technical Education (AICTE) is the body along with other number of organizations like Association of Indian Universities (AIU), University Grants Commission (UGC), All India Management Association (AIMA), Association of Indian Management Schools (AIMS), National Board of Accreditation and National Accreditation Council which control and monitor the growth of management education in India in more than many ways of approval, accreditation and pedagogy but the question still remains whether we could really generate globally competitive holistic management graduates who could really foster the Indian economy towards sustainable growth. In fact, all these institutions did work-for-fee like any other organizations in the country and many a time they worked in conflict with other lateral bodies floating the question of qualitative delivery of management education in the country even when there was a large burgeoning of management institutions and private universities. Nevertheless, we had over 2000 management institutes out of which more than 1000 were certified by the AICTE but the most went closed or are on the verge of closing as the extant system of management education has been alienated from real life situations and could not help achieve national goals of development, market driven skills development and business ethics in the future managers of India.

In fact, skill-orientation, which builds confidence and acumen in the youth, lacks in the business education provided in AICTE approved institutions. Many a time, management education in India is taken as any other not-for-profit venture where profits are disguised by displaying enormous expenses

towards advertising, promotional activities and attracting students for admission by spending huge amounts on paid ranking. Let it not be forgotten that an average student seeking admission in business school raises funds either by way of loans or remittance from the hard=earned savings of their parents. Each student wants to improve their employability by joining management courses rather than just to add management degree / diploma in their profiles. Many a time the youth who aspire for acquiring management diploma are dithered by the level of confusion the management institutes create in their minds at the time of admission. Why do we need so many entrance examinations for admission to management schools? Why should we not have an integrated educational policy for the well-being of our youth? Does liberalization entail trade-off between business ethics and national mission of skill development?

There prevails a wrong perception in the minds of the majority that management graduates could be inclined to so-called professional qualification rather than sharpening their competencies and skills matching with the global demand of the emerging markets. One school of thought suggested some measures like emphasis on the practical aspects of management with better institute-industry-interactions and new pedagogy by following rituals of more frequent or at the most annual course review by the Institutes but it could not bring change in the employability levels of the management graduates. However, management institutes especially those approved by the AICTE added costs to their balance sheets owing to imprudent spending in advertising, promotion and developing the complicated ways of admission. As a result, the additional costs were raised from students in terms of higher course fee and hostel facilities. Studies have shown that an engineer could get better salary package before completing the management program from the AICTE approved business school as compared to that after obtaining degree / diploma in management. It happened even though these institutes claimed their effective corporate relations and strong interactions in terms of participatory approach in course reviews, initiation programmes, on and off locational internships, guest lecture series and pre-placement offers. However when it comes to implementation of these policies, each management institute compromised since they intended to more admissions by spending more on promotion and advertising, congeal with market survey and media agencies by paying hefty amounts for better ranking of their institutes and display beautiful profiles of their faculty on their websites and social media. These measures did help them in increasing the number of admissions to some extent but no policy makers ever realized the cost nation paid for the dodgy means of promoting management education by each and every business person who has never realized the extent of return on long term investments parents make for the future of their children.

As of now, the management institutes claim 100% placement but they never tell the extent of career

-oriented and retainable placements. Studies have shown that many a time, the outgoing management graduates get offer letters from some companies due to unethical ways of interventions by their institutes, paid or otherwise, just to show 100% placements but as soon as these students are ready to take up the jobs, their appointments are either delayed owing to whimsical reasons or they have to leave such jobs immediately after joining for the very simple reasons that they were, in fact, not groomed to adept themselves with the corporate culture and market dynamics during their academic period in the management schools. Certainly the approval of AICTE and any accreditation including from NBA did not go into the details to that extent before granting approval or accreditation for which the institutions had been paid significant amounts in terms of fee or otherwise.

How will these graduates perform in the Digital India? India will be, in passing, a connected knowledge economy offering world class services when all the 2.5 lakh villages will be connected by December 2016 by broadband highways and have virtual networks, all the villages, by February 2018 will have universal mobile access and public internet access by March 2017. Issues of e-governance and electronic delivery of services are on the agenda of the digital India where online hosting of information and documents would be accessible to all. As of now, we spend about $100 billion, which would reach to an exorbitant level of $400 billion by 2020, on import of electronic infrastructure. Digital India plans to bring it down to net zero import level by 2020. Nevertheless, we have comprehensive plan to provide IT services to the villages to run viable business delivery services at the grass root level. I have my own conviction that the present management institutes cannot provide nation with the management graduates equipped to handle the manufacturing clusters with six sigma standards to the level of zero tolerance. Certainly they need to rejuvenate their educational delivery in consonance with the Make-in-India mission by involving manufacturing hubs and clusters in dispensing skill-based management education to the youth. The students and their parents feel that the management institutes should look forward to provide placement to their students immediately on the commencement of their academic session and work with the recruiters to equip the students what their employers expect rather than theoretical knowledge.

What we need therefore to ensure is a comprehensive management education policy which should facilitate achieving the Make-in-India and Digital India within the given timeframe. Otherwise, our mission of taking India to be an economic power will remain just a delusion. Let us be quite clear and objective in making our youth as demand-driven human resource rather than just job-seekers as it is happening now. The comprehensive management education must endorse the skill development and enhancement curricula who create manpower who are enterprising and ready to own the mission of Make-in-India and Digital India. I therefore suggest for management education which is not taught

in the classrooms but in the corporate and technical laboratories. At the time of admission itself, the students should be shown their career path which is possible when they get pre-placement offers from the corporate of their choice and are taught in the management institute what their employers require rather than what is generally taught in most of the management institutes. In this context, it is yet to be ascertained whether so many regulatory and / accreditation.

An assessment of India Skill Report compiled by the human resource consulting firms, namely, Wheebox, PeopleStrong, Linkedin and the Confederation of Indian Industry shows that out of three lakh students across 29 states and nine union territories, only 37 per cent graduates were employable in 2014 as against 34 per cent for the previous year. Top states were Rajasthan, Andhra Pradesh, Haryana, Kerala and Karnataka while the new states entered in this category were Uttar Pradesh, Bihar, Tamil Nadu, West Bengal and Orissa. The study revealed the positive outlook in hiring of human resources but the increasing number from 56 per cent during the previous year to 76 per cent was looking for apprenticeship. It needs to be pointed out that the graduates should be encouraged to take jobs which are career-oriented and help them in doing management programs through collaborated efforts of the industry and academic institutions. The proposed management education policy must at least emphasise on pre-placement offers where the youth are sure to be employed during the course of academic session rather than waiting for more than one year for seeking and participating in placement activities. The process of ranking of institutions must be taken up by the accreditation bodies like National Board of Accreditation rather than the Business Media so that the surveys are more genuine and objective. It is promising to note that the Ministry of Human Resources Development believes in transparency and effective information dissemination mechanism so that the students and their parents know pretty well about the future of the youth when they look forward any particular management institute.

Important is not to acquire a management degree but to get bright future by undergoing the particular program from the specific management institute. Unfortunately, such aspects are generally overlooked by the organizations like AICTE, AIU and UGC while granting permission for running management education. Let the management education not become a business hub where profits are the motive at the cost of employability of the youth undertaking technical and / or management education. Time has come when it is imperative to understand, on the one hand, the relevance of institutions such as AICTE and AIU when more vibrant organizations like UGC can take up the bigger task of overseeing the private management institutes and universities and the corporate / industry including Confederation of Indian Industry should collaborate with UGC, private universities and management institutes in policy-making for the bright future of the management graduates. In fact, in my view the permission to conduct examinations and award degrees at the individual management institutes is improper because the

students are not examined by the experts who are unbiased and neutral while examining the students. At present, in most of the private management institutes, the same faculty teaches, prepares question papers and evaluates the performance of the students as a result of which it has been observed that even those students with very high grades were unable to get appropriate employments after completion of their management programs. What I suggest here is that the private universities should also get the answer sheets evaluates from the professionals in the corporate since they are the best people to make out whether the students would be useful for the corporate after completion of their management programs. Each management institute must affiliate itself with some private Indian university for conducting examinations to award degrees.

In substance, the digital India needs the management graduates who are not just job-seekers but entrepreneurs to bring their nation on Make-in-India way more vigorously and tangibly in the dynamic scenario of markets economically and politically. A relevant and outcome-oriented management education policy should dovetail the Skill Development Mission of Make-in-India model with the emerging markets which need attitudinal change in the Indian youth by making them honest and positive in taking their nation forward. Redundancy of institutions like AICTE, AIU and duplicity of management institutes with an objective of making profit are the major hurdle in taking us forward in digital India and such issues must be addressed by having national level open symposium with no further delay.

INFORMATION SEEKING BEHAVIOUR OF M.B.A. STUDENTS IN MET'S INSTITUTE OF MANAGEMENT, BANDRA, MUMBAI: AN ANALYTICAL STUDY

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A B S T R A C T

This article reports the results of a study of the information seeking behaviour of the Master of Business Administration students of MET's Institute of Management, Bandra, Mumbai. Data were collected by using a questionnaire. These questionnaires were filled in by the respondents and 100 questionnaires were returned back. The total MBA students are 110, so that the percentage of response is 90.9% stated their method of seeking information by consulting a knowledgeable students in MET's Institute of Management, Bandra, Mumbai.

The response from 100 Questionnaires were compiled and tabulated for the purpose of analysis. The Study aims to trace the information seeking behaviour of the Master of Business Administration students of MET's Institute of Management, Bandra, Mumbai It tries to find out the methods used by the students for searching information for various purposes like examination project and subject interest. It also aims to find out patterns of use of services and facilities provided by the library. This data collection is collected for the purpose of research article.

Keywords: Information Seeking Behaviour, Meaning of Information Seeking Behaviour.

1. INTRODUCTION:

Now we are in information era due to information explosion, information revolution takes place all over the world. Due to this, traditional education system is changed to modern education system. This has put a great responsibility on educational institutions. The library is playing a vital role in all higher education institutions by storing retrieving & disseminating of information.

Library has central location for communication & channel. The users are the recipient of information in this communication channel. These users are most important element in any kind of library. Library is satisfying the information, needs of the users. It is a fact that, information seeking behavior is mainly concerned with who needs what kind of information for what reasons, how information is found, evaluated and used.

So it becomes very important to know how librarian helps the users in getting information as well as in the information seeking behaviour of students. This study is very important as it reflects the expectations of the users of the library, problems faced by them and their preference to various reading materials etc.

Information seeking behaviour is an active interest between librarians and information scientists. It reveals from the recognition of some need perceived by the user, who as a consequence makes demands upon formal systems such as libraries, information centers, on line services or some other purpose to satisfy the perceived need. The information seeking behaviour is mainly concerned with who needs what kind of information and what reasons, how information is found, evaluated and used and how these needs can be identified and satisfied.

The use of information is so complex that these cannot be a simple system to cope with the task of effective without assessing their specific needs. This situation has given rise to the growing concepts o information searching and the manner of determining the pattern of searching is said to be considered information seeking behaviour (ISB).

2. INFORMATION SEEKING BEHAVIOUR: A BASIC PURPOSE

"The study of information seeking behaviour can stand on its own as an area of applied research where the motive for the investigations pragmatically related to system design and development. A different motivation is involved if we wish to understand why the information seeker behaves as he does. This is an area of basic research and although the resulting knowledge may have practical applications, there is no necessity that it should [1].

When a need is felt for anything, more often than not, people take action in order to satisfy that need. Different strategies or modes of action are resorted to the same applies for the satisfaction of information needs. An individual realized that the needs information, he known that in all probability the information will not come to him on its own, therefore he has to go about seeking it. What strategies or processes, he resorts to in order to satisfy the need for information is the focus of study here [2].

3. MEANING OF INFORMATION SEEKING BEHAVIOUR

King [3] also defined information-seeking behaviour as a manner in which a user conducts himself in relation to a given information environment. It is, therefore, regarded as essentially, a process of interaction between the user and the information system."

When a need is felt for anything, more often than not, people take action in order to satisfy that need. Different strategies or modes of action are resorted to the same applies for the satisfaction of information needs. An individual realized that he needs information, he knows that in all probability the information will not come to him on its own, therefore he has to go about seeking it. What strategies or processes resorts to, in order to satisfy the need for information is the focus of study [4].

The phrase 'information seeking behaviour' have been defined variously be different authors. The following definition of information seeking behaviour will however make the concept clearer.

Wilson [5] defines what he calls 'information behaviour as, "Those activities a person may engage in when identifying his or her own needs for information, searching for such information in any way, and using transferring that information".

Thus information seeking behaviour essentially refers to the strategies and action undertaken to locate discrete knowledge element. If can be said that the behaviour which yields the highest information satisfaction is the best [6].

In addition information-seeking behaviour denotes a complex pattern of action and reactions, which the users engage in, while seeking the information of any type for any purpose. The user in this cases maybe an organization or an individual. Information seeking behaviour of the user is reflected in his relationship with the information unit and sources of information at disposal of the information Unit [7].

4. OBJECTIVES OF THE STUDY

1. To observe the information seeking behaviour of the students from the M. B. A. classes of the MET's Institute of Management, Bandra, Mumbai
2. To find purposes of information seeking by the M. B. A. students.
3. To know the information sources used by M. B. A. Students
4. To find time utilized by MBA Students on reading.
5. To find out periodicals preferred by M. B. A. students.
6. To know the feedback of the Master of Business Administration students about the library services and collection and collection of MET's Institute of Management, Bandra, Mumbai

5. SCOPE OF THE STUDY

This study covers the students of the post graduate level of the MET's Institute of Management, in the

Bandra, city at Mumbai. It is one of the oldest M. B. A. Institute.

This study is restricted to the students of M. B. A. of the MET's Institute of Management, Bandra, Mumbai for the academic year 2009-2010. This includes students from both Part I and Part II.

Author conducts a survey with the help of "Questionnaire" as a data collection tool.

6. NEED OF THE STUDY

The present exercise covers the study of Information seeking behaviour of the post graduate students of management studies Post graduate studies the highest level in the higher education system. As such the P. G. Students of management studies require variety of information from different sources, because they are studying 32 different subjects in two years time. Being in the Institutes for a long period they are extent, while studying different subjects they are required to seek information from books, journals, periodicals, manuscripts, foreign publication, CD's as well as through internet etc. The libraries in the Institutes also try to provide various types of services like catalogues, bibliographies, current literature search services, reprographic services (like Xerox) news paper clipping on relevant topics etc.

The study of information seeking behaviour of the management student (M. B. A.) students may give a crucial feed back to the Institute's library so that the library can managed it's various resources with the feedback from such studies the Institutes library can redesign, rearrange its reading resources, modify collection development policy, such study can also help find out the choice and preferences of the students as regards to the sources of information. The study for information seeking behaviour may also reveal the purpose and motives of the P.G. management students. In short this type of study in need to get better insight in the behaviour of the library user's which may be helpful in user training and education programmes to shape the information seeking abilities of the students.

Thus to conclude study of information seeking behaviour of the student would help both teachers and librarians to become more effective in delivering their services.

6. RESEARCH METHODOLOGY

Research simply means search for facts' answers to questions and solutions to problems. It is a purposive investigation. Research and Endeavour to discover, develop and variety knowledge. It is an intellectual which begins with the asking of questions, progresses through critical examination of evidence that is both relevant and reliable, to the revelation of truth which is generalized and universal.

This research is a systematic and logical study of an issue of problem or phenomena through Scientific Method [8].

Research can be of various types depending upon the nature of the research problem and its objectives. There are various methods of research as are the tools and techniques.

The present study is undertaken by using descriptive method of research. A survey technique is used with the questionnaire as a tool to collect primary data from the respondents. A sampling technique is also may applicable to collect the required data but our respondents are limited, i.e. only 120 students of M. B. A. from both year so Author not go through this sampling technique. Data collection in this context means the process of obtaining valuable and reliable information for the purpose of research.

Survey [9] is a fact-finding study it is a method of research involving collection of data directly from the population of the student at a particular point of time. This data may be collected by observation interviewing or by circulating questionnaires.

7. HYPOTHESIS

1) Arrival of television has affected the reading habit of students.
2) Electronic media and its impact have affected the reading habits of the students.

8. LITERATURE REVIEW

Padmamma S [10]. A study of the information seeking behaviour of 84 Vishweshvaraih Iron and Steel Limited (VISL) Scientists, Bhadravathi, Karnataka, conducted through a survey reveals that, roughly one third of the scientists visit the information centre to satisfy the information needs of research activity, about 31% scientists opined that education of the dependents is one of the factors which hinders their information seeking behaviour.

Singh K. P. and Satija M. P [11]. Has a study information seeking behaviour is an essential component in the designing and developing of need based information centers for meeting the information requirements of users. The undertaken study is an output of doctorate research in which a comprehensive review research scanned in international context in the field of agricultural sciences. The study coves various facets related to information seeking behaviour, findings and their conceptual meanings. It includes about sixty-five researches undertaken by foreign researchers in the agriculture

sector. The findings of the studies are organized into various categories, i.e. theories of information seeking; information needs; users' characteristics; information browsing; information seeking and information seeking behaviour.

Krishna Kumar [12] conducted two such studies. The first one is user survey concerning teachers and research scholars in the Departmental of Chemistry, University of Delhi. The other study is related to the information needs of the users in Health Science Libraries.

Tripathi Manorama and Prasad H. N. [13] conducted a study on information seeking behaviour of scientists in physical and social sciences, the study revealed that the physical scientists and the social scientists differed in the use of formal and informal sources of information. The scientists of both the groups used different types of information in order to meet their requirements. The physical scientists consulted different bibliographical sources regularly whereas the social scientists did not use bibliographical sources regularly.

9. PERFORMA OF MUMBAI EDUCATION TRUST'S, INSTITUTE OF MANAGEMENT, BANDRA, MUMBAI [14]

The MET League of Colleges is a conglomerate of ten premiere educational institutions, driven by a single – minded focus on imparting quality education to make students sharp. Established in 1989, with a mission to redefine the system of education, MET is a professionally managed, multi-disciplinary and multi-faceted oasis of knowledge. Its premiere educational institutes conduct university accredited and autonomous courses:

The campus in Mumbai is also houses coerce Management, Pharmacy, M.C.A., and C-DAC.

The MET Mumbai infrastructure adheres to international standards with faculty housing, hostel facilities, Amphi-Theatre, Wi-Fi ultra modern AC computer laboratories with TFT screens, air conditioned libraries and seminar halls in each institute, well equipped pharmacy labs, hi tech classrooms, imported ultra modern furniture, special infrastructural facilities for physically challenged students, and much more. Take a walk through the MET Mumbai Campus with world class, state of the art facilities, and you'll realize what makes it a cut above the rest.

10. DATA AND PRESENTATION ANALYSIS

These questionnaires were filled in by the respondents and 100 questionnaires were returned back. The total MBA students are 110. So that the percentage of response is 90.9%

The response from 100 Questionnaires were compiled and tabulated for the purpose of analysis.

Q. No. 1 – Frequency of Visit to Library

Sr. No.	Options	No. of Respondents	Percentage of Respondents
1	Daily	41	41
2	Twice in a week	37	37
3	Weekly	22	22
4	Specify	00	00
	Total	**100**	**100**

The above figure shows that 41 out of the 100 respondent i.e. 41% are regular visitor or user of the library. 37 respondents (37%) use the library twice in a week, 22 respondents (22%) use the library weekly.

Q. No. 2 – Purpose to Visit the Library.

Sr. No.	Options	No. of Respondents	Percentage of Respondents
1	To study in the reading room.	25	25
2	To issue books	20	20
3	To news papers	40	40
4	To read periodicals	15	15
	Total	**100**	**100**

This table shows that out of 100 respondents 25% respondents come to the Library for studying in reading room, 20% respondents come for getting book issued, 40% for reading news papers and 15% for periodicals.

So it can be said that maximum respondents (40%) visit in library for Reading Newspapers, that the minimum respondents (i.e. 15%) visit the library for reading periodicals.

Q. No. 3 – Reasons of not visiting library.

Sr. No.	Reason for Not Visit Library	No. of Respondents	Percentage of Respondents
1	Working Hours of library	60	60

2	Staff	20	20
3	Reading Material	10	10
4	Reading Facility	10	10
	Total	**100**	**100**

The table shows that 60 respondents (60%) do not visit the Library because of in convenient library hours. Most of them want library working hours should be 08.00 a.m. to 08.00 p.m.

Only 20 students (20%) are not regular because unhelpful nature of library staff, 10 students (10%) are saying that inadequate reading material and 10% students informed that reading atmosphere is not good they prefer to study at home.

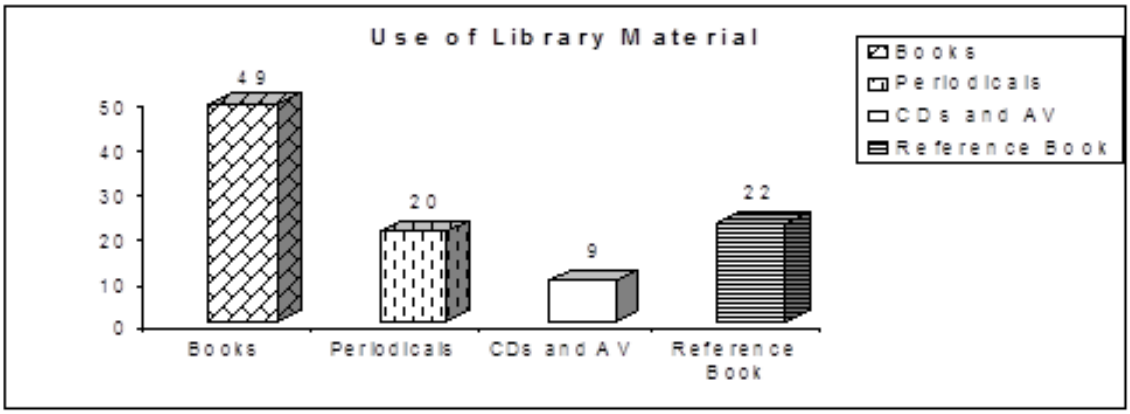
Q. No. 4 - Use of Library Material

Sr. No.	Particulars	Students Use	Percentage
1	Books	49	49
2	Periodicals	20	20
3	CDs and A. V.	9	9
4	Reference Books	22	22
	Total	**100**	**100**

The above table shows that out of 100 students using the library material, 49% students use the books, 22% students use the Reference books, 20% students use periodicals.

Only 9% students use the library Non Book Material i.e. CDs and Audio Visuals cassettes, so maximum students use the library books. Students heritate to use non book material because of the special requirements to use i.e. computer, video cassette plays, tape recorders.

Graph No. 1 – Use of Library Material



Q. No. 5 - Use of Reference Sources for Seeking Information

Reference source is the ultimate goal of the Library services. Reference service is a personalized source to users when they use the library for seeking Information from books Dictionaries, Year, Books etc.

Sr. No.	Reference Sources	Percentage
1	Dictionaries	39
2	Year Books	20
3	Encyclopedia	23
4	Bibliographical Sources	18
	Total	**100**

The table No. 5 clearly shows that all i.e. 39 out of 100 students use the library Dictionaries, 20% out of 100 use the Year Books and 23% students are using the Encyclopedias.

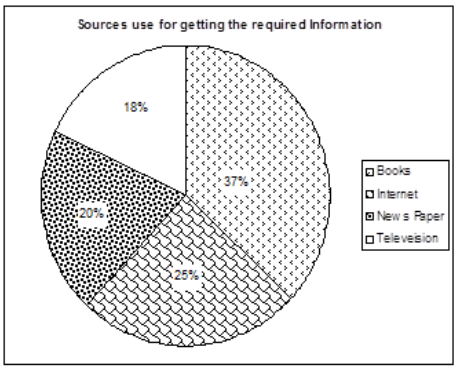
Only 18% students use Bibliographical sources so that more students are using the Dictionaries.

Q. No. 6 – Sources used for getting the required Information.

Sr. No.	Sources	Percentage
1	Books	37
2	Internet	25
3	Newspaper	20
4	Television	18
5	Any other	0
	Total	**100**

The table shows that 37% students are using the books for getting the required information. 25% students are using the Internet; 20% students are using the Newspapers and only 18% students are using the Television as information source.

Graph No. 2



Q. No. 7 - Sources used for Searching Library Material.

Sr. No.	Source	No. of students	Percentage
1	Lib. Catalogue	28	28
2	Lib. Staff	32	32
3	The Open Access	40	40
	Total	**100**	**100**

The table shows that 28% students are using the library catalogue, for searching books 32% students are asking to the library staff while searching reading materials and 40% students are using the open access system and try to find out books on their own.

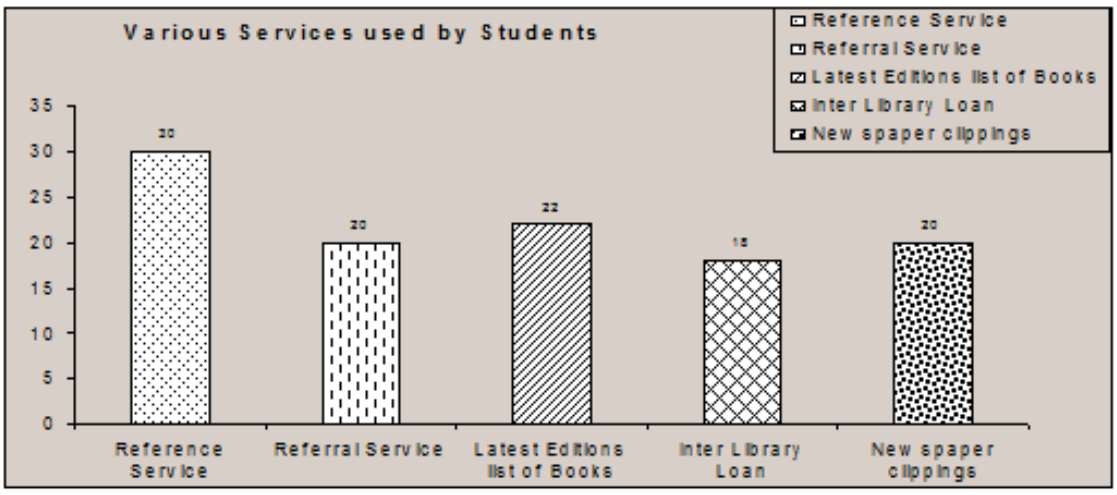
Q. No. 8 - Various services used by students.

Sr. No.	Options	No. of Respondents	Percentage
1	Reference Services	30	30
2	Referral Services	20	20
3	Latest Editions list of Books.	22	22
4	Inter Library loan	18	18
5	Newspaper clippings	20	20
	Total	**100**	**100**

Following table shows that, although all listed services are provided by Library. Students are using these services as follows:

This table shows that 30 out of 100 (30%) use reference services 20 (20%) out of 100 get books through referral services. 22 (22%) out of 100 use latest editions list of books, 18 (18%) out of 100 get through Inter Library loan and 20 (20%) out of 100 using Newspaper clippings service.

Graph No. 3



Q. No. 9 - Websites or Search engines browsed frequently

Sr. No.	Websites	No. of users	Percentage
1	Google.com	55	39.85
2	Yahoo.com	21	15.21
3	Wickeypedia.com	13	9.42
4	India Time.com	8	5.79
5	Rediff.com	7	5
6	NIC.com	5	3
7	BSE India.com	4	2.89
8	Money Control.com	4	2.89
9	MSE.com	3	2.17
10	Naukri.com	3	2.17
11	Santa Banta.com	3	2.17
12	ASK.com	2	1.44
13	Nasa 60V.com	2	1.44
14	Finance.com	2	1.44
15	Answar.com	1	0.07
16	Harworth.com	1	0.07
17	IBA.com	1	0.07
18	Ibnlive.com	1	0.07
19	M.B.A. Junic.com	1	0.07
20	Outmonitor.com	1	0.07
	Total	**138**	**100**

The total numbers of Websites used by the frequently 20 students is 20 many students search information from more than one website in that out of 100 students 55 students using Google search, 21 Yahoo.com other Websites are comparatively less visited.

Q. No. 10 - Issuing of Non-Book Materials i.e. CD

Sr. No.	Issuing C.D.	No. of users	Percentage
1	Not issued	53	53
2	Rarely	10	10
3	Sometime	9	9
4	Frequently	7	7
5	1 month (only in vacations)	6	6
	Total	**100**	**100**

Out of 100 students 53 students are not using CD's at all. 10% use it rarely, 9% sometimes and 7% frequently, these all figures show that only 47% of students are using CDs and 53% are not making use of CD or other type of non book material for their knowledge.

Q. No. 11 - Reasons of using non book materials

Out of 100 students 60% students are not using CDs at all 40% students are using the non-book materials.

Reasons of using Non-book Materials

1. Because they don't find it convenient. They prefer reading rather than listening or watching them.
2. Because searching is easy in CD's
3. It provides update to date information.

Reasons of not using non-book materials

1. Because there is fear in their mind for using such materials.

Q. No. 12 - Use of Recommended books from Library.

All most 90% of the students responded that average 3 to 4 books of each subject out of 9 to10 recommended in university syllabus are available in the Library. Availability of recommended is books is quite satisfactory.

Q. No. 13 - The National and International Periodicals read regularly.

Sr. No.	Name of Periodicals	Percentage
1	Business Today	30
2	Business World	20
3	Business India	19
4	India Today	11
5	Advertising and Marketing	8
6	Indian management	7
7	Intelligent Investor	5
8	Harvard Business Review	4
9	Smart Management	4
10	Front Line	3
11	Outlook	1
12	Competition Success Review	1
13	HRD Times	1
14	Digit	1

As regards to this question a mix-response is revived from the students. But it is clear that most popular periodicals are 'Business Today', Business World' responded by 30 students out all respondents as their first choice.

2nd rank goes to Business India by 19 students it is used.

3rd rank goes to a non Business Periodical namely India Today is used by 11 students. 5th rank is achieved by advertising and marketing periodicals are used by 8 students 6th rank is achieved by 'Indian Management' it is used by 7 students. 7th rank goes to Intelligent Investor; it is responded by 5 students. 8th rank is got by Harvard Business Review it is used by 4 students. 9th rank is also got by

Smart Management it is used by 4 students. 10th rank goes to Front Line is used by 3 students. There remaining student's responded single response. Outlook, digit competition success, HRD Times.

Q. No. 14 - T. V. Programmes for Acquiring Information

Sr. No.	Options	No. of Respondents	Percentage
1	Yes	60	60
2	No	40	40
	Total	**100**	**100**

The above figure shows that 60 (60%) respondents are getting information from Television and 40 (40%) out of 100 they are not using Television as on information Sources.

1)	News Bulletin	20
2)	Current Programmes	30
3)	Business News	10

This table shows that 20 students responded that they are watching TV Programmes on News bulletin or Current programmes are responded 30 students and Business news watching TV Programmes respondents are 10 students.

Q. No. 15 – Which Programme you prefer to watch.

Sr. No.	Options	No. of Respondents	Percentage
1	News Bulletin	34	34
2	Current Programmes	40	40
3	Business News	26	26
4	Please Specify	0	0
	Total	**100**	**100**

This table shows that 34 (34%) out of 100 respondents are watching TV Programmes and 40 out of 100 (40%) are watching current programmes and 26 (26%) watch Business News.

Q. No. 16 - Difficulties faced in the Library

The question asked to them and following are the responses the various difficulties faced by them in library use.

Respondents gave response as below:

1) 30 respondents suggested that timing should be increased as 08.00 a.m. to 10.00 p.m.
2) 20 respondents suggested that at least 5 books should be issued.
3) Newspapers cuttings should be placed on special board – 10 respondents.
4) 10 respondents suggested developing collection of CDs.
5) 10respondents gave suggestion to increase the Number Of New editions
6) No. of respondents want the use of reference section after 7.30 p.m. also.
7) Magazines and periodicals should be allowed to carry at home for reading purpose at least for a day. (20 respondents)

11. CONCLUSION AND SUGGESTIONS

11.1) Conclusion of the study

This chapter presents the analysis of compiled and tabulated information on the basis of responses given by the respondents to the questionnaires after this analysis following major conclusions are drawn.

1. Visit to Library

The first four preferences given by the student for visiting the Library are to read, newspapers, to issue books, to use reading hall, to read periodicals and magazines.

Most of the students use Internet for seeking information. They are using Encyclopedias, reference books, periodicals and dictionaries for getting the required information. Particular book is searched by students by using library catalogue or they may take help of library staff.

2. Library Collection

Students prefer latest editions of books for new information and it is observed that number of copies of new or recommended books is in demand. Students are demanding maximum books (i. e. up to 4) issued on library page at a time and also to extend the days i.e. from 15 days to 3 weeks.

3. Reading Room Facility

Although the capacity of reading hall is of 80 students, they are not very eager to avail this facility. Now a day's student's main interest is to get maximum books issued for maximum days.

Few students are regularly reading periodicals on a regular basis only of their subject specialization area. So it is observed that periodicals are not read up to the mark by management students.

4. Library timing

It is observed that library timing is not convenient to the students for reading. Students will be interested in visiting the library or availing various library facilities if library timings are increased from 8.00 am to 8.00 pm instead of 11.00 am to 8.00 pm.

Students prefer to study in the morning time in the reading room because in the afternoon time they are busy in their lectures, computer Practical's, project work etc.

12. SUGGESTION

The successful operation of any library depends to a large extent on the collection of library, requirements of the end users. It is observed that majority of student sought information for completing curriculum related notes, preparing project works and keeping up to date knowledge by seeking information. Considering the problems or lack of facilities following are few suggestions.

1. Library staff should use their time in a better way by focusing/assisting users.
2. Library should integrate physical expansion of collections and buildings.
3. To know the available resources properly library should propose a well planned user instruction and informant skills program.
4. Management institute should provide more funds to library for increasing staff, collection etc.
5. Newspaper cuttings should be placed on special board.
6. Magazines are essential for extra knowledge. But generally magazines are not issued out, so student not gets enough time to read the magazines. So at least bound volumes should be issued to facilitate the use of periodicals.
7. Library should provide reprographic services to users.

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INFORMATION TECHNOLOGY AND INFORMATION SYSTEM FOR EFFECTIVE ORGANIZATIONAL COORDINATION – AN EMPIRICAL RESEARCH ENQUIRY

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A B S T R A C T

Coordinating work among individuals and groups is an essential task in managing organizations. The increase in the various kinds of teams support technology – such as groupware and workflow technology, can improve the coordination of work in different ways: automating existing routines, shaping new communication patterns and organizational structures, or reducing the need for coordination itself. The coordination of information technology (IT) management presents a challenge to firms with dispersed IT practices. Decentralization may bring flexibility and fast response to changing business needs, as well as other benefits, but decentralization also makes systems integration difficult, presents a barrier to standardization, and acts as a disincentive toward achieving economies of scale. As a result, there is a need to balance the decentralization of IT management to business units with some centralized planning for technology, data, and human resources. The research design used is Descriptive Research. The sampling technique used in this study is Stratified convenient Sampling. Primary data and secondary data were collected for the study. The survey results are classified and Weighted Average Method was used to conclude the results. Implementing more advanced IT for coordination to plan for the greater complexity and organizational impact brought about by the technology is suggested.

Keywords: Information Technology (IT); Coordination; Organization; Information Systems;

INTRODUCTION

Coordination is a fundamental activity in organizing work and can be described in terms of mechanisms. Well-known sets of mechanisms are proposed by March and Simon and Mintzberg. The set of mechanisms from Mintzberg are mutual adjustment, direct supervision, standardization of skills, work processes, results, and norms, have a large impact on organizational theory literature. These are considered to be the most well-known sets of coordination mechanisms and have therefore been chosen in this paper. Information systems are also closely associated with the coordination of work. Information

systems are implicated in work routines through information storage, retrieval, and transmission capabilities, through providing a tool to accomplish tasks, and by imposing a rhythm and schedule on work processes.

Based on the argument that information systems are implicated in the accomplishment of tasks, and imposing a rhythm and schedule on work processes this paper states that a thorough understanding of organizational coordination can provide a fruitful perspective when focusing on information systems and their potential benefits for organizations. The purpose of this paper is to evaluate, by revisiting, the coordination mechanisms for an understanding of information systems used and organizational coordination. This examination is performed using the coordination mechanisms as a research study and then evaluating the mechanisms.

REVIEW OF LITERATURE

This section summarizes the literature and prior, related research on information systems. Coordination is "managing the interdependence" (Malone 1994). By focusing on the flow of materials, and objects, Thompson defines interdependence in terms of work flow with the forms of being pooled, sequential, and reciprocal (Thompson 1967). Van de Ven *et al* (Van de Ven *et al*. 1976) and Rao *et al* (Rao *et al*. 1992) further suggests team or concurrent interdependence, which refers to situations wherein the work is undertaken jointly by unit personnel who diagnose, solve problems, and collaborate in order to complete the work.

Prior studies have identified a rich volume of mechanisms addressing the interdependencies. The mechanisms may include standardization, planning, mutual adjustment, and routine (Galbraith 1973; Malone 1994; Thompson 1967). These mechanisms, static or dynamic, prescribe how the decisions will be made to solve the problems associated with interdependencies. From the perspective of information processing, these mechanisms vary in their information bandwidth and richness (Galbraith 1973).

Considerations of social structure, conflict, information quality and quantity, cost, technology, and task all have a role in determining when individual mechanisms may be preferred (Galbraith 1973; Shapiro 1977; Van de Ven *et al*. 1976; Victor *et al*. 1987). Despite increasing interest in the organizational coordination of extreme events, little is known about how to effectively make coordination decisions in trying conditions. It remains unclear whether, and to what extent, the conventional wisdom is still valid in abnormal circumstances (Petrescu-Prahova *et al*. 2005).

Although recent studies have explored the coordination decision making in contexts such as software development, new product design, supply chain management, where there exists moderate levels of

velocity of change, uncertainty, and pressure, further research is necessary (Montoya-Weiss *et al*. 2001; Piplani *et al*. 2005; Raghu *et al*. 1998; Simatupang *et al*. 2004). Moreover, there is a lack of awareness about the current practice of information technology in emergency management coordination. Aside from a few attempts (Chen *et al*. 2005; Mendonca *et al*. 2007; Shen *et al*. 2004), emergency coordination support has not been the focus of IS research (Currion *et al*. 2007; Fiedrich *et al*. 2007; Manoj *et al*. 2007; Simon *et al*. 2007).

STATEMENT OF THE PROBLEM

Coordinating work among individuals and groups are the essential tasks of managing organizations. The raise of various kinds of teams support technology, such as groupware and workflow technology, can improve the coordination of work in different ways: automating existing routines, shaping new communication patterns and organizational structures, or reducing the need for coordination itself.

The coordination of work has a critical impact on organizational performance. In an era of ever shorter product life cycles and lead times, it becomes a crucial necessity for companies to manage the transactions between individuals and work groups in an efficient way, independent from the organizations structural variables. Information technology has become the major enabler for speeding up communication and improving information exchange. However, the expected gains in terms of reduced time and cost and improved quality can fall short if technology is used for supporting existing structures of information exchange, rather than for reshaping this flux.

The coordination of information technology (IT) management presents a challenge to firms with dispersed IT practices. Decentralization may bring flexibility and fast response to changing business needs, as well as other benefits, but decentralization also makes systems integration difficult, presents a barrier to standardization, and acts as a disincentive toward achieving economies of scale. As a result, there is a need to balance the decentralization of IT management to business units with some centralized planning for technology, data, and human resources. This paper aims to analyze the possibility of achieving coordination using technology.

Objectives of the Study

- To analyze the need for technology coordination in an organization with special reference to IT sector.
- To determine the set of organizational coordination strategies preferred in an organization.
- To determine the current practices of information systems for coordination support.

RESEARCH DESIGN

Descriptive Research

Descriptive type of research has been adapted for the study. Descriptive research includes surveys and fact findings enquire of different kinds. The major purpose of descriptive research is description of the state of affairs as it exists at present. In social science and business research we quite of a use the turn exposit facts research for descriptive research study.

SAMPLING DESIGN

Sample size

The target respondents are associates contributing in IT Sectored organizations. For the purpose of the study, the size of the sample is 100.

Sample design

A Sample design is a definite plan for obtaining a sample from a given population. It refers to the technique or procedure the researcher would adopt in selecting items for the sample. Probability sampling technique has been used as the population size is known. Hence each sample has a chance of being selected this technique is adopted by the researcher.

Sampling technique

The adopted sampling technique for the purpose of research study is Stratified Convenience Sampling Technique.

LIMITATIONS

- The exploratory suggestions made via this survey in order to expand the view of coordination in information technologies sectors.
- Suggestions and opinions of people in the organization differs with levels in the organization
- Respondents might be hesitant in revealing their personal details during the survey

DATA ANALYSIS AND INTERPRETATION

Table No. 1 - STABILITY OF COORDINATION AT WORK

PARTICULARS	NO. OF RESPONDENTS	PERCENTAGE
Yes	64	64
No	36	36
Total	100	100

Interpretation: Two third of respondents stated that they have enough stability of coordination at work and one third stated that they do not have enough stability at work.

Table No. 2 - COMMUNICATION WITHIN A TEAM

PARTICULARS	NO. OF RESPONDENTS	PERCENTAGE
Daily	51	51
Weekly	8	8
Only when needed	41	41
Total	100	100

Interpretation: It was found that around half of the respondents stated that they communicate with their colleagues daily and 8% of respondents communicate weekly and 41% of respondents communicate only when required.

Table No. 3 - SUPERIOR ROLE IN IMPROVING COORDINATION

PARTICULARS	NO. OF RESPONDENTS	PERCENTAGE
Yes	73	73
No	27	27
Total	100	100

Interpretation: It is inferred that 73% of the respondents feel that their managers motivate them on improving coordination and 27% of the respondents differ.

Table No. 4 - RESPONSIBILITY IN DEFINING DECISION MAKING STRATEGIES

PARTICULARS	NO OF RESPONDENTS	PERCENTAGE
Manager	22	22
Delivery Head	36	36
CEO of the company	34	34
Associates	8	8
Total	100	100

Interpretation: It is inferred from the above table that 22% of respondents stated that the Manager should take up the decision making strategies, 36% insisted Delivery Head should take up the decision making strategies, 34% stated CEO of the company should take up the decision making strategies and 8% of the respondents stated that Associates should take up the decision making strategies

Table No. 5 - INVOLVING ASSOCIATES FOR DECISION MAKING

PARTICULARS	NO. OF RESPONDENTS	PERCENTAGE
Yes	93	93
No	7	7
Total	100	100

Interpretation: It is inferred from the above table that 93% of respondents feel that associates should be engaged in decision making and 7% of respondents differed.

Table No. – 6 INTEREST IN PERIODIC ASSESSMENT

PARTICULARS	NO. OF RESPONDENTS	PERCENTAGE
Yes	93	93
No	7	7
Total	100	100

Interpretation: It is inferred that 93% of respondents are interested in periodic assessment and only 7% are not interested in periodic assessment for the associates.

Table No. – 7 COORDINATION IN AN IT ORGANIZATION

PARTICULARS	NO. OF RESPONDENTS	PERCENTAGE
Strongly Disagree	2	2
Disagree	2	2
Neutral	18	18
Agree	57	57
Strongly Agree	21	21
Total	100	100

Interpretation: It is inferred that 78% of the respondents agree that coordination is needed in IT organization and only 4% disagreed on this point, 18% of the respondents neither agreed nor disagreed to the same.

Table No. 8 – COORDINATION AND TECHNOLOGY

PARTICULARS	NO. OF RESPONDENTS	PERCENTAGE
Strongly Disagree	2	2
Disagree	3	3
Neutral	5	5
Agree	29	29
Strongly Agree	61	61
Total	100	100

Interpretation: It is inferred from the above table, 90% of the respondents agree that Coordination through technology is readily achievable and only 5% disagreed to the same.

Table No. 9 – PAPERLESS ORGANIZATION – BOON OR BANE

PARTICULARS	NO. OF RESPONDENTS	PERCENTAGE
Boon	63	63
Bane	37	37
Total	100	100

Interpretation: It is inferred from the above table that 63% of respondents consider paperless organization as boon and only 37% of respondents say paperless organization as bane.

Table No. 10 – PREFERRED - COLLABORATION TOOLS

PARTICULARS	NO. OF RESPONDENTS	PERCENTAGE
Email	36	36
Bulletin Boards	22	22
Chats	21	21
Forums	21	21
Total	100	100

Interpretation: It is inferred from the above table, 36% of the respondents stated that Email is the tool for collaboration, 22% stated Bulletin Boards, and 21% of the respondents stated that Chats and Forums are the preferred e-collaboration tools.

WEIGHTED AVERAGE METHOD

Associate Contribute Successfully towards Coordination across the Team

PARTICULARS	NO. OF RESPONDENTS	PERCENTAGE	WEIGHTED ORDER
Strongly Disagree	2	2%	1
Disagree	5	5%	2
Neutral	22	22%	4
Agree	49	49%	5
Strongly Agree	22	22%	4
TOTAL	100	100	

= ((49 * 5) + (22* 4) + (22* 4) + (5 * 2) + (2 * 1)) / 100
= (245+176+10+2) /100 = 433 / 100 = 4.33

Interpretation: From the above table, the weighted average is 4.33, and the value of the weighted average is 4. So, most of the respondents agree that, an associate is successfully contributing towards coordination across the team.

Coordination with Other Subordinates and Co-Workers in the Organization

PARTICULARS	NO. OF RESPONDENTS	PERCENTAGE	WEIGHTED ORDER
Strongly Disagree	0	0%	1
Disagree	0	0%	2
Neutral	10	10%	3
Agree	44	44%	4
Strongly Agree	46	46%	5
TOTAL	100	100	

$= ((46 * 5) + (44 * 4) + (10 * 3) + (0 * 2) + (0 * 1)) / 100$

$= (230+176+30+0+0)/100 = 436/100 = = 4.36$

Interpretation: From the above table, it's clear that the weighted average is 4.36, and the value of the weighted average 4. So, most of the respondents are agree that, Coordination with other Subordinates and co-workers in the organization.

Frequent Communication between the Associates on General Topics

PARTICULARS	NO. OF RESPONDENTS	PERCENTAGE	WEIGHTED ORDER
Strongly Disagree	2	2%	2
Disagree	0	0%	1
Neutral	22	22%	3
Agree	51	51%	5
Strongly Agree	25	25%	4
TOTAL	100	100	

$= ((51 * 5) + (25 * 4) + (22 * 3) + (2 * 2) + (0 * 1)) / 100$

$= (255+100+66+4+0)/100$

$= 425 / 100 = 4.25$

Interpretation: From the above table, it's clear that the weighted average is 4.25, and the value of the weighted average 4. So, most of the respondents agreed for frequent communication between the associates on general topics.

SUGGESTIONS & RECOMMENDATIONS

Coordination Mechanisms – Summary of the Evaluation

Even if set of coordination mechanisms is criticized in this paper, several of the mechanisms can be included when understanding information systems and coordination. Mutual adjustment can occur, as well as direct supervision, and different kinds of standardization (the design process, designer's skills, norms, and the result). The main point in this paper is that these mechanisms are not sufficient on their own to help us to understand coordination in dynamic, and interactive, organizations with emergent

processes, and access to information systems. We need to expand our view of coordination.

Coordination mechanisms, revisited and evaluated when analyzing the firm, tend to focus on a formal division of labor, stable organizational structures and roles, and planned coordination. There is also a need to include more dynamic issues and perspectives, as well as the issue of concurrency and competing forces in coordination, when understanding this complicated phenomenon.

Coordinating with Information Systems – from a Particular to a Systemic Situation

When discussing coordination and the use of information systems in organizations, it is important to consider that information systems possess the potential to perform coordination of actions that are important when organizing firms. The use of information systems in coordination can imply that certain coordination is allocated from a particular coordination situation to a systemic situation. This allocation can result in a higher share of pre-defined, stable and formal coordination thereby forfeiting an inter-personal, and sometimes more flexible, coordination. The movement from a particular situation to a systemic one can be viewed both as positive and negative.

If coordination on a systemic level is increasing, the need for inter-personal communication and coordination can be reduced, and be a complement to the systemic one (e.g. when different breakdowns occur). Coordination therefore changes from a direct mode to an indirect. A high share of standardization (pre-defined, stable and formal), as a result of coordination on a systemic level, however, does not need to be negative for users of an information system in the sense that the system restricts possible actions. It can guide and support organizational action.

An Expanded View of Coordination Needed – Exploratory Aspects and Issues

There is a need to focus on the process of coordination. In doing that, one needs to focus on: prerequisites of coordination, human action and results. Communication, information and information systems are certainly related to coordination. To coordinate is to act and to communicate, and acts are performed by and through information systems. The need for information systems to be congruent to coordinated actions is also present as stated before.

Information systems (and their ability to perform and memorize actions, and to permit, promote and facilitate the performance of actions by users, both through the information system and based on information from a system) need to be coordinated with actions, and actions need to be coordinated with other actions.

The impact of Information Technology

The potential link between information technology (IT) and new workplace practices has received much attention lately. In particular focus is on the impact of organizational design on the demand for IT and found that this is larger for firms with substantial use of teams and broad job definitions. The impact of IT is consistent with our model's predictions. First, IT increases the capabilities of employees to perform information processing tasks, which is complementary with broader job assignments and more employee discretion. Second, IT is also likely to reduce communication costs, an effect that the previous literature has argued leads towards more specialization. There is a strongly significant positive correlation between the use of email and broadly defined jobs and the study resolves this apparent contradiction by showing that by increasing employee discretion, lower communication costs often results in more task-bundling.

Coordinated approach to IT innovation and use that diffused through the entire organization and extended beyond the tenures of the original leaders. IT innovation and coordination became a way of working embedded in the organization's social structure. Leadership created a vital and influential IT function without resorting to tight controls. They developed a culture of cooperation and IT innovation.

CONCLUSIONS

In this study we have argued the demand for coordination is essential in both understanding the problem of organizational design from a theoretical point of view as well as in rationalizing the changes in workplace. The endogenity of the demand for coordination induces a profit function for the organization that is often convex in the degree of specialization of its members and in the quality of the horizontal communication between them. The reason is that organizations exhibit increasing returns to coordination, that is, the better the coordination between the members of the organization the higher the demand for further coordination.

A direct consequence of this observation is that organizations tend to oscillate between two distinct modes. In the first one, organizations are characterized by very specialized job descriptions and limited employee discretion whereas the second displays broad job classifications and substantial employee discretion. The first, then, coordinates ex-ante, exploiting specialization gains and sacrificing adaptability whereas the second coordinates ex-post, foregoing the benefits of specialization to gain in adaptability.

Coordination in extreme events plays a critical role in achieving organizational goals and operational efficiency. The current body of knowledge in coordination, however, is mostly limited to normal contexts. While the conventional wisdom provides limited predictions, it remains largely unknown the extent to which these beliefs are in fact accurate. Through the study of coordination in one large scale incident, this study presents some intriguing findings. It shows that the decision making for extreme event coordination is mainly facilitated through (1) organizational structures, (2) collaborative decision making processes, and (3) the contribution of advanced decision support systems. The key to success in implementing more advanced IT for coordination is to plan for the greater complexity and organizational impacts brought about by the technology, and to provide social and institutional supports that facilitate the organization's adaptation to these changes.

The less the degree of change required by the implementation of new information technologies, the greater the likelihood of successful implementation of the technology. However, such incremental change might be part of radical organizational change brought about by business reengineering or other broader change in management or operational processes. The use of IT for coordination is more complex than much of the academic and practitioner literature suggests. Developing a better understanding of this complexity is the main challenge for scholars and researchers. Coping with this complexity is the main challenge for practitioners. This research is a first but important step in these directions. To give a final word in this globalized era technology for coordination is definitely a boon for any organization.

LIMITATIONS AND SCOPE FOR FURTHER RESEARCH

The exploratory suggestions made to expand the view of coordination to understand information systems has not yet been tested (e.g. in a system development project), and that of course can be criticized. Another important question left unanswered in this study is how significant the company size is when studying information systems and coordination. The set of coordination mechanisms that has been evaluated seems to have a large company as a blueprint.

The discussion concerning the relationship between different kinds of information systems and coordination can of course be made more thoroughly than in this paper. The researcher dealt with information systems for coordinating group work, that can be further studied in order to elaborate on the presented view of coordination and information systems.

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BRIEF PROFILE – Prof. Dr. V SASIREKHA

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Prof. Sasirekha obtained her B.Sc (Chemistry) from Madras Christian College in 1996 and MBA from University of Madras during 1998. She also completed her M.Phil from Bharathiar University – Coimbatore during 2007 and completed her Ph.D at Mother Teresa Womens University, Kodaikanal during 2011. Her areas of interest include Marketing Management, Integrated Marketing Communication, Quality Management, E-Commerce, Management Information Systems and Entrepreneurship development.

She has edited two books and has prepared monographs for E-Commerce and TQM for the benefit of students. She is also an editor for M-infiniti and Sankhya Journals published by Sri Sai Ram Institute of Management Studies. She is also an editorial board member of "Global research journal on information and communication studies" A peer reviewed referred publication and "International Journal of Research in Management" – an international, scholarly, referred, double-blinded, peer-reviewed, open-access, online & printed quarterly published Journal.

She is a recognized Ph.D research supervisor for Bharathiar University, PRIST and AMET University and is guiding Ph.D – Management Scholars. She is also acting as a DC member at Bharat University and St. Peters University, Chennai. She has published 25 research papers in journals and presented at national and international conferences. She has guided more than 225 MBA projects. She has also coordinated and organized many national seminars and international conferences.

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