CHAPTER 1

General Introduction

1.1 Introduction

Information is the basic material for the decision making process. Everyone needs information about everything even in his day to day life also. People needs information, right from the organizational level to the personal level, from the highly educated and experience person to school children, from a very famous person to an ordinary person, for taking the right decision in every step of life.

The word "information" was apparently derived from the Latin stem of the nominative informatio, this noun is in its turn derived from the verb "informare". When the raw data is processed or value is added to it, data becomes information. When information is further processed and reasoning is applied to it, information becomes knowledge. The processing at this stage is usually analytical in nature involving reasoning, inference, extrapolation and other complex mathematical operations.

Shannon and Weaver (1949) defined "*Information as any stimulus that reduces uncertainty*". Line (1974) defined that information need is what an individual ought to have for his work, his research, his edification, his creation etc. Ford (1980) defined "*information as the structure of any text which is capable of changing the image structure of recipient*".

Chen and Hernon (1982) mentioned that information is all knowledge, ideas, fact, data and imaginative works of mind which are communicated normally and informally in any format. Debons (1988) defined information as the cognitive state of

awareness (As being informed) of given representation and physical form (data). This physical representation facilitates the process of knowing. Hernon and Chen (1982) stated that information need occurs whenever people find themselves in situations that required some form of knowledge for resolution.

Webster's International Dictionary (1994) defines "Information" as

a) Facts or figures ready for communication or use as distinguished from incorporated in a formally organized branch of knowledge.

b) The process by which the form of an object of knowledge is impressed upon the apprehending mind so as to bring about the state of knowing.

Information can be defined as a collection of facts organized in such a way that they have additional value beyond the value of the facts themselves. In simple word "information" can be defined as a processed data. Information, in the most restricted technical sense; it is an ordered sequence of symbols that can be interpreted as a message. Information can be recorded as signs, or transmitted as signals. Information is any kind of event that affects the state of a dynamic system. Conceptually, information is the message (utterance or expression) being conveyed. This concept has numerous other meanings in different contexts. Information may be further divided into two major types, which are given below:

➢ Informal Information; and

➢ Formal Information.

Generally, information is a concept, an idea, a statement, a facts, news etc. The current information environment is rich, characterized by a proliferation of information sources and providers, a multiplicity of methods for accessing information, and a redundancy of content from multiple sources. Each and every actions of an individual being is linked with information. Most of individual gain this

by means of observation, experience and experiments (Bhattacharjee, Bhattacharjee and Sinha, 2013).

Today information is found in many forms of sources. Availability of information in digital sources has influenced everyone in the process of information seeking and information accessing pattern.

1.2 Information Needs

Information has become the central theme of living these days. It is treated as a commodity and traded for a price. Information economics has emerged as a subject of recent interest. The world is witnessing a phenomenon of information explosion. Consequently, the present period of human civilisation is also called the information age. Everybody needs information for some purpose or the other. The information need is different from one person to another which means that it will not be the same though it might be similar. Historically, the information age is supposed to have set in since early 1970s and is expected to last for another two more century.

In the context of information society and information age, a number of questions related to information have arisen such as:

> ➢ What constitutes information?

> ➢ How can we transmit information reliably and efficiently using modern telecommunication systems?

> ➢ How can we store large volumes of information in a compact form?

> ➢ Is there a measure for information?

> ➢ Can we evaluate the information content by attaching value to information?

Such questions have led to the development of information theory that basically deal with the various aspects; such as concept of information, information measure, information content, information communication, information storage, etc. Information usually generates following such modes as Observation, Thought process, Deliberation or Imagination, Experimentation, Processing of data, happening of various events, and so on. In certain cases like language, information generates following the path of evolution.

In order to identify the information need of an individual certain factors need to be considered/decided on a course of action as to whether

(a) The source is within reach;

(b) The money involves;

(c) The time involves;

(d) The sources having the answer to their problems; and

(e) Understanding the source that provides the answer.

Other factors like social, political, geographical, educational, etc. also affect the Information Seeking Behaviour (Laloo, 2002).

Information need was recognized as a complex phenomenon generated by complicated environments and peoples' minds. The concept of information required is not clear till date, Brittain point out that information required may referred to the following aspect:

(a) Need expressed by the user;

(b) Need that a user cannot express;

(c) Present or immediate need; or

(d) Future or deferred or potential need.

A range of studies has shown previously that personality traits impact on information seeking to varying degrees (Kernan & Mojena, 1973, Hertzum and Pejtersen, 2000, Halder et al., 2010).

1.3 Generation of Information at Digital Era

Information Technology leads to impact information generation in a number of ways. Previously, a budding author had to struggle a lot to get his writing published. Now, he can straightway place his writing in Internet to attract the attention of others without wasting any time. The process will generate information and to a certain prevent information loss. These publications among others comprise books, periodicals, and conference proceedings. Cyber-metrics, an electronic-only journal as well as a virtual forum is devoted to the study of the quantitative analysis of scholarly and scientific communications in the Internet.

Digital information is created and managed by using three digital technologies: digital computer, digital communication and digital storage technology. In addition, there are some end devices that acquire information in digital form. Examples of such devices are digital voltmeters, digital telephones and digital facsimile. Digital information is capable of being stored inside a computer, processed by a computer and transmitted over a digital communication system (Bhattacharjee, 2014).

Computers have traditionally acted as tools in performing functions related to human thought process. They used to be termed as data processing machines for about forty years since their inception. Today, they are termed as *information processing machines* and are serving the information society. The information processing machines are more powerful than data processing machines. At that time, the

computers with additional capabilities may be termed as knowledge processing machines. These machines may support knowledge bases and intelligent processing (Szymanski, 1994; Pearsall, 1999).

Thus, computer and its tools help in delivering a quicker and a better source of information without wasting any time. It along with Internet help in giving details for whatever information one wants to know. Users also use different e-resources through various modes to satisfy their information needs in this digital age. They use the Internet in different ways i.e. access to e-journals, downloading articles, chatting, discussion, etc. towards fulfilling their information needs. But, it also noticed a paradigm shift in Information Seeking Behaviour in the last few decades. In these days Information Seeking Behaviour is a process of finding information to fill a knowledge gap through electronic-based i.e. internet – search engines, search strategy, etc.

1.4 Changing Information Seeking Behaviour in Digital Era

Information Communication Technology (ICT) is one of the important words of today's world. It has changed the society into information society and our way of life. It has been integrated in every walk of our life and its impact has been evident in railway, air reservations, banking and insurance sectors, postal services, biotechnology, bioinformatics, biomedical sciences, media and communications teaching learning, library and information services, e-resources, digitization of documents, digital library, library trade, entertainment, etc. etc. It has penetrated in everywhere and its make our life comfortable and easy (Bhattacharjee, 2014).

Nowadays, like books and periodicals, there are many articles which are also available on Internet only as digitized form. IT has also helped in the generation of

quicker as well as better information. Before the advent of IT era, information search used to take a huge amount of time. Further, large volume of information in this universe is in non-electronic or analog form. This has helped in increasing the productivity of researchers and many other authors. Moreover, authors are now in a position to provide more updated information in their publications.

Due to the advent of internet, researchers or scientists can search the OPAC and can request for inter-library loan services from their library's desktop. Internet provides two tools to support searching on the www browser and search engines. Social scientists use HTML and HTTP through internet used by the social scientists for scholarly communications through: E-mail; E-count; E-journal; E-book; Data Bank; Virtual libraries; Academic websites and websites for research organizations; and other www based services (Krikelas, 1983).

Study on information seeking behavior would enable the investigator to discover the patterns of use and level of awareness of the scientists towards library services, to determine success or non-success of the services, to assess the level of efficiency of the services and to identify what adjustment are needed in successful delivery of library services.

Information seeking behaviour research has centered on the creation of models; from factor relationship models (Wilson, 1981, Wilson, 1999), through sense-making models (Dervin et al., 2003), search process models (Kuhlthau, 1993), task based models (Bystrom and Jarvelin, 1995), to non-linear models (Foster, 2004); and on to integrated general models (Spink and Cole, 2006). These models have been generated from a range of empirical studies on different types of users, but all aim to show how individuals orientate and 'go about' the act (or acts) of information seeking (Stokes, 2013). All these models will be discussed at length in later chapter.

In order to ascertain how the scientific community seeks information in today's environment, the present study was carried out among scientific community working at university libraries of Assam, India. The study would address the various aspects of library visit pattern, information needs, information seeking pattern and what factors are responsible for maximum utilization of resources and what issues are to be addressed to fulfill the information needs and users demands or users expectation in changing digital environment.

1.5 Role of Library and Information Centre

As people embrace to the new world of information and data that move with them fluidly throughout the day, the expectations of people also fundamentally change. They expect information to be accessible anywhere, anytime. They also expect to be in constant contact with their networks and to have ready access to businesses that are more open and transparent about how they operate than ever before.

In 2015, EMC-sponsored global survey conducted by Vanson Bourne included that the advances in technology and the heightened role of information have changed the existing way of our life. These new capabilities to enabled technology by the rise of big data, the ubiquity of always connected mobile devices, the power of social networking, and cloud computing are reshaping industries, redefining experiences and fortifying sustainable business.

Libraries and other information institutions have been responding to the information needs of education, research and development, government activities, business and industry and by the general public for a long time. With their collections, responsive and anticipatory services, libraries were able to meet many of the requests

for information for different clients. But these conventional services have remained largely passive and limited. Now ICT has provided a new opportunity for libraries to change their approach and offer a client-based active service to keep our institutions alive.

The library is the primary and significant requirement for any educational institution. Library is the heart of a university and the character and efficiency of an academic institution can be determined by the treatment given to its central organ namely the library. A systematically developed library collection serves as a major academic facility to the faculty as well as students and facilitates them to conduct research in all fields.

On the other hand, Library and Information Centre also has been playing a vital role towards fulfilling the information needs for everyone. Academic libraries have a long history, starting with the chained and closed-access libraries of earlier times to the present-day hybrid, digital, and virtual libraries that use the latest technology for provision of information through various media, sources and services. Today, these libraries are surrounded by networked data that is connected to vast ocean of Internet-based services to make desired information sources accessible to the academic community such as students, scholars, staff, and the faculty alike.

1.6 Area of the Study

"ASSAM" is one of the eight northeastern states of India with its capital at Dispur. The name "Assam" is derived from the term "Asom" which, in Sanskrit, refers to unequal. The uneven topography of the land, full of hills, plains and rivers might, therefore, have contributed to her name.

Except for a narrow corridor running through the foothills of the Himalayas that connects the state with West Bengal and rest of the country; Assam is almost entirely isolated from rest of India. Located just below the eastern Himalayan foothills, it is surrounded by the other northeastern states: viz. Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura and Meghalaya. Assam economy is based on agriculture and oil and forest and natural resources. Assam produces a significant part of the total tea production of the world. Assam produces more than half of India's petroleum (http://www.assaminfo.com/).
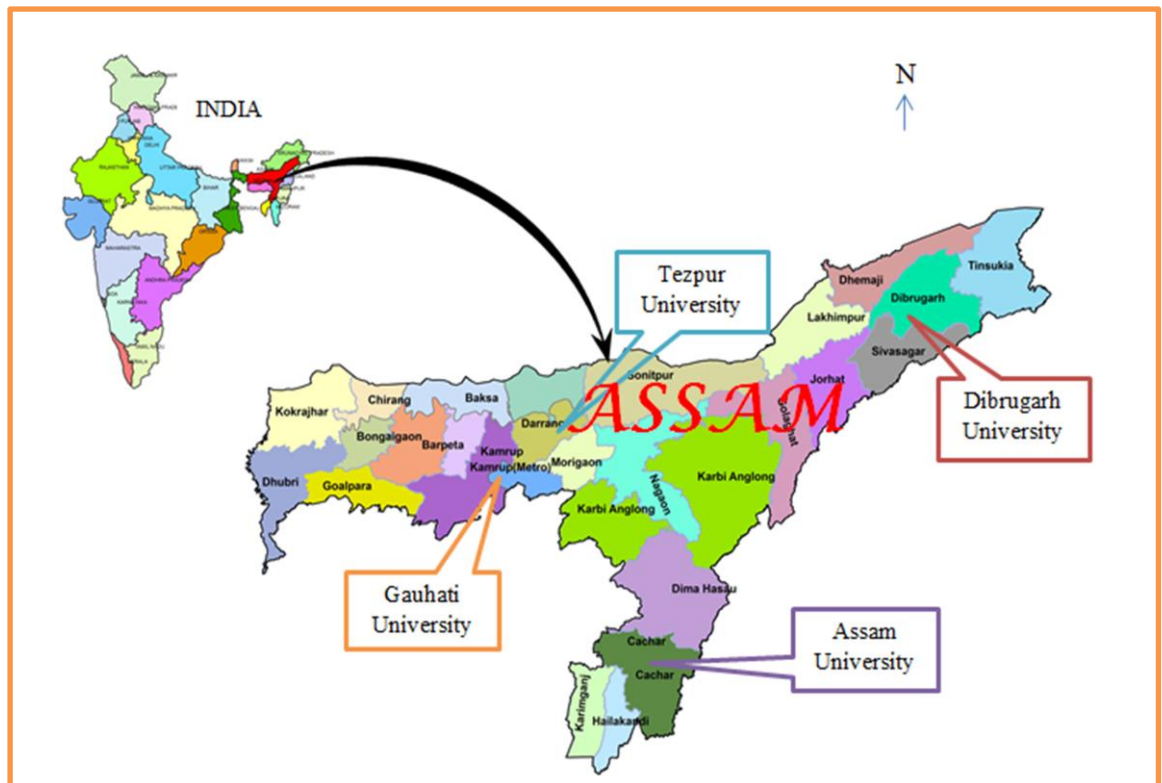

Figure: 1.1 Map of Assam along with the location of Universities

1.6.1 Statistical Records of Assam

As per the census records (2011), Assam comprises of 27 numbers of districts; which is shown in Table: 1.1. But, on 15th August 2015, Tarun Gogoi, the Chief Minister of Assam, announced the formation of five new districts in the state which leads to make total number from 27 to 32 numbers districts. The five new districts are

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Biswanath (of Sonitpur), Charaideo (of Sivasagar), Hojai (of Nagaon), South Salmara-Mankachar (of Dhubri) and West Karbi Anglong (of Karbi Anglong) (Times of India, PTI, 15th August 2015).

The Table: 1.2, shows the various statistical records of Assam as per geographical location, population, literacy rate, etc.

Table: 1.1: The areas and populations of the 27 districts of Assam

District	Headquarter	Population (2011)	Area (km²)	Density (/km²)
Barpeta	Barpeta	1,693,190	3,245	506
Bongaigaon	Bongaigaon	2,060,550	1,724	425
Cachar	Silchar	1,736,319	3,786	381
Darrang	Mangaldai	908,090	3,481	432
Dhemaji	Dhemaji	688,077	3,237	176
Dhubri	Dhubri	1,948,632	2,838	576
Dibrugarh	Dibrugarh	1,327,748	3,381	347
Goalpara	Goalpara	1,008,959	1,824	451
Golaghat	Golaghat	1,058,674	3,502	270
Hailakandi	Hailakandi	659,260	1,327	409
Jorhat	Jorhat	1,091,295	2,851	354
Karbi Anglong	Diphu	965,280	10,434	78
Karimganj	Karimganj	1,217,002	1,809	555
Kokrajhar	Kokrajhar	930,404	3,129	297
Lakhimpur	North Lakhimpur	1,040,644	2,277	391
Morigaon	Morigaon	957,853	1,704	455
Nagaon	Nagaon	2,826,007	3,831	604
Nalbari	Nalbari	769,919	2,257	504
Dima Hasao	Haflong	213,529	4,888	38
Sivasagar	Sivasagar	1,150,253	2,668	395
Sonitpur	Tezpur	1,925,975	5,324	315
Tinsukia	Tinsukia	1,316,948	3,790	303
Kamrup	Amingaon	1,517,202	--	489
Kamrup Metropolitan	Guwahati	1,260,419	--	1313
Baksa	Mushalpur	953,773	2,400	398
Udalguri	Udalguri	832,769	1,676	497
Chirang	Kalaigaon	481,818	1,468	328

(*Source: Compiled from Censes, 2011, Govt. of India, Assam*)

Table: 1.2 Statistical Records of Assam

State Capital	Dispur
Area	78,438 sq. km. (of this 20% hilly)
Altitude	237 ft
Longitudes	92.93 East
Latitudes	26.20 North
Population	31,205,576 Numbers
Male	15,939,443 Numbers
Female	15,266,133 Numbers
Sex Ratio	958 females per 1000 males
Temperature	10ºC- 35 ºC
Rain	1,500 mm per year
Official Languages	Assamese, Bodo, Bengali (in South-part).
Literacy rate	73.18 % (as 2011 Census)
No. of Districts	27 nos. (Till March, 2015)

(*Source: Manorama Yearbook, 2015*)

1.6.2 Status of Primary, Secondary & Higher Educational Institution of Assam

The school level education in Assam consists of primary, secondary and higher secondary schools and there are three different boards to control and run the system. After the proposal of establishing local self-government in India in 20th century, development related to education was started in Assam. From 1950, there was started to develop primary education with the five-year plans.

The Education system of Assam is the schools and Colleges of Assam are either run by the state government or private organization. The state Education Department gives special attention to the Primary sector in Assam. School education in Assam is imparted through a number of pre-primary, primary, middle, high and higher secondary schools. The Government of Assam has implemented the free and compulsory education policy for students up to the age of 14. The schools in Assam are affiliated either to State Education Board, Assam (SEBA), Indian Certificate of Secondary Education (ICSE), or to the Central Board for Secondary Education

(CBSE). The Central Board of Secondary Education (CBSE) affiliated schools in the state use English as their medium of instruction. (https://online.assam.gov.in/web/guest/education-in-assam). List of schools in various districts of Assam are shown in Table: 1.3.

Table: 1.3: List of districts wise schools in Assam

District	Primary Schools	Middle Schools	High School	Higher Secondary
Barpeta	2064	417	283	41
Bongaigaon	965	261	116	17
Cachar	1713	410	147	28
Darrang	1581	281	220	31
Dhemaji	1078	283	146	13
Dhubri	1624l	434	156	34
Dibrugarh	1304	382	141	25
Goalpara	1150	286	148	13
Golaghat	1125	265	162	23
Hailakandi	1127	260	40	9
Jorhat	1761	443	253	26
Kamrup	2490	518	484	65
Karbi Anglong	1162	286	163	12
Karimganj	1402	347	92	25
Kokrajhar	1282	218	73	15
Lakhimpur	1648	534	254	25
Morigaon	921	292	127	14
Nagaon	2230	575	304	58
Nalbari	1599	386	256	28
North-Cachar Hills	6060	205	68	6
Sibsagar	1805	426	185	41
Sonitpur	1465	280	212	36
Tinsukia	1080	230	106	19

(*Source: https://online.assam.gov.in/web/guest/education-in-assam*)

Assam consists of the most wide-ranging networks of higher educational institutions in the whole of North-Eastern region of India. Presence of institutions including the Indian Institute of Technology (Guwahati), National Institute of Technology (Silchar), Central Universities (Tezpur University, Tezpur and Assam University, Silchar), State Universities (Gauhati University, Guwahati and Dibrugarh

University, Dibrugarh), Silchar Medical College, Guwahati Medical College, Assam Agricultural University (Jorhat), Assam Engineering College (Guwahati), Jorhat Engineering College (Jorhat), Architecture institutes, Management institutes, etc. and various affiliated/ provincialized or private colleges adds significant value to the educational system of Assam. The colleges of Assam (including medical, engineering and law colleges) are affiliated to Gauhati University, Dibrugarh University, Assam University and the Assam Agricultural University.

Table: 1.4 Numbers of Higher Educational Institutions in Assam

Type	Numbers
Central University	2
Deemed university	1
Private University	4
State University	2
Open University	1
Distance educational Institution	2
IIT	1
Medical Colleges	8
NIT	1
Institutes of National Importance	3

(*Source: Compiled from https://en.wikipedia.org/wiki/Education_in_Assam*)

Table: 1.4 shows the different types of higher educational institutions of Assam along with the respective numbers. Thus, Assam has the most wide range networks of higher educational institutions in the whole of North-Eastern region of India.

1.7 Location of Research Study

For the present study, two states and two numbers of central universities have been taken into account. These universities consist of Tezpur University (Tezpur), Assam University (Silchar), Gauhati University (Guwahati) and Dibrugarh University

(Dibrugarh). Brief account of these universities under study has been highlighted in following paras:

1.7.1 Tezpur University, Tezpur

Tezpur University was established by an Act of Parliament in 1994. The objects of this Central University as envisaged in the statutes are that it shall strive to offer employment oriented and interdisciplinary courses to meet the local and regional aspirations and the development needs of the state of Assam. The university has four schools of studies which are divided into 20 departments and three special academic centers. (http://www.tezu.ernet.in/)

The Central Library, Tezpur University was established in 1994 along with the establishment of the University. The library holds 61284 volumes of Books and subscribed 685 titles of current journals (print 183, online 502). The UGC-Infonet Consortia of INFLIBNET Center is providing access facility to 9081 (including 525 on perpetual basis) e-journals. Central Library also gets online access of 926 e-journals through DelCon Consortium and 17 databases (14 from UGC-INFONET and 3 from others). Library also subscribed various e-resources for library users; which are IEEE Digital Library, ACM Digital Library, ASME Database, Science Direct, SciFinder, JCCC Database, Royal Society of Chemistry (6 Database), MathSciNet, ISID Database, Web of Science, Emerald, Cambridge Structural Database(CSD), FSTA, Indiastat, etc (http://www.tezu.ernet.in/Library/database.htm).

1.7.2 Assam University, Silchar

Assam University came into existence through Assam (Central) University Act, 1989 which is established in 1994 under an Act of Parliament. It has been accredited by the National Assessment and Accreditation Council (NAAC), with a B

grade with a CGPA of 2.90 in 2015. There are more than 3000 students enrolled in various courses offered by this university. There are also 56 undergraduate affiliated colleges under this university. (http://www.aus.ac.in/)

The University Central Library was established in 1994. At present the Central Library has a collection of more than one lakh twenty thousand books. It also subscribes to more than 400 Indian and foreign journals. Facilities provided by the Library include reading/ lending services, reference service, reprint service, literature search, photocopying, and CD-ROM search. Besides these, access to internet is provided to students through 40 terminals. Online access to more than 2000 e-journals under UGC-Infonet, access to IFLIBNET Database service, access to DeLNET Database Services, emerald journal services, OPAC facility etc. are also provided. (AUS Prospectus, 2015).

1.7.3 Gauhati University, Guwahati

Gauhati University is the first public university of North-East India, located in Guwahati, Assam, India. It was established on 26 January 1948. It is accredited by the National Assessment and Accreditation Council, with a B grade with a CGPA of 2.91. There are 39 post graduate departments and 341 affiliated colleges under Gauhati University. (www.gauhati.ac.in/)

The central library of Gauhati University is known as Krishna Kanta Handiqui Library. It was established to fulfill the needs of the students, teachers and research scholars of the University. The University Library started its functioning in 1948 at Chandmari (now known as old University Colony) and then shifted to the Arts building and accommodated in the present building in 1962. The personal collection of 7593 volumes of books generously donated by Prof Handiqui consisting to Gauhati

University is a precious and priceless possession of the library. The library holds 269369 books, 34495 volumes bound periodicals, 4276 nos report literature, 4500 nos manuscripts, 150000 pages digitized manuscripts, 852524 pages digitized theses, etc. (http://www.gauhati.ac.in/Krishna-Kanta-Handique-Library.php)

1.7.4 Dibrugarh University, Dibrugarh

Dibrugarh University, the easternmost University of India was set up in 1965 under the provisions of the Dibrugarh University Act, 1965 enacted by the Assam Legislative Assembly. It is accredited by the National Assessment and Accreditation Council, with a B grade in 2002 and re-accredited in 2009. The University has around 200 affiliated and permitted colleges and institutes to achieve its goal of dissemination of knowledge and generation of human resource. (www.dibru.ac.in/)

The Central Library has several specialized collections for readers, such as- Gandhi corner, Bezbaroa Corner, Human Rights Corner, North-East Corner, etc. The Library follows the Open Access System. It practices the DDC and AACR-II cataloging scheme. The Library provides access to E-Journals under Infonet-E- Journal consortium. The INFLIBNET sponsored project provides full-text access to scholarly Journals and archival access to back volumes. The library has a total collection of 1,64,677 books, 4700 E-Journals, 17200 Back-volumes of Journals, 400 CD's/DVD's, etc. (http://www.dibru.ac.in/index.php/amenities-infrastructure/library).

1.8 Statement of the Problem

In the present era gathering of information has become more complex and expensive. The present century is treated as an era of information revolution and libraries are changing their face and migrating towards use of traditional and

electronic information sources. The habits of library users are also changing as par their searching pattern for making effective information searches. Academic library users, basically those belong to scientific community plays very important role in developing a knowledge base and need recent information in the field continuously. The users visit libraries in quest for information, it affects the use of library resources. The users feel that library could not fulfill their needs and that they are wasting time in searching for the information as well obtaining need based information. Keeping these considerations in mind the present study has been undertaken to assess the information seeking behaviour of management users to fulfill needs of users from libraries in digital information era.

Information seeking behaviour research has also led to generate or create numbers of information seeking behaviour models; from factor relationship models (Wilson, 1981, Wilson, 1999), through sense-making models (Dervin et al., 2003), search process models (Kuhlthau, 1993), task based models (Bystrom and Jarvelin, 1995), to non-linear models (Foster, 2004). These models have been generated from a range of empirical studies on different types of users, but almost all these models aimed to show how individuals "usage" and "go about" the act of information seeking.

The above models have been discussed in details at later chapters. As there is changing trends in information seeking on account to development of ICT/ digital era, these models address the information seeking pattern of scientific community of Assam. The purpose of this study is to describe the information needs and information seeking behaviour of university library user's especially scientific community of Assam in current environment and their use of information to support their process of

inquiry and scholarly communication. More specifically this study was also designed to address/ answer the following questions:

- ➤ How does library user seek and obtain information, and what are the related issues?
- ➤ Do these library services are provided effectively and efficiently to the library users?
- ➤ How do they manage to get the material of their interest from the library?
- ➤ Do they face any difficulty to access information?
- ➤ What information resources do library user value, and where do they find them?
- ➤ What other factors influence do library user "information seeking behaviour"?

Academic institutions and library services have developed various information literacy initiatives in an attempt to improve the skill set of scientific community (Hanson, 1973, p. 13; Riyahi, 1995; Xia, 2006; Khosrowjerdi & Alidousti, 2010), but many of these are based on assumptions of what respondent should do, why they do it, and whether the searching strategy is idiosyncratic.

Motivated by above discussed various problems, an attempt has been made to conduct a study on topic information needs and information seeking behaviour among scientific community in digital era of university library users at Assam state.

1.9 Significance of the Study

Providing satisfaction to the users is one of the important objectives of the library. This can only be achieved provided the library disseminates adequate information, reading materials and services to the library users and for these, the

library requires to understand the library users for their information needs and information seeking behaviour to search desired information for academic and research purposes. There are many channels through which the library can develop with regard to collections and provide services to the users. The significance of this study from a theoretical perspective and the findings on analysis of data would substantially add knowledge in information needs and information seeking behaviour of scientific community who basically depends on library for their information needs.

1.10 Objective of the Study

The main objectives of the study are as follows:

➢ To study the information needs of scientific community belong to university libraries of Assam;

➢ To understand the library visit and library usage pattern for gathering information by them;

➢ To examine the different factors which facilitate information searching pattern of the scientific community;

➢ To find out the Internet literacy and e-resource searching behaviour among scientific community belong to these universities;

➢ To identify the various channels through which information is accessed by them; and

➢ To examine the various problems faced by the scientific community for accessing information.

1.11 Hypotheses of the Study

On the basis of observation, following hypothesis is framed for the present study:

Hypothesis: 1.

$H0_1$: There is no significant difference between different categories of users with frequency of library visit.

$H1_1$: There is a significant difference between different categories of users with frequency of library visit.

Hypothesis: 2.

$H0_2$: There is no significant difference between users from different universities with frequency of library visit.

$H1_2$: There is a significant difference between users from different universities with frequency of library visit.

Hypothesis: 3.

$H0_3$: There is no significant difference between different categories of users with their libraries visit pattern.

$H1_3$: There is a significant difference between different categories of users with their libraries visit pattern.

Hypothesis: 4.

$H0_4$: There is no significant difference between different income groups of users with different library visit pattern.

$H1_4$: There is a significant difference between different income groups of users with different library visit pattern.

Hypothesis: 5.

$H0_5$: There is no significant difference between different categories of users with overall satisfaction levels of library collections.

$H1_5$: There is a significant difference between different categories of users with overall satisfaction levels of library collections.

Hypothesis: 6.

$H0_6$: There is no significant difference between different categories of users with preferred way of desired information search.

$H1_6$: There is a significant difference between different categories of users with preferred way of desired information search.

Hypothesis: 7.

$H0_7$: There is no significant difference between different university library users with preferred way of desired information search by its users.

$H1_7$: There is a significant difference between different university library users with preferred way of desired information search.

Hypothesis: 8.

$H0_8$: There is no significant difference between different categories of scientific community library users with level of their confidence while searching information.

$H1_8$: There is a significant difference between categories of scientific community library users with level of their confidence while searching information.

Hypothesis: 9.

$H0_9$: There is no significant differences between scientific community belong to different universities with level of their confidence while searching information.

$H1_9$: There is significant differences between scientific communities belong to different universities with level of their confidence while searching information.

Hypothesis: 10.

$H0_{10}$: There is no significant difference between gender and level of confidence while searching information.

$H1_{10}$: There is a significant difference between gender and level of confidence while searching information.

Hypothesis: 11.

$H0_{11}$: There are no significant difference between gender and level of satisfaction with retrieved documents while searching information.

$H1_{12}$: There are significant differences between gender and level of satisfaction with retrieved documents while searching information.

Hypothesis: 12.

$H0_{12}$: There is no significant differences between different universities and level of satisfaction with retrieved documents while search information.

$H1_{12}$: There is significant differences between different universities and level of satisfaction with retrieved documents while search information.

Hypothesis: 13.

$H0_{13}$: There is no significant difference between different categories of scientific community and level of their satisfaction with retrieved documents.

$H1_{13}$: There is a significant difference between different categories of scientific community and level of their satisfaction with retrieved documents.

Hypothesis: 14.

$H0_{14}$: There is no significant difference between different categories of scientific community and extent to Internet literacy.

$H1_{14}$: There is a significant difference between different categories of scientific community and extent to Internet literacy.

Hypothesis: 15.

$H0_{15}$: There is no significant difference between different universities and Internet literacy.

$H1_{15}$: There is a significant difference between different universities and Internet literacy.

Hypothesis: 16.

$H0_{16}$: There is no significant difference between gender and extent to Internet literacy.

$H1_{16}$: There is a significant difference between gender and extent to Internet literacy.

Hypothesis: 17.

$H0_{17}$: There is no significant difference between different categories of scientific community library users and e-resource searching pattern.

$H1_{17}$: There is a significant difference between different categories of scientific community library users and e-resource searching pattern.

Hypothesis: 18.

$H0_{18}$: There is no significant difference between gender and e-resource searching pattern.

$H1_{18}$: There is a significant difference between gender and e-resource searching pattern.

Hypothesis: 19.

$H0_{19}$: There is no significant difference between different categories of scientific community and usefulness of e-resource available under university library service.

$H1_{19}$: There is a significant difference between different categories of scientific community and usefulness of e-resource available under university library service.

Hypothesis: 20.

$H0_{20}$: There is no significant difference between different universities with usefulness of e-resource availability.

$H1_{20}$: There is a significant difference between different universities with usefulness of e-resource availability.

1.12 Scope of the study

The present study has been designed for the scientific community university library users of Assam which comprises of post-graduate students, research scholars and faculty members. The area selected for the study is Assam state of Northeast India which consists of four (two central universities and two state universities) universities, viz. Assam University, Silchar; Tezpur University, Tezpur; Gauhati University, Guwahati and Dibrugarh University, Dibrugarh.

1.13 Limitation of the Study

The present study has been limited to the scientific community population who belong to the four universities of Assam, India which includes two central universities (like Assam University, Silchar and Tezpur University, Tezpur) and two state universities (like Guwahati University, Guwahati and Dibrugarh University, Dibrugarh). The technical universities and other higher educational institutions of Assam have not taken into consideration for this study. The study has further been limited to the scientific communities of library users of only four selected universities.

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1.14 Definition of the Operational Term/ Key Terms

➢ **University:** "University" means an institution of learning of the highest level, comprising a college of liberal arts, a program of graduate studies, and several professional schools, and authorized to confer both undergraduate and post graduate degrees. Webster's Dictionary defined University as "An institution organized and incorporated for the purpose of imparting instruction, examining students, and otherwise promoting education in the higher branches of literature, science, art, etc., empowered to confer degrees in the several arts and faculties, as in theology, law,

medicine, music, etc." Online Encyclopedia Britannica defined University as "institution of higher education, usually comprising a college of liberal arts and sciences and graduate and professional schools and having the authority to confer degrees in various fields of study".

➢ **University Library:** A university library is a library that is attached to higher academic institutions particularly above the graduation level, serving the teaching and research needs of students and scholar. These libraries serve two complementary purposes: to support the university curriculum, and to support the research of the university faculty and students.

➢ **Central University:** A Central University or a Union University in India is established by Act of Parliament and are under the purview of the Department of Higher Education in the Union Human Resource Development Ministry. In general, universities in India are recognised by the University Grants Commission (UGC), which draws its power from the University Grants Commission Act, 1956. The list of central universities published by the UGC includes 46 central universities as on 20 May 2015.

➢ **State University:** State universities are run by the state government of each of the states and territories of India, and are usually established by a local Legislative Assembly Act. Following a constitutional change in 1976, it became a joint responsibility of the states and the central government to run the universities in the state.

➢ **Scientific Community:** Webster's Dictionary defined scientific community as that community who's "having knowledge of science, or of a science; evincing science or systematic knowledge; as, a scientific chemist; a scientific reasoner; a scientific argument". Online Wikipedia defined scientific community as

"the scientific community is a diverse network of interacting scientists. It includes many "sub-communities" working on particular scientific fields, and within particular institutions; interdisciplinary and cross-institutional activities are also significant."

> **Students:** Webster's Dictionary defined student as "A person engaged in study; one who is devoted to learning; a learner; a pupil; a scholar; especially, one who attends, a school, or who seeks knowledge from professional, teachers or from books; as, the students of an academy, a college, or a university; a medical student; a hard student."

> **Faculty Members:** A members of a particular profession regarded as a body; a group of persons entrusted with the government and tuition in a college or university. Webster's Dictionary defined faculty as "an educator who works at a college or university".

> **Research scholars**: Students who have been registered with any University and pursuing research for the award of M. Phil. or Ph. D. degree and who are not a full time/ part time faculty of the constituent colleges.

1.15 Organisation of Chapters

The study is mainly organized into two main parts, namely: Theoretical Background and Analysis of Data

Chapter-I: General Introduction

It provides information on the Assam state, academic institutions of Assam, background of the study, significance, objectives, scope, limitation, planning of captures and definition of operational terms for the study in detail.

Chapter-II: Review of Literature

Here, it provides information about national level, international level and

printed and non-printed types of review of earlier studies.

Chapter-III: Research Methodology

Third chapter describes research methodology and research design adopted for the collection and analysis of the data. It also describes sampling procedure, tools of data collection and research adopted for this study.

Chapter-IV: Information Seeking Behaviour: A Conceptual Framework

Forth chapter deals with the conceptual background of information, information needs, information seeking behaviour, and information seeking models in detail.

Chapter-V: Data Analysis and Interpretations

Fifth chapter deals with the data analysis and interpretation of the data related to personal information, information needs of the library users. It contains interpretation of data by statistics that includes statistical data and figures.

Chapter-VI: Major Findings and Discussion

Sixth chapter comprises of major findings of the study. It also discusses about the discussion about the earlier study with the finding of the study.

Chapter-VII: Suggestions & Recommendations

Seventh chapter provides suggestions, recommendations and conclusion.

Chapter-VIII: Design & Development of Proposed Model

Eighth chapter described the new proposed model. It also includes areas of further research.

At last bibliography is given according to APA (6th ed.) style; which is followed by Appendix.