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Paradigm Shift in Library Usage: Evidence Based on Corporate Library Users Survey

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This article belongs to the ***Special Issue "Modern Trends in User Centric Design (UCD) of Library Services and Applications"***

Abstract This paper focuses on new ways to access and use information for corporate library users. There is an unbelievable growth in information technology sector, due to this, the information seeking pattern of the corporate library users have been changing quite often. As a result, the role of librarians is more focused on exploring awareness to gather the required information. The paradigm shift in the information seeking behavior of the corporate library users has created new value added market service to the library. Since majority of the software professionals are under work pressure they are not able to be present in the library so the library services should go to his/her place on time. This paper discusses on the user expectations of future corporate libraries, preferred place to access on-line resources, hindrance to access library resources, sharing of information and librarian's focus areas, in the future.
Keywords *Paradigm Shift in Corporate Libraries; Future Corporate Libraries; Information Sharing; Rating of Corporate Library Service*

1. Introduction

Information is powerful, valuable and therefore should be available everywhere. People are very fast in acquiring information and they rely on and live with technology. Technology changes are happening in every field and everyone needs information to be on their hands and thus expecting a new paradigm shift at every instance. In this context, the information seeking behavior of the library users is also changing towards new technologies. They are not willing to wait to get the information of their interest as they are pressurized to complete their task on time. It should be noted that the information seeking behavior or pattern of IT professionals distinctly differ from the other library users. This is because they are exposed to technology to a greater extent. They are well-versed in handling software devices and

tools and so prefer information through online resources, looking for a new paradigm shift in the libraries. This results in their fewer visits to the library. Some studies also show that they prefer to obtain information through social networking service (SNS) and various internet sources as of time and they feel that they could save the time in going to the library and searching for their needed information. In this context, due to the tremendous growth of availability of information and technology in this century, the corporate librarian's need a new paradigm to cater to the needs of the corporate library users and modify the library services by effectively planning for the future fate of corporate libraries.

2. Software Industry at a Glance

Information technology development has changed India's image from a bureaucratic economy to a land of innovative entrepreneurs. In India, the IT sector has generated 2.5 million direct employment making India to be one of the biggest hub of IT capital of this modern world, where all the major companies in the world IT sector are located. The IT companies are distributed in the major cities of India including Bangalore, Chennai, Kolkata, Hyderabad, Trivandrum, Noida, Mumbai and Pune. As Bangalore is the leading IT exporter, it is considered to be the silicon valley of India. The IT market in India is focusing on providing low cost solution in service business of the Global IT. There are only a few Indian companies involved in product development business of global IT, but now in the recent years a slow increase in the number of such companies has been stated. Certain high level software jobs like software development life cycle (SDLC), processes involving analysis, high level design and architectural design are not allocated to Indian IT players by the US giants, even though they have enough competencies to take up and complete these jobs successfully. Another visible change in the IT industry is the slow geographical diffusion of IT jobs that were confirmed to Bangalore which are now slowly moving into other cities like Chennai, Hyderabad and Pune.

3. Cognizant Technology Solutions: A Profile

Cognizant is a leading provider of information technology, consulting, Infrastructure Services and business process outsourcing (BPO) to successful leading IT companies in the world. Cognizant is organized into vertical and horizontal units where the vertical units focus on specific industries and the horizontals focus on specific technologies or process areas. Both the horizontal and vertical units have business consultants, together forming the Cognizant Business Consulting (CBC) team. Being the chief recruiter of MBAs Cognizant is involved in business development and business analysis for IT services projects. It has its headquarters in Teaneck, New Jersey with more than 100 development and delivery centers across the world and 217,700 employees as of March 31, 2015. Being a member of the NASDAQ-100, the Forbes Fast Tech 25, Information Weeks Top Innovators, the company is ranked #308 among the "Fortune 500" (up 44 places from 2013) and appeared on Fortunes "World Most Admired" list for seven consecutive years and is one of the fastest growing companies of the world. CTS is one among the top 10 companies receiving H1-B visa to send more employees to work in US offices and its locations. In 2015, Cognizant has first quarter revenue of $2.91 billion and is expecting second quarter revenue of at least $ 3.01 billion. Presently, Cognizant is headed by Francis D'Souza, its Chief Executive Officer under whose leadership CTS has a strong leadership team comprising of Gordon Coburn as its president and John E. Klein as its Chairman and Karen McLoughlin as its Chief Financial Officer.

4. Need for the Study

There are few studies have been conducted in corporate library users perception on library services. There is no even single study has been made to identify the factors lead to paradigm shift in library usage in corporate world. Corporate libraries are expected to grow day by day to meet the technology challenges and expectations from the users. Corporate library users are all very well talented and know how to get their information of interest when required. Certain external factors are also forcing the

corporate libraries to seriously evaluate and redefine their purpose that they have established within the IT industry. It is the duty of corporate librarian to identify and implement new paradigm services to meet the challenges posed by google, wiki and other Internet search tools that have changed the information seeking behavior of software professionals. In this crucial context, it is needed to carry out a study on corporate library users in the context of paradigm shift so as to focus on their search and accessing patterns of information to serve better.

5. Review of Literature

It has been observed that number of studies have been conducted on the Information Seeking Behaviour of which only a few studies are pertaining to software professionals. Most of the studies have shown that corporate libraries are providing wide range of services to the corporate users due to the unbelievable growth in the IT sector; the corporate library user's information seeking behaviour has been changed quite a lot and is expecting library services to be available at their desk or through mobile devices wherever they are. Leckie et al., (1996) presented that engineers work with a specific objective in mind – a particular product or device to be delivered to the client. This implies that accuracy, reliability of information is paramount. Information needs of engineers also vary by age, primary role and career stage. Oral communication is predominantly used to gather knowledge. Communication via telephone and face-to-face are considered important. It was also seen that experience affects the strategy chosen to seek information. Chun Wei Choo, Brian Detlor and Don Turnbull (2000) studied the usage of the Web to seek external information of IT specialists, managers, and research/marketing/consulting staff through questionnaire and interview method and suggested that a behavioral framework that relates motivations (Aguilar) and moves (Ellis) may be helpful in analyzing patterns of Web-based information seeking. Hertzum and Petersen (2000) proposed that engineers get most of the information from colleagues and internal reports. They spend 40-66% of their time communicating in order to get the necessary information. Yitzhaki and Hammershlag (2004) identified the information seeking behavior of software engineers and computer scientists and concluded that most of the software engineers and scientists preferred verbal discourse with colleagues, professional journals and printed text books as most accessible and often used them as information sources. Ko, A.J.; DeLine, R.; Venolia, G (2007) analyzed the software developers' day-to-day information needs and observed that their most frequently sought information included awareness about artifacts and coworkers whereas searches relating to knowledge about design and program behavior were deferred.

6. Objectives

The objectives of the research paper are:

- To identify the demographic and work profiles of the corporate library users of CTS library
- To identify the role of the library in their carrier growth and their preferred places to access the needed information
- To focus on their expectations for the future corporate libraries and the barriers to use their libraries
- To examine their information sharing modalities

7. Methodology

The study is based on the primary data collected from the library users in CTS Library. Since all the software professionals are busy with their work they are unable to spare time for an interview, so the questionnaires were posted to their respective official email ids with a request to fill the same. A number of 100 questionnaires were posted, of which, 95 filled questionnaires have received in return.

The study has adopted a simple random sampling technique to select the respondents belonging to CTS and is assumed that all the respondents are users of the library and therefore no clustering strategy is adopted. But the respondents are categorized according to their designation to make contrast in seeking pattern of information.

8. Results and Discussions

This section provides results of the survey in tabular form. Further, the results are interpreted and correlated with findings of the other studies. Among the 95 respondents 73 (76.84%) are male and 22 (23.16%) are female. The result shows large number of male respondents has actively participated in the survey.

Table 1: *Gender-wise Distribution*
(Source: Sample Survey, 2015)

Sl. No.	Gender	No. of Respondents	Percentage
1	Male	73	76.84
2	Female	22	23.16

A. Age Wise Distribution of the Respondents

Age is an important biological factor which is considered one of the prerequisite in job market especially in IT industry. Majority of the new entrants in the IT field will be less than 25 years and are fresh candidates. In the study, the same view is proved. Table 2 shows age wise distribution of the respondents

Table 2: *Age-wise Distribution*
(Source: Sample Survey, 2015)

Sl. No.	Age (in years)	No. of Respondents	Percentage
1	Below 25	40	42.11
2	26 - 30	42	44.21
3	31 - 35	5	5.26
4	36 - 40	6	6.31
5	41 - 45	2	2.11
6	46 - 50	0	0.00
7	Above 51	0	0.00

It is found from the table that majority of the respondents belong to the age group of below 30 years that accounts for 86.32 percent. Only few respondents are found in the rest of the age category i.e. above 30 years. An interesting findings is observed from the study is that there are no respondents from the age group of above 45 years. This is because the younger age group is more dynamic, suitable to diversity and adoptability. They would have an idea of improving their talents and skills. Therefore, they will refer more to update information and to standardize their carrier growth.

B. Educational Qualifications

Educational qualification is a main factor to set a job/employment in any field and is especially more important in software industry. In response to the booming of the industry, many fields have emerged, new courses and degrees are being offered by the educational institutions. Table 3 shows educational-wise classification of the respondents.

Table 3: *Educational Qualifications-wise Distribution*
Source: Sample Survey, 2015

Sl. No.	Educational Qualifications	No. of Respondents	Percentage
1	BE	48	50.53
2	B.Tech	17	17.89
3	M.E	9	9.47
4	M.Tech	7	7.37
5	BCA	8	8.42
6	MCA	3	3.16
7	Others	3	3.16

It is observed from the table that Graduates with B.E degrees (50.53%) are more in sample composition followed by B.Tech graduates (17.89%).The higher degree graduates and other technical holders are also low. It is clear from the table that fresh graduates are interested to participate in the survey and are happy to utilize the library resources efficiently.

C. Role of the Respondents in the CTS

Table 4 shows the various roles played by the respondents in the organization. It is evident that 32.63% of the respondents have Associates, 27.38% were program Analysts and 21.05% were Senior Associates revealing that software professionals in these roles have responded more. In addition 5.26% each of Programmer Analyst Trainee and Manager, 3.16% of Associate Director and 2.11% of Associate Vice President have participated in the survey. It is found that more than 81% of the respondents in the intermediate level have participated in this survey.

Table 4: *Roles of the Respondents*
(Source: Sample Survey, 2015)

Sl. No	Designation	No. of Respondents	Percentage
1	Programmer Analyst Trainee	5	5.26
2	Programmer Analyst	26	27.38
3	Associates	31	32.63
4	Senior Associate	20	21.05
5	Manager	5	5.26
6	Senior Manager	1	1.05
7	Associate Director	3	3.16
8	Director	1	1.05
9	Senior Director	1	1.05
10	Associate Vice President	2	2.11
11	Senior Vice President	0	0.00

D. Total Experience of the Respondents in the Industry

Table 5 shows the classification of the respondents according to their years of experience. It is found that professionals with <3 years of experience have responded more whose percentage share is 48.42%, followed by the respondents with 4-6 years of experience that accounts for 24.21% and respondents with 10-12 years of experience comprise 11.58%. An interesting finding is to be noted from the study is that the majority of the respondents are from the fresher's level who are having experience of less than three years as compared with experienced professionals.

Table 5: *Total Experience of the Respondents in the Industry*
(Source: Sample Survey, 2015)

Sl. No.	Years of Experience	No. of Respondents	Percentage
1	<3	46	48.42
2	4 to 6	23	24.21
3	7 to 9	8	8.42
4	10 to 12	11	11.58
5	13 to 15	5	5.26
6	>16	2	2.11

E. Respondent's Portfolio

Table 6 shows the distribution of the respondents based on the portfolio for which they are working. It is clear from the table that 16.84% of the respondents are in the Banking and Financial Services Industry, 13.68%each of the respondents are in the Insurance/Transportation & Logistics Industry and 12.63% of the respondents are in the Energy & Utilities Industry. It is found that majority of the respondents are working in Banking, Insurance and Transportation verticals.

Table 6: *Respondent's Portfolio*
(Source: Sample Survey, 2015)

Sl. No.	Respondent's Portfolio	No. of Respondents	Percentage
1	Banking & Financial Services	16	16.84
2	Communications	4	4.21
3	Consumer Goods	3	3.16
4	Education	0	0.00
5	Energy & Utilities	12	12.63
6	Healthcare	6	6.32
7	Information Services	6	6.32
8	Insurance	13	13.68
9	Life Sciences	1	1.05
10	Manufacturing	9	9.47
11	Media & Entertainment	2	2.11
12	Retail	6	6.32
13	Technology	4	4.21
14	Transportation & Logistics	13	13.68
15	Travel & Hospitality	0	0.00

F. Respondent's Services

Table 7 shows the distribution of the respondents based on the Services or capability through which they are linked to the verticals. It is seen from the task that 48.42% of the respondents are in the Application Services, 23.16% of them are in the Infrastructure Services, 7.37% of the respondents are in the Business Process Services etc. It is clear from the table that more respondents are from the application development side followed by infrastructure and BPO.

Table 7: *Respondent's Services*
(Source: Sample Survey, 2015)

Sl. No.	Services	No. of Respondents	Percentage
1	Analytics	3	3.16
2	Application Services	46	48.42
3	Business Process Services	7	7.37
4	Cloud	3	3.16
5	Digital Works	2	2.11
6	Infrastructure Services	22	23.16
8	Consulting	0	0.00
9	Customer Relationship Management	0	0.00
10	Engineering & Manufacturing Solutions	4	4.21
11	Enterprise Risk & Security Solutions	0	0.00
12	Experience Design	0	0.00
13	Human Capital Management	0	0.00
15	Mobility	5	5.26
16	Portals & Content Management	0	0.00
17	Quality Engineering & Assurance	2	2.11
18	Social	0	0.00
19	Supply Chain Management	1	1.05

G. Respondent's Competency

Table 8 shows the distribution of the respondents based on the competencies they possess. It is evident that 13.68% have Testing Competency, 10.53% have Web Development Competency, 7.37% have Network Administration, Security and Business Intelligence/Data Warehousing Tools Competencies each etc., It is evident from the table that professionals working in Testing projects have participated in this survey mostly followed by those working in Web Development projects.

Table 8: *Respondent's Competency*
(Source: Sample Survey, 2015)

Sl. No.	Competency	No. of Respondents	Percentage
1	DBA / Data Modeling / Data Engineering	4	4.21
2	Testing	13	13.68
3	Business Intelligence / Data warehousing Tools	7	7.37
4	Client Server	6	6.32
5	Usability Engineering	2	2.11
6	Mainframe Technologies	8	8.42
7	Content Management Solutions / Portals	7	7.37
8	Business Analysis	2	2.11
9	ERP Technology	2	2.11
10	Project/Program Management	4	4.21
11	Business Process Management	4	4.21
12	Web Development	10	10.53
13	Microsoft Technologies	6	6.32
14	Mobile applications and device management	5	5.26
15	Big Data	3	3.16
16	Middleware	2	2.11
17	Network Administration, Security	7	7.37
18	Training	0	0.00
19	Travel	0	0.00
20	HR, Recruitment, Administration	2	2.11
21	Accounts and Finance	1	1.05

H. Enhance and Apply the Techniques Acquired from the Library

Figure 1 demonstrates the knowledge and benefits acquired by the respondents through the library. 40% of the respondents have agreed and 17.89% have strongly agreed to the fact that they were able to enhance and apply the techniques acquired from the library. From this result, we can conclude that the library is still serving and helpful in the career growth of these professionals, even though modern technological means of obtaining information are available in their desk itself.

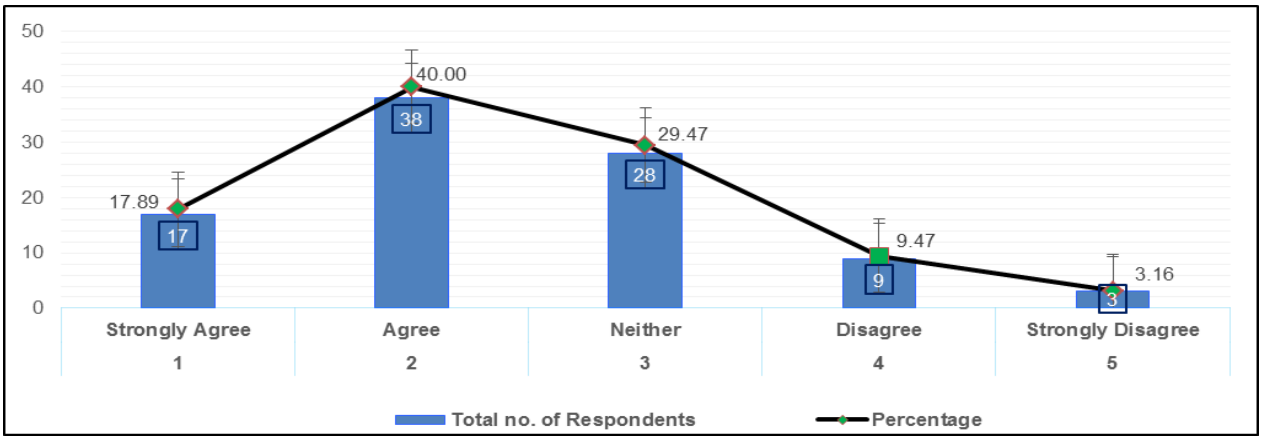

Figure 1: *Apply the Techniques Acquired from the Library*

I. Preferred Place to Access Online Resources

Figure 2 shows the place from which the respondents prefer to access online-resources. 62.11% prefer workstation, 24.21% prefer library, 11.57% prefer home and 2.10 % prefer internet centers to access online-resources. This finding clearly points out that majority of the respondents prefer to use online resources from their desk itself rather than coming to the library. It is also encouraging to find that 24.21% of the respondents are happy to choose library as their preferred place to access on-line resources. This confirms the success of the library in catering to the needs of these professionals.

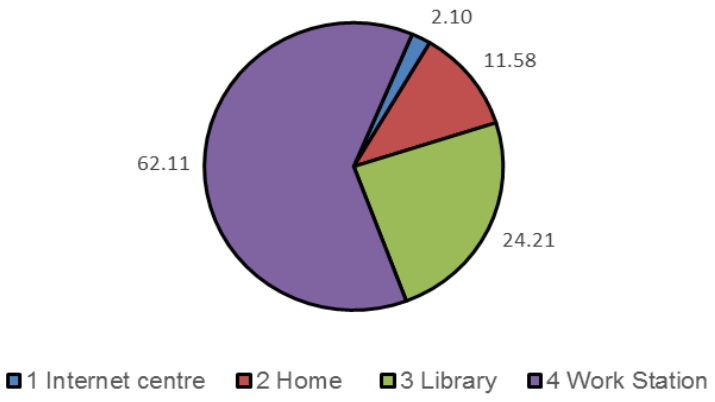

Figure 2: *Preference Place to Access Online Resources*

It is also pertinent to mention that libraries provide their resources on the desktops of the users with the ICT applications. The CTS library may subscribe to databases, which can be accessed on their desktops.

J. Expectation of Future Corporate Library

Figure 3 shows the future expectations of the respondents regarding the corporate library and its services. It is clear from the table that 48.42% of the respondents are expecting library services through handheld devices, 30.53% of the respondents prefer digitized resources for their information needs and 17.89% of the respondents are expecting to have a bigger and better library. An interesting finding from this table is that there is a moderate level of interest among IT professionals towards libraries amidst the tremendous technological developments.

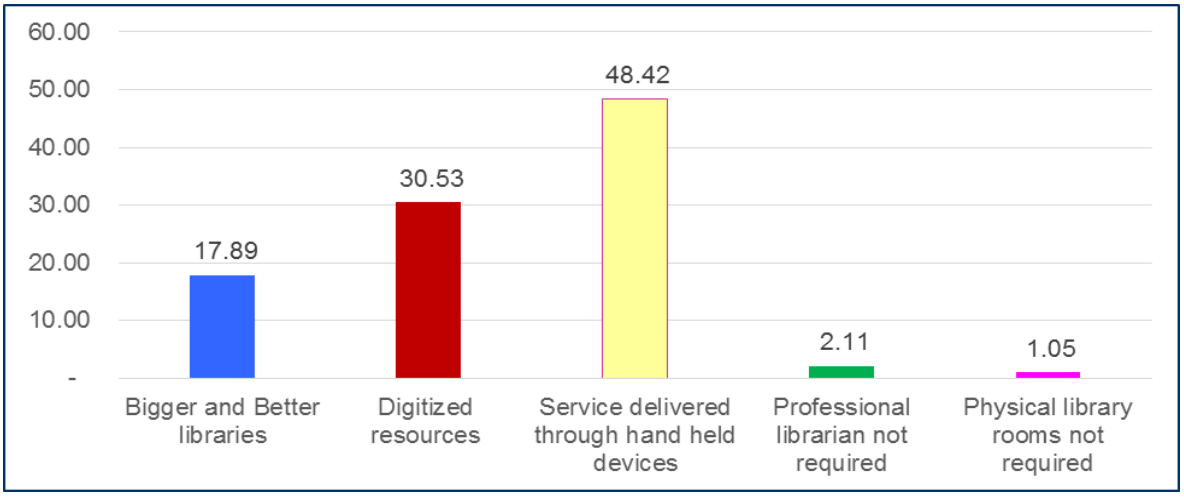

Figure 3: *Future Corporate Library*

K. Factors Affecting in Accessing the Library

Table 9 shows the various hindrances in accessing the library. It is clear from the table that 28.42% of the respondents are underwork pressure, 18.95% respondents are facing uncertainty of job, 15.79% of the respondents are having tight work schedules & are compelled to work long hours, 12.63% of the respondents are experiencing lack of role clarity & sense of dissatisfaction, 11.58% of the respondents are having lack of time to access the library, 8.41% of the respondents are working on shifts, 2.11 % each of the respondents are facing harassment from the reporting managers and are being distracted with social media and other activities. From the table a wide range of barriers faced by the software professionals in accessing the library are identified.

Table 9: *Factors Affecting the Access to Library*
(Source: Sample Survey, 2015)

Sl. No.	Barriers	No. of Respondents	Percentage
1	Work pressure	27	28.42
2	Lack of time	11	11.58
3	Uncertainty of job	18	18.95
4	Working on shifts	8	8.41
5	Lack of role clarity & Sense of dissatisfaction	12	12.63
6	Tight work schedules, Compelled to work long hours	15	15.79
7	Frequent work-related travel	0	0.00
8	Reporting managers harassment	2	2.11
9	Health problems	0	0.00
10	Emotional disorders	0	0.00
11	Distracted with social media, other activities	2	2.11

L. Sharing of Information

Table 10 exposes that many of the respondents of the study preferred to share either personal or career related information through either facebook or whatsApp. This is because the use of mobile devices has increased and people are becoming more dependent on them. It is clear that 1st and 2nd rankings were predominantly given to Facebook, WhatsApp, Twitter, YouTube and LinkedIn showing their popularity in sharing information. Google+ and Skype are shown to be used to a certain extent, whereas, Hike, and MySpace seemed to be of less popularity. Many organizations are themselves playing a major role in sharing information(s) to its employees by fixing mandatory learning hours as part of their goals. Social networking media is also playing a leading role in sharing information and libraries are also employing these tools to serve the user community.

The software professionals are asked to complete mandatory training courses through online resources like e-resources (books 24x7) which allows company employees to access learning assets around the globe in several modalities including video, audio and interactive formats at work place, home or on the road. Many IT companies have realized the importance of such media and have tied up with service providers like Skillport. Also the organizations have setup a credit system for using these resources that are directly linked to individual and group performance systems where defaulters will be rated accordingly.

Table 10: *Sharing of Information through SNS*
(Source: Sample Survey, 2015)

Sl. No.	Sharing of Information through SNS	Rank									
		1	2	3	4	5	6	7	8	9	No. of Respondents
1	Facebook	81	11	3	0	0	0	0	0	0	95
2	WhatsApp	79	10	2	1	1	1	1	0	0	95
3	Twitter	65	23	6	0	1	0	0	0	0	95
4	YouTube	53	7	9	11	3	12	0	0	0	95
5	LinkedIn	41	23	17	0	0	5	3	4	2	95
6	Google+	39	7	9	7	1	3	6	14	9	95
7	Skype	23	11	6	8	1	2	0	0	44	95
8	Hike	0	0	0	1	1	2	3	5	83	95
9	MySpace	0	0	0	0	1	0	2	3	89	95

M. Rating of Corporate Library Services

Table 11 shows the performance rating given to the various services provided by the library. The findings of this study express the satisfaction of the respondents towards the services rendered by the library. It is clear from the table that 44.02% of the responses were very good and 41.98% of responses were good making an average of 86%, which shows the success of the library in providing the required services to the users. It is also evident from the table that 13% of the responses were average and only 0.99% of the responses were poor. This shows that majority of the respondents have given positive responses towards availing the library services. It is also evident that the innovative services through electronic devices (Mobile phone, Tabs etc.,) are more preferable to the respondents as they can be benefitted through the services provided by library wherever they are.

Table 11: *Rating of Corporate Library Services*
(Source: Sample Survey, 2015)

Sl. No.	Rate the Below Services offered by Your Library	Poor	Average	Good	Very Good	No. of Respondents
1	Circulation	0	11	40	44	95
2	eBooks (Books 24x7)	0	12	47	36	95
3	eBooks on Mobile Device	0	14	33	48	95
4	eJournals	0	16	39	40	95
5	Reference Service	0	18	45	32	95
6	Digital Learning Centre	0	6	28	61	95
7	Transfer Library Resources	1	11	41	42	95
8	Library Connect Programmes	0	12	40	43	95
9	Content Page Service	0	3	51	41	95
10	Reprographic Services	0	14	41	40	95
11	Reservation	0	10	44	41	95
12	Inter-Library Loan	6	15	47	27	95
13	Document Scanning	5	4	18	68	95
14	Newspaper Clipping Services	1	18	40	36	95
15	Audio-Video Viewing	1	7	44	43	95
16	New Arrivals Display	1	31	36	27	95
17	Computer based Learning Courses	1	8	44	42	95
	Total No of Participants	16	210	678	711	1615
	Percentage	0.99	13.00	41.98	44.02	100

9. Summary and Conclusion

Information and communication technologies dominate the world. Everyone ultimately has to depend on the ICTs tools for their ordinary life. The positive growth of the sector leads to huge investment in the sector and paves way for opening up of millions job opportunities. Many MNCs have started their software companies in India and CTS is one of the popular companies. It offers employment opportunities for young and dynamic graduates with computer knowledge. The software professionals are generally viewed to be under work stress. They are not able to cope with stress due to many reasons. Psychologists suggest visiting the library and reading books would relieve them from stress. In this context the software companies are establishing separate libraries. Further, library offer more information to the corporate professionals to equip or enhance or update their knowledge. In the study, irrespective of designation, software professionals used to visit libraries for updating their knowledge and information. A majority of the respondents prefer to use online resources from their desk itself rather than coming to the library. A significant finding is observed from the survey that software professionals used to read/ access information through on-line. It is also found that respondents are expecting library services through handheld devices. Work pressure and uncertainty of their jobs are the major barriers for them to use the library. Many of the respondents of the study preferred to share either personal or career related information through either Facebook or WhatsApp. Thus, the librarian's role is much needed to upgrade and implement library services that can be delivered to their desk or through hand held devices.

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Experience: Over 21 years of experience in IT Industry including IITM, CTS, EDS and Mphasis involving Library Administration and Management, General Office Administration, PMO, Pre-Sales Support, Campaign Management, Marketing Productivity and Innovation, Transition Management, Business Analysis, Finance Management, Training Coordination's, Customer Relations, Team Management and Vendor Management.

Publications: Attended a number of conferences/workshops and presented papers in Conferences and Seminars
Memberships in Professional Associations: Madras Library Association, Chennai (MALA) Tamil Nadu, India.

Professional Visits: Visited EDS UK and implemented Library and Information Management System in Preston, Lytham, Blackpool, Manchester offices in July 2009.

Jayapal P.

Kaliyaperumal, K. (Dr.)

Librarian i/c, University of Madras Library, University of Madras, Chennai, Tamil Nadu, India,

Qualifications: M.L.I.Sc., Ph.D

Experience: Major contribution of work is creating patents information support services, ISO- 9001 application in the university Library, digital library initiatives, implementation of total bar coding, RFID, Smart Card, website creation, networking, implementing various value added services.

Awards: Received many awards, worked with various committees and conducted various national and international conferences and seminars.

Professional Visits: Visited many countries to deliver lectures and to present conference papers.

Kaliyaperumal, K. (Dr.)