The researcher analyzed data collected from librarians, users and from the scholarly literature published in different resources of e-resources and deduced findings by the researcher. The findings reported cover both the streams engineering and medicine.

7.1 Findings: Users Data Analysis:

A) Status of Professional Education

1. In Goa seven Colleges are established mainly for engineering professional educational courses and annual intake of these colleges is fixed as per Technical Education Goa and at present 1890 seats is allocated for engineering. The courses managed in these colleges are mainly Mechanical Electrical and Civil in addition to this IT, Electronic, E and TC are conducted. The oldest college in Goa is Govt. Engineering College (1967) and another popular institute is BITS Billani and only these two prominent colleges alone have 920 students intake per annum. In case of Medical Profession Education in Goa, five colleges are established for medicine, ayurveda, homeopathy, dental and nursing colleges (nursing college is covered in survey because it is basically and directly related to medical streams). There is a single college for each branch of medical discipline. But the oldest college is Goa Medical College established in 1842. The latest college is in the discipline Homeopathy in 1998.

2. It is observed that the candidates enrolled in both medical and engineering colleges are based on purely merit and incase of engineering education male population (65%) is more than female (35%) but in medical sciences female (65%) population is more as compared to male (35%). In case of paramedical courses like OT/PT microbiology, laboratory technician in which female representation is more and may reaches up to 90%.
B) Status of Libraries

- It is observed that all the engineering and medical colleges have provided library facilities to their students and faculty (users) and also appointed well qualified library staff.

- In both medical and engineering branches use of library is prominent and almost all students visiting to library regularly for study purpose and preparing for seminar assignment and project work. The library facilities are made available to users during working hours i.e. 10 am to 6 pm and 79% users are satisfied with this timings but 21% users have suggested to keep library open till 8 pm.

- The library collection is focused mainly on curriculum based and comprised of text book, reference book, Indian and Foreign Journals. 77% users have satisfaction using library collection whereas 23% users have suggested some advanced reading literature. The real users of the libraries in both streams are professors (faculty), students and researchers. 65% users are visiting library on their own where as 12% users visit to library for specific resources suggested by Professors, 22% users are visiting libraries suggested by their friends or along with friends for referring to resources in the library.

C) Users

- 67% users pointed out that libraries are best source for gathering required information for various purpose where as 33% users needs some additional resources to fulfill their needs. 55% users have awareness of use of library from the college time but 45% users indicated that they are using library from school time. This indicates that professional colleges like medicine and engineering have library literacy. 87% users have appreciated the environment in library suitable for reading purpose and also indicated their satisfaction from the collection.

- Users of professional colleges visits to libraries for different purpose especially 67% users are visiting libraries for purely study and subject reading purpose. 66%
users are visiting libraries for issuing books. The other purposes are for reading for seminar and term work preparations. However 20% users are regularly visiting library and 27% users at least 2-3 times in a week thus 50% of the users from professional colleges visit libraries for different purposes related to study regularly. 34% users uses library minimum two hours per visit for study purpose. Whereas 42% users are uses libraries nearly 4-5 hours per visit.

- Users from professional educational institutes use resources for subject knowledge, 38% for notes preparation, 40% for circulation and exam preparations, 45% users for seminar, assignment and project writing, 35% users visit for supplementary reading on the subject.

- It is also observed that 52% users are self sufficient in consulting resources for their own, 32% user on guidance of library staff, 29% users as per teacher’s instructions, etc. The main sources used by users are reference books and journals for qualitative reading. Only 33% users referring to curriculum reading.

- Users of professional education systems mostly depends on internet resources and free resources (58%), 40% users are also relying on library collection. 82% users have indicated that they can search information on their own, but 17% users have pointed out that they need some help from library staff like librarians.

- While observing researchers it is noticed that only 53% users can search information using searching tools, the remaining users 47% are unaware of searching techniques. 91% users are relaying on information based services.

- In professional education systems, users are fully aware of use of ICT applications for various purposes and all are technology savvy. 91% users are using PC’s 59% users are using laptops and tablets. 62% users have more than five year experience in handling ICT and among them 61% users are using
computer for gathering information from various resources for them, especially e-resources of libraries or internet.

- 86% users, uses computer from home or hostel and 58% users goes to library and computer centre for assessing the computers. 67% users are acquainted with Linux operating system but 100% users are fully aware of Windows Operating System. Thus it is observed that 70% of the users have gained literacy in computer.

- It is also observed that 93% users are using computer for email, communication and exchanging their documents to friends and peers. 95% users uses computer for searching information either online or offline. 95% users are using internet heavily for information collected or the topic in addition to the library facilities.

- 60% users are using broadband facility and 67% users are using mobile based communication system. It is observed that users are aware of using mobile for communication purpose especially using internet.

- 72% users are using internet since 2-5 years and 63% users are searching information everyday either from home, library or computer centre. 91% users are surfing internet on their own and feel satisfactory. Only 15% users are getting guidance from library and computer expert for getting proper information support.

- 61% to 71% users are using internet for searching databases, e-journals and OPAC’s. 92% users are using internet mainly for education purpose. 95% users are aware of search engines commonly used such as Google and Yahoo. 35% users have shown interest in getting orientation for searching information using specialized search engines.
• 75% users responded that users are preferring both the medias for professional education i.e. e- resources and print resources. Whereas only 4% users have opined to use only e-resources at present.

• The e-resources heavily used by users have based on internet resources (96%) and e journals (59%), databases (12%), while gathering information for projects users are required print and e-resources equally. 69% users have opted for internet resources 47% for print resources as well as e-resources for use. 55% users have agreed that impact of e- resources is reflected in scientific and professional areas like engineering and medicine. Only 28% users have accepted that slowly print version might be less used in professional education systems.

• The most preferred resources used by users are print media (90%) and e-resources (69%) and 11% internet resources for their professional career development. 88% users have opined that they are aware of e-resources available in their profession. 54% users have pointed out that the resources available in e-form in engineering and medical are mostly useful for the study or research purpose. 82% users are satisfied about the e-resources made available through e-library which includes database, e-journals, e books and engineering resources in their field. 88% users indicated that they need orientation for searching information from e- resources. e- Resources are used for different purposes but 93% resources are used for academic purposes only which covers everything. Users prefer data files in PDF form or word form more.

• Among the e-journals users prefer more to get full text papers and table of contents (48%) and full text (93%). Users while searching information they hardly take less than 5 minutes to get appropriate data and also downloading the resources. From the engineering users most preferred e- resources are Science Direct, IEEE, Springer, ASCE are very much popular. In case of medical the
priority for using e-resources is EBSCO, Annual Reviews, PubMed, Scopus, Science Direct and Springer link.

- Users have indicated their impact of e-resources on their usage and 93% users have indicated that they are getting up to date information and 80% users have pointed out that due to e-resources academic work, process of study is expedited and faster than print media.

- 45% users are using e-resources daily either from college campus (68%) or library (59%). 93% users indicated that they are getting proper infrastructure for searching e-resources in the library or institute and receive 93% satisfaction using e-resources made available to them. Only 18% users can search online database of their own, rest of them rely on librarian’s guidance. 60% users are using bibliographic databases. Only 69% users have suggested that they like e-resources because of user friendliness and multimedia content. Users from both the streams uses 96% internet. 59% e-journals and only few are using databases.

- Users opined that they prefer using e-resources due to features like accuracy, consistency in giving information, flexibility, utility, accessibility, timely providing the information from any corner of the world. In addition to this user prefers interface contents and multimedia features of e-resources.

- Libraries are providing different service to its users which are very common and normally provided by all libraries reference and referral service, offline database searching and CAS etc. 25% users only requested for advance services based on e-resources for their use.

1. In spite of merit of e-resources users faced some problem while accessing to e-resources in which the major problem faced by them are:
   - Internet connectivity is very slow
   - ICT infrastructure is outdated

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✓ No orientation and hence no awareness of e-resources and searching pinpointed information
✓ Staff is not cooperative to users in case of searching information available over the different nets
✓ Quality of online journals is not up to mark.
✓ Users are not aware of searching techniques hence poor recall is reflected after searching information from various resources. Users searches for information mostly using common keywords like author searching, keyword searching etc.

D) Assistance of Library Staff to Users:

- 93% users indicated that library staff and layout of the library (Organization) is having friendly atmosphere for consulting library.
- 91% users remarked that they are aware of the library collection and hence they are using resources freely from the library. 82% users’ gets help from the library staff and very few users are visiting to other libraries for getting information.

7.2 Findings: Librarians Data Analysis:

1. There are seven engineering colleges in Goa having total intake of 7560 students from all the engineering branches. The main courses conducted in each college are mechanical, civil, electrical, IT, electronic E and T C etc. The regular teaching staff in these seven institutes is 450. In medical sciences five colleges are considered for survey and total student population for medical is 1590 per annum and total faculty strength is 150 among these five colleges.

2. In the engineering college the oldest college is GEC established in 1967 and the youngest college Agnel Institute of Technology established in 2012. In all the colleges bachelors and masters courses are carried out. All are accredited by AICTE or NAAC or NBA, and follow standard process for admission monitored
by Technical Board of Goa. In medical colleges the oldest college is GMC established in 1842 and the youngest is 1998 Kamanidevi Homeopathy college. All the colleges are approved by medical council or Goa University or Council of Homeopathy, Gov of Goa etc.

3. The total population of the colleges in respect of students, faculty, administrative staff and library staff is given in the table 6.93 and noticed that total library staff is almost 60 in all the seven engineering colleges. The total population of the colleges in respect of students, faculty, administrative staff and library staff is given in the table 6.93A for medical sciences and noticed that total library staff is almost 26 in all the five colleges. In all the engineering colleges there are 60 library staff out of them librarian and Assistant librarians are the professional positions and remaining are technicians and helpers. Whereas in case of five medical colleges there are 26 library staff in all the capacities and same designations are visualized there like librarian and assistant librarian as professional staff and technical assistants and helpers as auxiliary staff.

4. The budgetary provision for the libraries at engineering colleges is made by institute itself as they are autonomous institutes and only GEC is funded by Government. The budget varies from institute to institute ranging from 10 Lakh to 119 Lakh. The budgetary provision for the medical libraries is made by Government and only two are autonomous institutes and hence they are self funded. The budget varies from institute to institute but not specified due to administrative reasons.

5. It is observed that both engineering and medical college libraries are well monitored by professional librarians, having post graduate degree in LIS and few librarians (one or two) have cleared either NET/SET or Ph D.
6. All most all libraries have normal timings i.e. 9.00 am to 5.30 pm, hardly one or two libraries are open late but not more than 8.00 pm except BITS is open till 11 pm. It is observed that all the students and faculty are the registered members of the respective college libraries and they are the users of the library also.

7. All the medical and engineering libraries in Goa are having rich library collection consist of books, bound journal volumes (back volumes) and current subscription to journals. All the colleges are subscribing to electronic resources and required packages are subscribed by the engineering colleges. In case of medical college libraries the e-resources are made available through Goa University UGC INFONET resources. Thus all the libraries have initiated the acquisition and accessing to e-resource collection. The internet resources are open to all the users.

8. In case of engineering colleges all the libraries have stack rooms, reading rooms and computer lab and internet lab including e-resource management area. The space provision is made for these activities. In case of medical college libraries only provision is available for stack and reading room area but so far computer lab and internet lab or e-resource management area is not earmarked properly. Only GMC have provided facilities for the modern systems like computer and internet lab.

9. It is observed that 91% Libraries are providing open access to all types of users. This is beneficial to users as they can search different documents on the shelf for subject searching. Only one library is having closed access and it is suggested to change to open access for user interest.

10. 66% libraries are acquiring e-resources mostly engineering and GMC, whereas other 33% libraries related to Ayurveda, Homeopathy, Nursing and Dental are not yet shifting towards e-resources procurement. 66% libraries have developed collection development policy for acquiring resources and more than 50% have
also planning to provide budget for e-resources. Only 41% libraries are member of resource sharing program.

11. 88% libraries are automated and 67% libraries have fully computerized in all activities and 17% are partly completed the automation. Whereas remaining 16% libraries have initiated the process.

12. It is observed that libraries are using OSS or FOSS and commercial softwares. 34% libraries are using e-Granthalaya LMS for automation which is OSS and a good move of libraries to perform automation at economical cost. 16% libraries are using Libman and (Commercial software), Newgenlib (Free). Whereas 9% libraries are using KOHA (OSS) and some are using in-house developed software’s. 16% Libraries are not using any software. Use of e-Granthalaya, Koha and NewGenLib are good as these are free or OSS and efforts are good for the automation. This also indicate that librarians are aware of free and OSS softwares in LIS. 83% Librarians are satisfied with the softwares they are using presently but 17% users are unhappy. Using these software’s 50% libraries have developed OPAC and made it available online over the campus only.

13. All the librarians have developed databases of their collection using LMS or even few librarians have developed using MS Excel or Access utilities. GEC is having the maximum collection of records in their databases followed by BITS and the lowest collection is in the database of Dental College. The development of OPAC and database of books is a good effort made by all librarians.

14. 67% libraries provide access to internet from libraries. In 33% libraries there is no provision of using net in libraries for users. On an average 70% terminals are occupied for using Internet and more than 50% users takes benefits of these networks. Users are using Internet for gathering data for academic purpose. Only 41% librarians are aware of using internet for all the activities. and 59% library
professionals are not aware of using internet. It seems orientation is also
necessary for library staff to enhance the use of Internet for housekeeping
operations. It is noticed that in 67% (8) colleges have intranet facility. 67% 
respondents have not developed the library webpage for their library and only 33
% have their webpages for library.

15. 75% of librarians are organizing orientation courses to educate users for using
libraries effectively. 25% librarians have yet to develop such orientation facility
but they assist users whenever they asked for help. 58% librarians are identifying
users ISB for the collection development, to develop need based collection for the
users but 425 librarians are not yet assessing the user needs or ISB. Only 33%
librarians are keeping track of users on using search engines for data collection
form the library terminals. Whereas 67% librarians are not assessing the use of
search engines. Only 33% librarians have prepared a list of specialized search
engines for their users in subject areas. However 67% librarians are not interested
in this activity.

16. 67% libraries have Wi-Fi facility in library hence users are even allowed to bring
their own laptops and work in the library. But in 33% libraries Wi-Fi is not
available. But 58% users said that enough computer infra is made available for
users from the libraries, but 42% have not supported to this and they have to
develop the infra. 83% libraries have well developed internet lab and computer
lab for searching OPAC and Internet. Only 17% libraries do not have this facility.
66% libraries have Campus LAN facility and data can be searched from the
remote areas, but 34% libraries yet do not provide this facility to users.

17. 66 % (8) libraries are subscribed to e-resources by engineering and medical
professional colleges in Goa. 34 % colleges are not yet subscribing to e-resources
but these colleges have access to UGC - INFONET e-resources from Goa
University. 58% libraries (7) are part of any one of resource sharing programs or
consortium and 41.67% (five) libraries have not yet associated with any resource sharing projects in the engineering and medical systems in Goa. But they have access to e-resources using Goa University terminals. The libraries are members of DELNET and UGC-INFONET. 58% librarian responded and indicated that, a separate unit is established for facilities for e-resources in their libraries. 42% librarian do not have separate section / facilities for E-resources in their libraries. Data indicates that 58% (7) libraries have sufficient Infrastructure to support e-resource management. Remaining 42% libraries do not have sufficient infrastructure to support e-resource management.

18. It is found that 83% librareis have not yet deployed any separate staff for managing e-resources the data clearly states that the main library staff only manages the e-resources in the library. Only 33% libraries have trained library manpower for management of e-resources and rests of the libraries are depending on assistance from computer section staff and they are computer educated.

19. It is observed that engineering colleges have subscribed their own resources in addition to resources used from Goa University. Whereas Medical college libraries do not subscribe to E-resources but totally depend on UGC-INFONET from Goa University. Only 33% (Four) libraries are associated with UGC INFONET in the engineering and medical colleges in Goa. Remaining 67% libraries are not part of UGC INFONET but they have access through Goa University.

20. Only one college of engineering is using D-space for managing e-resource collection. Librarians are not using any other software’s and hence some orientation is also needed for them for future management. Only 50% users can access to e-resources of college library, UGC-INFONET, N-List and internet resources, independently, but 50% users can not use e-resources due to unawareness of availability of e-resources.
21. 67% users have demanded for the ordination or training programs organized by libraries to make effective use of e-resources available through different sources. Out of 12 librarians 67% (eight) librarians have positively indicated that they are organizing orientation programs for users to make effective use of e-resources. 58% librarians opined that they have provided few prominent e-resource URL available on Net mostly free but intellectual. 42% have not compiled any list of e-resources available on net. Librarians are preparing list for DOAJ directory.

22. From the responses it is noticed that librarians are using mostly popular search engines like Google and Yahoo for collecting information. It seems that some orientation is also needed for library staff. 58% library staff is trained for searching e-resources available in their field but yet 42% users are unable to search proper availability of e-resources. Only 67% libraries are ready to share their resources available in their libraries. 50% librarian have linked their e-resources subscribed to users through web pages of the library whereas remaining 50% librarian answered that they have not linked their e-resources to web page of their respective library. Only 50 % Librarians are conducting users need survey, but not mentioned the time intervals.

23. 67% library staff takes care of users and assist them in getting proper resources. 83% librarians responded positively as they are conducting orientation courses in libraries for users. The methods used are either mostly lectures and demonstrations and only 25%( 3) libraries use hands on practices and demos. 66 % Libraries are organizing Library Tours. Only 16% libraries are having IR. 66% librarians have pointed out that user response for using e-resources is positive and made their mind to use, but remaining users are not yet declined towards use of e-resources comfortably. E-Resource collection development policy is not prepared by any libraries, which is need of the time.
24. Only Full text data bases are more subscribed in 50% (6) libraries. No bibliographic or indexing databases are subscribed. Only 50% (6) libraries are getting science direct database of Elsevier. 58% (7) libraries get IEEE database collection. 33% (4) subscribe to J-Gate database. 33 % (4) libraries Scifinder database, and Springer link by 16% (2) Libraries. Somehow good resources are made available to users in addition to Goa University resources. Only 58% librarians evaluate the e-resources prior to subscribing them. Evaluation is now essential. Only 58% librarians obtain user feedback. Only 50 % libraries had license agreement as they only procure e-resources. No one charges for use of e-resources from the libraries. This is a very good activity. 67% libraries have e-resource reading facility only on terminals but kindles are not available in any of the library.

25. It is observed that all libraries are providing CAS (Current Awareness Services) services to users. 58% (7) libraries are providing SDI services. 50% (6) libraries are providing bibliographic services using OPAC, internet. Library bulletins and documentation services are not at all provided by libraries. 100% libraries (12) are providing reference services, monthly library additions, and display of current arrivals and reading room services, circulation services to users. 33% (4) libraries provide book bank facilities. Xerox / photocopying services, OPAC Services, are provided by 67% (8) libraries, 58% (7) libraries are providing searching facilities. Alert and digest services are not at all provided which are value added services to users. 41% (5) Libraries are providing news paper clipping services. 67% libraries uses internet resources for providing library services. Social media is not yet used for providing library services e.g. Face book, Blogs, Twitter etc. 75% libraries are planning for new services using e-resources.

**Few Librarians have suggested following points:**

- Library budget need to be enhanced for getting e-resources or entering in to resource sharing collaborations among libraries.
- Librarian’s network need to be develop to share resources.
- E-resource management need additional budget
- Staff training and user training is essential
- Enhanced services provided to users based on e-resources need additional manpower as well as for maintaining e-resources
- Funds are needed for advanced infrastructure for managing e-resources

7.3 Findings: from Literature Published

- It is noticed that around 60-65% users are using e-resources regularly. e-Resources are now considered basic aids to improve professional competence most of the users have responded positively to this aspect. e-Resources helps users to update themselves with the latest information and most of users agree to this. 67% users prefer library as good source to get information required by them.
- For using e-resources effectively, training is required by users and also staff orientation for managing e-resources and searching. The users in the professional academic sectors have agreed that positive impact of e-resources which enhances the efficiency of users as they are getting access to current information instantly and also easy access to the information sources online and offline due to this academic processes are expedited.
- Institute library is the main source for accessing the databases to the users from where users can get total support for searching commercial databases using different techniques and download full text articles on need.
- The resources known to users are used more like internet and used heavily by users and also more relied on free data and information available over net.
- The main problem using e-resources which is faced by users is of slow connectivity of net and this is very common, this is mostly due to low bandwidth and can be eliminated easily by increasing the bandwidth of net. Another problem faced by the users is lack of good qualitative e-resources including e-journals. There is a need to get qualitative resources based on user needs.
- Library services are provided by the libraries to users and users have indicated priorities for the services based on net sources, databases and e-resources,
Reference service, referral service, CAS and SDI are to be restructured and have to be need based.

- Difference in behavior among users of different subject, disciplines, age, purpose etc. varies accordingly.
- In science professional streams more use of e-resources is noticed as compared to social sciences.
- Users are not fully aware of e-resources available in their area of subject.
- Users are not fully aware of IRS and tools and techniques of searching.
- Users prefer e-resources more when they are user friendly, easy to access, read and download as well as relevant and time saving
- Experts/faculty and users of different subject disciplines have different use patterns and preferences for print or e-resources.
- Both faculty and students of professional courses use and also prefer to use electronic resources. Though users prefer e-resources but print is used more as compared to e-resources.
- Subject experts use hyperlinks to view related articles however student user are not keen in using hyperlinks.
- Subject expert browse core journals in e-form for current information as well as retrospective information.
- Since subscriptions to print journals are decreasing users are migrating to e-resources available in libraries as well as internet.
- Students are using more resources available on internet then in libraries.

7.4 Recommendation and Suggestions:

Researchers would like to state few suggestions in order to improve the use of e-resources in professional colleges like medical and engineering.

- Librarians have to take more efforts to make availability of both print and e-resources in their field through libraries. There is need to develop awareness among users about the utility of e-resources in comparison with the print by orienting them.
There is a need to improve ICT infra for effective management of resources in the medical and engineering libraries. Many facilities are available in computer centers and not in libraries but internet access is provided and manpower is trained to sustain in ICT era. There is a need to develop skills for accessing information.

Librarians have to take information literacy programs for users at regular intervals to develop searching capabilities of users. There is also a need to develop training program for users for searching information using appropriate tools. Library tour for new entrants in the colleges and libraries is essential.

To enhance the use of e-resources or any resources in the subject, librarians have to prepare subject guides as well as library guides for effective use of resources.

Teaching faculty and Library staff together orient students to use maximum resources available in library as well as over the net on the subject areas.

Develop skills for searching information among users by orientation to improve use of e-resources. Libraries/librarians have to take necessary steps to develop information literacy among users like using e-resources, databases, advanced search strategies for information searching, online database searching, use of thesaurus and controlled vocabulary to make electronic resources searching process easier and accurate.

The funds to procure e-resources need to be enhanced or group subscription needs to be accepted through (R/S) consortium tool.

Librarians should identify users who do not use e-resources and understand the reason for not using or trying to use resources and efforts to be taken to provide special training to these users to enhance usage of e-resources.

Any institution maintaining large assorted information, whether it is electronic, print or both, needs qualified professionals to keep it up to date, organized and made easily accessible.

A master in LIS degree prepares students to play a vital role in evolving and managing global information for users. LIS professionals strengthen their links among individuals, users, information technology experts and libraries for effective use of library collection.
• To manage advanced and modern libraries there is a need to organize different small core specialized programs to train library professionals for effective use of emerging technologies and techniques in the field of LIS.
• The syllabus for LIS schools to be drastically modified to suit the demand of the information society. Information organization and management of resources.
• Use and user studies, information needs assessment need to be conducted at regular intervals, to develop qualitative collection at economical ways.
• More digital resources to be added in the library to provide access to users and promote library use. The rare collection need to be digitized with proper security and access measures.
• Librarians have to provide services like alert, ask librarian, reference and referral, digest services and value added services to professional education users using e-resources.
• Librarians have to analyze the trends regularly and try to implement in the professional activities like database development, soft skills adaptations in the professional activities, ISB (Information Seeking Behavior) , digital library initiation, networking of libraries, health informatics, information analysis, information product development etc
• Librarians have to work as a e-resource librarian, library service consultant, web archivist, integrated library system administrator, metadata analyst, data administrator, outreach librarian, indexer/abstractor and taxonomist, data curator, special librarian, and also as a knowledge specialist.
• Information products and services are to be provided to users working in S and T, R and D areas, for researchers, students, learners, scholars etc. These are essential in the era of information explosion.
• There is no collation development policy in any professional college libraries, including print or e-resource management. It is suggested that librarians need to develop a suitable collection development policies for both print and e-resources and regularly update it. The contents of CDP may be selection, acquisition, de-selection, maintenance, retention, preservation, weeding etc. CDP is collection of
policies together. Few policies like Library of Congress are useful for developing guidelines while developing CDP.

- It is noticed that only few librarians tried to develop a web page for their libraries, but they are not proper. It is suggested that there is a need to develop library web page in consultation with computer staff and link different e-resources and library data to it with internet resource links. Even librarians can develop portals and subject gateways for the expert users in libraries.

- The different information products and services provided are:
  - CAPS: Contents, Abstracts, and Photocopy Services
  - Bibliometric services and Translation Services
  - Information Retrieval Services
  - Online databases searching services (Using STN / DIALOG)
  - Specialized Document procurement and supply (Thesis, reports, standards, patents, business and trade information etc)

- There is a strong need of orienting users and library staff to manage ICT and new trends in profession as well as to meet the needs of the users. Researcher would like to suggest a preliminary or elementary model for orientation purpose. The flowchart of the module is illustrated on the next page. (Fig 7.1)

- Since all the libraries are automated and developed databases for their collection, it is suggested that a resource sharing is possible among the similar subject libraries like medical and engineering.

- The resource sharing can be effective by way of developing consortium locally or become a member of the subject consortium, development of IR, developing web OPAC, or establishing local library networks among the special subject libraries.

- The researcher would like to suggest a preliminary model for networking of engineering and medical libraries to achieve resources sharing among them at local area of Goa. For this purpose a suitable and manageable network structure is presented in diagram as figures 7.2 and 7.3. Fig 7.2 illustrates local college intranetwork and the access to information is only over the campus. Fig 7.3 is a LAN network which develops resource sharing at local level among the group of libraries. Brief information is also provided.
Fig 7.1 Library Orientation Module

Library Orientation

User
- Advertise / Events / Awareness Programs
  - Registration
    - Login Id
    - Library Rules
    - Imp. of reading
    - Study Skills & Academic Integrity

Infrastructure
- Print Media
  - Repository
    - Book Collection
      - Journals
      - Magazines
      - Newspapers
      - Ambience
      - Signage and Maps
      - Book Search
    - College publications
      - Thesis
      - Old Question papers
      - CD/DVD/Video tapes

Staff
- Computer Lab
  - Events / Training Programs
    - Portal / Website
    - Online Catalogue
    - Subscription to e-resources
    - Consortium of e-resources
    - E-books
    - Free on internet OAI
    - Databases
    - E-newspapers
    - Staff Details
      - Designation
      - Nature of work
      - Contact details

Feed Back & Suggestions
College Intra Network (Fig. 7.2)

Central /Cloud Network

E-Resource Administrator

Cloud Server

College Staff

College Server

Library / Firewall

Computer lab

Hub
1] **Cloud Server** - Central e-resource server where all colleges will be connected through college server, accessible to all users as per delegated authority. All the e-resources required by colleges will be stored with at this server with the consent of college authority and made available as per rules and regulations or authority defined by the college.

2] **e-Resource administrator** – This team will consist of Library Professional, Professors, and Subject Experts. This team will check / verify the resources, contents and quiz uploaded by college staff and library personnel. Delegate roles / authorities and conduct trainings for new developments on e-resources. Publish notice and circulars online for college administrative staff.

3] **College Server** – College server will be maintained by college server administrator with consent of college library and authorized staff. Maintain connectivity with cloud server.

4] **Library / Firewall** – Library / authorized staff will manage the e-resources and content / quiz to upload and MIS report generation. Login generation for college staff and students using computer lab.

5] **College Staff** – Make proposal for new e-resources, Develop quiz and other activities for orientation of available resources to the students.

6] **Student Computer Lab** – Demand for login into the e-resource consortium. Utilize the available e-resources to its full extent. Gather knowledge of new technologies and grab new opportunities.

**Advantages of Network**

1] Central e-resource management and procurement reduces cost of each and every college doing expenses on same e-resources.

2] Content may be managed centrally under the strict guidance of college and e-resource administrator.

3] Distribution of work helps to manage the resource more efficiently.
4] Students get benefit to access the e-resources from various location as per permission allotted.

5] Proper Utilization of infra-structure, human resources and e-resources.

6] Systematic approach would benefit all i.e. college, staff, students, mentors etc.
**Engineering Colleges Cloud Network** (Fig 7.3)

Based on the same lines similar network for medical libraries in Goa can be developed or even both medical and engineering library cluster can be developed for effective use of e-resources in Goa engineering and medical Libraries.
7.5 Scope for Further Research:

This study is mainly focused on the use of e-resources in medical and engineering professional education system. There is a need for undertaking such studies in detail for other areas like law, arts and science, commerce, architecture etc. Similarly there is also a feasible study based on evaluation of e-resources and collection development in engineering / medical sciences. Assessment of internet resources for the effective use in engineering and medical sciences. These can be topics for the continuing research in similar areas.

7.6 Fulfillment of Objectives and Hypothesis:

The objectives and hypothesis set for conducting this study in the beginning are discussed in the different chapters and proved true.

The objectives set for this study are:

1. To study availability of print and e-resources in medical and engineering sciences and list them for use. In chapter 5 researchers has presented few prominent e-resources in both medical and engineering streams. This is also very useful to the users as well as librarians. The table 6.143 describes the resources used in engineering and medical areas by users.

2. To identify awareness, purpose and frequency of use of resources by users in medical and engineering. This objective is elaborated in the chapter 6A in tables 6.59 and 6.60 and analyzed the user needs. This helps librarians in procuring use based information resources for users.

3. To assess use and benefits of e-resources over the conventional information sources. This is very well discussed in chapter 5 of the study in detail and also analyzed in tables 6.52, 6.53 to 6.56, 6.64, 6.68, 6.70 and 6.83. This information assesses the use of e-resources by users.

4. To study different types of library services provided by medical and engineering libraries in Goa. The chapters on data analysis 6A and 6B, highlighted this issue as well as in tables 6.86 and 6.87.
5. To understand, user needs of e-resources and problems faced while using e-resources. Users needs and problems faced by users are analyzed from the survey and presentations in chapters chapter 6A in Tables 6.78 to 6.83 and 6.148

6. To understand the level of user satisfaction using e-resources as well as p-resources. Discussed in chapter 6A and 6B in tables 6.62, 6/73, 6.76 and 77 discussed and analyzed

7. To provide solutions for improving and enhancing use of e-resources and suggest a model for resource sharing. This is also well covered and discussed in chapter 7, and table 6.84. Model for resource sharing is also described in pages of chapter 7 as a part of suggestions.

The following hypotheses considered at the beginning of the study are also proved true i.e. Positive.

1. The users of libraries are using e-resources for their information needs and increasing use slowly (It is also proved positively from data analysis that use of e-resources is preferred but not more than 60% but in the future when the acquisition of print resources reduces then users may not have option to use e-resources and the use is going to rise slowly).

2. There is a need to build positive approach towards use of e-resources among professional community by developing awareness (This fact is also true that since users do not have awareness of e-resources availability in their areas they are unable to use them, information literacy, e-resource literacy may enhance the use of e-resources. Table 6.63)

3. There is a need to prepare collection development policy for e-resources (This is also proved positive from the survey that no library has developed collection development policy Table 6.160)
Conclusion:

Libraries of all types, all sizes are now marching towards digital collections due to its many fold uses. At present many libraries continue to subscribe both print and digital or e-collection for another few years. Certainly in future more subscriptions in e-forms (e-journals) may increase. The e-resources have made impact on users of libraries. The use of e-resources are analyzed by librarians conducting surveys, transaction logs analysis, observation, interviews etc.

The present research studies a snapshot of use of e-resources by the users from engineering and medical colleges in Goa state. e-Resources are increasingly important to all aspects of education from teaching and learning through the collection of data from students and faculty members of engineering and medical colleges. To understand the current status of these libraries, researcher has collected data from these colleges using descriptive research and questionnaire as a tool. Researcher analyzed library collection, services and acquisition of e- resources, use of Internet and e-resources etc.

The outcome of the present study highlights various aspects of user perception, awareness of e-resources, availability and use of e-resources, library services using e-resources and collection development policies etc. This research study also assesses user needs, information seeking behavior including use of online resources, journals and social media. It is observed that the e-resources in the disciplines of engineering and medicine are plentiful but awareness of its availability is poor. Librarians need to develop awareness of e-resources through organizing orientation and training programs and utilize both e-resources and print resources more. Librarians main task in the information explosion era is to manage access to resources and provide efficient services to users using ICT and e-publications. This study is very useful to library professionals working in engineering and medical libraries as well as for other libraries also. The training programs for the users may enhance use of e-resource literacy among the users.