

A Study of Information Needs of Engineers in Nigerian Institute of Transport Technology, Zaria

By

Lucky Tijani Abdulsalami

BLIS, MLIS, MLC and MIAD (ABU)

Federal University Library Lafia, Nasarawa State

-----Abstract-----

The work was a survey to examine the study of information needs of engineers in Nigerian Institute of Transport Technology (NITT), Zaria. The extend was to determine the way and manner in which engineers go about seeking information and how important this information add to their work, the purpose of information to engineers. The problems of engineers in finding information, various ways of dealing with such situations, the study includes statement of problems, objective of the study and methodology of the research work employed. The instrument used for data collection was questionnaire, seventy two (72) questionnaires was administered to the engineers, which forms the sample population was filled and returned. The findings of the study among others are long daily working hours, the hours in which engineers use for work hinders them from visiting the information center and the distance between work place and the information center. The problems they faced while seeking information are incomplete information .lack of relevant information and time, while lack of time is as prominent as ever. The researcher suggestions and recommendations was offered to help engineers through the Librarians and staff to help examine criteria of information services, designing new information services, intervening in the operation of existing systems or planning in services programs. Library staff or reference librarians should help users to improve their skills in information seeking behaviour and needs and to find out the types of information they need. The role of Librarians to assisting users in teaching the use of OPAC, search engine, e-mail and CD - ROM techniques.etc

Date of Submission: 14 Feb 2013



Date Of Publication: 20, April.2013

I. NTRODUCTION

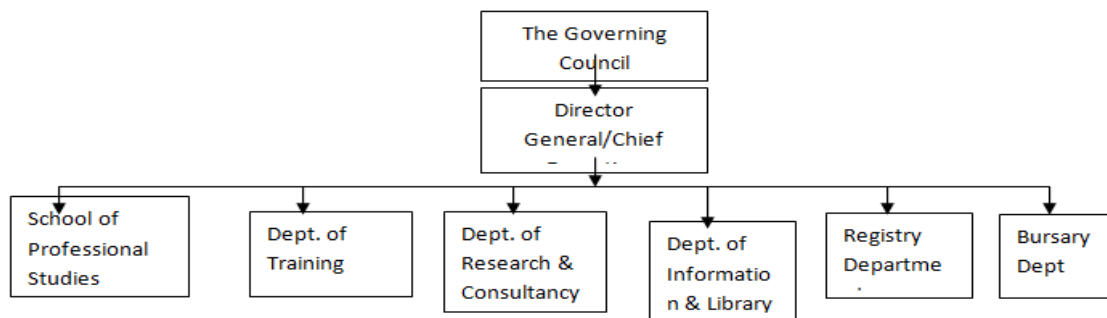
Information as a concept is a difficult one to define. Numerous definitions evolved seeking to distinguish for example, among ‘data’ ‘information’ and ‘knowledge’. Recently there have been attempts to define information as a single concept ‘information science Wilson (2007). The new encyclopedia Britannica (2001) notes that information may be refer to as facts and opinions provided and received during the course of daily life, this definition denotes that information is generated, through interaction of human activities within their environment and transmitted from generation to generational time. Chandra (2002) and Uchegba (2006) notes that “there is not even a clear agreement on what the world “information” itself means and particularly whether it implies a creative act of intellect or a commodity that can be embodied in document, transported and has a complex nature and therefore can be conceived from several perspective, also considering the issue of approach to the definition of information from several perspective, Opera (2000) has observed that each definition appears to be coloured by the academic or professional orientation of this proponent.

Information according to Crawford (2000) represents gaps in the current knowledge of the client. Importance of the information depends on discipline, availability of activities, need to new ideas and the need to take a decision. Vicky (2003) on his part noted “everyday information is required not only to a specific questions arising during work but sometimes to certify the reliability of a source. Information needed to seek after by the individual will depend, to some extent “age, education and range of the seeker, the nature of his job, the stage his work has reached and the type of institution in which he works. Thus the importance of information to transport engineers will have to depend on a great extent on nature, objective and purpose for which information is requested. The importance of information to engineer mainly current and new information is that it assists them in their research works. According to Tad Gold (1997) “engineer” is one who harness the great forces of nature for the benefit of man. “Therefore an engineer may be defined as any person who by virtue of his or her education training, scientific knowledge and methods understands materials and manages human beings for development. Also, Palmer (1984) described an engineer as a mediator between philosopher and working mechanic and like an interpreter between two foreigners, must understand the language of both”.

Transport engineers generally are involved in the design, production and maintenance of commercial transportation. Sources of information for transport engineers: The transport is a hi-tech industry where facilities and equipments become absolute as technology improves. The institute since its inception has always ensured that it keeps pace with this development by providing current and up to date information and state of the transport equipment and facilities. This includes trained transporters, laboratories, audio-visual aids, simulators, radar equipment, and transport documentation. These facilities and transport documentation are written according to certain requirements. These include all manuals and publications necessary for operations. Follow up and maintenance of the transport. Transport engineers in NITT have been issued a transport maintenance engineering license which equips them with the knowledge and appreciation of transport design, control and operation. Transport engineers generally are involved in the design, production and maintenance of commercial transport.

NIGERIAN INSTITUTE OF TRANSPORT TECHNOLOGY (NITT) SERVICOM CHARTER

The Organogram of NIT T



II. INTRODUCTION/BACKGROUND

The Nigerian Institute of Transport Technology (NITT) was established in the year 1986 by Decree No 6 of March 14 (now CAP 309 of the Federal Laws of Nigeria). The Institute was established as a Transport Management Development and Research Institute for Nigeria and the West African Sub-region. It is charged with the responsibility of providing professional training for middle cadre managers on the areas of transport and logistics and also conducts research and offer consultancy services to both public and private transport and logistics organizations.

2.1 VISION

To be an internationally recognized center of excellence, providing world-class professional training, research, advice and solutions to all issues relating to transportation in Nigeria and Africa

2.2 MISSION

To systematically provide professional training in all aspects of transportation and offer research and consultancy services to private and public transport agencies for the achievement of management excellence in all modes of transport in Nigeria and the West African sub-region.

2.3 DETAILS OF CUSTOMERS

The customers of the Institute comprise of both the public and private sector transport and logistics oriented organizations. A detailed list is as follows:

- [1] Nigerian Ports Authority (NPA)
- [2] Nigerian Shippers' Council (NSC)
- [3] National Maritime Authority (NMA)
- [4] Joint Maritime Labour Industrial Council (JOMALIC)
- [5] Nigerian Railway Corporation (NRC)
- [6] Federal Airport Authority of Nigeria (FAAN)
- [7] Nigerian Civil Aviation Authority (NCAA)
- [8] National Airspace Management Agency (NAMA)
- [9] Nigerian College of Aviation Technology (NCAT)
- [10] Nigerian National Petroleum Corporation (NNPC)

- [11] Federal Ministries and State Governments
- [12] National Clearing & Forwarding Agency (NCFA)
- [13] Petroleum Technology Development Fund (PTDF)
- [14] Military/Para Military personnel
- [15] Shell Petroleum Development Company (SPDC)
- [16] Albarka Air Plc
- [17] Chanchangi Airlines
- [18] Peugeot Automobile Nigeria
- [19] Dangote Transport
- [20] Chisco Motors
- [21] ABC Transport
- [22] BATKOT Group Ltd
- [23] Paterson Zochonis Industries (PZ)
- [24] The Gambia Public Transport Corporation

2.4 DETAILS OF SERVICE PROVISION AND DELIVERY

The Institute offers short-term training programme, long term professional training leading to award of certificates of participation, Diploma and Masters Programmed as the case may be. It also carries out research and offers consultancy services on various issues relating to transport and logistics management.

2.5 STATEMENT OF STANDARDS OF SERVICE DELIVERY TO BE EXPECTED,PERIOD IT TAKES.

2.6 Short Term Training Programmed

These are courses aimed at re-orientating the participants for improved performance of participants and hence the operational efficiency of their organizations, especially with regard to managing and performing specific functions. The short term programmes are either knowledge or skills based, designed to improve the skills and increase the knowledge of participants in policy issues and management of different modes of transport. These courses can be run as regular/scheduled and or customized/tailor made. The duration of the short term courses ranges from 3 days to 2 weeks.

2.7 Long-term Professional Programmed

The Institute has developed four types of long-term professional programmes. The programmes are designed for those who should build a career in transport and logistics professions. The programmes and their respective costs are as follows:

2.8 Certificate in Transport and Logistics

Designed to equip technicians and artisans with the professional skills to carry out supervisory responsibilities in transport and logistics concerns. The duration of the programmes courses is 6 months.

2.9 Diploma in Transport & Logistics

The programme has the objective of providing professional and technical knowledge for line operation officers in the transport and logistics oriented organizations. It also arms at improving operational practice and competence. The duration of the programmes courses is 9 months.

2.10 Postgraduate Diploma in Transport & Logistics

The programme provides basic strategic management skills needed to manage transport firms in order to make them achieve competitive edge in the market. The duration of the programmes courses is 12 months.

III. MASTERS IN TRANSPORT & LOGISTICS

The programme is aimed at equipping participants to develop and manage corporate vision and mission, allocate and coordinate resources among different businesses effectively and efficiently and provide leadership to such organizations. This programme is being run in collaboration with the University of Pretoria, South Africa.

3.1 Statement of Problems

Information is simply a list of facts or data telling us details such as who, where, what, when or how, which are critical to meaningful development. However, there is a difference between information and propaganda. While information gives facts, knowledge shows you how to think, propaganda distorts and twists facts specializing half truth targeted at logical thinking abilities. Distorted information relentlessly forces us to

have a wrong view and discourage critical thinking. Presently, there is an unprecedented overload of information. Whether by printed materials, radio or television coverage, the internet or some other means around the world is saturated with distorted information. Information is very important in every human endeavor. It is a critical resource in our technological life as a developing nation. It is more critical in the engineering sector of our economy. Latest of technological information is what engineers need to enhance their performance. Access to current information on technological breakdown as it affects transport industry will obviously bring about safety in land transportation. We cannot talk about safety in the land transport without equate access to technological information for the engineer who service and repair the transport.

The Nigerian Institute of Transport Technology (NITT) Zaria was established with the objective of producing engineers and other related professional in the transport sector. Information remains the source of value in any society. It also serves as instruction in the hands of decision makers. Without information no society can exist and survive. However, some segments of the society have suffered from inadequate information provision which transport engineers are not exempted. Information on new technologies, available spare parts and new approaches to do things are critical in engineering. Transport engineers cannot perform their duties effectively without adequate technological information which serve as a big resource in this age of our national development. It is observed that the information needs of the transport engineers in Nigeria Institute of Transport Technology is not adequately met, it is noted that they do not have access to the needed information promptly and this has effected their duties. Perhaps it is because of lack of relevant information that tends to act against the success of their duties. This is what has prompted the researcher's quest for the investigation.

3.2 Objectives of the Study

The objectives of the study amongst others were: to identify the various types of information needs of transport engineers in Nigeria Institute of Transport Technology (NITT) Zaria, to recognize the information seeking behaviors of transport engineers in NITT, to identify the various information sources and materials that can be used to meet the information needs of transport engineers, to investigate problems that hinder easy access and retrieval of needed information of transport engineers and to proffer recommendations on how the discovered problems could be solved.

3.3 Concept of Information Needs

Information need is mostly understood in information science as evolving from a vogue awareness of some thing missing and as culminating in locating information that contribute to understanding and meaning. It is described as an anomalous state of knowledge or a gap in individual knowledge in scene making situation. Information need is defined as a function of extrinsic uncertainty produced by a perceived discrepancy the individual's current level of uncertainty about important environmental objectives and criterion he seeks to achieve, Ojiambo (1995). Need is a psychological state associated with uncertainty and the desire to fill a gab in knowledge. To meet the information need of transport engineers, Awojobi (2004) write deterring the use of library by transport engineers in Nigerian Institute of Transport Technology Zaria, Bardes, (2008) recommended for increase in the funding of current journals. Information need has been described as the totality of human behaviour in relation to sources and channels of information, including both active and passive information. This includes face-to-face communication as well as passive information reception, with no intention to act on the given information.

Cool, (2000) define information need "as a system of people, practices, values and technology in a particular local environment. In information need, the focus is not technology, but on human activities served by technology. The transport deck represents an information need, incorporating not only the physical representation of cognitive artifacts, but the distributed collective practice of engaging in the activity that is transporting. As noted by Baryam (1997), to understand the behaviour of a complex system we must understand not only the behaviour of the parts but how they act together to form a whole".

3.4 Information seeking Behaviour

Human information behaviour has been defined as the totality of human behavior in relation to sources and channels of information, including both active and passive information, seeking and using information, Wilson (2000). This includes (face-to-face) communication as well as passive information reception (e.g. viewing TV advertisement), with no intention to act on the given information. Hirsh, (2000) describes information seeking as "a process in which humans purposefully engage in order to change their state of knowledge". Ellis, *et al* (1993) proposes a general model of information seeking behaviour as starting, browsing, differentiating, monitoring, and extracting. Starting activities that form the initial search for

information identifying sources that could be used for information. These sources are likely to point way to follow up an initial source, which can be backward or forward. Backward chaining takes place through identifying and following up on other sources that refer to an initial source, thus broadening a search. Browsing is semi-directed or causal search in areas of potential interest. This is looking for information at the micro-event level and remaining unconstrained; open to serendipitous findings, filling new connections or paths to information. Differentiating refers to filtering and selecting from among identified sources, by noticing differences between the nature and the quality of the information offered. A good number of researchers have investigated, information seeking activates (a broad team which is used here to indicate the way in which engineers articulate their needs for search for and use (information)).

Information seeking is undertaken to identify a message that satisfies a perceived need. Research on information seeking reveals how to identify individuals going about finding the materials that need to be order to satisfy information needs. The increase in information, available to engineers generally helps engineers to locate information. They also use colleagues as a source of information, but often rely on the library as a last resort. Books are critical to this population. They are comfortable with and use electronic resources, but also have a strong preference for accessing what can be considered more traditional library resources such as books and other physical items. Engineers often have a cycle for information gathering where the need for information changes drastically depending on the development phase of the project. They can have an extensive need for information during times of exploration and understanding on projects but at other times, when their "heads are down" in terms of actual product development, they may seek not information at all. Information seeking behaviour of engineers is generally in response to very specific problems or projects. They often seek answers to immediate problems, and need information quickly.

Proximity of services and facilities are very important. Most engineers want a physical library or a reading room in their specific location. Engineers are not often aware of resources such as IEEE explore, ACM Digital library, patent and standard tools or specify search engines such as Goggle Scholars, cite seer, when engineers are often aware of resources they always use a rudimentary manner, options such as advance searching, leveraging index terms and used of alerting options are over looked. As to web resources engineers tend to stick with only one to two paid access resources and are reluctant, to explore others with which they have little experience. The importance of books to engineers should not be underestimated, many engineers want access to an on-site library or reading room.

The engineers free themselves to use their expertise on engineering problems while gaining the expertise of the library team when information is needed. When information need do occur engineers are often seeking immediate solutions. The information that solves the problems may be located in a publication, information resources, or in the head of the person in the next office. Getting this information quickly and without breaking the project flow is critical. Majid *et al* (2000) found that most engineers refer to the library OPACS, scan journal articles and used information sources. In another study (Majid *et al*, (2000), they claim that engineers spent sixteen percent of their time reading relevant materials. Dume (2000) believes that engineers use personal library, professional meetings and periodical as their major sources. Holland and Power (1995) while surveying the information seeking and use habits of some engineers advised that instructions on how to access information should be incorporated into courses taught at transport colleges and should be part of continuing education and on the job training to keep them abreast of information seeking to be embedded in the day to day of their activities. This was an investigations result by Reneker (1992) the information seeking activities of 51 pupils of the Stanford University Academic Community. They were examined over a period of two weeks during the 1990 academic year. Further findings shows that they go about satisfying their needs by creating information by themselves. Their action in seeking information originates from a variety of needs and such as personal, professional and entertainment. Shoken and Kushik (2000) studied information seeking behaviour of engineers, findings shows that they normally search for information out side, their establishments. He recommended that there should be provision of adequate libraries in the various work places for engineers.

Resouli Azad (2001) reported that engineers aim for searching information sources was to conduct research and up-dating knowledge. More then fifty percent of respondent did not have access to computer, special data bases and computer networks in the libraries; they refer to Journal articles and books, respectively, ranked as the first and second most used sources. In sum literature showed that engineers, and specialists mostly refer to their institution's special libraries, use text books, journals, and personal libraries, interact with colleagues and other experts. They also use standards, patents and technical reports, catalogues and plans to meet their information needs.

3.5 Description of Area Studied

The research seeks to find out the information need of transport engineer and it focuses on Nigerian Institute of Transport Technology (NITT), Zaria. The method adopted for this study was the survey method; this was so because it enables specific issues such as the study of information need of NITT engineers thoroughly investigated through information gathering and analysis opinion of the chosen population. Survey method investigated large population. Bush and Harter (2005) accepted this saying through their expression, that it enables specific issue such as engineer information needs and information seeking behaviour to be investigated through information gathering. The population for study covers all the engineers in Nigerian Institute of Transport Technology, Zaria and their instructors were sample which gives about seventy-two (72) sample sizes for the study. Random sampling techniques were adopted for the conduct of the research while the instruments used for the data collection was the questionnaire and the interview.

Table 1: Sources of Information

Channels of Information	Respondents	Percentage (%)
Discussion with colleagues	8	11
Consultation with transport engineers	11	15
Consultation with field supervisor	7	10
Discussion with librarians or references staff in the library	12	17
From Internet	10	13
Abstracting Journals/ article review	9	13
Library Catalogue	8	11
Indexing Journals	7	10
Total	72	100

Table I investigate the sources of information for the transport engineers. Most engineers seek information from their college/references librarian 12 (17%) express this opinion, 11 (15%) consult knowledgeable specialists on the field, 10 (13%) from internet, 9 (13%) from abstracting journals/ review of articles, 8 (11%) from library catalogues and discussion with fellow colleagues while 7 (10%) is indexing journals. This shows that information is sources from different angles.

Table II: Purpose of Seeking Information

Purpose	Respondents	Percentage (%)
For preparing class lectures	6	8
For updating knowledge	25	35
For doing research work	23	32
For writing paper and presenting paper	18	25
For entertainment	-	-
Total	72	100

Table II expressed the purpose for information 25 (35%) seek information to update their knowledge, 23 (32%) for doing their research work, 18 (25%) for their term papers, journal, seminars etc while 6 (8%) for preparing class lectures. By this it's worth saying that information is the bed rock of invention or improvement.

Table III: Types of Materials

Materials	Respondents	Percentage (%)
Text books	19	26
Periodicals	9	13
News Papers	13	18
General books	8	11
Patents	-	-
Thesis/Research Reports	15	21
Reference Books	8	11
Total	72	100

Table III is about the types of materials used for research purposes 19 (26%) use textbooks, 15 (21%) use thesis/research report for writing, 13 (18%) use newspapers as the type of materials resources use, 9 (13%) use periodicals, general book/reference books as type of information sources use.

Table IV: Tool Use to Access Document Needed

Tools	Respondents	Percentage (%)
-------	-------------	----------------

Library catalogue	10	14
Indexing journals	-	-
Abstracting journals	6	8
References from books	10	14
Reference from a periodical articles	15	21
Internet	31	43
Total	72	100

Engineers were asked to indicate the type of tools they use to access document they need, from the table, reference from a periodical articles is needed which is 15 (21%), internet 31 (43%), library catalogues/reference book is 10 (14%) while abstracting journals is 6 (8%). This shows that Librarians played an important role in information dissemination to scholarly work.

Table V: Which problems do you meet while seeking Information?

Problem	Respondents	Percentage (%)
Materials available no sufficient	21	29
Few available information sources are difficult to located in the library	18	25
How to use the catalogue	12	17
Information scattered in too many sources	13	18
Some information materials are old	8	11
Total	72	100

Table V indicate the problem and barriers encountered by transport engineers 21 (29%) indicated that materials available to transport engineers are not sufficient, 18 (25%) posit that the available information sources were difficult to locate, 13 (18%) express that information by the engineers are scattered sources. Another problem is how to use catalogue 12 (17%) while 8 (11%) posit that some of the information available to engineers were obsolete or old.

Table VI: How often do you use the Internet?

Internet	Respondents	Percentage (%)
Daily (using modern)	37	51
Weekly	16	22
Fortnightly	14	20
Monthly	5	7
Total	72	100

Table VI express the use of internet to undertake their research work. 37 (51%) indicated that they use internet daily for search of information 16 (22%) use internet weekly 14 (20%) use internet fortnightly while 5 (7%) use internet monthly. This shows that internet is substituting the library on a gradual process.

Table VII: Through which medium do you reach the Internet?

Facility	Respondents	Percentage (%)
College Library internet	25	35
Computer Center	10	14
TV	3	4
Internet Café (browsing)	34	47
Total	72	100

Table VII indicate the medium through which transport engineer reach the information in the internet. 25 (35%) use institute library, 34 (47%) uses internet café. 10 (14%) use computer center, while 3 (4%) uses television information as medium, in all Internet café was the major instrument use as a medium to acquired needed information.

Table VIII: Which search engines do use most?

Search Engines	Respondents	Percentage (%)
Google.com	20	28
Yahoo.com	46	64
Sanook.com	-	-
Excite.com	6	8
Hunsa.com	-	-
MSN.com	-	-
Altavista.com	-	-
Kapok.com	-	-
Lycos.com	-	-
Total	72	100

Table VIII is about the search engines use by transport engineers to acquire information for their work. 46 (64%) uses yahoo.com, 20 (28%) uses Google.com while 6 (8%) use excite.com as a means to search for needed information. This shows that the library and the internet search engines were the prominent ways transport engineers use to search for information.

3.6 Summary

In response to the research questions, based on the data collected and analyzed the following findings were gathered. The population of the engineers studied in Nigerian Institute of Transport Technology (NITT), Zaria was 72. Most of the engineers are literate; they use the internet to seek for information, to develop knowledge. This was followed by information for lecture and research work. Engineers use several methods to seek for information but they prefer to consult a knowledgeable engineer in the field, the internet is used strongly at workplace/home for educational research. Most of the problems faced by engineers at times and at the course of seeking for information is incomplete information, lack of relevant information and time is still as prominent as ever.

3.7 Recommendations

In regard to information seeking behaviour and need of users in Nigeria, it is recommended that library staff or reference librarians could use their time in a better way by focusing on assisting users. Librarians should help users to improve their skills in information seeking activities and to find the different types of information they need. Librarians should also assist users in learning the OPAC, search engine, e-mail, and CD-ROM techniques of acquiring information.

IV. CONCLUSION

The present era is the era of information and knowledge revolution. Many electronic resources are available in the Library. The increase in information availability in the web has affected information seeking behaviour. Immoveable types of information in a large variety of containers and in much different locations are all available in one place, in modern multifarious offerings for men and women to select. Information seeking behaviour is a consequence of a need to satisfy some goals. In the course of seeking, the individual may interact with manual information systems (such as newspapers or library) or with the computer based system (such as the web) this involves personal reasons for seeking information the kind of information sought, and the ways and sources with which needed information is being sought.

REFERENCES

- [1] Awojobi, R. (2004): Content User Profile: Update on Scientists. Out seller's in to about in fro Briefing, 7 (4), 1 – 9.
- [2] Barde, D (2008) Information Seeking Assessing and Anticipating Users Needs. Neal-Shuman, New York. P2, 5.
- [3] Baryam, k (1997) Information need, seeking behaviour and uses. New- Delhi, Ess
- [4] Chandra, G. (2002): Information needs and Uses. Annual Review of Information Science and Technology 12(35).
- [5] Cool, C. and H. (2000): Patterns of Information use, Avoidance and Evaluation in a Corporate Engineering Environment, Proceedings of the 63rd Asia Annual Meeting, USA, 37, 462 – 472.
- [6] Crawford, G. J., Pettigrew, K.E., and Sylvain, C. (2002): Modeling the Information Seeking Professionals: a General Model Derived from Research on Engineers, Healthcare Profession Retrieved 8/18/2004 from [www.at: http://www.ischool.washington.edu/fisher/pubs/LQ.1996A.pdf](http://www.ischool.washington.edu/fisher/pubs/LQ.1996A.pdf).
- [7] Dume, M (2000): trend Alert: Engineers Open a Window of Opportunity for Information Managers. Out Sell's information to Briefing, 8 (2) 1 – 9.
- [8] Ellis, A. et al (1993): Review of Literature Exercise; The Information seeking Behaviors of Engineers Drexel University. College of Information science and Technology. Info511. Retrieved 8/18/2004 from [www.at: http://www.pages.Drexel.Edu/adwa/mycourses/into511/i511rol.htm](http://www.pages.Drexel.Edu/adwa/mycourses/into511/i511rol.htm).
- [9] Hirsh, S. G. (2000): Information Needs, Information Needs and Information Seeking and Communication in an Industrial R & D Environment. Proceedings of the 63rd Asia Annual Meeting, USA, 37 – 472.

- [10] Holland and Power (1995): An investigation of Factors affecting how Engineers and Scientist Seek Information. *Journal of Engineering and Technology Management*, 182 (2) 131 – 155.
- [11] Majid, T. et al (2000): Of Course it's true; I saw it on the internet: Critical thinking in the internet era. *Communication of the ACM*, 45 (5), 71 – 75.
- [12] Ojiambo, J.B (1995) Developing human resources capacity for information services in *African journal of Library, Archives and information science* 2(2) 83-90.
- [13] Opara, H.S (2000) Evaluation of Library Resources and Services of Kaduna State Ministry of Justices Law Library. Kaduna.
- [14] Palmour, V.E (1984) how needs are generated: What we have found out about them in ASLIB Proceedings. The nation's wide provision and uses of information. Sheffield.
- [15] Publication. P7, 13, 23.
- [16] Reneker, D. (1992): Search Engine Users: Internet, searchers are Confident, Satisfied and trusting – but they are also unaware and Naïve. Pew Internet and American life project. Retrieved 3/13/2005 from the [www:http://www.pewinternet.org/pdts/pipsearchengineusers.pdf](http://www.pewinternet.org/pdts/pipsearchengineusers.pdf).
- [17] Rosouli Aza (2001): *Communication Patterns of Engineers*. Piscataway, NJ: IEE Press.
- [18] Shonken and Kushik, (2002): How Scientists and Engineers find Information and Use Libraries. ACRLSTS Program Partners in Science: An Exploration of a Scientist Librarian Relationship. ALA/CLA Toronto. Retrieved 8/18/2004 <http://www.ala.org/aia/acmbucket/stsconfererencepro/annual2003progra/hiller.ppt>
- [19] TadGold, H (1997) The Information need of Current Scientific Research. *Library Quarterly* 34(1).
- [20] Uchegba, E. (2006): Information Seekers Perspectives of Libraries. *Advances in Librarianship*, 28, 151 – 170.
- [21] Vickey B.C (2000): Information Needs of the Scientist in Nigeria. A Case Study of National Animal Production Research Institute.
- [22] World Book 2002; 101 E. pf., 284.