

INFORMATION NEEDS OF ENGINEERS IN SELECTED STEEL COMPANIES IN NIGERIA

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Abstract

This research was conducted to identify the information needs of Engineers working in Federal Government owned steel companies in Nigeria. The survey research method was employed to gather required data. A population of 70 Engineers was covered by this study. However, two third (2/3), giving a total of 50 Engineers was randomly sampled and served with copies of the questionnaire. 43 (86%) copies of the questionnaire were returned and found usable. The data collected was analyzed using descriptive statistics by which way responses and their percentages were tabulated. The findings revealed that the actual information needs of the Engineers are varied and job related as each of them indicated that they need information that is directly related to their areas of specialization. These areas include efficient use and maintenance of machines, raw materials sourcing and breakthrough into new areas of steel production, among others. The study further discovered that the information needs of Engineers are determined by a number of factors such as the work at hand and anticipation of need, etc. Finally, it was recommended that to meet with the problems of Engineers' information need, they must be trained and retrained on regular basis while adequate and current sources of information should be provided.

Introduction

Machines, structures, tools, and indeed every implement that has been created have had far reaching effects on mankind. These contrivances have been closely intertwined with major political, social, economic, scientific, and technological events throughout the history of human existence.

Initially, crude implements were produced from stones and woods for farming, hunting, and even fighting wars. The means of transport was mainly by trekking. However, with the advent of technology, things like vessels, bicycles, motorcycles, cars, lorries, trains, and aeroplanes were created for travelling long distances with many passengers and heavy goods. The wooden and stone implements for farming have also been replaced with iron ploughs for increased productivity. The impact of the printing press on the preservation and dissemination of information and knowledge which has led to information explosion, cannot also go without mention. These are great achievements of mankind which according to Efobi (1998) were made possible primarily because of the availability of functional iron and steel industry in the originating environments. In relation to the unprecedented enjoyment of high

standard of living in advanced countries, such as in the areas of social and economic development and massive agricultural production, Efobi (1998) further attributed such great achievements to a correspondingly high production and consumption of steel in those countries.

The above analysis explains why industrialization and sustainable development has remained at its rudimentary level for over 40 years of independence and is likely to remain so, for as long as deliberate, sustained and selfless effort at developing steel production is not accorded the national priority it deserves. Even the Obasanjo administration's privatization could not salvage the industry because the whole idea was shrouded in selfishness and lack of regard for the collective development of the nation. This undesirable attitude of government was untimely because the government needs to have laid a solid foundation of the industry before its privatization. It is the belief of this author that there is no private company within Nigeria or abroad that could be more interested in the development of the country than the government put in place democratically. After all, Efobi (1998) quoted in Bitagi (2003) noted that there is no record of a viable industrial nation without a viable steel sector and we must not delude ourselves that Nigeria is even at the threshold of industrialization.

In view of the above observations, it must be stated emphatically that in Nigeria, priority has not been accorded to the production of steel by the Federal Government because of over-dependence on petroleum resources which these days has become completely unreliable because of the activities of the Niger Delta miscreants, who have transformed themselves into various associations to destroy oil facilities with a bid to deny the whole country the benefit of such products from their area. Of recent, Ahmed (2008) said that Nigeria loses 30% revenue to Niger Delta crisis. Ahmed was quoting the President, Musa Yar'adua on the activities of the vandals in relation to all time increase in the world oil prices.

In addition to the above, the Federal Government, coupled with the activities of the Engineers did not help matters at all. This, according to Miachi (2001), is because of the fact that even when the companies were operational, the Federal Government did not give enough financial backing which led to frequent work stoppages and consequent delays in the pace of work.

Despite the diversion of the Federal Government and the key players in the steel sector, hope must not be lost as according to Agabi (2008) a decision has been arrived at after a two day first iron and steel summit that the Federal Government is planning to re-launch the steel sector especially the Ajaokuta Steel Company. This then, is the time to reflect on the information needs of steel Engineers so that by the time the companies resume operation, their products will not only be acceptable but also comparable to those from developed countries. This idea has become necessary because information has been identified by various professionals such as Adimorah (1993), Abubakar (1998), Sambo (1998), Fayose (1998) and Makinta (1998) in Bitagi (2003) as a necessary tool that enhances rapid economic, scientific, technological, political, social and cultural emancipation, transformation and revolution of any country.

In view of the above, information need plays a strategic role where Engineers in the steel companies, are expected to produce qualitative and reliable iron and steel products.

Information need involves the identification of additional knowledge over the present one to perform better in a given area. Presmit (1990) cited in Ugwuanyi (2004) in a study of academic scientists found out that information need is the most important research related situation, encompassing identifying up-to-date information, receiving relevant studies or data and finding a research topic. Reveker (1993) also in Ugwuanyi (2004) stated that the types of information sought included facts, general information, improving current state of knowledge about a subject, products and materials.

In the light of the above, this study is carried out to determine the actual information needs of Engineers in Nigeria's steel industry.

STATEMENT OF THE PROBLEM

Despite the availability of many steel companies in Nigeria before their privatization by the Federal Government, their output did not make any significant impact in the Nation's industrialization bid. This was because the steel industry was highly underdeveloped. The underdevelopment witnessed in the steel sector may be attributed to lack of adequate, reliable and relevant information needed by Engineers to perform effectively. For example, Adimorah (1993) and other professionals in Bitagi (2003) identified information as a necessary tool that enhances rapid economic, scientific and technological emancipation, transformation and revolution of any country. Mamman (2000) also quoted Oslen as having said that information provides the heart of development of knowledge, the basis for innovations, the resources for an informed citizenry, it therefore becomes the key commodity for progress of society.

Based on the output of the steel industry in Nigeria, it could be observed that the steel companies performed below expectations. That is that the Engineers in the steel industry did not receive the right type of information required to turn around the fortunes of the industry to meet the nation's need of steel production. The question then arises; what types of information are required for Engineers in Nigeria's steel industry to boost their productivity? In a bid to provide answers to this question, the identification and determination of the type of information required by Engineers in Nigeria's steel industry has become the problem this study wishes to unravel.

RESEARCH QUESTIONS

This research will seek answers to the following questions:-

1. What are the information needs of Engineers in the steel companies under this study?
2. What are the principal determinants of Engineers' information needs in their various areas of specialization?
3. What are the ways forward in achieving the information needs of steel Engineers?

OBJECTIVES OF THE STUDY

1. To identify the information needs of Engineers in the steel companies under this study.
2. To identify the principal determinants of Engineers' information needs in their various areas of specialization.

3. To identify the way forward in achieving the information needs of steel Engineers.

REVIEW OF LITERATURE

Information need is a necessary ingredient in the successful attainment of almost all human endeavours ranging from production to ultimate consumption. Popoola (2000) opined that an important segment in library and information science that has received pragmatic attention of professionals is determining or identifying the actual information needs of various fields to enhance productivity. According to him, information is the fifth factor of production and is the most vital tool today (because) it is needed daily in the process of planning, decision making and control.

Information according to Prytherch (1990) is an assemblage of data in a comprehensible form capable of communication. However, in more relevant terms, Longley and Shain (1989) were of the view that information is knowledge that was unknown to the receiver, prior to its receipt. They went on to state that information can only be derived from data that is accurate, timely, relevant and unexpected. The latter definition of information points to the fact that no man is an island and that there is a lot to learn from the experiences and knowledge of other people. It is also observable that whatever the level of one's academic background and practical experience, there are certain basic information that is not known to him/her in his/her area of specialization. Thus the quest for information needs continues in whatever activities one is engaged. This is to say that as far as iron and steel production is concerned, Nigerian Steel Engineers have a lot to learn from the experiences of developed countries.

The information needs of Engineers and indeed every researcher, academics, producer and the entire public could said to be the vacuum that exists between what is already known and what is unknown to him in the field of interest. However, information need is dependent on certain factors. According to Devadason and Lingam (1996) information needs depend on work activity, discipline/field/area of interest, availability of facilities, hierarchical position of individuals, motivation factors for information needs, need to take a decision, need to seek new ideas, need to validate current ones, need to make professional contributions and the need to establish priority for discovery.

From the above analysis it could be argued that information needs of Engineers in the steel sector in Nigeria varies from one Engineer to the other based on factors adduced above. Thus, it could be concluded in the words of Bitagi (2003) that information needs of Engineers in the steel industry (in Nigeria) encompasses such areas as raw materials sourcing, practical conversion of such materials to finished qualitative steel products, efficient use of machinery and personnel, management of the entire resources of the industry and research into new areas of steel production. This is in addition to current development, on the ways on which they could convince the Federal Government to intensively invest on the steel sector as a possible replacement to the oil sector when the fortunes of the later begin to show diminishing returns.

METHODOLOGY

The survey research method was employed in the conduct of this research. This is because of the numerous advantages attributed to it by statisticians and professionals such as Osuala (1993), Busha and Harter (1980), Aina and Ajiferuke (2002), etc. According to them, the method could be conveniently used in the study of large and small populations without sacrificing efficiency in addition to time and money saving, accuracy and information adequacy in the research process.

Since this research was devoted entirely to steel companies established by the Federal Government, purposeful sampling was used in arriving at the three (3) out of the six (6) companies covered by the study. These companies are those at Itakpe, Ajaokuta and Jos.

A total of fifty (50) out of seventy five (75) Engineers were random sampled for the study. The names of the Engineers were sought and written on pieces of paper, folded and thrown into a container and thoroughly mixed up. Fifty representing 66.66% were hand picked, thus giving each Engineer the opportunity of being selected. This number, 50, was found to be representative enough of the population studied.

The questionnaire, personal observation and interview constituted the three instruments combined to gather adequate data required for this study. The data gathered was analyzed using frequency approach. The result of each response was reflected in the tables. Descriptive statistics was used in analyzing the numerous data gathered. In that respect, frequencies of occurrence and their respective percentages were conspicuously shown in each table. Below each table, an explanation or interpretation of its contents is provided.

ANALYSIS OF DATA

Table 1: Response rate

Respondent	No of Questionnaire administered	No of Usable returns	Percentage (%)
Engineers	50	43	86

Table 1 depicts that 50 questionnaires were administered to the Engineers in the steel companies. Out of this number, 43, representing 86% were returned and found usable. The high rate of response was achieved as a result of constant visit (3 times) to the steel companies to follow up for the collection of the administered questionnaires.

Table 2: Areas of information needs of Engineers in the steel sector

Areas of information need	No of responses	Percentage %
Raw materials sourcing	15	35
Practical conversion of raw materials into finished products	13	30
Efficient use and maintenance of machinery	21	49
Breakthrough into new areas of steel production	15	35
Steel/metal defects such as corrosion, deterioration and protection, etc	5	12
Equipment design and construction	9	21
Management of human and material resources	10	23
Environmental pollution and control	6	14
Other areas (specify)	0	0

Table 2 reveals that the greatest number of Engineers, 21 (49%) needs information on efficient use and maintenance of machines. This is followed by 15 (35%) of the Engineers that need information on raw materials sourcing and breakthrough into new areas of steel production respectively. The table further reveals that 13 (30%); 10(23%); 9 (21%); 6(14%) and 5 (12%) of the Engineers need information on practical conversion of raw materials to finished products; management of human and material resources; equipment design and construction; environmental pollution and control; and steel/metal defects such as corrosion, deterioration and protection respectively. They did not indicate need for any other form of information to either sustain or improve their companies or duties.

The above finding reveals that if the Engineers in the steel industry have access to all the necessary information in the production of steel, they will excel and produce iron and steel that compares and competes favourably with those of developed countries. On the other hand, the lackadaisical attitude of the Engineers in identifying other areas of information needs as indicated in the table is an indication of their lack of concern for the progress of their work.

Table 3: Principal determinants of information needs of Engineers

Determining factors	No. of responses	Percentage %
By the work at hand	19	44
Anticipation of need	18	42
Based on experience	12	28
Based on advice of colleagues	4	9
By reading through books and journals	12	28
Watching film/listening to radio	3	7
Through internet	5	12

Table 3 shows that the major factor that determines the information need of Engineers in the steel sector is dependent on the work at hand as 19 (44%) of them have indicated. This is followed by 18 (42%) and 12 (28%) whose need for information is determined by the anticipation for the need of it, based on experience; and by reading through books and journals respectively. However, 5 (12%)' 4 (9%); and 3 (7%) of the Engineers expressed that their information need is determine through the use of internet, advice from colleagues, and watching film/listening to radio, respectively.

Since Miachi (2001) discovered that there was frequent work stoppages and consequent delays in the pace of work in the steel companies, this finding further reveals that there may not have been too much work at hand while yet, very little was anticipated. The finding also corroborated that of Diso (1992) where he found out that workers perform based on experience. According to him, even in industries where productions are expected to compete with those from other parts of the world, workers resort to the use of experience by which way, things or production is done today and always as it was done yesterday and before. This means that unless due attention is given to workers in terms of information and other needs, not much progress should be expected in their negative attitudes towards work.

Table 4: Way forward in achieving information needs of steel Engineers

Responses	Frequency	Percentage
Training and retraining on regular basis	43	100
Provision of functional library resources	35	81.04
Adequate funding of the steel sector	43	100

When the Engineers were asked about the ways forward through which the present information gap between what they currently know and need to know could be bridged and method of achieving a viable steel sector in Nigeria, all of them, 43 (100%) agreed that they should be trained and retrained on regular basis and that the companies should be adequately funded by the Federal Government. On the other hand 35 (81.04%) of the Engineers supported the provision of functional library resources and services. It is observed that 8 (18.96) others were undecided over the issues of provision of library resources and services.

DISCUSSIONS

The analysis on table 2 is a pointer to the fact that information needs of Engineers in the steel companies in Nigeria are diverse but yet job related as each of them indicated that they need specialized information in their areas of specialization. These findings corroborate that of Singh (1981) when in a study he found out that information needs of Engineers are job related.

However, despite the fact that the Engineers indicated no other form of information need, it is the observation of this researcher that Nigerian Steel Engineers need information on how to critically defend the activities of their companies, jobs, and how they could sufficiently convince the Federal Government to realize the need for a sustained national steel sector for the industrialization bid of all sectors of the nation's economy. The lack of this information has led to the privatization of the sector to non performing, ill equipped, and in experienced firms that have succeeded in messing up the huge investment in all the steel companies.

The research findings as shown in table 3 shows that the principal determinant for information need of Engineers in the steel sector is also as varied as the type of information they actually need to perform effectively. It is however, the observation of this researcher that less than expected library resources and services are provided by the steel companies to ease the information need of Engineers.

On table 4, it was revealed that to bridge up the gap of information already acquired by the Engineers and what they need to know to perform according to expectations and to meet the nation's need in steel sector development, they must be trained and retrained on regular basis. Training requirement could be formal and advanced such as acquisition of Masters and Ph.D degrees in relevant areas. Other forms of training which keep the participants adequately informed in their areas of specialization include seminars, workshops and conferences. More importantly, since it is the belief of this researcher that practical aspect of technological education could better be stolen rather than acquired, Engineers in the steel sector should be sponsored for overseas training to understudy those Engineers who operate in those countries where iron and steel production has been developed. This line of argument is agreed to by all, 100% of the Engineers studied.

In addition to the above, provision of functional library resources and services could be provided to further assist in bridging up the information gap. Thus, current, relevant and related printed materials together with internet services through the library's cyber café should be provided to facilitate access to current information on steel development worldwide.

Lastly, the underfunding witnessed by the steel companies which has led to frequent closures should be addressed. Ideally, the Federal Government should spend a lot of its financial resources to the development of the steel industry so that it could replace the oil sector in the event that the former begin to show the signs of diminishing returns as is being witnessed now and the recent past.

CONCLUSION

Based on the findings of this research, it is be concluded that the actual information needs of steel Engineers in the various companies studied are varied and revolve around efficient use and maintenance of machines, breakthrough into new areas of steel production and raw materials sourcing, among others. However, their non-challant attitude towards making additional suggestions in areas of information need was seen as a lackadaisical behavior on issues that affect their work.

Meanwhile, the Engineers agreed that their information needs is determined by a number of factors such as by work at hand, anticipation for need of information, based on their experience, etc. In the light of this, it was observed that the frequent closures of the companies had negatively affected the amount of work at hand and anticipation for the need of information. Yet, the practice of doing things based on experience has limited the hope of advancement in the sector.

The research also found out that in order to bridge the information gap in the steel companies, Engineers must be trained and retrained on regular basis and provided with functional library resources and services. Adequate funding of the steel sector was also viewed as a way out of the woods when there is diminishing returns from the oil sector which Nigeria has over-dependended on terms of revenue generation.

RECOMMENDATIONS

Since information need is that aspect of activity or vacuum that exists between what one has already known and what he needs to know to improve in his/her area of interest, it must be emphasized that for Nigerian Steel industry to develop and compete effectively in production both quantitatively and qualitatively and to also meet the iron and steel need of consumers nationwide, all Engineers, irrespective of their areas of specialization must be trained and retrained to adequately perform according to expectations.

In view of the varying determinants of information needs of Engineers in the steel sector, the mother organizations should, as a matter of priority provide them with adequate sources of information to enable them keep pace with current developments in their areas of specialization. To that effect, functional and well equipped libraries stocked with current, relevant and related materials in all ramifications of iron steel processing and production should be provided to serve as background for satisfying information needs.

In addition to the above, an Information Communication Technology (ICT) centre or sections or a virtual library should also be provided to enhance access to very current information worldwide by each of the operating steel companies.

Finally and more importantly, the Federal Government, as a matter of priority should provide the needed funds and support to be able to realize the aims and objectives for which the steel companies were established in the first place since it is the view of this researcher that most of the problems that led to the incessant closures and subsequent privatization of the companies emanated due to lack of funds to function effectively.

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