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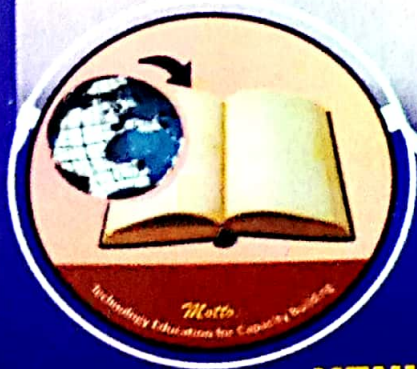
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**INNOVATION AND ENTREPRENEURSHIP IN  
SCIENCE AND TECHNOLOGY EDUCATION FOR SELF RELIANCE**



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## **Information Brokerage for Self-Reliance by Librarians and Information Technologists in Nigeria**

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### **Abstract**

This paper explains how printing and printing technology led to publication explosion. Efforts made by libraries and librarians to control and provide needed information resources and services to library users were explained. The inability of libraries to provide needed information using print information resources was also explained. The difficulties arising from resources and services provision by librarians led to the introduction of ICT which is supposed to be the best thing that happened to libraries worldwide. However, Nigerian libraries, especially public libraries were observed to be ill prepared in the use of ICT facilities due to financial constraint. It was therefore observed that the gap created by inability of libraries to provide needed information to the public could better be handled by information brokers who could be regarded as entrepreneurs. The terms entrepreneur, entrepreneurship and information brokers were therefore highlighted. The need for entrepreneurship training for successful information brokerage was also discussed. The nature of curriculum to be covered by the training was adequately treated. The professional areas for information brokerage by libraries and information managers were identified. Factors that could militate against information brokerage service in Nigeria such as lack of unanimity on what the practitioners should be called and the demand for information through librarians were observed to be below average etc. were equally identified. The paper concluded that even though information brokerage is new in Nigeria, if the professionals and practitioners put their heads together a new, important and thriving business is in the making. The paper then recommended that practitioners in Nigeria should be called Information Service Providers (ISP) with one association to be known as Nigerian Association of Information Service Providers (NAISP), among others.

**Key words:** Libraries, Librarians, Information Technologists, Entrepreneur, Entrepreneurship, Information, Information Brokerage, Self-reliance, Nigeria.

### **Introduction**

The introduction of printing and printing technology led to mass production of information resources in print format. At certain times information resources in print format led to what is known as publication explosion. That is, it was not only the coverage of information resources on a given or specific discipline that matters, but also how to identify and manage what was published about a given area of specialization and by who. The effort of various libraries to provide, by various means, all relevant and related information resources to their user communities could not be achieved wholly due to financial resources available at the disposal of such libraries and geographical barrier which inhibited easy access to published information, among others. While in relation to these problems Aziagba and Umeazor (2008) found out that principal among factors militating against the provision and utilization of information resources by libraries, Bitagi (2014) observes that funding is really the mother of all problems militating against library development in Nigeria since it is required at all levels of activity.

It is however, noteworthy that librarians have tried much as possible to disseminate to the users available information resources by compiling various types of bibliography and providing information services that was intended to keep them informed of the contents and stock of their information services that was intended to reach all intended users because the effort



It is this wilderness of information resources and services provision that the Information and Communication Technology (ICT) was introduced. The introduction of ICT in the provision and management of information resources and services by libraries is supposed to be the best thing that ever happened to libraries worldwide. This is because Aliyu (2011) observed that the use of technology to inform and make teaching, learning and research conducive is almost limitless. The author further emphasized that with technology playing an ever more significant role in people's homes, lives and working places, the world is in the midst of a communication and information revolution, complemented by an explosive growth in knowledge. Unfortunately however, these authors have observed that most libraries in Nigeria and especially public libraries that are supposed to be accessible to all, irrespective of status, age, qualification, religion, political leaning and tribe etc. are yet to meet automation requirement and standard to fully meet the diverse information needs of their registered and potential users through the ICT. Where ICT facilities are available, the potentials are not fully tapped for everybody's utilization but designed to benefit a few privileged or targeted audience such as employees of institutions or organizations.

In view of the above situation, a gap is created in the provision of information resources and services to meet the generality of people's needs for private, corporate and or institutional purposes. This justifies the need for information brokerage services by individual or group of librarians so as to provide the needed information required to enhance the operation of other business enterprises to everybody after making a few charges so as to become self-reliant. Such a person or librarian is regarded as an entrepreneur.

Entrepreneur is derived from the French verb "Entreprendre" which means to undertake, to attempt, to try in hand, to contract for or to try. Haruna (2011) defines the entrepreneur as somebody who establishes a business and bears the risk and uncertainty for the purpose of making profit or growth by identifying significant opportunities and assembling the necessary resources, to capitalize on them. Thus, an information broker who bears the risk and uncertainty for the purpose of making profit in his/her business is also an entrepreneur.

Entrepreneurship has recently been defined in a variety of ways by different authors to suit their interest and circumstance. For example, Entrepreneurship Centre of Miami, University of Ohio in Malumfashi (2011) defines entrepreneurship as:

A process of identifying, developing and bringing a vision to life. The vision may be an innovative idea, an opportunity or simply a better way of doing something. The end result of this process is the creation of a new venture formed under conditions of risk and considerable uncertainty

From the foregoing, it could be argued that irrespective of the way and manner entrepreneurship is defined, it has to do with risk bearing of acquiring all types of information through a variety of means and selling such information for a token fee with a view to make profit. This profit is what really keeps the information broker in business.

Entrepreneurship plays a great role in the development of individuals, societies and nations all over the world. To buttress this point, Ogunleye and Petinrin (2013) observed that the role of entrepreneurship in the developing economy is progressively becoming significant. The authors note that the advantages of entrepreneurship have been well recognized as it forms the bedrock of industrialization in developed and developing nations.

An information broker could be regarded as an individual who searches for information for clients. Information brokers use various resources including the internet, online services that specialize in data-bases, public libraries, books and CD-ROMs. Information brokers provide,



for a fee, information retrieval from publicly accessible data sources, most often online databases. However, information brokers really do more than data gathering. From the information gathered, brokers provide such services as writing reports that analyse the data they obtain, creating internal databases for clients to manage their in-house information, maintaining current awareness services that update a client whenever new information on a given topic becomes available etc.

The importance of information brokerage on the part of librarians and information technologists cannot be over-emphasized. Jonathan (2014) in a submission believes that vibrancy of youths must be invested in a youthful enterprise so that we can celebrate our youth for creativity and breaking new grounds in innovation, science, technology and other forms of beneficial human endeavours so that much needed jobs can be created. The emphasis here is that we, as enterprising Nigerians need to be self-reliant and rather, than looking to government for white kola jobs, such jobs can be created and provided by individuals. Thus, they will become owners of businesses. In another direction, it has also become imperative that focus must be shifted from mere acquisition of certificates by librarians and information technologists to the development and application of skills for which they are best suited. In that direction therefore, the art or science of developing and applying skills must be thoroughly taught and learnt in library schools as major component of their studies. This is expected to provide the basis upon which professionals may learn to practice such activities that could enhance their future lives, whether they are employed or not.

### **The Need for Entrepreneurship Training for Library and Information Scientists and Technologists**

Unlike in the years before the late eighties when jobs were easily available, the present day Nigeria is witnessing unprecedented unemployment problem of graduates from tertiary institutions. Thus, hundreds of thousands of graduates roam about the streets searching for jobs that are not easy to come by. Consequently, the need to look inward for what graduates could do by themselves to be self-employed becomes imperative. Osagie (2009) corroborate this view when the author observes that in recent times, with falling standard of education and huge pool of unemployed graduates, it has become mandatory for the individuals to look inwards, discover their talents and acquire knowledge on independent wealth creation. It is notable that unlike in the past where there were very few library schools across the country, the current situation is faced with the fact that every federal, state and private university is struggling to establish its own library school. Thousands of students are therefore, graduated on annual basis. Unfortunately however, even with the establishment of numerous libraries and expansion of existing ones, they fall short of accommodating every graduate in library and information science/technology. In view of that, there is the need to redefine library and information science/technology curriculum to accommodate well-designed entrepreneurship training.

The establishment of entrepreneurship programme specifically tailored towards the need of library and information science graduates has become imperative because after graduation, students may not need to wait for white kola jobs but with some amount of capital, they could become self-dependent. Osagie (2009) is also of the view that entrepreneurship training for students is necessary because it enables graduates to engage in entrepreneurial activities, to become self-reliant, job and wealth creators. In the same vein, the National Policy on Education (2004) provides for the acquisition of appropriate skills from schools for self-reliant nation and by extension, self-reliant individuals who would not depend on the nation to provide a means of livelihood. Volery (2003) further observes that entrepreneurship training help to identify opportunities and bring technologies and new concepts into active commercial use.

In view of the above observations, it could be argued that factors that necessitate



entrepreneurship training for potential librarians and information managers include:

1. A very competitive employment or labour market and fewer openings in all the tiers of government and industries in Nigeria.
2. The high rate of inflation which has resulted into an equally high cost of living.
3. The inability of employees generating additional income through employment.
4. Failure of earth-while lucrative sectors such as finance houses, banks and consequential overloading of the labour market.
5. A nation with acquisitive culture.
6. The already inclusion of entrepreneurship training by the National Universities Commission (NUC) in the curricula of all schools.
7. The need to recognize the potentials of youth to innovate, create, invent, manage and successfully drive their chosen businesses.

### **Designing an Effective Curriculum for Entrepreneurship Training in Library and Information Science and Technology**

An effective curriculum for entrepreneurship in library and information science and technology must first of all, put into consideration, the availability of qualified lecturers in the discipline, training materials, equipped laboratories, necessary equipment and established related business centres where students could do their SIWES. Christozov, Denchev, Toleva-Stoimenova and Rasheva-Yordanova (2008) in this direction observes that such project requires allocation of significant resources such as human and intellectual, financial, material and information resources.

In a study on entrepreneurial librarianship for self-employment in Nigeria, Saka and Ahmed (2014) identify entrepreneurship courses in undergraduate LIS curriculum to include:

- Information brokerage
- Publishing/book trade
- Information business
- Public relations
- Library building (design/architecture)
- Basic statistics
- Consultancy services
- SIWES programme
- Private libraries/Archives
- Preservation of libraries/Archives.

In their contribution on the form the curriculum of LIS/T programme should look like, Christozor et al (2008) identifies that at undergraduate level, library and information/technology students should focus on "fundamental and specific" courses. According to the authors, the fundamental aspects of the curriculum are:

- Mathematics (Algebra, Analysis)
- Informatics Fundamentals (Discrete Mathematics)
- Information systems
- Information Science Fundamentals
- Information Society and Policy
- Data/Document Processing
- Documental Sources
- Knowledge Organization and Management etc.

On the other hand, specific courses recommended by the authors include:

- Information Brokerage
- Information Management
- Probability and Statistics



or software development. Malumfashi (2011) elaborately listed entrepreneurship areas where librarians and information managers could concern themselves to include book selling, compilation, print and publishing, journal publications, bindery and lamination, stationery, store, newspaper vendor/distributor, photocopying, newspaperman, service to special groups, telephone/GSM library, internet café, and facility and event management. It is to be noted that while it is not possible for an individual to undertake all the above mentioned services, each broker could specialize in one or two areas for efficiency. Meanwhile, library schools should endeavour to practicalize all these activities to students so as to serve as a guide after leaving school.

### **Factors Militating Against Information Brokerage Service in Nigeria.**

As a young and developing area of specialization, information brokerage, as expected is faced with a number of militating factors. These include:-

1. Lack of unanimity among practising brokers on what the activity should be called. Onaade (2012) reported that the practitioners are referred variously as information brokers, independent researchers, independent information professionals (IIP), information consultants, freelance librarians or business librarians. Unless they are known by one name and come under a strong association, they cannot constitute a force in fighting for their right.
2. While information has been regarded as the fifth factor of production (Malumfashi, 2011), the demand for information by librarians, especially for developmental purposes, has been adjudged to be very low. Operating information business by librarians in Nigeria could therefore, be thwarted by lack of adequate patronage.
3. The illiteracy in Nigeria which according to Onaade (2012) is over 60% is an indication that most Nigerians, especially those in rural areas have little or nothing to do with written information. That delimits the area of influence of information brokers to major cities in the country.
4. Availability of required information resources which are supposed to serve as basic tools of operation and required infrastructure by the information brokers seem to be unavailable locally, costly and their maintenance is inhibited by lack of adequate experts in the field.
5. The capital base required to start operation may not be easy to come- by potential or new entrants (fresh graduates) into the business arena.
6. Information service of any nature, and brokerage in particular depends to a great deal on the availability of constant power supply to succeed. Power supply in Nigeria is highly erratic and therefore, dependence on its supply as needed may be disappointing.
7. Lack of well-equipped laboratories to teach undergraduates on methods of business operations. This is coupled with the fact that there is lack of qualified and experienced teachers in the field of information brokerage.

### **Conclusion**

Information brokerage is relatively new among librarians in Nigeria. It is however, expected that when professionals and practitioners (stakeholders) put their heads together, a new, important and thriving business is in the making for interested librarians. Meanwhile, the foundation necessary for the business to thrive according to expectations should be laid from library schools. In addition to that, the information brokers must have certain traits or qualities to practice successfully. These traits include that they must be self-motivated, creative, intuitive, authoritative, strong willed and resourceful to avoid over dependence on other people.

- Systems Analysis
- Theory and Practice of Consulting
- Introduction to Information Brokerage (IB) Law and Legal Regulation.
- Mathematical Foundations of IB

The authors still maintained that LIS/T students should be trained to acquire technical skills which according to them will enable the potential information broker to collect, summarise, process and interpret data and information in design, development and implementation of contemporary systems. Such courses include:

- Optimisation
- Applied Software
- Internet
- Database Design and Integration
- Programming Fundamentals
- Computing Systems Architecture
- Computing Networks and Communications
- Information Security
- Software Ergonomics
- Projects Design and Management.

The other segment of the training that need to be included in the LIS/T curriculum is the Social and Business Skills which will make it possible for IB to function effectively within the society in which they find themselves. These authors are also of the view that the practical aspect of entrepreneurship training should be emphasized so that new graduates could operate on their own after the NYSC.

### Professional Areas for Information Brokerage

Professional areas of practice for library and information brokers are numerous. For example, Saka and Ahmed (2014) note that professional areas of self-employment opportunities for librarians include: information business centre, consultancy services, designing of library services, information broker, publishing/book trade, public relations/advocacy, private library/archives, presentation of printed materials/archives.

Igbeka in Onaade (2012) listed some of the work information brokers are doing in Nigeria. These include:

- Indexing
- Abstracting
- Retrospective Conservation
- Cataloguing and Classification (Contract Cataloguing)
- Literature Reviews
- Print searches for users
- Owning a library or bookshop with the cooperation of nearby libraries in the area of interlibrary loan
- Packaging information
- Editing and Publishing
- Developing hvnc



## Recommendations

1. Since information brokerage, among libraries is relatively new, the practitioners should come under one name to be called Information Service Providers in Nigeria (ISPN). They should then organize themselves into one registered association to be known as Nigerian Association of Information Service Providers (NAISP). Such an association must develop a constitution to guide the conduct of the activities of its members, employees, and regulations governing business practices etc.
2. Alternative sources of power supply may be needed to thrive efficiently and effectively.
3. The proposed association governing the practitioners should serve as a guarantor between the potential brokers and financial institutions so as to procure loans for their businesses.
4. The jurisdiction of librarians in rural areas should not be limited to providing information resources but also extended to organize people for learning to read and write especially in English and any other major language that could assist the rural people in accessing required information for self and national development.
5. All library schools should, as a matter of priority provide well equipped laboratories and provide requisite training for their staff so as to enhance teaching and learning in information business.
6. There is need to adequately publicize and market information brokerage business by both the association and individuals involved in the business.
7. The trainers in library schools need to be adequately retrained such that their retraining will conform to the present realities in entrepreneurship training.

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