

# The Strategic Role of Library and Information Professionals in Mitigating the Factors Responsible for Non-Commercialization of Research and Development Results in Nigeria

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## ABSTRACT

The quest for commercialization of research and development results (products or services) has been one of the major challenges of Nigerian government. Preliminary observation in various research institutes and institutions like universities, polytechnics etc. reveals that majority of the ground breaking R&D results does not see the light of the day due to lack of interest of those that should finance, manage, adopt, advance and promote the commercialization process. This study was conceived to examine the strategic role the library and information professionals can play in mitigating the factors responsible for non-commercialization of research and development results in Nigeria. It seeks to re-examine, re-explain and to provide a new model that will conceptualize and make the commercialization of research and development results a sure bet in Nigeria based on the underpinning that sufficient information flow can enhance adequate communication, collaboration and connections among and between the five (5) stakeholders involved in the research and development process.

**Keywords:** Library and Information Professionals; Non-Commercialization; Research and Development; Librarian; Commercialization.

## 1. INTRODUCTION

In today's society which is increasingly knowledge-driven, research and development activities, most especially in science and technology are the twin keys to national development, industrial growth (Siyanbola, Isola, Egbetokun & Adelowo, 2011), technological innovation and viable attempt to build competitive advantage or to catch up with others, especially the technological capitalist developed countries of the west. These can only be achieved when the research and development results are capitalize or commercialized.

Research and Development (R&D) is the kind of scientific investigate undertaken with the sole aim of producing a product or service. Usually, Research and Development (R&D) is undertaken when there is need to improve on the existing product or service. According to (OECD, 2002) Research and Development can be seen as creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of individuals, culture and society, and the use of this stock to devise new applications. In an attempt to elaborate on what research and development is all about, Siyanbola, Olamide, Yusuff, and Kazeem (2012). separated the two concepts that is "Research" and "Development". For the

authors, research is the back-end of the exercise where the researcher is in most cases not seen except at data collection stage of the exercise, while development as it relates to R&D means the front end of the exercise (research) and this is where the activities that have occurred in the back-end are brought to the fore for either display or transformation into more explicit products or services. No matter how innovative a research and development result is, it remains useless until it serve the purpose for which it was created, hence the need for commercialization of research and development results (products or services) in Nigeria.

Preliminary observation and extant literature review shows that majority of the notable ad ground breaking research and development results (services or products) has remained underutilized or even totally unutilized in most research institutes, universities, Research centers, polytechnics, private research centers, government agencies involve in Research and Development due to the aforementioned factors. These innovations when properly commercialized are capable of geometrically reducing the rate of unemployment in Nigeria and increasing the nation's GDP. It is an established fact that the rich industrialize capitalist nations of the west invest much on research and development and also commercialize the end products or services as a source of wealth creation and employment opportunities.

Effective commercialization of research and development results in crucial for wealth creation, employment and national development, but at present the issue of commercialization of research and development results has remained a mirage in Nigeria (Ukwuoma, Amade & Moghalu, 2013) due to many factors, most of which is inadequate flow of information through communication, collaboration, networking, societal needs assessment, community analysis, lack of awareness of notable and ground breaking research and development

results, lack of adequate funding of commercialization process, lack of infrastructural facilities and environment in most research institutes, universities and other agencies undertaking research and development in Nigeria, Negative public perception of indigenous research and development results, lack of confidence in the quality assurance of indigenous research and development results be it a product or services. Lack of interest among financial institutions and private sectors in Nigeria to take the risk of commercializing indigenous research and development results, lack of National research and development repository which will increase global visibility of the Results, attitude of indigenous researchers, research institutes, and other agencies involve in research and development in Nigeria towards the issue of Intellectual property right which might be due to lack of awareness of the benefits of obtaining it (Briggs, 2002; Adewoye, 2007; Ukwuoma, Amade & Moghalu, 2013).

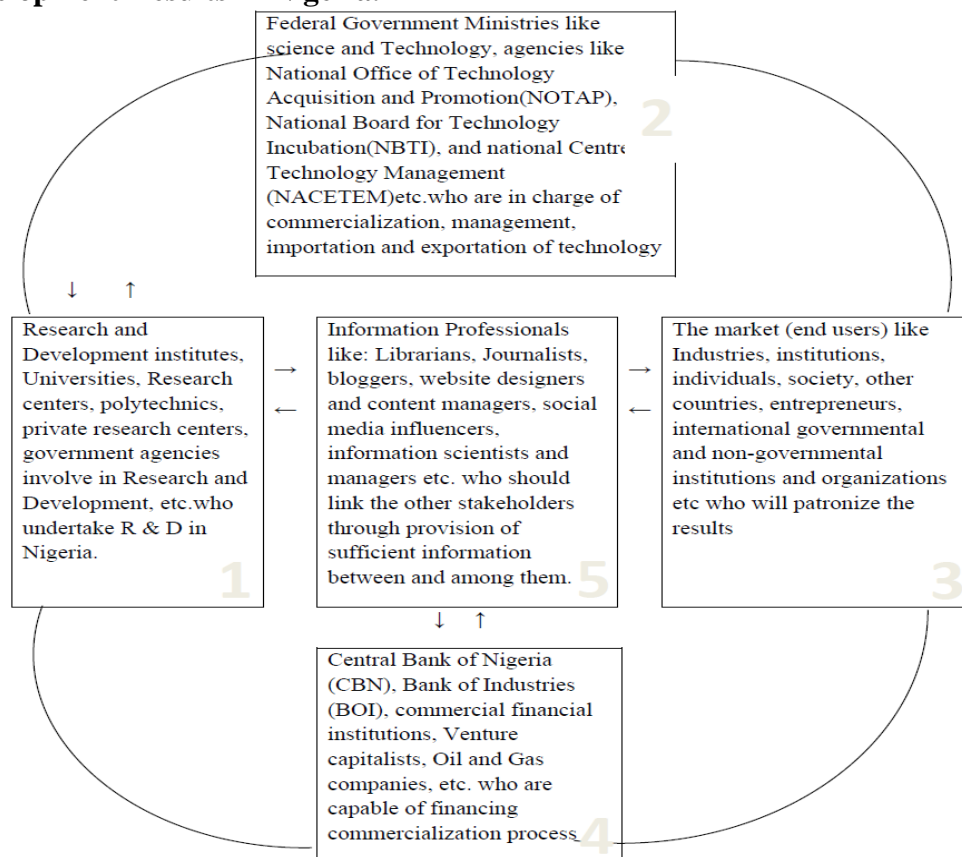
A critical evaluation of the aforementioned factors revealed a wide gap in information flow, communication, networking, and synergy among and between the key stakeholders in the research and development process which include those conducting the process of research and development (research centers, universities, polytechnics, research institutes, private organizations involve in research development etc.). Those financing the process ( Central Bank of Nigeria, Bank of Industry, Federal Government, venture capitalist, rich oil and gas companies, financial institutions etc.). Those that should publicize or market the products or services to the target audience to those that should finance the commercialization through re-orientation and guaranteeing quality assurance of the indigenous research and development results using social media, blogs, National Research and Development Repository, creating awareness of notable products and services (Librarians, journalists, bloggers, information scientists, web-designers and managers, National

Orientation Agency, etc.), and the end users of the research and development results neither a product or services (industries, society, institutions, countries etc.). It is this communication linkage that causes non-commercialization of research and development results in Nigeria.

For effective commercialization of research and development results in Nigeria, these key stakeholders as mentioned above should be in constant, frequent and sufficient communication, collaboration and networking, because any form of blockage or inadequate flow of information among or between these key actors will abort the quest for commercialization of research and

development results (products and services) in Nigeria, hence, the urgent need to involve the services of the set of professionals trained and equipped with the skills and competences of acquiring, processing, organizing and dissemination of information to various groups in the society according to their information need, saving them the agony of information overload and information explosion which characterized this 21<sup>st</sup> century. To better illustration, the study developed a model of sufficient information flow of research and development results commercialization using Nigeria as a case study.

## 2. Sufficient Information Flow Model of Commercialization of Research and Development Results in Nigeria.



The above model shows the five (5) stakeholders that should work together for commercialization of research and development results to take place. These stakeholders are;

1. Those who undertake research and development. Which include Research

institutes, Universities, Research centers, polytechnics, private research centers, government agencies involve in Research and Development, etc.

2. Those who are in charge of commercialization, management, importation and exportation of

technology. Which include Federal Government Ministries like science and Technology, agencies like National Office of Technology Acquisition and Promotion (NOTAP), National Board for Technology Incubation (NBTI), and national Centre for Technology Management (NACETEM) etc.

3. Those who should patronize the results (products or services) for commercial purpose or personal consumption. Which include; Industries, institutions, individuals, society, other countries, entrepreneurs, international governmental and non-governmental institutions and organizations etc.
4. Those who are capable of financing commercialization process. Which include; Central Bank of Nigeria (CBN), Bank of Industries (BOI), commercial financial institutions, Venture capitalists, Oil and Gas companies, etc.
5. Those who should link the other four (4) stakeholders mentioned above through provision of sufficient information between and among them. These include; Information Professionals like: Librarians, Journalists, bloggers, website designers and content managers, social media influencers, information scientists and managers etc.

For commercialization of research and development results (products or services) to take place. These five stakeholders must be in constant and sufficient communication with adequate flow of information and the Information Professionals like: Librarians, Journalists, bloggers, website designers and content managers, social media influencers, information scientists and managers etc. must be involved to make the flow of information sufficient. First and foremost, the Information Professionals should link the target market (Those who should patronize the results) with Those who undertake research and development (Research institutes, Universities, Research centers, polytechnics, private research centers, government agencies involve in

Research and Development, etc.) so that there will fully understand the needs and exact specifications that the market wants before undertaking the research and development process. This simply means involving the end users in the research and development process. In the course of doing this the end users should be used to trial test the product so as to increase their confidence in the said product or services.

Secondly, the Information Professionals should link those who undertake the research and development and those who are capable of financing such endeavor so as to reduce the case of inadequate funding which will affect the quality of the R&D result. When adequate information is flowing among and between these two stakeholders the research institutes, universities and other institutions that engages in R&D will be well funded and the researcher will be well rewarded as well.

Another indispensable communication should be established between Those who undertake research and development (Research institutes, Universities, Research centers, polytechnics, private research centers, government agencies involve in Research and Development, etc.) and Those who are in charge of commercialization, management, importation and exportation of technology. Which include Federal Government Ministries like science and Technology, agencies like National Office of Technology Acquisition and Promotion (NOTAP), National Board for Technology Incubation (NBTI), and national Centre for Technology Management (NACETEM) etc. so that adequate guidance on obtaining intellectual property right should be followed and such benefit granted with ease.

Based on the model, we argued that once there is linkage or insufficient information flow between and among these five (5) stakeholders, the quest for commercialization can never be achieved. Most importantly, we argue that, the role of information professionals in facilitating this

communication, collaboration and connection should not be overlooked if the quest for commercialization of research and development results is to be achieved. However, to achieve these tedious responsibilities as fore mentioned for information professionals, the following strategies should be followed religiously.

### **3. Strategic Roles of Library and Information Professionals in the Commercialization of Research and Development Results in Nigeria**

For effective commercialization of Research and Development results in Nigeria, the following strategic approach should be followed:

1. First and foremost, a “National Research and Development Repository” should be created for all notable, commercializable and ground breaking Research and Development results (products or services) in Nigeria. Using ‘Dspace’ an open source free software where the abstract, videos, full text, procedures, etc should be uploaded and displayed for global visibility and patronage of the research and Development results. This will also enhance the awareness level of result and Development results among the target end users and can increase interest from financing institutions, individual capitalist and entrepreneurs in the commercialization of research and development results.
2. Secondly, the federal government, through the agency responsible for granting intellectual property right should mandate all Science and Technology Innovation research centers, institutions etc. to apply for the type of intellectual property right for their notable research and development results so as to benefit from the privileges of such rights. Also the enforcement of intellectual property rights should be active in the Country to avoid unnecessary infringement of someone’s right.

3. Thirdly, adequate communication, collaboration, networking and information should be established among the key stakeholders in the process of research and development. In establishing this communication, the end users of each result should be involve in the process, most especially the specific needs of the various stakeholders should be considered properly and be guided accordingly. If the results does not meet up with the demand of the other stakeholders commercialization will never take place, because no one takes unnecessary risk.
4. Fourthly, the federal government ministry or agencies in charge of importation and exportation of foreign technologies into this country should propose a sort of policies restricting the importation of certain technology into the country to save unfair competition between our infant indigenous research and development results and the matured international research and development results. This particular negative effect of globalization has killed the entrepreneurship spirit of many in developing countries.
5. Public re-orientation should also be taken seriously, to this end, the information professionals should be empowered to disseminate and market the results based on the specific user needs. For instance, results meant for Health sectors shall be marketed to firms interested in it, so also to Agriculture, Engineering, ICT, etc. professionally, this is called ‘selective dissemination of information’. This can be achieved through organization of National exhibitions and display, conference, workshops etc where the perceived end users will be invited.

### **CONCLUSION**

From the discussion, using the model as a base for analysis, it is clear that the role of information professionals in setting positive perceptions, interest,

communication, collaboration and networking which will enhance the commercialization of research and development results in Nigeria is indispensable. Since to him who devotes his life to the rigorous process of research and development tirelessly, nothing can give more happiness than increasing the number of discoveries, innovations and inventions, but his cup of joy and fulfillment is full when the research and development results of his studies immediately find practical application, most especially as a worthy, viable economic and commercial products or services. I tend to conclude that the role of information professionals in actualization of this joy and happiness of researchers, research institutions, centers, etc. cannot be over emphasized, hence, lets involve them.

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