

## Gown to Town: The Yabatech Saga

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### Abstract

The need for industrial driven research in recent times is been promoted through patenting and commercialization of inventions in higher institutions of learning, which is aimed at meeting societal needs through the industry. The basic concept of technology transfer lies in the recognition that the existing technology is available in the academia and is needed in the industry. The purpose of this article describes how identified technologies are deployed from the institutions to the industry where qualitative and quantitative techniques are used to explore the transfer. This is to understand existing relationship and suggest more suitable arrangements through industry – academic linkage. Research and Development (R&D) department of the industry should relate directly with Research Centres of the Institutions to foster the desired need driven research in Nigeria.

**Keywords:** Academia, Industry, Need Driven Research, Technology Transfer.

### INTRODUCTION

The need for industrial driven research in recent times is been promoted through patenting and commercialization of inventions in higher institutions of learning, which is aimed at meeting societal needs through the industry. This need is driven by the continuous challenges faced by the industries to meet the ever increasing demand of the society in the present day knowledge economy.

Over the years, there exist gaps between the industries and institutions especially in developing countries where the institutions exist parallel to the industries. Although institutions produce manpower that is later employed by the industries but the relationship between them is not a symbiotic one. The purpose of this study is to describe how identified technology move from the institution to the industry.

### INDUSTRY ACADEMIC LINKAGE

Several literatures have established the need for synergies between the academic and the industries. A lot had been done on industry academic linkage in the past. Scholars had made recommendations towards increasing and enhancing academia-industry interface [1], [2]. The benefit of projects carried out in collaboration with industry to the academia was shown to provide finance benefit as well as a positive effect in the academic publications of academia and in the number of patents granted [3]. Although issues such as differences in mission and objectives, organizational differences: cultural differences, have been raised on barriers to successful academia industry linkage [4] [5] [6]. Success factors such as cultural awareness, motivation, and knowledge distance between partners, openness and trust, selection of partners and relationships between them, clear objectives for knowledge transfer collaborations and language, existing relationship between collaborative partners, experience and skills of partners, their reputational capital and local networks of the knowledge supplier has also been identified by other scholars [7][8].

A glimpse at Stanford University industry interface reveals that apart from the industrial affiliated programs and industrial sponsored research the use of technology licensing is also a functional aspect of their relationship [9]. Here the benefits of Intellectual Property (IP) for the institution come into play. Hence the impact of IP in the linkage is been appreciated.

### TECHNOLOGY TRANSFER IN YABA COLLEGE OF TECHNOLOGY

The importance of IP either through patenting or commercialization was brought to the fore by National Office for Technology Acquisition and Promotion (NOTAP) in higher institution of learning in Nigeria with the establishment of Intellectual Property and Technology Transfer Offices (IPTTO).

Identification of existing technology within the academia is facilitated by the intellectual property office available in these institutions. This office is responsible for technology transfer to the industry through their R&D department. Despite the awareness created within the institutions only few have benefited from the numerous advantage of IP created in their environment. Yaba College of Technology (YCT) is the first Polytechnic in Nigeria, established in 1947. It is also one of the institutions that benefited from the establishment of IPTTO

A study conducted among academic staff in the Schools of Science, Engineering and Technology at YCT showed a minimal relationship between the institution and industries. Several of YCT research outputs remain unpatented and unexplored by industries. Few technologies that were explored were not patented by the

researchers.

*A. Identified and Deployed Technology within the YCT Community*

- Textile and polymer winch dyeing machine
- Evaporative cooling system used for laboratory experiment

*B. Identified and deployed technology to the industries.*

- Bottle corking machine for syrup
- Cashew nut shelling machine
- Portable mechanical seed planter
- Fuel economizer that reduce fuel consumption for both petrol diesel and biodiesel
- Solar energy to power street light
- Extraction of bio fuel from jatropha plant as alternative source of energy
- Design of D/C air conditioner

*C. Unexploited technology to within the YCT Community.*

- Etimepaste – Water Based Colour
- Substitution of Orange peels meal for maize in catfish diet.
- The use of Castrol oil in production of soap and detergent
- Yogurt production from Tigernut, fermented Groundnut, Soya bean and melon seed.
- Biodiesel from waste vegetable oil
- Ethanol production from yam peels and cassava peels
- Essential Oil and leaf extract of scent leaf for antibacterial prevention
- Probiotics from wara
- Biogas from domestic waste

*D. Method of Technology Deployment*

The deployment of technology within the College was as a result of identified needs in the Department of Polymer and Textiles (winch dyeing machine) and the Industrial Maintenance Engineering Department (Evaporative cooling system). Descriptions of needed equipment were given to researchers who designed and constructed according to specification. These equipment are still been used in the various Departments in the College.

For the industries, the specification for bottle corking machine, and cashew nut shelling machine was given by the Small and medium scale industries involved and it was constructed and delivered, Solar energy for street light, Bio diesel, fuel economizer, and design of D/C Air conditioner were responds to finding alternative source of energy for GSM operators' because of the expensive nature of diesel that was used in running generators. The research was sponsored by the industry and conducted by the academic researcher alongside the associate that was based in the industry. The technologies were developed in sequence as result of the search for alternative power supply at a reduced cost while working on a two year contract with the industry.

*E. Method for Technology Deployment*

Below are some method for technology deployment that had been used by other research and higher instructions.

- Commercialization- outright sales of the product/process to Small and Medium Enterprise through workshop, training and exhibition.
- Spin Off Companies – developing SMEs through incubation centre that reside in the Centre for Entrepreneurs Development (CED) or Incubation centre.
- Partnering with Angel Investors

## **DISCUSSION**

The findings from the study conducted in YCT revealed that technology transfer in form of licenses or out right sales of IP has not fully been explored by the YCT community. The saying that institutions are grave yard of inventions is true for an academic community like YCT as several research outputs from both students and staff lies on the shelves of the institution. The usage of their research centers especially the IP office is superficial. Although, researchers could assess grants for research works but industrial sponsored research is not yet enjoyed by them. The culture of patenting has not been absorbed among academics in Nigeria [10]. Therefore the idea of patent, publish and prospers remains an illusion as many researcher cannot stand the waiting period for patenting before publishing. The existing relationship between the YCT community and the industries in terms of technology transfer is scrawny. Short courses are run for technical staff of industries on few cases. Industrial visitations are also once in a while for the students in the Schools of Science Engineering and Technology. Staff exchange programme with industry is close to non existence.

## **CONCLUSION**

Exploration of research findings through the Research Centre where the intellectual property office is residence along side with the Entrepreneurship Development Centre should organize forum for industries especially the

SMEs and academic researcher where industrial needs would be discussed and solution sort for from existing technology that is resident in the institution. Research policy should also be provided as a guide for the researcher within the institution. Spin off companies should also be encouraged through the existing Incubation Centre that is resident in the Centre for Entrepreneurship of the institution.

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