

**THE FUNCTIONS OF AN INTELLECTUAL PROPERTY
AND TECHNOLOGY TRANSFER OFFICE (IPTTO)
AND IT'S MANAGEMENT**

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1. Introduction

Central to the mission of Tertiary Institution is Research, Education, and the publication and dissemination of ideas and discoveries.

The Nigerian tertiary institution has fulfilled this mission well with the notable exception of dissemination of ideas and discoveries. All across the country there are numerous instances of research results wasting away on the shelves. The Nigerian tertiary institution, in failing to disseminate ideas and discoveries, has short-changed itself, researchers or inventors and the nation.

The IPTTO is therefore a vehicle by which this observed failure may be corrected.

2. Concept of IPTTO

Intellectual Property and Technology Transfer Office can be defined as an office that manages the output of an innovation centre in the form of Intellectual Property. Intellectual Property is any form of original creation of the mind. Intellectual Property has the same attributes as physical property; it is owned much the same way as physical property. The ownership of intellectual property is conferred by law. These rights conferred by law, can be given, sold, rented (called licensing) and in some countries, even mortgaged, in much the same as physical property.

Intellectual Property Rights (IPR)

Intellectual Property Rights are the rights given to persons over the creation of their minds, usually over a period of time. The right confers the exclusive authority on the possessor to exclude others from making, selling, offering for sale, using, etc, the protected invention.

Types of Intellectual Property Rights (IPR)

Intellectual Property is usually divided into two branches, namely industrial property and copyright.

Industrial Property

These include patents, industrial designs, trademarks/service marks, trade secrets, geographical indications, etc.

Patents

A patent is an exclusive right granted for an invention, which is a product or a process that provides, in general, a new way of doing something or offers a new technical solution to a problem. A patent provides protection for the invention to the owner of the patent. An invention is normally patentable if it is new, involves an inventive step, and is industrially applicable. New strains of microorganisms and plant varieties may also be recognized as invention. The protection is granted for a limited period, generally 20 years.

Industrial Design

An Industrial Design is the ornamental or aesthetic aspect of an article. Industrial Designs must appeal to the eye. It is that characteristic appeal that is protected.

Trade Mark

A Trademark is a word, name, phrase, symbol or design, or a combination of these elements, which identifies and distinguishes the particular goods or services. The term Trademark also encompasses Service Mark, which identifies and distinguishes the source of a service rather than a product. Trademark Rights are used to prevent others from making, promoting, or selling goods or services which have a name, symbol, or design that is confusingly similar to that of an established Trademark. It does not, however, prevent others from making or selling the same goods or services as long as it is under a different, non-confusing mark.

Trade Secret

Any information that may be used in the operation of a business and that is sufficiently valuable to afford an actual or potential economic advantage is considered a Trade

Secret. Examples of Trade Secrets can be formulas for products, such as the formula for coca-cola, compilations of information that provide business with a competitive advantage, such as a database listing customers, distribution processes, etc.

Geographic Indication

A Geographic Indication is a sign used on goods that have a specific geographic origin and possess qualities or a reputation that are due to that place of origin. Agricultural products typically have qualities that derive from their place of production and are influenced by specific local factors, such as climate and soil.

Copyright

Copyright is a legal term describing the economic rights given to creators of literary and artistic works, including the right to produce the work, to make copies, and to perform or display the work publicly. Copyrighted materials include the following:

- Books, journal articles, texts glossaries, bibliographies, study guides, laboratory manuals, syllabi, test, and proposals;
- Lectures, musical or dramatic compositions, unpublished scripts;
- Films, filmstrips, charts, transparencies, and other visual aids;
- Video and audio tapes or cassettes;
- Live video and audio broadcasts;
- Programmed instructional materials;
- Mask works;
- Research notes, research data reports, and research notebooks, and
- Other materials or works including software which qualify for protection under the copyright laws of Nigeria or other protective statues whether or not registered there under.

3. Functions of IPTTO

Intellectual Property and Technology Transfer Office has several functions which include:

- Sensitizing its University, Research Institute or Community on Intellectual Property Rights (IPR);
- Collation and Assessment of Research Results and Inventions emanating from the particular institution;
- Securing Intellectual Property Rights for novel and commercializable Inventions;
- Building up and enhancing the capacity and documentation needed to receive patent disclosures, undertake patent searches, completing applications for patents and copyright and providing such services to the public at a fee;
- Processing and drafting of the participation Agreement, Material Transfer Agreement, Confidentiality disclosure Agreement, among others;
- Establish linkage with Industries and Entrepreneurs;
- Identify industrial problems soluble through contract research;
- Monitor the activities of investigators and maintain awareness of new technologies;
- Market Intellectual Property Rights;
- Administer Licensing Agreements;
- Monitor and collect revenue;
- Calculate and remit the inventor's and institution's shares, and
- Track Invention Progress and maintain Record of the entire process;

4. Management of Intellectual Property and Technology Transfer Office

Intellectual Property and Technology Transfer Office (IPTTO) has an important role to play in today's world, where access to know-how and knowledge are valuable economic commodities. An Intellectual Property and Technology Transfer Office (IPTTO) is set up to achieve this noble objectives and should be closely aligned with its supporting institution's missions and goals. Apart from being income generating venture, it also has the capacity to facilitate innovation and broker the exchange of knowledge for society's benefit.

I. Foundations

Any Intellectual Property and Technology Transfer Office should be aligned with and supported by the institution it serves. The IPTTO's mission should be consistent with the institutional mission, and the IPTTO's approach and activities should support and add value to the institution. The IPTTO and the institution should agree upon what value the centre will add, because financial returns alone are an insufficient measure of value for universities viewing their commercial activities strategically and contextually. Long-term returns, such as:

- sustained partnerships,
- cultural change,
- job creation, and societal well-being should be part of the value addition provided by IPTTOs which will supplement shorter-term, such as
 - income,
 - access to resources and expertise, and
 - program delivery.

Decide whether the IPTTO should undertake commercialization through IPR

Based on the IPTTO's objectives, the IPTTO may decide on how the office should be configured, resourced, and operated. The senior management of the institution must actively support the IPTTO. The Director (Manager) on the other hand will need to understand the relevance of IPTTO to the institution, her life cycle is also essential as this will help the office to encourage academics to participate in meaningful R&D thus helping to maintain support when returns seem slow or when a partnering decision appears unappealing on the surface. Such an understanding involves vision from both partners and an ongoing dialogue between principal's stakeholders.

Adequate policies and objectives should serve as a framework for shaping the office and directing priorities. An early step in setting up the IPTTO—and an essential ongoing activity—is identifying and fostering relationships with stakeholders (researchers, inventors, etc). This group will include academics, representatives of the business and user community, and regional and governmental offices. The most important group at

the outset is the internal community (institution).

Successful and meaningful technology transfer is demand driven, so it is important to understand the external partner's needs. If the internal academic community does not support the technology transfer process, there will be scope for failure at various stages of the process. Although time consuming for the technology transfer manager, he or she should be seen in the academic departments being served. This visibility will accelerate culture change and help integrate the IPTTO into the fabric of the university. The institutional message must be one of support and encouragement for engaging in technology transfer.

IPTTO staff must work with academics at all levels to educate them in patenting their R&D efforts. Their work could include:

- training and responding to their needs,
- act as consultants, and
- identify partnership or licensing opportunities. All academics will need to be aware of the intellectual property (IP) rights process, including disclosure, confidentiality, types of protection, and so forth. Such awareness training may be delivered by the IPTTO staff or in partnership with external providers. For example, IP specialists, lawyers, etc.

Researchers must often be willing to provide these training services to the academia. The universities on the other hand should always make funds available to establish a number of enterprise centers for such training.

Incentive schemes need to be carefully considered for academic staff, researchers and even the IPTTO employees and these policies should be implemented early. Experience has shown that acknowledging people participation in IPR and sharing some of the financial reward or royalty are clear cut incentives to encouraging engagement in IPR and they are the key factors for pulling success in intellectual property and technology transfer office (IPTTO).

II. IPTTO Personnel

The core element for successful intellectual property and technology transfer office (IPTTO) is people. IPTTO is a “contact spot,” so the Director (Manager) must have the ability to engage with people at all levels. The manager need to understand the viability of their inventions and must be highly flexible. Intellectual Property and Technology transfer office manager need to be capable of engaging equally well with academics and business.

Business skills are important but hiring an MBA graduate is not essential. The office should be led, however, by an individual who understands the details of intellectual property right (patents and other related rights). Staffs with work experience in the relevant sectors that can appreciate its requirements and tailor opportunities accordingly are also very useful. To build up an understanding of the potential for new opportunities, the manager needs to win the confidence of academics, researchers and local inventors. The office should be perceived as part of the institution. Staff should be able to spend time with academics and other inventors to have better understanding of what they offer as well as how these opportunities can best be developed for mutual gain by the institution, researchers, inventors, employees and the immediate community. Similarly, staff must be actively engage with training to have better understanding of the patentable inventions which will meet market needs and also the gains that will accrue to the institution through IPR.

An effective IPTTO is a team of complementary abilities. There is no one rule for the type of background that an IPTTO staff need; much can be learned on the job and through specific training. However, if the office will be brokering opportunities in particular technical areas, then it is wise to recruit technical specialists. They will need to be able to use technical languages with academics and customers, understand an opportunity and its applications, research areas of interest to a partner, and translate their ideas into an offering that patent office will understand. Not all IPTTOs need to be large. A core viable unit at the outset may have three staff members, two of whom have

business and technical skills and have or can develop expertise in IP rights and commercialization. The third staff member would provide administrative support. Often it is hard to resist the seduction of employing specialist staff in preference to administrative staff. However, an office that does not have access to appropriate administrative support will always be inefficient.

Specialist advice can be outsourced (for example patent and legal counsel). A growing number of legal firms have experience with the academic technology transfer sector, and they can provide a service that responds to the needs of this sector—both in terms of the type and level of advice and in the cost of counsel. When options have not been identified, a discussion within technology transfer networks will often reveal a number of suitable choices. While most offices use external legal advisors, others can employ in-house advisors, which may be desirable but naturally depends on whether the volume and complexity of work make such an appointment financially sensible.

Free business advice—which can be useful—should be made abundantly available to IPTTOs. Peer advice, including participation in technology transfer training, can be invaluable.

III. Managing information

In an IPTTO, adequate attention must be paid to information management. Acquisition of patent certificates is naturally a long-term prospect, and key information on IP rights and legal agreements must be captured, organized, and maintained for a long time as the life of a patent may last for up to 20 years, so with the license obligations. Moreover, most litigation requiring access to initial documents comes after a successful product is in the market, often several years after patent licensing. Without adequate management of records, patent positions may not be sustainable and income may be lost. To develop business/project, contact information must be captured and shared across the organization hence IPTTO must have Customer Relationship Management (CRM) style of database.

The IPTTO is responsible for new opportunities and research inventions from the institution, and bring all the research activities together. This combination of functions weaves the activities of the organization together and creates an integrated team. The IPTTO may start initially as a small technology transfer unit with a staff strength specializing in the protection and commercialization of university IP rights. The IPTTO centre of the university should encompasses business development, consultancy, marketing, technology transfer, spinout company incubation, and research support. The mission is to leverage the intellectual capital of the university to generate income and benefit society.

The business development team underpins the activities of the centre and must be manned by specialist who will leads them appropriate. Their objectives include:

- developing collaborative research ,
- promoting innovative culture within and externally.

The technology transfer team focuses on the identification, management, and exploitation of IPR.

Those who are skilled in patent prosecution, due diligence, drafting and negotiating license agreements, and are supported by a team dedicated to monitoring and incubating new company spinouts from the university the research. The expansion of the team can be done when funds are available.

These can only happen when both of which recognize the increasing importance of the knowledge economy and applied research and actively participate in promoting knowledge transfer. This allows many universities to develop knowledge transfer capabilities and capacity. It also allows them to take some risks in funding research to encourage and capture new opportunities at the institutional level.

The government has been keen to encourage development of knowledge transfer through the public sector research establishments within the Universities, Polytechnics and Research Institutions.

A push for technology transfer for some time now has created 38 intellectual property and technology transfer offices across Nigerian universities, RIs, Polytechnics, etc, and the universities Intellectual property and technology transfer offices have a clear mission to: -

- contribute to the nation's economy,
- facilitate research uptake for the public good,
- develop mutual beneficial close ties with industry,
- motivate and retain academic staff's efforts, and,
- ultimately to increase income to the institution.

These objectives when pursued leads to:

- the commercialization of research results,
- negotiating sharing formula for benefits accruing from research,
- supporting the creation of new spinout companies,
- training and educating scientists in the field of technology transfer, and
- bringing together IPTTOs and specialists in the field of research to improve the provision of services and share information and resources at their disposal.

4. NOTAP's IPTTO Programme

NOTAP's IPTTO programme began in 2006. The objectives of the programme are:

- i. Audit of all the research projects in the Universities and Research Institutes,
- ii. Collation and assessment of indigenous research results and inventions,
- iii. Securing Intellectual Property Rights for the results where desired,
- iv. Establishing linkages with industries and entrepreneurs, and
- v. Forming the nucleus of Universities/R&D institutions, technology incubation centre (TIC) or Technology Park within or around institutions that will promote the establishment of numerous indigenous technology based enterprises.

To date, NOTAP has set up 38 IPTTOs nationwide. However, the results fall short of expectation.

CONCLUSION

In this era of knowledge economy, IPTTO is an indispensable unit of the university. Making money is a consideration when setting up an IPTTO, however IPTTO adds value in many other important ways:

- ✓ As a resource to facilitate innovation for the public good,
- ✓ As a way to broker the exchange of knowledge between the businesses and public sectors for society's benefit,
- ✓ Transferring knowledge across disciplines such as humanities, law, and social sciences, and
- ✓ IP TTO should be set up to have the flexibility to accomplish broader knowledge-transfer objectives.

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