

Techno-Entrepreneurship for Business Development and Technology Incubation in Nigeria

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Abstract

Most enterprises being promoted by different kind of entrepreneurs lack adequate technical inputs which to a large extent affect the technical output and ultimately affect the business development. Hence, the need for techno-entrepreneurship for business development becomes imperative. The objectives of this paper are to ascertain the place of techno-entrepreneurship within the concept of entrepreneurship, to identify the role of techno-entrepreneurship in business development, to investigate roles of technology incubation as it relates to techno-entrepreneurship and to ascertain achievements of technology incubation programme in Nigeria. Exploratory methodology approach was used where secondary data were used from extant literature to underpin the theoretical and contextual frameworks of techno-entrepreneurship development. The findings of the study revealed that graduates of technology incubation programme have over five thousand (5,000) employees; the techno-entrepreneur graduates have about eight hundred and twenty-six (826) innovative products in the market with one hundred and twenty-five (125) registered patents. The techno-entrepreneurs were identified to have some peculiar challenges to include the followings; lack of strong Industry – Academia linkage, weak patenting culture in Nigeria, lack of adequate awareness of new technologies, inventions, research and development results, lack of venture capitalists and government innovation/risk funds. It is therefore suggested in this paper that government should intensify efforts to bring techno-entrepreneurship into the front burner in order to have effective and efficient business development in Nigeria.

Keywords: *Entrepreneurship, Techno-entrepreneurship, Technology incubation, Business development*

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Background to the Study

Sequel to globalization, technological changes and the digital age in the world presently, the subject of entrepreneurship has gained greater interest. The discussions centered on what actually constitutes entrepreneurship and how far it extends. The term entrepreneurship is derived from the French word *entrepreneur* – to undertake. This suggests that, the concept of entrepreneurship is the process of undertaking activities concerned with identifying and exploiting business opportunities while assuming its associated risks. In a more specific term, “Entrepreneur” is of French origin and was first noted in Savary's 1723 Universal Dictionary of Business as one who undertook a project on behalf of the owners; a manufacturer, or a master builder.

Entrepreneurship is thus considered as the process of creating something new with value by devoting the necessary time and effort, assuming the accompanying financial, psychic, and social risks and receiving the resulting rewards of monetary and personal satisfaction and independence that comes with it. Entrepreneurship development require a selection process that attempts to identify those target groups that have some of the key prerequisites for entrepreneurial success and the selection process deploys limited resources where they are most effective, to the overall benefit of the community. Entrepreneurship development should help aspiring entrepreneurs to recognize and design unique, innovative business opportunities, based on an analysis of local conditions and their own special skills. Entrepreneurship development most include Entrepreneurship orientation and awareness; Development of the competencies (skills, experience and attitudes) necessary to recognize a market opportunity and organize the resources to meet it and Improvement of business performance for growth and competitiveness.

Entrepreneurship, according to Song (2001), the competitiveness of any economy depends on how efficiently all the resources in the process of production are utilized and how efficiently these are marketed; hence the entire chain of production and marketing has to be efficient. Many of the items produced by small-scale entrepreneurs are becoming redundant because of the change in consumers' choices, preferences and also due to a change in new technology. The entry of foreign products/services has given consumers a wide choice of hi-tech and good quality products at competitive prices. This implies that the process of the production has to be cost efficient and meets quality needs of the consumers. This improvement can be achieved through the use of the latest technology; hence, the need for change in technology is more relevant for startup entrepreneurs. Entrepreneurship is therefore concerned with what an entrepreneur actually does which include utilization of resources in managing an enterprise and assuming the risks and maximizing profits from the business venture. It is a very dynamic process of both the entrepreneur and individual in the society (Tende, 2011). He further posits that successful entrepreneurship requires the entrepreneur to possess certain managerial skills which include the ability to conceptualize and plan effectively, manage other individuals and time effectively and to learn new techniques in handling business operations and ability to adopt to change and to handle changes in their environment.

Research Problem

Most enterprises being promoted by different kind of entrepreneurs lack adequate technical inputs which to a large extent affect the technical output and ultimately affect the business development in all ramifications. Technology value added entrepreneurs are generally referred to as techno-entrepreneurs and their technical input into any business is critical to the determination of its success as it will also accelerate business development. In view of lack of adequate relevant data on techno-entrepreneurship in Nigeria; It is therefore, imperative to establish the effect of these techno-entrepreneurs on business development from a techno-entrepreneurship institution called technology incubation programme in Nigeria.

Objectives of the Study

- i. To ascertain the place of Techno-entrepreneurship within the concept of entrepreneurship
- ii. To identify the role of Techno-entrepreneurship in business development
- iii. To investigate roles of Technology Incubation as it relates to Techno-entrepreneurship
- iv. To ascertain achievements of TIP in Nigeria so far as a techno-entrepreneurship institution.

Literature Review

Entrepreneurship is about a kind of behaviour that includes initiative taking, reorganizing economic activities and the acceptance of its risks (Shapero, 1982). It is important to note that entrepreneurial activities are universal and can therefore be promoted even in societies that manifest low entrepreneurship activities.

Entrepreneurship involves taking chances, but new businesses do not emerge by accident (Egelhoff, 2005). They are usually founded as a result of motivated prospective entrepreneur gaining access to resources and finding niches in opportunity structures. Hence, entrepreneurship could be seen as the process of identifying and exploiting unique business opportunities that stretch the creative capacities of both private and public organizations. Sue and Dan (2000) argue that entrepreneurship is influenced by genetic power, family background and economic environment. Since economic environment could support or suppress entrepreneurship, governments world over undertake development of macroeconomic policies that focus mainly on providing access to resources and support services to individuals and organizations that display a flair for expanding their business horizons.

Adam Smith (1723-1790), who is commonly accepted as the father of free enterprise economics, used the standard terms of the times, that of "projectors and undertakers" to identify entrepreneurial individuals. Smith's undertaker was a "mere capitalist" and while he was important as a decision maker in regard to the division of labor, he was ahead of his time in terms of identifying innovation, the use of capital and the division of labor (but not technology per se) and its dependency on the markets. Jean Baptiste Say (1767 – 1832), who is particularly well known for his "law of markets" and "theory of production"

visualized three components of the production process: human industry, capital and national agents. He was the first in economic history to identify the value that is contributed to the system by the entrepreneur. Ludwig von Mises (1881-1972) was the first in modern times to come out foursquare in placing the entrepreneurs in the same rank as, if not more important than, the three classical agents of economics – land, capital and labor. The Austrian economist Joseph Schumpeter (1883 –1950) believed that the action of entrepreneurs, working their innovations and technology on the market introduces change to what otherwise might be a system at rest or in equilibrium. Schumpeter saw five possible scenarios that would create a metamorphosis that causes disequilibrium: 1) Introduction of a new product or a new quality, neither of which the consumer is familiar with;2) Application of a new production method or process that relies on innovation, rather than invention;3) Opening up a new market;4) A new or innovative servicing of material or components and5) Establishing a new organization, either in structure or type. What sets Schumpeter apart from others is that his theory positions the entrepreneur as the prime mover.

Poverty among people is usually caused by inadequate income due to shrinking job opportunities as well as a high rate of failures of new businesses (Donald &Hodgetts, 2002). Small-scale businesses tend to add jobs faster than big companies because they are highly adaptable, innovative and responsive to new business and market challenges (Frese& Rauch, 2005). Small enterprises in particular are central in achieving sustainable growth. They constitute about 90% of the business population in North America and they account for newest jobs in the country (Kuratko&Hodgetts, 1998). Thus, supporting entrepreneurs becomes a critical policy issue especially since those new businesses that do survive tend to expand employment and growth of the nation's economy. The important question to be asked is why too few young businesses grow in meaningful ways? Bruno et-al (1987) maintains that there are three categories of reason for high business failures: product/market problems, financial difficulties and managerial problems. This suggests that the responsibility for creating and growing new businesses does not rest entirely on government. Individuals and organizations are required to analyze key success factors in business environment and take personal responsibility for survival and growth of their own ventures. On its part, government is expected to provide adequate infrastructure and friendly policy guidelines.

It is also globally recognized today that entrepreneurship is the major factor of the socio-economic advancement of the western world because it is innovating, strategic and imitating. However, the lack of much entrepreneurship activities are partly responsible for the snail paced economic development of the third world countries because they practice what is referred to as Fabian and Drone types of entrepreneurship (Williamson &Bultrick, 1969). The role played by entrepreneurship in the development of western countries has made developing countries very much conscious of the importance of the programme for rapid economic development.

Entrepreneurship according to global entrepreneurship monitor (2001) is a global multi-faceted phenomenon with significant difference between countries but has positive relationship between technology and economic growth that contribute towards the wealth and social development of a nation under the given technological, industrial and political framework.

Entrepreneurship according to Mainoma and Aruwa (2013); is the pursuit of opportunity through innovation, creativity and hard-work without regards for the resources currently controlled; Entrepreneurship as posited by May (2015); is the practice of starting new organizations or revitalizing mature organization particularly new businesses generally in response to identified opportunities. Entrepreneurship is simply doing an ordinary thing in an extra-ordinary way i.e making a difference (Yakubu, 2016).

Ndagi (2005) defined entrepreneurship as value re-orientation, change of societal mind set and economic belief by inculcating self confidence, interest re-alignment and development of passion for the futuristic adventure through skills acquisition and other competencies. Furthermore, an entrepreneur is someone who has the ability, initiative, creativity and competencies to identify and evaluate opportunities to take advantage by committing resources, time and energy for the purpose of making profit as a moderate and calculated risk taker. Ndagi further concord with Wikipedia that Entrepreneurship is the act of being an entrepreneur which can be defined as one who undertakes innovations finance and business acumen in an effort to transform inventions into economic goods through innovations. This may result in new organizations or may be part of revitalizing mature organizations in response to a perceived opportunity. The most obvious form of entrepreneurship is that of starting new businesses referred as Startup Company.

Technology is the practical application of science and technical knowledge in engineering production, manufacturing in the industries and processing efficient and effective service delivery for the benefit of mankind. The components of technology are:

- a) Machines, equipment and tools: machine are designed to perform a particular task, usually powered, equipment and tools or instruments required for a particular kind of work or activities while tools are implement used or required for a particular trade or profession.
- b) Techniques, methodology and strategy: techniques is a skill in the practical aspect of an art which could as well means proficiency in an art, methodology is the system of methods, principles and above all procedure used in a particular activities while strategy is the means adopted to achieve organizational or individual objectives, goals and set targets.
- c) Know-how, skills and competence: Know-how: is specialized skills, while skills is a talent or gift naturally acquired or developed through training and competence is also a capability, sufficient skills or training to do something efficiently. To successfully utilize technology efficiently and effectively as an entrepreneur machines, techniques and skills are required. The big question now is who is an entrepreneur that requires machines, techniques and skills and above all where, when and how can he/she source these components of technology.

Techno-entrepreneurship according to Dorf and Byers as contained in Ndagi (2005) is a style of business leadership that involves identifying high-potential, technology-intensive business opportunities, gathering resources such as talent and capital, managing rapid growth and significant risk using principled, real-time decision making skills. Techno-entrepreneurship involves a process of industrial innovation and technology transfer, which is relevant for both independent start-ups and established corporations. Techno-entrepreneurship according to Aderemi (2008) is needed to make use of knowledge of science and technology currently available to meet market needs, thereby making the business, state or country in question more productive and more competitive locally and internationally. Abubakar (2010) Techno-entrepreneurs are entrepreneurs who used technology as their driving factor in transforming resources into goods and services, creating an environment conducive to industrial growth. The interface between technology development and entrepreneurship was in the early twentieth century when Schumpeter popularized entrepreneurship where he argued that entrepreneurship is viewed as a disequilibrating phenomenon rather than an equilibrating force, He further proposed a theory of creative destruction, where new firms with the entrepreneurial spirit displace less innovative incumbents, ultimately leading to a higher degree of economic growth. In his book *Capitalism, Socialism and Democracy*, Schumpeter (1942, p.13) further argued that entrenched large corporations tend to resist change, forcing entrepreneurs to start new firms in order to pursue innovative activities. This resulted in to what is referred to by Peter Drucker as TECHNO-ENTREPRENEUR known as Technology value added entrepreneur. Innovation is the embodiment, combination, and/or synthesis of knowledge in original, relevant, valued new products, processes or services. It can also be defined as the introduction, modification or value addition to an idea, a product or services.

Types of Entrepreneurs

There are different types of entrepreneurs according to Schollhammer and Kuriloff (1997). In their book, *Entrepreneurship and Small Business Management*, that they include among others;

1. Agropreneurs: These are agriculture driven entrepreneurs
2. Alphapreneurs: These are money driven entrepreneurs
3. Bosspreneurs: These are control freaks entrepreneurs
4. Dadpreneurs: These are lifestyle orientated entrepreneurs
5. Ecopreneurs: These are entrepreneurs driven by nature
6. Edupreneurs: These are educational entrepreneurs involved in Coaching freak
7. Execpreneurs: These are executive corporate entrepreneurs
8. Mobilepreneurs: These are mobile/Freelance entrepreneurs
9. Mumpreneurs: These are home based/nursing mother entrepreneurs where family comes first
10. Passionpreneurs: These are entrepreneurs driven by doing what they love (Passion)
11. Safepreneurs: These entrepreneurs are risk averse as they are not risk taking entrepreneurs
12. Serialpreneurs:

13. Sociopreneurs: These are social entrepreneurs whose aims are want to change the world for the positive
14. Techno-preneurs: These are Technology value added entrepreneurs.
15. Ultrapreneurs: These are entrepreneurs that are ultra high achieving philanthropists
16. Webpreneur: These are internet driven entrepreneurs.

Concept of Technology Incubation

There are several definitions and approaches to business and technology incubation. Conceptually, 'incubation' is a more diligent and planned process than clustering or 'co-location' and therefore needs careful attention to the problems of prospective occupants, extending well beyond providing infrastructure and office services (Adelowo, Olaopap & Siyanbola 2012; Kiridena, 2001). Technology business incubators according to the National Business Incubators Association (NBIA), catalyses the process of starting and growing companies, providing entrepreneurs with the expertise, networks and tools they need to make their ventures successful. Incubation programmes diversify economies, commercialise technologies, create jobs and create wealth.

The term incubator, which is more widely known with the life-giving support to premature babies or phenomenon to enable them survive the critical early period of life, is what has been adapted to economic development and regeneration. Therefore, economically, definition of Incubation/Incubators varies with their services, their organizational structure and in the types of clients they serve. Technology Incubation has different goals which include job creation, new venture creation, wealth creation, value addition to clients' products, process and services and transferring technology from universities, corporations and individuals to entrepreneurs/enterprises (Smilor & Gill, 1986). According to Lalkaka (2000), business incubation is a means by which visions of new businesses are turned into reality with reduced risks. Incubators aspire to have a positive impact on a community's economic health, by maximizing the success of emerging companies (Cassim, 2001). Business incubators have proved effective in many parts of the world. According to Rice and Matthews (1995), only 10 business incubators existed in the United States in 1980. There were nearly 500 by 1995, and a new incubator has been opening every week. The technology business incubators generally focus on nurturing technology-intensive enterprises and knowledge-based ventures. Technology business incubation centre clients are key to the development of new and innovative technologies creating products, processes and services that improve the quality of our lives in communities around the world.

Essentially, the incubation programme is to assist and support the transformation of selected, early stage businesses with high potentials, into self-sufficient, growing and profitable enterprises (Lewis, 2001). By reducing the risks during the early period of business formation, the incubation sustains the new enterprises that might otherwise fail due to lack of adequate support. In doing so, the incubation programme contributes to the economic growth by creating jobs and offering other socio-economic benefits. According to Adelowo, Olaopa and Siyanbola (2012), technology business incubation programme

can therefore be seen as an economic development tool designed to accelerate the success of high technology entrepreneurial enterprises through the provision of an array of technology business support resources and services in a controlled work environment. Lewis (2001) sees technology business incubation programme as an innovative system designed to assist entrepreneurs, innovators and inventors in the development of new technology -based firms. It seeks to effectively link talents, technology, capital and know-how in order to accelerate the development of new businesses, and thus speeds the commercialization of technology. It is a facility that helps the early stage growth of technology-based enterprises by providing shared facilities such as space, office services, and business consulting services.

This concept, which constitutes a very potent economic development tools, has generated great desire and has undergone extensive development in the USA and many other countries such as in Europe (Germany, France, Britain etc), Asia (India, Japan, China, Korea etc) in the context of new global trend of engendering real sector development through small and medium scales business. (NBIA, 2010). Technology Incubation programme as a tool for economic development makes provision of job creation, employment opportunities targeting unemployed university graduates, retrenched public sector employees, retired research institution employees, retired private sector employees, and established industrialist desiring to expand or diversify their businesses (Lalkaka, 1996). Relevant research thus comes from countries in Europe and North America. Several studies analyse the aims, structures and spatial impact of technology incubation centres and similar initiatives. In some countries, lengthy and comprehensive impact evaluations have already been conducted. With respect to technology incubation centres, Germany, United Kingdom, Sweden and the whole of the European Union (European Commission, 1996; Massey et al. 1992;) may still be the best researched countries. More or less comprehensive evaluations are found in other countries such as the USA (Luger and Goldstein, 1991).

In this paper, the term technology incubator is taken to mean a controlled environment-physical or virtual- that cares, and helps new ventures at an early stage until they are able to be self-sustained through traditional means while technology incubation apply generically to all the organizational forms for promoting technology-oriented SMEs respectively. The organizational format of technology incubations also varies and could generally be categorized as public or not-for-profit incubators, private incubators, academic-related incubators and public/private incubators, which are referred to as hybrid in most literatures. Also, technology incubations may thus have a wide range of goals and objectives giving rise to different forms of incubators specializing in accessing diverse resources

Characteristics of Technology Incubation

Different types of incubation centre provide different services, depending on the needs and the problems faced by local enterprises within the community. The key elements are the provision of an environment where start-up enterprises can start their work quickly and can expand their operations rapidly. These are achievable according to Erlewine and Gerl (2004), by the following characteristics:

Provision of factory-like workspace and graduated but subsidized rents on flexible terms, allowing the enterprises to pay monthly rent and with the flexibility to move to larger or smaller units after the pre-incubation period.

Selection- incubation centres vet the business and the business ideas/proposals to ensure that those selected can gain most from the incubator and offer most to the local economy. This usually means excluding retail and trade activities (since they are generally over-represented) and choosing business activities that are under-represented in the local economy, types of business incubation centres are more likely to focus are businesses with the potential to grow and develop quickly.

Provision of business advice and support services ranging from business planning, market advice, accountancy, legal and registration support.

Provision of common facilities (conference rooms, restrooms, reception areas), staff (reception staff), and equipment (conference equipment, photo copiers, fax machines).

Provision of utility services (telephone, water, gas, drainage) at affordable rates and without high initial connection fees.

Incubation team- the support will be packaged by one-site business advisor/advice team, as well as having brought in specialist services;

Graduation- the businesses are encouraged to move on once they have grown, gained markets and maturity.

Role of Incubators in Entrepreneurship Development

Incubators are available in various types rendering a range of long and short-term assistances and they help in the establishment of new enterprise in one way or the other. Many of these provide only guidance, technical assistance and consulting to entrepreneurs and offer business development services. ICT incubators are major examples of these Incubators where clients access to appropriate rental space, shared basic business services and equipment. Few incubators assist only in developing new ideas and arrange for venture capital funding. Incubators are sometimes known as Business Accelerator as it accelerates start-ups by providing quick knowledge, support services and resources (Lewis, 2001).

The National Association of Business incubation (2017), posit that business incubation is a business support process that accelerates the successful development of start-up and fledging companies by providing entrepreneurs with an array of targeted resources and services. These services are usually developed or orchestrated by incubator management and offered both in the business incubator and through its network of contacts. A business incubator's main goal is to produce successful firms that will leave the programme financially viable and freestanding. These incubator graduates have potential to create jobs, revitalize neighbourhoods, commercialize new technologies and strengthen local and national economies. NBIA, conclude that there are around 5000 incubators in the world and the incubation industry is more than two (2) decades old. It has come a long way from the real estate and shared resources model in the first generation to the current

in-house debt/equity financing and success sharing third generation model. It must be noted that more than three quarter 3/4th of the business incubators are located in the North America, Asia and western Europe. Highly adaptable incubators have differing goals, including diversifying rural economies, providing employment for and increasing wealth of depressed inner cities, and transferring technology from universities and major corporations (Smilor & Gill, 1986).

Technology Incubation Programme in Nigeria

Incubation programme was introduced to Africa in 1988 by United Nations Development Programme (UNDP) to test run the concept on pilot scheme in four (4) countries of cote-d'ivoire, Nigeria, Equatorial Guinea and Zimbabwe. In 2008, the incubation programmes has spread across Africa with approximately about one hundred incubation centers. Nigeria has about forty-four (44) incubation centers, South Africa with about thirty-six (36) while the rest of the other countries houses the remaining twenty (20). These are both publicly and privately owned Technology Incubation Programme in Nigeria began since 1988 with feasibility study for the establishment of pilot centers at Lagos, Kano and Aba. The feasibility study is to ascertain the viability of Technology Incubation Centers in these commercial cities. This study led to the establishment of Lagos Centre in 1993, Kano in 1994 and Aba in 1995. The success of these three pilot centers facilitated the establishment of Minna, Nnewi and Calabar in 1998. Meanwhile by 2005 the Federal Government of Nigeria established NBTI and there were seventeen (17) incubation centers in Nigeria but as at 2012 there are about forty (40) federal government owned incubation centers in the country with about two hundred and eighty-seven (287) entrepreneurs and six thousand two hundred (6,200) job created.

The integrated entrepreneurship development approach of technology incubation centers in Nigeria has seen to the successful grooming, fostering and nurturing of potential entrepreneurs/enterprises to a creative technology value added budding entrepreneurs and enterprises. This show that technology incubation is an independent variable while the entrepreneurship is the dependent variable which means technology incubation is not an end to means but a means to an end as technology incubation centers are only facilitating entrepreneurship development through a structured entrepreneurship development programme within the technology incubation centers. Although not all entrepreneurs and entrepreneurship are driven by technology incubation, but all technology incubation nurtures incubatees to be successful entrepreneurs by providing the environment to build their business from conception to successful ventures. Therefore, the existing expectation of incubation-driven entrepreneurship to provide the training, nurturing and conducive environment for incubatees to nurture their business to successful ventures. They also provide support for small enterprises to overcome business skills, infrastructure, market linkage, financing and people connectivity constraints, and expose entrepreneurs to information and communication technologies (ICTs) that help increase the productivity and market reach of enterprises across sectors.

The National Board for Technology Incubation (NBTI) is a veritable institutional mechanism for coordination of technology Incubation Centers in Nigeria for commercialization of Research and Development (R&D) results, enterprise creation, job/wealth creation and value addition. It is an integrated support programme designed to assist budding entrepreneurs in the development of new technology-based firms, both startup and fledglings. It seeks to harness new talent in order to accelerate development of new companies, speedy commercialization of (R&D) and innovation. It also helps in value orientation by creating an environment for changing the attitude towards personal initiative, creativity, innovation, risk-taking and entrepreneurship.

Techno-Entrepreneurship for Business Development

Business Development is creating a long term value and positive image of an organization with in its ecosystem of relevant stakeholders which has a goal of implementing and developing growth opportunities either within the organization or between two or more organizations. It is related to all round development of a particular business which makes it enriching and fruitful. It is a mixture of commerce, business and organizational behaviour theories. Business development deals with the establishment of long term value factor for an organization from the point of view of marketing. The roles of techno-entrepreneurs in effective business development strategies according to Grafstrom (2013) in American express open forum are;

- i. Recruiting the Right Person at the appropriate stage; A person with deep industry knowledge and strong network ready to work can turn into a disaster if it is too early in a company's product lifecycle. There are three stages in the commercialization process and not everyone is suited for every stage.
 - a) Scouting: The earliest stage of a company, business development is about identifying various routes to market, points of leverage and providing the internal team early market feedback. The ability to work with product and engineering teams is a key skill.
 - b) Testing: At this stage, business development will close a few deals to test assumptions and provide measureable input before you scale the business. Analytical skills to set up a framework for what to measure, and examining the data, will determine if and where to scale based on the company's strengths and vision.
 - c) Scaling: After gathering data from early deals and validating a path to achieving the enterprise goals, business development is ready to start replicating deals and putting a support structure in place.
- ii. Business Development Is Not Sales; Business development will identify and create partnerships that enable leverage for driving revenue, distribution or that enhance the product. Sales are focused almost exclusively on driving revenue. Similar distinctions will apply when hiring a sales leader for an early stage company versus a more mature organization.

- iii. **Post-Deal Management Is Crucial;** All successful deals are as a result of accountability and proactive management by both business development and account management. In most cases, the account manager is a different person than the business development person who did the deal. Ideally, the account manager has variable compensation or incentives tied to meeting the goals established by both parties.
- iv. **Qualitative Versus Quantitative;** Companies sometimes try to build a business purely around a qualitative value proposition, which is difficult and has a higher likelihood of failure. The market is less willing to pay for a better user experience or the promise of increased engagement, even if they like the product and find it useful. A quantitative value (lowers cost, drives revenue, more customers, etc.) dramatically increases the odds of success.
- v. **Support for Business Development Is Essential;** A good business developer will engage internal resources along the way to ensure the company can meet the goals and expectations of a partnership. A lack of support will almost certainly lead to finger pointing and blaming game when things go wrong. Everyone should own part of the success or failure from the start.
- vi. **Establish a Framework for Assessing Opportunity;** In order to gain support from your team, everyone needs to understand why the deal makes sense for your company. Does it drive revenue, lead to new users or enable the company to enter a new market or vertical? When the goal is clear and measurable, it makes it easier to address issues like, "Why are we converting below projections?"
- vii. **Make Deals Carefully;** There is a difference between doing deals and doing the right deals. A good dealmaker can help identify a false signal -- when there is just enough market momentum and revenue to mask the greater opportunity. Conversely, a less experienced dealmaker or one with the wrong incentives can generate enough momentum and distract the company from the bigger opportunity. Many companies have been weighed down by a bad deal they later regretted -- this is where you want to develop a level of understanding and trust with your business development person.
- viii. **There Are No Legal Issues;** A legal agreement codifies a business arrangement and includes commercial terms as well as what happens if things do not work out. This requires business development and legal counsel to assess the business opportunity versus the business risk and explain the trade-offs to management.

Research Methodology

Exploratory study methodology approach was used as suggested by Cooper and Schindler (2003) that exploratory research uses secondary data from extant literature to underpin the theoretical and contextual frameworks of techno-entrepreneurship development. This was also predicated upon the lack of adequate information on techno-entrepreneurship. The researcher also used qualitative reasoning to draw up conclusions that are the hallmark of exploratory case studies methodology. This is a position

supported by many other researchers (Page & Meyer, 2000; Saunders et al., 1997). The findings from the exploratory studies on the extant literature are presented below which also help the researcher to draw exclusive conclusion and appropriate recommendations. The findings and recommendations are meant to assist the development of techno-entrepreneurship institution called technology incubation programme in Nigeria.

Findings

- i. There are forty (40) technology incubation centers in Nigeria with three hundred and fifty-eight (358) incubator units which are approximately 17,900M² of actual incubation space excluding administrative, workshops and training spaces.
- ii. The technology incubation programme has graduated three hundred and seventy-two techno-entrepreneurs
- iii. The graduated techno-entrepreneurs have estimated turnover of sixteen billion Naira (16,000,000,000.00)
- iv. The graduated techno-entrepreneurs have over five thousand (5,000) employees.
- v. The techno-entrepreneur graduates from incubation centre have about eight hundred and twenty-six (826) innovative products in the market and one hundred and twenty-five (125) registered patents.
- vi. The techno-entrepreneurs were identified to have some peculiar challenges to include the followings;
Lack of strong Industry - Academia linkages, Weak patenting Culture in Nigeria, Lack of adequate awareness of new technologies, inventions, R&D results etc, Lack of venture capitalists and Government innovation/Risk funds, Lack of appropriate infrastructure, facilities and necessary services, Inappropriate identification of techno-entrepreneurship stakeholders and ecosystem, The high cost of starting a techno-enterprise in Nigeria and lack of specific targeted specialized capacity building for techno-entrepreneurs.

Conclusion

To encourage, promote and develop techno-entrepreneurship culture in Nigeria; technology incubation centers are required to act as catalyst and veritable tool for the creation of successful technology based entrepreneurs. The right and favourable environment is required to provide technology incubation services such as incubator units, technical training, marketing assistance, access to credit facility etc. for effective and efficient formation of techno-entrepreneurs for successful business development

The emergence of science parks, technology parks and technology incubators globally have enhanced technology based activities resulting in the formation of techno-entrepreneurs. Suzuki et al. (2002) conducted a study comparing entrepreneurs in Japan and USA (Silicon Valley), they found out that the entrepreneurs differs in four dimensions of motivation, risk and obstacles, growth factors and infrastructure. Based on this perspective, we must focus on technological innovation while additional dimensions to include access to credit facility and provision of technical capacity building for developing country like Nigeria to achieve maximum benefit and improvement of techno-entrepreneurship development.

Recommendations

In view of findings of this paper, I therefore recommend a holistic specifically focused policy framework for techno-entrepreneurship development in Nigeria to enhance performance of technology incubation programme and develop strategies to overcome challenges identified in this paper.

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