



Industrial Design in Nigeria: A Mechanism for Expanding the Roles of Industrial Sector as Empowerment for Youth and National Development

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ABSTRACT

The Industrial design in Nigeria is a potential and an agent for expanding various roles of industrial sectors in order to empower the youth that is skillful in Industrial Designs. This paper focuses on the industry (relatively low capital intensively low investment cost, that are able to use low skilled labour as a means that the industry is relatively footloose as well as able to adjust and to manage the market condition quickly as possible. It explains the manufacturing industries as the process of creating designs for mass production purposes in the industries. It further explains the uses of computer-aided design softwares for designing products as well as expressing design industries as agent of National development. It expresses in details the social aspect of Industrial design as well as the challenges facing industrial design in Nigeria which include Infrastructures and corruptions among others. Based on the above reasons, the paper focuses on expanding the roles of industrial design and likewise the attempts to begin the assessment of the impact of long-term policies on the design Industries as sectors that can employ on a largely supply of unskillful workers from formal and informal labour forces and proffers recommendations and conclusion.

Keywords: Industrial Design, Agents, Empowerment, National Development.

INTRODUCTION

Industrial design form a major part of manufacturing, employment and trade in many developing countries. This paper will examine the impacts and role of industrial design in growth and development strategies for developing countries. The Industrial design is one of the oldest, largest and most global industries in the world. It is the typical 'starter' industry for countries that engaged in export-orientated industrialization [6] and is labour-intensive. The technological features of industrial design have made it suitable as the first step on the 'industrialization ladder' in poor countries some of which have experienced a very high output growth rate in the sector, such as Bangladesh, Sri Lanka, Vietnam and Mauritius, and have since become middle income countries [10].

A number of reasons [10] why the designing sector has played such an important role in economic development. The sector absorbs large numbers of unskilled labour, typically drawing them from rural agricultural households to urban locations. Despite relatively low start-up investment costs, expansion of the sector provides a base upon which to build capital for more technologically demanding activities in other

sectors. Growth of the sector allows imports of more advanced technologies to be financed through revenues gained from products exports.

The industrial design was major sources of export, income and employment for the country before the discovery of oil exploration and exploitation. This discovery of oil (Petroleum) led to government's negligence to the people's dignity – farming resulting to corruption, poor management, white collar job perception, certification preferences over vocational and apprenticeship careers. These were influenced by the Nigerian government policies and implementation. However, the oil boom period promotes industrial and infrastructural development, and higher revenue income generation but the Nigerian government failed to grow and develop as well the industries and comparative business advantage of the regional economy. These policies and actions portrayed by government caused the total collapse of almost all indigenous design industries leading to the present mono-economy situation Nigeria is experiencing today. Diversification of economy to solid minerals and agriculture and also, the revitalization of the role of design in order to engage our teaming unemployed youth have been the media jingles and Government's mantra.

However, the characteristics of the industry (relatively low capital intensity; low investment costs; and use of low skilled labour), also means that the industry is relatively footloose and able to adjust to changing market conditions quickly [10]. Government policy regulations have had a major impact on the pattern of Industrial design production and are likely to do so in the near future. China has become a very important player now that restrictions on its trade are progressively being lifted. This has intensified competition for traditional designers and producers especially in small and remote countries. This paper therefore provides Nigerian government and industrial designers' advice for a sustainable development of our designing industries.

DESIGN

In normal usage, the word design can be taken to mean a plan or scheme, which may be written or drawn, showing how something is to be constructed, or how the elements of an item or article are arranged. In the legal terms, a design is defined by reference to the provisions applicable to either the registered design or the design right, as appropriate.

According to [5], Industrial design is any combination of lines or colours or both and any three dimensional form, whether which is intended by the creator to be used as a model or pattern to be multiplied by industrial process and not intended solely to obtain a technical result. Industrial designs are primarily those elements incorporated into mass produced products that aim to enhance their attractiveness by their appearance. The primary objective of the law governing industrial design is to protect a design that is new or essentially better in some ways than what was created before. This protection is of immense importance to artists, lace designers and designers of other types of products. When goods are similar, designs become an important distinguishing factor.

Definition of Industrial Design

Industrial design is the application of arts and science for the improvement of aesthetics, architecture, ergonomics, functionality and usefulness of the specific product, [4]. Industrial design can be used for the improvement of the competitiveness of a product and its manufacturing. The major role of an industrial designer is the creation and development of the most successful project solutions related to the shape, usability, physical ergonomics, marketing, brand development and sales, [7]. Industrial

design is an integral part of the scientific progress and development of business. Sometimes, companies have to change the shape, functions and usability of their products in order to attract new customers and compete with other similar firms on the same sector of the market. Although everyone knows at least something about the foundations of industrial design, very few people are aware about the roles of this matter.

The Role of Industrial Design

Industrial design is essentially the process of creating designs for the industry, for mass production purposes. Industrial designers are involved with the production of these designs, which are used, sometimes repetitively, by the industries. The field encompasses the actual pattern making while supervising the production process. In other words, industrial design is a process from the raw material into finished product. Industrial design fulfils a variety of purposes in our lives. For example, our clothing, carpets, handsets, laptops, electronics, cars, towels, rugs, etc are all results of industrial design.

These examples illustrate the significance of industrial design in our daily lives. The creations of product are not only important for their use, but also for the role they play in the development of the country. Industrial designers have the ability to inspire collections, trends, and styles and the industry, while being a creative art form, is a business opportunity for the sector. Industrial designers marry a creative vision of what a finished product will look like with a deep understanding of the technical aspects of production and the properties of fibre, yarn, and dyes. The creative process often begins with different art mediums to map concepts for the finished products. Traditionally, drawings of woven textile patterns were translated onto special forms of graph paper called point papers, which were used by the weavers in setting up their looms [6].

Today, most professional industrial designers use some form of computer-aided design softwares created expressly for this purpose. Some of the latest advances in printing have been in the area of digital and 3D printing. The process is similar to the computer controlled paper printers used for office applications. In addition, heat-transfer printing is another popular printing method to be used for design [7].



Fig 1: Product Development Circle [11].

DESIGN INDUSTRIES AS AGENTS OF NATIONAL DEVELOPMENT

The development of a nation cannot be discussed without the factors that contribute to such development which are usually embedded in diverse areas of a nation's economy. The need to actualize and stabilize Nigerian economy implies harnessing all resources and factors that can reshape its economy to achieving a purposeful growth. In this regard, industrial designs have been identified as a dependable employer of labour and a source of financial security for most Nigerian youths [1].

Apart from food and shelter, industrial design (products) has been identified as the most important in the hierarchy of man's need [8]. In Nigeria, the production of items had flourished at both cottage and industrial levels. Studies show that the industry had been a major employer of labour (about 60% of the labour force) in the manufacturing sector and contributed immensely to the socio-economic and cultural development of the country [2], [7]. It is unfortunate; however, that the current economic low-ebb in Nigeria has

developed adversarial forces clamping the proper functioning of these industries as a resourceful economic contributor.

THE IMPACT OF INDUSTRIAL DESIGN ON THE ENVIRONMENT

Industrial design is changing rapidly in all areas of sectors as a basic fact as seen in all manufacturing industries. However, the product such as clothing, ceramics wares, cars were available to us in the market are at present are more expensive than they were few years ago. In the 1980s, for example, products choices were based on the functionality: products were selected according to certain attributes such as comfort, durability and versatile characteristics. Currently consumers buy products impetuously, irrespective of whether they meet the attributes outlined above [9].

The Social Aspect of Industrial Design

As an industrial designer, understanding the mindset of the customer is critically important to what you do. Social innovation occurs when the voices, expertise, and insights of key players in a

market space form a single, dynamic community, which influences, guides, and fosters the development of innovative industrial designs. Social innovation is so vital to the development of successful industrial designs that most leading manufacturers have formal voice of the customer programs. Accurately capturing the customers point of view is a social, iterative process, demanding a social-networked approach to industrial design that allows you to manage and control these communications, so vital information and innovative ideas don't get lost.

CHALLENGES FACING INDUSTRIAL DESIGN IN NIGERIA

The industrial design sector in Nigeria accounts for a tiny proportion of economic activity (6 per cent) while the manufacturing sector contributes only 4 per cent to Government Developmental Programs (GDP) in 2011. There are some challenges faced with industrial design leading to inadequate development in Nigeria. Among these issues, three in particular top the current policy debate and these are; the development of the critical infrastructure, tackling corruption and ensuring national security.

Infrastructure

The current infrastructure base in Nigeria is grossly inadequate in terms of capacity and quality and is not capable of catering for the anticipated industrial development. Despite government investments, Nigeria still has huge infrastructure deficits, particularly with regards to power generation. The current power generation capacity is less than 2000 Megawatt, which is about 20 per cent of the estimated national demand [8]. A key challenge for government and the private sector is to build a modern, efficient, and effective infrastructure network within the next five to ten years.

Electricity outage is the key factors constituting impediments to firm growth. Nigerian manufacturing firms suffer acute shortages of infrastructure such as good roads, portable water, and, in particular, power supply. Electricity outages and voltage fluctuations are commonplace, causing damage to machinery and equipment. Consequently, most firms rely on self-supply of electricity by using generators, which escalates their costs of production and erodes their competitiveness relative to foreign firms.

Corruption

Nigeria ranks highly in the Corruption Perception Index [3]. This has implication for investment

flow into the country. Previous anti-corruption policies implemented in Nigeria have been targeted at enforcement measures rather than addressing the root causes. The root causes of corruption in Nigeria have been identified to include social insecurity and over-centralization of resources at the centre. Even though there are suitable laws and viable institutions to fight corruption in Nigeria, the greatest challenge is in formulating a strategic plan of action to deal with the root causes.

National Security

The internal security of Nigeria has become a very big challenge in recent times. Internal conflicts, including religious, ethnic and political, have had debilitating effects on the economy, most notably by scaring investors from certain parts of the country. Even though insecurity of lives and properties had become noticeable following the civil war and the subsequent military regimes which directly intensified urban violence, the recent upsurge of violence and insurgency (Boko-Haram, Avengers and Biafra Agitators) in the country heightens the need to comprehensively address the persistent causes of social tension as a risk factor to Nigeria as an investment destination.

THE FUTURE OF NIGERIAN YOUTH INDUSTRIAL DESIGN

There are huge learning opportunities for designers locally, in our various institutions, such as Ahmadu Bello University (ABU), Zaria, Federal University of Technology, Akure (FUTA), and Kogi State Polytechnic, Lokoja where Students can learn and practice product development to the value of a designer. Most of the products developed were left without been used by the industries as expected. It is hoped in the future that these designs can translate to product developed for mass production in industries like Textile Industry, Ceramics Industry and Garment Industry.

In Nigeria, most of the graduate Industrial Designers are not practicing, as there are no availability of equipments to practice, insecurity, lack of infrastructure and materials, in order to showcase their knowledge as industrial designers. In the future, these Nigerian youths of Industrial Designers will be the most employers of labour, because in all industries, they cannot produce any item without the input of Industrial designers that consist of Nigerian youth.

RECOMMENDATION

- Government should rationalize and strengthen production chain where necessary by setting up institutions to channel raw materials and finished products.
- Diversifying product base: the Industrial designers in the factories can diversify their outdated product base such as changing bottles to different shapes, changing dress wares into fashion materials like shoes, interior decoration, old ceramics works to flower pots or tiles. Industrial designers studied the customers and diversify the product development to their present interest needs. Instead of most manufacturing industries to close down, the knowledge of Industrial designers can be employed, so that the Industries that have closed down can diversify their products as subsidiary firms that can grow and re-establish as a viable Industry progressing over years respectively. That will also boost the export of Nigerian made products overseas.
- Promoting an export culture thus growing domestic and export demand for local industries. Although Nigeria is the destination market for most trading partners such as China, U.S and Holland for the products, ultimately to improve our share of the market on the world scale, Nigeria must export whether to the sub region or the further parts of the world. All global players operate in international markets. China is said to be aiming to increase her foreign trade volume by outpacing world average by 4% annually to remain above 10% in fifteen years [11]. Many experts also say Nigeria must start growth targeting, whether in exports or overall trade. Export promotion will be linked to other things like tourism promotion to promote local products to international status the way Chinese, Japanese and Italian products have become international.
- Industrial friendly policies such as reduction of tax should be adopted to ensure that improve economic incentives.
- Government should focus mainly on providing strong support for technical training as well as educational programs related to the industrial design just like the Chinese design industries who have invested much on training the workforce in modern technology and management skills.
- The government should demand an improvement in the output and productivity from design industries to encourage innovations, and innovators periodically come

together and sell their innovations to other industries [7].

CONCLUSION

Nigerian design industries have the capability of making the nation grow if given proper handling and attention. Both traditional and contemporary industries are essential to national growth. Also, the problems of power, transportation and other basic infrastructures have weakened the industry's potentials. We would imagine that this is one thing that could be taken care of, given some will to do so. It is almost redundant these days to mention power, transportation and other basic infrastructure. But yes, these are going to be crucial to any resuscitative attempts.

The Nigerian government's determination and political-will to be active player in industrial design will help to fully realize its potentials. The patronage of smuggled products by some Nigerians indicates that Nigerian Industries are to be closed-down. But if Nigerians have a change in attitude and start patronizing made in Nigeria products that will create employment and sustainable development for the young industrial designers in Nigeria. The fact that Nigeria is already acknowledged as a big market makes this a worthwhile venture. The involvement of the Indians and Chinese might just be the catalyst that is needed.

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