Industrial Design: An Amalgam of Social Form and Technological Function – An Impact Analysis on Contemporary Design and Design Education

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Abstract
The paper examined the content, structure and characteristics of the industrial design discipline which, is said to be indistinctly linked to its core values and commitment to render professional service for the generation of ideas & concepts. Industrial design is aimed towards the development and production of industrial products, goods, and services, for the benefit of man and society. The study also highlighted the underpinnings of the role, and place of the given social form and structure, which was stated to be the societal structure, procedure or order of a society which establishes the methods of societal expression or practice, or a fixed way of carrying out its proceedings or an established scheme and formula for carrying out all of human/societal activities. It was established that the issue of the context of the technological function of industrial design refers to the use of practical application of scientific knowledge, principles and practice of technology that is adopted in the creation and development of useful man-made things for societal benefit. The paper also established that the role of industrial design epitomizes an amalgamation of the characteristics of social form and its inherent technological function in the process of the actualization, production and development of man-made environment. The paper recommends that the development of a relevant and reliable design education curriculum, aimed at achieving a viable pedagogic model, and educational tool will be needed for the actualization of an efficient and viable design-led education delivery. It also recommended a rigorous paradigm shift from the current traditional theme-based, project-based learning techniques that is characteristic of the "Top-down" learning approach, to a dramatic tilt and shift towards a more adaptive "student-centered" or "de-centered" learning model and technique of design education delivery.

Keywords: Industrial design, Social Form, Technological Function, Amalgam, Top-down Design Education

Introduction

Ultimately, industrial designs result in the development of new products, goods and services, for the overall improvement of life, ease and comfort of man and society at large. That core nature and content according to Lorand, (2000) "is driven by the sheer innate passion that portrays designer's excellence, which is brought to bear in the process and task of decision making that involves problem solving skills". This is sometimes necessitated by the urgency and need to get a given design defect resolved or driven by the desire to fill a void or vacuum desirous of an urgent design need or solution.

The above represents the bedrock on which the principles, practice and approaches of the profession is hinged. According to Saito (2007), "these factors help drive the very narrative of an integration of the principles and philosophy of the Aesthetic balance, role, form and function in a Technologically driven man-made material culture and environment". So that narrative also helps, to advance the conversation of material culture, which represent or symbolizes the amalgamation of all the socio-cultural, economic and political concerns of society. These underpinnings are virtually dictated by the social form and structure that our society and way of life demands. Added to that, there is the overriding impact and role of Technology and its undeniable influence on the accruing overall lifestyle of today's technologically – driven, fast-paced material world. A society whose lifestyle has been shaped by the prevalence of the variegated socio-cultural demands of society and the very dynamic nature of its social form which often times needs a constant reshaping due to the enormous impact of modern, technology and its numerous, inventions and innovations which derives from a direct result of the influence of modern Technological hardware, and an overall Technological performance of industrial production of goods and services?

Taking into cognizance the meaning and definition of social form which according to Smelser, N. J. et.al (2001) refers to "The societal structure, procedure, or order of doing things". It is an established method of societal expression or practice, a fixed way of carrying out proceedings or that conventional scheme and formula for carrying out all of human or societal activities" (Morrison, 2008). Also in the same token Callon (1987), referred to it as "the boundary or demarcation of materiality or subject matter which can dictate or differentiate one social set of ideas or form from another".

So, descriptively, a given particular set of social form could be characterized by the shape and sometimes, the visible (physical or tangible) or the invisible (metaphysical or intangible) composition and structure of things or objects that makes up such a society and its accepted goals and objectives (Cohen, 2006). They could be those societal attitudes, orientations or behaviours which take the interests, intentions or needs of society (its people) into account, as they are shaped by the concepts and theory of form, which is interpreted to mean an interpretation of the vision, sight, nature characteristics, appearance and substance of such a form, as embedded in the social content, desires and demands of society (Read, 1994). While Technological function, according Bijker, et.al. (1987) could be referred to as "the use of (and) practical application of science or scientific knowledge, experiments, principles and practice (such as in the industry, engineering or manufacturing) in an attempt to create, develop or invent useful things in order to resolve specific societal problems. It is the manner in which these technical knowledge and processes are utilized to accomplish specific design tasks. Its meaning could be expanded to include the utilization of such technical scientific knowledge solely for the purpose of the creation of objects of utility for which Technology is specifically or specially fitted, or used for. It could also be said to mean the quality or trait exhibited by a given product or object, which are evidenced in their dimensional (morphological), functional, Aesthetical physical appearances and the accompanying mechanical characteristics of the product or service. Furthermore it is known to represent what Technology does or is used for. It signifies what the given Technological object (or manufactured product) does or how it operates in the role and purpose for which it was created. That is the Technological function of industrial design product (object) (Michl, 1989)

The impact of all of the above on contemporary design practice and its education cannot be far-fetched. Hence it is worthy of note that the history of design education dates back centuries. Back to the days when folkloric traditions that entrenches the passing on of the craft techniques which is handed down through workshop skills, apprenticeship-trainee cum master craftsman relationship. The skills and "tricks of the trade" were passed on by oral tradition from generation to generation (Crisp, A. et.al. 2011). But today the reverse is the case. Design education has now become part of mainstream university education and disciplines, holding its own alongside the other older professions of medicine, science and Engineering.

Industrial Design and Social Form: **An Introductory Descriptive Definition and Analysis**

From the outset we can say that form refers to the shape of material objects (intangible or tangible). Having said that Akner (2007), in his body of work attempts to highlight the core nature, and meaning of industrial design saying that "Industrial design is a strategic problem-solving process that drives innovation, builds business success, and leads to the creation and development of a better quality of life for man and society". Heskett, (1993) in his opinion expanded on this by saying that this is done "through the conceptualization, design, and production of innovative products, good, systems and services" Burdek (2005), also added to this conversation by stating that "Industrial design helps bridge the gap between "what is" and "what is possible". Contributing also to this ongoing debate of the descriptive definition of Industrial design, Muratovski (2016), citing Nobel Laureate Herbert Simon, who he says defined industrial design as "that attempt to take or (device) a course of action aimed 'at changing existing situations into preferred ones". He continued by saying that "Design actually began as a verb which describes a process of intention and action, it is an effort aimed at devising or contriving a specific object's function, to meet an expected end or target result". Relating the description of Industrial design to its contemporary use and context, he says that "in the twentieth century, the design profession took the shape of such fields as evidenced in its product centred design disciplines", but that as of today, "modern design has grown from a focus on product – centric and service – centred designs unto a robust set of methods that is applicable to a wide range of societal issues and concerns". The discipline has since evolved to become a trans-disciplinary and an interdisciplinary profession where "Inter" and "Intra" collaborative effort to garner and harness latent creative potentials aimed at resolving perceived design problems and thereby helping to co-create solutions with the intent of making a product, system or service (or a business) better and more efficient. At the core of the industrial design content, is its ability to provide a more optimistic way or method of looking at the future by helping to reframe anticipated problems and presenting them as new opportunities for new design ventures. In its context, and nature, it links and utilizes technology, research, business and brings consumers together to help provide new impetus for new values and a healthy competitive advantage in all spheres of the socio-economic and environmental strata of society (Welton, 2002).

Contributing further to this debate on how to best describe and understand the meaning of what design represents in society, Papenek (1971) puts it so aptly and posits that "Design is the patterning, structuring and re-structuring (or planning) of any act directed toward a desired and foreseeable end, and that it is the primary underlying

matrix of life and society". A much more incisive descriptive definition was also proferred by Conway (1987) who stated that " it is the creative endeavour or activity that aims at providing professional service of creating and developing concepts and ideas aimed at utilizing the specification and potentials of science and technology in the attempt at maximally uptimizing the function, value and overall aesthetic appearance of the given product, service or system, intended to cater to the mutual benefit of both the consumer on the one hand and the manufacturer on the other". Furthermore, the industrial design profession and practice helps determine the features, aesthetic appearance, use of materials and the overall physical and ergonomic attributes of the intended product.

The attempt at trying to address the issue of industrial design and social forms, stems from the very primary role and focus of the practice of the profession. According to Greet (2002) "Its role has been established to revolve around helping to improve humanity and his lifestyle and interaction with nature". It is the fundamental soul of the human-made or man-made creation of material culture. It has virtually helped shape our world and modernized our society in whole new ways that was never before thought possible. It embodies society's progress which is encapsulated or reflected through the conceptualization and creation of new ideas, products and services. It helps transform these ideas into reality thereby helping to create a new society with a new way of life evolving therefrom. It is rooted and manifested in every door nub you touch" (Bangert 2004). Summated that "The discipline is at the centre and intersection of Art, Science, technology and business". They help to enrich lives, values and norms of society by helping to create objects and systems that reflects the psychological and emotional needs of consumers, in order to satisfy social aspirations, thereby helping to provide social order and structure for the economic and political vibrancy of companies and the nation. It thus thereby helps to improve our abilities to better understand and interact with and enjoy the full benefits of today's technologically-driven, computer-generated and an economically enhanced world.

So the social form and expectation of design is that of designing and providing objects and products that must embrace the three basic principles on which society revolves and that is –"Truth (reality), humanity and simplicity". (Rodziewicz, 2012) So it is expected that this helps better to serve society because design is required to define much of what we do and touch. Designers are expected to envision, create and make (produce) the things we use in our everyday life. They are expected to blend art, utilize engineering and Technology to help solve problems and ultimately help add value to our lives and thereby helping to humanize such objects, products and services that we use in everyday life's activities. As these objects are not only created to be beautiful, but are also capable of eliciting emotional/ psychological responses which more often than not directly affects the quality and overall well-being and standard of living of people and societies around the world. The social implications to all of these is the form and nature of the inter-relationship and interdependence that design has come to represent. It has come to represent the way people or society responds to products (objects), the way people communicate, entertain and respond to pleasure, comfort, safety and in some cases help consumers to overcome, their physical emotional and psychological limitations. It engenders social order, and ensures an enriched value system which is embodied in the wealth and richness of human knowledge, thereby acting as agents of change and intergration. It has endeared to the tenents and values of our cultural,

economic, ecological (environment) and various other issues of sustainability of the earth's limited natural resources, coupled with its overall symbolic social and cultural values.(Ruseell, 2004) Stretching that further, asserts that the social significance of design helps determine products that are innovative, useful, dependable, safe, durable, Aesthetically appropriate, ecologically responsible and beneficial. It ultimately serves the overall fundamental needs of society.

Industrial Design and Social Form: Fundamental Framework of Practice

Quoting William Morris, Morton (1973), stated that "William Morris' ideology of victorious modernism, is believed to be, were we all should imbibe the idea of a society rebuilt to foster social equality and social egalitarianism". Morton, also paraphrasing Mr. Morris says, "Remember what the waste of a society of inequality is, where the production of goods are meant for poor folks who cannot afford the real articles, and the production of luxury items for rich folks who eventually (to their personal folly), does not make the rich want those articles after all, and the wealth wasted on competitive commerce to which the production of goods is but secondary while the real reason for their production is to profit the individual manufacturer".

Also adding to the above conversation, Michl (2001) (also quoting William Morris) avers thus: "I do declare that any other state or society but communism is grievous and disgraceful to all belonging to it". These were the socialist ideology of communism linked to the philosophy of Marxism. Where form or functionalism could be produced independently of the tastes of any social class group or society. It was no longer the subjective taste preferences of the users, but the objective factors of a classless society that were now seen as the "raison d'etre" of design. This form of social functionalism was hoped would be a kind of visual solution that is equally accessible (acceptable) to all without regard to the users social or cultural background and as such the functionalist design would advance the cause and case of an egalitarian society.

Furthermore early functionalist and socialist theories of industrial design contended that the emergence of industrialized competitive market societies, would not result or create a society with "liberty' equality and fraternity" for all of its citizens, and it needed the intervention of politics and social reform in order to tackle social problems, injustices and issues of inequality. This brought about the social structure and social form characterized by societies that imbibed socialism and communism as a social strata and form of society. While in contrast, and at the other end of the social spectrum is the social structure (or social form) characterized and propelled by private enterprise, corporate organizational structures, social class consciousness, monarchy and the hierarchy of the rich, famous and powerful. There should be a society where industrialization and private sector production and manufacturing of goods and services take centre stage. This is indicative of the social organizational structure, characteristics and form inherent in capitalism or a capitalist society. A society dictated by the very Rich and Famous that makes up the 1% (one percent) of the higher echelon of the social hierarchy and the 90% (ninety percent) makes up the middle class and the poor (the "Have-nots"). This social form and class of society is prevalent in the western Hemisphere of Western Europe and Most of North and South America. From the above it could be deduced that there exists a world dictated by materialism, where the social structure and formation of a society is dictated by the material where-withal of the "haves" and "have-nots". A social structure dictated by class and economic well-being.

This singularly has over the millennia dictated the social form, and class consciousness of both the classical-medieval and the modernist and contemporary (Technologically-driven) capitalist societies of the industrialized western world.

So as highlighted earlier, the attempt at trying to address the issue of industrial design and its relationship and or influence is dictated by the prevalent social form, operational at the time in each given scenarios of societies that embraces socialism (communism) on the one hand and those that embraced capitalism on the other. There definitely exists a wide "schism" in the operational dynamics in the mechanisms and operational methodologies of the approaches and practices of the process of Design. The given examples abound of the products of design produced in the socialist (communist) societies that invoke the design principles of "constructivism" and "functionalism" where the theory of "Minimalism" – "Less is more" serves as the prevailing theme in the overall design conceptuatisation and execution. Where products and goods design that apply these concepts are purely functional, utilitarian and must eulogise and accentuate the tenents, principles and beliefs of a classless workers society. Where the users tastes and individual/personal, cultural preferences are not relevant or taken into consideration during the process of design of the envisaged product. Whereas, reverse is the case in a class conscious capitalist society or social form. The role of Industrial design in capitalist societies (or social form) tends to "glorify" "opulence". It is a society where, the rich and the famous (using the power of their wealth) virtually dictates (through sponsorship and product patronage) the shape, form, function and sometimes the ergonomic and aesthetical cultural attributes or characteristic and physical appearances of the industrial products goods and services. The industrial products of a capitalist social form or structure epitomize the economic and social dichotomy which exists in such social form of society. A good example is the contemporary "chic and smart art, Technologically-driven, computer/ IT enhanced or emancipated smart phone industry and the ubiquitous internet networks and "Tech" companies of Silicon valley of America and Europe to mention a few.

Industrial Design and Technological Function: What is it? – A Descriptive Definition and Analysis.

In the opening sections of this paper, it was established that the term – Technological function would be referred to mean "the use of and practical application of science or scientific knowledge, principles and practice (such as in engineering and manufacturing) in the process of the creation, development, and invention of things that is intended to improve or resolve specific design problems" (Kamenhkosh, et.al 2013) Added to that, he stated that it could also mean "the manner in which such technical methods to accomplish specific design tasks are put to use". Furthermore, he concluded by saying that it embodies "the quality or traits of the physical, dimension, mechanical or morphological characteristics inherent in a product or service".

Expounding that further, the above narrative represents according to Lindemann, et.al (2009) "what Technology does or what it is used for" continuing he stated that "it is the science of craft, art, skills cunning of hand that is embodied in the principles, practice and processes of the application of science and techniques of art (craftsmanship) for the promotion and benefits of society and that it could also act as a reward for those who are engaged in such endeavours". Where the application of science may also imply any use of scientific knowledge that is intended for the specific purpose of designing a process,

product, goods or service. This is with the intention of helping to develop or create (another) totally new technology. Where the application and use of the term "process" here, might be referred to, according to Dewey, (2002) "the process of the art or method which includes use of materials or new processes of machine, manufacture and development of new systems. Deducing from the afore stated, Technological function would therefore imply the application or purpose of scientific knowledge viz-a-viz Technology and to which it is specially fitted or used, for the specific purposes of carrying out the actions of designing, creation and the productions of objects, goods and service emanating from industrial manufacturing practices and processes.

Consequently, one of the major roles of industrial design is that of designers attempting to abstract natural forms through efforts aimed at trying to mimic, imitate or at best harmonies nature's features and characteristic forms, which exists in "asymmetry", "irregularity", " chaos and complexity" of objects as they are found in their natural habitat. So, one of the arguments, so put forward by Akner (2006) who states that "this role of industrial design and its technological function has begun in a contemporary context, to present a paradigm shift in the replacement of old ideologies and concepts of design. Whereby the previous "masculine", "colourless", "geometric" or "objective" forms are now being replaced by "emotional", "irrational", "feminine", "individualistic", cultural and aesthetically-driven, metaphysical (or spiritual) intangible components and approaches in design". Using for example contrasting colours and more of organic, dynamic design principles called "Bio-Forms" which helps to achieve a higher level of nature inspired forms in product design.

An ideal example was given by Burdek (2005) who says that "the technological function in an industrial design product is inversely proportional and related to the shape or form of the intended product". This he says is greatly influenced by the technological forces called "directional forces" which represents the internal energies acting upon the movement of the inner and spatial axis of the material and form of the elements inherent in the products nature. Also according to Kamenhkosh, Et Al (2010) "These Technological forces sometimes increases the complexity and symmetry or asymmetry of the object by affecting the surfaces from within and above the object from different angles and intensity". This pressure and tension of forces influences the internal elements to project outward which sometimes helps to determine, for instance, curvatures, bends, concavity, convexity of the desired form in the given product. Invariably the issue of the form and function of technology in design are inseparable and are inherently connected (Bijker, 1995).

Industrial Design, Social Form and Social Responsibility: An Overview

In recent years, there has been growing concern about the profession's views and outlook towards socio-ethical issues that borders on the impact of design on the planet. While the main focus of the practice of the profession, is still clearly tilted towards product-centric innovations, a lot of the professionals are increasingly getting more involved with the activities of the betterment of humanity, an aspect called "social innovation, and design for society", which has become the campaign for future designs (designers) to assume the growing inclusion of designs for social responsiveness and social responsibility. "Social ethics" on the other hand is believed to be according to Callon (1987). "those aesthetic form-giving design solutions and innovations that gives premium benefits and freedom to the entire human community". Socially responsive

designs takes as its primary motivating factor, the prevalent social issues, with its main desire being the social impact and its main objective is to effect social change. According to Sussman, (2003) who stated that "designers recognize their role and contribution to the social individual and material well-being of society, particularly as it regards to health and safety, and therefore will not consciously behave or act in a manner harmful or contradictory to the balance and well-being of society, including those members of society with challenging abilities such as the elderly and the physically challenged".

Therefore design and its practictioners must redefine itself to assume new roles and further commit themselves to developing new solutions leading to a new and sustainable future. Evolving a thought pattern of imbuing values for recreating and building an ecologically and socially sustainable world, integrating such social form, values and concerns for the fight against poverty, gender equality, human rights, education for all, health, human security and for an inter-cultural dialogue and harmony.

Industrial Design as an Almagam of Social Form and Technological Function

As has earlier been established the very content, context and major characteristic component of the practice and approaches of Industrial design is hinged on providing professional services in the form of conceptualization, generation and development of new ideas which is often translated into the production or creation of new products, goods and services that is intended to make our everyday lifestyles easier and better for the overall improvement of life and comfort of man and society at large. Van-Doren (2002), averred that sometimes this professional calling of designers could be dictated or influenced by various factors such as - socio-economic, political, cultural and even sometimes ecological and environmental factors, to name a few. Sometimes, we often see an interface of a few of the various factors (or all of the factors) at work at the same time. There exists such enormous forces that exacts a great deal of influence and impact on the design process and design endeavour, so much so that sometimes there occur surprisingly profound changes on the resulting design object/product that emanates from such a process (Bijker, 1987). A very good example is the influence on the design tasks and objectives of products of design emanating from socialist or communist social structure and principles. Industrial products resulting from such societies are particularly unique in their form, physical and morphological- aesthetical appearances or characteristics. The constructivist tendencies and features of a classless societal ideology of the socialist workers society is prevalent and seen in their industrial products. The industrial products found in these societies exhibit the features of rigidity, and are, very mechanically inclined with emphasis placed on the functionality or durability of the ensuing product. Here, cultural and aesthetic preferences are ignored or negligibly absent, undermined or sometimes even non-existent. Whereas in societies where the social structure (or form) is characterized by enterprise, corporate organization, private ownership and social class consciousness, the reverse is the case. Industrial design products emanating from such societies are characteristically, opulent, lavish, luxurious and socio-culturally and aesthetically-driven/dictated. In this social form the societal needs are dominated and driven by materialism and the consumerist tendencies of the very rich and famous in society. (Archer, 2002).

It is therefore evident that the design of products emanating from both of these social structures, with such divergent views and philosophy of social form are equally uniquely and extremely different, in their, form, shape and sometimes in their

technological and morphological make-up. The technological function and factors that influences products in both of these societies are also uniquely different. However, it must be said that whatever the product nature there is an amalgamation of the needs and desires prevalent in any of the given society, being fulfilled and translated into reality, with the help, function and role of Technology. The role and place of the utilization of scientific principles and technological expertise in both societies is given its pride of place. Actually it is technology that drives most of the innovations and inventions of new technologies in both of these societies. So ultimately there is a collaborative union of efforts to harmonise what society wants and desires on the one hand, to be met or achieved on the other hand by the prevalent technological potentials available to such society at the time. So industrial design becomes (a summation of) the sum total of ideas, concepts, needs and wants of society being brought to life (or reality) through the application, adaptation and (or) utilization of the available and prevalent technological function and capabilities of such a society. Put succinctly – Industrial design results when, societal needs are met or translated into consumer goods by means of the technological abilities potential or function of such a society- An amalgamation of social form and technological function.

Industrial Design as an Amalgamation of Social Form and Technological Function – an Impact Analysis on Design Education

In the contemporary context, the industrial design discipline and the attempts at its pedagogy for a viable design-led education delivery has seen its fair share of challenges. Design education has over the centuries been confronted with the dictates and definition of what societal rules and norms of the time demands. This form of practice dates back to the pre-industrialization era. Where the training or the passing on of design skills were done or transferred from generation to generation by oral tradition. Through the adoption of the apprenticeship – master craftsman relationship founded on the workshop craftsman's professional practice. Overtime these workshops developed into larger workshops where design skills were now laid down through institutionalized establishments followed by the creation of "pattern books" or "collection of engravings", illustrative/decorative forms patterns and motifs which became the first group of teaching aids, to be used for the education of would –be trainees and apprentices that graduates from such workshops. (Heskett, 1993).

However, the advent of industrialization and the age of information, coupled with the discovery and use of printing, together with the establishment of the Bauhaus school and its antecedental effects on the practice of contemporary industrial design, the industrialized world and societies of Europe and America began to experience tremendous progress at the various stages and levels of their socio-economic and also the educational aspects of society, and thus, bridging the divide that existed between the traditional mainstream systems of education, and those of the Design education discipline (Findeli, 2001). Societal norms, beliefs and practices have so much since also changed dramatically. So too has been the level and proficiency of contemporary technological practices beset upon us in this era of a computer-driven world of the internet and cyberspace.

Design education ultimately has greatly, evolved thanks to the rapid development of the socio-cultural, political and economic well-being of Nations (both developed and emerging economies). The impact of all of these factors, coupled with todays

"consumerist", "cravings" for industrially produced consumer goods. Therefore it is safe to say that the influence of these and other factors on the contemporary nature of our societies is enormous to say the least. As a result of so much activity happening at the same time, (socio-culturally and technologically), the tools and pedagogic vehicles for education delivery of what modern day society demands of designer has become so dynamic and volatile, just like the unpredictability and nature of todays "internet and smart phone" addicted consumers of society. Industrial design becomes the "fulcrum" that bears or encapsulates the so much "fluid and ephemeral" material world of a society propelled by the fast-paced discovery and development of the latest in Technological innovations and inventions. Industrial design has become the symbol of what society is and represents. It reflects, affects the very nature and way of life of today's man-made environments – the earth and place we call home.

This impact is best symbolized by the paradigm shift in design education methods and approaches. There has been a shift from the traditional, theme-based, context-based learning, approach which are the features and characteristics of the "Top-down", learning approach, where the Teacher is at the Apex of the classroom pyramid. Where in all of these, the effect has generated a shift to a more adaptative "student – centered" education approach where the figure or person of the teacher becomes a "catalyst, coach and collaborator" (Biggs, 2007). This has become known as a "de-centred learning model" of education delivery. Therefore in the light of the foregoing, it is highly recommended that whatever the new design education model or approach adopted, arrived at, they must be streamlined to cater to a bias of a design-led, technologically-driven educational model that is intuitive, ingenious and responsive to a qualitative and result-oriented academic reasoning, which must also ensure a well-structured and effective design-led Educational objective.

Conclusion

The core content, structure and characteristics of the industrial design discipline is intrisinctly linked to its core values and commitments, first and foremost to render professional service that utilizes the conceptualization and generation of ideas which is aimed at developing new products, goods and services, for the improvement of life and comfortability of man and society. That core nature of design is sometimes driven by the sheer passion of designers to achieve design excellence in the task of decision making which utilizes and involves the application of relevant problem solving skills. Sometimes propelled by the urgency and need to get a given design defect resolved or at other times driven by the necessity to fill a void or vaccum desirous of an urgent design solution.

So this is the thrust or focus of this paper which helps drive the narrative of the integration of the various principles, approaches and philosophy relating to to the adaptation and utilization of the design components of Aesthetic balance, form and function in the achievement of a technologically driven man-made material culture and built environment. These underpinnings are virtually dictated by the social form and structure of the society in which this occurs. Added to the above there is an overriding emphasis of the impact/role of Technological hardware, such as computer/IT. Competences in all of these, coupled with an accompanying overall Technological function and performance of industrial production of goods and services.

Putting that into a different perspective it connotes that, the meaning and role of social form in this regard would imply or refer to the societal structure, procedure, or

order of doing things. Such is an established method of societal expression or practice, or better still a fixed way of carrying out proceedings. It represents that conventional or established scheme and formula for carrying out all of human and societal activities. While in the same context, the technological function of industrial design refers to the use of and (or) practical application of scientific knowledge, principles and practice of technology in the creation of and development of useful man-made things in society in order to resolve specific design problems. It is the manner in which those technical methods, knowledge and processes are put to work or utilized to accomplish specific design tasks. Furthermore it is what Technology does or what it is used for. The role of industrial design serving as an amalgamation of social form and Technological function is epitomized by its summation or a representation and utilization of the sum total of ideas, concepts, of the needs and wants of society, which is correspondingly translated into reality through the application, adaptation and (or) utilization of the prevalent technological function and capabilities of such a society.

Subsequently, the overall impact of all of these on the issue of contemporary design and design education cannot be overemphasized. The several attempts made at achieving a relevant and reliable design curriculum aimed at achieving a viable pedagogic tool or vehicle needed for an efficient design-led education delivery, calls for a rigorous paradigm shift. A shift from the traditional theme-based, project-based leaning techniques characteristic of the "top-down" learning approach, where the teacher is at the apex of the classroom pyramid, and the shift must be tilted towards a more adaptive "student-centred" or "de-centred learning model" or approach and technique of a new design-led education objective. Consequently the role and place of industrial design literally synonymizes and symbolizes an amalgamation of man's social form and its contemporary technological function which today virtually dictates the how, and why of the reality of modern societal values and the man-made material culture and built environment.

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