

Ergonomic Issues for Good Product Design

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Received date: December 20, 2017; Accepted date: January 15, 2018; Published date: January 24, 2018

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Abstract

Perception of a good design, to a common buyer, is a concept that satisfies a functional reliability towards fulfilling a need. It rests on a complete trust feeling. The design is a creative ideation that requires a conscious application of technicality and aesthetics. An ergonomic design creates a context for an experience. When design features match with users' characters of feeling to admire and possess, a design selection gets preference; people feel trust and the design becomes inviting to use without hesitation. Identity elements, embedded in the utility items as overall appearance, should anticipate its performance. Products should be innovative in terms of newness and compatible in terms of usability issues. Product specifications should maintain a balance between task characteristics and human capabilities. Design features conforming usability, trust, and sustainability issues make a product successful.

Keywords: Design ergonomics; Creativity and trust; Design ideation

Introduction

Design and ergonomics go hands in hand while conceiving a good product to suit a specific human need. Ergonomics provides information on various contextual human compatibility factors for formulating design parameters, and the product outcome would thus be accepted as a good design. The design is a creative ideation of a perceived utility. Criteria, for a good design, have expanded from basic requirement of fulfilling functional reliability of utility to an overall satisfaction of using the same. Competitive efforts have made it a regular practice in the field of design development to explore what attract customers while looking at and selecting something from the various presences of similar items. What are those factors which commonly motivate users to select and use the product; and how to incorporate them into design features? A product selection and acceptance are influenced by its look good features followed by utility issues.

A well-designed product or a system increases acceptance and reduce the risk of avoidance. Design features of a product should go along with the psycho-physical image matching of what it does and can be used in which context when a common buyer meets it the first time, each time and every time there after. Design ideation for a utility item should focus to create trust and sustainable existence to feel and use, and thus a product becomes successful. The packaging of a product also has gone beyond the concept of wrapping and something used as a container to an identity of itself as a distinguished appearance that adds image building value to the original product. Both the packaging and the product together attract the buyer, and thus ergonomic considerations taken for product design also are equally important for package design. Packaging and product with a complementary support to each other scopes to create an identity of a newness to explore the market. Whether packaging should cover or expose the product/content in full, partial, or use exaggerated simulation to fit the context-specific usage of the product needs to be understood with its utility value.

It is a constant search for means and methods to make a design unique and provide a satisfaction feeling while using it. Intuitive trial applications of various design features and error-success results in identifying specific elements/ factors responsible for product acceptance. Many-a-times, buyers are not clear about what they need to specify and when something comes in a market they express acceptance as "I like it". Simply it can be said, it should be unique and equipped with newness elements, and be useful in a certain context. How to identify the elements that commonly facilitates acceptance? What are the common ergonomics factors of a good design? This deliberation looks into some of such issues applicable for product conceptualization and acceptance evaluation by common users. Design ideation should balance with characteristics of the product and context of use it is associated with. Success of a product depends upon its uniqueness feeling and sustainable existence possibilities among varied desirable alternates. How common facilities and different-ness can be made clever matching while conceiving design ideation remains a challenge and scope for creative excellence.

Functional Reliability and Overall Appearance

A designed commodity, the product itself and its packaging, at the first look be attractive to appreciate aesthetically and must conform to the functional reliability. Acceptance of a design depends on the creative application of these issues in tune to comfort of use and trust perception of target users. Geometric form and structural design, as well as graphic applications, provide a clue to the usability. To achieve trustworthiness in a design not only the functional reliability, several humane issues are in play. In order to look into issues on how people interact with a product, a set of the mental process of attraction, e.g., perception, cognition, memory, reasoning, and emotion are relevant that needs to be articulated.

Elements of design filtered out from crude observations on specific functions the product should deliver and design features derived there by creating a specific identity of a product, and abstract applications of such elements should go closure to the original or similarity to be maintained that the users have experienced earlier. Thus creative

applications, towards satisfying a contemporary need and to provide a pleasurable look, there it requires innovative presentations of form, shape, and size, and graphics are to be considered in tune to a common understanding of the intended users.

Creativity and Image Building

Everyone is creative. Everywhere in our surroundings, we interact with utility items we experience marks of creativity. A utility product is an outcome of conscious efforts of creativity and ideation leading to trust. Either it would be exclusive for a specific purpose or inclusive in nature. Human security, safety, and sentiment of intended users are to be considered. The design is a creative field that demands balance application of aspects of technicality and aesthetics to develop utility items, which are to be used by many people. It can be said that creativity has no limit. For designing utility product, it would be innovative towards newness and to be useful and ethical to present to the mass.

While talking about a need for newness as a major input to ideate a design, human ethics and values relevant to its intended use require being looked into. Design practice should cater to specific requirements if it is for local needs or should meet diverse needs of larger heterogeneous target users. Applications of design elements and specifications derived from culture and tradition appear to be appropriate to consider for different target user groups. Good design criteria consist of some universal design issues, which relate to trust and pleasure feeling while using a utility item.

Creativity balances between 'be satisfied' and 'yet to be satisfied'; and thus multiple utility facilities of the designed item may require considering. Modular approaches with multiple functions have also been a preference against the fixed utility. Few issues, such as what image we are going to cater, e.g., if the product is for (a) Luxury category or Casual purpose, (b) Minimalistic or Detailed, (c) Playful or Serious in mood, (d) Modern or Retro in presentation, (e) Loud or Quiet in appearance, (f) Feminine, Masculine or unisex features required, (g) Budget or Elite in class, etc., influences selective adaptation of design elements and specifications. How we differentiate between an immediate solution to a problem and conscious ideation to make a design that can be used by many with a long-term utility; accordingly specific design features are to be used.

Several issues play important roles during design ideation for an image-building attempt of a product. These may be considered as appropriate representations of (a) emotional attachment and imagination around the product (b) should follow a mental perceived image, (c) sensation and feeling of the use context, (d) sustainable image of freshness and (e) should go for fulfilling a contemporary and contextual need, etc.

User's Compatibility

Good design aids human life. Inclusiveness elements implanted in a design widens the users' acceptance of varied requirements. When it projects an inbuilt sustainable image, the acceptance of product gets rejuvenated while in use. Thus design ideation approach must be an innovative, practical, and reproducible solution to conceive various aids to meet human needs. Various finer aspects of humane experience that go along with socio-cultural relevancies influences design. The design looks into aiding and facilitating the human natural ability, and the means and methods of exploring human compatibility information and application in such endeavour are the area of ergonomics. Design

features should match the task characteristics that the design is expected to deliver within limits of human capabilities. When a usable item and a space in and around to operate the same is conceived with interface matching with how our body and mind behaves, the design would be well accepted. Good design ideation assesses the match.

Ergonomic design ideation follows appropriate context-specific human information to fulfil a perceived need. Designing a product, a system or task must give maximum comfort, efficiency, and safety to its users, taking into account differences in human performance and limitations. Application of best scientific principles and appropriate technologies may generate a design best to deliver its intended function, still its user, (man as prime system component), ultimately has to feel satisfaction while using it to qualify the same to be a good design.

An ergonomic design creates a context for an experience. When design dimensions match with users' characters of feeling to admire and possess, a design selection gets preference, people feel trust and the design becomes inviting to use without hesitation and the experience becomes pleasurable. Ergonomics concerns with a system approach to an issue that establishes content for design application to satisfy a need, affordability, resource availability and pleasure feeling are some issues relating to trust building and sustainability. Requirements of situational demand make us differentiate between a single time development of an appropriate solution to a problem and conscious ideation to make a design that can be used by many and be mass produced; ergonomics principles and criteria provide such information to conceive a good design.

Trust Dynamics

Design is an innovative, practical, and reproducible solution to conceive various aids to human needs. It carries inbuilt message ensuring reliable operations. Design features specifications are dependent on three basic issues (1) Aesthetics - the pleasing appearance, (2) Usability- functionality and reliability, and (3) Human aspect- product dimensions and context compatibility with users' (a) Physical- relevant to human body dimension ensuring both static and dynamic fit to the geometric features of the product, (b) Physiological- to maintain operational load within safe limits while using the item and (c) Cognitive perception that deals with easy understanding of operability that influences acceptance or rejection of a product; where a series of psychological factors are relevant. User analyses products' attributes by knowing (through information provided), doing (using) and feeling with perceptual-motor skills and emotional connections. While conceiving a design, these issues are essential.

To establish trust, specific factors like (1) Safety and well-being, (2) Functionality, (3) Usability and (4) Pleasure-feeling of satisfaction, a feel-good experience, and to possess and a feeling of uniqueness are to be considered. Trust factors embedded on the design ensures an overall image of reliable operations, a series of semiotic issues require to be taken into account. It concerns with the system approach to an issue and to develop utility items to be used by many people. Thus it can be said that design specifications should go compatible in terms of usability issues, and concept conforming ease of operation and safe to use.

Design as a whole at its first sight and while choosing for use, the overall appearance of a product should say if it is safe for use by all people regardless of age and capabilities; thus inclusive and exclusive appearance in the inbuilt feature matters a lot in selection. Right choice

increases its intended use and wrong selection may create a disastrous effect. Design of a commodity should speak through its shape, form, size and look familiarity of the product to use easily with inbuilt operational clues or it needs specific learning and accordingly, information presentation strategy requires to be chalked out. This may be through inbuilt semiotic applications on the product body itself and on a package or providing additional support document. Design ideation should also be linked to perceived affordance and maintenance significance.

How to use the product if it is delicate and people should be able to handle with care due to the probability of misuse or there are relevant hazards; appropriate presentations of such information are necessary. Psychological acceptance of a product or component in any system and space thereby should speak out its usefulness and mode of use to their intended users, linking with user's basic instincts and past knowledge of varied semiotic similar applications. When the above are considered in the design of a utility item through the manipulation of different shape and other direct and abstract information features in accordance to common people's knowledge of similar usage; if these do not match might weaken or with proper application strengthen its desirable action and thereby increases acceptance.

Design Ideation

Design in its first look attracts with its aesthetics and functional symbolism. Through semiotic embodiment message and inbuilt characteristics, it ensures safe operations. Brand and uniqueness issues are to be presented with a semiotic understanding of target group. Information embedded should be logical with information hierarchy with easy to understand graphics and typographic applications. If it is for single use or repeated use. Now-a-days people also prefer multiple uses where after its basic intended use is fulfilled, it can be re-used even for different purposes, buyers' specific purpose or it would be inclusive use to meet additional needs. Look for a product and its packaging express an irresistible identity either of contemporary, futuristic or to maintain a traditional identity.

Designing can be said a performing art that expresses a need-based performance which everyone can understand and feel to explore. When the above-mentioned issues and identity elements in a proper combination and in accordance with specific product development are applied, the design creation would be well-accepted. Design need felt by buyers/ users may be classified as inbuilt (inherent needs to satisfy) and acquired (depending on social influences). Thus the understanding of context and the background of users are necessary to arrive at design specifications.

Some critical consumer trends that many researchers have confirmed through various applications needs may be re-looked into with the target population group. These include convenience to use e.g. different capability people, holding considering the centre of gravity and easy to grip, easy to use, peel, open wide, squeeze, reclosed and clean-up, reseal-able, multi-appliance usage facility, carry-ability and storable. Semiotic and informative graphics applications, colour, texture etc., may also be looked into for quality assurance and freshness and overall wellness imaging linking to brand. The brand value of specific utility items is seen either if a single owning product or with new value economy (NVE) approach having co-branding (more than one product together makes a combined unit).

Design ideation is conceived to satisfy a need; affordability, resource availability, and pleasure feelings are some issues essential to build trust. Inbuilt design features must confirm human security, safety, and inviting characters to use. While conceiving a design the nature of needs has to be addressed, like (a) Immediate- to address it, mostly crude information based design specifications may be used, (b) Perceived- application newness may be added to the design and (c) Created- through awareness to the targeted users group, possibility of creating a need that people would explore when it is put in market. The mind is programmed to see the things as 'this type or that type' image for a new product. User analyses form-shape-function issues when he meets first with an object. User's pre-experience of similarities matters while selecting a product.

Conclusion

There is a constant struggle to adapt the changing environment and newer ambitions with the limitations of human capabilities that lead to hazards, stress, and errors if the things are not properly understood the way it should be used. Design exercise may consider (1) the need justification towards making an advanced aid to facilitate lifestyle, what for it is required and how it would be satisfied and (2) ensuring proper use, and consequences of misuse and trouble makers there by, and how these can be addressed. When a basic need is met with crude applications of functionality, there comes the fineness of abstractness. Emphasis may be to give a trustworthy-look and feel for functional reliability to satisfy a perceived need, pleasure of use, and sustainable to continue, deliberately to live short duration for a single purpose or perform longer and have multipurpose inclusive utility value [1-3].

It can summarily be said that when human compatibility issues and design elements are applied in a proper combination and in accordance with specific image building to the product (and the packaging), it would get preference by the intended users and the product becomes successful in the market. We need to look into the issues for (a) design ideation for newness and trust-worthiness; it is a creative field which demands balance in technicality and aesthetics, the question of universality comes in fore, and (b) it scopes beyond function delivery and several humane issues is in play to achieve trust and sustainability. When a design satisfies target users' perceived values of satisfaction, it gives business from the producer's point of view and from a buyer's point of view it is a good design to use as an efficient product, pleasing experience and feeling proud of possession. Appropriate use of ergonomics in terms of providing relevant human information and judicial application in a creative ideation is essential to conceive a successful commodity for our use as good design.

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