Ergonomic Issues for Good Product Design

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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 clearer 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 clauses 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, resal-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, 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.

References

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