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An Industrial Designer's Viewpoint

Sunil Malhotra

An M. Des. from IIT, Mumbai in Industrial Engineering. He is amongst the pioneer industrial design professionals in India. Also associated with the School of Planning and Architecture, New Delhi in various capacities.

Before you read Malhotra's article take a look at the pictures that have been exposed by the editor in Mumbai. Read the captions and then decide what manufacturers and product designers must do to improve AC products, their aesthetics and installation practises. Architects and building owners must also get together to play an important part in improving the appearance of our buildings. Most certainly, buildings can be designed to accommodate split air conditioners and window air conditioners, if that is the only option for air conditioning, and yet appear aesthetic. Building owners can insist that tenants obtain then prior approved before finalizing their installation plans for air conditioners.

Let me introduce the concept of Industrial Design. In air-conditioning (as in any other field), design can make a difference only if efforts are directed towards fulfilling product needs in their typical environments of use. For example, in many parts of India, we have erratic power conditions, dusty environs, corrosive air, varying temperature and humidity. These, among other factors, gives us a starting point for developing design criteria. Some of these aspects are addressed by engineering design while user interfacing and aesthetics are the domain of industrial design. Like a discharge grille, which is misconceived by Indian

manufacturers to have only an airflow function. It is, undoubtedly, singularly responsible for effective performance of the equipment. It is an interface for the airflow circuit and user comfort. Filter-media removal, deflection controls damper controls service access and above all, aesthetic appeal must be considered while designing the product. Other areas of equipment design viz, operating noise levels, ease of servicing, circuit protection, user safety, condensate disposal, power saving etc, are all to be considered in the developmental process without compromise. Issues design can provide fresh viewpoints which could be translated into marketable features by the producer. It is the fertile, innovative mind that creates a fresh solution - an idea that sells. I want to stress that it is not always possible, or even necessary, to come up with brilliance which shows through at first sight: the impact might get across better if the "glow" is discovered in the hands (sic.) of the user. In a nutshell, what I am trying to say is that it's those small, obscure aspects that count - that make the difference between sound design and loud design.

Design

Integral to the product development cycle is the design-manufacture interface which focuses on the relationship between design and manufacturing. Current philosophies and techniques that are used to improve the design and manufacture of the product from a comprehensive framework for making decisions in modern manufacturing environments. They include concurrent engineering, quality function deployment design for manufacturing. Current philosophies and techniques that are used to improve the design and manufacture of he product from a comprehensive framework for making decisions in modern manufacturing environments. They include concurrent engineering, quality function deployment, design for manufacture and assembly, design of experiments, material and process selection, decision-making aids, value analysis, process analysis and computer-aided process planning.

To use Industrial Design is a fundamental policy decision. It can be made only by those who have the authority to implement it, namely, the officers and directors of the company. There is an implied pressing need for "an overall vision" which does not exist at sub-ordinate levels. Once made at a top level, hundreds of cascaded decisions emerge for implementation. It is never too early to employ design - almost always too late. Design should be used to create the spark and not to fight the fire. It is also important for designers today to recognize *that people are now more educated about design and quality. The certain road to success is to make manufacturers and users feel that they*

are, in some degree, designers - that their contributions are invaluable and central to the product offering.

Technological Change and Strategic Planning

Companies must try to develop awareness that technology is constantly changing and is influenced by economic, political and social issues. Therefore they must build strategic planning policies and develop an understanding and appreciation of technological change and consider ways of coping with changes and turning these changes into opportunities by strategic planning and sustainable development. This process is expedited through multidisciplinary consultancies, foremost among which are Industrial designers and designer teams. They challenge companies to consider the interests of all the stakeholders in the formulation of the hierarchy of design goals. They aim to provide an opportunity to devise creative 'concept designs' and to develop, prepare and document a final design proposal to meet the functional objectives. They regard environmental guidelines, economic constraints and community values and build confidence to use all aspects of prior studies and experience to devise, analyze, assess and refine alternative designs.

I could get into a hardsell of design, but if you have not yet felt its need you would never bite. I'm only trying to dispel the notion that design starts and ends with quantifiable technical data and therefore solutions. We are driven by market pressures created by competition. We are driven by **"keeping the boss happy"**. And somewhere along the way we start believing that these are the goals of business. In the business of tomorrow, the only business is the business of ideas that stem from needs of users. The product of tomorrow is less a box - more an offering. The success of tomorrow is less through customer satisfaction - more through user delight.

Getting down to the brass tacks....

Clients often tell me that my idea is good but....

.....the product will become too expensive.

.....we do not have an in-house facility for it to be implemented.

.....it might work in the US but not in India.

.....Can you work out something simpler.

.....Can you give us three alternatives. After all, we need options to choose from.

(I could go on...!)

Do you get my drift? Why should everything always be easier for the manufacturer but never for the user!! What does the customer care what your constraints are. Who is the seller to take decisions for the customer.

India's industrial design effort is still in its pre-impact days. In those parts of the world where design has become an integral part of the manufacturing culture, the designer's role is primarily that of an ideas person. A thinker! Someone who "invents" the future.

These societies have oriented themselves toward and have absorbed design more completely. People understand that the producer and the user have to be on the same side for better products and technologies to develop. Both want an easier lie and a better environment.

Therefore, manufacturers account for investments in interdisciplinary studies, industrial design, material and process research, engineering design, too design, prototype development and testing and rapid prototyping development and testing and rapid prototyping in their need to continually upgrade products and systems.

Look at the wealth of our own culture. Products of everyday use that employ our craft tradition are sought by the economies we look up to and try to emulate. Products like the beautifully woven silk carpets of Kashmir, the exquisite pottery of Khurja, the ornamental Kanchipuram saris, the earthen waterpot and a host of others. We ourselves marvel at the degree of perfection. We can see a sound design reflects a deep understanding of the people's needs, a reverence for nature in its use of materials and a great concern for simplicity in use. It is apparent that we have allowed technology to corrupt our ethos.

We bring an air-cooled chiller outside the building but refuse to change the design of the equipment to suit the new location.

We are not averse to dressing colorfully but are tentative about using appropriate colors on our products.

We have the same method of installation of a split unit whether the refrigerant lines are exposed or concealed.

We like to attempt beautification of the indoor unit and leave the condensing unit unheeded because the user doesn't get to see it.

We attend conferences and talk of Ozone depletion and global warming but do not design a better coupling between the two sections of a split AC.

These small steps become too much of an effort.

If I'm sounding cynical, it is with good reason. It does not require overseas expertise to identify or address these issues. Only the will to discard the attitude of "Sab chalta hai."

Being competent and having excellent customer service is not going to ensure the survival of an organisation. If your competitive hope is that your competitors will continue to be more incompetent than yourselves then that is a very weak basis for survival. Creativity is going to be the key differentiating process in the future.

A prominent hotel on Marine Drive has concealed two split AC "outdoor" units to improve their appearance and reduce the effect of sea air corrosion

Is it possible to do this some other way? Are there new materials that perform better? Is there something we can do about the negative effects of our environment? Can we make it easier to use/operate? Does it have to stick out of a building facade like a sore thumb? Is it child-proof? What are the periodic cleaning requirements and therefore access? Are there crevices that allow insects and rodents access? Is it a breeding ground for inspects? The list is endless. These are questions that must be asked during the development stages. These are the "value" concepts we badly need. We are always more comfortable with hand tangibles and the softer issues - the issues that our customers value are ignored because they are unpredictable. Statistics are very comforting but are "like a bikini," said W.C. Fields, "what they reveal is suggestive, what they hide, vital." We rely on them not to inform the decision but to replace the decision itself. I could discuss specific aspects of various HVAC products and offer solutions, but I don't think that was what I set out to do. I only wanted to introduce you to a design sensibility. By far the most important ingredient of a product offering. So seldom recognised. So often ignored.

The side entrance to a well known building at Nariman Point. Notice the standard cages around the ACs and the exposed refrigerant piping. Not so nice to look at !

Another landmark building at Nariman Point whose facade is plastered with ACs and service enclosures. Other buildings have soft PVC piping carrying condensate and looking like spaghetti stuck on the facade.

Typical design process

Stage 1 - Following receipt of the design brief it is required to:

- Assess the information provided, and refine the design objectives and criteria.
- Prepare and evaluate feasible conceptual design options and prepare the preferred option as the conceptual scheme for the final design.

Stage 2

- Prepare a preliminary design for each major component of the project, based on the approved preferred concept.
- Presentation describing and assessing preliminary design schemes in terms of the design objectives and criteria.

Stage 3

- Develop detailed final designs and documentation for selected components of the scheme, within the context of he overall project, addressing the design objects and complying with the agreed design criteria and constraints.

Stage 4

- Presentation of design to a panel to discuss the rationale which underlies the final desig.

Prominent retail stores on Warden Road have built ugly cages and rain/sun shades over their split AC units

More stores on Warden Road with ugly, rusted rain/sun protective covers