

# Analysis and Design an Industrial Product (Ceramics)

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## Abstract

This paper outlines how and which aspects should be analyzed on a product that sells industrial market due to the special feature of these markets and the close correlation between the concept of quality and value for use, especially for an industrial product.

**Keywords:** use-value, quality, design, ceramics

## Introduction to the Study of Industrial Products

In industrial marketing, the product shall not be treated as a constant but as a variable rather than the physical size is less important, really important as functional size. This last dimension referring to uses that provide acquiring company. The tactics that the product should be based on analysis of these uses demand. This analysis can be done using methods such as "value analysis" or "QFD" (Quality Function Deployment - Quality function development).

Value analysis - analyzes both in terms of product quality and costs. Regarding quality, the use value considering the usefulness of the product and not necessarily high quality.

Value is defined further analysis by the functions (attributes) that holds the product in terms of its operation. Industrial products meet the needs of consumers biological protection (clothing, footwear), satisfy social needs, cultural, sports, health and environmental comfort, ease household work and generally have a protective role. Industrial products do not lose their use value immediately after use, even during prolonged use. Due to this reason were specific conditions of warranty and post warranty is necessary that accessories and spare parts.

Consumers greatly appreciate the aesthetic dimension of products, turning his attention to new products, new shapes, colors and modern hues.

Supply of industrial goods comes from a very large number of manufacturers and distributors. In industrial goods entering class: wood, glass, ceramics, fibers, textiles etc.

## **2. Ceramics, industrial product**

Ceramics is an important group of commodities that includes a wide range of products: glassware, decorative, sanitary ceramics, building finishing materials (ceramic), building materials (bricks, tiles, pipes ...), technical ceramics and others.

Porcelain and earthenware goods are exported to many countries Romanian and Romanian porcelain marks are known abroad.

Besides ceramic industry goods and exported goods are valued locally made ceramic crafts, with special artistic value.

Ceramic products are made from ceramic materials from the combustion of mixtures of silicates and oxides.

## **3. The main types of decorative ceramics and household**

Ceramic goods and decorative glassware can be obtained from four types of porcelain: porcelain, semi porcelain, ceramic tile and common.

**Porcelain** is a fine ceramic vitrified structure of white-gray or yellowish-white and translucent. Depending on the nature and proportions of raw materials and primary fund for nature, porcelain can be soft or hard.

China soft background is high and is obtained from a relatively low firing temperature, below 1300C. Such icing is less harsh, the translucency, White admitted greater degree. Used for fine articles of household and decorative art.

China countries are characterized by a lower degree of white, good translucency, hard coating, thermal stability and good chemical.

After flux used distinguish 3 types of porcelain: feldspar, feldspato-calcium, magnesium.

**The semi porcelain** is a table with many fine pottery and porcelain tile features intermediate between the appearances of approaching it more tiles. It is characterized by: white-gray or gray semi vitrified , higher mechanical strength than tiles are used for glassware used in the hospitality industry and catering to sanitary and plumbing.

**Ceramic tile** is a table with a fine porous structure obtained from clay, quartz, limestone, feldspar, and dolomite. It is characterized by the yellowish-white, yellowish, high porosity, high water absorption, opaque glaze, fabric and, frosted or colored, unlike porcelain opacity.

After the composition of ceramic tile distinguish two types: clay and silica.

Common pottery made from clay is a common meal with a high content of iron oxide mixed with sand and limestone. Has a red or black and is granular structure. Includes 3 types: ceramics, pottery village Thermoset majolica.

Ceramics Roman tradition can be red, black Dacian tradition. Common ceramic resistance to heat the fire resistance due to the presence of mineralogical compounds. It is used for cleaning dishes. Is double glazed majolica and used for decorative articles, tiles. The main building ceramic goods Construction Ceramics increase in importance in the current is made of all kinds of porcelain.

The main groups: Ceramic goods masonry and roof: bricks, tiles, tiles;  
- Finishing building materials: ceramic tile, ceramic plates and fine semi glazed and unglazed floor;

- Sanitary fixtures: sinks, wash tanks, bidets, bath accessories (shelves, pegs, paper port), pedestal washbasin etc.

- Acid-resistant stoneware pipes with different sizes for industrial work.

### **Quality Ceramic Goods**

Quality check household goods and decorative pottery is made by organoleptic analysis and laboratory analysis. Organoleptic analysis is done by identifying the type of porcelain and check the conditions of issue (check the shape, size and defects under the conditions of eligibility.

Identify the type of porcelain is made by examining: structure chipping, color section, wall thickness, sound hitting, translucency and cover with icing.

Laboratory analysis for quality control includes verification of quality characteristics. This verified by laboratory methods: thermal shock resistance, water absorption, resistance to acids glaze, emission of toxic substances decor (Pb and Cd in mg / l), toxicity to glaze.

### **Terms of Labeling, Packaging, Storage and Transport**

Marking parts cleaning is done on the back of the object with 3 words:

- Brand name;

- Quality;

- Inscription "crafts" hand-decorated products only.

Packaging is done carefully, using duplex or triplex cardboard and protected each silk crepe paper or corrugated cardboard sleeve. Stick with gummed tape boxes.

Store in closed rooms, clean and free from moisture.

Be done by public transport covered and provided with warning signs of fragility, that symbol "FRAGILE."

## **Importance of the Industrial Design Products**

In the process of product design, as claimed by the author in his A. Buiga European Steel Industry: A SWOT Analysis " analysis and identification requirements, search for solutions, analysis and decision for the optimal solutions are very important, especially in the early stages, when the product needs to clarify requirements, understanding the concept and completion of general appearance. The entire process of product development and its main features are determined by these requirements. Design and development work and costs of design changes increases as the project moves towards the end, but are much smaller in design phase when decisions are made for optimal solutions. To choose the best solution from several alternatives proposed, the project team needs access to information relevant to the product as a whole.

Analysis of products is a very important discipline in the work of industrial designer. It applies equally to the realization of a new product and improving an existing product, because the designer creates a social environment that gives certain requirements and values and the market economy in which the main role is occupied by consumer demand. Thus conceived by designer product is the result of an accurate analysis of the market segment you are targeting the product to requirements. Product has some features that meet the characteristics that made the designer product must meet. Designer must be objective and give their work throughout the contest for best achievement in the sense of the product developed market economy.

Made by designer product reaches the consumer through the exchange, the sale or purchase, thus it becomes a commodity, which is defined by use value and utility. Nobody can afford to create products that are not required or accepted in the market or not meet the required standards for consumer products should be designed so the designer in the spirit of value and utility.

According to authors A. Buiga and C.M. Barbu ("Some Considerations Regarding Resource Management and Competitiveness in the European Steel Industry"), consumer products must meet at least three conditions for them to be useful.

There is a certain relationship between the qualities and one of the necessities of man. It is true that some desires for certain things are required and some local habits or fashion. But they are not transferred to vital necessities, but what we might call desirability.

Not enough to have the relationship between the qualities of something and one of our needs, but they must also be known to consumers. This can make production through the means at its disposal, including commercial.

Finally, it is not enough to know the properties, qualities of a thing, but must and we can use them.

The relationship between product quality and market needs determine actual sales from retail market demand analysis at the time of product development and existing supply. This preliminary analysis can also be included in the analysis of consumer products, this time in analyzing existing products to determine future production. Course designer must know the existing products on the market and the extent to which they satisfy the relationship between product quality and market requirements in order to qualify or improve the following products.

To achieve advertising and information targeted market segment on the emergence of a new product provides a market analysis and the factors that outlet to market. The analysis aims and how they will be advertising means.

And this kind of analysis is part of consumer product analyzing as a product made for sale as part of design and design conditions.

For a product to be used it must have some useful features. These are outlined along with setting specifications, following the analysis of consumer products in relation to what the future product must carry out operating characteristics.

Analysis of industrial products and value in use cannot be separated from their quality. Use value and quality are closely linked, as both relate to the properties and characteristics of products. Product quality out there, there as "self" that is independent of the objects, as there is no object without a qualitative determination. Thus one important aspect of value in use is the very quality.

Consumer Product quality is one of the goals that must be a designer when creating a new product, the rules that define it as resulting from the analysis of existing consumer products like the new product, rules must be respected and the new product New rules and new product quality superior to existing ones.

Quality reflects all the properties of a-values, highlighting the utility size or the degree to which each party product or service meets a consumer need for which it was created or provided.

Therefore, the quality differs not a case of use-value of another, but a product of another within the same kind of use-value. The analysis of industrial products quality has a complex content, which is to support a wide range of product features quite different in importance and in terms of quantitative assessment opportunities.

In relation to the nature and the effect they have on the application process, qualitative characteristics of products can be grouped into the following groups: technical, economic, aesthetic and reliability and maintainability.

For technical data, refer to the intrinsic qualities of the product due to material structure design concept, execution technology and functional parameters. Generally, these technical features can be measured with very high precision.

Economic characteristics are expressed as: production cost, price, performance, leverage raw materials, consumption levels, etc..

Aesthetic concerns attractive, elegant form (design), color, etc. degree of comfort. In order to effectively integrate the usefulness of products, manufacturers must bear in mind that these features show a high variability in time and space, and the appreciation of many of them are under the influence of subjective factors determine the consumer and society development.

Reliability and maintainability characteristics were imposed as a result of the increasing share of the total labor means of production and consumer durable goods with technical complexity increasingly higher.

All these features quality consumer products, the technical, economic, aesthetic and reliability are general features but required that the designer has in mind when creating a new product or improving an existing one. A product that does not meet one of these features is a product that can be marketed, so it may end.

Both reliability and maintainability cause problems with profound economic implications either producers or consumers. Thus, due to poor execution some products end up creating maintenance problems which sometimes exceeds their purchase price. Or, due to poor reliability, some products such as transport can have serious social consequences.

The product is best appreciated by consumers as one that meets superior performance both technically and economically. Obviously, they add all the other features then it is appreciated quality goods. To determine these performance parameters designer needs analysis products. Content of the concept of product quality evolves with the development of science and technology. From this point of view, quality is a concept that is highly dynamic. Under these conditions, a product is considered good quality today, tomorrow may not meet consumer demands.

The dynamic nature of quality products requires that the manufacturing process must keep pace with developing technology.

Regardless of how a measure product quality is one of the most important manifestations of economic efficiency. This can be illustrated by many practical aspects.

In general, quality improvement involves some increase in cost to the manufacturer. Mention in this regard that quality costs, usually borne manufacturer. If these additional expenses need to increase product quality are well calculated, they will be fully compensated by the return (by increasing it).

Optimizing the ratio of increased quality on the one hand, and the additional costs necessary to achieve this objective, on the other hand, can be achieved by using value analysis method whose essence is that manufacturing costs related to product functions and not their physical components. Thus, using the method of value analysis to maximize the ratio of the size of the product and cost effectiveness that it involves.

The value of a product is determined by the degree to which performed the functions required by the market and its nature.

Designer's role is not just to create "chaotic" but this creative new ideas must be "channeled" to meet specific needs. These needs are determined from analysis of products, analyzes may reflect the extent to which the retail market demands are unmet or only partially met. Such activity designer and consumer product analyzing works one to the other and it would be wrong their categorical separation.

When creating a new product is necessary to develop appropriate methods to facilitate the establishment and use of criteria for analyzing the use value of a particular class of products, accounts for a specific purpose to use them. The purpose of this study is to define the place they occupy in the market place and if the products concerned can be triggered by new product created using new technical solutions and / or different for the same general field use.

Designer is very complex role in achieving a new product because it is not only the product itself but must develop all stages of the product realization in the form of functional, market launch, advertising, life, profit from periods product. Also, the designer should not exacerbate the amount of use or aesthetic value products, which must coexist in complete balance so that optimum product to meet market demands.

The designer must take into account the technical aspects of product functional and aesthetic aspects however trying to satisfy the principle of quality products made in maximum and minimum price.

Therefore put more acute problem orientation process design to respect usage and environmental factors, or to the message came from the user. All these complex relationships between products, users and the environment must be considered very serious in the design and industrial design. These relationships are orientation vectors design new products to meet the competitive competition.

Particularly important for industrial design is the concept of product use related to the evolution towards a greater concern on the establishment of a knowledge base in use value as an indispensable requirement, the one who develops and designs products.

In conclusion emerges clear that a professional industrial designer is very complex in design of new products should take into account many aspects, not necessarily technical, but also aspects of analysis products.

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