

propose the systematic include: semantics and symbolism, Gestalt principles and usability. The systematic was applied in two cases of product planning to develop ideas of new washing machines for two market segments. The results of the planning team are presented in the session 4 and 5. At the end (section 6) considerations are presented about the systematic application and the product ideas.

## LITERATURE REVIEW

Product planning is a process to support the establishment of projects to be developed in a given period of time. The results are presented as product ideas and technologies related to trends and demands of the market and business strategies. This view is demonstrated in Figure 1, taking into account the relationships with strategic and project planning phases.

There are publications that present the phases, activities, methods and tools to systematically perform product planning [5-7]. However, contents about attractiveness have not been considered in those approaches.

In today's market, needs like cost and performance are met by a range of brands and companies. Therefore, the characteristics that affect consumer preferences are the attractive factors, related to the visual aspects [2]. These factors are perceived first, and the decision to like or dislike the product happens in the first moments of observation [3]. If a person decides not to like a product in its first visual contact that opinion will hardly change later.

At the time of purchase, consumers first look for a product that meets their needs and expectations, content addressed by semantics and symbolism; and then check the aesthetics of the product, which can be implemented, for example, by the Gestalt principles. Chosen the most appropriated product, the consumer will usually try to interact with it. If this initial interaction is positive, the consumer will probably purchase the product [3].

The contents of attractiveness can be implemented on product planning through of principles and guidelines based on concepts and characteristics of subjects, which are summarized bellow as semantics and symbolism, Gestalt principles and usability.

Semantics consist to express the purpose of the product by the visual form. It is implemented through design elements like lines, textures, shapes; for example, products made to move quickly should have smooth aspect and aerodynamic design; products for hard work should have sturdy and strong aspect [1].

Symbolism consists in considering personal values, social and cultural on the product, that reflect a self-image. All material goods of a person or group, such as home, furniture, electronics, cars, clothing, jewellery, including the places they frequent, are part of a set of things that constitute a visual image that is projected in others [1].

The Gestalt principles consist in a set of rules that can facilitate obtaining a product with attractive characteristics, because the human

Figure 1: Relationship between typical results of strategic, product and project planning [2].

