

After final evaluation the ideas are described in a report of new ideas, important for the company have all information necessary for the idea development. In the reports, the idea is graphically presented, along with a brief description of its operation and the target segment, which attends. For the ideas presentation, the team used the Sketchbook Pro software [13].

With the resulting ideas, the product plan can be now completed using the technology roadmap positioning the ideas in the time according to the requirements that were considered. This actualization is partially presented in the appendix B.

APPLICATION OF THE SYSTEMATIC – CASE 2

The second case study was developed considering the same problem as case 1. Twelve engineering student formed the planning team. All participants already had some experience in product design process. In this case, the technology roadmap presented in Figure 5 [12] was also used to introduce the study.

Results of Problem Preparation Phase

In this case, the two activities of the problem preparation phase (define the problem and horizon of planning; and identify the needs and market segments) were also performed based on the information of the roadmap. The team analysed information and summarize the results of phase.

Considering the market segments: ECO (appreciate performance and economy) and PREMIUM (appreciate comfort, agility and exterior design), the following characteristics was described important for the next generation (to be launch in 3 years): have good performance, be economical, be comfortable, be agile, be sustainable, smaller size, be silent and have water and soap reuse systems.

Results of Idea Generation Phase

Like the first case study, this idea generation phase was developed applying stimulation using visual panel and brainstorming sessions.

In first step were generated 21 ideas applying a brainstorming session stimulated by semantics

and symbolism. In the sequence, the design team selected 5 ideas using a multi criteria decision make method, with the following criteria: apparent operation, aesthetic potential and identification with the consumer.


The second step involved the ideas generation stimulated by Gestalt principles, so the 5 ideas selected in the first step were evolved in 14 ideas. In the sequence, the team selected 3 ideas with a multi criteria matrix using as criteria: symmetry, similarity, proximity and continuity.

In the last step, the 3 ideas were evolved in 7 ideas stimulated by usability approach. In the sequence, 3 ideas were selected by the criteria: appropriate functions, easy access to the buttons and clear display.

Results of Idea Evaluation Phase

The final evaluation of the generated ideas is evaluated in relation to the market segment, i.e., considering the ECO and PREMIUM segment. From the analysis of the ideas under these criteria, model 1 were selected for the ECO market, and model 2 for PREMIUM market as presented in Figure 7. These resulting ideas were positioned on the technology roadmap used for product planning. This actualization is partially presented in the appendix C.

Figure 7: Final ideas of case 2.

ECO segment	 <p>Wash water recycling for reuse in the house; Collector box connected to the pipeline; Touch screen control system with rotating screen.</p>
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