1. Background
When designers create products, they are taking meanings into consideration. Moreover, people recognize products of design as meanings. Thus far, meanings have been considered to be an important prospective for design, such as product semantics [1]. In recent times, designers have been increasingly taking into account the important role played by meanings. Designs need methods that support meanings incorporated in them, and those methods should have the ability to explicitly operate the meanings. Meanings in design can be approached from two different perspectives – functional application of the design and impressions of the design created in the user. The applied methodologies are also diverse. Both approaches are important to support of creativity involved in the design process. In recent times, both viewpoints – functional and impression – are required by designers, in terms of creative methodology involved in design. However, thus far, there has been no successful application methodology to explicitly process and operate all types of meanings, during designing. It is necessary to have a new user-oriented methodology that focuses on both types of meanings – functional and impression. With aid of this methodology it should be possible to rationally support these meanings. For this purpose, it is necessary to elaborate on the explicit representation of meanings that reflect complex human knowledge. Moreover, the methodology should be easily operable by the designer. In addition, in order to support the designers’ creative process, it is necessary to consider the early stages of process. From the viewpoint of creativity, the exploration, synthesis, search and finding [2, 3] of new concepts and meanings are critical for design achievements. Creative design entails the creation a new structure of meanings by the designer. Existing methods cannot address all these issues in their complexity and are not universally applicable beyond the original designation of methodology.

2. Aim of the Research
The present research introduces a methodology with above described features and proposes the structuring of the meanings in the process of conceptual design. Hence, we term it as the process of conceptual design. Hence, we term it as the original designation of methodology.

3. WordNet and Concept Evaluation Tools
The WordNet database satisfies all the basic requirements for a tool to be implemented in such a methodology; it can address and describe both functional and impression meanings. The advantages of WordNet as humanly constructed database and having an extended network between concepts are that it is practically useful for searches and evaluations of connections between concepts. This research uses WordNet to search for meanings. Moreover, the WordNet:Similarity tool is used for the evaluation of meanings in the methodology of design.

4. Design Methodology
The design methodology uses the following precise procedures for meaning search and evaluation (Figure 1). Stage A involves the meaning set used in the design methodology; Stage B entails building the structure of meaning using search and evaluations and Stage C is the resulting appropriate meaning structure. The steps are: (1) Meanings set refers to the starting point of initial concepts (meanings) that relate to the design task and abstracted meanings from the task (A); (2) Search in WordNet with these meanings (B1). Visualization of WordNet as a network neighborhood of searched meanings (B2); (3) Designer selects new meanings (concepts) from this neighborhood network (B3); (4) New meanings are evaluated by convergence criterion form WordNet:Similarity (B4) (Figure 2); (5) If the meanings do not show sufficient convergence
criterion, the designer returns to one of the previous steps—the designer selects new meanings or searches (B5); (6) The process continues until a good score on convergence criterion is achieved or until the designer decides that the meanings are appropriate (B1–B5).

5. Design Example

The discussed example focuses on the designing logo for a company, called Relymount, which produces mountain radio transmitters. The meanings conveyed from design task result in five input meanings consideration—Communication, Connection, Radio, Mountain and Durability—to be considered further in the process. The next process according to the design methodology is the evaluation of the whole meaning set (B5 in Figure 1). The calculated convergence score of 0.155 is considered to be relatively low. In the next stage, the design methodology continues with the search (B1) and visualization (B2) to help the designer to choose new meanings. The visualization of the local WordNet structure for the meanings of the word “radio” is shown in Figure 3. This graph shows different possibilities for substitution of the input meaning. Respectively, the meanings of the words “mountain” and “durability” are visualized. On the basis of these visualizations the replacement meanings are chosen by the designer. The designer chose not to change Communication and Connection. As a result, it is higher than the initial convergence score - 0.200 > 0.155. The conceptual designs iterations resulted in different prototype layouts of the shape structure. The final idea sketch and the layout of final designer’s decision for the shape with the meanings of Communication, Connection, Wireless, Peak and Continuity are shown in Figure 4.

6. Conclusion

The search and evaluation of meanings are key stages in the proposed design methodology. The structure of meanings—that can be directly operated and developed by the designer—on the design conceptual level is applied. Confirmation of changes and development of the structure of meanings by the designer is done by the presented example. The design methodology advantages can be considered to have the following: (1) The search for meanings is enhanced in a systematic manner, by using the complex WordNet knowledge database for objective representation of the meanings. (2) The evaluations of the designer in terms of meanings are enhanced by the introduction of the convergence criterion, which can be easily evaluated for sets of meanings. (3) There is improvement in the designer’s control and in the building of the structure of meanings.

References