

SUCCESS KEY IN DESIGNING A NEW PRODUCT

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***Abstract.**In this paper we use a quality management instrument called a tree diagram, based on undigital data, in order to show what the solutions are in order to solve an analyzed problem. The problem proposed to be analyzed is: identifying specific objects and corresponding measures to successfully design a new product. The proposed solutions are grouped into three specific objectives: Top management commitment; Beneficiary need analysis; Designing process quality. The tree diagram for the analyzed problem is made.*

Keywords: quality, new product , projection, design, measures

1. Introduction

The quality management provides the organizations with instruments facilitating the finding out of new solutions insuring the continuation of the quality improvement process. The quality management instruments are in two categories: some use certain data (digital data), and others solve quality problems when there are no digital data. In many cases solving of some quality management problems may not be done analytically and in these cases we use techniques for undigital data. For example, the data needed to fundament a decision concerning the assimilation of a new product are collected from the marketing studies. But knowing the consumer's needs is not enough. Within the TQM conception, the needs expressed by the product beneficiaries have to transform into design and production specialists' pretentions. In this paper we use a quality management instrument called a tree diagram, based on undigital data, in order to show what the solutions are in order to solve an analyzed problem. The problem proposed to be analyzed is: identifying specific objects and corresponding measures to successfully design a new product.

In the specialized literature more papers were published approaching the use of quality management instruments in order to find out a quality improvement solution.

Al-Bashir Adnan in [1] presents a study concerning the application of 5 quality improvement management instruments in universities. It presents also an aspect related to the use of the tree diagram in the academic education. Paper [2] approaches a quality management important problem in project realization – Quality Planning. Also papers [8] and [9] present case studies concerning the evaluation and quality management quality management instrument application in the field of automotive. The welding defaults are analyzed with a quality management instrument and a study case is given in paper [10]. The paper [11] present the results of a study concerning the use of the Ishikawa diagram in analyzing the measuring process. A study of the quality of education in a university is given in [12], where the quality management instrument called the Ishikawa diagram applies. An important application of quality management is given in the paper [15].

2. The realization of the tree diagram in order to design successfully a new product

In this paper we propose the tree diagram application to underline the relationships between a general objective proposed and the actions needed to proceed its reaching. In realizing the diagram we start from the general objective: the successful design of a new product. We establish the specific objectives in more steps. We propose the diagram realization stages, according to the indications given in paper [7] and based on standard [16]: a) We define clearly the subject having to be studied; b) We define the main subject categories (the specific object); c) We define for each main category the components and the subelements; d) We construct the tree diagram. We place the subject in a case located to the left and then we ramify laterally to the right the main categories and then the components and the subelements.

In identifying the solutions to realize the proposed object we studied also papers [4] and [5] where we present aspects connected to the importance of creativity and innovation. Also, we take into account the importance of the technological transfer between firms and universities, [6].

Following the study of more specialized papers on the theme within the field of designing new products ([3], [13], [14]) in this paper we draw up more measures to be applied in order to realize successfully a new product project. We grouped the measures in three main categories: Top management commitment; Beneficiary need analysis; Designing process quality.

The measures proposed and classified in this paper in the three main categories, are the following:

a) *Top management commitment*

- Top management real interest and implication;
- Top management collaboration to university research groups, where necessary;
- Top management happy to allot supplementary resources to research – innovation;
- Establishing a project manager with corresponding qualities;
- The control on the factors increasing the possibility to go wrong;
- Insuring an adequate environment to motivate and stimulate intellectually the project team.

b) *Beneficiary need analysis*

- Collecting data concerning the customers' needs concerning the new product;
- Analyzing the similar product using customers' potential feedback;
- Calculating the customers' requests when the product will enter the market;
- Analyzing the social-economic environment where the new product is designed;
- Knowing the product use field;
- Using a knowledge procedure for the customers' needs.

c) *Designing process quality*

- Establishing clearly the new product profile;
- Designing the product in the conditions of updating the information technology and the software;

- Designing the form and size in order to answer the product function;
- Using recyclable material to develop durably, if possible;
- Designing the new product to be adequate to the customers' expectations;
- Designing a manufacturing technological process based on technical and economic reasons;
- Adequate professional training project team.

In figure 1 we present the tree diagram realized for the general objective: Designing successfully a new product. The diagram contains 3 levels, as follows: the general objective (the studied subject), the specific objects and measures (solutions) to solve the analyzed problem.

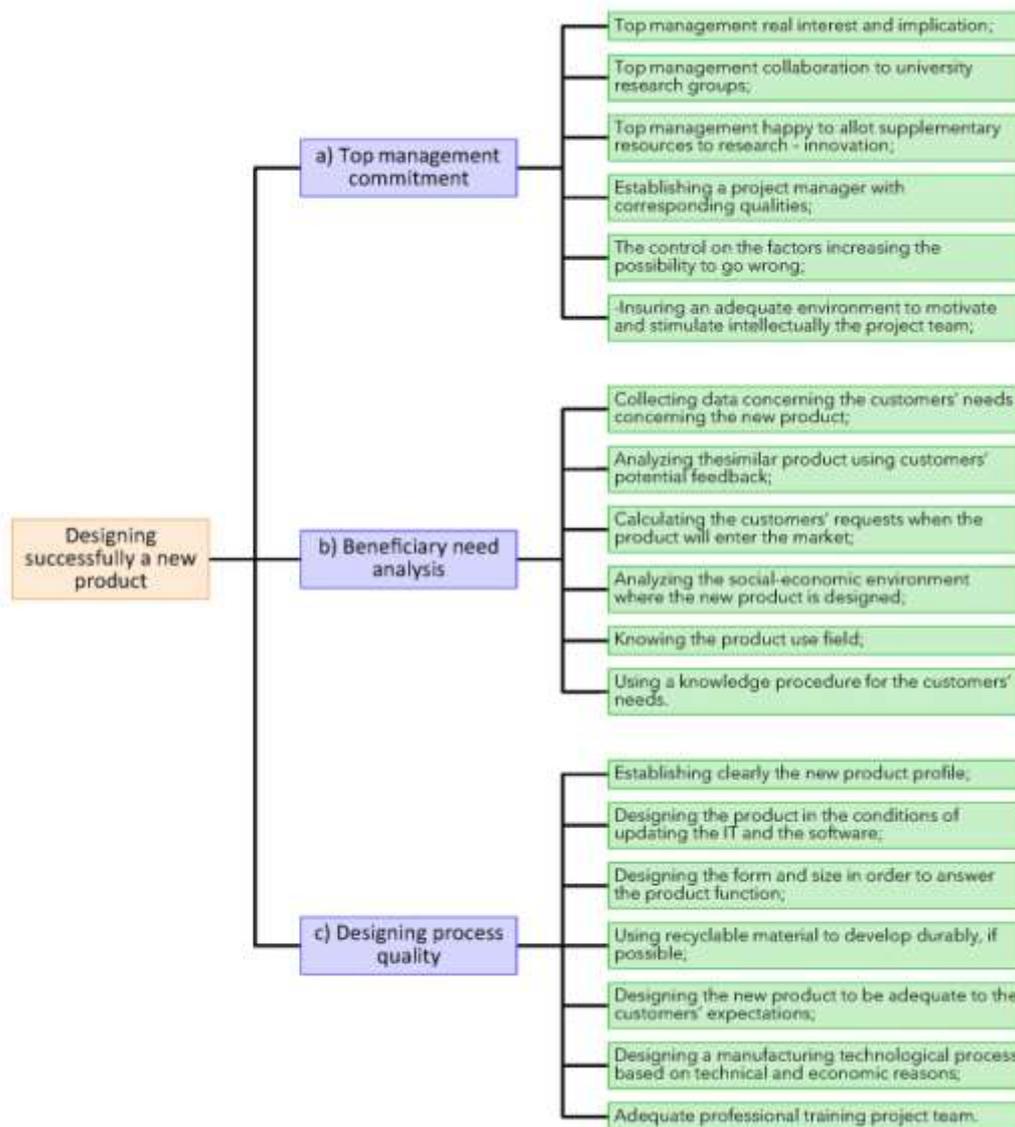


Fig.1. Tree diagram

Conclusions

In all cases where solving the quality problems may not be done analytically we call for using undigital data techniques and instruments. The tree diagram application has advantages, such as: we may identify the unquality problem to be solved and the causes generating this problem; finding solutions and measures to solve an analyzed problem. The industrial organizations should be interested in applying the best practices in designing a new product.

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