MARKET STUDY FOR PRODUCTS IMPROVEMENT

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Abstract: The aim of this paper is the identification of trends that occur in the development of new products and / or improvement of existing ones and inventory needs and preferences of potential clients in order to diversify and improve the supply of products. This paper presents results of a quantitative research conducted on a representative sample of the population (50 subjects), in the virtual environment through an HTML interface. The research was made in a national number 3/1.10.2007, PN II/2007. The research made for objectives accomplishment was mainly a descriptive research. It is mainly a descriptive, transversal research, the information gathered belonging to the quantitative category.
Key words: product, quantitative research, descriptive research, market study

1. INTRODUCTION

Assimilation of new products and / or improving existing ones for each enterprise is one of the most important ways of increasing labor productivity, high recovery of raw materials and materials, reduction of consumption, by efficient use of machines and by default of increasing efficiency and competitivity.

Assimilation of new products and / or improving existing ones is imposed by the fact that each product has a life span, "a time interval, expressed in years, between the moment when the proposed product appears on the market and when it stops to be required and sold ".

The evolution in time study for each product and extrapolation of trends, correlated with technological forecasts offer information for the development and / or improvement of some products. The new product involves an enrichment of the range of values for use and of technical-functional and economic characteristics.

There are many aspects to consider when designing a product. When the user has extensive interaction with the product, the design issue becomes even more complicated as the product developer also has to think of the product's applications for the right user and the actual use situation. Thus, aspects such as ergonomics, aesthetics and semantics have to be taken into consideration

This paper presents results of a market study, conducted in the virtual environment (questionnaire on a HTML interface), applied on a representative sample of subjects (50 subjects), in order to improve a generic product (means of transportation-ATV type).

In the first part of paper is presented the research methodology, and in the second part are emphasized the study results.

2. THE RESEARCH METHODOLOGY

The Research Methodology used was an interdisciplinary one**,** centered mainly on the research methods specific to marketing and mathematical statistics, with transmission and transformation of gathered information in statistical data. The research made to accomplish the objectives was mainly a descriptive research (Bacali, 2002), transversal research, the information gathered being **quantitative**. For acquisition of data needed for accomplish the objectives of the research contract were used both **secondary** and **primary** sources.

As method of **primary data** (Kotler, 2006) acquisition we used the classical survey based on of questionnaire applied to the representative subjects' samples. The data from **secondary sources** were obtained from National Institute of Statistics, presented in Romanian Statistic Yearbook.

For to choose and apply a sampling method were considered the next factors: the financial resources allotted, the time allotted to the research, the human resources available, the size of target population, the sampling error, etc.

The method of information acquisition used was the INVESTIGATION, and the research tool was the QUESTIONNAIRE. A HTML interface was used for the questionnaire application on an (experimental) sample made of 50 subjects.

The interest populations considered were**:** users of ATV transport used for professional interest or leisure.

The sample dimension was determinate based on the statistical formula:

$$ n = \frac{t^2 \times p(1-p)}{\Delta\Omega^2 \pm \dfrac{t^2 \times p(1-p)}{N}} = 50 \qquad (1) $$

Where the meanings are:
- t – Coefficient which correspond to the probability with which the results are guaranteed. (in statistical tables);
- p – the proportion of sample components which have the studied feature (usually "p" value is not known, it can be considered as equal with 0,5 to make the dispersion maximal);
- $\Delta\Omega$ – the accepted limit of error (± 3 %);
- N – The size of total aimed population, named also universe population.

The sampling method chosen was the **random stratified sampling**, which consist of: dividing the collectivity in groups based on preset criteria – incomes (125-1000E) and age (18-60 years), from every group (50 subjects) were randomly extracted a sample which was interviewed.

The questionnaire elaboration is one of the main elements which influence the research success. The questionnaire used is made of 18 questions closed: 5 introductive questions, with cu general character, 5 questions regarding the present behavior of subjects, 5 questions regarding motivations, needs, attitude, 3 identification questions, with socio-demographic character.

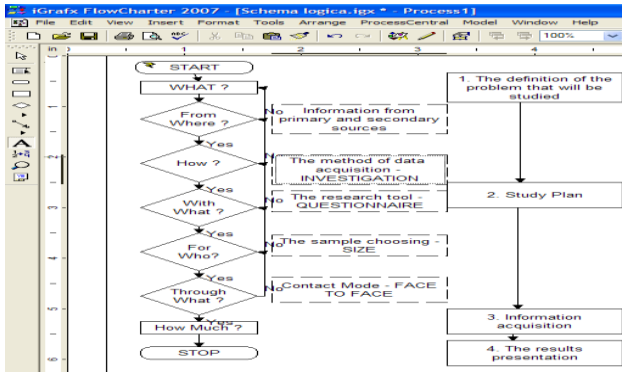The Synthesis of research methodology is presented in figure 1.

Fig. 1. The Synthesis of research methodology

3. THE RESULTS OF MARKET STUDY

We developed an instrument through which we carried out a market study in the virtual environment. The instrument developed consists of a questionnaire applied on an HTML interface (figure 2), which was issued on a web site of a company. For the representativeness sample and the relevance of answers not to be affected the subjects could access the web site only after they completed the questionnaire and to each question has been offered an answer. Answers of the subjects investigated (the number of 50) have been stored in a database (Access), thus eliminating the data manual introduction and so has been reduced the time to achieve the research, and costs for human resource involved in carrying out of study.

Fig. 2. Questionnaire applied on an HTML interface – Model

After this market study (acquisition and processing of data provided by users) was made we obtained the following results:
- All subjects investigated have used / use ATV's.
- 62% of research subjects use ATV's for professional purpose.
- 50% of the participants in this study use this means of transport on the mountain roads (forestry) and 28% in rural areas. Only 22% of subjects use this mode of locomotion in the urban environment, this is due mainly to lack of parking places (22%) for ATV and safety in adverse weather conditions (62%). To remove this disadvantage 74% of the subjects investigated have expressed their desire to develop protective cabins, which offer safety / security in less favorable weather conditions.

Starting from user dissatisfaction regarding the lack of safety in adverse weather conditions (62%) a company in Romania has decided to offer a solution to eliminate this disadvantage. The company decided to improve product development through an accessory - protection cabin for ATV- in order to increase security and also the satisfaction of users. To develop this accessory it was necessary to continue research to provide a solution that would provide satisfaction of users.

After achieving a market study, in order to improve the product the following results were obtained:
- 44% of subjects investigated want this accessory, safety cabin, to be a temporary one - to be attachable in unfavorable weather conditions, and 66% of study participants have expressed their desire that this device will be permanent.
- 66% of those participating in the market study would want the safety cabin to be made out of transparent plastic and have a zipper closing system, and 44% of them want this accessory to be made out of plastic and have a classic door closing system.

After achieving a market study, the premises of improving the product were launched by creating a type of accessory protection cabin. By developing the protection cabin, the product is improved, providing greater safety / security and thereby an increase in the degree of satisfaction of users.

4. CONCLUSION

The novelty of our work consists in the fact that the market study was conducted in virtual environment (questionnaire on a HTML interface) leading to certain reductions: the cost of achieving the research, the number of people involved in collecting information and duration of application of research tools.

Making research in virtual environment can be a solution in the current economic conditions, in which the emphasis is on reducing costs, regardless of their nature.

Romanian market is atypical in terms of purchasing behavior. According to official statistics (Romanian Statistical Yearbook), in Romania, the average net estimate for 2009 is 1260 lei (299 euros) per month, which offers no possibility of realization of "investment" in products for leisure. However many Romanians are influenced in their decision to purchase by the IMAGE factor. According to market survey results, for 52% of the investigated subjects IMAGE is the determining factor in making purchasing decision of a means of locomotion such as ATV, and utility / mobility / handling counts for 24%. In terms of wages specified above, 66% of investigated subjects are willing to offer to purchase cabin protection to 500Euro, which is in contradiction with the purchasing power and level of income of people surveyed - 60% of them have a monthly income ranges between 1000-2000 lei (237-475 euros).

The problem which arises is to implement that information provided by actual users in the design specifications. In the future we propose to develop a methodology / tool to help solve this problem.

5. REFERENCES

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