

**TRIZfest 2019**  
**September 12-14, 2019. Heilbronn, Germany**

**TITLE OF THE ARTICLE**

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**Paper Classification:**

- Theoretical, research results
- TRIZ-related methods and tools development
- Best practices, business experiences, integration with non-TRIZ methods/tools
- Educational methods and experiences
- Case study

**Abstract**

The topic or product in two sentences. The task or problem in two sentences. The result in two sentences.

Keywords: at least three keywords that reflect the theme of work.

*[E.g. for case study: Thermo cups are used all over the world, especially to transport freshly brewed coffee. On the one hand, these cups should keep the drinking temperature as long as possible, on the other hand, the freshly brewed coffee remains too hot. By using the physical contradiction and the separation principles, it was possible to develop several solutions that keep the coffee up to ten times longer at the desired drinking temperature and eliminate the risk of scalding.]*

**1 Project**

Short description of the company and your activity in the company. What is a typical "product"? What do you do in general? State-of-the-Art? How have competitors solved it? How do other methods solve the problem? What was your motivation?)

*[E.G. for case study: With a market share of 40%, Thermo Cups GmbH is one of the market leaders in the production of thermo cups worldwide. Both thermo cups and thermos flasks are produced in a variety of sizes and variants. My main task is the further development of the products, especially the radical innovation.*

*In the morning, customers have less and less time for their own breakfast. Many customers use the thermos cup to drink freshly brewed coffee on their way to work. Coffee is often brewed by the customer at 100°C and filled with 85°C into the thermos cup. Due to the good insulation, the customer cannot drink the coffee directly but has to wait until it has cooled down to avoid scalding. In addition, the customer cannot yet tell when the optimum drinking temperature has been reached. Competitors are reducing the insulation, but this is not an approach we are pursuing.*

*Our goal was to provide the coffee immediately at the perfect drinking temperature for the average commuter distance of 60 minutes.]*

## 1.1 Level 2

### 1.1.1 Level 3

#### 1.1.1.1 Level 4

## 2 TRIZ relation

Which TRIZ tools were used/combined/developed? How were they introduced? Describe the procedure and the way. e.g. name the contradiction, which innovation principles were used? Which ideas followed? Show your functional analysis if used? Which results have been implemented?

### 2.1 Level 2

#### 2.1.1 Level 3

##### 2.1.1.1 Level 4

## 3 Results

What was the outcome of the project? What was the benefit? Where is it applied? Where do we get more detailed information? Who is the beneficiary? What further projects / actions did the project induce?

### 3.1 Level 2

#### 3.1.1 Level 3

##### 3.1.1.1 Level 4

## 4 Conclusions

What were the advantages of the procedure? Have you used other methods? How did the project become a success?

## References

1. Neiman D., Morgenstern O. "Theory of Games and Economic Behavior". Moscow, Nauka Publishers, 1970.

## Communication

**Communicating Author:** [yourname@yourdomain.org](mailto:yourname@yourdomain.org)

**Communication acceptance:** With the submission of the paper the authors accept to be contacted by MATRIZ representatives for TRIZfest purposes.

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## A. Formal requirements for the project

### 1. General Requirements

The text should be set in from **MS Word (DOCX) AND PDF.**

Paper length: TRIZfest-2019 full papers should have a length **between 4 and 12 pages** using the following formatting, references and appendixes includes.

Above or under this range, the abnormal content size should be formally justified by the corresponding author with a risk of major amendment requested by the reviewers.

Paper size is A4, portrait orientation.

Subtitles must be numbered.

Margins: upper – 2.5 cm and lower – 2 cm, left – 2.5 cm, right – 2.5 cm.

Font types: Times New Roman, Times ET, Windings, Symbol.

Font sizes:

- Abstract: 11pt,
- Keywords: 11pt, italic,
- Main text: 12pt,
- Subtitles: 14pt,
- Captions, keywords, and references: 11pt.

Pre-set interlinear spacing: Single. Justified alignment.

Hyphenation: automatic arrangement, hyphenation zone: 1 cm, no more than three successive hyphenations.

Footnotes: 11pt, italics, independent numbering at each page.

References to sources in the main text are placed in square brackets, e.g. [4]. The numeration in the bibliography reflects the order of mentioning.

### 2. Subtitle of Level One 2

#### 2.1. Lists

1. Work with bulleted and numbered lists should be either manual or with using the MS Word formatting toolbar.
2. After typing the number, put a full stop, a gap and then follow with the text.
3. Element 3 of the list.

#### 2.2. Formulas

It is preferable to type simple formulae in the text mode, using subscript and superscript indices, see (1) below:

$$F = R_s + D_k, (1)$$

where s and k are subscript indices. Punctuation at the end of a formula is as in an ordinary sentence. Formulae numbering is placed on the right, even with the right edge of the column.

Complex formulas are typed in the formula editor MS Word, see (2):

$$V = \frac{F}{C} . (2)$$

In the formula editor setting Style/Size for typing symbols should be only by default. The main font size of the formulae is 14 pt, big index – 9, small index – 7, a big symbol – 18, small symbol – 14. In the formula editor and the text itself, the variables expressed by Latin symbols are typed in italics; figures, Greek and Russian symbols are Roman type as well as symbols of functions (sin, ln, etc.).

### 2.3. Tables

Tables should be typed directly in MS Word rather than copied from other editors and programs. Table number (for example, Table 1) is placed above and to the right of the table itself without full stop after the number. The title of the Table is typed in the centre below the table number. The margins of the Table should not extend beyond the borders of the printed text.

Table 1

Table Title

Column 1	Column 2	Column 3	Column 4

If necessary to specify the source, type under the Table with 11 pt font, line spacing 1, center-aligned formatting.

### 2.4. Figures and Diagrams

Figures and diagrams are either put in the text or submitted in separate files (each illustration being a separate file) in the .tif format (other acceptable formats are .bmp or .jpeg), in which it is necessary to specify the exact location of their insertion into a text file.

The scanned image used in the text should have resolution 300 dpi. It is desirable to make all drawings, flowcharts and **diagrams in the black-and-white mode since colors or “tints of gray” may be distorted or lost in printing**. Titles of diagrams and drawings are indicated below in the center (for example: *Figure 1. Caption to the Figure* or *Diagram 1. Diagram Title*), see Fig. 1.

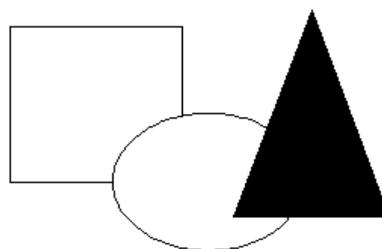


Fig. 1. Caption to the Figure, no full stop at the end