# TRIZ exercise (Solution based on Contradictions)

Source: Doan Minh Dang @ TRIZ Studies - [rosetta.vn/triz](http://rosetta.vn/triz) - 2020-08-09

Table 1. Meta data

|  |  |
| --- | --- |
| Title: |  |
| Abstract: |  |
| Classification-field: |  |
| Classification-method: |  |
| Take-away-messages: |  |
| Tags: |  |

Table 2. Problem description

|  |  |
| --- | --- |
| Description: |  |
| Objective: |  |
| Reference: |  |
| Picture: |  |
| Video: |  |

Table 3.1. Problem modeling and analysis - System

|  |  |
| --- | --- |
| System: |  |
| Model: |  |
| Function: |  |

Table 3.2. Problem modeling and analysis - 9-windows

|  |  |
| --- | --- |
| Subsystem-in-the-past: |  |
| Current-subsystem: |  |
| Subsystem-in-the-future: |  |
| System-in-the-past: |  |
| Current-system: |   |
| System-in-the-future: |  |
| Supersystem-in-the-past: |  |
| Current-supersystem: |  |
| Supersystem-in-the-future: |  |

Table 3.3. Problem modeling and analysis - Ideal final result

|  |  |
| --- | --- |
| Ideal-Final-Result: |   |

Table 3.4. Problem modeling and analysis - Contradictions

|  |  |
| --- | --- |
| Administrative-contradiction: |  |
| Technical-contradiction: |  |
| Physical-contradiction: |  |

Table 3.5. Problem modeling and analysis - Resources inside system and in environment

|  |  |
| --- | --- |
| Resource-as-space-or-field: |  |
| Resource-as-substance: |  |
| Resource-as-time: |   |
| Resource-as-structure: |  |
| Resource-as-energy: |  |
| Resource-as-information: |  |

Table 4. Problem solving process - Based on 40 principles

|  |  |
| --- | --- |
| Parameter-to-improve: |  |
| Parameter-to-preserve: |  |
| List-of-suggested-principles: |  |
| Principle-to-follow-1: |  |
| Idea-1: |  |
| Evaluation-1: |  |
| Principle-to-follow-2: |  |
| Idea-2: |  |
| Evaluation-2: |  |
| Principle-to-follow-2: |  |
| Idea-3: |  |
| Evaluation-3: |  |
| Principle-to-follow-4: |  |
| Idea-4: |  |
| Evaluation-4: |  |

Table 5.1. Problem solving process - Based on separation principles - Separation in time

|  |  |
| --- | --- |
| Parameter: |  |
| Property\_+P: |  |
| Property\_-P: |  |
| When-it-should-have-property\_+P: |  |
| When-it-should-have-property\_-P: |  |
| Idea-1: |  |
| Evaluation-1: |  |
| Idea-2: |  |
| Evaluation-2: |  |

Table 5.2. Problem solving process - Based on separation principles - Separation in space

|  |  |
| --- | --- |
| Parameter: |  |
| Property\_+P: |  |
| Property\_-P: |  |
| Where-it-should-have-property\_+P: |  |
| Where-it-should-have-property\_-P: |  |
| Idea-1: |  |
| Evaluation-1: |  |
| Idea-2: |  |
| Evaluation-2: |  |

Table 5.3. Problem solving process - Based on separation principles - Separation in scale

|  |  |
| --- | --- |
| Parameter: |  |
| Property\_+P: |  |
| Property\_-P: |  |
| Which-part-(or-whole)-should-have-property\_+P: |  |
| Which-part-should-have-property\_-P: |  |
| Idea-1: |  |
| Evaluation-1: |  |
| Idea-2: |  |
| Evaluation-2: |  |

Table 5.4. Problem solving process - Based on separation principles - Separation in condition

|  |  |
| --- | --- |
| Parameter: |  |
| Property\_+P: |  |
| Property\_-P: |  |
| In-which-condition-the system-should-have-property\_+P: |  |
| In-which-condition-the system-should-have-property\_-P: |  |
| Idea-1: |  |
| Evaluation-1: |  |
| Idea-2: |  |
| Evaluation-2: |  |

Table 6. Revision of solution

|  |  |
| --- | --- |
| What-to-change: |  |
| How-to-change: |  |
| Time-cost: |  |
| Material-cost: |  |
| Human-power-cost: |  |
| Management-cost: |  |
| Total-cost: |  |
| Expected-benefit: |  |

Table 7. Comparison

|  |  |
| --- | --- |
| Similar-problems: |  |
| Known-ideas: |  |
| Criteria-for-solutions: |  |
| Evaluation-of-our-solution: |  |
| Score-of-our-solution: |  |
| Evaluation-of-other-ideas: |  |
| Score-of-other-ideas: |  |
| Overall-assessment: |  |