

## **Project outline of the Fraunhofer IPT in the context of the “8th Joint CORNET Call”**

### **Title: *Innovative Improvement of Support Processes***

#### **Initial Situation**

In many industries, the competition no longer takes place in the technical differentiation of product characteristics, but in the quality of business processes adding value to the product. For this reason, the focus of many companies is improving the value-added business processes. In many cases the potential of non-value-adding support processes is not used to enhance the competitiveness of a company. Research shows that for order processing various support processes are needed, such as the administration. Especially in these processes approximately one third of working time is wasted. These processes are characterized by a high proportion of administrative tasks that must be carried out directly by employees, for example the order processing of client orders. Therefore improvements in support processes are highly dependent on the willingness of employees involved in these processes.

These circumstances suggest that there is currently a need for user-friendly approaches and methods to improve support processes.

#### **Goal**

The research targets at small and midsize companies depending on effective support processes, because their performance needs a high degree of customer interaction and integration. The goal is to systematically identify potential improvements in administrative and production-processes and their effective implementation.

#### **Solution, divided in 3 steps**

##### **Step 1: classification of process types and development of adequate indicators**

**Goal:** Development of process categories for structuring relevant support processes and the development of appropriate figures for process evaluation and control.

##### **Work contents:**

- Categorization and structuring of supporting processes and of appropriate figures for process evaluation and control. Ensure transparency in raising the figures and their reproducibility.
- Development of an evaluation scheme for systematically analyzing the figures and identification of the most critical process deficits. Establishing appropriate and reasonable ranges of the established figures which serve as a foundation for further process improvements.
- Determination of the cause-effect relationships of identified process deficits based on the methods of the Theory of Constraints (TOC). Analysis of all internal and external influences on the figures, for fixing the most critical factors.
- Development and validation of a computerized tool, including all developed methods for determining the largest process deficits and their cause.

**Result:** User-oriented computerized tool, which indicates eligible figures for given process categories. Critical values of figures generate an identification of the cause and feasible improvements are indicated.

##### **Step 2: Implementation of the identified improvement possibility**

**Goal:** Develop innovative solutions to improve support processes

##### **Work contents:**

- Analysis of the TRIZ-principle (en. "Theory of Inventive Problem Solving") to abstract specific process problems and transfer them to standard problems, dependent of transferability on support processes. Definition of categories of standard problems by intensifying previously identified problems.
- Definition of standard solutions related to the standard problems. Analysis of existing solutions of TRIZ and other existing approaches, procedures and methods for process improvement
- Definition of suitable sub-ordinate targets for the implementation of the standard solution, and setting up of a adequate target interval. Visualization in the barrier tree of the TOC.
- Development of a relationship matrix for the determination of interactions between the identified standard solutions. Review how the standard solutions enhance their action, or weaken it.
- Creation of a computerized tool for the translation of process problems in standard problems and solutions for their remediation.

**Result:** User-oriented computerized tool, which first abstractly translates process problems into standard problems and associates them with standard solutions. Indication of appropriate figures to assess process improvements, including adequate target intervals.

### **Step 3: Implementation of the standard solutions**

**Goal:** Development of a method for implementation of the previously defined standard solution in the corporate practice, with particular attention of the impact of employee behaviour on the success during the change of the support processes

#### **Work contents:**

- Analysis and categorization of potential obstacles during the implementation of the standard solution under the behaviour of employees, with special focus on communication during process changes and roles of the participating employees. Classification of the obstacles in the "barrier tree" of the TOC.
- Development of a method and measures to solve the obstacles. Analysis of existing approaches and methods, how barriers, blockades and any fears of the employees about process changes can be reduced or eliminated.
- Creation of a computerized tool that helps the user solving his obstacles in accordance with its specified standard solution and suggests appropriate methods to address and reduce.

#### **Result:**

User-oriented computerized tool that shows obstacles that occur in the behaviour of employees during the change of support processes. Recommendation of procedures and methods to overcome these obstacles.

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