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**8th International
Quality Conference**

23.05.2014. Center for Quality, Faculty of Engineering, University of Kragujevac



Culture of Quality

**Quality and Social
Responsibility**

**From knowledge
to quality**

**Competition and
globalization**

**Innovation: A key of
quality in
automotive industry**

**From knowledge
to quality and
safe food**

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and excellence**

**Defining and
measuring success**

**Management of
sustainable
development**

**ICT challenges
for future society**

**Excellence of
society organization**



8th IQC
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RESEARCH

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8. International Quality Conference



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A NEW FUZZY MODEL FOR EVALUATION OF KEY PERFORMANCE INDICATORS AND PURCHASING PROCESS QUALITY

Abstract: Improvement of key business processes is one of the requests of standard ISO 9001:2008 and has a critical effect on the competitive advantage of any organization. In this paper, the purchasing process, its objectives, key performance outcomes and key objective indicators for each identified objective are defined with respect to critical success factors. Modelling of the relative importance of purchasing key performance indicators and their values as well as modelling of the influence of a specific objective on process quality will be presented using fuzzy sets. The algorithm for evaluation of KPIs, process quality and the gap between existing and target values are presented and illustrated by an example of the purchasing process in one service organization. The presented approach should contribute to the assessment and improvement of purchasing process performance.

Keywords: process quality strategy, effectiveness, fuzzy set, fuzzy AHP

1. INTRODUCTION

Quality management includes all the activities that organizations use to direct, control, and coordinate quality. These activities include formulating a quality policy and setting quality objectives. They also include quality planning, quality control, quality assurance, and quality improvement. It could be stated that achievement of quality goals leads to improvement of the competitiveness, effectiveness and flexibility of an organization. The formulation of quality goals and a quality strategy are based on the strategy development process [1]. The quality goals are defined by top managers. In further steps, top managers define goals and critical success factors (CSFs) - which the organization must accomplish to

achieve the mission, by examination and categorization of the impact [2]. Defined CSFs are sufficient for the mission to be achieved and to use for identification of the key business processes in an organization. Business Process Management (BPM) defines objectives of key business processes with respect to CSFs which must be accompanied by measurable key performance indicators (KPIs). Improvement of key business processes could be achieved if objectives can be measured through the KPIs. KPIs, on the other hand, are measures that quantify management objectives, along with a target or threshold, and enable the measurement of strategic performance. Performance measurement systems are developed on different mathematical and logical frameworks.

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