

# **Abstract**

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## **Evaluating Supply Chain in Egyptian SMEs using Object Oriented Analysis and Six Sigma: A Case Study**

The purpose of this thesis is to analyze the current performance of an SME's supply chain using one of the object oriented modeling techniques in order to develop a visual graphical model to be easily communicated to survive the current competitive environment. It also seeks to evaluate the current performance of the supply chain in order to improve its quality performance in SMEs. The study achieves its aim through answering the following research questions: 1. What is the current situation of the supply chain in SMEs? 2. How to improve the supply chain quality in SMEs? In this research, a case study strategy is used, where after surveying SMEs in Alexandria, semi-structured interviews were conducted with Egyptian SMEs and the Unified Modeling Language was used to analyze the collected data. Then the performance quality of the current supply chain is evaluated to the Selected company according to the five steps of the Six-Sigma DMAIC approach which are: Define, Measure, Analyze, Improve, and Control. The research recommends the deployment of the RFID technology as a technique for improving the current supply chain performance quality and the accompanying costs that result from applying it on the container level, on the carton level in Egyptian SMEs. This makes the current study a worthwhile investigation as it helps decision makers make better informed decisions.