Abstract

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Evaluating the supply chain information flow in Egyptian SMEs using six sigma: A case study

Purpose – There is a great deal of concern among the Egyptian economy that small- and medium-sized enterprises’ (SMEs’) potentials are not fully used although they dominate it and contribute to its success. The question is what challenges are preventing those SMEs from performing efficiently. This research aims to focus on examining the issues regarding the supply chain of Egyptian SMEs, exploring the areas that need improvement and assessing the impact of technology in enhancing their performance and whether they afford applying it.

Design/methodology/approach – In this research, semi-structured interviews were conducted at 14 Egyptian SMEs. Then, the business process at six of the fourteen SMEs was observed. After that, a representative sampling was applied and a company was chosen as a representative case company. Moreover, the Selected company’s documents were analyzed to capture the full image of the current supply chain performance in Egyptian SMEs. Finally, the Six Sigma DMAIC approach was used to assess the effectiveness of the current supply chain and identify the problems faced and how to deal with these deficiencies. Findings – The current process of the supply chain was analyzed and the result shows the obstacles and constrains facing SMEs in Egypt. Despite the clear benefits of radio frequency identification (RFID) technology, Egyptian SMEs still do not use it to solve their problems due to its high cost and their low budgets. However, the investigation concludes that SMEs in particular can benefit from the RFID technology and will be able to pay back the cost of the system applied after a certain period of time that is measured by calculating the breakeven point of having the RFID system against the current situation. As a result, improvements were realized and recommended for the organization. Originality/value – This research develops a model that suits SMEs in the Egyptian market. The use of a case study approach with a quality measurement tool, namely, the Six Sigma DMAIC approach, especially after surveying several SMEs, and observing the business process at some of them, makes this a thorough investigation which proves that even SMEs can use the RFID technology despite its high cost that hinders its utilization. Thus, this research helps decision-makers in Egyptian SMEs make better informed decisions and guides them to when will they be able to pay back the cost of the system applied.