

IMPROVING PERFORMANCE OF SME'S USING SCOR AND AHP METHODOLOGY

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ABSTRACT

This Paper proposes a framework that will help companies, particularly the small and medium-sized enterprises, assess their performance by prioritizing performance measures and supply chain processes. The framework utilizes the SCOR model processes and performance attributes which help in standardizing process mapping and attributes. The authors also suggest the use of an Analytical Hierarchy Process approach to construct, link, and assess supply chain processes and performance attributes. The outlined framework is illustrated on a case of a family owned, medium-sized manufacturing company.

1 INTRODUCTION

Since the beginning of the last decade of the twentieth century, there has been a huge change in environmental awareness as related to the business world which has resulted in tremendous growth and opportunities for new markets on one hand, and in more complicated operations and challenges has threatened the operations and survival of some firms. The competitive pressures in global manufacturing are driving manufacturing firms to re-evaluate their competitive strategies, supply chains, and manufacturing technologies in order to improve performance, compete, and survive long-term.

Small and medium size enterprises (SMEs) are not exempt from these external pressures, they also face the same challenges which in turn influence their operations and existence. Moreover, SMEs are constrained by severe limitations in terms of financial resources, manpower and managerial skills (Hudson et al. 2001). Several research studies have linked the success of businesses to the type of performance measurement system (PMS) used by the firms and to the successful design and implementation. Other researchers have considered PMS as a means to attain competitive advantage, continuous improvement and ability to successfully manage changes (Holban, 2009). Despite these facts, studies found that many small enterprises predominantly emphasize financial index only while others failed to implement the well-known PMSs (Hudson et al., 2001; Gosselin, 2005). The failure of implementing PMS, mainly caused by the characteristics of SMEs, or due to the complexity of the measurement framework and implementation of the models. Researchers also observed that there is poor fit between supply chain management and SMEs. (Arend and Winsner, 2005) attributed this poor fit to different reasons such as improper implementation of supply chain management by SMEs, and due to the lack of use of supply chain management to complement strategic focus

Although PMSs research that focus on the specific needs of SMEs have been in existence for decades, it appears that these models did not fully satisfy that needs. Different multi-dimensional performance measurement models were created to improve internal performance but overlooked the practical realization of small businesses characteristics, supply chain structure and operations, and the measurement at the operational levels as well. The weaknesses and implementation failure of different approaches in SMEs justify the need for a combined methodology that aligns strategy, metrics, processes, performance improvement and organizational outputs in a dynamic and a comprehensive model. Therefore, this work aims to assess SMEs to improve their performance by providing a dynamic and a com-

prehensive model which links performance attributes, metrics and supply chain operations to business strategy.

2 THE APPROACH

It is necessary to understand that the metrics and processes that are used in performance measurement systems should have the power to capture the organizational performance, should reflect clear connections with various levels of decision-making such as strategic, tactical, and operational, should also reflect an acceptable balance between non-financial and financial measures, and a measurement system that ensures a suitable allocation of metrics to the areas where they would be most appropriate. Therefore, the proposed methodology involves all supply chain processes and performance attributes based on SCOR model structure. The methodology utilizes AHP approach to integrate the attributes and the processes into one model and to rank and prioritize supply chain processes and strategic metrics as well. Construction of the model in a hierarchal structure is necessary to reduce complexity in the performance measurement problem into manageable levels. Using AHP provides us with a systematic method that breaks down a complex problem by following the four steps: problem modeling, weights evaluation, weights aggregation, and sensitivity analysis. Finally, we used the Expert Choice software in building the hierarchal structure and evaluating the overall score.

3 RESULTS

We implemented this methodology on a medium-sized manufacturing company. We have observed that the results obtained from the integrated model shows that the Cost and Reliability of supply chain are the most important strategic attributes to the overall goal. At the same time, the comprehensive model ranked the make to order process as the most significant process within the supply chain processes followed by source and deliver to order. In addition, the results show that each attribute ranked each and every process differently. For example, the Source to Stock process “sS1” was highly prioritized to the cost of supply chain but it came second to the supply chain responsiveness and third to the supply chain reliability.

4 SIGNIFICANCE OF THE RESEARCH

The proposed model links processes to strategic goals, establishes a measuring system for the core and critical business and supply chain processes, prioritizes of business resources, i.e. financial and non-financial resources. The model also links financial and non-financial measures to processes and capabilities, provides decision makers with a focused view on the strengths of the businesses, and helps to re-allocate a company’s resources to meet different conditions and changes.

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