Chapter 10

The Strategic Contribution of ERP Systems to the Formulation of Non-Financial Key Performance Measures (KPIs) in Logistics Activities: An Exploratory Study in Northern Greece

Fotios Misopoulos
City College, Thessaloniki, Greece

Sophia P. Asprodini
City College, Thessaloniki, Greece

ABSTRACT

The purpose of this chapter is the thorough observation of supply chains within the broader geographical area of Northern Greece in order to recognize whether organizations formulate and use KPIs in order to evaluate performance. The essence of developing useful KPIs with regard to supply chain performance is the identification of the gap between planning and executing while KPIs also give an indication about areas that are in need of corrective action. However, due to the fact that the Greek region has maintained narrow manufacturing activities as a result of its economic situation in the past five years, the research is focused on that part of the supply chain associated to logistics and customer service.

DOI: 10.4018/978-1-4666-3914-0.ch010
INTRODUCTION

This paper portrays the strategic significance of a metrics system formulated by appropriate data derived from an ERP system in order to measure and tackle performance in logistics’ associated activities. The specific issue, the issue of performance evaluation is of great importance since there are already positive correlations researched and found by rich streams of literature concerning performance evaluation and non-financial performance measures. Thus, the importance of this study lies in the fact that performance evaluation is explored through being narrowed down to logistics activities and defined through the implementation and use of ERPs (Enterprise Resource Planning Systems). Based on research conducted in a number of SME’s in Northern Greece, significant correlations have been found with respect to properly set non-financial performance measures (KPIs) and logistics activities such as procurement, purchasing, supplier evaluation, warehousing, order processing and customer satisfaction in order to determine factors that adversely affect the efficient flow of goods within the supply chains. With the evolution of technology and Information Systems (IS), customers at any level of the supply chain are able to have access to vital information concerning processes and outcomes of interest so that proper integration and visibility through the supply chain is attained.

Aims and Objectives of the Study

The interviews have provided adequate info concerning the use of ERPs—and other in house developed IS—and the extent to which ERPs support logistics activities and contribute to the formulation of suitable non-financial performance indicators. The goal of the research is to realize whether ERPs or IS systems in the Northern Greek market are utilized adequately so as to tackle and evaluate performance. The most commonly used method for attaining this without contending with financial data—since the cost and expenses factor is not used in parallel in this chapter—is through using non-financial performance measures. Following, the methodology of approaching this research is provided for the needs of the dissertation and outcomes are interpreted while being grouped into research questions and justified in order to finalize conclusions and areas that call for further research.

LITERATURE REVIEW

In turbulent times, organizations are struggling to perform in a rather dynamic business environment which requires a flexible—although structured—strategic approach in order to be tackled. Among various activities such as manufacturing, purchasing, operations, procurement and marketing, logistics has grown to be a viable component of the supply chain within the last fifteen years since it acts as an enabler of supply chain management (Panayides, 2004; Bienstock et al., 1997; Mentzer et al., 1989). For the purpose of this paper there is a necessity to address the goal of supply chains in a global context given the interdependence and interrelation of business entities within any given industry.

Supply Chain Management and Its Relation to Strategy

Supply chain management has shifted the global business rationale from cooperation and competition between business entities to interrelation between supply chains (Van der Vorst et al., 2002). The procedure through which products flow—with the form of materials—from manufacturing until the end consumer—as finished goods—needs coordination and constant control since any failure to keep up within schedules and specifications entails excessive costs (Johnson et al., 1999) not only in money terms but in terms of performance and reputation as well (Green Jr. et al., 2008).