Chapter 15
Implementation of Time-Driven Activity-Based Costing System in the Manufacturing Industry: Evidence From Turkey

Ahmet Özcan
Adana Alparslan Türkeş Science and Technology University, Turkey

ABSTRACT
In the current business environment, the costing system used within the firms has prominent impact on strategic decisions. High-quality cost data significantly increases the quality of firms’ strategic decisions. The activity-based costing system has failed to satisfy the needs of firms operating in the competitive economic environment. The time-driven activity-based costing system is the developed version of activity-based costing system. Time-driven activity-based costing system is one of the most sophisticated costing systems that enable firms to accurately calculate the cost of goods and services. Time-equations are used in time-driven activity-based costing system to estimate the time consumed by each activity. This chapter aims to discuss main dynamics of time-driven activity-based costing system and provides an illustration of this costing system in the manufacturing industry. The case study demonstrates that time-driven activity-based costing system is useful in calculating idle capacity cost.

INTRODUCTION
Firms are required to adopt an effective costing system so as to gain competitive advantage. In today’s business world, there is a huge need for accurate cost data. Cost knowledge plays a key role in the relationship among suppliers, manufacturers and customers. Firms increasingly need a costing system that excels in identifying, classifying, allocating and analysing costs. Without detail analysing of actual costs of goods and services, the quality of strategic decisions made by the firm management significantly decreases (Dejnega, 2011).

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The selection of appropriate costing system has always been a significant challenge for the management of firms. The management of firms should analyse the strengths and weaknesses of available costing systems. It is worth mentioning that the costing system implemented by the firms should integrate into firms’ objectives.

Before 1980, costing systems used by firms adopted a different approach. Those systems did not sufficiently support decision making process, management, planning and defining objectives (Johnson and Kaplan, 1987). As the business world is becoming much more globalized than before, traditional costing systems have failed to deal with the changing needs of firms. Traditional costing systems have become obsolete in the manufacturing industry (Öker & Özyapıcı, 2013). Traditional costing systems were criticized for misallocating overhead costs. Consequently, the cost of goods and services is inaccurately calculated under traditional costing systems.

In the beginning of 1980s, activity based costing system has been developed to solve these problems. However, the implementation of activity based costing system has become impractical for many firms in the late years. Kaplan, the founder of activity based costing system, agreed with the opinion that the implementation of activity based costing system is difficult for firms to maintain.

Time-driven activity based costing system has emerged to resolve drawbacks of activity based costing system. Time-driven activity based costing system developed by Kaplan and Anderson (2004) aims to simplify the calculation of costs and avoid time-consuming and expensive implementation processes. Time-driven activity based costing system is a simplified version of activity based costing system. Kaplan and Anderson (2007) state that time-driven activity based costing system provides prominent competitive advantages to firms operating in the competitive economic environment.

This book chapter is structured as follows. First section presents primary features of time-driven activity based costing system. Second section discusses the advantages of time-driven activity based costing system. Third section compares the results of time-driven activity based costing system with activity based costing system. Fourth section presents literature review. Fifth section provides the implementation of time-driven activity based costing system in the manufacturing firm. Last section concludes the chapter and provides suggestions for future studies.

**FEATURES OF TIME-DRIVEN ACTIVITY BASED COSTING SYSTEM**

In this section, the main features of time-driven activity based costing System are discussed. Along with the development of technology, the nature and dynamics of costing systems have changed. In today’s business environment, the cost structure is highly complex. Traditional costing systems are ineffective in dealing with complex cost structure. This can lead to ineffective decision making process.

Previous studies demonstrated that time-driven activity based costing system is fit for ever-changing market conditions. In today’s business climate, firms’ management wants to employ a costing system that can produce accurate results for complex operations. An advanced software can make it possible.

Kaplan and Anderson (2007) state that time-driven activity based costing system is simple and one of the effective ways to get detailed information about costs incurred in production process. In the firms using time-driven activity based costing system, the consumption time of activity plays a vital role in the costing of goods and services. Inaccurate estimation of activity time could cause misleading results. Time-driven activity based costing system employs time equations for assigning the resource costs (Kaplan & Anderson, 2007).