

Chapter 12

Pervasive Computing, Firm Characteristics, and Environmental Factors Conducive to the Adoption of Activity-Based Costing: Evidence from Bahrain

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ABSTRACT

The main purpose of this study is to provide evidence on the contextual features of firms adopting Activity-Based Costing (ABC) compared to those not adopting ABC. The study examines certain organisational and business environment variables which appear to have influenced the adoption of ABC. Based on a review of the relevant literature, it is hypothesised that firm size, the amount of overhead costs, the level of product variety, production complexity, the degree of competition, and the degree of computer usage are factors which encourage firms to adopt ABC. A list of manufacturing companies operating in Bahrain (332 firms) was obtained from the Ministry of Industry. Firms with (50) workers or more were selected for the study. The reason for limiting the study to firms with this number of workers is that small firms are less likely to be able to afford the cost of adopting and implementing an ABC system and its required changes. Total of (111) firms met this size criterion and a questionnaire was developed and distributed to the entire sample. Fifty seven questionnaires were returned completed; a response rate of (51.4%). The results of the study show that a small percentage of Bahraini manufacturing companies are adopting or planning to adopt ABC systems (26.3%). There were significant relationships between the adoption of ABC and the variables selected for the study except production complexity and the degree of computer usage. The results are consistent with previous research. However, further research using a case study approach with semi-structured interviews could be conducted in those firms which claim to have adopted ABC. This approach might be fruitful and would provide more insight in identifying the characteristics of ABC companies in the Bahraini context.

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INTRODUCTION

Activity based costing (ABC) has been regarded as a management accounting innovation that has rapidly spread across many organizations, industries, and nations exhibiting different diffusion processes (Colwyn and Dugdale, 2002; Malmi, 1999; Bjornenak, 1997; Cooper 1987, 1988a; 1988b; 1989 and Cooper and Kaplan 1987 and 1988, 1988). A major benefit of ABC is that it is a tool for more accurate, relevant and reliable cost information than traditional costing systems. Moreover, it is a tool for improved cost management practices. As a result of having more accurate cost information, managers have greater confidence in the accuracy of the costs of products and services reported by ABC. This gives a more solid basis for strategic decisions such as, pricing, product retention, product mix and cost management (see for example: Innes and Mitchell, 1990, Cooper and Kaplan 1992, Garrison and Noreen, 1994 and Horngren et al. 2009). An important problem mentioned in the literature on ABC implementation is the complexity of the ABC system and the substantial costs involved in maintaining it. It requires an extensive process of training, identifying activities and cost drivers for each activity, and it may be necessary to maintain an ABC system separate from the accounting system used for external reporting purposes (Estrin et al., 1994).

Although the implementation of ABC involves certain limitations, some firms are implementing it. The characteristics of firms conducive to the adoption of ABC have received some attention in the management accounting literature. Researchers have investigated studies addressing the relationships between ABC adoption and several contextual factors such as organizational structure, product diversity and production complexity (Cooper, 1988a and 1989; Cooper 1989 and Kaplan, 1987; Baker, 1994; and Nguyen and Brooks, 1997; Bjornenak, 1997; Gosselin, 1997; Malmi, 1999 and Bjornenak and Mitchell, 2000).

Moreover, Lukka and Granlund (1999) indicate that the need for ABC systems has putatively arisen from increasingly complex production and marketing environments and from a changing cost structure which includes more indirect costs.

An increasing number of companies around the world is using ABC systems. To name a few, American Airline, Hewlett-Packard (HP), Daimler Benz, Norwegian State Railway's passenger transport, Scottish National Blood Transfusion Service, and United States Postal Service, use or have used it. A major computer company HP, realized that continuous improvement and innovation require the use of ABC. For example, more than half of net revenues are derived from products launched less than 2 years ago. The research and development (R & D) budget represented about 10% of net revenues at beginning of 1990s. Because the computer section is very competitive, HP must also reduce its costs to keep its margins up. In the past, competition was based on technological innovation, the quality of the products, and the efficiency of the resellers. Now, it is important to control costs and for this purpose to improve the traditional costing system. Managers of HP realized that competition had increased and prices were greatly reduced. Complexity became more and more important: the number of services delivered and the number of products supported increased. This created a need to improve cost measurement and to identify the most profitable products. The new management accounting system ABC would provide information to help in the conceptualization of new products (target costing), to produce at low costs and make decisions about localization of factories (Lacombe and Bescos, 2000). The strategy of HP was to advise all subsidiaries and business units to adopt ABC.

The present study seeks to focus specifically on the association between ABC adoption and certain organizational and environmental factors. Five variables are selected for the study: the size of the firm, the amount of overhead costs, the degree of product variety and production complexity, the

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