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INTEGRATION OF ACTIVITY-BASED COSTING AND TARGET COSTING -THEORETICAL STUDY

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ABSTRACT

This study aimed to explore the integration mechanism between Activity-Based Costing (ABC) and Target Costing (TC) as two modern tools for management control in economic institutions.
The study concluded that the outputs of the ABC system represented by the vast amount of information and data on various production activities could effectively contribute to the implementation Target Costing system (TC).
It recommended that economic institutions adopt an integrated costing system that combines Activity-Based Costing and Target Costing to enhance management efficiency and support cost-related decision-making.

KEYWORDS
Activity-Based Costing, Target Costing

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Introduction

The current national and international business environment is witnessing numerous rapid and continuous changes, including increasingly complex production processes, technological advancements, and intense competition. These dynamics require economic institutions to respond swiftly and strive to adapt accordingly.

In this context, the field of management control has also experienced various developments. Economic institutions no longer rely solely on traditional management control tools; instead, they have turned to more advanced techniques such as Activity-Based Costing (ABC) and Target Costing (TC).

ABC is considered one of the most important approaches in cost management due to its ability to accurately allocate and control indirect product costs. On the other hand, Target Costing is one of the key modern cost management approaches, as it focuses on reducing production costs during the design phase while ensuring quality.

Economic institutions can adopt both ABC and TC approaches when developing their costing systems. Integrating these two systems contributes to the continuous improvement of organizational performance.

Research Problem

Based on the above, the main research question of this study is formulated as follows:
How can integration between Activity-Based Costing and Target Costing be achieved?
To answer this main question, the following sub-questions must be addressed:
1. How is the Activity-Based Costing system designed within an economic institution?
2. How is the Target Costing system designed within an economic institution?
3. Can the (ABC) system be used to support the design of the (TC) system?

Significance of the Study

The significance of this study stems from the importance of both Activity-Based Costing and Target Costing as modern approaches to cost management and control. The study is also significant because it addresses a topic that has not received much attention from Algerian researchers. The integration of management control tools can contribute to the continuous improvement of the performance of economic institutions. Additionally, this study provides scientific value by offering a modest contribution and complementing previous research on the same subject.

Objectives of the Study

This study aims to:

- Highlight the two approaches: Activity-Based Costing and Target Costing;
- Examine the integration between the two approaches;
- Evaluate the performance of the"Saharan Chambers" institution using the integration between Activity-Based Costing and Target Costing.

Methodology of the Study

In the theoretical part of this study, we adopt a descriptive approach by relying on all available references related to the topic.

The tools used for data collection include:

- Various available references (books, articles, doctoral dissertations, etc.);
- Review of institutional data, including statistics from different departments and activity reports.

Chapter One: Activity-Based Costing System (ABC)

This section addresses the basic concepts of the Activity-Based Costing (ABC) system, its implementation steps, and its advantages and disadvantages.

1. Basic Concepts of the ABC System

1.1 Definition of the ABC System: There are several definitions of the Activity-Based Costing system:

Horngren defines it as a system that accumulates indirect costs for each activity within the economic institution and then allocates them to the products or services that trigger these activities. (Charles T. Horngren and al, 2014, p. 581)

Cohen views it as a method to determine the cost of all activities involved in the production process, allocating these costs in two stages: first, resources are assigned to activities based on their consumption; second, activity costs are assigned to products based on their usage. (CohenHoward, 2004, p. 01)

Moore and others define it as a method that provides more accurate information than traditional costing systems by identifying the causal relationship between resources, activities, and cost objects. (https://apps.dtic.mil/sti/tr/pdf/ADA393980, 2024)

Based on these definitions, ABC can be seen as a system for determining the cost of all activities involved in the production process. It accumulates indirect costs by activity and assigns them to products or services that drive these activities, through identifying the causal relationships among resources, activities, and cost objectives.

1.2 Assumptions of the ABC System:

The ABC system is based on a fundamental assumption that final products do not consume resources directly, but rather consume the institution's activities, which in turn consume resources. From this main assumption, the following assumptions are derived: (Al-Tikriti, 2008, p. 264).

- **Activities consume resources:** Activities are the true consumers of resources and the drivers of costs.
- **Products consume activities:** Activities link resources to cost objects, meaning products consume activities.
- **Activities serve as a link between resources and cost objects:** Therefore, multiple cost pools can be used instead of a single pool.
- **Each cost pool is driven by homogeneous activities:** Each pool is linked to one or more highly related activities.
- **Each cost pool varies proportionally with the activity:** Costs in each pool change proportionally with the activity level.

2. Steps for Implementing the ABC System

Calculating the final cost of products using the ABC system involves several steps that differ from traditional costing methods, except for the first stage which distinguishes between direct and indirect costs.: (CaroleneSelmer, 2019, p. 84) The steps include:

- Identify essential activities: Analyze the institution's structure and production process to identify key activities that contribute significantly to resource consumption. (Waleed Khaled Saleh, 2012, p. 300)
- Determine the cost of each activity: Sum all resource elements (labor, machines, etc.) used for each activity. (Mohamed Al-Sadiq Al-Fadil, 2018., p. 272)
- Identify cost drivers: These should be measurable, accessible, fairly allocate costs, and strongly correlate with the activity's cost. (Radhi, 2011, pp. 10-11)
- Group similar and related activities into cost pools: Based on shared cost drivers.
- Calculate the unit cost of each cost driver: Divide the total cost of each pool by the number of its respective cost drivers.
- Assign activity costs to products: Product cost = unit cost of each cost driver × number of drivers consumed. (Raghad Hashem Jassim Hashem, 2011, pp. 190-191)

3. Advantages and Disadvantages of the ABC System

3.1 Advantages of the ABC System: The activity-based costing method has a number of advantages, which we summarize below:

- Helps in cost reduction by eliminating non-value-adding activities. (Hallas, 2007, pp. 211-238).
- Improves decision-making through accurate product cost determination. (Kim Needy and al, 2003, pp. 3-10)
- Clarifies cost origins, supporting better resource allocation. (Ellis, 2003, pp. 330-348)

3.2 Disadvantages and Criticisms: Despite the development that the activity-based costing (ABC) system has brought about in contemporary accounting literature, and the success it has achieved over the past two decades, it faces problems and difficulties that have emerged through the application and practical application of this approach. These difficulties are represented in many aspects, the most important of which are:

- Focuses on long-term strategic decisions, whereas institutions often need short-term planning and control. (Hamed, 2007, pp. 267-269)
- Excludes some costs like marketing, R&D, and post-sale services, limiting full product cost analysis. (Damdoum, 2020, pp. 6-7)
- Cokins et al.: The system is designed for internal use and doesn't comply with GAAP, requiring dual systems. (Gary Cokins, 2010, p. 57)
- Gervais et al.: It is time-consuming and costly in data collection and processing.(Michel Gervais, 2010, p. 02)
- Al-Shaarani: Excessive focus on detail leads to a massive volume of data, without a proper framework for prioritization. (Al-Shaarani, 2010, p. 116)
- Kuchta et al.: Inappropriate allocation of some indirect costs may distort decision-making. (Kuchta, 2011, pp. 322-323)

Chapter Two: The Target Costing System

This section addresses the basic concepts of target costing, the steps for its implementation, as well as its advantages and main criticisms, followed by a discussion of its relationship with the Activity-Based Costing (ABC) system.

1. Concepts of Target Costing

1.1 Definition of Target Costing

The concept of target costing has been defined in various ways in accounting and management literature, including:

Sakurai defines it as a cost management tool that allocates the total production costs over the product's life cycle through collaboration among production engineering, design, marketing research, and accounting teams. (Sakurai, Target costing and how to use it, 1989, p. 39)

Doriath and Goujett consider it an approach that analyzes market prices and the desired profit margin to derive the cost according to the following formula: Target Cost = Market Price – Desired Profit Margin. (Brigitte Doriath et autre, 2008, p. 180).

Hilton views it as a cost management tool aimed at reducing the total production costs over the product life cycle through coordination among the different technical, marketing, and accounting departments. (Ronald Hilton, 2002, p. 987)

Kato describes it as a comprehensive cost-reduction program focused on examining all potential ideas for cost reduction at the planning, development, and design stages, while ensuring quality and meeting customer requirements. (Kato, 1993, pp. 33-47)

Synthesis of Definitions: Target costing is a strategic management tool for planning, designing, and developing a product with the aim of reducing its life-cycle costs, increasing profitability, and achieving customer satisfaction. Unlike the traditional approach, which designs the product first and then determines its cost, the target costing approach sets the allowable cost first and then designs the product accordingly.

1.2. Core Principles of Target Costing

Target costing is based on seven fundamental principles: (Mushtaq Kamel Faraj, 2010, pp. 433-434)

Price-Led Costing: Determining the target cost based on the expected market price, minus the desired profit margin.

Customer Focus: Listening to customers' needs and preferences, designing products that meet their expectations, and pricing them at an acceptable level.

Product Design Orientation: Selecting materials and components from the outset to ensure the product can be manufactured within the target cost.

Process Design Orientation: Optimizing production processes to achieve maximum efficiency by selecting the most suitable technology and resources.

Cross-Functional Teams: Engaging representatives from multiple departments—marketing, engineering, procurement, production, and management accounting—to work collaboratively on the project.

Product Life-Cycle Costing: Considering all costs incurred from product planning and design through to distribution and after-sales service, unlike traditional systems that focus mainly on production costs.

Value Chain Orientation: Reviewing the entire value chain (suppliers, distributors, customers) to identify cost-reduction opportunities and eliminate non-value-adding activities.

2. Steps for Implementing Target Costing

The application of the target costing method depends on following a set of steps, which are: (Nassima Abdelwahid, 2020, pp. 6-7) (Shawky El-Sayed Fouda, 2018, pp. 205-206)

Determining the Target Price: The price customers are willing to pay, based on perceived value and competitors' prices.

Determining the Target Profit Margin: The profit the company aims to achieve, aligned with its strategic plans and return on investment goals.

Calculating the Target Cost: Using the formula: Target Cost = Target Price – Target Profit Margin.

Comparing Target Cost to Estimated Cost: Redesigning the product if the estimated cost exceeds the target cost, or discontinuing the project if the target cannot be met. - Bridging the Cost Gap: Using tools such as Value Engineering during the design stage and Reverse Engineering during production to align actual costs with target costs.

3. Advantages of target costing and the most important criticisms directed at it

3.1. Advantages of Target Costing: The most important advantages of target costing can be presented below: (Abu Odeh, 2010, pp. 31-33)

Aligning products with the company's strategic objectives.

- Meeting customer requirements for quality and cost.
- Eliminating non-value-adding activities.
- Enhancing teamwork across different departments.
- Improving interaction between the internal and external environment.

- Reducing costs to achieve a competitive advantage
- Adopting a realistic approach that considers all cost-influencing factors.

3.2 Main Criticisms of Target Costing: Despite the many advantages of target costing, it faces some criticisms that revolve around the difficulty of managing it to achieve the target cost, including**:** (Tsuneo Yoshikawa, 1993, p. 16) (Talal Jarira, 2011, pp. 161-179)

- Ambiguity in the practical understanding of'target costing' and'value engineering'.
- Excessive time pressure on employees to meet cost targets.
- Difficulty in predicting market prices or competitor behavior.
- Uncertainty about future technological developments and customer preferences.
- Lack of detailed information about competing products.

Chapter Three: Integration between Activity-Based Costing (ABC) and Target Costing

The ABC system is based on the premise that products do not directly consume resources; rather, they consume activities, and these activities in turn consume resources. In contrast, the target costing approach determines the product cost first and then designs the product to meet this cost.

Importance of Integration: ABC provides precise data on activities, whether value-adding or non-value-adding, enabling better product design and cost reduction from the earliest stages. These data can be used in Value Engineering to eliminate unnecessary activities or choose lower-cost alternatives. Integrating the two systems supports pricing decisions, achieving a balance between competitive pricing and targeted profitability. (Sakurai, 1998, P41.)

The integration between Target Costing and Activity-Based Costing (ABC) is considered a more effective approach for dealing with the competitive environment faced by organizations. This integration leads to cost reduction while maintaining quality standards, by leveraging the shared features of both systems. Consequently, it enables more rational pricing decisions, increases the market share and profitability of the organization's products, and ultimately contributes to improving the financial performance of economic enterprises. (Fahmi, 2012, p. 158)

The ABC system supports and complements value engineering efforts—one of the tools that assist in implementing target costing—through the continuous search for and reduction of waste in operational activities. The outputs of the ABC system can be utilized in applying value engineering to reduce product costs by managing the activities involved in the production process. This can be achieved either by reducing the activity through lowering the effort and time required to perform it or by eliminating non–value-adding activities before, during, and after the production process. Cost reduction can also be attained by selecting the least costly method in product or process design. (Abdallah, 2014, pp. 197-198)

It can be said that applying activity-based costing provides the institution's management with the necessary and accurate information about all stages and activities of the production process, as well as the various cost drivers. This helps to avoid the random allocation of costs to different products. All of this facilitates the institution's adoption of the target costing approach, as it becomes easier in this case to determine a competitive price, maintain a reasonable profit margin, and provide a clear view of the cost of products or services, thereby supporting decisions in determining the optimal mix of products or services. (Abu Awad, 2008, p. 68)

Conclusions

Findings: Following the study, the researcher reached a set of findings, which are summarized as follows:

- The limitations of traditional management control tools, such as cost accounting, dashboards, and budget forecasts, in keeping pace with developments in the economic environment, have obliged organizations to adopt modern tools such as Activity-Based Costing and Target Costing.
- Economic enterprises can evaluate and improve their performance using a set of management control tools in the form of an integrated system, rather than relying on a single tool.
- Relying on the Activity-Based Costing system and its outputs, which include a massive amount of data and information about various production activities, such as activity volume, activity cost, cost drivers, final cost, and the analytical result of each product—can support value-engineering efforts, one of the key tools for implementing Target Costing. This is achieved by identifying the efficiency of activities and classifying

them into value-adding and non-value-adding activities, enabling the organization to eliminate or replace the latter. This contributes to making appropriate production and pricing decisions, thereby improving the financial performance of the economic enterprise.

Recommendations

Based on the findings, a number of recommendations and suggestions are proposed, which are deemed necessary for improving the performance of economic enterprises:

- The need to bridge the gap between scientific research and practical reality by organizing seminars and training sessions for the technical and administrative staff of Algerian enterprises.
- Algerian economic enterprises should adopt a cost accounting system based on recognized scientific principles.
- Modern management control tools should be employed when carrying out performance evaluation and improvement procedures.
- The integrated system that combines Activity-Based Costing and Target Costing should be utilized to its full potential.

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