

## A Study on Activity Based Costing at Muthu Shri Chakra Packaging Pvt Ltd

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### ABSTRACT

This study explores Activity-Based Costing (ABC) at Muthu Shri Chakra Packaging Pvt. Ltd., a leading manufacturer of packaging materials in Pondicherry. The primary objective of this research is to analyze how ABC can be effectively adopted to allocate overhead costs to products and activities based on their actual consumption. The secondary objectives include examining the factors influencing ABC implementation, the challenges faced, and providing recommendations for improvement.

The company, which operates under ISO standards and focuses on quality control, has seen consistent growth in production across various product lines such as tarpaulins, polythene films, and pouches between 2021 and 2023. Through ABC analysis, the study identifies key cost drivers—machine setup, quality control, and packaging—highlighting areas for potential cost reduction.

The results suggest that while production volumes have increased, labor and machine setup have not escalated at the same rate, demonstrating operational efficiency. The findings emphasize the importance of accurate resource allocation and the elimination of non-value-added activities to improve profitability. The study concludes by recommending continuous refinement of the ABC system to keep pace with production changes and enhance decision-making in resource management.

**KEY WORDS:** ABC analysis, overhead costs, resource allocation, non-value added activities, cost drivers, production

### INTRODUCTION

In a business organization, the ABC methodology assigns an organization's resource costs through activities to the products and services provided to its customers. ABC is generally used as a tool for understanding product and customer cost and profitability based on the production or performing processes. As such, ABC has predominantly been used to support strategic decisions such as pricing, outsourcing, identification and measurement of process improvement initiatives.

With ABC, a company can soundly estimate the cost elements of entire products, activities and services, that may help inform a company's decision to either:

- Identify and eliminate those products and services that are unprofitable and lower the prices of those that are overpriced (product and service portfolio aim), or
- Identify and eliminate production or service processes which are ineffective, and allocate processing concepts that lead to the very same product at a better yield (process re-engineering aim)

**REVIEW OF LITERATURE:****Ahmad Yahiya Ahmad Bani Ahmad and Abedalqader Rababah(2014)**

This article states the factors which drive manufacturing organizations to implement/adopt ABC. The authors conducted semi structured interviews with Manufacturing companies to find out the factors impacting the adoption and implementation of ABC. The research revealed that, globalization of consumers, increased competition, growing costs, allocation problems, inability of the traditional cost systems to provide relevant information in the 27 new business environment and financial crisis were the driving factors for organizations to implement ABC. Moreover, they found that the success of the implementation largely depended on top management support, non-accounting people's ownership and participation in the process, higher information technology and education about the benefits of ABC.

**Rainer Lueg and Niklas Storgaard(2017)**

The paper examines existing research on how organizations adopt and implement activity-based costing (ABC). It highlights that most studies focus on identifying technical, behavioral, organizational, and contextual factors that contribute to the successful adoption and implementation of ABC. Factors like support from top management, implementation training, involvement of non-accounting personnel, and the size of the business have been identified as significant, but the findings are often inconsistent. Some studies question the straightforward adoption process assumed by these factors, suggesting that it involves complexities such as power struggles, legitimacy issues, and external pressures from institutions. To address gaps in the research, the paper proposes a future agenda. This includes exploring ABC adoption in new geographical and organizational contexts, developing updated frameworks for factor-based studies, and adopting alternative research approaches to better capture the complexities of the process.

**Angels Ninerola and Maria Victoria(2023)**

This article presents a comprehensive analysis of research on Activity-Based Costing (ABC) over a 32-year period (1988–2019). ABC is a method used for determining costs, and while it has been widely applied for over three decades, few studies have systematically reviewed its academic publications. The study examined 1,260 articles from the Scopus database to explore trends, key contributors, and research methodologies. The analysis included descriptive (e.g., publication trends, influential journals, leading authors, and countries), relational (e.g., citation patterns, co-authorships), and content-based aspects (e.g., keywords and research objectives). It categorized ABC research into twelve themes, showing that interest in ABC continues to grow, particularly in sectors like healthcare and manufacturing, where it has practical applications. The most common research method identified was case studies, and the United States emerged as the leading contributor in terms of academic output and citations. Overall, the study offers valuable insights for professionals, business managers, and academics, while also suggesting future research directions in ABC.

**Ayad Raheem Jalfan and Amer Mansoor Hasoon(2023)**

This abstract discusses the challenges faced by industrial entities in Iraq, particularly in competing with imported products. These challenges include high production costs, insufficient market research, a lack of government support for the manufacturing sector, and the oversaturation of local markets with cheaper imported goods. Additionally, many of these entities rely on outdated methods for calculating product costs, which do not provide accurate information for making pricing decisions. To address these issues, the study focuses on implementing modern technologies, specifically Activity-Based Costing (ABC), to help reduce costs and improve competitiveness. The research examines the application of ABC in a case study of Al-Raklim Factory, demonstrating that the technology effectively lowered costs by allocating indirect costs more fairly and objectively. This resulted in a cost reduction of 67,420,602 Iraqi dinars for the factory's main activities, all while

maintaining product quality and enhancing customer satisfaction. The study highlights the potential of ABC to provide more accurate cost information and support better pricing strategies, ultimately helping industrial entities compete more effectively.

#### **Jalalbadi and Faryan(2018)**

Activity-based costing (ABC) is a method of assigning costs to the activities and resources involved in delivering goods and services. In the healthcare sector, this approach can help identify inefficiencies and reveal unused capacity, enabling hospitals to provide more value-driven services. ABC is flexible and can be tailored to measure costs based on relevant production factors. Time-driven activity-based costing (Td-ABC) is an advanced version of this method, combining aspects of fee-for-service and capitation models to move toward a value-based care system. In this model, healthcare providers are rewarded for efficient practices and positive patient outcomes while being discouraged from incurring unnecessary costs or delivering poor results. Despite its benefits, implementing ABC carries risks and potential downsides. It requires careful application to avoid harming the organization. This abstract reviews research on the use of Td-ABC in healthcare, focusing on its implementation, medical applications, and both its advantages and challenges.

#### **Sophie Hoozee and Stephen C.Hansen(2017)**

The abstract explains the evolution of cost accounting methods and the comparison between two specific approaches: Activity-Based Costing (ABC) and Time-Driven Activity-Based Costing (TDABC). Traditional Cost Accounting (TCA), commonly used until the 1980s, became inadequate due to its inability to provide accurate information about profitability in complex and diversified business environments. ABC emerged as a solution by focusing on the costs of activities involved in producing and supporting products. However, it has limitations, particularly in addressing unused capacity, which is crucial for forecasting. The study aims to compare the advantages of ABC and TDABC in sustaining effective costing practices. Data was collected from an electronics manufacturing company in Pahang, focusing on a magnetic inductor product. ABC assigns costs based on activities, while TDABC incorporates time equations and capacity cost rates to account for unused capacity. The comparison covers various factors, including cost allocation, determination of drivers, handling additional activities, implementation costs, system updates, and the ability to forecast and plan capacity. The study highlights that both methods have their strengths, with their effectiveness depending on the specific needs of the industry. It concludes that TDABC offers more transparency and capacity planning capabilities, while ABC provides a robust activity-based focus.

### **OBJECTIVE OF THE STUDY:**

#### **PRIMARY OBJECTIVE:**

- To study on ABC adopted at M/S Muthu Shri Chakra Packaging Pvt Ltd

#### **SECONDARY OBJECTIVE:**

- To study the implementation of ABC analysis in M/S Muthu Shri Chakra Packaging Pvt Ltd.
- To find out the various factors influencing ABC analysis.
- To analyze the issues occurred through ABC analysis.
- To provide valuable suggestions & recommendations adopted at M/S Muthu Shri Chakra Packaging Pvt Ltd

## RESEARCH METHODOLOGY

### TOOLS USED:

#### Regression Analysis:

Regression analysis is a set of statistical methods used for the estimation of relationships between a dependent variable and one or more independent variables. It can be utilized to assess the strength of the relationship between variables and for modeling the future relationship between them. Here, to measure the dependency the production is taken as X and machinery is taken as Y. The dependency of production on machinery is analyzed and drawn the output. For this 3years data is taken from the cost sheet and cost methods of the company. The 3 years data's are used for regression analysis.

#### Trend Analysis:

Trend analysis is a technique used to examine and predict movements of an item based on current and historical data. We can use trend analysis to improve the business using trend data to inform your decision-making. The 2 years data's are used to compare the activities like machinery setup, quality control, and packaging costs of the company.

### LIMITATIONS OF THE STUDY:

- The duration of the study is limited. So it may not be able to cover the past few years of report.
- The only three-year report need to analyze if have more time to dig into the past ten years to identify the trends.
- It can be easy to learn in theory, but difficult to implement in practice.

### DATA ANALYSIS AND INTERPRETATION:

#### REGRESSION:

TABLE 1

#### TARPAULINS

YEAR	PRODUCTION(X) (metric tons)	MACHINE SETUP(Y)	r= (Y on X)	r= (X on Y)
2021	10,080	4	0.000297	3360
2022	13,440	5	0.000297	3360
2023	16,800	6	0.000297	3360

**TABLE 2**

**POUCHES**

YEAR	PRODUCTION(X) (metric tons)	LABOUR(Y)	r= (Y ON X)	r= (X on Y)
2021	3360	6	0.00114	840
2022	6720	9	0.00114	840
2023	8400	12	0.00114	840

**TABLE 3**

**POLYTHENE FILMS**

YEAR	PRODUCTION(X) (metric tons)	MACHINE SETUP(Y)	r= (Y on X)	r= (X on Y)
2021	10,080	5	0.000148	6686
2022	10,080	5	0.000148	6686
2023	16,800	6	0.000148	6686

**TREND ANALYSIS:**

**TARPAULINS**

**2021**

**TABLE 4**

ACTIVITY	TOTAL COST	COST PER DRIVER UNIT	PRODUCT COST (Per metric ton)
MACHINE SETUP	250000	62500	190000
QUALITY CONTROL	200000	547	160000
PACKAGING	250000	25per unit	220000

## TARPAULINS

2022

**TABLE 5**

ACTIVITY	TOTAL COST	COST PER DRIVER UNIT	PRODUCT COST (per metric ton)
MACHINE SETUP	300000	60000	200000
QUALITY CONTROL	170000	465	100000
PACKAGING	260000	19per unit	180000

### FINDINGS:

- Findings of the study states that the polythene films production in the year 2023 remains steady at the machine setup in the year 2023 remains the same. It is noted that the role of machine has less dependency on production.
- The analysis of the study intimates that production get increased from year to year.
- From the findings of pouches noted that the production of pouches has increased to 8400in 2023 to 3360units.
- The study highlights that product cost found to be higher.
- From the analysis it is found that cost per driver unit remains stable.
- Increased production was achieved without a proportional increase in labor or machine setup, indicating operational efficiency.
- The use of ABC analysis highlights that machine setup, quality control, and packaging are major cost drivers.

### SUGGESTION:

- The company can ensure that cost drivers selected for activities are accurate and reflect the actual consumption of resources. For example, explore whether labor hours or production volume better aligns with specific activities like quality control and packaging.
- Introducing additional drivers can be done if existing ones do not fully capture variations in activity costs.
- Organization can identify and eliminate non-value-added activities revealed by ABC analysis to reduce unnecessary costs. For instance, evaluate if certain machine setups or quality control checks can be streamlined without compromising quality.
- Organization can use the insights from ABC analysis to allocate resources more effectively. For instance, shift resources from less critical activities to high-impact areas like innovation and process improvement.
- Regularly update the ABC system can be done which reflect changes in resource usage patterns due to production scaling or process changes.
- Implementation of a dynamic ABC model can be done that can adapt to variations in production volume, labor, and machine setup which will ensure costs are accurately assigned during periods of fluctuating demand.
- Organization can establish a periodic review process to update activity cost pools and drivers to account for operational changes.

- Organization can encourage cross-departmental collaboration to gather feedback on ABC implementation and refine methodologies.

## CONCLUSION:

Consistent growth and operational efficiency, supported by its focus on quality, customer satisfaction, and sustainability. The adoption of ABC analysis has provided insights into cost management, contributing to improved profitability. To maintain its competitive edge, the company should continue investing in technology, sustainability, and employee development. By addressing the suggestions above, a stronger position can be established in the packaging industry while staying aligned with global trends and customer expectations.

## BIBLIOGRAPHY:

- Sophie Hoozee, Stephen C. Hansen A Comparison of Activity-Based Costing and Time-Driven Activity-Based Costing Journal of Management Accounting Research, Vol. 30, Issue 1, pp. 143-167, 2018
- Jalalbadi and Faryan Activity-Based Costing Faryan Jalalabadi et al. Semin Plast Surg. 2018 Nov.
- Ayad Raheem Jalfan and Amer Mansoor Hasoon(2023) COST REDUCTION USING ACTIVITY-BASED COSTING (ABC) TECHNIQUE (AN EMPIRICAL STUDY IN AL-RAKLIM FACTORY / BABEL TIRES FACTORY)
- Maria Victoria and Angels Ninerola After 30 Years, What Has Happened to Activity-Based Costing? A Systematic Literature Review June 2023 13(2) DOI:10.1177/21582440231178785 LicenseCC BY 4.0
- Rainer Lueg and Niklas storgaard Activity-Based Costing: A Synthesis of Findings on Its Adoption and Implementation 26 Pages Posted: 20 Oct 2017
- Cost Accounting-T.S. Reddy and Y. Hari Prasad Reddy
- Research Methodology-R. Pannerselvam