

Review Article

The role of activity-based costing systems in enhancing the competitiveness of small and medium-sized enterprises (SMEs)

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Abstract: In contemporary Thai society, small and medium-sized enterprises (SMEs) face increasingly fierce competition and rapid economic changes. Businesses need to adapt by adopting technology and developing management systems related to cost control and analysis to enhance their competitiveness. SMEs play a vital role in supporting Thailand's economic stability by generating income, creating jobs, and improving the quality of life for its citizens. SME owners should prioritize reducing the costs of non-value-adding activities while simultaneously improving the quality of their products and services. Activity-Based Costing (ABC) is a crucial tool for SMEs to improve their competitiveness by shifting from traditional costing to calculating costs based on actual activities. This reveals the true cost of goods and services, reduces hidden costs, and decreases the costs of non-value-adding activities, leading to more appropriate pricing. This concept can be integrated through the ABC-S (Activity-Based Costing for Strategy) model, which systematically explains the linkages from activity analysis leading to accurate budgeting, efficient cost control, and ultimately creating a strategic advantage. This process demonstrates that using ABC not only helps SMEs "see true costs" but also enables them to "control costs and make accurate decisions." And to compete sustainably, this is considered important knowledge that helps enhance the potential and competitiveness of small businesses in the long term.

Keywords: Activity-based costs; competitiveness; small businesses; SMEs

1. Introduction

During the year 2025, continuing into 2026, Thailand's small and medium-sized enterprises (SMEs) will be in a transitional phase, moving from recovery and adaptation to clearly defining their strategic direction. In a highly competitive and rapidly changing economic environment. Therefore, entrepreneurs need to focus on efficient operations. Value for money and the speed at which one responds to market demands. Especially in business sectors with high growth potential. such as Smart agriculture high-value food Specialized logistics Healthcare services and digital solutions. However, Defining appropriate strategies. such as Using cost data accurately. Choosing a clear target market. Applications of technology and creating added value. These are all important factors for competitiveness and sustainable growth [1], which is consistent with Thanyathorn Sriwichien and colleagues [2] pointed out that effective management and the use of complete data. Especially accounting information. It plays a crucial role in business decision-making. Although external factors cannot be directly controlled.

The above context the application of Activity-Based Costing (ABC) is a key approach to improving the efficiency of business cost management. SMEs, because they can clearly reflect the true costs of the activities that take place. Unlike traditional costing systems, which may lead to discrepancies. This is especially true in businesses with a diverse range of products and operational processes. Using the system. ABC helps entrepreneurs analyze their cost structure. Identify and reduce activities that do not generate value. Improve operational processes. And they can set appropriate prices for their products. It also supports strategic decision-making. such as Product development Customer selection and planning the long-term direction of the organization [3]. Consistent with Chaisit Lim [4]. It is stated that using

an activity-based costing system helps reduce errors in cost calculation. And promote effective and competitive pricing.

So, Implementing activity-based costing in business. SMEs are therefore a key mechanism for improving management efficiency. Support decision-making based on accurate information. And to strengthen the competitiveness of businesses so that they can grow steadily and sustainably in a constantly changing economic environment.

2. Concept and theories about costs

In small business operations, one aspect of entrepreneurial success is cost management. There are several concepts and theories related to cost, including.

2.1 The meaning of the word cost

Chaisit Saelim [4] and Wanida Veerakiat [5], according to the definition of the Certified Public Accountants Association of Thailand, define cost as the value of resources or expenses that a business uses or loses to obtain goods or services. This may be in the form of cash, assets, services, or liabilities, including losses that can be measured in monetary terms. Cost is considered crucial accounting information for organizational management, playing a role in planning (such as budgeting, pricing, and profit forecasting) and control (comparing performance to planned objectives to evaluate and improve operational efficiency). Furthermore, cost accounting systems systematically collect, record, and allocate costs to various departments or activities to support optimal operational efficiency and enable management to make appropriate decisions. The nature of costs varies depending on the type of business.

From the above definitions, it can be concluded that cost refers to the expenses or value of resources that a business must use or lose to obtain goods and services. This is important information for business planning, control, and decision-making, playing a vital role in the success and sustainability of an organization.

2.2 Cost Classification

From studying the concept of cost classification, several scholars have mentioned that cost classification is an important tool that helps managers to analyze and use cost information appropriately. Prapaporn Kiattikulwattana [6] classified costs into 2 main types: product costs, which are related to the production of goods, and period costs, which are expenses not related to production and become useless in the accounting period. While Rattana Wongrasmeeduang [7] proposed cost classification from a more diverse perspective, dividing it into 5 types: (1) classification for preparing financial statements, (2) classification for planning and control. such as Variable and Fixed Costs (3) Classification by Function such as Production costs and non-production costs (4) Classification by time period such as Actual cost and standard cost. and (5) classification for decision making. such as sunk costs Cost difference and the opportunity cost is consistent with... Supranee Sukrasanee [8] explained that cost classification can be considered from multiple dimensions. namely According to job duties. Cost behavior the relationship with what needs to be costed. Power of control and its application in decision-making. This is consistent with the concept of management accounting.

Based on the study above. It can be concluded that: Cost classification can be done in several ways, depending on the purpose of use. Whether it's for the purpose of preparing financial statements. Planning and control Analysis based on function or time period. And for making business decisions. Proper cost classification helps managers analyze data effectively. This leads to making the right and appropriate decisions based on the organization's situation.

3. Concept and the theory of activity-based costing

Kaplan and Cooper [9]. It has been said that: A drawback of traditional costing is that it distorts the true cost of a product or service. In the year... 1988 Professor Roberst S. Kaplan and Professor Robin Cooper published his concept of the fundamental cost of an activity in a journal. The Harvard Business Review, and since then until the present day, has published numerous articles supporting the concept of activity-based costing, both in theory and practical application, widely throughout the world, including in Thailand. In accordance with the Warot Wongba [10] and Kanyanut Sukcharoen [11]. Businesses producing goods and services have increasingly applied activity-based costing concepts. Activity-based costing is an evolution of cost management. The organization's operations are divided into different activities. etc. This will help to understand what activities make up the operation of the event. As well as the time spent on each activity, which can be summarized as follows: Activity analysis Identifying activity costs. This refers to the total resource cost used in carrying out that activity. Identifying performance indicators. It involves the cost per output, the proportion of time spent, and

the quality of the output combined. Identifying the correlation between the outcomes of each activity and the cost drivers is crucial information for controlling and reducing business costs. It is also used as a basis for calculating the cost of various activities. etc. It can also be used as a supplement.

3.1 Definition of activity-based costing

Wanida Veerakiat [5] It has given meaning. Activity-based costing It is used to determine the production cost rate. Allocated based on different activities. etc. That occurs in the manufacturing process of each type of product. By using the activity-based cost driver. etc. It serves as a criterion or basis for allocating production costs.

Kalyanee Kittichit et al. [12] stated that Activity-Based Costing (ABC) is a method for measuring the cost of cost objects, as well as the performance of processes, using activities as a basis. Developed by Robert S. Kaplan, Robin Copers & James A. Brimson in the 1980s, its aim was to encourage managers to pay attention to managing activities and related costs. It is widely accepted that ABC provides more accurate cost calculations than traditional costing methods, which have shortcomings. Traditional methods used production volume or direct labor hours as the basis for allocating manufacturing overhead, resulting in higher overhead for mass-produced goods and neglecting the activities involved in the production of each product, which have unique production processes. This leads to distorted costs and insufficient information for managers regarding the causes of costs.

Pojanee Silakham [13] The allocation of manufacturing overheads as product costs using the activity-based costing system is a method of determining the rate of manufacturing overheads, allocating them according to the activity base of the production process defined by the business, using the cost driver of that activity as the criterion or basis for allocation.

Based on the definitions from various scholars, it can be concluded that activity-based costing is a cost calculation method that focuses on allocating production costs according to the activities that actually drive the production process of goods. Using cost drivers as a basis for distributing costs across different products. This allows for a more accurate reflection of costs than the traditional activity-based costing method. This helps management clearly understand the sources of costs. The performance of various activities can be analyzed. etc. And use the information in planning. control And make more effective business decisions.

3.2 Principles of Activity-Based Costing

Anurak Thongsukhowong [14] stated that activity-based costing is a method of calculating costs based on the use of organizational resources in various activities that result in the creation of products. This includes both production activities and supporting activities that enable operations to proceed. The process of activity-based costing consists of two main steps: 1) Grouping similar activities into activity-based cost groups involves allocating expenses from similar activities into these groups. If a cost arises from a single activity, it can be directly allocated to that activity. However, if a cost arises from multiple related activities, it must be allocated to specific activities using an appropriate allocation criterion. If allocation based on specific activities is not feasible, personal judgment may be used to select an allocation criterion. 2) Identifying cost factors in each activity and assigning them to the product is a cost management system that links activity-based costing data. It identifies the various resource costs used in each activity and links them to the costs that result in the product. For example, the cost of modifying a product design is allocated to the product based on the number of modifications performed. Therefore, the more usage or operation of the activity, the higher the cost allocated. The more of that activity, the higher the cost allocated to that product will be.

Thares Santatiwongchai et al. [15] stated that: To achieve cost reduction through event management strategies. There are four ways to do this: 1) Activity Elimination focuses on cutting out activities that do not add value. Because it is an activity that increases costs but does not add value to the product. A business may not be able to eliminate all non-value-adding activities. Minimizing non-value-adding activities and continuously reducing non-value-adding activities. This enables sustainable cost reduction of low-quality products. 2) Activity Selection Competitive strategies in the production of different types of products utilize different groups of activities. such as Different product design strategies. This will result in different costs as well. So, Product design should select a design that uses the set of activities with the lowest cost. By using existing activities. Because the employees are already very familiar with the process. And ultimately, this led to a cost reduction (3). Activity Reduction It reduces the number of times you do the activity. This includes reducing the time and resources spent on each activity. In order to reduce costs. And this leads to improvements in activities that do not add value. Before eliminating that activity. Such as Machine setup activities to reduce time and resources. This

reduces the uptime of the machinery. And overall costs decreased by (4). Activity Sharing This leads to economies of scale, specifically the ability to increase the quantity of cost drivers without increasing the cost of the activity itself. Ultimately, this will reduce the unit cost the cost driver that is allocated to the product or service. such as Designing a new product. This makes it possible to use parts that are intended for use in the production of other products. Without changing the set of activities in production. And it reduces overall costs.

3.3 The difference between traditional production costs and activity-based costs

Wanida Veerakiat [5] stated that traditional production costing calculates costs by combining actual direct materials and direct labor with manufacturing overheads allocated according to production volume criteria. Such as number of production units labor hours or machine hours. This may involve using a single rate or multiple rates depending on the department. Including the various expenses. etc. Such as indirect materials indirect labor costs utility bills and depreciation. It will be incorporated and distributed into the product. This results in production costs derived from " direct materials + direct labor + allocated manufacturing overhead ". However, This method may not reflect the true cost in cases where there is a wide variety of products. While activity-based costing (ABC) allocates production costs according to the activities that drive the costs. Using cost drivers as a benchmark. This allows for more accurate cost calculations. It also helps managers gain a clearer understanding of the cost structure of each product.

3.4 Advantages and disadvantages of activity-based costing

Activity based costing theory [16] discussed the advantages and disadvantages of activity-based costing.

Strength It can be divided as follows:

- 1) Helps to ensure the accuracy of product/service cost calculations.
- 2) Supports the continuous development of activities.
- 3) Helps in measuring the performance of the business.
- 4) Helps to reduce costs and expenses.
- 5) Helps in supporting decision-making.

Weakness It can be divided as follows:

- 1) It is costly because it requires creating a flowchart showing the production process broken down into various activities.
- 2) You must find documents or records detailing the relationship between cost drivers and every activity. This results in wasted expenses and time.

4. Concept and theories related to cost-effectiveness analysis. And value for money

In addition to calculating production costs, small businesses must also conduct a cost-benefit analysis. And cost-effectiveness, so that businesses know how much product they need to sell and at what price. This will allow you to achieve the desired profit and serve as a useful tool for business planning. Investment decision and performance evaluation, concepts and theories regarding cost-effectiveness analysis. And the value for money is as follows:

4.1 The meaning of the break-even point

Kanokphem and Rachasorn [17] mentioned that "break-even point" means the level of sales that neither results in profit nor loss for the business. That is, Total revenue point Equal to the total cost. Or it is the point where profit equals zero. So, the management knows how much merchandise they need to sell to break even and how much merchandise they want to sell. To achieve the desired profit, the American Small Business Administration [18] states that the break-even point is the level at which total revenue equals total costs. It makes the business neither profitable nor losing money. This is a key indicator in business planning. This is especially true for new businesses, where investors want to know when they will start generating returns. Even though it may incur losses initially before reaching the break-even point. In addition, for existing businesses. The break-even point also helps in analyzing costs. Estimate profit from sales. And it is used to plan business recovery during a crisis. The study concludes that the break-even point... It is the sales volume level at which total revenue equals total costs. This resulted in the business neither making a profit nor incurring a loss. Or have zero profit. This is an important indicator that helps management know how much merchandise they need to sell to avoid losses. And how much more sales need to be increased to achieve the profit target? It also plays a role in business planning. This is especially true for new businesses that need to assess the payback period. This also includes helping to analyze costs. Assess profitability. It can also be used as a guideline for adjusting strategies or revitalizing businesses during times of difficulty.

4.2 Break-even analysis methodology

Kalyanee Kittichit [12] stated that break-even analysis is a part of cost-relationship analysis. amount and profit. This type of analysis is widely used because it allows managers to use the results as supporting information for various decision-making processes. such as Sales planning to avoid losses, controlling production costs and operating expenses. Improving the efficiency of production processes, for example.

There are three ways to perform break-even analysis.

1) Equational Method: From the definition of the break-even point above, it can be seen that the break-even point is the point where operating profit is zero. This is the point where sales equal total expenses. The expenses can be divided into two parts: Variable expenses and fixed expenses. So the break-even point can therefore be written as an equation as follows:

Equation 1	$\text{Sales} = \text{Total Variable Expenses} + \text{Total Fixed Expenses}$
Equation 2	$\text{Sales} = \text{Selling Price per Unit} \times \text{Quantity Sold}$
Equation 3	$\text{Total Variable Expenses} = \text{Variable Expenses per Unit} \times \text{Sales Quantity}$

Substituting equations 2 and 3 into equation 1, we obtain equation 4 as follows:

$$(\text{Selling price per unit} \times \text{Sales quantity}) = (\text{Variable cost per unit} \times \text{Sales quantity}) + \text{Total fixed costs}$$

Substituting all the variables into Equation 4, we obtain the following equation:

$$PQ = VQ + F$$

Where	Q	=	Quantity sold/Quantity produced (units).
	P	=	Selling price per unit
	V	=	Variable cost per unit
	F	=	Total fixed costs

2) The excess profit method: This method uses the gross profit per unit figure in the calculation. By applying the concept of cost-relationship analysis. amount and profit. That said the profit from each unit sold will be used to offset fixed expenses. So when a business is able to sell more products until its gross profit equals all fixed expenses. on This level of sales volume will result in neither profit nor loss; it is called... That's the break-even point. So on break-even point it can be written as an equation as follows:

$$\text{Gross Contribution} = \text{Total Fixed Costs}$$

Where on Break-even point Total excess profit equals Sales volume on Break-even point Multiply by Contribution per unit so Calculating sales volume. On Break-even point Therefore, the gross profit per unit is divided by the total fixed expenses, resulting in the following formula:

$$\text{Sales at break-even point (units)} = \frac{\text{Total fixed expenses}}{\text{Contribution margin per unit}}$$

To calculate the break-even point, you need to use the contribution margin formula as follows:

$$\text{Sales at break-even point (Baht)} = \frac{\text{Total fixed expenses}}{\text{Contribution margin}}$$

3) The graphical method shows the relationship between cost, volume, and profit at different sales volume levels and at the break-even point. A graph showing this relationship is called a Cost-Volume-Profit Graph (CVP Graph). According to the graphical method, a total revenue line and a total expense line must be constructed. The point where the total revenue line intersects the total expense line is called the break-even point. It's called break-even point because it is the point at which total revenue equals total expenses, there is neither profit nor loss.

4.3 Cost-effectiveness analysis theory

Yaowaret Thapphan [19] Economic project evaluation is a process used to analyze the cost-effectiveness of a project by systematically considering both the costs and benefits involved. It covers all aspects, including the economy, society and the environment. With key points related to the concept, theory step And methods for evaluating projects. As follows:

1) Cost - Benefit Analysis (CBA) compares costs and benefits by converting everything into monetary terms. To see if the project is worthwhile. If the benefits outweigh the costs, it's worth investing.

2) Cost Minimization Analysis (CMA) is used when the results of each alternative are "exactly the same". The option with the lowest cost will be chosen. Because it yields the same results but is more economical. 3) Cost Effectiveness Analysis (CEA) with results measured in "effectiveness units". Such as number of beneficiaries or the health outcomes. Without converting the results into money, 4) Cost - Utility Analysis (CUA). CUA is similar to... CBA, but use... Utility or quality of life? It is a suitable performance indicator for public health work. Because it reflects both the quantity and quality of life of those who benefit.

5. Concept And theories about small and medium-sized enterprises (SMEs)

5.1 Definition of Small and Medium Enterprises (SMEs)

Thanes Heng Trakulsin [20] stated that business SMEs (Small and Medium Enterprises) are also known as... "Small and medium-sized enterprises" Small and medium-sized businesses in most cases, these are sole proprietorships. Or it could be a small group within the family. In line with Chakorn Lertnitat [21] defined the size of enterprises into 3 sizes. Micro, Small, and Medium Enterprises (MSME).

1) Small and medium-sized enterprises (SMEs) Businesses with annual revenue not exceeding 1.8 million baht. And the employment of no more than 5 people.

2) Small and medium-sized enterprises (SMEs) Businesses with annual revenue not exceeding 100 million baht. And the number of employees does not exceed 50.

3) Medium-sized enterprises Businesses with annual revenue not exceeding 100-500 million baht. And the employment of no more than 50-200 people.

5.2 Business Strengths Small and medium-sized enterprises (SMEs) compared to large businesses

Krung Thai Bank [22] stated that the business SMEs are small and medium-sized businesses that operate with relatively low investment but contribute significantly to the continuous growth of the country's economy. It's because of business. SMEs have advantages over large businesses in many areas. is

1) Flexibility business SMEs have a structured and uncomplicated management system. Executives can make decisions quickly. We are ready to adjust our work plans at any time. Therefore, it is keeping pace with the changes of the modern world.

2) Ability to reach customers. business SMEs have easier access to customers than large businesses. Building good relationships is what leads to... business SMEs gain trust. And they maintain a good customer base.

3) Opportunities for new business ventures. etc. business SMEs are businesses where entrepreneurs can fully utilize their creativity. And you can also find a wide range of business ideas. Ready to test a small business model. etc. Before taking action and achieving success.

4) It is an organization of young business people. SMEs meet the needs of the new generation of workers. Independent And they want flexibility in their work. Therefore, young people are choosing to start their own businesses. SME (Small and Medium-sized Enterprise) or partnering with friends to start a business. Businesses therefore have creative ideas, are modern and adaptable, and have more opportunities for growth.

5.3 Ways to Control Costs for SMEs

IFS Capital [23] stated that the advantages of cost reduction is Make your business more profitable. There are five ways to control business costs. SMEs are (1) using online marketing This helps businesses reach their target audience quickly. Reduce advertising costs. and increase the value of marketing communication (2) Determining expenses and planning the budget systematically This helps to control income and expenses and adapt to economic situations effectively (3) Accurate analysis of target customer groups. To make the best use of resources and increase opportunities for profit (4) Using technology in business operations such as digital transportation and payment systems. This helps reduce costs and increase the convenience of providing services. And (5) The exchange of goods or services with individuals or business networks. Such as social media influencers to help reduce marketing expenses. However, Effective cost management coupled with cash flow planning. This will help businesses to operate stably and sustainably in the long term, in line with the Office of Small and Medium Enterprise Promotion (OSMEP) [24], which states that the business operations of entrepreneurs many SMEs tend to focus primarily on sales. But it lacks an analysis of true profits. This could pose a risk to long-term growth. So summarizing annual costs and profits is a crucial step in developing a business in a focused and sustainable manner. This must begin with gathering complete cost data. namely Product cost wage Rental fee Marketing and advertising costs Including hidden costs. such as Shipping costs and platform fees. When the correct information is available. Entrepreneurs will be able to analyze which types of products generate the highest profits. Which sales channel provides the best return on investment? And it can identify expenses that can be reduced. in addition, summarizing costs and profits also helps to make business planning for the following year much more accurate. Both in terms of market expansion. Pricing Cost control and making decisions to invest in products with potential. In conclusion, Knowing the true profit is more important than knowing the sales figures. Because clear financial information helps entrepreneurs make effective decisions. This leads to systematic and sustainable business growth; therefore, cost management is extremely important. This will help Thai entrepreneurs identify factors that contribute to increased long-term competitiveness. It also helps entrepreneurs understand how to manage costs in a way that not only helps reduce expenses. But it can also create value for products and services. This includes strengthening sustainability in constantly changing markets and enabling Thailand to maintain its competitiveness in the global trade arena [25].

6. Summary of new knowledge

Developing cost management concepts for small and medium-sized enterprises (SMEs) by moving away from using cost data for recording and reporting past results. Moving towards use. Activity-based costing (ABC) is a strategic tool for business decision-making. With a focus on analyzing costs based on actual activities. This enables entrepreneurs to clearly distinguish between value-generating and non-value-generating activities. This results in a reduction of unnecessary costs. Control resources efficiently. And they can set appropriate prices for their products. It also helps support business planning. Product development and the ability to choose competitive strategies with greater precision. Therefore, it can be said that system integration ABC, when integrated with modern business management, is a key approach to enhancing competitiveness and creating sustainability. In the long run, activity-based costing benefits small and medium-sized enterprises (SMEs). Seeing the true costs allows for cost control. It is used to make accurate decisions. And it can compete sustainably. This concept can be integrated through the ABC-S Model (Activity – Based Costing for Strategy). Activity analysis will lead to accurate cost information. It helps to control costs effectively. And ultimately, this leads to... Strategic advantage of a business: a model. ABC-S (Activity-Based Costing for Strategic Planning) uses

activity-based costing (ABC) information to improve operational efficiency and enhance business competitiveness. SMEs, by showing the sequence of connections starting from "Activities that create added value". This provides "accurate cost information". This leads to "strategic decision - making". Create a competitive advantage by presenting an activity - based costing model, as shown in Figure 1.

The ABC-S Model dimensions play a role in enhancing the competitiveness of small and medium-sized enterprises (SMEs) as Figure 1.

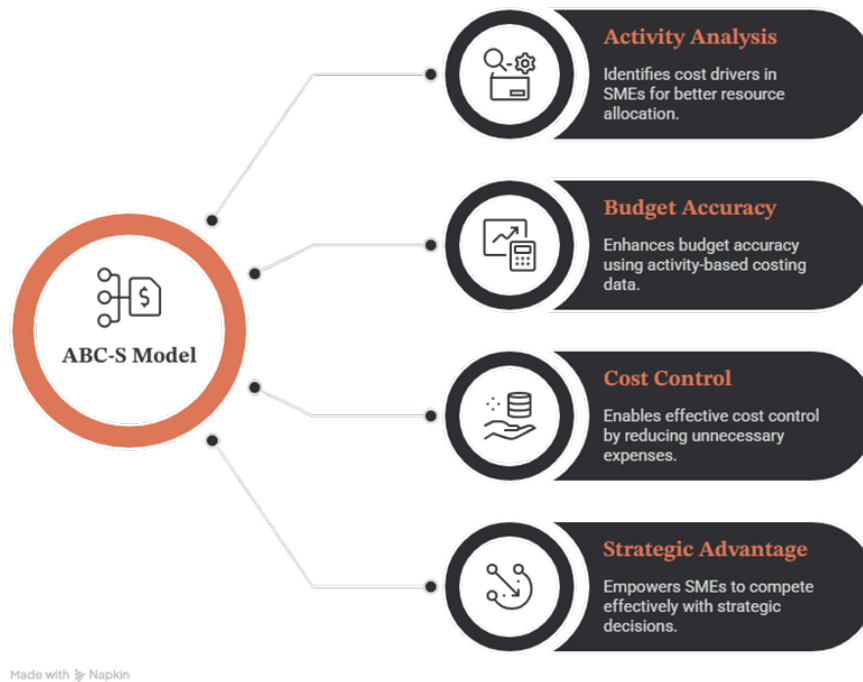


Figure 1. Dimensions The ABC-S Model plays a role in enhancing the competitiveness of small businesses. SMEs
Source: Wichchuta Sakunareungsri was created from Napkin (2026).

The ABC-S Model (Activity-Based Costing for Strategy) is a method of analyzing activities to obtain accurate cost information for business strategy planning. It helps to control costs effectively and ultimately leads to strategic advantage of the business

A = Activity Analysis is a tool for small and medium-sized enterprises (SMEs). With limited resources. Activity analysis helps business owners see "where the cost is generated." such as Preparing ingredients Customer service or the delivery of goods. This allows for a clear separation of revenue-generating activities from non-profit activities. This results in reduced waste and more targeted management.

B = Budget Accuracy. This refers to the accuracy of the budget for small businesses. SMEs often have problems with inaccurate budgeting. Using data from activity-based costing helps to make cost estimations more accurate. such as Know the true unit cost. This allows you to set prices for your products. Plan your expenses. And profit forecasts are accurate. Reduce the risk of losses.

C = Cost Control. Cost control is essential for small businesses. SMEs must closely control costs to maintain liquidity. Knowing the source of costs for each activity helps in reducing unnecessary expenses. such as Reduce redundant steps. Reduce unnecessary resource consumption. Or improve work methods to make them more efficient. Without compromising the quality of products and services.

S = Strategic Advantage. Strategic advantage is when small business SMEs have accurate and well-controlled cost data. It can be used to make strategic decisions. such as Competitive pricing Choosing to sell high-profit products. Or, selecting the right target customer group. It enables the business to compete with rivals. Despite limitations in terms of capital and business size.

7. Patents

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