Management Accountancy

Unit 15
Management Accounting Control System

Structure

- Concept of Management Accounting Control System
- Technical Considerations of Management Accounting and Control System
- The Value Chain, Total Life Cycle Costing, Target Costing, Kaizen Costing and Benchmarking

After the completion of this unit, you should be able to:

- Understand the meaning of Management Accounting Control System
- Describe Technical Considerations of Management Accounting and Control System
- Describe the concept of: The Value Chain, Total Life Cycle Costing, Target Costing, Kaizen Costing and Benchmarking

15.1 Management Accounting and Control System (MACS)

Management accounting and control systems (MACS) is a part of the global information system. In MACS, the information is collected, processed and analyzed. This information, mainly, financial and non-financial, internal and external, are disseminated to the users for planning, monitoring and control of different organizational activities, to optimize the use of resources, to support the decision-making process and to the performance evaluation process. It indicates that a management accounting control system is a logical integration of management accounting tools to gather and report data to evaluate performance of an organization. The purposes of MACS are as under:

- communicate the organization's goals/objectives to managers and employees
- managers and employees should understand and able to take the specific actions to achieve organizational goals/objectives
- communicates the results of actions across the organization
- management control system ensures to regulates and changes in the working environments

Thus, MACS provides information to monitor and assess whether the organization goal or objectives are being achieved or not.

The main objective of the MACS is to help the company's management to guide the company towards its strategic objectives, i.e., provide information to create economic value. In this sense, the MACS must be considered as a part of the more comprehensive system. It helps to manage and direct the company towards the chosen strategic and profitability objectives, as well as minimizing the business risk.

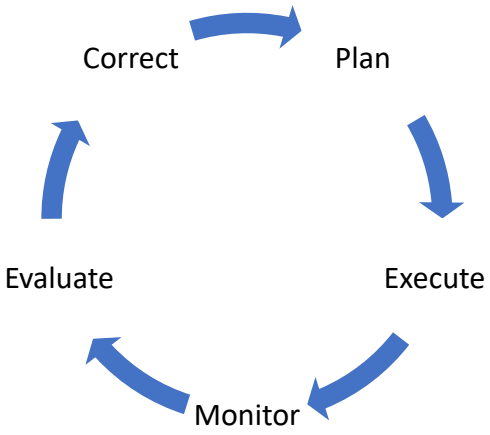

Figure 1: The Cycle of Control

According to Atkinson et al. (2014) argued that a management accounting and control system generates and uses information to help decision makers assess whether an organization is achieving its objectives. They further optioned that the term "control" in MACSs refers to the sets of procedures, tools, performance measures, and systems that organizations use to guide and motivate all employees to achieve organizations objectives. Atkinson et al. (2014) further explained that the organization must have the knowledge and ability to correct situations that it identifies as out of control; otherwise, control serve no purpose. Further, Atkinson et al. (2014) explained the process of keeping an organization in control consists of five stages, as shown in figure 1

1. Planning consists of developing an organization's objectives, identifying activities to accomplish the objectives, and selecting measures to determine how well the objectives were met.
2. Execution is implementing the plan.
3. Monitoring is the process of measuring the system's current level of performance.
4. Evaluation happens when feedback on the present level of performance of the system is compared to the planned level so that any discrepancies can be recognized and corrective action prescribed.
5. Correction consists of taking the appropriate actions to return the system to an in-control state.

Thus, The MACS can be defined as the structured and integrated system of information and processes used by management to support the planning and control activities of the organization. So, the company management able to take corrective actions on time to protect financial results of the company.

15.2 Technical Consideration of MACS

Atkinson et al. (2014), technical considerations of MACS fall into two categories: (1) the relevance of the information generated and (2) the scope of the system as shown in figure 2.

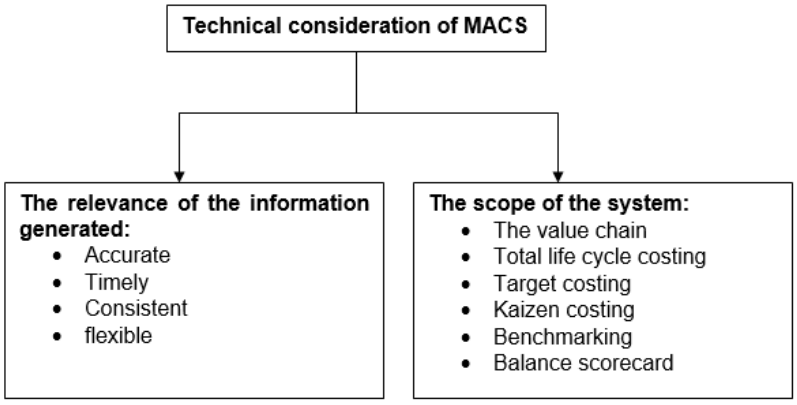

Figure 2: Technical Consideration of MACS

(Source: Dangol & Dangol, 2019)

(1) The Relevance of the Information Generated

Relevance is the notion that the information produced by an accounting system should have an effect on the decision-making of someone perusing the information. In another word, management take decision based on the available information. So, relevance, adequate and useful information is very important for an organization's decision and control process.

The following four characteristics can be measured the relevance of the information:

- **Accurate**
  Accurate accounting information is vital to effective decision-making in an organization. In the absence of accurate, reliable and timely information, decision-makers will make bad decisions. They will be unable to help or persuade others to make better decisions on time. MACS designers have to develop a system that leads to the most accurate information possible. Managers always rely on managerial accounting information to plan and control an organization's operations.
- **Timely**
  In the decision-making process, information should be disseminated in timely basis. Atkinson et al. (2005) opined accurate information that is late is also of little use for decision-making. The MACS must be designed in such a way that the results of performance measurement are useful to the units and sub-units of the organization.
- **Consistent**
  A quality of accounting information that facilitates comparing an organization's reporting of one accounting period to another with same framework. For example, the users of an organization's financial statements can assume that the company is using the same inventory valuation technique in this period as it used last period or last year. If the company did change, it must be disclosed to the users. Atkinson et al. (2014) suggested that the system designers must structure the MACS to provide a consistent framework that can be applied globally across the units or divisions of an entity.
- **Flexible**
  Atkinson et al. (2014) argued MACS designers must allow employees to use the system's available information in a flexible manner so they can customize its application for local decisions. If flexibility is not feasible, the motivation of an employee to make the best choice may be diminished for the decision at hand, particularly if distinct units participate in distinct kinds of operations.

(2) Scope of the System

MACS system is an important process in which accounting information is used as to accomplish the organization's objectives. Therefore, the scope of MACS is very wide that covers a broad range of management activities. Atkinson et al. (2014) emphasized the scope of MACS system must be comprehensive and include all activities across the entire value chain of the organization. Managers can only make restricted choices without an extensive collection of information.

The Value Chain

A series of value generating activities to develop a competitive advantage in business is known as the value chain. In another word, an economic system is referred to the value chain of an organization. It can be described as (i) a series of business function or activities starting from specific inputs for a particular product, transformation, marketing, and finally product sales to the consumer; (ii) the set of enterprises (operators) that performs these functions, i.e., the producers, processors, traders and distributors of a particular product, and (iii) The business model that enables clients to be reached using a specific technology and a specific way of coordinating manufacturing and marketing between several companies. According to Porter (1985),

value chain includes all activities to design, produce, market, deliver and support the product, and services. It is concentrating on the activities starting with raw materials till the conversion into final goods or services.

An organization's value chain consists of a linked set of value-creating activities performed internally. Porter (1985) describes two major categories of business activities: primary activities and support activities. Primary operations are directly engaged in the transformation of inputs into outputs and in the shipment and after-sales support. Primary activities focus to create the value for customers. It includes:

Inbound Logistics: it is concerned with materials handling and warehousing which includes receiving, storing, distributing inputs, for example, e.g., handling of raw materials, warehousing, and inventory control.

Operations: it comprises the transformation of the inputs into the final product which includes production, assembly and packaging.

Outbound Logistics: it is concerned with order processing and distribution activities. It involves, for example, the collection, storage and distribution of the product to buyers, the processing of orders, the warehousing of finished goods and the delivery.

Marketing and Sales: it is related with market research, customer management, customers order handing, promotion and sales analysis. In other words, it is communication with customers, pricing and channel management for creating value.

Service: it includes all the activities required to keep the product/service working effectively for the buyer after it is sold and delivered, for example, installation, repair and supply require parts.

All five main activities are crucial for adding value and generating a competitive advantage. Companies can take advantage of a competitive advantage in any of the five value chain operations. For instance, by generating extremely effective outbound logistics or by lowering the transport expenses of a company, it enables either more benefits to be realized or savings to be passed on to the customer by manner of lower prices.

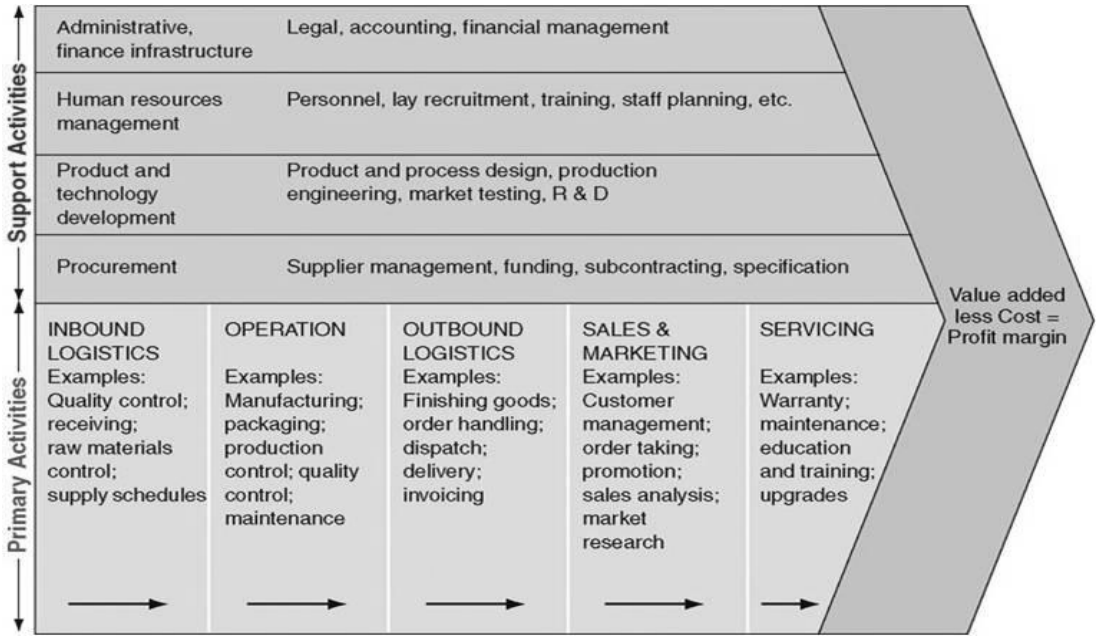

Figure 3 The value chain

Source: Porter's value chain analysis (retrieved from Google images)

Support activities facilitate performance of the primary activities. Using support operations enables to make main operations more efficient. Increasing one of four support operations enables to operate more efficiently with at least one primary activity. It includes:

Firm infrastructure: it consists of activities such as general management, planning, finance, accounting, legal, government affairs, public relations and quality assurance or quality management.

Technology development: it concerns the machinery, hardware, software, processes and technical expertise brought to bear in the company's conversion of inputs into outputs. Technological inputs required in every operation of the value chain.

Human resource management: it consists of all the activities involved in selection, promotion and placement, training, appraisal, rewards, compensating, management development and labour or employee relations.

Procurement: It relates to the purchase of goods, services or works from external sources. It includes purchasing of raw materials, supplies and other consumable items as well as assets.

Total Life Cycle Costing

According to Atkinson et al. (2014), the fundamental principle of life cycle costing (LCC) is to identify and quantify the various cost elements in purchasing and using a particular product or service including the annualized cost that would be incurred through its life. LCC spreads the total cost of an asset over its complete life. It indicates that LCC is the process of economic analysis to assess the total cost of ownership of a product, including its cost of installation, operation, maintenance, conversion, and/or decommission. In another word LCC is defined as the total cost throughout its life including planning, design, acquisition and support costs and any other costs directly attributable to owning/using asset. As per Atkinson et al. (2014), from the company's perspective, total life cycle product costing integrates Research, Development and Engineering (RD&E), Manufacturing, and Post-Sale Service and Disposal stages as shown in figure 4.

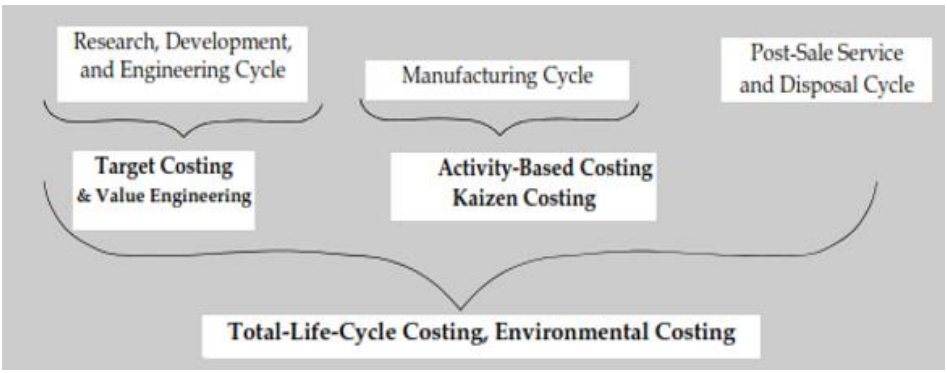

Figure 4: Total Life Cycle Costing

(Dangol & Dangol, 2019)

(i) Research, Development and Engineering (RD&E)

The Research, Development and Engineering (RD&E) stage consists the following three sub-stages:

(a) Market research: during which try to establish what product the customer wants, how much s/he is prepared to pay for it and how much s/he will buy. In other words, mainly, conduct customer need assessments and generate idea for the new product.

(b) Product design: during which product designers prepare drawings and define process schedules with technical specifications of the product.

(c) Product development: during which company creates features critical to customer satisfaction and manufacture a small quantity of the product. These prototypes product will be used to develop the final product. They finalize the production processes and required special tooling.

(ii) Manufacturing Stage

The manufacture of a product involves the purchase of raw materials and components, the use of labour and manufacturing expenses to make the product. Atkinson et al. (2014), after the RD&E stage, the company enters the manufacturing stage, in which it spends money – on materials, labour, machinery, and indirect cost – to produce and distribute the product. This stage offers little opportunity for engineering decisions to reduce product costs through redesign decisions since most costs have already been determined during the RD&E stage. Figure 5 shows the total life cycle costing with relationship between committed cost and cost incurred during the RD&E and the manufacturing cycle. Atkinson et al. (2014) further explained, for moderate to long life-cycle products, the costs incurred during RD&E will be less than 10 per cent of total-life-cycle cost. But the decisions made during the RD&E stage will determine 80 per cent of the costs that will be incurred in subsequent stages. Traditional cost accounting and process improvement methods focus their attention on the manufacturing stage. This is the role for product and process costing, facilities layout, kaizen, benchmarking, and just-in-time manufacturing. These techniques assist to decrease the cost of the item during the manufacturing phase. But during the RD&E phase, they disregard the potential for efficient price leadership.

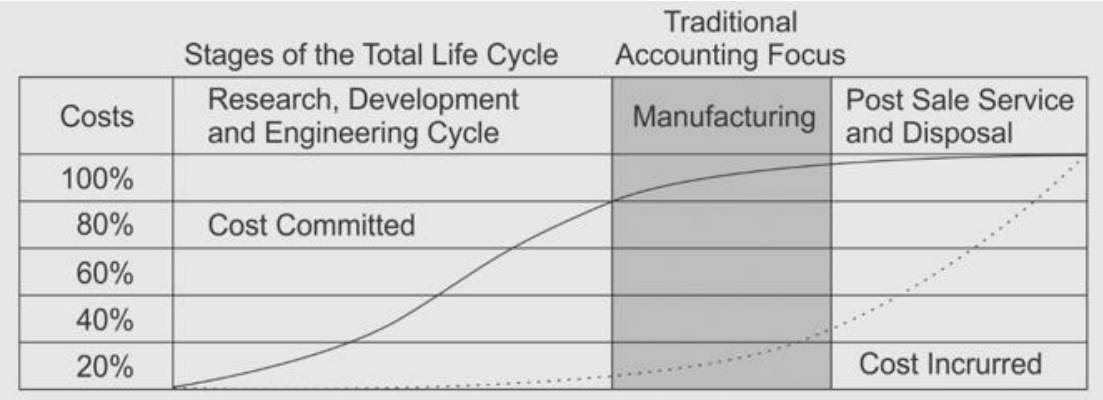

Figure 5: Total Life Cycle Costing: Relationship between Committed Cost and Incurred Costs

Source: Dangol & Dangol (2019)

(iii) Post-Sale Service and Disposal Stages

Atkinson et al. (2014) argued in the third stage, companies incur costs for *post-sale service and disposal*. Although the costs for service and disposal are committed in the RD&E stage, the actual service stage begins once the first unit of a product is in the hands of the customer. Thus, this phase somewhat overlaps with the manufacturing phase. It typically consists of three sub-stages:

(a) Rapid growth: The product gains a bigger market as demand builds up. Sales revenues increase and the product begins to make a profit. Marketing and promotion will continue through this stage. Unit costs tend to drop as fixed costs are recovered over larger quantities. Competition also rises, and the business may need to lower rates to stay competitive.

(b) Transition: From the peak sales to the peak service cycle.

(c) Maturity: Eventually, product demand growth will slow down and enter a period of relative maturity. It will continue to be profitable. Price competition and product differentiation, however, will begin to erode profitability. The item can be altered or enhanced as a means of maintaining its demand.

The market will have purchased enough of the item at some stage and will, therefore, achieve 'saturation point'. Demand will begin to drop and prices will also drop. It will eventually become a loss maker and this is the moment when the organization should decide to stop selling the item or service. The expenses concerned would be environmental clean-up, disposal and decommissioning during this phase. In the

meantime, a substitute product will need to be created, incurring fresh levels of research and development and other set-up expenses.

Atkinson et al. (2014) opined disposal costs include those associated with eliminating any harmful effects associated with the end of a product's useful life. Products whose disposal could involve harmful effects to the environment, such as nuclear waste or other toxic chemicals, can incur very high salvage, recycling, and disposal costs.

Target Costing

Now days, in industries, competition is so intense that prices are determined by supply and demand in the market, and hence producers cannot effectively control selling prices. They can only control, to some extent, their costs, so management's focus is on influencing every component of product, service, or operational costs.

The main goal of target costing is to allow management to use proactive cost planning, cost management, and cost reduction methods where expenses are planned and calculated early in the design and development cycle, rather than in the later phases of product development and manufacturing.

Target Costing and Target Pricing

Target pricing is based on Target costing. It starts with a review of the market place and includes the involvement of senior management in its processes. For setting target cost, firstly a predecessor product is identified. A predecessor product is one that can be taken at the basis for the current product. Secondly, the management will then review the current production cost of the predecessor product, which will then be adjusted to include any cost reduction idea for the product that have not yet been implemented. Thirdly, an 'as-if' cost is calculated. An 'as-if' cost represents the cost of making the product if the company had implemented all cost reduction activities. Finally, mark-up percentage is added to 'as-if' cost and target price is fixed.

Companies use target-costing pricing widely in the development stages of new product. It is originated in Japan and now-a-days it is being used by worldwide companies. Under this method, the company first uses market research to determine the price of which the new product will sale. The estimate is based on the understanding of customers perceived value for the product. In other words, companies which are going to use target costing, have to determine the price at which they can sell their product. Then they have to estimate the total cost for the product. If the total cost of the product is sufficiently low, the product may be launched. Conversely, if the total cost is too high, the product may be unjustified.

Kaizen Costing

The term Kaizen is a Japanese word with composition of two words "Kai" and "Zen". "Kai" means "change," and "Zen" means "good" or improvement. So, Kaizen refers to change for good. Kaizen is for making continuous improvements in relatively small activities rather than major innovation improvement. It is a price reduction and management mechanism. It is based on collaboration and engagement and contrasts with methods that use radical modifications or top-down edicts to accomplish transformation. So, Kaizen is small incremental changes made for improving productivity and minimizing waste. Waste relates to any activity which does not add value. Waste adds to time and cost only. It was developed in the manufacturing sector to lower defects, eliminate waste, boost productivity, encourage worker purpose and accountability, and promote innovation. The main distinction between target and Kaizen costing is that target costing is implemented during the design phase where Kaizen costing is implemented during the manufacturing phase of the life of a product.

Kaizen costing's goal is to decrease real expenses of manufacturing a product below the standard cost. The standard cost scheme usually aims at achieving the cost requirements set by management, while Kaizen costing systems are more worried with lowering real expenses below standard expenses.

Kaizen costing tracks the plans for cost reduction on a monthly basis. The Kaizen costing objectives are articulated in terms of physical assets. If the head of a group fails to achieve the Kaizen costing target by pre-determined percent, review by senior will start. In many Japanese firms, resource consumption is tightly regulated. Thus, the scheduled cost reductions are scheduled and controlled in terms of physical assets through Kaizen cost objectives. Kaizen costing promotes a cost reduction scheme based on the notion of ongoing system evaluation and processes to identify and execute tiny incremental cost savings, used in a product's manufacturing process stage, and staff are both encouraged and empowered to recommend modifications without efficient quality. The Japanese company, Toyota is the famous for its use of Kaizen but other companies have used the approach successfully. The concept of Kaizen costing is presented in figure 6.

Figure 6: Kaizen Costing

Kaizen and Waste

Kaizen philosophy identifies 7 types of waste which have negative impact on company functioning and may generate additional cost.

Figure 7: Kaizen and Waste

(Source: http://www.daicelsse.com/kaizen,c63).

Overproduction – manufacturing products earlier and in bigger amount than ordered by customer; it requires more storage space and causes quicker consumption of raw materials. It creates the biggest risk concerns about hidden defects which may appear due to long time storage; it generates additional cost.

Defects – products which are not conformed to customer's requirements; they may appear as a consequence of improperly designed production process, failures of equipment or incorrectly trained employees.

Unnecessary motion – non-added value actions which prolong standard operations; they may result from insufficient employee training or incorrect work place organization.

Stock – accumulating of too big quantity of raw materials which can be used; its storage requires additional warehouse space and may cause some hidden defects which can occur during long waiting time for production.

Unnecessary transportation – unnecessary handling of materials, goods; it may cause some damage during transportation.

Proceeding – additional operations resulting from, e.g., improper design of production process or usage of inadequate technologies.

Waiting – time when staff are unable to carry out their activities due to machine breakdown, incorrect training or absence of manufacturing parts.

Advantages of Kaizen Costing

- Employees morale grows and teamwork increases
- Create a gentler approach to change
- Ensure improvements are encouraged both short and long-term

Disadvantages of Kaizen Costing

- Increases the burden on lower level of management
- Difficult to changes cultural value to create a receptive environment

Differences between Kaizen Costing and Standard Costing

Atkinson et al. (2014) differentiate the Kaizen costing and standard costing as follows:

STANDARD COSTING CONCEPTS	KAIZEN COSTING CONCEPTS
Cost-control system concept	Cost-reduction system concept
Assumes stability in current manufacturing processes	Assumes continuous improvement in manufacturing
Goal is to meet cost performance standard	Goal is to achieve cost-reduction standard
STANDARD COSTING TECHNIQUES	**KAIZEN COSTING TECHNIQUES**
Standards are set annually or semi-annually	Cost reduction targets are set and applied monthly and continuous improvement (Kaizen) methods are applied all year long to meet targets
Cost variance analysis involves comparing actual to standard costs	Cost variance analysis involves target Kaizen costs versus actual cost reduction amounts
Cost variance investigation occurs when standards are not met	Investigation occurs when target cost reduction (Kaizen) amounts are not attained
WHO HAS THE BEST KNOWLEDGE TO REDUCE COSTS?	**WHO HAS THE BEST KNOWLEDGE TO REDUCE COSTS?**
Managers and engineers develop standards as they have the technical expertise	Workers are closest to the process and thus know best

Source: Atkinson et al. (2014)

Benchmarking

Benchmarking is the measurement of an organization's internal processes and performance data and a comparison with those of related and comparable organizations. Atkinson et al. (2014) opined that benchmarking is a way for organizations to gather information regarding the best practices of other. It indicates the other company's best practices can be adopted to avoid mistakes and minimize the cost without effecting quality of product. Preferably, these comparisons are made with businesses from the same sector, but it is possible to use benchmarking between businesses from other sectors as well. In these comparisons it mainly concerns the dimension's quality, time and costs of organizations that are about the same size and that more or less have the same outlet. In addition, it is about how certain features can be realized better, faster and cheaper.

In other words, by studying businesses with superior performance, breaking down what makes such superior performance possible, and then comparing those procedures to how company works, organisation can introduce adjustments that will produce important improvements as well as assist to reduce costs.

Step-by-Step Benchmarking

Benchmarking is a simple, five-step process are as follows:

- Choose a benchmark product, service or inner department
- Determine which best-in-class businesses you should benchmark against – which organizations you will compare your company
- Gather information about their inner results or metrics
- Compare the data from both organizations to identify gaps in your company's performance
- Adopt the processes and policies in place within the best-in-class performers

Key Benefits of Benchmarking

Using Benchmarking, companies become more efficient and profitable, benchmarking has some key benefits as under:

- Improve staff knowledge of price structures and inner procedures
- Encourage team building and collaboration in order to become more competitive
- Enhancing familiarity with important performance metrics and business-wide possibilities for enhancement

Importantly, benchmarking enables staff know how the key to significant achievement can be one tiny piece of a company's procedures or goods, just as one employee's contributions can lead to a great victory.

Types of Benchmarking

Benchmarking can be classified, mainly, four primary types: internal, competitive, functional, and generic.

1. Internal benchmarking is a comparison of a business process to a similar process inside the organization to acquire the best internal business practices.
2. Competitive benchmarking is a direct competition-to-competitor comparison of a product, service, process, or method. This type of benchmarking helps to know the business itself and the competitive position in the industry;
3. Functional benchmarking is a comparison to similar or identical practices (e.g., the picking process for assembling customer orders, maintaining inventory controls of spare computer parts, logistics to move operational forces, etc.) within the same or similar functions outside the immediate industry.
4. Generic benchmarking widely conceptualizes unrelated business processes or features that can be practiced in the same or similar manner regardless of the sector. Generic implies without a brand. The focus is on being innovative and acquiring insight into outstanding job procedures rather than the company procedures of a specific organization or sector.

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