CHAPTER III
COST MANAGEMENT - THEORETICAL FRAMEWORK

3.1 INTRODUCTION

Cost management identifies, collects, measures, classifies and reports information that is useful to managers and other internal users. Cost management aims to produce and provide information to internal users and personnel working in the organization.

Cost management is the process of planning and controlling the budget of a business. Cost management is a form of management accounting that allows a business to predict expenditures to help reduce the chance of going over budget. Many businesses apply cost management plans for specific projects, as well as for the over-all business model. When applying it to a project, expected costs are calculated while the project is still in the planning period and are approved in advance. During the project, all expenses are recorded and monitored to make sure they stay in line with the cost management plan. After the project is finished, the predicted costs and actual costs can be compared and analyzed, helping future cost management predictions and budgets. Implementing a cost management structure for projects can help a business to keep their over-all budget under control.

Cost Units: It is a unit of product service or time (or combination of these) in relation to which cost may be calculated. ‘A’ batch consists of a group of identical items and maintains its identity through one or more stages of production may be considered as a cost units. It is units of physical measurement like Number, Weight, Area, Volume, Length, Time and
Value. The following Table 3.1 shows some of the examples of cost units in different organisation.

<table>
<thead>
<tr>
<th>Industry or Product</th>
<th>Cost Units Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automobile</td>
<td>Number</td>
</tr>
<tr>
<td>Cement</td>
<td>Tone/per bag</td>
</tr>
<tr>
<td>Power</td>
<td>Kilo-watt hour (kwh)</td>
</tr>
<tr>
<td>Steel</td>
<td>Tone</td>
</tr>
<tr>
<td>Pencils</td>
<td>Dozen or gross (Batch)</td>
</tr>
<tr>
<td>Printing</td>
<td>Thousand copies</td>
</tr>
<tr>
<td>Timber</td>
<td>Cubic foot</td>
</tr>
<tr>
<td>Transport</td>
<td>Passenger kilometer /Tone kilometer</td>
</tr>
<tr>
<td>Bricks</td>
<td>1000Bricks /500Bricks</td>
</tr>
<tr>
<td>Nursing home</td>
<td>Bed per day.</td>
</tr>
<tr>
<td>Shoes</td>
<td>Pair or dozen pairs</td>
</tr>
<tr>
<td>Carpets</td>
<td>Square foot</td>
</tr>
<tr>
<td>Hotel</td>
<td>Room per day</td>
</tr>
<tr>
<td>Sugar Factories</td>
<td>Per Quintal</td>
</tr>
</tbody>
</table>

**Source:** Hand Book on Cost Management, ICWA of India, Kolkata, March 1998, p. 7

### 3.2 BACKGROUND TO THE STUDY

The growing complexity of modern production method results in greater capital investment, competition and modern market. For any company to be successful in such environment, it must have a good costing system. To reach this objective demands careful selection of a costing system that suits the production process of the company. Vickery (1971) describe that costing system is essentially analytical in nature, and it is therefore impossible to derive a system which suits all business. Hence, the costing system adopted by a manufacturing company must be designed to suite its production process. A common misconception made by
management of a company is that a single definition of cost is ideally suited to all types of manufacturing concerns. Managers must realize the, difficulty arising in determining the cost of production. This gives rise to two reasons for the difficulty arising in determining the cost of products produced. First, the relationship between the cost incurred and output produced is often difficult. Secondly, cost may be assembled, combined and reported in different ways.

In addition to inherent difficulties in determining the cost of output, management fails to recognize that different cost measurements are needed for different purposes. If cost information is to be used intelligently, management must understand that any cost figure has inherent limitation and that no single method of arriving at cost will serve equally well for all the various purposes for which information is needed.

Modern technology makes it imperative for a firm to cost its products. Lagne, (1984) contends that if a firm fails to cost its products, the firm will continually cease to exist. Cost determination is essentially concerned with tracing of cost through to the end department and product. This tracing can be in terms of economic benefits, causes and effect of divergence from plan. A costing system provides a reliable means of determining the cost of production. An important feature of costing system is the firms measurement and allocation of resources which the firm solves its problem permanently in order to safeguard its existence. Bhathachary (1980) points out that from a management point of view perhaps, the most important use of a costing system is for revenue decision. But elements of costs are not used as a basis for logical accumulation and diagnosis of cost.
The cost accounting techniques are planning, credit control, decision making, queuing theory etc. A firm with these costing techniques or systems will produce and sell at a high profit or at loss. This is due to the fact that the firm fails to adopt a proper costing system or the implementation of the system adopted is weak. Batty (1974) contends that a costing system adopted by any firm should be the most appropriate for the firm concerned, where management arrives at a decision without the aid of adequate and correct costing data, is to invite problems. More so, where there is weakness in the implementation of the system adopted, aims and objectives of the system will be defeated.

Cost and management techniques serve as useful tool for inventory valuation, revenue decision making, cost control, credit control and price setting when they have been carefully designed and implemented. Apart from these, costing system can provide the basis through which the efficiency of the firms operations can be measured. Such tools are standard costing and budgetary control. Standard costing involves the detailed estimation of the cost of a product\(^4\).

3.3 **COST MANAGEMENT CONCEPT**

Cost is an expenditure incurred to produce a particular thing. It has become very essential to the producer to manage the same to be successful in the market. Therefore, the cost management becomes very critical area for the companies. In recent years, the term cost management have been widely used, but no uniform definition have been evolved yet. Formally, it would be quite difficult for anyone to define the term. It would generally be understood as management of cost achieved by collecting, analyzing, evaluating, and reporting cost information for the application into budgeting, estimating, forecasting, and monitoring the cost.
It is an improvement over cost accounting. The cost management developed in response to limitations in traditional cost accounting. A new approach addressing this need ‘cost management’ combines familiar costing techniques with new methods of monitoring economic performance against plans. Instead of focusing attention on what occurred, cost management emphasizes the future impact of economic conditions. Thus, cost management is grouping of cost accounting systems, tools, techniques, modern concepts and ideas that are recently developed for dealing with costs scientifically. Cost management is basically depending on cost accounting principles for classification, recording, ascertainment and analysis of costs.

However, all efforts have been made to define the term cost management in the midst of several complexities. Generally, cost management refers to process of monitoring costs of business activities. It is a systematic, planned and structural approach to understand the different costs of a firm properly, so that a holistic approach is provided to control, decrease and eliminate costs. It is an vital part of profit planning and aims at manufacturing of quality goods and services at the lowest possible cost. “Cost management is the set of actions that managers take to satisfy customers, while continually and permanently reducing and controlling costs.” It involves energetic management action, which identifies, plans and controls resources consumed by activities and suggests alternate courses of action. “Cost management system is a management planning and control system with regard to determination of cost, identification and elimination of non-value added costs, determination of the efficiency of main activities and identification and evaluation of new activities that can improve the future performance of the firm.” Cost management acts as a vital bridge between strategy and functional efficiency which launches the
company into an orbit of global competitiveness. In cost management corporation manages costs as a holistic entity for attaining constant cost reduction to ensure enhanced prices to the consumers.

3.4 COST MANAGEMENT SYSTEM

Cost management is concerned with producing outputs for internal information users using inputs and process needed to satisfy management objectives. The cost management system provides information for three broad objectives they are as follows;

1. Costing of products, services and other objects of interest to management.
2. Planning and control.
3. Decision making.

Cost management system consist of two major subsystems, they are the cost accounting system and the operation control system. Cost accounting system must assign costs to products in order to value inventories and determine cost of goods sold. Operation control system provide accurate and timely feedback concerning the performance of managers and others relative to their planning and control of activities. Sub system of an accounting information system is presented in Chart 3.1.
It is clear from the above chart that accounting information system have two parts. First one is financial accounting and second one is cost management system. Cost management system includes cost accounting system and operational control system.

3.5 COST MANAGEMENT MODEL

Cost management is a vital part of management. It has been emerged as outcome to the cost accounting limitations to face the challenges of economy. It focuses on four major areas namely-

i) Cost planning,
ii) Cost measurement,
iii) Cost control and
iv) Performance measurement.

The cost management model can be better understood with the help of the following figure.
The cost management model consists of,

1. Cost planning: It is a management process that seeks to control, design and develop the cost in line with the budget.

2. Cost measurement: It is the process of ascertaining and analyzing the costs to identify what 'drive' the costs and how resources achieve value addition.

3. Cost control: It is a process of identifying the different costs based on root causes and exploring the ways of supervision the costs in various stages of manufacturing. Then preparing and managing action plans on controlling cost.

4. Performance measurement: It is a process of analyzing the results of processes, cost centers and the profitability of the products, men, material and machinery so as to evolve an approach for upgrading the performance.

"Cost management model advocates that unless the cost is kept under control, it will be complex to provide the company with enough returns on investment"\(^{10}\). Therefore, cost management plan should be suitable to
maximize profit by reducing cost of all resources including human resources.

3.6 FACTORS AFFECTING COST MANAGEMENT

Growth of services industry and advances in information and manufacturing technology have changed the nature of the economy and caused many firms in manufacturing and service industries dramatically change the way in which they operate. A firm can establish a comparative advantage by providing more customer value for less cost than its competitors. The important factors affecting cost management are discussed as under.

3.6.1. Global Competition.
3.6.2. Growth of the Services industry.
3.6.3. Advances in information Technology.
   3.6.4.1. Just In Time Manufacturing.
   3.6.4.2. Computer Integrated Manufacturing.
3.6.5. Customer Orientation.
3.6.7. Total Quality Management.
3.6.8. Time as a Competitive Element.

3.6.1 Global Competition

Highly improved transportation and communication system have led to a global market for many manufacturing and service firms. Several decades ago firms neither knew nor cared what similar firms in Japan, France, Germany and China were producing. These foreign firms were not competitors because their markets were separated by geographical distance.
Now both small and large firms are affecting by the opportunities offered by global competition.

The new competitive environment has increased the demand not only for more cost information but also for more accurate cost information. Cost information plays a pivotal role in decreasing costs, improving productivity and assessing product-line profitability.

3.6.2 **Growth of the Service Industry.**

The service sector of the economy has increased in importance because in USA service sector constitutes approximately three-quarters of the economy and employment. Many services among them accounting services, transportation and medical services are exported. Thus, increase in competition has made managers in this industry more conscious of the need to have accurate cost information for planning, controlling, continuous improvement and decision making. Thus the changes in the service sector add to the demand for innovative and relevant cost management systems.

3.6.3 **Advances in Information Technology.**

Computers are used to monitor and control operations. Enterprise resource planning system is a centralized database system that integrates all functional areas of a firm and provides access to real time data from any functional area of the firm. Automation and integration increase both the quantity and the timelines of information for managers. To fully exploit the value of more complex information system, they must have access to the data of the system. Activity Based Costing (ABC) software typically interfaces with Decision Support System (DSS) software and other online software to facilitate application such as cost estimation, product pricing and planning and budgeting. Electronic Data Interchange (EDI) involves the exchange of documents between computer using telephone lines and is
widely used for purchasing and distribution. The emergence of EDI and supply chain management has increased the importance of costing activities in the value chain and determine the cost to the company of different suppliers and customers.

3.6.4 Advances in the Manufacturing Environment.

The theory of constraint and just in time manufacturing have allowed firms to increase quality, reduce inventories, eliminate waste and reduce costs. The impact of improved manufacturing technology and practices on cost management is significant. Product costing systems, control systems, allocation, inventory management, cost structure, variable costing, capital budgeting and many other accounting practices are being affected.

3.6.4.1 Just In Time Manufacturing.

Just in time manufacturing is to produce a product only when it is needed and only in the quantities demanded by customer. Demand is measured by customer orders, plus products through the manufacturing process. Parts and material arrive just in time to be used in production. Increasing quality enhance the competitive ability of the firm and finally changing from a traditional manufacturing process to JIT manufacturing allows the firm to focus on quality and productivity.

3.6.4.2 Computer Integrated Manufacturing

Automation of the manufacturing environment allows firms to decrease inventory, increase productive capacity, improve quality of product and services, decrease processing time and increase output. If correct set up is made for installation of computer integrated manufacturing system than computer integrated manufacturing system can be used in manufacturing the product in more scientific way. The following are the software are use in Computer Integrated Manufacturing (CIM).
1. Products are designed through the use of Computer Assisted Design (CAD).
2. A Computer Assisted Engineering (CAE) system is used to test design.
3. The product is manufactured using Computer Assisted Manufacturing (CAM).
4. An information system connects the various automated components.

3.6.5 Customer Orientation

Accountants and managers refer to a firm's value chain as the set of activities required to design, develop, produce, market and deliver products and services to customers. The cost management system must track information relating to a wide variety of activities important to customers e.g. product quality, environmental performance, new product development, and delivery performance. Customers now count the delivery of the product or services as part of the product.

3.6.6 New Product Development.

High production costs are incurred during the development and design stage of new products. The effect of product development decision on other parts of the firm's value chain now widely recognized. This recognition made very sophisticated cost management procedures relating to new product development. Target cost and activity costing encourage the manager to assess the overall cost impact of product designs over the product's life cycle and simultaneously provides incentives to make design changes to reduce costs.

3.6.7 Total Quality Management.

A philosophy of total quality management in which manager to create an environment that will enable firms to produce defect free products.
and services. The cost management system provides important information concerning quality-related activities and quality costs. Manager need to know which quality related activities add value and which ones do not.

3.6.8 Time as a Competitive Element.

It is crucial element in all phases of the value chain. Firm can reduce time to market by redesigning products and processes by eliminating waste and non-value added activities. The overall aim is to increase customer responsiveness. Time and product life cycles are related so that manager should able to respond quickly to changing market conditions.\(^\text{11}\).

3.7 NEED FOR COST MANAGEMENT

Effective management of cost makes an organization more strong, more stable and helps in improving the potentials of a business. The organization calls for a system that would monitor the full economic impact of the business, on resource acquisition and consumption. This provides supplying of information to the top management for exploring various alternatives by which cost effectiveness can be improved. Cost management also helps in optimizing resources which will improve overall efficiency of the organization and help the firm to achieve its objectives.

Cost management is concerned with profitability, which is a measure of business performance, especially in a manufacturing concern, the need for higher sales will arise and this will facilitate the need to increase production capacity, which in turn brings about increase in cost. Brumbaug (2008) was of the opinion that corporate bodies should watch the cost and the profit will take care of itself. The implication is that cost should be controlled rather than embarking on unscientific cost reduction that may translate to lowering the quality of product. Management is normally forced
to adopt various methodologies and techniques in order to regulate (control) rather than reduce cost.

Cost management is come up with following needs-
3.7.1. Cost Competitiveness
3.7.2. Changes in Business Environment
3.7.3. Changes in Management Systems
3.7.4. Quality Management.

3.7.1 Cost Competitiveness:

The cost factor plays a vital role in successful working of organisation. The slogan “defeat your costs before they defeat you” states how dangerous the ‘cost’ is. During the globalised and liberalized economic reforms, cost has become more dangerous and it is now being taken up as a serious concern. Due to the reasons like personal prejudice, carelessness, status, habits and richness etc., the cost factor may be ignored. Such ignorance may not expose any serious problems in short-term. But, neglecting cost factor in long-term, certainly place the organisation in a terrible position. “If the industry tries to raise the selling price to a level necessary for it to realize a profit without making attempts at cost reduction, it will soon price itself right out of the market.”

Hence, perfect knowledge of cost and timely attempts at its control is required to the management for securing competitive advantage. To cope up with present cost condition of the organization, it is essential to pay attention towards cost side of profit equation.

3.7.2 Changes in Business Environment:

The Liberalization, Privatization and Globalization process has opened the doors of the world economy. In this new environment, two major factors ‘cost and quality’ are having direct bearing on business
performance. Therefore, the long-term survival of an organization depends on effective management of productivity, quality and cost. In this regard, the conventional cost accounting system has minimal role but the professional cost management plays vital role in managing the cost factor strategically towards business goals.\textsuperscript{13}

\subsection*{3.7.3 Changes in Management Systems:}

The changes in manufacturing, marketing, research and development areas have to be reflected in corresponding changes in the cost accounting system. The way in which costs are incurred, planned and controlled have notably changed since the development of conventional cost accounting. Classical cost accounting models were based on the mass production of mature product with known characteristics and steady technology. Various new business practices like wide product varieties, after sale support, quick product introduction and short product life cycle are assuming greater importance today. The way of measuring operational performance has drastically changed. Intangible assets such as brands, technical proficiency, software programming, human expertise and quality systems are having greater influence on cost and profits in current system. As a result, traditional costing systems do not cost the products correctly for decision making purpose.\textsuperscript{14} These structural changes required for updating cost accounting system. In the liberalized economy, the business firms that are able to recognize these aspects with the help of scientific cost management system will survive and will be the winners.

\subsection*{3.7.4 Quality Management:}

No fixed standard for quality as it is continuously undergoing improvement and up-gradation. Quality at the least possible cost is the basis upon which economic progress stands. Continuous quality improvement is the new basis for building competitive advantage in liberalized, globalized
and privatized economy. Strategic cost management is must for providing a better quality products at the least price which the customers are ready to pay. The evolution in technology with increased world competition is demanding the managers to produce high quality products and to offer outstanding customer service at the least possible cost. Therefore, organisation required to move from a traditional cost accounting perspective to a scientific cost management perspective\textsuperscript{15}.

3.8 OBJECTIVES OF COST MANAGEMENT

Cost management system is an vital part of profit planning. Its main objective is to produce quality products at the least possible cost. Since, it is improved over traditional cost accounting, the objectives of cost accounting remains to be the objectives of cost management as well. In addition, the cost management aims to serve the following objectives,

\begin{enumerate}
  \item To measure the cost of resources incurred in performing the organization's major activities.
  \item To recognize and eradicate non-value added costs. These are the costs of activities that can be eliminated with no compromise of quality and performance.
  \item To establish the efficiency and effectiveness of major activities of the organization.
  \item To identify and evaluate new cost activities that improves the future performance of the enterprise.
  \item To manage the costs of men, material and machines in better possible way.
  \item To evaluate, report and to increase the productivity.
  \item To offer a comprehensive approach to costs for better control, reduction and eradication of them.
\end{enumerate}
8. To organize and examine the action plans on external and internal fronts for betterment of cost competitiveness and profitability.

Thus, cost management plays a predominate role in cost planning, communication, competitiveness, control and performance improvement.

3.9 STRATEGIC COST MANAGEMENT

It is cost analysis in broader context where the strategic elements become more conscious, explicit, and formal. Here cost data is used to formulate superior strategies en route to gaining sustainable competitive advantage.

Strategic cost management is understood in different ways. According to Cooper and Slagmulder (1998) argued that strategic cost management is "the application of cost management techniques so that they simultaneously improve the strategic position of a firm and reduce costs". A hospital redesigns its patient admission procedure so it becomes more efficient and easier for patients. The hospital will become known for its easy admission procedure so more people will come to that hospital if the patient has a choice. The strategic position of the hospital has just been increased over its competitors. Strategic cost management needs to include all aspects of production and delivering the product; the supply of purchased parts, the design of products and the manufacturing of these products. So, strategic cost management should be inherent to each stage of a product's life cycle, i.e. during the development, manufacturing, distribution and during the service lifetime of a product.

Strategic cost management is an area that holds exciting possibilities for accountants. They also emphasized that strategic cost management attempts to improve the strategic position of an organization and reduces costs at the same time and it is important because global competition means
that firms must be constantly aware of their strategic position. An organization must compete in the areas of cost, quality, customer service and flexibility with any cost reduction efforts contributing to an improved strategic position. A sophisticated understanding of an organization's cost structure can go a long way in the search for sustainable competitive advantage, this point is emphasized by Shank and Govindarajan who define strategic cost management as "the managerial use of cost information explicitly directed at one or more of the four stages of strategic management: (1) formulating strategies, (2) communicating those strategies throughout the organization, (3) developing and carrying out tactics to implement the strategies, and (4) developing and implementing controls to monitor the success of objectives"\textsuperscript{17}.

Strategic cost management has emerged as a key element to attain and sustain a strategic competitive advantage through long-term anticipation and formation of costs level, costs structure, and costs behaviour pattern for products, processes, and recourses. For this purpose, strategic cost management must provide managers with different information. Strategic cost management sees products, processes, and resources themselves as creative objects for attaining a strategic competitive advantage. Finally, strategic cost management should begin with participation during R&D and design stages of the product in order to avoid the costs early in the product life cycle. The following figure shows about the strategic cost management.
The above figure shows that strategic cost management process, the goal setting is done during the 1 to 2 month, target setting is done during the 2 to 3 months, cost reduction planning is done during the 3 to 6 months, hardwire plans and execution is during the 6 to 8 months and lastly strategic cost management implementation is done in a year.

Cost management is a necessary course of action which acquires strategic significance the more it increases the number of options for discovering new opportunities or inventing new markets. Strategic cost management tends to be an integrated, proactive part of strategic management aimed at satisfying all key stakeholders. Strategic cost management should be a part of the strategy of businesses in order to achieve a radical and long-term increase in the value of the company. Strategic cost management needs the support of employees, top management as well as information technology because effective and timely communication is required for implementing it.
Mercer’s approach for addressing the environment that executives face today is Strategic Cost Management, which is built around the following points

3.9.1 Determine Where You Need to Be

There is saying, “if you don’t know where you are going, any road will get you there.” We believe it is important to define, at a high level, the cost targets and expected economic and operating environment a business needs to compete if it is to be successful. These targets are similar in nature to those tracked by financial analysts. Moreover, the experience of other industries can be very useful in helping managers to define the challenges facing by the business. For example, the economics of computer manufacturing and distribution changed with the Dell Computer. Their approach is tailored specifically to the needs and requirements of each client.

3.9.2 Deploy Costs and Resources to Maximize Customer Value

The next step is to understand the company’s customer base and the distribution of value or profitability within that base. To learn this, we typically identify customer segments of varying profitability, as well as the products, channels, and resources they use. With this information, we can address other significant questions.

- What percentage of our resources are devoted to customer segments.
- Which non-strategic services should we outsource to more efficient Management

3.9.3 Move with Fast Action

Approach is built upon early programme implementation. While this requires senior management support, we believe a necessary ingredient for achieving results is an expectation that we can implement programmes in
the very near future typically three to four months. Action can’t happen until just one more piece of research takes place and focus on implementing programs, achieving quick wins while simultaneously assessing areas that offer more significant opportunity and change. The below figure shows Mercer’s approach to Strategic Cost Management built on five principles.

**Fig-3.3: Mercer's approach to Strategic Cost Management.**

1. Targeted Competitive Economics
2. Customer Understanding and Valuation
3. Enterprise Operation and Economic Analysis
4. Opportunity Identification and Prioritization
5. Effective Implementation

*Source: www.mercermc.com*

It is evident from the above figure that Mercer's approach's is first step is to analyse the targeted competitive economy second customer understanding and valuation is done, thirdly enterprise operation and economic analysis, fourthly opportunity identification and lastly effective implementation of SCM.

**3.10 Objectives of Strategic Cost Management.**

Strategic cost management has both the opportunity and challenging task of shaping the future of companies. Trends and changes in the business environment such as increase of global competition and rapid advances in information technology in manufacturing sector has made the task difficult. In this situation traditional cost management is not suitable to these events. Cost and revenue management is the present role of strategic cost management. In the 21st century, strategic cost management's primary
concern will not only be cost management but also increase revenues, improve productivity and customer satisfaction, and the same time improve the strategic position of the company.

The key is that costs must be viewed by looking simultaneously at the value they provide. Strategic cost management must recognize that cost/value and revenue: Both must be understood if an organization is to intelligently choose its customers and markets. Strategic cost management must bridge the gap between cost and value as well as between the language of the market and the language of the business. Traditional cost management during the 20th century faced many criticisms however, strategic cost management during 21st century gained importance due to its unique and rewarding objectives. The below chart shows the objectives of strategic cost management.

**Chart-3.2: Objectives of Strategic Cost Management**

<table>
<thead>
<tr>
<th>Organization's success: Strategic position improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value creation</td>
</tr>
</tbody>
</table>

**SCM Concept and Objectives**

<table>
<thead>
<tr>
<th>Cost Management</th>
<th>Revenue Enhancement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Productivity Improvement</td>
<td>2. Profit Maximization</td>
</tr>
<tr>
<td>3. Customer Satisfaction</td>
<td></td>
</tr>
</tbody>
</table>

Above chart shows the strategic cost management objectives. Organisation success is depending on good cost management and revenue management. It resulted in increase in productivity, profitability and finally customer satisfaction.

3.11 TRADITIONAL COST MANAGEMENT VERSUS STRATEGIC COST MANAGEMENT.

The business environment is changing very quick all over the world in accordance with new economic reforms. In this changing environment, companies need to identify and measure those strategic activities which are creating future financial success. Traditional cost systems often fail to provide the information necessary to manage business. The new and traditional concepts are presented below.

<table>
<thead>
<tr>
<th>Traditional Concepts</th>
<th>New Concepts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Old style</td>
<td>New Strategy</td>
</tr>
<tr>
<td>Domestic market</td>
<td>Global economy</td>
</tr>
<tr>
<td>Cost ascertainment and control</td>
<td>Total cost management</td>
</tr>
<tr>
<td>Quality control</td>
<td>Total quality management</td>
</tr>
<tr>
<td>Conventional management</td>
<td>Activity based management</td>
</tr>
<tr>
<td>Competitive analysis</td>
<td>Bench marking</td>
</tr>
<tr>
<td>Value analysis</td>
<td>Total customer satisfaction</td>
</tr>
</tbody>
</table>

Source: Jain and Narang Advanced Cost Accounting, Kalyni Publishers, New Delhi, 2000, p-17

It can be stated that traditional concepts are cost accounting concepts which are modified into the new ideas to suit the changing environment. Thus, cost management can be regarded as modified and enhanced form of cost accounting. In other words, cost management is modern approach to the traditional cost accounting system. This means that cost and management accounting practices and systems need to be thoroughly overhauled. The following figure shows the traditional cost system,
It is shown in the above figure that how traditional cost system will work. Direct material, direct labour cost are allocated directly to product and all indirect cost are allocated on the basis of overhead recovery rates.

Traditional cost management depends on conventional cost accounting system. In conventional cost accounting variance analysis is done in respect of each element of costs i.e. material, labour and overhead to evaluate performance, to control costs and to take suitable action. Traditional cost management aims at meeting the standard costs and here only financial measures are developed under cost accounting system to judge the performance and reward and punish the managers accordingly.

Strategic cost management is a philosophy of improving cost and revenue. It is not only a cost management but also revenue management. Its objective is seeking to improve productivity, maximize profit and improve customer satisfaction. The strategic cost management will enable the companies to identify their strong and weak points by improving the company's position among competitors. Strategic cost management makes a wider and deeper analysis of economical events that surround the company by using not only quantitative data, but also qualitative data too, providing
long-term strategic insight to its management\textsuperscript{19}. The below figure shows strategic cost transformation process.

**Fig-3.5: The Strategic Cost Transformation Process.**

![Strategic Cost Transformation Process](googleimages)

**Source: googleimages**

It is clear from the above figure that various steps involved in the strategic cost transformation process. Initial goals are framed than individual department targets are fixed, try to achieve targets by implementing action plans lastly monitor all these activities.

Difference between traditional cost management and strategic cost management is most important. Understanding difference between traditional cost management and strategic cost management is shown in the following table.
Table- 3.3: Difference between traditional cost management and strategic cost management

<table>
<thead>
<tr>
<th>Traditional Cost Management</th>
<th>Strategic Cost Management.</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is focus on manufacturing.</td>
<td>Competitive focus</td>
</tr>
<tr>
<td>Standard cost system with normal allowance for scrap waste zero defect standard is not practical</td>
<td>No allowance for scrap waste, rework zero defect is the concept</td>
</tr>
<tr>
<td>Overhead variance analysis to maximize production volume(not quality) to absorb overhead</td>
<td>Overhead absorption is not the key, standard costs and variance analysis not given importance.</td>
</tr>
<tr>
<td>Not consider nonfinancial performance measures</td>
<td>Heavy use of nonfinancial measures</td>
</tr>
<tr>
<td>No tracking customer acceptance</td>
<td>Systematic tracking of customer acceptance of complaints, order lead time, on-time delivery</td>
</tr>
<tr>
<td>No cost of quality analysis</td>
<td>Quality costing as a diagnostic and management control tool</td>
</tr>
<tr>
<td>Goal is to be in the top tier of the reference group</td>
<td>The goal is kaizen continuous improvement</td>
</tr>
<tr>
<td>Annual target is to meet the standards.</td>
<td>Industry norms set the floor.</td>
</tr>
<tr>
<td>Standards are to be met not exceeded</td>
<td>Annual target is to beat last year’s performance.</td>
</tr>
<tr>
<td>Standards are tough but attainable</td>
<td>Try to beat this year's target (continual improvements)</td>
</tr>
<tr>
<td>A regularly exceeded standard is not tough enough</td>
<td>Each achievement level sets a new floor for future achievement</td>
</tr>
</tbody>
</table>

3.12 COST MANAGEMENT TECHNIQUES

Several management analysis and decision process involving value analysis, process analysis, quality management all get integrated into a total cost management system. Modern cost accountant, therefore, becomes not only a member of the management team but also strategic manager himself. Following are the tools and techniques of cost management.

1. Target Costing.
2. Life Cycle Costing.
5. Enterprise Recourse Planning (ERP).
6. Activity Based Costing (ABC).
7. Activity Based Cost Management (ABCM).
8. Total Quality Management (TQM).
9. Value Chain Analysis.
15. Throughput Accounting.

Efforts are made to explain each of the above techniques in brief.
3.12.1 Target Costing

Target costing is practiced in more than 80% companies in Japan and more than 60% companies in processing industries. Japanese companies were experiencing shortage of resources and skills required for the development of new concept, tools and techniques which are required to achieve parity with the toughest western terms of quality, cost and productivity. A range of specialized tools including functional analysis, value engineering, value analysis and concurrent engineering were introduced to support target costing. “A structured approach to determine the cost at which a proposed product with specified function and quality must be produced to generate a desired level of profitability at its anticipated selling price”\(^{21}\).

3.12.1.1. Main Features of Target Costing

The important features of target costing are,

a. It is an integral part of the design and introduction of a new product. It is a part of an overall profit management process rather than simply a tool for cost management.

b. In any given product a target selling price is determined by using variance analysis and sales forecasting techniques. It should be a reflection of the competitive environment.

c. Target selling price is the establishment of target production volumes which give the relationship between price and volume.
The below chart shows steps in target costing;

**Chart-3.3: Steps in target costing.**

- Set target selling price based on customer expectations & sales forecasts
- Establish profit margin based on long term profit objectives & projected volumes
- Determine target or (allowable) cost per unit (target selling price less required profit).
- Estimate the current cost of the new products
- Establish cost reduction target for each component and production activity using value engineering and value analysis

**Source:** Jain and Narang "Advanced Cost Accounting," Kalyni Publication, New Delhi, 2000 p-156.

The above chart shows the steps in target costing. First target selling price is fixed based on customer requirement and fix profit margin based on long term objectives. Find out allowable cost per unit selling price-required profit. All possible effort is to be made to achieve the target cost.
3.12.2 Life Cycle Costing

It is totally different from traditional cost accounting system. It reports profitability on a calendar basis i.e. monthly, quarterly and annually. It involves tracing cost and revenues on a product by product base over several calendar periods. Life cycle of a product vary from product to product from a few months to several years in case of cameras, photocopying machinery etc. The usefulness is more than 100 years. In case of black and white TV and VCR it was for few years.

3.12.2.1 Elements of Life Cycle Cost

The basic concept of life cycle costing is better allocation of cost pre and post manufacturing period. The traditional cost accounting focus on the manufacturing stage of life cycle of a product. There is a chance of ignoring vital elements of the pre manufacturing cost like cost incurred for doing research on product such as product design, product development, training and development of employee. The following are elements of product life cycle cost.

1. Acquisition cost i.e. research cost, design, testing cost etc.
2. Transportation, maintenance and handling cost of equipment.
3. Energy cost and other utilities.
4. Cost of training to the staff.
5. Inventory holding cost, spare parts, warehousing costs, technical knowhow cost.

3.12.2.2 Steps in Product Life Cycle.

The following are main steps in product life cycle.

i) Market research. Here research is done about what product customer want and how much he is ready to pay for it.
ii) Specification. Here it will give maximum permissible maintenance costs, manufacturing costs, required delivery date, expected performance of the product.

iii) Design. Detail drawings of the product process are to be defined.

iv) Prototype manufacturing. With the available drawings small quantity of the product will be manufactured. These prototype will be used to develop the product.

v) Development. After the initial run make suitable change in product design or process of manufacturing. Keep on changing the product until it will reach the actual requirements of the customer.

vi) Tooling. It means arranging required tools and equipment for making manufacturing of product in large quantity.

vii) Manufacture. It involves the purchase of raw materials and components, the use of labour to make the product.

viii) Selling.

ix) Distribution.

x) Product support.

xi) Decommissioning. When manufacturing product comes to end the plant used for production must be sold or scrapped.

### 3.12.2.3 Different Stages of the Product Life-Cycle

The different stages of product life cycle costing are shown in the following figure.
The above figure clearly shows the different phases of product life cycle such as, Introduction, growth, maturity and declining.


The following are the features of product life cycle:

a. The products have specific lives and part through the cycle of development. Introduction, growth, maturity, decline and deletion at varying speeds.

b. Cost revenue and profit are predictable course through the product life cycle. Profit appears at growth stage and after stabilizing during the maturity stage than decline.

c. It requires research and development emphasis in the development stage and cost control emphasis in the decline phase.

d. It provides an overall framework for considering total incremental cost over the entire life span of a product.

3.12.3  Just In Time Approach

This technique was developed by Japan Toyota Motor Company. It is strategy for stock management in which raw material and components are delivered from suppliers immediately before they need for manufacturing.
Here it is possible to increase the revenue through better service and quality because less amount is blocked in the form of inventories. Ultimately stock is reduced volume of production significantly increases.

According to Hoeffer the JIT system is a combination of purchasing, inventory control and production management function.

A company must ensure that it receives products spare parts/materials from its suppliers on the exact date and at the exact time when these are needed for this reason purchasing staff must investigate and evaluate every suppliers, eliminate those who could not keep up with the within time delivery\textsuperscript{23}.

3.12.3.1 Features of Just In Time Approach

Some of the important features are,

a. Deliveries should be sent straight to the production floor for immediate use in manufacturing products so that there is no time to inspect incoming parts for defects.

b. The engineering staff must visit supplier’s site and examine their process, guide to bring up to a higher standard of product.

c. It will focus on eliminating all waste from a system. This can be a wastes of assets, excessive inventory etc.

d. It will reduce various kinds of waste of time so that the entire production process can concentrate on the time spent in actual producing products. With the help of table 3.4 one can understand the difference between JIT approach with Traditional approach.
Table-3.4: Comparison of JIT approaches with traditional manufacturing and production

<table>
<thead>
<tr>
<th></th>
<th>JIT</th>
<th>Traditional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pull through system</td>
<td>Push through system</td>
<td></td>
</tr>
<tr>
<td>Insignificant inventories</td>
<td>Significant inventories</td>
<td></td>
</tr>
<tr>
<td>Small supplier base</td>
<td>Large supplier base</td>
<td></td>
</tr>
<tr>
<td>Long-term supplier contracts</td>
<td>Short-term supplier contracts</td>
<td></td>
</tr>
<tr>
<td>Cellular structure</td>
<td>Departmental structure</td>
<td></td>
</tr>
<tr>
<td>Multiskilled labour</td>
<td>Specialized labour</td>
<td></td>
</tr>
<tr>
<td>Decentralized services</td>
<td>Centralized services</td>
<td></td>
</tr>
<tr>
<td>High employee involvement</td>
<td>Low employee involvement</td>
<td></td>
</tr>
<tr>
<td>Facilitating management style</td>
<td>Supervisory management style</td>
<td></td>
</tr>
<tr>
<td>Total quality control</td>
<td>Acceptable quality level</td>
<td></td>
</tr>
<tr>
<td>Buyer's market</td>
<td>Sellers market</td>
<td></td>
</tr>
<tr>
<td>Value-chain focus</td>
<td>Value-added focus</td>
<td></td>
</tr>
</tbody>
</table>


3.12.4 Material Requirement Planning (MRP)

Material Requirement Planning is a computerized production scheduling system. It is special technique to plan the requirement of material for production. And it is Management Information System (MIS) provides a basis for production decision. The success of the system depends on quality of information inputted to computer software model. The following figure shows the overview of the MRP.
It is clear from the above figure that master production schedule is combination of product structure, material requirement planning and item master file. Planned orders are released they are work orders, purchase orders and rescheduling notices.

3.12.4.1 Features of MRP

Some of the significant features of MRP are,

- a. Find out final product namely what would be produced and at what time.
- b. It increase the plant operating efficiency by better use of productive resources
- c. It minimize the inventory cost by reducing stock levels
- d. Calculate the required units of production of sub assemblies.
- e. Determine inventories, work in progress, batch sizes and manufacturing and packing lead times.
f. It is detailed forecast of the inventory position highlighted period by period usually used to plan a future time period of manufacturing operation like a month, quarter or even year into the future.

3.12.5 Enterprise Resource Planning (ERP)

It is latest high end solution which information technology has lent to business application. It combines all computerized departments together with the help of single integrated software program that runs off a single database so that various departments can more easily share information and communicate with each other. Today companies in India have gone in for implementing of ERP. 60 percent companies implemented ERP to give competitive advantage. The following figure will describe evolution of ERP.

Fig-3.8: Evolution of ERP

Source: googleimages

It is shown in the above figure that evolution of ERP from 1940s, Inventory Control 1960s Material Requirements Planning(MRP), Manufacturing recourse planning 1990s, Enterprise recourse planning 2000s extended ERP and also shows next generation ERP.
3.12.5.1 Features of ERP:
The following are the features of ERP

a. It is a wide integrated information system covering all functional areas like manufacturing, selling and distribution, payables, receivables, inventory, accounts, and human resource purchases etc.
b. It solves the information gap across organization.
c. It is a solution for the best project management.
d. It stimulates introduction of the latest technologies like Electronic Fund Transfer (EFT), Electronic Data Interchange (EDI), Internet Video Conferencing etc.
e. It solve the most of business problems like material shortages, productivity enhancements, customer service, cash management, inventory problems, quality problems and prompt delivery. The below figure shows how ERP will work.

Fig-3.9: ERP work process

Source: googleimages

3.12.6 Activity Based Costing (ABC)

ABC is modern absorption costing method and was introduced between the years 1960s and the 1980s to produce more accurate product cost. It is an accounting methodology that assigns costs to activities rather than products or services. This enables resources overhead costs to be more accurately assigned to products and services that consume them.

3.12.6.1 Concept of ABC.

CIMA defines ABC as "cost attribution to cost units on the basis of benefit received from indirect activities e.g. ordering, setting up, assuring quality". The basic feature of ABC is to assign cost on the basis of activities. Activity is the fundamental cost objectives for determining product or service cost. Present competitive world needed ABC because of globalization very competitive selling price should be fixed. But in traditional cost accounting allocation of overhead is not on the basis of activities and it leads to fixing inappropriate selling price. It is better to know the difference between traditional overhead allocation and ABC.

Table 3.5: Traditional System Vs. ABC

<table>
<thead>
<tr>
<th>Traditional System</th>
<th>ABC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing overheads are first allocated and apportioned to cost centers (production and support service centers) and then absorbed to cost objects e.g. product</td>
<td>First overheads are assigned to activities or activity pools (group of activities) and than they are assigned to cost object or product.</td>
</tr>
<tr>
<td>It is not appropriate in allocation of overhead.</td>
<td>It is more appropriate in allocation of overhead.</td>
</tr>
</tbody>
</table>
Traditional System | ABC
---|---
It fails to determine the product cost accurately | It will accurately determine the product cost.
There is lack of cause and effect relationship for allocating cost to product. | It will find what cause cost i.e. activities.(which activity made cost)
The cost of product either undercosted or overcosted. | Less or no chance of under costing or over costing.
Rational cost control and reduction is not possible. | Scientific cost control and reduction is possible because of detail analysis of indirect cost is done here


3.12.6.2 Features of ABC
The salient characteristics of ABC are,

a. Cost management and downsizing
b. ABC is must where production overheads are high in relation to direct costs.
c. ABC is needed where there is great diversity in the product range.
d. When improvement in performance of the product in competitive cost.
e. The products which use very different amount of the overhead resources.
f. Implementation of ABC is to improve product costing
g. It is suitable to identify non-value added activity in production process.
h. To take make or buy decision it will guide
i. It will fix correct price for transfer pricing of a product within the organisation selling the product.

3.12.6.3 Kaplan and Cooper’s Approach to ABC
Kaplan and Cooper of Harvard Business school, who have developed this approach in costing to compute product costs claim that relates overhead costs to the forces behind them. The forces behind overhead costs are named as ‘cost drivers’. Cost drivers can be defined as activities or transactions, which generate costs. Under ABC system product cost is calculated by attaining a greater understanding of the cost behaviour and using new measures of activity of resources consumed by each product. ABC system is based on activities cause costs and that a link should, therefore, be made between activities and product by giving costs of activities to products based on product’s demand for each activity.

3.12.6.4 Product Costing Process under ABC

Under ABC, the cost of a product is the aggregate of the costs of activities performed to develop, manufacture, sell, deliver and service the product. The following chart shows the product costing under ABC system.
Chart-3.4: Product Costing under ABC


It is clear from the above chart that direct costs are allocated directly to product and all indirect costs are allocated to product on the basis of activities using different cost pools.
3.12.6.5 Steps Involved in ABC

The important steps involved in ABC are,

1. **Identification of Major Activities:** First step in ABC is to identify key activities such as material handling, mechanical insertion of parts, manual insertion of parts, quality testing, etc.

2. **Determination of the Cost Drivers:** The second step in ABC is to determine the cost drivers for each activity. The cost driver is primary factor which causes the incurrence of cost relating to activity. Examples of cost drivers are labour time, machine time, quantity handled, invoices processed, number of requisitions, etc. These cost drivers change from activity to activity depending upon their character.

3. **Creation of Cost Pools:** The third step involves gathering of the expenses of all resources consumed by each activities which gives costs of all activities and then creation of cost pools for activity costs having the same cost driver.

4. **Cost Attribution:** This is the last step in ABC, where costs of all activities in the cost pools are attributed to products on the basis of cost drivers.

3.12.6.6 Competitive Advantage Through ABC:

ABC supports business strategy in several ways. It supports the management by providing data at the functional as well as strategic level for gaining competitive advantage. The below figure shows competitive advantage through ABC.
Fig-3.10: Competitive Advantage through ABC

The above figure shows that the areas where ABC serves management in gaining competitive advantage.

1. **Product Planning and Promotion**: Proper product costing helps the management to compare the profits that various product lines, brands, etc., generate and to decide on removing unprofitable products. Appropriate cost information pertaining to profitability of one product in relation to the other is the significant basis for such decisions. ABC helps the management in product planning and promotion of new product by offering appropriate costs.

2. **Cost Cutting and Downsizing**: If survival of business is in question and its financial results are not satisfactory, organizations have to resort to extreme measures to minimize the cost. These may take the form of layoffs, closedowns, etc. In long run such actions do not
generally succeed unless the focus of the activities is changed. However, ABC approach is very efficient in making right kind of decisions in position calling for key changes in the way of work planned. As ABC is spotlights on the activities, one clearly knows as to which activities are non-value adding for being targeted in a downsizing exercise for enhanced competitive advantage.

3. **Product Pricing:** ABC facilitates the management to fix the product prices by establishing an effective pricing policy. ABC helps in price fixation by providing appropriate information relating to product costs.

4. **Identifying Customer:** ABC helps the management in recognizing the more profitable customer for the company’s products by providing accurate product costs. On the basis of appropriate cost information management can evaluate the capability of customers in placing product.

5. **Selection of Distribution Channel:** Now-a-days non-manufacturing costs can no longer be ignored as they constitute major portion of the total cost, e.g., soft drink masters of the world, Coke and Pepsi have huge marketing and advertisement costs. Under ABC, costs can also be found for particular distribution channels. The channel of distribution available may turn out to be profitable if the costs are properly allocated. Marketing and servicing costs are vital for better allocation through ABC.

6. **Performance Improvement:** ABC involves preparing the statement of expenditure activity-wise and evaluating it with the corresponding value addition to know the activities which are to be removed or required improvement for better results. ABC provides
appropriate cost information which is vital for most of the product improvement approaches like total quality management, life cycle costing, and target costing etc\textsuperscript{26}.

3.12.7 Activity Based Cost Management (ABCM)

It focuses on the efficient and effective management of activities as the route to continuously improving the value received by customer and the profit received by providing the value. ABCM utilizes cost information which gathers through ABC through various analysis. It manages activities rather than resources which ABC supplies the information and ABCM uses this information in various analysis designed to yield continuous improvement. The ABCM currently being used for variety of business application such as activity based budgeting, benchmarking, cost reduction, performance measures and business process re-engineering. ABCM is much broader concept it refers to the management philosophy that focuses on the planning execution and measurement of activities as the key to competitive advantage\textsuperscript{27}.

3.12.8 Total Quality Management

By focusing on the management accounting function we will devise a process through which quality improvement methods might be used to highlight problem areas and facilitate their solution on initial understanding of the difference between the quality control, quality assurance and quality management\textsuperscript{28}.

Quality Control:

It is concerned with the past and deals with data obtained from previous production which allows action to be taken to stop the production of defective units.
Quality Assurance:

It deals with present and concerns the putting in place of system to prevent defects from occurring.

Quality Management:

It deals with future and manages people in a process of continuous improvement to the products and services offered by the organization. The following figure shows the TQM basic concepts.

**Fig-3.11: TQM Basic Concepts**

![TQM Basic Concepts Diagram]

Source: googleimages

The above figure shows how TQM will work, first it will focus on the customer requirement, continuous improvement of quality measuring quality by involving the employees.

**3.12.8.1 Features of TQM**

The striking features are,

b. It is a systematic process implemented to identify and adopt solution to prioritized opportunities for improvement.

c. It will highlight the need for a customer oriented approach to management reporting eliminating some of over more traditions reporting practices.

d. TQM culture is to be developed so that quality improvement becomes a normal part of everyone’s job and a clear commitment from the top must be provided.

e. TQM is a process, not programme it is never ending search for ways to do the job better.

f. There is always room for improvement however small.

g. TQM may not be appropriate for service based industries because it ignores the culture of organization. TQS is suitable for service sector (Total Quality Service).

The following figure shows the procedure for implementing TQM

Fig-3.12: Implementation of TQM

<table>
<thead>
<tr>
<th>How to Implement Total Quality Management?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Commitment from Employees</td>
</tr>
<tr>
<td>2. Quality Improvement Culture</td>
</tr>
<tr>
<td>3. Continuous Improvement in Process</td>
</tr>
<tr>
<td>4. Co-operation from Employees</td>
</tr>
<tr>
<td>5. Focus on Customer Requirements</td>
</tr>
<tr>
<td>6. Effective Control shall be laid down</td>
</tr>
</tbody>
</table>

Source: googleimages
It is shown in the above figure that steps for implementing TQM in an organization. Commitment of an employees, continues quality improving culture should be encouraged, co-operation from employees to focus on customer satisfaction and effective control.

3.12.9 Value Chain Analysis

It was suggested by Michael Porter (1985) to depict how customer value accumulates along a chain of activities that leads to an end product or service. It is the internal processes or activities a company performs to design, produce, market deliver and support its product. The value chain for any firm is the value creating activities all the way from basic raw material sources from component suppliers through the ultimate end use to product delivered into the final consumers hands\(^29\). The following figure shows the basics of value chain analysis.

**Fig-3.13: Value Chain Analysis**

Source: googleimages
It appears from the figure that there are two types of activities they are primary activities and support activities. Primary activities includes, Inbound logistics, Operations, Outbound Logistics, Marketing and Sales lastly Services. Similarly support activities includes Firm Infrastructure, Human Resource Management, Technology Development and lastly Procurement.

3.12.9.1 Features of VCA:
The prominent features of VCA are,

a. It will require a team effort. Management Accountant of today has to collaborate with engineering production, marketing distribution, and service professionals to focus on the strength, weakness, opportunities and threats identified in the value chain analysis results.

b. Enhances the firm value and demonstrates the value of the finance staff to the firms growth and survival.

3.12.10 Business Process Re-engineering (BPR)

In modern business environment, many products are entering the market and only the best products are survived. In such environment, only those who fight on the cost, time, quality and service will survive. Business Process Re-engineering has came out as a tool to overcome the business hurdles. BPR focus is on rethinking and redesigning in the way we work. This is reorientation of the business process from the point of view of potential customer. It is thinking process to ensure that activities are adding value. “It is neither a mere trick that promises to increase the quality of a product or save a percentage of cost, nor it is programme to hike worker morale or to motivate the sales force. BPR means starting all over, starting from scratch.” BPR is a thinking process for each essential element of the organisation like personnel, raw material, accounting practices,
Management Information System (MIS), finance, etc., to find out the restrictions in the way of doing work and avoiding needless work, removing obsolete methods and systems if required. In other words, BPR attempts to view the business activities closely with an intention of noticing and avoiding ineffective works for ensuring competitive advantage\(^\text{30}\).

BPR singularly and collectively plays a significant role in the financial control of enterprise. It can be pointed out that BPR system and practices would help in overall improvement of the performance of the firm, decreasing in cost of production and improvement in productivity. This has become possible for the BPR to achieve the above benefits with the help of improved and advanced technology.

3.12.11 Bench Marking (BM)

The enlarged global competition calls for special capability of increased cost efficiency for an organization for its survival. BM is a recent development which will help an organization to attain cost efficiency. Bench mark study provides significant information on the competitive efficiency of a company. BM is the continuous process of measuring products, services and activities against the best levels of performance. It is a continuous information sharing process implemented by a firm to identify its strong or weak points against the toughest competitors to enhance the activities taken up and services provided by it. A comparison of costs per process or per output among many companies can highlight which companies are more cost efficient and which are less cost efficient. An analysis of the activities of the most efficient company can help the least efficient company to find out the ways in which they can improve their cost efficiency.
3.12.11.1 Steps in BM

BM is a constant learning process and therefore, results in innovations. In order to efficiently benchmark, the company has to follow five essential steps. The below figure shows essential steps.

Fig-3.14: Five Steps in BM


Above Figure represents five essential steps of BM which are explained as follows:

1. **Identifying Key Variables:** It is the first step in BM exercise wherein the variable for BM is found out by the management. In order to benchmark efficiently, it is significant to identify the proper variable. Some of the important areas which may be considered for BM are
   (i) cost of product,
   (ii) productivity,
   (iii) standards of performance achieved, and
   (iv) attitudes/features.

2. **Selecting Comparative Companies:** One required to benchmark with the best in the industry sometimes even with best in the world not necessary from the same industry. The firms are, therefore, to select a best firm which deserves comparison. It is hard task to judge
that a specific firm is internally as well as externally sound. However, efforts must be made to select firm suitable for comparison.

3. **Gathering Required information:** Data is basis for comparison. Therefore, most care must be taken while collecting the data to obtain appropriate and relevant data.

4. **Evaluating and Interpreting the Performance Gap:** The information collected for the enterprise with which the company intends to bench mark should be analyzed and compared with the performance of firm. The performance gap can be revealed and interpreted so that accurate point of weakness or strength is located.

5. **Improving the Performance:** required managerial actions may be initiated for improving the performance to achieve world class operations. Practical BM is the need of the hour, which will manage that the input costs do not blend the competitive edge thereby, makes a firm fit to be a global player to beat the best competitor in the globe.

3.12.12 Kaizen Costing.

Kaizen refers to the process of seeking continuous improvement. Some Japanese companies link a target costing planning process with a kaizen process once the products are in production. Their approach to continuing improvement is to have several generations of products at different stages of design and development. Prior to kaizen costing, when the products are under development phase, target costing is applied. After targets have been set, they are continuously updated to display past improvements, and projected (expected) improvements. Adopting Kaizen costing requires a change in the method of setting standards. Kaizen costing focuses on "cost
reduction" rather than "cost control". The following figure describes the basics of Kaizen Cost.

**Fig-3.15: Kaizen - Continuous Improvement**

![Kaizen - Continuous Improvement](source: googleimages)

It is shown in the above figure about working of Kaizen - Continuous Improvement. Top Management should take care of Innovation, Middle Management should take care of small and continues improvements in current processes and lastly Supervisors and workers should do correct maintenance.

Kaizen costing involves making continual, incremental improvements to the production process during the manufacturing phase of the product/service lifecycle, typically involving setting targets for cost reduction. Kaizen costing takes into consideration costs related to manufacturing stage, which includes:

- Costs of supply chain;
- Costs of product redesign;
- Legal costs;
- Manufacturing costs;
- Waste;
✓ Recruitment costs;
✓ Marketing, sales and distribution; and
✓ Product disposal.

Kaizen costing has been developed to support the continued cost reduction of existing components and products. One of the main ways to reduce costs is through the elimination of the seven main types of waste:
1. Over-production - produce more than customers have ordered.
2. Inventory - holding or purchasing unnecessary inventory.
3. Waiting - production delays/idle time when value is not added to the product.
4. Defective units - production of a part that is scrapped or requires rework.
5. Motion - actions of people/equipment that do not add value.
6. Kaizen Costing Transportation - poor planning or factory layout results in unnecessary transportation of materials/work-in-progress.
7. Over-processing - unnecessary steps that do not add value to product.

While implementing the concept of kaizen, following few rules are to be considered.
✓ Identify your own problems.
✓ Grade your problem like minor, difficult and major.
✓ Select the smallest minor problem and start with it after tackling this, move on to next graded problem and so on.
✓ Always ensure that improvement is a part of daily routine.
✓ Never accept status quo.
✓ Never reject any idea before trying it.
✓ Share the experiments with colleagues, eliminate already tried but failed experiments, while sharing the problems with your colleagues. Never hide problems always highlight them.

In order to achieve cost reduction, variable as well as fixed costs are considered. However, since fixed costs are needed to maintain continuous growth, Kaizen cost is achieved mainly by reduction in the variable costs, direct material and direct labour costs. Targets for kaizen costs are set monthly basis on the following ground.

1. Per product actual cost in the previous year = Total actual cost of last year ÷ Actual production in last year.
2. Estimated amount of total current year actual cost = Per product actual cost in the previous year x Estimated production for the current year.
3. Kaizen cost target for the current year = Estimated amount of total current year actual cost x Ratio of cost reduction target.
4. Assignment cost to each plant (assignment ratio)= Cost directly controlled in single plant ÷ Cost directly controlled in all plants.
5. Kaizen cost target for each plant = Kaizen cost target for the current year x Assignment ratio.


Following figure shows kaizen costing implementation process in detail.
Fig-3.16: Kaizen Costing Implementation Process

The above figure shows Kaizen Costing Implantation Process. Product planning phase includes, Product specification, Revenues/Targets, Profit Targets, Cost Targets. Life cycle costing includes major product/process change. In production phase minor product/process changes are included and lastly product scrapping.

3.12.13 Balanced Scorecard.

The Balanced scorecard comprises measures from financial, customer, internal processes and learning and growth perspectives. The aim is to avoid focusing only on short term financial measures. The BSC enables managers to focus their efforts and to understand the links between the four key areas. The BSC technique was developed by Kaplan and Norton (1992, 1996) to combine financial control measures with non-financial control measures. It is used for implementing the mission and objectives of an organisation’s business strategy. The purpose of the BSC is to enable effective monitoring and control of the business.

The Balanced Scorecard consists of four interrelated quadrants each containing measures for a distinct perspective. They are as follows

1. Financial.
2. Customer.
3. Internal processes.
4. Learning and growth.

These four are designed to cover the whole of the organisation’s activities, both internal and external, current and future. It can be understood with the following figure.

**Fig-3.17: Balanced Scorecard**

Source: googleimages

It is shown in the above figure that first focus on customer satisfaction with the help of increased quality. Learning and growing includes team building, employees development and training. Business Processes includes strategic sourcing, risk protection contract management,
analytical negotiation and decisions taking. Financial includes decreasing costs, resource optimizations, low cost country sourcing and lastly competitive bidding.

3.12.13.2. Steps in Development of a BSC
The following are steps in the developing of a BSC
1. Identify the key outcomes critical to the success of the organisation.
2. Identify the processes that lead to these outcomes.
3. Develop key performance indicators for these processes.
4. Develop reliable data capture and measurement systems.
5. Develop a mechanism for reporting these to the relevant managers and staff.
6. Enact improvement programmes to ensure that performance improves.

3.12.13.3. Benefits of BSC
The main benefits of the BSC are mentioned below.
✓ It avoids management reliance on short-term or incomplete financial measures. It ensures that senior management takes a balanced view about the organisation’s performance.
✓ Forcing management to develop success measures related to corporate goals. Top level strategy and middle management level actions are clearly connected and appropriately focused.
✓ It can help stakeholders to evaluate the organisation if measures are communicated externally.
✓ The organisation’s performance reporting system is much more likely to focus on staying competitive in the long term and to realise value for its stakeholders.

Goldratt’s ideas on Theory of Constraints (TOC) indicate a criticism of traditional accounting measurement. They focus on working optimally. TOC is predicated on there being a finite capacity at certain critical points in any production schedule. By eliminating bottlenecks, TOC increases the velocity of products moving through an organisation and therefore profit is maximised. TOC is not ‘costing’ as it does not allocate costs to products and services. The TOC approach calculates the product throughout the product’s sales price minus its material costs. All other costs are taken into account separately as operating costs are not allocated directly to the products. Currently, no specific accounting practices are advocated by Goldratt. Instead, accountants are encouraged to learn TOC ideas and to apply them to accounting in ways which suit them. The following figure shows about the theory of constraint.

**Fig-3.18: Theory of Constraints**

![Theory of Constraints Diagram](googleimages)

It is clear from the above figure that how Theory of Constraints works. First identify the constraint than analyze the which constraint is exploiting. Next step is to overcome the constraint until the problem is solved the above process will repeat again.
3.12.14.1. Goldratt’s five steps in the TOC
The following are steps in TOC
1. Identify the system constraint.
2. Decide how to maximise the output from the constraint. Prepare to subordinate all other activities to this decision.
3. Once the resource constraint has been identified, consideration can be given to deploying the appropriate level of resources. As a consequence, the constraint's capacity is increased.
4. Once a constraint has been rectified, go back to step one.
5. To identify the next most serious constraint and repeat.

The following are major benefits of TOC.
1. Traditionally managers took action to correct costs different from planned through its use. However, cost allocation has become arbitrary for several reasons and its applicability is now dubious.
2. The advantage lies in avoiding the accumulation of the associated excess stocks and work in progress. It also addresses the weakness of managers seeking to optimise production on particular machines if this is sub-optimal for the firm. Markets and customer requirements are constantly changing and the business model must respond quickly.
3. As a pure optimisation tool, TOC can never be better than a correctly formulated Linear Programming (LP) approach. However, the TOC-based approach has significant advantages over LP. It is easier to use, particularly for managers who are not familiar with operational research methods.
3.12.15 Throughput Accounting.

The concept of Throughput Accounting (TA) was created by management consultants David Galloway and David Waldron. They wished to replace traditional concepts such as direct and indirect cost allocation, economic batch size and treating inventory as an asset. In their view accounting should monitor the rate at which businesses make money. With this crucial goal in mind, they focused on the return per product per restricted hour. TA is an important development in modern accounting that allows managers to understand the contribution of constrained resources to overall profitability. It also refocuses away from cost accounting’s reliance on efficiencies. TA improves profit performance through better analytical decisions based on three critical monetary variables, namely throughput, inventory and operating expense. It is sometimes referred to as throughput contribution and is similar to the concept of ‘contribution’ in marginal costing i.e. sales revenue less ‘variable’ costs. Supply chains transform components into a finished product that is delivered to the end customer. Plans will be drawn up to maximize production (throughput) and that once these plans have been established no section of the firm should depart from them. Each department could be seen as having a fixed budget to spend to meet its target. The following figure describes the difference between throughput accounting and conventional cost accounting.
The above figure highlights the difference between throughput and conventional accounting. In conventional cost accounting inventory is an asset but in case of throughput accounting it is to be treated as barriers for making profit. In cost accounting costs are classified as direct and indirect but in case of throughput accounting costs are no longer exist. In costing direct labour cost is a variable but in throughput it is fixed cost. In traditional accounting profit can be maximized by reducing cost elements but in modern approach profit is the function of material cost i.e. Profit = Throughput - Total Fixed Cost (TFC).

Throughput accounting is not really a new form of accounting. It is merely an extreme form of variable costing. The accounting skill should be to provide relevant costs for the purpose for which they are required - this has always been the case and TA offers nothing new to that basic concept.
3.13 Cost Management Implementation Strategy in Sugar Industry

In order to ensure that complexities of business are properly managed, the executives should implement cost management system. The management accountant has to convince the management team regarding the need for structural changes in the organization's cost management and performance measurement system. The various steps involved in implementation of cost management are as follows:

i) Conducting awareness programmes for the top and middle management.

ii) Organizing management development programmes for senior and middle management. In these programmes the fundamental concepts and approaches of cost management, broad methodology of its various paths and their benefits are explained with the help of case studies.

iii) Undertaking a couple of pilot projects to test the actual relevance and benefits of cost management.

iv) Taking up company-wide implementation after successfully performing pilot project.

This pragmatic step by step approach helps the organisation in implementing the cost management successfully.

3.13.1 Requirements for Implementing Cost Management Techniques in Sugar Industry

It is team work and support from top level management to lower level management. The following point should be remembered to implement cost management techniques in sugar industry.
1. Establish good cost accounting department.

2. Select which cost management techniques are suitable for sugar industry such as Target Costing, Life Cycle Costing, Just in Time Approach, Material Requirement Planning (MRP), Enterprise Resources Planning (ERP), Activity Based Costing (ABC), Activity Based Management (ABM), Total Quality Management (TQM), and Value Chain Analysis.

3. Each technique has its limitation. We should select most useful and easy way to apply techniques of cost management.

4. Proper training should be given to the staff to educate about techniques implementation in industry. First training should be given to management body. These techniques will reduce the cost and directly increase the profit.

5. At a time all techniques of cost management should not be implemented. The things should be used on trial and error base. Initially one or two techniques should be practiced.

6. Profit is backbone of organization. It can be achieved by decreasing cost as well as increasing selling price.

The aim of the research work is to find out the cost and management accounting techniques to be established in co-operative sugar factories in Bidar district of Karnataka. Hence the life blood of every country’s economy lies upon the state of its manufacturing companies. So if manufacturing companies adopt the appropriate techniques, they will strive or do well and also the state of the economy will improve. For manufacturing companies to be healthy, it is a function of how costing techniques is managed.
References:


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