CHAPTER-2

THEORETICAL FRAMEWORK OF COST OPTIMIZATION
2.1 Introduction

Before making an attempt to study the Cost Optimization, it would be relevant to understand exhaustively about concept of cost, Cost-Classifications and their respective importance in decision making and control, cost reduction, cost control and their respective differences with Cost Optimization is required. In addition, a brief understanding is provided about Economic Value Added to bring a new attempt in knowing whether the cost incurred have provided a positive impact or negative impact on value addition. If there exists positive impact on Value Addition in term of economic profit, then it is construed as Cost Optimization and vice-versa. Therefore keeping all this in view, a chapter is developed to bring conceptual clarity as regard to Cost, Cost classifications, cost control, cost reduction and Cost Optimization with value addition.

2.2 Concept of Cost

A cost is a sacrifice of resources. Every day, we buy many different things: clothing, food, books, music, perhaps an automobile, and so on. When we buy one thing, we give up (sacrifice) the ability to use these resources (typically cash or a line of credit) to buy something else. The price of each item measures the sacrifice we must make to acquire it. Whether we pay cash or use another asset, whether we pay now or later (by using a credit card), the cost of the item acquired is represented by what we forgo as a result.
2.3 **Cost versus Expenses**

It is important to distinguish cost from expense. An **expense** is a cost charged against revenue in an accounting period; hence, expenses are deducted from revenue in that accounting period. We incur costs whenever we give up (sacrifice) resources, regardless of whether we account for it as an asset or an expense.

2.4 **Classification of Costs**

The various costs incurred by companies have been broadly classified into following categories for the purpose of cost optimization.

2.4.1. **Cost Classifications**

**Table: 2.1 Cost classifications**

<table>
<thead>
<tr>
<th>Purpose of cost classification</th>
<th>Cost classifications</th>
</tr>
</thead>
</table>
| Preparing external financial statements | ● Product costs  
● Direct materials  
● Direct labour  
● Manufacturing overheads  
● Period costs  
● Marketing or selling costs  
● Administrative costs |
| Predictability                 | ● Variable cost  
● Fixed cost                |
| Assigning costs                | ● Direct cost  
● Indirect cost             |
### Purpose of cost classification

<table>
<thead>
<tr>
<th>Managerial Decisions</th>
<th>Cost classifications</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>• Controllable and Uncontrollable Cost</td>
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<td>• Relevant and Irrelevant Costs.</td>
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<td>• Sunk cost</td>
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<td>• Opportunity cost</td>
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<td></td>
<td>• Break Cost</td>
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<td>• Discretionary and Non-discretionary Cost</td>
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<td>• Marginal Cost</td>
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<td>• Standard Cost</td>
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<td>• Postponable and Avoidable Cost</td>
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<td>• Out of pocket Cost</td>
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<td>• Imputed Costs</td>
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<td>• Replacement Cost</td>
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<td></td>
<td>• Future cost</td>
</tr>
<tr>
<td></td>
<td>• Conversion Cost</td>
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</tbody>
</table>

### 2.4.2 Product Costs

For financial accounting purposes, product costs include all the costs that are involved in acquiring or making a product. In the case of manufactured goods, these costs consist of direct materials, direct labour and manufacturing overhead. Product costs are viewed as attaching’ to units of product as the goods are purchased or manufactured, and they remain attached as the goods go into stock awaiting sale. So, initially, product costs are assigned to a stock account on the balance sheet. When the goods are sold, the costs are
released from stock as expenses (typically called cost of goods sold) and matched against sales revenue. Since product costs are initially assigned to stocks, they are also known as stock-related costs. We want to emphasize that product costs are not necessarily treated as expenses in the period in which they are incurred. Rather, as explained above, they are treated as expenses in the period in which the related products are sold. This means that a product cost such as direct materials or direct labour might be incurred during one period but not treated as an expense until a following period when the completed product is sold.

2.4.2.1 Direct Materials

The materials that go into the final product are called \textbf{raw materials}. This term is somewhat misleading, since it seems to imply unprocessed natural resources like wood pulp or iron ore. Actually, raw materials refer to any materials that are used in the final product; and the finished product of one company can become the raw materials of another company. Direct materials are those materials that become an integral part of the finished product and that can be physically and conveniently traced to it. Sometimes it isn’t worth the effort to trace the costs of relatively insignificant materials to the end products.

2.4.2.2 Direct Labour

The term direct labour is reserved for those labour costs that can easily (i.e., physically and conveniently) be traced to individual units of product. Direct labour is sometimes called touches labour, since direct labour workers typically touch the product while it is
being made. The labour costs of assembly-line workers, for example, would be direct labour costs, as would the labour costs of machine operators. Labour costs that cannot be physically traced to the creation of products, or that can be traced only at great cost and inconvenience, are termed **indirect labour** and treated as part of manufacturing overhead, along with indirect materials. Indirect labour includes the labour costs of caretakers, supervisors, materials handlers and night security guards. Although the efforts of these workers are essential to production, it would either be impractical or impossible to accurately trace their costs to specific units of product. Hence, such labour costs are treated as indirect labour.

### 2.4.2.3. Manufacturing Overhead

Manufacturing overhead, the third element of manufacturing cost, includes all costs of manufacturing except direct materials and direct labour. Manufacturing overhead includes items such as indirect materials; indirect labour; maintenance and repairs on production equipment; and heat and light, property taxes, depreciation and insurance on manufacturing facilities. A company also incurs costs for heat and light, property taxes, insurance, depreciation and so forth, associated with its selling and administrative functions, but these costs are not included as part of manufacturing overhead. Only those costs associated with operating the factory are included in the manufacturing overhead category. Various names are used for manufacturing overhead, such as indirect manufacturing cost, factory overhead, and factory burden. All of these terms are synonymous with manufacturing overhead. Manufacturing overhead combined with direct labour is called
conversion cost. This term stems from the fact that direct labour costs and overhead costs are incurred in the conversion of materials into finished products. Direct labour combined with direct materials is called prime cost.

2.4.3 Period Costs

Period costs are all the costs that are not included in product costs. These costs are expensed on the profit and loss account in the period in which they are incurred, using the usual rules of accrual accounting you have already learned in financial accounting. Period costs are not included as part of the cost of either purchased or manufactured goods. Sales commissions and office rent are good examples of the kind of costs we are talking about. Neither commissions nor office rent are included as part of the cost of purchased or manufactured goods. Rather, both items are treated as expenses on the profit and loss account in the period in which they are incurred. Thus, they are said to be period costs. As suggested above, all selling and administrative expenses are considered to be period costs. Therefore, advertising, Executive salaries, sales commissions, public relations, and other non-manufacturing costs discussed earlier would all be period costs.

2.4.4 Marketing or Selling Costs

Marketing or selling costs include all costs necessary to secure customer orders and get the finished product or service into the hands of the customer. These costs are often called order-getting and order-filling costs. Examples of marketing costs include advertising,
shipping, sales travel, sales commissions, sales salaries and costs of finished goods warehouses.

2.4.5 Administrative Costs

Include all executive, organizational and clerical costs associated with the general management of an organization rather than with manufacturing, marketing or selling. Examples of administrative costs include executive compensation, general accounting, secretarial, public relations and similar costs involved in the overall general administration of the organization as a whole.

2.4.6 Variable Cost

Variable Costs are those which vary in total in direct proportion to the volume of output. These costs per unit remain relatively constant with changes in production. Thus, variable costs fluctuate in total amount but tend to remain constant where considered with cost per unit as per changes in production activity. Examples are direct material costs, direct labour costs, power, repairs, etc.

2.4.7 Fixed Cost

Fixed Costs are those which remain fixed in total amount with increase or decrease in the volume of output or productive activity for a given period of time. Fixed cost per unit decreases as production increases and increases as production declines. Examples of fixed costs are rent, insurance of factory building, factory manager’s salary, etc. These fixed costs are constant in total amount but fluctuate with per unit cost as production changes. These costs
are known as period costs because these are dependent on time rather than on output. These costs are also termed as capacity costs.

2.4.8 Direct Costs

Direct costs can be defined as costs which can be accurately traced to a cost object with little effort. Cost object may be a product, a department, a project, etc. Example: Cost of raw material, direct wages, etc.

2.4.9 Indirect Cost

Indirect Costs are those costs which cannot be accurately attributed to specific cost objects. These typically benefit multiple cost objects and it is impracticable to accurately trace them to individual products, activities or departments etc. Example: Cost of depreciation, insurance, power, salaries of supervisors.

2.4.10 Controllable and Uncontrollable Cost

Controllable costs are those costs which can be influenced by the action of specified member of an undertaking. It refers to those costs which may be regulated at a specified level of authority (management) within a specified time period. The term “controllable costs” means variable costs. Cost-control factor depends on time factor and level of managerial authority. If the time period is sufficiently long, cost can be well controlled. Proper delegation of authority with responsibility facilitates the task of control of costs. Uncontrollable costs are those cost which cannot be influenced by the action of a specified member of an undertaking”. This cost is not subject to control at any level.
2.4.11 Relevant and Irrelevant Costs

Relevant costs. Not all costs are relevant for specific decision. A relevant cost whose magnitude will be affected by a decision being made. In decision-making, management should consider only future costs were revenues differ under each alternative. Management is concerned only with those things it gets affect. Management cannot change the cost of plant and machinery purchased in 1995. It can change future costs by its current decisions. Hence, relevant costs are future costs that will differ depending on the actions of the management. For each decision, the management must decide which costs are relevant. For example, in pricing a competitive bid, only differential costs may be relevant. Whether a cost is relevant or not depends upon the circumstances. In one case, a cost may be relevant but in another case the same cost may not be relevant. It is thus not possible to prepare a list of relevant costs to be used in all types of decision. Irrelevant costs are those costs that will not be affected by a decision. To take an example from day-to-day life, one may have to decide about making a journey by own car or by a public transport bus. In this decision, Insurance cost of car is irrelevant because it will not change whatever alternative is chosen. However, cost of petrol and other operating costs of car will differ under the two alternatives and thus, are relevant of this decision.

2.4.12 Sunk Cost

Sunk costs are those costs that have already been incurred and thus cannot be recovered. A sunk cost is an expenditure made in the past that cannot be changed and over which management has no
control. These costs are not relevant for decision-making about the future. Thus, the book value of an asset currently being used is not relevant in making the decision to replace it. Similarly, the cost of land purchased in 1980 is not relevant in deciding whether to sell the land or hold it. What is relevant is how much cash could be realised in future by selling it. Despite the fact that sunk costs, which are historical costs, are irrelevant for making decisions, they are frequently analysed in detail before decisions about future courses of action are made. For example, historical costs may affect future tax payments which will differ depending on the course of action selected by management. Moreover, an analysis of historical costs may provide information about how future costs will differ under alternative courses of action. One should understand the difference between sunk costs and irrelevant costs. Not all irrelevant costs are sunk costs but all sunk costs are irrelevant. To take an example, in choosing from the two alternative methods of production, if direct material cost is the same under the two alternatives, it is an irrelevant cost. But direct material cost is not a sunk cost because it will be incurred in future and is a future cost. In the opinion of Horngren, a well known authority on the subject, sunk cost has the same meaning as the past cost and all past costs are irrelevant.

2.4.13 Opportunity Cost

Opportunity cost is the sacrifice involved in accepting an alternative under consideration. In other words, it is a cost that measures the benefit that is lost or sacrificed when the choice of one course of action requires that other alternative course of action be given up. For example, a company has deposited Rs. 1 lakh in Bank
at 10% p.a. interest. Now, it is considering a proposal to invest this amount in debentures where the yield is 12% p.a. If the company decides to invest in debentures, it will have to forgo bank interest of Rs.10,000 p.a. which is the opportunity cost. Opportunity cost is a pure decision-making cost. It is an imputed cost that does not require cash outlay and it is not entered in the accounting books. Opportunity costs are the economic resources which have been foregone as the result of choosing one alternative instead of another. The unique feature of an opportunity cost is that no cash has changed hands. There is no exchange of economic resources. It results from sacrificing some action. They are never shown in regular cost accounting records.

2.4.14 Break Cost

Expense or charges incurred when a borrower terminates a fixed-rate loan contract before the expiry of the fixed-rate period.

2.4.15 Discretionary and Non-discretionary Cost

Expense which is not essential to the operation of an organization is called as Discretionary cost such as entertainment expenses. Expense required for the operation of an organization is called as Non-discretionary cost such as Insurance.

2.4.16 Marginal Cost

Marginal cost is the additional cost of producing an additional unit of product. It is the total of all variable costs. It is composed of all direct costs and variable overheads. Marginal costing is also a very important analytical and decision-making tool in the hands of
management. It helps in decisions like make or buy, pricing of products, selection of sales mix, etc.

2.4.17. **Standard Cost**

Standard cost is the predetermined cost of materials, labour and overhead for a selected period of time and for a prescribed set of working conditions.

2.4.18. **Postponable Costs**

Costs which may be postponed to the future with little or no effect on current operations are called as postponable costs. Actually it means deferring the expenditure to some future date. It does not mean that the cost is avoided and rejected summarily. Example: Repairs and maintenance.

2.4.19. **Avoidable Costs**

Cost which can be saved by choosing one alternative are called avoidable costs. Example: By not manufacturing a new product, the appropriate direct material, labour and variable costs can be avoided.

2.4.20. **Out-of-Pocket Costs**

Out-of-pocket cost means those elements of cost which warrant cash payment in the period under consideration. This is helpful in deciding whether a particular venture will at least return the cash expenditure caused by the expected project. Example: Taxes, insurance premium, salaries of supervisory staff, etc.
2.4.21. **Imputed Costs**

These are hypothetical costs which are specially computed outside the accounting system for the purpose of decision-making. Interest on capital invested is a common type of imputed cost. As interest on capital is usually not included in costs, it is considered necessary to take it into account when deciding about the alternative capital investment projects. The failure to consider imputed interest cost may result in an erroneous decision. For example, project A requires a capital investment of Rs. 50,000 and project B requires Rs. 40,000. Both the projects are expected to yield Rs. 10,000 as additional profit. Obviously, these two projects are not equally profitable since project B requires less investment and thus, it should be preferred. Similarly, rental value of building owned by a firm is also an imputed cost.

2.4.22. **Replacement Cost**

This is the cost where an asset can be purchased identical to that which is being replaced. In simple words, replacement cost is the current market cost of replacing the asset. When the management considers of an asset, it has to keep in mind its replacement cost and not the cost at which it was purchased earlier. For example, a machinery purchased in 1995 at Rs.10,000 is discarded in 2003 and a new machinery of the same type is purchased for Rs.15,000. So the replacement cost of the machinery is Rs.15,000.
2.4.23. Future Cost

No decision can change what has already happened. The past is history and decisions made now can affect only what will happen in the future. Thus, the only relevant costs for decision-making are pre-determined or future costs. But it is the historical costs which generally provide a basis for computing future costs. However, changing relationship in the future are also given due consideration while estimating future costs.

2.4.24. Conversion Cost

It is the total cost of ‘converting’ a raw material into finished product. This term is used to denote the sum of direct labour and factory overhead costs in the production of a product. In other words, conversion cost is factory cost minus direct material cost.

2.5 Cost Control

Cost control implies containing costs at a budgeted or some other predetermined level. For example:

- The cost of packing material is contained at Rs.50 per unit during the next financial year.
- Advertising costs are controlled at Rs.3 crore during the first quarter of next financial year.

The chartered Institute of management accountants, London defines Cost control as: “The regulation by executive action of the cost of operating an undertaking particularly where such action is guided by cost-accounting.” Cost control aims at reducing
inefficiencies and wastage and setting up predetermined costs and achieving them. In other words, cost control is compelling actual costs to confirm to planned costs. The Cost control is the function of keeping costs within prescribed limits.

2.5.1. Cost control techniques

Every control systems pre-supposes the practice of the following four activities.

1. Ascertainment and use of a Pre-determined standard for performance.
2. Evaluation of actual performance.
3. Comparison of actual performance with the standard performance to ascertain variations.
4. Analysis of variations arising out of several factors in order to take appropriate corrective action. Wherever necessary, Cost control techniques are:

5. Cost ratios,
6. Standard costing,
7. Budgetary control, and
8. Inter firm comparison.

Amongst the techniques used for cost control, the two most popular are standard costing and budgetary control.

2.5.1.1. Standard Costing:

This is a very valuable technique to control the cost. In this technique, standard cost is predetermined as a target of performance and actual performance is measured against the standard. The
difference between standard and actual costs are analysed to know the reasons for the difference so that corrective actions may be taken.

2.5.1.2. **Budgetary Control:**

Closely allied to standard costing is the technique of budgetary control. A budget is an expression of a firm’s plan in financial form and budgetary control is a technique applied to the control of total expenditure on materials, wages and overhead by comparing actual performance with planned performance. Thus, in addition to its use in planning, the budget is also used for control and co-ordination of business operations.

2.6. **Cost Reduction**

Cost reduction implies reducing the costs in a planned manner from, a given level to a lower level. Some examples of cost reduction could be:

- The cost of raw material is brought down from 65 percent to 60 percent (of not selling price) through import substitution.
- The labour cost per unit is reduced from Rs.200 to Rs.150 through a voluntary retirement scheme.
- The cost of steam is reduced by 30 percent by substituting husk for coal.

Cost reduction may be defined as the achievement of Real and Permanent Reduction in the unit cost of goods manufactured or services rendered without impairing their suitability for the use intended or diminution in the quality of the product. Cost reduction, should therefore, not be confused with cost saving and cost control,
Cost saving could be a temporary affair and may be at the cost of quality. Cost reduction implies the retention of essential characteristics and quality of the product and thus it must be confined to permanent and genuine saving in the costs of manufacture, administration, distribution and selling, brought about by elimination of wasteful and inessential elements form the design of the product and from the techniques and practices carried out in connection therewith.

Often cost reduction is confused with cost control.

2.6.1. Characteristics of cost reduction

1. Cost reduction must be real- say, through increase in productivity.
2. Cost reduction must be permanent – temporary reductions in cost due to windfalls, change in tax rates, changes in market prices, etc., do not come in purview of cost reduction.
3. Cost reduction must not impair the suitability of products or services for the intended use. In other words, cost reduction should not be at the cost of essential characteristics of the products or services.

The cost reduction is, therefore, the term used for planned and positive approach to the improvement of efficiency. It can be viewed in many ways, such as increasing productivity, elimination of waste, improvement in product design, better technology and techniques, incentive schemes, new layouts and better methods, etc. If the cost
reductions are not based on sound reasons, like improved methods, then very quickly the costs will grow back to their original size.

2.6.2. Areas of Cost Reduction

No cost is at a level that it cannot be cut and reduced. Cost cutting and reduction is an important exercise which should be periodically undertaken in every enterprise.

The areas of cost reduction can be identified as:

- Raw material and inventory costs
- Manufacturing costs
- Labour costs
- Finance costs
- Marketing costs
- R & D Costs and
- General Administrative costs

2.7. Cost Improvement

Cost improvement implies incurring more expenditure, if necessary, to achieve ultimately tangible economies. For example:

- Employment of more skilled people at higher wages to improve worker productivity.
- Buying expensive high quality raw material to reduce waste percentages.

In comprehensive program of achieving cost leadership, step one is cost control. Step two is cost reduction. The final step is cost improvement. In such a program, managers should always weigh the
pros and the cons of every decision in the light of cost-benefit analysis. The objective is to be penny wise without being pound foolish.

2.8. Cost Optimization

2.8.1. Introduction

The global economic meltdown had forced the corporate entities across the globe to adopt cost cutting strategies to protect and improve their margins. The focus of cost-cutting is primarily on bolstering margins. This strategy, though a working model, is often detrimental to the organization in the long run. Some of the immediate effects are on the organizational environment such as lapses in delivery and quality. Customers are often very sensitive to these changes and rightly so, as they become unintentional recipients of the cost-cutting exercise. Cold airline food is a good example. About 90 percent of cost-reduction programs fail to achieve their intended goals and do not deliver long term results. Consider a cost cutting exercise analogy- eating half an apple to save on the cost of the apple and saving for adversity. The impact of this reduction exercise is that, in the short term, the cost of apples consumed has indeed reduced. But now we need to spend on storing the half eaten apples, apples have a shelf life and will perish and, of course, people will not want to eat a half eaten apple. So in reality this cost reduction exercises has yielded far less benefits than expected. In view of this, mature organisations started looking at long term strategies that can provide a sustained benefit. Cost Optimization which focuses on customer value rather than just on cost reduction, has emerged as a viable alternative. Organizations
understood that cost optimization is not a one-time effort but a focused effort that also brings about sustainable cost benefits. Corporate entities across the globe started realizing the importance of cost optimization. Today, the strategic challenge encountered by corporate entities includes right pricing and rising costs. Therefore, the corporate entities are facing a strategic dilemma between increasing revenue, decreasing cost and enhancing productivity. Therefore, Cost optimization is emerging as new management practice across the globe. In 2008, Booz & Co (Research Agency) has conducted a survey of with a sample size of 30 leading companies in Germany, Italy, Austria, and Switzerland to understand the optimization strategy/programme adopted by sample companies. Once again in the year 2011, Booz &Co has conducted a survey and found that 75% of the companies have adopted cost optimization strategy to survive and manage economic crises. The survey revealed that companies had recognized the importance of cost optimization in creating value -particularly in terms of improving service quality and compliance. According to Booz and Company, Cost optimization is still a hot topic for companies. The survey found that companies represented in the survey—have conducted a general and administrative (G&A) optimization program within the last three years. Of these programs, the majority (62 percent) were the result of a continuous cost optimization process, and the others were triggered by the financial crisis. The survey reveals that all participating companies were satisfied with the outcome of their effort, despite the fact that the amount of time required accomplishing their cost-saving goals increased from an average of 17 months in the 2008 study to 20
months in the 2011 study. In fact, 67 percent of participating companies reached their target savings level, and the remaining 33 percent exceeded it. Companies have also identified new areas for potential cost savings mainly in HR, IT and finance. Today, corporate entities across the globe in general and corporate entities in India in particular are using cost optimization strategies to manage their business, improve productivity without compromising on quality. Few of the corporate entities across globe which have adopted cost optimization strategies include TCO, Nexenta, Accenture, etc. Few of the Indian companies which have adopted cost optimization strategies include SAP, Labs India Pvt. Ltd., Logica, Deloitte, SAIL, etc. Therefore, the researcher felt it is an opt time to take up the research on Cost Optimization.

2.8.2. Definition of Cost Optimization

According a Kaiser Cost Optimization is an act, process, or methodology of making something (as a design, system, or decision) as fully perfect, functional, or effective as possible; specifically without compromising quality.

Kurt Potter, defines Cost optimization is process of reducing the baseline costs of the business, while maintaining acceptable service levels.

From these definitions it may be concluded as value achievement with minimum cost. Without compromising quality. Recently the cost optimization has attracted the interest of corporate across the world because of global financial crises.
2.8.3. Difference between Cost control and Cost optimization

Difference between cost control and cost optimization is presented in the following table:

**Table: 2. 2 Cost control and cost optimization**

<table>
<thead>
<tr>
<th>Area</th>
<th>Cost Control</th>
<th>Cost optimization</th>
</tr>
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<tbody>
<tr>
<td>Meaning</td>
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<td>Cost optimization is a process, not a technique. Perpetual practice for improvement.</td>
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<tr>
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<td>Control on cost</td>
<td>Cost Reduction Assurance of Quality Value enhancement and value maximization.</td>
</tr>
<tr>
<td></td>
<td>No Focus on quality</td>
<td>Focus on Cost as well as quality</td>
</tr>
<tr>
<td>Impact</td>
<td>Short Term impact on Margin</td>
<td>Long term impact on margin</td>
</tr>
<tr>
<td>Controlling Strategies</td>
<td>Standard cost concept</td>
<td>Optimization concept uses Target costing, Activity Based Costing (ABC), Value Engineering, Just in Time (JIT)</td>
</tr>
</tbody>
</table>
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<td>Long term impact on margin as well productivity</td>
</tr>
<tr>
<td>Intention</td>
<td>Only on cost reduction.</td>
<td>Quality improvement and happy customer</td>
</tr>
</tbody>
</table>
2.8.5. Means of Cost Optimization

The following are the means of achieving cost optimization objectives:

1. Shared service centers
2. Application of IT in Functional areas
3. Supply chain management
4. Benchmarking costs, etc

2.8.6. Advantages of Cost Optimization

The companies which use cost optimization as a contemporary tool to measure business performance are expected to enjoy the following benefits:

1. Cost Saving: Cost Optimization will help in cost saving to the companies which in turn help them to improve their bottom line. For example, the Cost Optimization strategies have helped SAIL to save cost to the tune of 5000 crores. The area identified by SAIL for Cost Optimization include optimization of input, improvement in the operational efficiency by optimally utilizing the available assets, quick stabilization of the newly commissioned units and reduction in overhead costs and enhancing employee productivity.

2. The Cost Optimization is expected to increase efficiency of employee. It also helps in Standardization and consolidation. It helps companies to enjoy economies of scale.

3. Cost Optimization is expected to help companies in filling compliance report. Cost optimization involves clear separation of responsibilities which ensure improvement productivity.
4. The main aim of Cost Optimization is supply of quality products to customer. Therefore, Cost Optimization gives quality assurance to customers.

5. Cost optimization helps in detecting and eliminating problems within production systems that would otherwise require time-consuming and cost-intensive corrective measures during production ramp-up.

6. Cost optimization helps in maximizing long-term Return on Investment (ROI) through increased planning accuracy and efficiency.

7. Optimize space utilization at both the plant and transportation truck level by analyzing and evaluating material requirements, container sizes, container stacking criteria as well as ingress/egress guidelines.

2.9. **Economic Value Added (EVA)**

Cost Optimization off course is understood in a normal course in the contemporary world that maximization of profit without sacrificing or compromising quality of the product or remain rendered which is to be a perpetual in nature. But we understand, the ultimate result of their examine is to add value in there is the economic form or in market form. Therefore in our study Cost Optimization we viewed in another form that is in value addition. Accordingly, cost is said to be optimum only when the proportionate change in Value Added is more than the proportionate change in cost incurred on various item of expenses together. On the other hand, cost is said to suboptimum only when proportionate change in Value Addition is less than proportionate in cost incurred. In doing so, the
impact of inflation is not taken. Measuring is undertaken on normal basis but not real basis. Hence, clear conceptual explanations are provided for grasping the EVA and MVA in bring.

2.9.1. Definition of Economic Value Added

It is a tool of monitoring and measurement the performance of business. It is calculated by deducting cost of capital from after-tax cash flow generated by business. It can help the company in business planning. Economic value added (EVA) is an internal management performance measure that compares net operating to total cost of capital. Stern Stewart & Co. is credited with devising this trademarked concept. Economic Value Added (EVA) is important because it is used as an indicator of how profitable company projects are and it therefore serves as a reflection of management performance. The idea behind EVA is that businesses are only truly profitable when they create wealth for their shareholders, and the measure of this goes beyond calculating net income. Economic value added asserts that businesses should create returns at a rate above their cost of capital.

The economic value calculation has many advantages. It briefly summarizes how much and from where a company created wealth. It includes the balance sheet in the calculation and encourages managers to think about assets as well as expenses in their decisions. However, the seemingly infinite cash adjustments associated with calculating economic value can be time-consuming. And accrual distortions can still affect the measure, particularly when it comes to depreciation and amortization differences. Also,
economic value added only applies to the period measured; it is not predictive of future performance, especially for companies in the midst of reorganization or about to make large capital investments.

2.9.2. Process of Economic Value Added

To calculate the EVA, you'll need to determine the capital charges, operating profit and the net operating profit after taxes. You can calculate the value of capital charges by multiplying invested capital and the weighted average cost of capital. Subtract the operating expenses from net sales to get the operating profit. Next, compute the net operating profit after taxes (NOPAT) by subtracting taxes. Now, subtract capital charges from NOPAT to arrive at the EVA.

2.9.3. Formula for Calculation of EVA

\[ \text{EVA} = \text{NOPAT} - \text{Cost of Capital} \]

2.9.4. Significance of EVA

The EVA calculation measures the performance of a company over a period. This way, you can calculate performance for a given year and compare it with other years. A higher number is better because it demonstrates that there has been an increase in the flow of profit for the period in question. Unlike the MVA, you can calculate the EVA units within the company instead of the entire company. For example, you can compute the EVA of departments and product lines. This allows more detailed analysis and comparisons.
2.10. Market Value Added (MVA)

MVA being an absolute measure assesses that how much capital a company has added to or subtracted from its shareholders’ investment. It is the cumulative amount by which a company is perceived to have enhanced or diminished shareholder wealth. It is based upon the logic that if the total market value of a company is more than the capital invested in it, the company has managed to create shareholder value. However, if the market value of a company comes less than its invested capital, company has destroyed the shareholder value. MVA thus, measures the value added by the management over and above the capital invested in the company by its shareholders and lenders. It is the perfect summary assessment of corporate performance that shows how successful a company has been in allocating and managing resources to maximize the value of the enterprise and the wealth of its shareholders.

2.10.1. Process of calculation of Market Value Added

To calculate the MVA, subtract the total investment in the company from its total market value. You can compute a company's total market value by adding the market value of its equity to the book value of its debt. Another way to imagine MVA is to consider the amount that investors put into the company and then determine how much they could make if they disposed of all their shares. The difference between these two is the MVA. The larger this figure, the greater the maximization of shareholder value.
2.10.2. Formula for Calculation of MVA

\[ MVA = \text{Market Value of Equity} - \text{Book Value of Equity} \]

Where, \( MVE = \text{No. of Issued Shares} \times \text{Market Price} \)

Where,

\[ BVE = \text{Total Assets} - (\text{Liabilities} + \text{Preference share} + \text{Goodwill}) \]

2.10.3. Significance of MVA

The MVA calculation offers a summary of how well the company has maximized shareholder value since its inception. It offers a judgment on the company's past, present and future use of investment capital. A higher number is better because it shows that shareholder value has increased over the life of the company. It is an aggregate figure because it provides information on the company as a whole. This is because figures such as market value and total investment apply to the entire firm.

2.11. MVA v/s EVA

Market value added (MVA) and economic value added (EVA) are calculations used to measure the value of a company. These metrics are useful for business owners because they highlight whether the firm is doing well or performing poorly. The metrics can also guide decision-makers as they consider possible strategies for increasing the company's value.