Chapter No. 2
Chapter No. 2

Theoretical Framework of Cost-Analysis

(Based on Review of secondary Literature)
1. Classical Theory of Cost of Production

Adam smith argued that competition would tend to establish ‘the natural prices’ of commodities produced i.e. the price of any commodity is neither more or less than, what is sufficient to pay the rent of land, the wages of labour and the profit of staff employed; according to their natural rates.\(^1\) In simple words, the price of any produced commodity will under the pressure of competition, be equal to the cost of its production. Thus Price and Cost are two faces of one coin. What is price from the viewpoint of a buyer, happens to be the ‘Cost’ as per the consideration of a seller-producer.

Ricardo used the ‘Cost of production’ as a synonym for the value of a commodity\(^2\) as well as the relative quantity of labour necessary for the production of the commodity.\(^3\) A fisherman’s catch of Fish during a day’s time, will have the ‘Price’ which will not be less than the cost of food of one day of his entire family.

Marshall argued that classical theory of the Price was ‘one sided’ and based on only one blade (Supply Side) of the scissors. The value of anything will be determined by the interaction of both ‘The Demand’ and ‘Supply’ of that commodity as such, it will be governed by ‘Utility’ (Demand) and ‘the cost’ (Supply) of production. Walras also thinks that Demand and Cost of production are

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\(^1\) Adam Smith - ‘Wealth of Nations’ Published in 1776-Page No. 65  
\(^3\) D. Ricardo – Principles of political economy
independent forces which determine the price in conditions of competitive equilibrium.\(^4\)

A cost function embodies the consequences of ‘Cost minimizing behaviour’ on the part of a consumer or a producer.

Cost benefit analysis is a widely used technique in recent times of applied welfare economics. It is simply a ratio of the value of Benefit produced by a project and the total cost incurred within the investment of that project. The cost of efficiency can be judged by a greater benefit as against the less of the cost. A recent variant of cost benefit analysis is ‘Cost effectiveness analysis’ which is essential and useful in managerial economics. Here benefits are endogenously specified and the problem is to ‘minimize the costs’ associated with a given profile of benefits. \(^2\)

For judging the efficiency, Adam Smith had advanced a proposition that output was maximised in a private enterprise economy with competition. If each owner of a resource maximizes the return from his resources, then aggregate output would be maximised. This theorem of maximization of output/maximization of satisfaction was

\(^4\) Palgrave’s Dictionary of Economics _ Note the cost of production Page No. 698
\(^2\) Palgrave’s Dictionary of Economics- Note on Cost-benefit analysis- Page No. 687 and 688
developed and qualified by Leon Walras (1874), Alfred Marshall (1890), Pigou (1912) and a host of modern economists.

In a regime of change of growing population, capital, innovations, technological advance, discovery of a new resource, new consumer demands; perfect competition was achievable only in the stationary economy or in comparative statics, as well as, dynamic economics.

Joseph Schumpeter believed that incessant change in products and product methods was the very essence of competitive equilibrium. Kirzner emphasized the role of entrepreneurial rivalry in competition. Demsetz explained the concept of ‘Laissez faire competition’, in which freedom of resources to move anywhere was the central element. Schumpeter also noted that displacing of one product or method by another, a process which he called ‘creative destruction’ is at the root of innovations, greater productivity and economic progress. Innovations can also reduce the existing levels of costs and at the same time, enhance quality of the products. ②

**Schumpeter’s Ideas**

Schumpeter traced the source of profit, being innovation by which a company can reduce its average cost of the product by even improving the quality of the same and thereby can earn a competitive edge against rival firms. By reduced price and improved quality, the company expands its sales turnover and profits and
capture the Market leadership with a very large share in the total market. According to Schumpeter, the main job of an entrepreneur happens to be of ‘innovator’; and profit is the reward for his innovative ability. The very source of profits is innovation. Innovations can comprise introduction of a new ‘product’, new method of production, opening of a new market, a new process and use of a new machine, technology, energy, materials, inputs or a new source of supply of raw materials or a new organisational set up etc. The economy is supposed to be in a state of stationary or static equilibrium, prior to inception of innovation. An entrepreneur, as a visionary innovates by launching a new product or a new technique. Such a new product may require a large gestation lag before it earns revenue. It may require huge expenditure on R & D, which will increase the financial burden of the company. But once the innovation clicks in one, company, it makes ‘monopoly profits’ and can compensate for all its risks for generating an innovation.

In the medium/long run, the ‘successful innovation’ causes further ripples via backward and forward linkages, as well as, by attracting imitators. Innovations occurring singly or largely produce a ‘Kondratieff cycle’, in which profits, prices and output rise. In the long run, because of intense competition, monopoly profits are bid away and the system returns to equilibrium i.e. with getting only normal profits.

Therefore innovative process happens to be discontinuous and disequilibrating. It is accompanied by a credit boom and a cyclical upturn. Innovations are uncertain and unanticipated. The history of
capitalism was for Schumpeter, made up of successive important waves caused by clusters of innovations.

According to Schumpeter, neither the conventional entrepreneur nor the labour generates profits. Profits are abnormal and sporadic!① Companies will try to retain their markets by holding prices where improved technology will reduce the existing level of costs.

**Cost plus pricing & Cost Management**

It is a practice whereby firms add a margin on to average variable cost in order to cover fixed costs and some reasonable level of profits. By reducing average variable costs further, the firms can maintain their competitive strength for retaining their markets. Therefore constant vigilance and effort to avoid waste and inefficient, as well as, unwarranted expenses is to be carried out by ‘efficient cost management’. ②

**Cost minimization and cost effectiveness**

Cost effectiveness analysis is a technique closely related to ‘Cost benefit analysis’. It asks a special question namely, given a particular objective, which is the least cost way of achieving it? It requires appropriate choice between feasible options.

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② Pearce – Dictionary of modern economics. Page No. 86 and 87
For any given level of output, that choice of input combination which yields the ‘smallest possible total cost’; happens to be the most appropriate one.

The choice of a cost-minimizing firm facing fixed input prices and using the two factor inputs viz. capital K and Labour L can be illustrated using isocost lines and isoquants. The choice of minimizing output level Y2 is represented by the input combination A, where the isoquant labelled Y2 is tangent to the lowest possible iso cost line I2. Other input combinations lying on I2,

- Such as represented by points B & C, will not be chosen as they yield the lower output level Y1; lying on lower Isoquant.
o Any point beyond A, or across Isoquant $Y_2$; will require greater capital and increased wages; therefore cost efficiency will not be possible. Any point lying on Isoquent $Y_1$ other than point A, will yeild the reduced output of the firm which again is a case of cost output efficiency. ②

o Thus within OK capital and OL labour cost, the maximum output AA’ will be produced since’ the point A is located on the highest possible Isoquant and also tangential to the ISOCOST cc! Any other point on the same ISOCOST such as B or C will bring a reduced quality of output since they are on a lower ISOQUANT No. Y1 instead of Y2.

The tangency conditions for cost minimization, yields the result that the input combination which minimizes the total cost of producing any given output level, must necessarily satisfy the equality of the ratio of the marginal physical products of any two factor inputs, with the ratio of their prices.

In a way, profit maximization implies cost minimization; but cost minimization does not imply necessarily the profit maximization. For instance, a sales revenue maximising firm will choose input combinations which minimize the total production cost; but may require huge expenses for pushing the maximum possible sales revenue! ③

② Pearce – Dictionary of modern economics. Page No. 86 and 87
③ Pearce – Dictionary of modern economics- Page No. 87
The operative profit is that profit which could be earned if no resources are diverted to the future expansion of a firm.

The opportunity cost (the special term exclusively used in economic analysis and not used by the book-keepers and business accountants) of any action, is prevalue foregone of alternative option. For example, if one acre of irrigated land is used for growing grapes (and suppose grape yield brings a revenue of about Rs. 1.5 lakh), its second best option of growing alphanso mangoes (Assuming one acre’s mango yield brings a revenue of Rs. 1 lakh); the opportunity cost of growing grapes is equivalent to the sacrifice of Rs. 1 lakh revenue from mango yield.

Net advantage of growing grapes on one acre land hence becomes Rs. 50000/- and not Rs. 1.5 lakhs!! Similarly suppose a Pune based professor is offered a job in Mumbai for a monthly salary of Rs. 40000/-; but if he still continues to work in Pune for a monthly salary of Rs. 30,000/-; then his opportunity cost of remaining in Pune becomes equivalent to the loss of Rs. 10,000!!

In cost accounting of economics discipline, therefore while managing the cost efficiency, a due consideration is to be granted to the loss or gain of opportunity costs!

Appropriate choice is to be made by estimating opportunity costs of several input combination options.

In managerial economics, therefore ‘optimization exercise’ has paramount importance. The optimum level happens to be the best situation or state of affairs. It requires minimization of cost/sacrifice
and maximization of satisfaction and profit. Appropriate allocation of resources will yield maximum productivity, revenue and profits. It will help to make the best use of available/scarc resources for maximization of product/benefit and profit.  

Production function & Productivity

It is a functional relationship between inputs (factors of production) and the output. It can be expressed as $Q = f (L, K, t ....etc.)$

Here $Q$ is output, $L$ is labour, $K$ is Capital and $t$ is technical progress. The nation’s production function, nation’s output produced by national resources- is termed as an aggregate production function. It will be expressed as $\text{GNP} = f (L, K, t .... etc.)$ and will become essential in macroeconomic studies.

If the output will be increased in the same proportions by increasing the inputs; this condition exhibits “Constant returns to scale”. If the output/production increases more than proportionately by increasing inputs, it means “Increasing Returns to scale” and if the output does not increase proportionately and decrease more than proportionately, it means “Decreasing Returns to scale”. The firms therefore have to be cautious to note the trends of decreasing returns to scale and have to improve the returns to scale for time and again for maintaining their productivity.

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1 Pearce – Dictionary of modern economics- Page No. 316 & 317
Productivity is measured by the ratio of output per unit of labour, capital, materials, energy, time and technology. Increase in productivity comes about from increased efficiency on the part of capital and labour.²

**Profit maximization**

A basic assumption accepted in the discipline of economics is that every firm will endeavour to maximise its profits. This assumption is based on the premises of ‘Rational Behaviour’ for the last 250 years. Profit maximization is logically possible only when a firm maximises its output & sale within minimum possible costs! Thus profit is inversely related to the ‘cost’, For managerial efficiency, cost management becomes indispensible. Thus difference between Revenue and Cost happens to be the profit.

² Pearce – Dictionary of modern economics- Page No. 348
In this graph, total revenue & total cost curves are shown. At point $X^*$; the firm can obtain maximum profit which is between points R & C.

Any output less than $OX^*$ i.e. $X_1$, will bring reduced profit and any output greater than $OX$, i.e. $X_2$ will also reduce the profit because of falling revenue and rising costs.

**Profit maximization output**

Optimum output of this firm happens to be $OX^*$, where the firm can earn maximum profit.

The slope of total revenue curve is Marginal Revenue of the firm and the slope of total cost curve is the Marginal Cost of the firm. Thus profit maximization is all possible when MC of the firm equals the MR. ¹

¹ Pearce – Dictionary of modern economics- Page No.350
Recession

It is a phase of the trade cycle, followed by contraction in aggregate demand for the products causing loss of confidence among the investors due to disappointing prospective sales. It is a downfall from the peak of the cycle which affects decline in demand, rise in unsold stocks, locking of the capital, reduction in the firm’s cash flows of incomes, increased capital stocks, falling rate of profits and declining prices of its shares in the market. If the trend of recession could not be halted by extraordinary measures, the company is likely to face the tragic conditions of serious depression. The phase of recession normally is beyond the control of a firm; caused by sudden changes in the international and national economies, or loosing markets due to intense competition of the rival firms etc. Recession can be checked by special efforts done by the governments of the affected countries by taking urgent and effective measures so as to boost the aggregate demand for the products of affected firms. Recessions are common, frequent and recurrent. All the countries of the world without any exception, have suffered due to recurrent waves of recession. In fact, recession occurs due to fluctuations in aggregate demand and aggregate supply, consequent due to disequilibrium conditions. They are like ‘after effects’ of irrational buoyancy and booms. Many a time, they are caused due to bankruptcies of giant financial institutions, multinational banks and insolvent conditions of sick and heavily indebted firms.
Recession is initial stage of a slump or depression. In fact, broadly the entire world has faced recurrent trends of recession and recovery throughout the 20th century. It should be noted by efficient managers that recession is the integral and unavoidable part of the whole ‘Business life’. Every capable manager therefore, should carefully master the appropriate strategies and techniques to come out of recessions; which has become the most challenging task of modern managers. ¹

**Rationalization**

Rationalization is a deliberate way of restructuring the industry by introducing new machinery, new product, new processes and by raising the labour productivity by methodological training. It also means new set up of organization by installing American, Japanese or German methods of production to secure the benefits of large scale production and cost cutting of the same product. ²

International economic conference of 1927 passed a resolution that rationalization is a **scientific method of increasing output, improving conditions of labour and reducing prices**. It lays emphasis on maximum efforts, reduction in the variety of different patterns, applications of research in manufacture, eliminating waste of materials and power, eliminating ill-organised transport by bringing down the logistic costs, minimizing the days of inventory, avoiding financial burdens by alert financial discipline and eliminating the useless middlemen.³

1 Pearce – Dictionary of modern economics- Page No.368
2 Rationalization of German Industry – Chapter 1 Page No. 2
3 The International economic conference-Geneva/Switzerland-May 1927
Rationalization is a method to reduce the production costs. It includes standardization, simplification, waste reduction, replacement of hand labour by machinery, reduction in overhead costs and selling economies.³ It also aims at elimination of the evils of thoughtless competition which create price fluctuations and business instability.⁴ It requires perfect coordination among the different departments, planning, purchasing, employing, production, finance, Human Resources, Research and Development, advertising, selling and risk management.

**Integrated Cost Reduction**

Integrated cost reduction is defined as an organised continuing activity for the reduction of costs involving all the key functions of a business management. It no more remains a temporary or adhoc measure to cure the health of a firm; but it becomes a permanent and statutory system of modern management.⁵ The study of cost reduction is in effect a study of modern business management.⁶

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⁴ Oliver Sheldon – The significance of rationalization – Harvard B. Review April 1928, Page No. 264-269
Normally the profits and jobs in a firm are threatened by undue rise in cost of materials, cost of labour, cost of energy and maintenance of plant, cost of capital, administrative costs and selling and marketing costs.

Integrated cost reduction becomes possible in intra-departmental cooperation and the excellent team work.

The task of cost reduction can be entrusted to a qualified administrator of cost reduction; or by introducing a new department or by appointing of a committee representing all departments or a competent outsider management consulting firm.

During a crisis of recession faced by say- Automobile Industry; the results are that industries are closed, workers are given lay off, production of new cars paralysed and companies are faced with severe financial crunches. Under such circumstances, workers of one automobile unit cannot easily acquire equivalent jobs in other automobile units, auto companies may also close some shifts or reduce the working hours.

In order to come out of such a crisis, the firm which can develop understanding of relationship between job security and reduced operating costs, is likely to secure industry leadership by minimizing the costs and slowly gaining the markets by reducing prices. Such industries continue to be successful during periods of both recession, and prosperity.1

1 Allan De Marco – Integrated Cost Reduction- 1960- Page No. 16
The process of globalization also is leading to a structural transformation of firms and nations and is creating new relationships and interdependencies.²

The state during recessionary crisis, should adopt a role as an administrator and facilitator. It should provide favourable conditions such as infrastructure, power, education, finance and industrial peace.³

**Pricing Decisions**

While fixing the prices of the products, firms in general follow ‘the rule of thumb’ (Hall & Hitch 1939 & 1951). The Oxford Economist’s Research Group undertook a study to investigate the decision process of businessmen in relation to government measures. The study consisted of 38 efficiently managed enterprises. (Barback 1964)

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² Martin K Weldge & Dirk Holtbrugge – The German economy after unification
Page No. 335

The results as reported by Hall & Hitch are as follows.

i) In real life, firms did not attempt to maximize their profits.

ii) They did not use the Marginal Rule of MC = MR in order to optimise and maximize their profits.

iii) Oligopoly was the main market structure of the business world as against the ‘monopolized competition’. (Chamberlin)

iv) Firms were not independent in decision making.

v) Firms priced their products on the average cost principle i.e. \( P = AVC + AFC + \text{Profit margin} \).

vi) Firm’s main occupation is price not output.

vii) Prices remain fairly sticky despite changes in demand and cost.\(^1\)

**Attack on Marginalism**

The marginal pricing principle has been challenged on many grounds in the context of its practical use in the real world. (Gordon 1948) Gordan pointed out some of its limitations as follows.

i) Inability of the marginal theory to cope up with the ever-changing factors determining the Demand & Supply.

\(^1\) Author M.L. Trivedi- Managerial Economics – Chapter 29 Page No. 504 Tata McGrams Hill – N. Delhi
ii) Marginal analysis assumes perfect information, which is not the case in real life. Uncertainty does not fit in the scheme of things.

iii) Businessmen adopt several goals (not only profit maximization) to avoid uncertainty.

iv) The average cost pricing has been widely used even by multi product firms.

v) Marginal analysis deals with objectively determined Demand & Supply curves, not with a businessman’s subjectivity conceived ones.

vi) Expectations about future environment do not fit in Marginal Analysis.²

J.S. Easley (1956) made a study and found that modern accounting provides perfect information on marginal revenues and cost and it is used by organized firms. It also found that profit maximizing firms survive better than other firms.

Joel Dean in his pioneering work of Managerial Economics, discusses the problems of pricing techniques in three broad groups.

a) Determination of basic price.

b) Determination of prices of the members of the product line.

c) Price differentials or discount structure.³

² Author M.L. Trivedi- Managerial Economics – Chapter 29 Page No. 505 Tata McGrams Hill – N. Delhi
³ M.L.Trivedi – Managerial Economics – Page no. 505 (Tata McGrowHill)
Basic price is defined as the price of a commodity with which the prices of other members of the product line are related to. Prices of other products can be determined by some price differentials depending upon their cost, competitive maturity, local conditions, profitability etc. The discount structure helps the firms to capture new markets by granting large discounts than their rival firms.

The cost structure of a firm depends upon its internal environmental forces while the Demand for a firm’s product depends upon external environmental conditions.

Therefore Cost of production sets the lower limit of the price which a firm can accept; or further lower the price ignoring AFC in conditions of recession; so as to sustain its survival. On the other hand, Demand conditions determine the ‘Highest price a firm can fetch in the market’. A firm therefore normally fixes the price of its product between these lower and higher limits.\(^2\)

According to Joel Dean, pricing policy decisions of big firms remain a patch work of adhoc decisions.\(^3\)

If a firm produces some high class products which are used by upper income groups as a status symbol, the firms deliberately keep their prices high; so as to attract its elite clientale. Such high prices are called ‘skimming prices’.

\(^2\) Joel Dean – Managerial Economics – Chapter on Pricing Techniques.
\(^3\) Joel Dean – Managerial Economics – Ed. 1976 Page no. 401
By fixing a price as low as possible to start with in order to penetrate the market (and then gradually raising it) & gain acceptability in the mass consumption market. This price is called a 'Penetration price'.

J.S.Bain (1947, 56) developed the theory of 'limit pricing'. He observed that duopoly firms charge a price below the short-run profit, maximizing equilibrium price so as to prevent the entry of new firms. Thus it is between Monopoly price and competitive price; .. (less than monopoly price & greater than competitive price.)

Bain also explained four barriers to entry viz.

a) Product differentiation barrier
b) Absolute cost advantage barrier
c) Economies of scale barrier
d) Large initial capital requirement barrier.

**Full cost pricing**

It is also called ‘average cost pricing’ or ‘cost plus pricing’. (Hall & Hitch 1939) Andrews (1949) Edwards (1964). In the short run, as well as, recessionary conditions, since the objective is not profit maximization, full cost pricing is not feasible.

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4 M.L.Trivedi – Managerial Economics- Page no. 508 Tata McGrawHill
5 M.L.Trivedi – Managerial Economics –Page No. 511- Tata McGrowHill
**Optimization**

Optimizing behaviour is one of the basic postulates of microeconomics. It is based on the principle of ‘rationality’. On that basis, a consumer will always try to maximize his satisfaction by minimizing his expenses; a producer will try to maximize output at minimum cost and a firm will aim to maximize its profit or market share.\(^3\)

Baumol’s model suggests ‘Sales maximization’ as another possible goal of a firm along with profit maximization. Williamson’s model suggests the maximization of managerial utility. Marris’s growth model suggests a balanced growth rate between the rate of growth of Demand (gb) and a rate of growth of capital (gc).

Managers would like to maximize their utility (Um) which is dependent on the growth of Demand (gb) whereas shareholders’ utility (Vo) will depend on the growth of capital (gc). The growth of the firm can be maximised by balancing gb and gc... \(g_{max} = gb = gc\).\(^4\)

Herkerl Simon (1955) suggested that the modern firms are motivated by ‘Satisfying behaviour’ rather than maximizing behaviour. Behavioural theory as developed by Cyert & March (1963) is based on the principle of the divorce of ownership from management and view the firm as a cooalition of individual members called stockholders and professional managers acting as

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\(^3\) M.L.Trivedi – Managerial Economics –Page No. 293 (Chapter 15) McGrowHill  
\(^4\) M.L.Trivedi – Managerial Economics –Page No. 294 McGrowHill
their caretakers! According to this approach, managers perform upto their ‘aspiration level’.

There are five goals of the modern firms namely –
1) Production goal
2) Inventory goal
3) Sales goal
4) Share of the market goal &
5) Profit goal.¹

The first four goals are subordinate to the 5th goal i.e. profit which is very favourite of the Top Management.

**Technology and Economics of Firms**

Technology happens to be ‘applied science’. Modern Research & Development aims at the commercial exploitation of the existing scientific knowledge by technological innovations, that is product or process development. Technology aims at finding new products, devices, systems, methods & processes.

Development is an activity & effort leading to innovation. An assessment of its commercial viability is also an integral part of Development. Innovation thus becomes the ultimate outcome of R & D activity. In short, commercial exploitation of an invention is called ‘innovation’.

¹ M.L.Trivedi – Managerial Economics- Page No. 295 – Tata McGrowHill, New Delhi
Normally there is a gap of about 13 years between an invention and an innovation and of about 50 years between an invention and its diffusion.

Technological change is a continuous process between present and future innovations having cross-linkages among them.²

The State and Wealth of Nations

Adam Smith maintains his ideas of ‘invisible hand of the market focus’, ‘impulses of personal interest and profits’ and the Laissez Faire (i.e. uninterfered free market economy) as main engines to the growth of businesses and industries and sees very little role for the state. According to him, the role of Government is to create the minimal facilitation conditions. He strongly advocated private operations of roads and waterways.

In fact, very few countries like U.K. and U.S. have made industrial progress by maintaining practices of limited government, high individual liberty and good administrative justice. The modern history of majority of nations such as Germany, Soviet Union, Japan, South Korea, Taiwan, Brazil, Antarctica, China, India, Israel etc. reveals that the role of the state has been very substantially

² M.L.Trivedi – Managerial Economics- Page No. 295 – Tata McGrowHill, New Delhi
Influential for rapid and planned growth of them. World’s majority of countries have adopted policy of ‘guided market economy’.

Fredrick List highlighted the supportive role of the state for raising the wealth of nations and advocated the policy of protectionism; which is necessary in the transitional stage of a country’s take off to reach matured growth. He also pointed out that during Victorian Age, when England reached Zenith of prosperity, the state had deliberately developed various institutions, as well as, infrastructure necessary for the progress of industries and businesses.¹

Similarly, to understand the history of Krupp or Thyssen in Germany, we must know about universal banks, cartel policies, protective tariffs and state patronage. When we study the history of Toyota in Japan, we learn about the transition of making Textile machinery to making trucks and automobiles due to the pressure of militarizing Government of Japan in 1930s.²

We know from Chandler’s book the Visible hand (1977) that in the history of American economy, certain industries always adopted large scale like railroads, telephones, steel, oil, chemicals, automobiles, aluminium, copper, pulp and paper etc.³

² Thomas K. Maccrani – Pages 526
³ Thomas K. Maccrani – Pages 527.
Even in retail trade and small scale industries, systems of franchising developed in the post world war II years; e.g. Reebok and Loto shoes, Adidas garments, Midas Muffler (in auto repair), Walmart in retail stores, Holiday Inn in hotels, McDonald’s in food services etc. It is the vertical disintegration which is prevalent in this system, cuts down the costs due to the optimum combination of large and small scales.

While the industrialized countries exhibited along economic performance, many ‘developing’ countries failed to develop at all; therefore in post World War II years; the gap between rich and poor countries widened. It can be proved by following figures.

Index of GDP per capita in 1990 for the basis of PPP –
A sample of 125 countries; US = 100 (absolute amount in current dollars=$21,360)

**High Income Economies**

<table>
<thead>
<tr>
<th>Country</th>
<th>Per capita GDP index</th>
</tr>
</thead>
<tbody>
<tr>
<td>United states</td>
<td>100</td>
</tr>
<tr>
<td>Japan</td>
<td>79.4</td>
</tr>
<tr>
<td>West Germany</td>
<td>76.3</td>
</tr>
<tr>
<td>France</td>
<td>71.2</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>70.0</td>
</tr>
<tr>
<td>Italy</td>
<td>68.1</td>
</tr>
</tbody>
</table>
**Middle Income Economies**

**Ratio of India per capita GDP**

**compared to following countries**

<table>
<thead>
<tr>
<th>Country</th>
<th>Per capita GDP index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greece</td>
<td>34.4</td>
</tr>
<tr>
<td>South Korea</td>
<td>33.7</td>
</tr>
<tr>
<td>Brazil</td>
<td>22.4</td>
</tr>
<tr>
<td>Argentina</td>
<td>21.9</td>
</tr>
<tr>
<td>Thailand</td>
<td>21.6</td>
</tr>
<tr>
<td>Poland</td>
<td>21.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Country</th>
<th>Per capita GDP index</th>
</tr>
</thead>
<tbody>
<tr>
<td>India to U.S.</td>
<td>1: 20 (i.e. Twenty times than that of India)</td>
</tr>
<tr>
<td>India to Japan</td>
<td>1: 16</td>
</tr>
<tr>
<td>India to W. Germany</td>
<td>1: 15</td>
</tr>
<tr>
<td>India to U.K.</td>
<td>1: 14</td>
</tr>
<tr>
<td>India to Greece</td>
<td>1: 7</td>
</tr>
<tr>
<td>India to S. Korea</td>
<td>1: 6.5</td>
</tr>
<tr>
<td>India to Brazil</td>
<td>1: 4.5</td>
</tr>
<tr>
<td>India to Argentina</td>
<td>1: 4</td>
</tr>
<tr>
<td>India to Thailand</td>
<td>1: 4</td>
</tr>
<tr>
<td>India to Indonesia</td>
<td>1: 2</td>
</tr>
<tr>
<td>India to China</td>
<td>1: 1.8</td>
</tr>
</tbody>
</table>

**Lower Income Economies**

<table>
<thead>
<tr>
<th>Country</th>
<th>Per capita GDP index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>11.0</td>
</tr>
<tr>
<td>China</td>
<td>9.1</td>
</tr>
<tr>
<td>Pakistan</td>
<td>8.3</td>
</tr>
<tr>
<td>Nigeria</td>
<td>6.6</td>
</tr>
<tr>
<td>* India</td>
<td>5.4</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>1.5</td>
</tr>
</tbody>
</table>

The important role of Big Businesses in Advanced countries has been noted by Robert Lucas, who has developed a ‘new growth theory’.\(^1\) Obviously, Big Businesses could capture and expand their markets due to their lowest prices consequent of their managerial efficiency in reducing the costs for maintaining the competitive edge.

According to Alfred Chandler, countries like U.S. & Japan have made tremendous industrial progress by their support to ‘competitive managerial capitalism’ and in order to gain competitive superiority, it is necessary that the industries ought to minimize their costs of products.\(^2\)

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Distribution of the largest industrial enterprises in U.S. by industry

<table>
<thead>
<tr>
<th>Industry</th>
<th>Year 1930 (No)</th>
<th>Year 1988 (No)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food</td>
<td>31</td>
<td>18</td>
</tr>
<tr>
<td>Tobacco</td>
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<td>3</td>
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<tr>
<td>Textiles</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Printing &amp; Publishing</td>
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<td>9</td>
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<td>Chemicals</td>
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<td>Primary Metals</td>
<td>23</td>
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<tr>
<td>Machinery</td>
<td>19</td>
<td>13</td>
</tr>
<tr>
<td>Electrical Machinery</td>
<td>5</td>
<td>21</td>
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<tr>
<td>Transportation Equipments</td>
<td>23</td>
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</tbody>
</table>

It is the Research & Development which brings innovations and helps to reduce the existing ‘Cost-structure’.

Advanced countries sustain their industrial competitive efficiency by spending huge amounts on Research & Development; e.g. U.S. Research & Development Total expenditure went up to $130 million dollars ($130 million) from 70 lakh dollars ($7 million) in the year 1930.

1Source- Alfred Chandler Jr. ‘Scale and Scope: Dynamics of Industrial Capitalism.’ Harward University Press 1990 – P.19
Innovative capacity happens to help countries, for the growth of Big Business Enterprises of the World; for example; U.S. in the year 1993 alone had 160 large industrial enterprises which were from the 500 largest enterprises of the World. In the year 1962, U.S. had 298 i.e. (nearly 60 percent) out of 500 largest industrial enterprises of the World. ¹

Due to Research & Development innovations and the capital intensity; the productivity i.e. Output per labour-hour in manufacturing multiplies and simultaneously brings reduction in cost per unit of output. It can be illustrated by the following Table.

Output per labor-hour in manufacturing ²
1955-1988 (Indices)

<table>
<thead>
<tr>
<th>Year</th>
<th>U.K.</th>
<th>U.S.</th>
<th>Germany</th>
<th>France</th>
</tr>
</thead>
<tbody>
<tr>
<td>1951</td>
<td>100</td>
<td>270</td>
<td>68</td>
<td>71</td>
</tr>
<tr>
<td>1964</td>
<td>100</td>
<td>268</td>
<td>117</td>
<td>90</td>
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<tr>
<td>1973</td>
<td>100</td>
<td>234</td>
<td>133</td>
<td>101</td>
</tr>
<tr>
<td>1979</td>
<td>100</td>
<td>243</td>
<td>163</td>
<td>129</td>
</tr>
<tr>
<td>1988</td>
<td>100</td>
<td>224</td>
<td>138</td>
<td>122</td>
</tr>
</tbody>
</table>

¹ Alfred Chandler Jr and Takashi Hikino- the large industrial enterprise & the dynamics of modern economic growth. Table No. 2.10 Page 51
Article from 'Big Business & Wealth of Nations – Cambridge University Press.

² Source: Nick F.R. Crafts- “Economic Growth”-
Editors- Crafts & Woodward – “British Economy since 1945’-
Note:

i.) U.S. has consistently maintained its highest productivity per labour hour.

ii.) Britain was second best in productivity during 1951-1964

iii.) Germany became the second best and remained so during 1951-1988

iv.) France snatched the third best position since 1973 onwards and U.K. became the fourth ranking nation in Europe.

v.) In recent years, South Korea, Japan and China have improved their productivity.

Theory of Profits

Profits are defined as Sales Revenue minus Operating Costs where Operating Costs are defined as current outlays minus investment in stocks. ¹

Since Profit = Revenue minus Cost; Profit is inversely related to the cost of product; which means, if costs will increase, other things remaining constant; profits will decrease and if costs will reduce, profits will automatically increase.

Thus Profit is an Inverse Function of the Cost. \( P = f \left( \frac{1}{C} \right) \). Therefore Cost Management becomes very essential for the profit management. Similarly Productivity is inversely related to Labour-cost per hour.

If Productivity per labour-hour is increased, the cost per labour hour per se, decreases. Thus Cost Reduction is essential for profit promotion.

The successful business is to be all round best; in implementing innovations, design, manufacturing, sales, logistics and services that competitors cannot match.  

The secret of being the best is found in having the ‘skills base’ throughout the organization that allows it to be the ‘LOW COST INTEGRATOR’ of all the activities. In an era of man-made brain power industries capital/labour ratios cease to be meaningful variables. 

Being a low cost producer is partly a matter of wages, but to a much greater extent, it is a matter of becoming the masters of process technologies. In the era ahead, countries have to make the investments in knowledge and skills that will create a set of man-made brainpower industries.

Consider the list of the twelve largest companies in America on January 1, 1900. They are viz. 1) American Cotton Oil Co. 2) American Steel 3) American Sugar Refining Co. 4) Continental Tobacco 5) Federal Steel 6) General Electric 7) National Lead 8) Pacific mail 9) People’s gas 10) Tenesse Coal & Iron 11) U.S. Leather and 12) U.S. Rubber.

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1 Lester Thurow- The Future of Capitalism- WmMorrow & Co. N.Y.Ed. 1996, Page 69
2 Lester Thurow- The Future of Capitalism- WmMorrow & Co. N.Y.Ed. 1996, Page 69
3 Lester Thurow- The Future of Capitalism- WmMorrow & Co. N.Y.Ed. 1996, Page 68
Ten of the twelve companies were natural resource companies. The economy at the turn of the century was a natural resource economy.

But only one of these companies, General Electric, is alive today. The moral of the story is clear. Capitalism is a process of creative destruction whereby dynamic new small companies are continually replacing the old ones that cannot adjust to new conditions. Similarly, before World War I, more than one million workers toiled in the coal mines of Great Britain i.e. six percent of the total Workforce. Coal was king.

Today less than thirty thousand workers toil in the same coal mines. Argentina and Chile were rich due to their natural resources during 19th century when Japan was damn poor.

In 21st Century, Japan is busy in promoting microelectronics, civilian aircraft manufacturing, machine tools and robots and computers; all of them were man-made brain power industries. Japan developed its very dominant steel industry yet having no coal and no iron ore. Biotechnology is going to bring another Green Revolution in agriculture. ²

² Lester Thurow- The Future of Capitalism- W. Morrow & Co. New York Ed. 1975, Page 70, 71
The World’s wealthiest persons like Bill Gates etc. have become successful in very short period of time due to very high percentages of net profit in Computer Hardware & Software Industries. There is virtually no proportionate relationship between the cost of production and sales revenue. Thus knowledge has become the only source of long run sustainable competitive advantage.

Today’s communication technology has become cost efficient, because skilled components are made in the ‘first’ world and then chipped to the ‘Third’ world to be assembled with low skill components. This combination helps to cut costs, raise profits and higher wages and dividends. Rapid transportation also has helped to globally connect the markets. Due to the availability of very large number of unskilled workers from the ‘Third World’, those laborers from advanced countries of the ‘First World’ who happen to be equally unskilled, at present are either losing their jobs or getting low wages which are almost equal to the wages of unskilled workers from the ‘Third World’.¹

U.S. Boeing Company had almost monopoly in manufacturing and supply of ‘Airbuses’. But recently in the first decade of 21st Century, European companies have got more orders than Boeing and because of competitive price/cost cuts, the Boeing Company is now on the ‘back foot’ and has become defensive. Even it is bringing pressure on Americal President, for canvassing and making sale deals in the ‘Third’ world;

What is true in sports/war is equally true in business and industries; If one plays defence all of the time and is never on offence, never wins\(^2\)

**The Role of Cost-reduction efforts during Recession**

Recession adversely affects the aggregate consumer demand. Due to recession, companies forced to give lay-offs, retrenchment of labor and together they bring mass unemployment. There is a sort of glut due to overproduction and under consumption. Therefore companies face huge burden of lacking of its capital in inventories and unsold stock of products and experience liquidity crunch and shortage of cash flow funds. They are compelled to approach banks and financial institutions for additional loans and further get trapped in raising their burdens of debts. The prices of their shares collapse and due to sickness are pushed on the brink of bankruptcy. When many industries are closed during general slow down and recession; some industries can sustain their viability and marginal profitability by cost cutting and selling their products at lowest possible prices. Thus cost cutting becomes an indispensable measure during the crisis of recession.

Recessions are frequently recurrent and they are normal. They are part of the economic system. They cannot be eliminated; they are to be tolerated. Business cycles are as natural as earthquakes and high tide and ebbs and climatic seasons.

Let us take a concrete case of U.S. during 50 years from 1945 to 1995. The U.S. had ten years in which output, employment and profit seriously declined. They were viz. 1946, 1949, 1954, 1970, 1974, 1975, 1980, 1982 and 1991. These recessions occur due to changes in global, national, political or abnormal reasons and sometimes due to trivial reasons; too.

Negative growth in 1946 and 1954 was caused by cutbacks in military procurement following World War II and the Korean War. The 1957 recession followed in the wake of an unsustainable boom in auto sales, where people in the preceding years were buying the cars that they were unable to buy in the 1930s and during Second World War period. ¹

But once that pent up demand had been satisfied, sales fell back dramatically in 1958. The recessions of 1970s were due to oil and food shocks. The 1982 recession was deliberately engineered by the Government because Fed had raised high rates of interests to tame inflation. In addition to exogenous upward or downward shocks, the internal dynamics of economic decisions, leads to business cycles (Multiplier accelerator combined effect).

Hearing about shortages, consumers start to buy ahead of their needs. Panic buying may brighten the profit expectations of the firms and they will also increase purchases of their inventories. It is rise in demand itself, induces further rise in demand. This tendency of booming demand again produces glut of unsold stocks.

Thus booms lead to booms and recession leads to slumps. ²

Sometimes because of drastic changes in global trade and finances, recessions explode like epidemics. For example, South East Asian Crisis of 1997 (p. 212) currency inflations, flight of foreign capital, drastic fall in export orders and complete dependence on export incomes, collapsing prices of real estates, bankruptcy of banks and financial institutions; produced recession even in the Third World Countries including India. Many big industries like Automobiles, Machine Tools, Engineering, Electrical etc. were compelled to shut their factory gates and relieved their employees by announcing ‘lay-offs’; Lakhs of labourers lost their jobs during those recession years.

Recession became a blessing in disguise. During recessions, various units having positive outlook; made special efforts to install, new machinery, new technology, new organization, new products and introduced Research and Development activities for reducing their costs of products and simultaneously enhancing the quality of the same of international level.

In fact, the new inventions of cost cutting and Technological upgradation happen to be the ‘unexpected and generous’ products of recession!

Page 212
The theory of ‘Competitive cost Management’

Michael Porter – A management Guru – is the prominent and pioneer exponent of the theory of competitive cost leadership. He has elaborately researched the area of strategic management, which is not only an adhoc measure to tackle the problem of ‘economic slow down / recession; but it is vitally essential even in booming business conditions; so as to sustain the cost leadership and thereby largest share of the product / service market.

According to him,”Many firms do not fully understand the behavior of their costs from a strategic perspective and fail to exploit opportunities to improve their relative cost position”; as a result of which, they are unable to maximize their efficiency and profits.¹

Porter further states that, “there are two basic types of competitive advantage, a firm can possess: low relative cost or differentiation. Three generic strategies for achieveing above – average performance in an industry are viz

a) Cost leadership

b) Differentiation and

c) Focus.

¹ Intangible intelligence leadership software – overcoming the pitfalls of cost leadership.

Pages 1, 2 and 3
The focus strategy has two variants:

i) Cost focus and

ii) Differentiation focus

A firm must strive to become the low cost producer in any industry. A firm which ignores the ‘cost management’ often face following problems; viz

1) Wasted cost and wasted time
2) Decreased engagement and motivation
3) Decreased productivity
4) Decreased brand value.

**Cost of manufacturing activities and pitfalls of cost leadership identified by porter.**

1) Many costs are service related, not manufacturing related. Automation, Business Process Engineering, Six Sigma and Outsourcing are forcing manufacturing processes offshore to low cost countries.

2) Ignoring Procurement – The majority of firms are now service firms. Many manufacturing firms now manage outsourced manufacturing processes rather than perform them internally. As such, efficient procurement and purchase and supply chain management are very essential factors.

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2 Intangible intelligence leadership software – overcoming the pitfalls of cost leadership. Pages 1, 2 and 3
Today the value of a purchase is often in its ability to make employees more productive and effective; not to reduce ‘head count’. Head-count reductions in understaffed firms decrease cost leadership. Efficient procurement means ability to save time, increase cost. Effectiveness of increase in revenue capability, decrease in revenue losses, market value and share price losses, must be duly exercised.

3) Overlooking indirect or small activities- Often indirect costs of small activities are overlooked. ‘Intangible Intelligence Leadership Software’ helps us to valuing the productivity of value creation, assessing the cost effectiveness. All activities are measured and accounted for quickly through advanced data collection tools and benchmarking.

4) False perception of cost-driven and wrong decisions of reducing the labor un-thoughtfully- Suppose a firm decides to reduce company’s sales force due to its cost; is not an intelligent decision if the firm has excess customer demand. Understaffed organizations cannot supply enough customer time to customers to meet their demands in a timely manner. The result is ‘Customer base erosion’. Cost quality of every decision can be examined and verified from the cost leadership software. For instance, a project costing $1 million that result in a $5 million loss of revenue has negative cost quality whereas a project costing $1 million that raises revenue by $5 million has positive cost quality. The software helps us to understand and assess the cost effectiveness of every management decision.
5) Failure to exploit linkages- It is very essential to know the difficulties of your vendor suppliers; who may be willing to reduce their prices but they are unable because of their own costs of purchasing raw material from other suppliers. It is better to apply the principle of aggregation which means you will form a team of all those producers and suppliers and remove their individual difficulties and help them to reduce their costs.

6) Cost reduction does not mean reduction in value.

7) Undermining differentiation- Differentiation is the maximization of unique value creation for customers. Reducing costs can decrease differentiation and uniqueness.¹

Cost Reduction- A Key to Survival & Success²

Cost reduction is the key word for success in today’s global competitive market scenario. It is one new economic mantra. Gone are the days where vendor can pass on the cost of his inefficiency and low productivity to the customer. Today’s customer has a wide choice in a ‘net connected global market’ where n numbers of market savvy vendors are available.

¹ Intangible Intellignece Leadership Software – Overcoming the pitfalls of cost leadership. Page no. 2 & 3
² Cost reduction through Business Partnership IIMM - Page no. 1 of 4
How to develop Cost-Reduction Ideas

The first thing that you have to do while developing cost-reduction ideas is to consider alternate and all feasible cost-reduction measures. Sourcing for new suppliers offering cheaper rates is a sub-optimal alternative.

Rob Patton, an associate with sourcing consulting firm Paladin Associates, has identified 7 such cost reduction ideas, including following four major ones.

A) Ask and you may receive- Ask your suppliers if they have cost savings ideas. Answer may probably surprise you. Ask your purchase/supply chain managers for reducing purchase and costs of logistics.

B) Aggression- It is any effort that makes the buyer’s requirements more attractive to the seller by bundling those requirements with the volume of other buyers. For external bundling, you can build your own consortium or join an existing group purchasing organization.

C) Space Rationalization involves looking at the goods and services you buy and determining smarter ways to specify them. We discovered that we had between 80 to 100 different specifications across the worldwide sources for water.

1Charles Dominick- web based version- Purch Tips- Edition 167, December 9, 2008- Page no. 1 of 2
No reasonable person in purchasing or engineering is going to say that we really need that many specifications for water.

D) Leveraging the supply chain- In this technique, you are looking at suppliers, one or two steps back in the supply chain. Your own intermediate suppliers do not normally have direct control on maintaining low cost purchases. Try to take him in your team and help him to sort out his problems.²

² Charles Dominick- web based version- Purch Tips- Edition 167, December 9, 2008- Page no. 1 of 2
ABC and ABM of Cost Leadership

We are in the era of indispensable liberalization, inevitable privatization and invincible globalization, where COMPETITION is very intense and the change is rapid. The face of business has changed completely, towards market preferences or customer driven market. Therefore, every firm has to remain cautious about the moves of your competitors and the sensitive responses of the customers. It has further to secure ‘COST ADVANTAGE’ OVER THE COMPETITORS. In this direction, new cost approaches have emerged as ‘Activity based costing’ (ABC) and ‘Activity Based Management (ABM).

ABC

ABC is a system that first accumulates overhead costs for each of the activities of an organization and then assigns the costs of activities to the products, services or other cost objects which caused that activity. ABC attempts to refine the second stage overhead allocation process and assigns costs on the basis of a cost driver that propels a set of activities leading to such cost.¹

The new costing system improves the accuracy of cost information. One can identify activities that are not adding ‘value’ and the activities that can be outsourced so as to reduce the internal cost.²

ABM

Activity based management is the next step of ABC. ABM is the Special Management discipline by which cost management is done by the aid of ABC. It is the process of understanding Reengineering and making decisions about the activities to put the enterprise on the road to continuous improvement and excellence. ABM aims to improve the value received by customers and to improve profits by providing this value. It is useful for avoiding ‘Non-value added activities.’

ABM is capable of producing parts of the product with the lowest cost process, design parts to minimize the manufacturing costs, modify equipment to reduce costs, increase prices of products priced below ABC cost and to drop unprofitable products. It is a powerful tool for process optimization and facilitates corporations in achieving manufacturing excellence.
Cost Reduction Strategy for a manufacturing Set-up\textsuperscript{1}

The essential steps:

i) Identify the categories of raw materials, components, parts etc. which are used for manufacturing a product. E.g. resistors, capacitors, integrated circuits, transformers etc.

ii) Identify the suppliers for the above categories.

iii) Analyze annual buy for each of the category and their shares in total inventory costs.

iv) Analyze annual purchase from individual vendor for each of the category e.g. integrated circuit

v) Based on the above analysis, try to redistribute business between vendors to realize economies of scale.

\textsuperscript{1} Manish Jain, Cost Reduction Strategy, Cool Avenues Com, April 13, Page no. 1 & 2
Role of Cost Reduction Team

Normally a purchaser gets no time to move out from day to day firefighting and focus on cost reduction activity. Hence the foremost importance is to form a separate dedicated team exclusively for managing the cost reduction. It has to identify various opportunities for cost reduction, develop new parts or think of outsourcing of internal costs comparatively are excessive.

This team has to mind four areas of management viz.

a) Vendor consolidation (instead of unmanageable large number; it is better to restrict their numbers)
   b) Value Engineering for Quality control
   c) Assembly outsourcing e.g. Automobile & Electronics
   d) Standardization

The effect should also be done to avoid ‘Cash blocked inventory’.

While signing contracts of outsourcing following points are to be noted.
   i) The product should be broken into independent assemblies.

ii) Drawings of the assembly are to be made and their critical functional parameters are to be defined.

iii) List of tooling and machinery required for making the assembly is to be defined.

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1 Manish Jain, Cost Reduction Strategy, Material procurement department, April 13, 2009, Page no. 2 & 3
iv) Fix a target cost of purchase of the assembly.

v) Vendor Development- while selecting vendors, necessary check up of conditions e.g. whether he has appropriate tooling and machinery and necessary infrastructure and production capacity along with quality controls. It should also be ascertained whether his financials are sufficiently strong enough so as to enable him to procure raw materials and execute the order on time.

**Standardization**

Standardization is the basic factor which is indispensable in cost reduction. It implies to reduce the variety of components used in manufacturing. In the standardization, Research & Development plays a pivotal role.

**Benefits of Standardization**

a) Reduction in variety of components to be handled, which in turn will reduce supplier base, increase on time delivery of components and increase in the efficiency of inventory management.
b) Set up time will reduce, since the number of components required to change the set up, will reduce.

c) Reduction in material handling and increased stock accuracy

**Conclusion**

Each strategy of cost reduction has its own significances and hurdles. Before selecting a strategy, a person should be thorough about its benefits and road-blocks. Although strategies are simple, it requires great leadership to implement them.

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Perceiving opportunities in problems

The recent threat faced by Indian manufacturers in certain market segments from China (e.g. Indian Toy Industry) is the ground reality; and learning lesson for Indian Manufacturers. This reflects the Indian Industry’s inability to compete in today’s global business environment. If the same threat is converting into opportunity by building up business partnerships with them, it will be fruitful to both the stakeholders. A logical possibility is that many Indian manufacturers may be shifting to China, which offers advantages of reduced cost, tax free concession, tariff free special economy zones, a Worldwide market and availability of cheaper electricity and overheads, as well as, cheaper and abundant raw materials.

A modern industry at present times is ready to offer quality products and services at the right price and place.

Slow or negative growth rate in certain key sectors like steel, cement, fertilizers, textiles, engineering, energy, light truck vehicles and the near death knell of small scale industries; have lead to closures, mergers, acquisitions, bankruptcy and prove our chronic weaknesses. Most of the successful old economy giant organizations, who could not quickly adapt to the changing environment, are reported to be sick, slowly going to the death-bed mainly surviving on the oxygen of ‘manpower reduction, VRS and downsizing’; the medicines often prescribed by western consultants. These are only the half hearted short term measures; but they are not useful to regain the past glory of their organizations.
The radical and long term therapy consists of strategic management of cost reduction for improving the productivity and profitability of the sick units. Cost reduction must be aggregative and exhaustive; e.g. Production and Designing costs, Purchase and Material Management Cost, Overhead costs of infrastructure, Labor and Personnel cost, Marketing costs, Selling and Advertising costs, Financial costs and costs of capital, Costs of business risk and uncertainty, Futuristic costs etc. will require unified consideration. Merely economizing costs of stationery and telephone, labor welfare budgets, special perks given to employees etc. will bring the company in a strange crisis and the treatment will be more dangerous than the existing sickness.

What company needs is to think about radical cost saving measures in all major cost areas. The main objective of cost reduction must be to regain health and competitive edge. 

**Survival Strategy**

During the crisis of a company’s sickness, the company should systematically plan a survival strategy which consists of following issues.

a) Clear shared vision

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1 Indian Institute of Materials Management, Cost reduction through Business Partnerships-Page no. 1 of 4
b) Well set goals and objectives

c) Committed organization aligned with company’s goals and vision

d) Global cost consciousness

e) Well structured policies and procedures to back up the same and to deliver the said objectives at minimum costs

f) Produce market quality products and services at the right place, price and time as per the customer’s requirements

g) Key performance indices are to be identified e.g. data on Repeat orders, indicating brand/customer loyalty, market share and cost of service etc.

**Need of Strategic Sourcing at Optimum Cost**

One of the major costs in any organization is procurement cost of materials, fabrication and services, components etc. ranging from 40% to 70% of the total turnover. Next area is to keep updated ‘scrap accounting’ and monitoring disposal, establishing vendor chain management, is a key to achieve competitiveness.

The traditional Indian idea of sourcing from one cheapest source by way of quotations has lost relevance due to the following reasons:

i) Quotations can be fabricated.

ii) Lowest rates can be at the cost of quality
iii) Lowest cost vendor may not be capable of producing large amounts of materials because his inability to raise finance, employ large number of workers etc. Therefore his supplies may be delayed or paralyzed. This undependability factor is more important than the lowest price bid he does.

iv) Vendor chain relationship should be developed on mutual trust and benefit.

vi) Reduce inventory carrying cost, inventory cost by reducing inventory replenishment period to few days by cooperation of offering “just in Time suppliers”.

vii) Explore global sourcing units, as well as, scope for extension of markets. The role of internal Audit is not that of a spy or a detective; who is on fault finding mission; but that of ‘in-house consultant’ who helps line managers in discharging their functions efficiently and effectively as far as costs are concerned. ¹

¹ Indian Institute of Materials Management, Cost reduction through Business Partnerships- Page no. 2 of 4
Business Recession Strategy (Cost Cutting)

When Business is slowing down and there is economic recession, following options must be tried as ‘Business Recession Strategy’.

1) Do continue with cost reduction but also look at profit improvement. Use the ‘Business solutions profit equation’ to help your efforts. Profit is a function of expense, loss and revenue. So look at your losses i.e. waste for opportunities to improve and examine your revenues in detail, for opportunities to improve them.

2) Re-evaluate your entire pricing structure. As costs go up, so must prices in order to maintain margins. The caution is to avoid alienating your customers and thereby losing too many sales. Test pricing, up and down in response of your customers demand.

3) Think strategically. May be your closest competitor may not be as flexible as you are. You can create business advantage when costs and prices are under pressure. Your suppliers may be more willing to partner with you in their own interest.

4) Look for acquisition opportunities. Your competitors in complimentary product lines may be looking to sell. Market consolidation is always a better option.

5) Consider investing. Invest in the new equipment, machinery or technology to reduce costs and improve quality.
6) Watch your cash flow like a hawk. Make sure your accounts receivable stay current and healthy. If you are having trouble, so are your customers.

6) Make sure to engage your employees in the process. Everyone must be part of your team for renovations, rationalization, cost cutting and quality improvement.

7) Be slow to hire and quick to fire new employees to keep only the best. ‘A lay off should be a past resort’. Instead of firing employees, ask them to work more and improve their productivity. They will surely be willing to choose the latter option.

8) Talk to your banks, investors and other sources of capital. Take them in confidence by transparently revealing your present difficulties and future plans. Take their suggestions and solutions. Instead of dodging calls from your bankers and well wishers; you call them for lunch or breakfast. Get your costs and bottom line profits under control !!

Recession is not a problem.... It is an opportunity! ¹

¹ Business Recession Strategy, Author Steve C. Martin, Profits weekly Newsletter, Page 1 of 2
Five Key Levers to Ride the Storm of Global Slow down

During global slowdown of 2007, firms should look at proactively deploying five key levers viz. a) Revenue and margin enhancement, b) Cost reduction and performance improvement, c) Reassessing planned capital expenditure, d) Seizing new opportunities and e) improving employee performance management. This will enable firms to successfully navigate tumultuous times and position themselves for further growth.

Business portfolio needs restructuring. On the one hand, companies should try ‘cross-selling and up-selling’ to existing customers and should explore new channels and avenues. On the other hand, they should think of ‘Price optimization techniques’ on the basis of customer spends and estimation of demand elasticity vis-à-vis price. Furthermore, companies should also do ‘the product-mix-optimization’; diversifying to more paying lines rather than less paying lines. They should also make entry into ‘high margin categories and services’. For that newer distribution and communication channels such as retailing over internet, employing electronic out of home media and mobile advertising can be leveraged so as to reach the customer cost effectively. In-depth analysis of customer profiles helps in identifying unique customer segments that can be effectively targeted for sale of additional products and service.
Specific initiative yield major benefits which include raw material optimization, value engineering, overhead coast reduction, right sizing and supply chain optimization. When business is enjoying ‘going good conditions’; nobody bothers for a harder look at internal operations and costs, generally it is avoided for the pain it causes. Empirical studies prove that companies can boost productivity and cut waste, as well as, costs by 6 to 12%.

A redefinition of the key Performance Indicators and existing performance management systems (KPIs & PMS) may be necessary. Rewards and incentives certainly will improve employee performance.

Seizing new opportunities like acquisition and merger will also be easier in times of recession.

Creating a sense of togetherness and belonging from Top management level to Bottom lines, can reduce the execution risk and can help companies navigate through difficult times.

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1 R.R.Bhinge (CEO) and Pankaj Gupta (Head consumer & retail) - "Navigating through tumultuous times". Tata Strategic Management Group.
Cost Reduction: Cases

‘Tata Strategic’ was assigned to offer solutions for optimization of manufacturing cost competitiveness. It split the assignment into three parts viz.

a) Identification of manufacturing constraints by estimating demand and detected capacity bottlenecks.

B) Variable costs, inbound and outbound logistics costs, temporary manpower costs and structuring costs were identified and analyzed.

C) Finally, strategic options were generated for the short and long term and potential cost benefits were analyzed.

Savings potential worth Rs. 350 million was identified based on a revised product mix at each manufacturing organization location. The client happily could reduce the unwarranted cost as per the advice.

Cost reduction opportunities in the area of overseas transportation by competitive negotiations, modifying the payment structure and inventory control, as well as, routes optimization. The client obtained overall cost reduction of about 30%.

Cost reduction in a large state run Dairy Federation was also suggested by ‘Tata Strategic’. Barring the cost of raw milk, the rest of all costs were studied such as manpower, logistics and conversion. Almost 30% surplus labor was identified. Some activities were outsourced. Inter-union milk movement was
redesigned using ‘optimization software’. 15% logistics costs were reduced; 20% operational costs and 5% conversion costs were also cut down.  

The 4-A’s of Cost Reduction Ideas

A₁ – You must first have the ideas #- Large number of ideas are your opportunity resource pool.  

A₂ – Sort the resource pool to find those that apply to your business situation.  

A₃ – Sort the list again to find those that are achievable and worthy of effort. Optimum time management is also inevitable.  

A₄ – Finally, you have to implement the opportunity to create results. Energize your profits with a list of valuable cost reduction and profit improvement ideas- Review how productive each space is for your business. How much revenue does it generate or support. Put that surplus space for another productive use. Encourage prompt and quick payments from your customers, reduce the credit limits and make your cash flow comfortable.

¹ 'Tata Strategic’- Cost reduction , Case profiles, Cost savings, Page no. 1 of 2  
² Profit Wealthy newsletter, Cost reduction and Profit improvement tools Page 1 to 8
Avenues for Cost Reduction in Chemical Processing

Major production cost in chemical processing includes color and chemicals, utilities, maintenance, wages and interest. A mill engaged in Bleaching, Dyeing, Printing and Finishing, the cost on colors and chemicals are comparatively higher than the utilities/Unit productions. Mills using coal as fuel for thermal energy have some relief on utilities particularly on steam and water cost.

Among the utilities, major cost happens to be thermal energy which is about 50% of the total cost.

Water is becoming scarcer these days and on the other hand ‘Anti-pollution regulatory authorities’ are tightening the nose of polluting industry by making the stringent regulations for effluent treatment. Thus both water and effluent treatment costs are rising very high and rapidly.

Therefore conservation/reduction in its usage is utmost important. Bombay Textile Research Association (BTRA) has taken a lead and continuously rendering the consultancy services to the mills producing cotton, polyester, polyester wool, woolen, woven or knitted fabrics. BTRA launched water conservation studies and effluent treatment expenditure studies.

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1 B.P. Yadav, Avenues for cost reduction in chemical processing, Seminar on conservation of utilities in Indian Textile Industry, November 26, 2002, Seminar Paper
After implementing suggestions done by BTRA Research Group, the selected 8 mills showed not only reduction of water consumption from 25% to 38% but also in reducing the cost of thermal and electrical energy. The suggested measures also helped the mills to reduce their ‘effluent treatment costs’ by 15 % to 25%.

**A.K. Steel plans of cost cutting in global slowdown of December 2008**

Due to sudden and sharp fall in demand for company’s products, company announced ‘salaried employee cost reduction program’. There was 5% pay reduction effective from January 1, 2009. Pay reduction applicable to all, from top CEO to bottom line employees. It also introduced ‘freezing of the Benefit plan for salaried employees and replaced it by a scheme of ‘contributory retirement benefit’. It offered incentives for voluntary retirements. In case company finds stringency to continue, company announced that it will implement ‘involuntary salaried job reductions’.

A.K. Steel produces flat rolled carbon, stainless and electrical steels, primarily for automotive, construction and electric power generation and employees 6500 men and women in U.S.

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Various ways and means of cost reduction

1. Cost Reduction by Design

Product development determines 80% of product cost. The concept/architecture phase alone determines 60% cost. Cost is very hard to remove later after products are designed. Significant cost reductions by design for parts, labor, material overhead, and quality and product development: designing for lean production can maximize lean savings. Implement Design for manufacture ability (DFM), Design to lean and Design for quality.

2. Activities supportive to Low cost Product Development

a) Co-locating Engineering with manufacturing ensures the best team work. Avoid distant outsourcing and off shoring.

b) Choose local vendors which ensure early and active vendor participation in product development teams.

c) Avoid low bidding

d) Implement standardization and good product portfolio planning for focus.

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1 Half cost products, Cost savings, 14th July 2010, Page no. 1 to 7
e) Total cost measurements to qualify all costs affected by design.

f) Correcting counterproductive policies- New ventures and startups will be able to implement these principles easily and smoothly. Established companies will require extra efforts and trouble to bring things in order.

3. Lean Production cost Reduction

Lean production benefits include doubling labor productivity, cutting production throughout times by 90%, reducing inventories by 90%, cutting errors and scrap in half errors.

Activities supportive to Lean Production

a) Design product families

b) Concurrently engineer flexible processes

c) Implement standardization

d) Rationalize the products to eliminate the most unusual products with the most unusual parts and processes

e) Total cost measurements

f) Keep control of manufacturing in-house or with vendors/partners; avoid outsourcing for cost; avoid long and distant supply chains.
4. Overhead cost reduction

Try ‘Build to order’ without forecasts and see the products are ‘mass-customized on Demand’.

Result-

a) Inventory carrying costs can be eliminated

b) Procurement costs can be reduced with automatic check on demand resupply

c) Better responsiveness leads to more sales.

5. Standardization of Cost Reduction

Standard part lists can be 50 times less than proliferated lists.

Result- Standardized parts are easier to get. Economies of scale also result from large scale purchases.

6. Product line Rationalization Cost Reduction

Focus on the most profitable products. Eliminate the ‘loser tax’ on cash cows to subsidize low margin products. Remove products that are losing money on a total cost basis. Reduce overhead costs of ‘loser products’. Free up valuable resources to work on cost saving efforts in engineering operations and ‘Supply Chain Management’.
7. Supply Chain Management Cost Reduction

Supply chain simplification can greatly simplify supply chain management. Material overhead can be reduced by a factor of 10 for standard parts and materials. Automatic Resupply (Just in time) saves the cost of inventories.

8. Quality Cost Reduction

The cost of quality can be 15% to 40% of revenue. Quality costs can be greatly reduced; in some cases reducing quality costs can double profits. Quality costs in manufacturing organization can be eliminated with ‘Six Sigma’ programs.

9. Total Cost Measurement to Support all Cost Reduction Activities
Total cost measurements are imperative to encourage and support the above activities to rescue all cost categories.

Other Valuable Tips
1) Do not try to remove cost after the product is designed.

2) Do not lower cost: short sighted attempts prevent real cost reduction.

3) Do not use low bidding.

4) Do not outsource or offshore manufacturing for cost.¹

¹ Dr. David M. Anderson. www. Half Cost Products. Com,