
UNIT 14 PERFORMANCE EVULATION OF A SMALL ENTERPRISE

Structure

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14.0 OBJECTIVES

After studying this unit, you should be able to:

- 1 Outline the importance of measuring performance;
- 1 state the relationship between planning and controlling;
- 1 enumerate important planning tools;
- 1 outline the principles of the performance measures;

- 1 state the concept of controlling and its procedure; and
- 1 enumerate important tools and techniques of controlling.

14.1 INTRODUCTION

A businessman always has to look ahead in terms of production, sales, expenses, profitability, customers, etc. In the process of looking forward and assessing his future he should be mindful of various activities happening in his firm. He should occasionally, stop and review his previous activities to see whether his business is running on the right track as he desired or not. Evaluation is a process of systematic investigation and is a part of a project or business enterprise from beginning. It is an essential aid to improve performance, achieving best results for money, improve decision making process and planning is important but review of measurement of performance and its control is also equally important. Both of these are in fact complementary and supplementary to each other. Controlling is effective only when there is proper planning, and planning is fruitful only when there is effective control. The inter-dependency of planning and control can be shown through the following diagram.

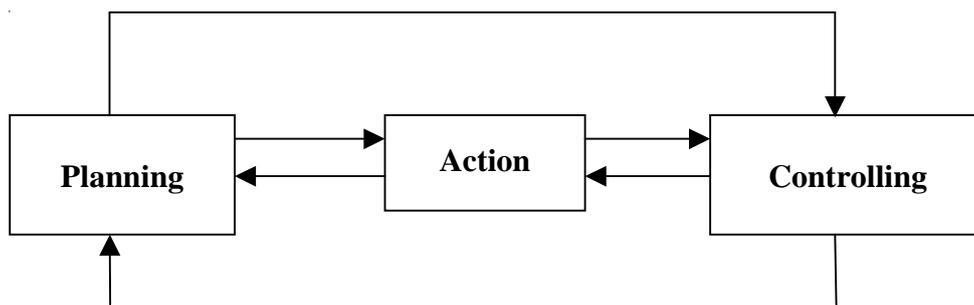


Figure 14.1: Diagram Showing Inter-Dependency of Planning and Control

14.2 PLANNING

Planning is an important facet of management and we apply it in our day-to-day activities in management of our time, resources and inputs/ outputs. At small level of an enterprise operation involving few activities, resources, constraints and inter relationship can be visualised easily by human mind and planned informally. However, when size and level of operation becomes large, the need for formal planning steps in. Planning is defined as process of setting goals, developing strategies and outlining tasks and schedules to accomplish the goals. The need for formal planning is indeed much greater for business enterprise in the current competitive scenario. The advantages associated with planning are:

- 1 It provides a basis for organising the work in an enterprise.
- 1 It is a mechanism of communication and coordination between different sub-groups and individuals in an enterprise in the project.
- 1 It induces people to look ahead.
- 1 It inculcates responsibilities among individuals.
- 1 It establishes the basis for monitoring and control.

i. Areas of Planning

- (a) **Structuring the goals and activities:** The first and foremost task for an entrepreneur is to set the goals with the time frame. For example: Capturing 15% of market share of the ice-cream market in the country in a span of two-three years/ setting up of dairy unit for production of quality indigenous dairy products for export in a couple of years. All the probable activities associated to achieve the goals are listed out from production point to consumption level. These activities are grouped within the enterprise into parts and sub-parts such as for a small dairy - procurement, purchase, production, quality control, marketing, services & maintenance, administration and finance, etc. are the major sections, and each section will have corresponding activities. The activities relating to each section are outlined in detail and should be properly scheduled and sequenced. This helps in- (a) dividing the work into manageable elements and (b) development of control and information system.
- (b) **Defining the objectives and policies:** The issues in this context are- What are the technical and performance objectives? What are the time and cost goals? To what extent should the work be given to outside contractors? How many contractors should be employed? What should be the terms of contract? The activities like packaging, transportation, security and maintenance are being outsourced by the dairies.

The well-defined objectives and policies serve as the framework for the decisions to be made by the entrepreneur/ manager. Throughout the span of the business, he has to seek a compromise between the conflicting goals of technical performance, cost standard, and time target. The framework set by the management will be helpful in taking quick decisions. For example, guidelines on product mix for a dairy plant in lean season, acceptance and payment norms for sub-standard raw milk, maintenance of product standards will facilitate decision-making process.

- (c) **Planning for human resource and organisation:** The human resource required for an enterprise ranging from managerial cadre to skilled worker (managers, technologists, technicians/ operators, and others) must be estimated and the responsibility for carrying out the project work must be allocated.
- (d) **Planning the finance:** The financial requirements taking in account the fixed capital and recurring expenditure should be planned. The initial returns from the market shall be slow.
- (e) **Planning the information system:** The information required for monitoring an enterprise must be defined. It is important to set the communication and information network among all the stakeholders of the business enterprise (including consumers).

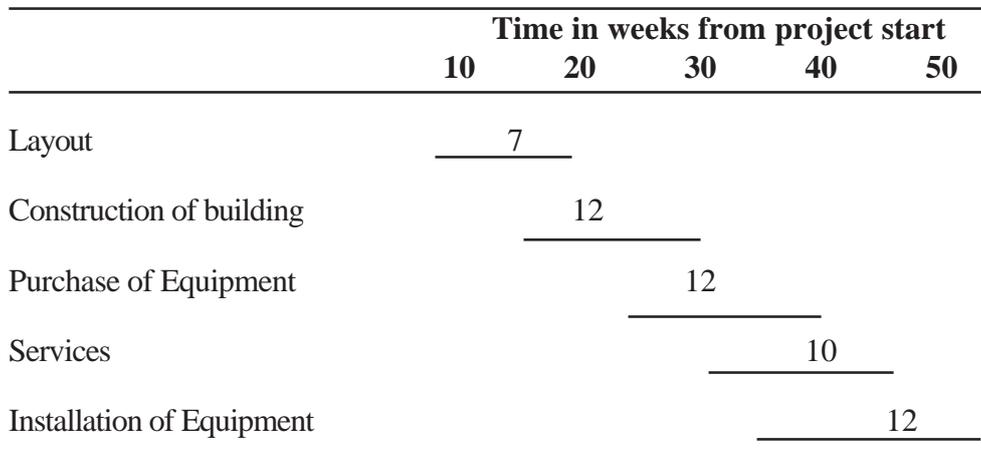
ii. Tools of Planning

The oldest formal planning tool is the bar chart, also referred to as the Gantt chart or the multiple activity chart. The network techniques have received considerable attention in last few decades. An introduction to the planning tools is made here.

- (a) **Bar Chart:** This is a pictorial device in which the activities are represented by horizontal bars on the time axis. The left-hand end of the bar shows the beginning

time, the right-hand end the completing time. The duration of the activity is indicated by the length of the bar. The manpower requirement for the activity is shown by a numbers on the bar. An illustrative bar chart is shown in Fig. 14.1

Fig. 14.1 : An Illustrative Bar Chart



The advantages of the bar chart are: (i) it is simple to understand; (ii) it can be used to show progress; and (iii) it can be used for manpower planning. The bar chart, however, suffers from some disadvantages which limit its usefulness: (i) it cannot show interrelationship among activities on large, complex projects; (ii) there may be a physical limit to the size of the bar chart, which may limit the size of the project that can be planned with this technique; and (iii) it cannot easily cope with frequent changes or updating.

(b) Network Techniques: These are more sophisticated than the traditional bar chart. In these techniques, the activities, events, and their inter-relationships are represented by a network diagram, also called an arrow diagram. An event is a specific accomplishment that occurs at a recognisable point in time. It marks the completion or beginning of the activity and does not require any time or resources. An activity is the work required to complete a specific event. An activity is a recognisable part of work project that requires time and resource for completion. A network is formed by connecting all activities and events in a logical manner. The activities are represented by arrows and events by a circles. Thus a network consists of arrows and circles. .

Programme Evaluation and Review Technique (PERT) and Critical Path Method (CPM) are two basic network techniques. Normally PERT is used for variable activities while CPM is used for deterministic activities. Variable activities mean the activities which may have never occurred before and/ or which contains a considerable number of chance elements. Deterministic activities are those for which we have considerable experience and whose mean value is accurately known and whose variance in performance time is negligible.

PERT is applied to projects characterised by uncertainty and its orientation is probabilistic. CPM is applied to projects which are relatively risk free. PERT is used where the emphasis is on shortening and monitoring execution time without too much for cost implication. CPM is used on optimising resource allocation and minimizing overall cost of a given project execution. We can say that CPM takes accounts of costs and PERT is concerned with time.

Development of networks: Basic to PERT as well as CPM is the network diagram. The network diagram, also referred to as the project graph, shows the activities and events of the project and their logical relationships. A simplified network diagram for an inauguration function of a dairy plant is shown in Fig. 14.2

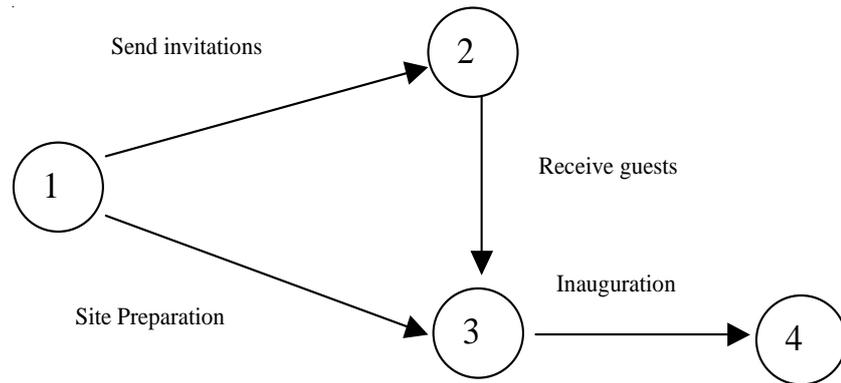


Fig. 14.2 Network Diagram for an Inaugural Function of a Dairy Plant

The network diagram is constructed in terms of activities and events. An activity is a definite task, job, or function to be performed in a project. For example, 'Inaugural Site Preparation' (see Fig. 14.2) is an activity. An activity is represented by an arrow. The head of the arrow marks the completion of the activity and the tail of the arrow marks its beginning. (The length and 'compass' direction of the arrow have no significance.) An event is a specific point in time indicating the beginning or end of one or more activities. It represents milestone and does not consume time or resources. For example, event 2 in Fig. 14.2 marks completion of the activity 'send invitation'.

Activity Duration/ Span (Te): In PERT, the activities duration or time is calculated by using three time estimates such as optimistic (to), pessimistic (tp) and most likely time (tm). The activity duration time (Te) is calculated by using the formula:

$$Te = \frac{a + 4m + b}{6}$$

where:

a = optimistic time (to)

m = most likely time (tm)

b = pessimistic time (tp)

Te = Mean Activity Performance time based on three time estimates

Critical Path: It is the path which takes the longest duration of time to reach the objective event. If it is required to complete the project in less time, the duration of the activities lying in the critical path will be shortened. Time for an activity can be reduced by employing more resources or by using improved technology.

Float/ Slack: We have defined that the critical path is the longest path in time from starting event to the objective event. The other event and in the network lie on the paths which are shorter. This means that along these paths there is a slack or time to spare. These paths are referred to as slack time and are the areas

where surpluses resources of men, facilities, or time are to be found.

Steps for PERTing a project: The basic steps are:

- 1 Deciding the objectives and project structure
- 1 Listing out key events and their sequencing
- 1 Listing out activities and their relationship
- 1 Construction of net work
- 1 Obtaining time estimates for activities
- 1 Calculating critical path and floats
- 1 Allotting resources
- 1 Evaluation
- 1 Control

Network Cost Control: We know that project cost is product of time and resources. The amount of priority that should be given to the achievement of a project by a certain date depends on its cost consideration. Selection of certain schedule for project generally involves a comparison of a number of alternatives, each with a different relationship between cost and time of completion of the activity. A certain activity could be expedited by incurring extra cost in the form of assigning more personnel or scheduling overtime for that activity. When an activity is completed in normal time, the associated minimum cost is called as normal cost. When an activity is completed in minimum possible time, the associated time could be called as Crash time and the cost Crash Cost. The network cost system are useful for cost planning and control of projects.

A network diagram is shown in the Fig. 14.3

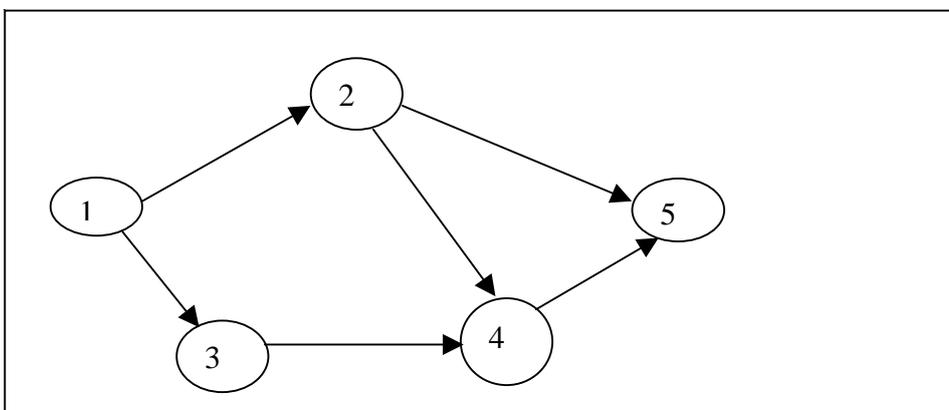


Fig. 14.3 A Network Diagram

The advantages of network techniques are: (i) they can effectively handle inter-relationships among project activities; (ii) they identify the activities which are critical to the completion of the project on time and indicate the float (or spare

time) for other activities; (iii) they can handle very large and complex projects; and (iv) they can be easily computerised and updated.

While the network techniques are a superior tool for project planning, they suffer from several drawback such as: (i) being more complicated than the traditional bar chart they are not easily understood by the project personnel; and (ii) they do not define an operational schedule which tells who does what and when.

14.3 PERFORMANCE MEASUREMENT

Performance measurement is a management function. It helps in detecting, preventing or eliminating distortions in the process or product. The aim is to match the product to the customer's requirements. Performance measurement makes the organization capable of taking sound decisions about the action to be taken to ensure appropriate processes and products.

i. Need for Measuring Performance

If an activity cannot be measured, its effect cannot be seen and suitable correctives cannot be applied. The activity cannot then be controlled and managed.

What are performance measures

A performance measure is composed of a 'number' and a 'unit of measure'. The number gives us a magnitude (how much) and the unit gives the number a meaning (what). Performance measures are always tied to a goal (the target). These can be represented by hours, meters, number of reports, units of product manufactured etc. They can show the variation from the standards set.

Two types of unit of measures are used:

- i) single-dimensional unit of measure;
- ii) multi-dimensional units of measure.

In case of single dimensional units, performance measures can be represented by units like hours, meters, rupees, number of reports, etc. They can show the variation in a process. Single-dimensional units of measure usually represent basic measures of some process or product.

In case of multidimensional units of measure, performance measures are expressed as ratios of two or more basic units. These may be units like number of bottles of jam produced per month, number of hours worked to produce a packet of papads, etc. Performance measures expressed this way convey more information than the single-dimensional or single-unit performance measures.

ii. Principles for a Performance Measurement System

Successful performance measurement systems are based on the following principles:

1. A businessman should focus on customer needs and based on these must-decide what is needed to be measured.
2. A businessman should measure only that those activities, which are important and will affect customers' satisfaction.

3. A businessman should involve employees/workers in the design and implementation of the measurement system. He should give them a sense of purposeful control, which will lead to improvement in the quality of the measurement system.

iii. Benefits of Performance Measurement

1. *To ensure that the decisions are based on facts*

The businessman can ensure that his decisions are based upon well-documented facts and figures and not on intuition and gut feelings.

2. *To show the areas of improvements*

Performance measurement can show the areas where improvements need to be made. The businessman can come to know where he can do better or how he can improve.

3. *To reveal the clear picture of improvements*

Based on measurement of performance the businessman can have a clear picture whether the improvements have actually occurred or not.

4. *To reveal incorrect assumptions*

If the businessman has been doing his business for a long time, he might have been assuming incorrectly that things are going well, whereas in reality that may not be the case. Thus, without measurements there is no way to tell whether the business cannot do better.

iv. Performance Measures

Performance measures are generally expressed in terms of quantity. They provide useful information to the businessman so that he may make intelligent decisions about his business. They tell him something important quantitatively about the processes with the help of which products are manufactured. In a nutshell, performance measures indicate:

- 1 how well he is doing;
- 1 whether he is meeting his goals;
- 1 whether his customers are satisfied;
- 1 whether his processes are well in control;
- 1 where improvements are necessary.

Features of an ideal unit of measure

Following are the features of an ideal unit of measure:

1. It should be understandable.
2. It should reflect the needs of the business.

3. It should reflect the customer's needs.
 4. It should be capable of wide application.
 5. It should be interpreted uniformly.
 6. It should be precise in interpreting the results.
 7. It should be economical to apply i.e. its should be cost effective.
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Check Your Progress - 1

1. Explain the importance of planning in the management of a small enterprise?
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2. Why network techniques are better than bar chart as a planning tool?
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3. For which activities you will apply PERT and for which activities CPM?
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4. Fill in the blanks:
 - a) Performance measure can be used for exercising _____.
 - b) A performance measure is composed of a number and a _____.
 - c) 'Hours' is an example of _____ dimensional unit of measurement.
 - d) Performance measures are generally expressed in _____.
 - e) A performance measure should reflect the needs of the _____ and the business.
5. State True or False:
 - a) A businessman should measure only important activities of the firm.

- b) A businessman should involve the employees in the formulation of measurement system.
 - c) An ideal unit of measurement should be expensive to apply.
 - d) Single-dimensional unit of measure conveys more information than multi-dimensional unit of measure.
 - e) Measurement of performance does not provide a clear picture whether the improvement has actually taken place or not.
6. Name any two performance measures

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14.4 PERFORMANCE CONTROL

i. Definition and Features of Controlling

Let's go down the memory lane. Think of those days when you were in Class XII studying for your first terminal examination. You decided to secure 75% marks in aggregate and started studying accordingly. When you received your Report Card you were shocked because you could manage to get only 60%. After certain hue and cry you must have sat down and thought that where you went wrong -

- 1 Whether your scheduling was incorrect; or
- 1 Whether your syllabus was too heavy; or
- 1 Whether you got nervous right at time of examination; or
- 1 Whether you had not revised the lessons thoroughly.

Lastly, you must have made fresh plans to do better at the next terminal examination by making a proper timetable, by revising the lessons thoroughly and by streamlining your study pattern.

In the above process you have unknowingly applied the controlling procedure.

i) Define Controlling

Controlling is nothing but to set standards, measure the performance, compare the performance with the standards set and take corrective measures if deviations are found. In other words controlling is comparing operating results with the plans and taking corrective action when result deviates from the plan. Thus, controlling is an 'action oriented' process.

Control process can be illustrated with the help of an example of automatic iron, press which is fitted with thermostat. As soon as the iron is switched on the bulb

lights up - it means that the current is passing in the iron. The current goes on passing as long as the temperature does not reach the level at which the thermostat is set. Immediately after the temperature reaches that level, the thermostat starts functioning and the current is disconnected, thereby causing the bulb to go off. When the temperature becomes low than the level set, the thermostat allows again the current to pass and the bulb lights up. Here, the thermostat is acting like a controlling device, which compares the actual performance with the standard set. It starts functioning and disconnects the electric current when the actual deviates from the standard.

ii) Features of Controlling

- 1 It is the last function of management process, the first function being planning.
- 1 It is a dynamic process, adapting itself to the changes in the environment.
- 1 It is a continuing process.
- 1 It is pervasive in nature i.e. it is found at all the levels of management.
- 1 It is backward looking because it involves feedback and responses. It is linked with - what has happened in the past.

Check Your Progress - 2

- 1. Why is controlling referred to as 'backward looking'?
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- 2. Mention two features of controlling.
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- 3. If controlling is said to be the last function of management process then which one is the first function?
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ii. Procedure of Controlling

Let's now discuss the control process. It embraces the following steps:

i) Fixing Standards

Standards serve as a test of performance. It is a criterion against which results are measured. Standards can be expressed in physical terms and monetary terms. If we say that the firm is required to manufacture 1000 packets of paneer in a week, this is expressing standards in physical terms. In case the standard set is to increase the sales by Rs. 10,00,000 by the end of the current financial year, this is expressing standards in monetary terms.

The standards should be easily understandable, result-oriented and attainable. They should be scientifically set with the help of time and motion studies. Workers should also be consulted in order to involve them in achieving the standards set.

In general, good performance standards should have the following attributes:

- 1 *Understandable*: Standards should be expressed in simple and clear terms, so as to avoid misinterpretation or vagueness. Similarly, instructions for their use should be specific and complete.
- 1 *Attainable*: Standards should be such that they can be attained with reasonable efforts under the given conditions.
- 1 *Economical*: Cost of setting and administering the standards should be low in relation to the activity covered and the benefit to be derived.
- 1 *Applicable*: Standards should be such that they can fit the conditions under which they are to be used. If conditions vary, they should contain built-in flexibility to meet these variables.
- 1 *Consistent*: Standards should help to unify communication and operations throughout all functions of the company.
- 1 *Stable*: Standards should have a fairly long life to provide comparability.
- 1 *Adaptable*: Standards should be designed in such a way that elements can be added, changed, and brought up-to-date without much complexity.
- 1 *Equitable*: Standards should be accepted as a fair basis for comparison by the people who have been assigned the responsibility of meeting the goals.
- 1 *Customer-focus*: Standards should address areas, which are important to the customer (internal/external) such as cycle time, quality, cost schedule performance, and customer satisfaction.

ii) Measurement of Performance

Performance can be measured through inspection, observation, measurement and reporting. Uniform reports should be prepared at regular intervals. Performance measurement should be an ongoing process. It is easier to measure the standards if they are tangible in nature. For example, Rahul & Co. sets the standard to reduce the advertisement expenses by Rs. 50,000 in the next six months. This standard being tangible can be easily measured with the actual performance by looking at the figures of actual advertisement expenses. But, in cases where standards are not tangible like result expected from a training programme for salesmen, measurement of results becomes complicated.

iii) Comparison with Actual Performance

The actual performance should be measured with the standard set. If deviations are found exceptionally wide then only should be concentrated upon. It helps in conserving time and effort of the businessman. For long-run standards (like increase in return on investment) annual comparison may not at all be appropriate. But in case of short-run standards (like to maintain a minimum cash balance of Rs. 1000) comparison can be on daily basis. For certain short-run standards comparison can be on weekly or monthly basis e.g. to reduce the selling and distribution expenses by 2% within a period of 4 months.

iv) Finding the Cause of Deviation

A very wide range of deviation is analysed at this stage. It is done so to find out the various reasons of its occurrence. This analysis should be promptly done to make control effective.

v) Taking Corrective Actions

Remedial actions are to be taken so that deviations may not occur again and objectives are properly achieved. Corrective actions may involve:

- 1 *Let the situation remain as it is:* This is applicable if the deviation is insignificant i.e. within tolerable limits (which should be set in advance).
- 1 *Correct the deviation:* This can be done by improving the performance e.g. defective tools to be repaired, generators to be installed, close supervision, incentives to be provided, appointing more salesmen, good training provided etc.
- 1 *Revision of standards:* The standards may need to be revised if they are not effective for required control.

Check Your Progress - 3

- 1. Write any two examples of standards which can be easily measured and compared.
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- 2. What will be the consequence if the standards fixed are on higher side?
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- 3. Why the reporting should be quick?
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14.5 TOOLS AND TECHNIQUES OF CONTROLLING

i. Ratio Analysis

Ratio analysis is a study of relationship among various financial factors in a business like sales, gross profit, net profit, stock, debtors, fixed assets etc. It is a technique of analysing the financial statements by computation of ratios. Ratio analysis acts as an important and effective control device in an organization. It is the process of establishing a significant relationship between the items of financial statements to provide a meaningful understanding of the performance and financial position of a firm. Ratio analysis focuses attention on relative figures which should be significantly related. For example, figure of sales when related to the figure of gross profit will indicate gross margin earned on sales. This means both the figures in the ratio are significantly related. Ratio analysis seeks to measure the effectiveness and profitability of the various functions.

Controlling process starts when the accounting ratios are compared with their own past ratios or with the ratios of similar firms in the same industry. For example, a Fruit Jelly manufacturer measures that his gross profit ratio for current year is 18% whereas in the immediate past year it was 22%. Thus, on comparing the gross profit ratio he finds the deviation. Now he has to take remedial action to improve the ratio.

Some of the important ratios used in controlling the affairs of a business are:

- i) Return on Investments (ROI)
- ii) Net profit to Sales (Net Profit Ratio)
- iii) Sales to Capital employed (Capital Turnover Ratio)
- iv) Gross profit to Sales (Gross Profit Ratio)
- v) Sales to Working Capital Ratio (Working Capital Turnover Ratio)
- vi) Stock Turnover Ratio
- vii) Operating Ratio
- viii) Current Ratio
- ix) Debtors' Turnover Ratio

Let's now discuss these ratios.

i) Return on Investments (ROI)

This ratio shows the relationship between net profit (before interest and tax) and

capital employed. It indicates how efficiently the capital employed in the business has been used. In other words it shows the firm's ability to generate profit per rupee of capital employed. It is a measure of overall profitability of an enterprise. Higher the ratio the better it is.

$$\text{Formula: Return on investment (ROI)} = \frac{\text{Net profit (before interest and tax)}}{\text{Capital employed}} \times 100$$

where Capital employed = Fixed assets + Working capital

For example, a company manufacturing various bakery items has earned a net profit (before interest and tax) of Rs. 4,00,000 during the current financial year. The company has Rs. 16,00,000 as capital employed. The ROI works out to 25%. In the same industry ROI is 20%. This means the company has used its capital efficiently.

ii) Net Profit to Sales (Net profit ratio)

This ratio shows the relationship between net profit and net sales. It measures the rate of net profit on net sales. It helps in ascertaining the efficiency with which the affairs of the firm are being managed particularly its marketing. In case the ratio increases, it indicates improvement whereas if it declines, it reveals inefficiency in the management of the affairs of the firm.

$$\text{Formula: Net profit Ratio} = \frac{\text{Net profit}}{\text{Net sales}} \times 100$$

For example, the net profit of a firm is Rs. 1,00,000 and the net sales is Rs. 4,00,000. In this case, the Net Profit Ratio is 25% as calculated below:

$$\text{Net Profit Ratio} = \frac{1,00,000}{4,00,000} \times 100 = 25\% = \frac{1,00,000}{4,00,000} \times 100 = 25\%$$

In the corresponding next year, if the Net Profit Ratio works out to 30% it will show efficiency in the management of the affairs of the firm.

iii) Sales to Capital Employed (Capital Turnover Ratio)

This ratio shows the relationship between net sales and capital employed. It indicates the firm's ability to generate sales per rupee of capital employed. Higher the ratio the better it is.

$$\text{Formula: Capital Turnover Ratio} = \frac{\text{Net sales}}{\text{Capital employed}}$$

where Capital employed = Fixed assets + Working capital

For example, net sales of a company is Rs. 8,00,000. The company has Rs. 2,00,000 as capital employed. The Sales to Capital employed (Capital Turnover Ratio) works out to 4 times. i.e.

$$\frac{8,00,000}{2,00,000} = 4$$

iv) Gross Profit to Sales (Gross Profit Ratio)

This ratio shows the relationship between gross profit and net sales. It indicates the gross margin earned on sales.

$$\text{Formula: Gross Profit Ratio (GP Ratio)} = \frac{\text{Gross profit}}{\text{Net sales}} \times 100$$

For example, a spices manufacturing unit earns a gross profit of

Rs. 5,00,000 during the current financial year. Its net sales (i.e. gross sales - sales returns) are Rs. 25,00,000. In this case the GP ratio works out to 20%. Higher the ratio the better it is.

v) Sales to Working Capital Ratio (Working Capital Turnover Ratio)

This ratio shows the relationship between net sales and the working capital. It indicates the efficiency with which the firm has utilised its working capital. In other words it signifies the ability of the firm to generate sales per rupee of working capital. Higher the ratio the better it is.

$$\text{Formula: Working Capital Turnover Ratio} = \frac{\text{Net sales}}{\text{Working capital}} \times 100$$

where Working capital = Current assets - Current liabilities

For example, a grocery dealer's sales during the current financial year are Rs. 18,00,000. His working capital is Rs. 6,00,000. In this case Sales to Working Capital Ratio (Working Capital Turnover Ratio) works out to 3 times.

vi) Stock Turnover Ratio

This ratio shows the relationship between cost of goods sold and the average stock. It indicates the efficiency with which the firm has utilised its stock. In other words it signifies the speed with which stock is converted into sales. Higher the ratio the better it is.

$$\text{Formula: Stock Turnover Ratio} = \frac{\text{Cost of goods sold}}{\text{Average stock}}$$

where (i) Cost of goods sold = Opening Stock + Purchases + Direct Expenses - Closing Stock and (ii) Average Stock = (Opening Stock + Closing Stock) / 2.

For example a flavour milk manufacturer's cost of goods sold during the current financial year amounted to Rs. 10,00,000. His average stock during this period was Rs. 2,00,000. In this case Stock Turnover Ratio works out to 5 times.

vii) Operating Ratio

This ratio measures the relationship between operating cost and net sales. It indicates the operational efficiency with which the production or purchases or selling operations are carried on. Lower the ratio the better it is.

$$\text{Formula: Operating ratio} = \frac{\text{Operating cost}}{\text{Net sales}} \times 100$$

where (i) Operating Cost = Cost of goods sold + other operating expenses like administrative expenses, selling and distribution expenses etc.

For example a ghee manufacturer's cost of goods sold during the current financial year amounted to Rs 10,00,000 and other operating expenses were Rs. 75,000. His sales during this period were Rs. 25,00,000 whereas sales returns were Rs. 50,000. In this case the operating ratio works out to 43.88% as calculated below:

$$\text{Operating Ratio} = 10,75,000/24,50,000 \times 100 = 43.88\%$$

viii) Current Ratio

This ratio measures the relationship between current assets and current liabilities. It indicates the ability of the firm to meet its short term obligations. In other words it shows short term financial solvency of the firm. Ideal current ratio is 2:1.

$$\text{Formula: Current Ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

where (i) Current assets = Cash and bank balance, marketable securities, debtors, bills receivables, stock, prepaid expenses etc. and (ii) Current liabilities = creditors, bills payable, bank overdraft, short term loans etc.

For example a ghee manufacturer's current assets as on 31st March 2004 were Rs. 6,00,000 and current liabilities were

Rs. 3,00,000. In this case the current ratio works out to 2:1.

ix) Debtors' Turnover Ratio

This ratio measures the relationship between net credit sales and average debtors. It indicates the ability of the firm to collect its trade debtors. In other words it shows the speed with which the debtors are collected. A high ratio indicates shorter collection period i.e. debtors are repaying promptly.

$$\text{Formula: Debtors' Turnover Ratio} = \frac{\text{Net credit sales}}{\text{Average debtors}}$$

Where Average Debtors = Opening Debtors (including opening bills receivable) + Closing Debtors (including closing bills receivable) / 2.

For example a ghee manufacturer's net credit sales for the year 2004 were Rs. 90,00,000 and average debtors were Rs. 15,00,000. In this case the Debtors' Turnover Ratio works out to 6 times.

ii. Cost Analysis and Control

This analysis is associated with various costs of the firm. Cost control is important because all the businessmen - whether operating on a small scale or large scale - always try to contain their all types of costs. For a successful analysis, the businessman should himself have a very clear idea of all the costs. He should also have an effective system to measure and analyse them systematically. Various costs may include - cost of production; cost of credit sales; selling and distribution costs; inventory costs; channel costs; marketing research costs; advertising costs; sales promotion costs etc.

These costs should be measured against the results produced by incurring them. The results may take the form of sales revenue generated, gross profit achieved etc. The efficiency of each product, channel, customer-class, and salesmen should be analysed by measuring their respective contribution to profit of the firm on the one hand and to the overheads on the other.

Cost analysis should also include standard costing for various management functions. It is not enough that costs should be compared with the budgeted costs only. The firm should develop standard costs for each function of market and measure actual cost with the standards set.

Cost analysis helps the businessman in the following ways:

- 1 It helps to control and reduce all types of costs.
- 1 Cost reduction leads to savings.
- 1 It leads to alternate ways of performing functions to reduce the costs.
- 1 Prices can be kept at competitive rates if costs are reduced.
- 1 The businessman can drop unprofitable customers, products, dealers etc. from the list.

iii. Credit Control System

A businessman generally prefers to sell his goods on cash basis. It is because of the following reasons:

- 1 No risk of bad debts.
- 1 Less working capital required because of continuous cash generation.
- 1 Short operating cycle.

Despite above advantages of selling goods on cash basis, the businessman may still be forced to sell goods on credit basis on instalment basis to achieve higher turnover. There may be number of problems attached to the selling of goods on credit or instalment basis like:

- 1 Interest on money involved.
- 1 Money blocked for longer period of time.

- 1 Legal hassles i.e. court cases if money is not realized.
- 1 Loss due to insolvency of debtors.
- 1 More accounting work involved.

Despite these problems a businessman sells his goods on credit or instalment basis because he has to survive in the market, and higher turnover may offset losses and such sales.

In case he sells his goods on credit basis, he should frame a clear credit policy. The businessman should also have a proper credit control system on the following lines:

- i) Credit should be extended to the customers and dealers after a proper credit rating is made. A credit rating analysis would reveal the soundness of the customers and dealers. No-risk customers may be extended large credit limits. High-risk customers could be given credit only if bank guarantee or collateral security is made available.
- ii) The businessman should also adhere to the prescribed credit limits.
- iii) As a part of credit control system he should analyse the accounts receivables and bad debts. The number, type, extent and integrity of the debtors or the reason for a debt to become bad must be brought out by the analysis. The age of debtors outstanding should be determined (i.e. 15 days old debts, 30 days old debts, 45 days old debts, 180 days old debts, 365 days old debts etc.) from time to time and based on this analysis corrective action should be taken.
- iv) A proper credit control system will ensure that the cost of credit is built to the price itself.
- v) Strategies like offering cash rebates in lieu of credit can be thought of. Cash discounts may be offered for quick recoveries.

iv. Budgetary Control

A budget is a plan for some specific future period. It is based on objective to be attained. It is expressed in monetary or physical units. A budgetary control is a system in which all operations are forecast and planned and the actual results are compared with the forecast and the planned ones for reviewing policy are programme for the balance period or for next period.

Budgetary control can be applied to every function of the business i.e. production, finance, human resources, marketing etc. It corrects the deviations from pre-planned path through observation, research, reporting, planning and decision making. The future activities of the business can thus, be performed in an orderly way.

The procedure of budgetary control involves the following steps:

- i) Establishing the budgets.
- ii) Continuous comparison of actuals with budgets by preparing control statements which will show:

- 1 Budgeted figures
 - 1 Achieved figures
 - 1 Variances
- iii) Placing the responsibility for failure to achieve the budgeted figures.
- iv) Revision of budgets.

Advantages of budgetary control.

Following are the advantages of budgetary control:

- i) It helps in bringing efficiency and economy in the working of the business enterprise.
- ii) It fixes responsibility on every division or department of the enterprise.
- iii) It coordinates the various divisions of a business i.e. production, marketing etc.
- iv) It serves as an automatic check on the decisions of the management.
- v) Credit agencies favour that organisation which operates through a well-ordered budget plan.

v. Break-even Analysis

Break-even analysis is yet another controlling device which can be used by a businessman. It is an important tool of profit planning. It is also called cost-volume-profit (CVP) analysis. It facilitates cost control by measuring operational efficiency. At break-even point the businessman neither makes profit nor incurs losses. For calculating break-even point we need to understand the following concepts:

- i) *Fixed costs (FC)*: Fixed costs are those costs which remain constant whether there is increase or decrease in production over a given period of time. These costs are fixed in nature and are incurred as soon as the business is started. This concept of fixed costs remains valid up to a particular level of operation.

Examples of fixed costs are - rent of the premises, salaries of the employees, depreciation, interest charges on long term debts, insurance premium, property tax etc. Even if there is no production, these fixed costs will be incurred. Suppose, a flavoured milk manufacturer incurs Rs. 40,000 towards fixed costs for manufacturing sterilized flavoured milk bottles. In this case fixed costs are Rs. 40,000 which shall be considered for calculating break-even point.

- ii) *Variable costs (VC)*: Variable costs are those costs which vary according to the level of production attained. They will increase if the production is increased even by one unit or decrease when there is decrease in production.

Such costs are - raw material costs, wages to the workers, water charges, oil and fuel etc.

For calculating break-even point, generally we consider variable cost per unit of

production. Suppose variable cost incurred for manufacturing 10000 flavoured milk bottles is Rs. 60,000. In this case per unit variable cost works out to Rs. 50,000.

Note: For the purpose of calculating total cost of production we have to add fixed cost and variable cost. Thus,

$$\text{Total Cost} = \text{Fixed cost (FC)} + \text{Variable cost (VC)}$$

iii) *Selling price:* Selling price is that price at which the goods are sold. Usually, we consider selling price per unit for calculating break-even point. For example, a flavoured milk bottle is priced at Rs. 10.00 It means that it will be sold to the consumers at this price. Thus Rs. 10.00 is the selling price per unit of the product.

iv) *Contribution margin:* Contribution margin is the difference between selling price per unit and the variable cost per unit. In other words:

$$\text{Contribution Margin} = \text{Selling Price per unit} - \text{Variable cost per unit}$$

Considering the figures given above contribution margin is Rs. 5.0 (i.e. Rs. 10 - Rs.6).

It may be noted that for calculating contribution margin, fixed cost is not considered.

After understanding the above concepts, we can move on to calculate break-even point (BEP) with the help of following formula:

$$\text{BEP (in units)} = 40,000/5 = 8,000 \text{ units}$$

$$\text{BEP (in value)} = 8,000 \text{ units} * \text{Selling price per unit i.e. Rs.10.0} = \text{Rs. 80,000.00}$$

At the level of 8,000 units the manufacturer does not incur any loss nor earn any profit. This is verified as below:

$$\text{Selling price of 8,000 units} = 8,000 * \text{Rs.10} = \text{Rs. 80,000}$$

$$\text{Variable cost of 8,000 units} = 8,000 * \text{Rs.5} = \text{Rs. 40,000}$$

$$\text{Fixed cost} = \text{Rs. 40,000}$$

$$\text{Total cost} = (\text{VC} + \text{FC}) = \text{Rs. 40,000} + \text{Rs. 40,000} = \text{Rs. 80,000.}$$

The manufacturer does not earn or lose anything by selling 8,000 sterilized flavoured milk bottles because at this level both sales revenue (i.e. Rs. 80,000) and total cost (i.e. Rs. 80,000) are the same. Beyond this level he will start earning profit and below this level he will incur losses.

From controlling point of view the manufacturer has to understand whether he can operate above the level of break-even point. If he can do so in a shorter span, it is better for him. He must understand that the lower BEP denotes lesser risk.

vi. Internal Audit

Internal audit is another effective tool of managerial control. It involves appraisal

of operations i.e. weighing actual results in the light of planned results. It is a regular appraisal which is done by trained staff of internal auditors of the accounting, financial and other operations of a business.

It is concerned with long term business interest. It aims at evaluating the entire system of an organisation. It can be said to be a continuous, systematic and bias free study of total efficiency of the firm. It tries to measure and evaluate the effectiveness of all other control devices employed by the firm.

Internal audit is advantageous for the departmental managers as well. They get proper advice from the internal auditors on policies and plans of the firm. The auditors also suggest solutions to managerial problems.

The limiting factors for internal audit are two-fold - first, the business firm should be able to afford an internal audit and secondly, specialized persons should be available who can do a broad type of internal audit.

For making the internal audit successful, full support of subordinates is also required.

Check Your Progress - 4

1. Does ratio analysis technique have an edge over Budgetary Control methods of appraising the performance of an enterprise? If so in what respects?

.....

2. Below is the performance measurement of Firm A and Firm B in terms of Gross Profit and Sales. You are required to make a comparison and state which of the firms has performed better.

	Firm A	Firm B
Gross profit (Rs.)	50,000	1,28,000
Sales (Rs.)	5,00,000	6,00,000

.....

3. Based on the following figures you are required to ascertain whether the performance of Firm A is improving or not:

	Year 1	Year II
NP ratio	12.21%	10.32%

.....

-
.....
4. Which technique aims at a total evaluation of the entire system of an organisation?
.....
.....
.....
.....
5. Give one word for the following.
- a) Certain costs which remain constant over a period of time.
a)
 - b) Costs which vary according to the level of production.
b)
 - c) A specialized person who evaluates various controlling techniques adopted by a firm.
c)
 - d) A monetary or physical plan meant for a specific future period.
d)
 - e) An effective controlling tool which establishes relationship between items of financial statement.
a)

14.6 LET US SUM UP

Measurement of performance and its control is quite important because substantial benefits are realized by organizations which implement performance measurement programmes. However, even much greater importance is given to planning and setting of goals for different activities of an enterprise only than measurement and control will be effective. Being a function of management, performance measurement makes the organization capable of taking sound decisions. Performance measures are generally expressed in terms of quantity. A performance measure is composed of a 'number' and a 'unit of measurement'. Single-dimensional and multi-dimensional are two types of units of which are generally used. An ideal unit of measurement should reflect needs of the customer and business; should be understandable, capable of being applied over a wide area and interpreted uniformly. Performance measurement is associated with controlling. Controlling is nothing else but to set standards, measure the performance, compare the performance with the standards set and take corrective measures if deviations are found. Some of the important tools and techniques of control are ratio analysis, cost analysis and control, credit control system, budgetary control, break-even analysis and internal audit.

14.7 KEY WORDS

- Quality** : The degree to which a product or service meets customer's requirements and expectations.
- Control** : The set of activities employed to detect and correct variation in order to restore a desired state of conformance with quality goals.
- Remedial action** : Measures taken to rectify conditions adverse to quality.
- Unit of measurement:** A quality feature that permits evaluation of that feature in numbers.

14.8 SOME USEFUL BOOKS

- Bhushan, Y.K. (2001) Fundamentals of Business Organisation and Management, Ed., Sultan Chand and Sons, New Delhi.
- Chandra, Prasanna ¾ Projects-Planning, Analysis, Selection, Implementation & Review, sixth edition 2005 Reprint, Tata McGraw Hill Publishing Company Limited, New Delhi.
- Gupta, R.L. & Gupta, V.K. (2001) Principles & Practice of Accountancy, Ed., Sultan Chand & Sons, New Delhi.
- Koontz, Harold and Cyril O'Donnell ¾ Principles of Management: An analysis of Managerial Functions - McGraw-Hill Inc.
- Maheshwari, S.N. and Mittal, S.N. (2001-02) Cost Accounting, Theory and Problems, Ed., Shree Mahavir Book Depot (Publishers), Delhi.
- Ramaswamy, V.S. and Namakumari, S. (1998) Marketing Management (Planning, Implementation and Control-The Indian Context), Reprint, Macmillan India Limited, Delhi.
- Varshney, R.L. and Gupta, S.L. (2000) Marketing Management (An Indian Perspective), Ed., Sultan Chand and Sons, New Delhi.

14.9 ANSWERS TO CHECK YOUR PROGRESS

Your answers should include the following points:

Check Your Progress - 1

1. Planning is an important facet of management which is applied in our day to day life for managing over time resources and inputs.
2.
 - i. activities are not interlinked in bar chart
 - ii. bar chart size has a physical limit
 - iii. updating is not possible in bar chart

3. i. Variable activities
 - i. determinates activities
4. a) control
 - b) unit of measure
 - c) single
 - d) quantity
 - e) customer
5. a) False
 - b) True
 - c) False
 - d) False
 - e) False
6. i) Hours ii) Metres

Check Your Progress - 2

1. It is based on feedback.
2. ?) It is the last function of management.
 - ii) It is a continuing process.
3. To plan the objectives of the firm.

Check Your Progress - 3

1. Hint: i) Reduction in advertisement expenses by Rs. 50,000 in next 6 months.
 - ii) Increasing the production by 5,000 units in next one month.
2. Standards will not be met leading to wastage of time, money and efforts as well as de-motivation for the concerned person.
3. To take remedial action quickly.

Check Your Progress - 4

1. Hint: Ratio analysis focuses attention on relative figures which are actual. These figures are significantly related. Ratios help in judging solvency, profitability and liquidity of an organization. However, in case of Budgetary Control methods the budgets are prepared bases on estimated figures (future estimates) which are not actuals. Based on budgets solvency, profitability and liquidity of an organization can not be judged.

2. Firm B's performance is better because its GP ratio is high.
3. Firm A has not improved.
4. Internal audit
5.
 - a) Fixed costs
 - b) Variable costs
 - c) Internal auditor
 - d) Budget
 - e) Ratio analysis