

CHAPTER – 1

INTRODUCTION

1.1 Historical Background of Industrial Development in Nepal

Nepal the steepest country in the world descends from the heights of Everest to the tiger –prowling jungles below. Between are valleys rich in more than 2500 years of culture where Hinduism and Buddhism have met and created undreamed of glories of spiritualism through stone, brick and metal for the eye to behold and for the soul to experience. The most beautiful Himalayan-Kingdom countries discover the world of mountain, river jungle and culture in the world of Nepal.

A part from its natural beauty, Nepal has been known for industrial developing country. Agriculture has been playing a key role in Nepalese economy where more than 70% of the economically active population is estimated to be involved in agriculture. Nepal is just moving towards industrialization with manufacturing sector is very small. The history of industrial development in Nepal begins the year 1936 A.D. when the first industry was also enacted in the same year. however, the real attention was given to the industrial development of the country only after the dawn of democracy; particularly after the introduction of first five years plan in year 1956 A.D. the government then the decided to speed up, support and regular industrial development in the country. Then different acts and policies were enacted to encourage the industries to come up and to regulate the industrial system. Due to all these efforts on the part of the government same progress was observed in the number of workers in them. We now have an emerging

industrial sector in the country and the management challenges are growing. Manufacturing industries like **Bottelers Nepal Limited** can contribute much more to the up lifetime of the country if organized, developed and motivated properly.

In recent years the growth rate is relatively more satisfactory; however the manufacturing sector has to face numerous problems, which have acted as constraints in the growth of manufacturing company. Mainly such problems are land locked situation of the country, under developed situation of physical, human, financial and administrative infrastructure, under developed situation of transport and communication net works, non-availability of assured energy at reasonable rates, non availability of trained and skilled manpower, shortage of capital, small size of the market, unawareness of the industrial potential, higher cost of production and service, low productivity of inputs, manpower and service sector, non stability in government policy etc.

1.2 Background of the Study

The key motive of business organization is to make and maximize profit. Profit does not happen by chance. It is to be managed. Cost-Volume-Profit analysis is a most important tool of profit planning means of predicting the effects of changes in cost and sales level on the income of business. In this simplest form, it involves the determination of sales level at which a company neither earns profit nor incurs a loss, or in the other words the point at which it breaks even. Break-even point is only a special case of CVP analysis. However, CVP analysis included to find out sales volume to earn zero profit or desire profit, to affect income by changes in selling price, to check income if new machine will be

installed, to examine operating profit if fixed cost as well as unit variable cost will be changes etc.

CVP analysis is an analytical tool for studying the relationship between volume, cost and profit. There are three factors of CVP analysis which are interconnected and dependent on one another CVP analysis examines the behaviors of total revenues, total cost and operating income as changes occurs in the output level, the selling price, the variable cost per unit and fixed cost of a product. CVP also helps to make or buy decision on sub-assemble or part.

Cost volume profit analysis is a management accounting tool to show the relationship between the ingredients of profit planning. Profit planning is function of selling price of the product, the variable costs and volume to be sold. The scope of profit planning associated with CVP relationship is break-even analysis. Break even analysis is concerned with the study of revenues and costs in relation to sales at which the firm's revenue and total cost will be exactly equal (or net income is zero). Thus the breakeven point (BEP) may be defined a point at which the firm's total revenues are exactly equal to total costs, yielding zero income. The "no profit no loss" is a break-even point or a point at which losses cease and profit begins.

CVP analysis is an important media through which the management can have and insight into effects on profit on account of variance in cost and sales and take appropriate decisions. Profit planning can be done only when the management has the information about the cost of the product and selling price of the product, the key motive of business enterprise is to make and maximize profit. Profit does not happen by chance. It is to be managed.

CVP is a supplementary tool of planning of profit. It is immensely helpful for developing cost estimation. CVP is an accounting technique showing the relationship between the above-mentioned variables. This technique is equally important in profit making and non-profit making organization (Bajracharya, 2004:98).

Hence, a company may use CVP analysis, as a planning tool when the sales volume is known and management need to find out how much profit will result. Another way of planning is to begin with a target profit. Then through the CVP analysis a company can decide the level of sales needs to reach that profit. Similarly, for the cost control purpose, CVP analysis is a way to measure how well different departments in the company are doing. At the end of a period, the company analyzes sales volume and related actual costs to find out the actual profit. It measures performance by comparing actual cost with expected cost. These expected costs are computed by applying CVP analysis to the actual sales volume. The result is a performance report on which management can base the control of operations Profit Planning and Cost Control (PPC) is an important approach, which is developed for providing effective performance of management system where, management means co-ordination of human effort for the accomplishment of an organization objective. PPC has broad application. It is used both by profit taking and non-profit making organizations. It is also used both in manufacturing and non-manufacturing organizations. PPC is identified as a way of management sophistication for the organization, which requires high degree of management sophistication. Understanding of profit planning is essential to understand PPC.

It terms of Profit, it does not happen but profits are managed. Profit is one of the most important indications, which measures the success of an organization. Profit is necessary for any organization to continue business. Therefore the main objective of every firm is to maximize profit by providing goods and services. That's why profit plays vital role to achieve an organization goal. Move over planning, it is one of the major functions of management without proper planning management cannot achieve organization goals. Planning is a process of developing organization objective and selecting a future course of action to accomplish them. It is the quantitative and qualitative statement prepared by management for definite time period.

"PPC is used in a process designed to help management to show their effective performance, significant phases of the planning and control function. The PPC model involves, (a) development and application of board and long range objective of the firm, (b) specification of firm goal and objective, (c) development of strategic long term profit plan, (d) specification of a tactical short term profit plan detailed by given responsibilities [division, project], (e) establishment of a system of specific performance reports, and (f) development of follow up producers." (Welsch, Hilton, Gordon, 1999:30)

Specially, profit planning and cost control is possible with the help of cost-volume-profit analysis. Cost Volume Profit analysis is an important tool of profit planning because it provides the information about the behavior or cost in relation to volume, production or sales where the business is at break-even, sensitivity of profit due to variation of output, amount of profit for a projected sales volume and quantity of production.

Cost Volume Profit

analysis is great helpful in managerial decision making. Profit planning is the fundamental part of the overall management function. Profit planning can be done only when the management has the information about the cost of the product and selling price of the product.

1.3 General introduction of the Bottlers Nepal Limited Balaju

Bottler Nepal Limited Balaju, Kathmandu is one of the manufacturing and processing companies. It is established in 1979 under the company act 1964 it was initially started as a private enterprise and converted into public enterprise in 1985 issuing share to public. The company is located at Balaju, in area of the 10.648 square meters of land the building of the co. covers 5.823 square meters.

The principle activity of the company is to manufacture and sell soft drinks under the registered trademarks of the coca cola company. There were no changes in nature of these activities. The coca cola Sobaco (Asia) ltd., a Company corporate in Dubai (UAE) which holds 98.16% shares of Bottlers Nepal Ltd is the parent company. The company continues to maintain its leadership in the soft drink market because of its strong market infrastructure backed up by their effective sales and promotional plans and consumers preferences in their products the company has already started distributing the products though the Manual Distribution Center (MDC) directly through its wholly owned company Trokia traders Pvt. Ltd since 1st Jan 2006, the result of this distribution through the manual distribution companies is very productive. We were able to increase the market share and numeric distribution company is productive. We were able to increase the market

share and numeric contribution by serving the markets more effectively due to the implementation of the distribution model.

The company is committed to deliver the quality product to its consumers at all times. To company with coca cola standard of sugar, the company has started using imported sugar. The cost benefit of the quality of the quality derived firm imported sugar is more beneficial than locality available sugar.

The BNL was started with authorized capital of Rs. 30250000.00 in the initial period its paid up capital was Rs. 1050000.00 of Rs. 100 Now the company has authorized capital of Rs. 194889000.00

It is one of the top companies listed in NEPSE in term of market capitalization. The company produces bottles soft drink name coca cola, Fanta orange, Fanta leman and sprit.

1.4 Cost Volume – Profit Analysis

Cost Volume Profit (CVP) analysis is the powerful tool of planning and controlling of management accounting. It shows the chain relationship among cost-volume and profit. Management can get various answers of different questions through CVP analysis. Management can estimate easily that what should be the required sales of the company to get desired profit. Similarly profit can be estimated in different expected sales volume. CVP is greatly helpful in managerial decision making especially cost control and profit planning. Profit is the basic thing to survive the organization. By a simple mistake the whole firm could reach to the failure. So, CVP analysis provides a lot of information about the alternative to have the strategies and

utilization of resources. Therefore, it will be fruitful to know the role of CVP analysis in profit planning and control of manufacturing industries.

CVP analysis is the process of examining the relationship among revenues, costs and profits for a relevant range of activity and for a particular time frame. It is one of the most important and powerful tools that managers have at their command in short-term planning. It helps managers understand the interrelationship between costs, volume and profit in an organization by focusing interaction between the following five elements.

- i. Price of product
- ii. Volume/Sales of Activity
- iii. Variable Cost
- iv. Fixed Cost
- v. Sales Mix

CVP analysis is used to determine how changes in costs and volume affect a company's operating income and net income. In performing this analysis, there are several assumptions made, including:

- i. Sales price per unit is constant.
- ii. Variable costs per unit are constant.
- iii. Total fixed costs are constant.
- iv. Everything produced is sold.
- v. Costs are only affected because activity changes.
- vi. If a company sells more than one product, they are sold in the same mix.

CVP analysis requires that all the company's costs, including manufacturing, selling, and administrative costs, be identified as variable or fixed. The analysis of relationship between cost, volume and profit is known as cost volume- profit analysis. It is an analytical tool for studying relationship between volume, cost price and profit. More specifically, it looks at the effects on profits of changes in such factors as variable costs, fixed costs, selling prices, volume, and mix of products sold.

By studying the relationships of costs, sales, and net income, management is better able to cope with many planning decisions. For example, CVP analysis attempts to answer the following questions: (1) what sales volume is required to break even? (2) What sales volume is necessary in order to earn a desired (target) profit? (3) What profit can be expected on a given sales volume? (4) How would changes in selling price, variable costs, fixed costs, and output affect profits? (5) How would a change in the mix of products sold affect the break-even and target volume and profit potential?

1.5 Focus of the Study

Analysis that deals with how profits and costs change with a change in volume. More specifically, it looks at the effects on profits of changes in such factors as variable costs, fixed costs, selling prices, volume, and mix of products sold. By studying the relationships of costs, sales, and net income, management is better able to cope with many planning decisions. Due to the sustention problem of cost management in Nepal this study focuses on the one of the most effective part of the business that is CVP analysis of BNL. This study defines the cost required for the production. It expected that,

some remarkable finding can be obtained during the study that may suggest the company that is now running in the market.

Cost

In Economics, Business, and Accounting, a cost is the value of money that has been used up to produce something, and hence is not available for use anymore. In business, the cost may be one of acquisition, in which case the amount of money expended to acquire it is counted as cost. In this case, money is the input that is gone in order to acquire the thing. This acquisition cost may be the sum of the cost of production as incurred by the original producer, and further costs of transaction as incurred by the acquirer over and above the price paid to the producer. Usually, the price also includes a mark-up for profit over the cost of production. Cost is the one of the most sophisticated element to study in an organization, which mostly influenced by the external environment. Literally, cost is the expenditure on goods or services required to carry out the operation of an organization. (Source: <http://em.wikipedia.org>)

i. Volume

The level of sales in terms of units and Rupee value, that actually determines the activity level that the company is actually carrying out. Volume is literally the number of product or service those have been sold out to generate the revenue, which an organization expects to exceed the cost incurred.

ii. Profit

Profit generally is the making of gain in business activity for the benefit of the owners of the business. The word comes from Latin meaning "to make

progress," is defined in two different ways, one for economics and one for accounting. Pure economic profit is the increase in wealth that an investor has from making an investment, taking into consideration all costs associated with that investment including the opportunity cost of capital. Accounting profit is the difference between price and the costs of bringing to market whatever it is that is accounted as an enterprise (whether by harvest, extraction, manufacture, or purchase) in terms of the component costs of delivered goods and/or services and any operating or other expenses. A key difficulty in measuring either definition of profit is in defining costs. Pure economic monetary profits can be zero or negative even in competitive equilibrium when accounted monetized costs exceed monetized price. Generating profit required is a good deal of managerial capability and managerial talent. (Source: <http://en.wikipedia.org/wiki/Profit>)

Combining the above three sophisticated elements of an organization, managerial desk could have many question and queries towards their planning and budgeting such as:

- a. What must be the sales volume for achieving the breakeven point?
- b. What must be the sales level to achieve the targeted profit at the given selling price per unit?
- c. What will be the expected profit level at the given sales level?
- d. What changes in selling price must be required to achieve the same profit level even if the cost per unit has been increase?
- e. And many more...

1.6 Statement of the Problem

Cost volume profit analysis is a Supplementary tool of profit planning. CVP analysis is a hugely helpful for developing alternative strategies in sales planning and cost estimation. Nepalese forms are still being run with primitive management. They lack modern management culture there is a lot of difference between the theory and practice in business form. In Nepal, the price of using CVP analysis provides the technique of profit planning framework. Based on annual published report, performance of Nepalese industry is not satisfactory. Poor performance is the outcomes of poor planning, controlling, decision making. The question has risen whether Nepalese managers are enough competent? Do they use CVP analysis tools technique to carryout planning, decision making and controlling function? In this regard, Botteler's Nepal Limited has been choosen for the analysis of these problems. The research question posed mainly in this research will be following:

- i. Whether or not Nepalese manufacturing companies are practicing CVP analysis?
- ii. What are the major difficulties of CVP analysis of Botteler's Nepal Limited?
- iii. Why are the Nepalese companies suffering from loss?
- iv. Which part contribution Margin (CM), breakeven point (BEP), and Margin of safety (MOS, of CVP analysis is mostly practice and which are not practice still now?
- v. What sales Volume is needed to achieve break even of Botteler's Nepal Limited?

- vi. What should be the sale volume to earn a desired profit?
- vii. What will be the profit or loss to the specified level of sale?
- viii. What will be the relationship between cost, volume and profit?

1.7 Objectives of the Study

The main objective of the study is examining the use of CVP analysis to plan the profit in BNL. The other specific objectives of the study are:

- i. To analyze the profit planning practice in Bottlers Nepal Limited.
- ii. To study present application of Cost Volume Profit analysis in Bottlers Nepal Limited.
- iii. To study the profitability and financial position of Bottlers Nepal Limited.
- iv. To analyze the CVP and its impact in Profitability of Bottlers Nepal Limited.
- v. To provide suggestions and recommendations on the basis of major finding.

1.8 Signification of the Study

This study is significant in the following ways:

- i. This study provides necessary recommendation to the related department of the economy.
- ii. This study is useful for potential managers, account, policy maker and planners.

- iii. It provides information on the application of the tools under profit planning in difference circumstances.
- iv. It examines the application of the CVP analysis in the company.
- v. It also provides the literature to the researcher, who wants to carry on the further research in the field.

1.9 Limitation of the Study

In the dynamic world, nothing existence is free from information. This study also is not an exception. The researcher has however tried to eliminate the limitation to the best possible extent. The study was confined only to CVP analysis as tools to measure effectiveness of profit planning and control. Yet it suffers from the following limitations

- i. The study covers data of five years only (2006/07 to 2010/11) from Bottlers Nepal limited
- ii. The study is based on in the secondary data.
- iii. The amiability of resource is the main limitation of the study.
- iv. The study only concerns with the Practical requirement in the fulfillment of the master of business studies. (MBS)

1.10 Organisation of the Study

The study was divided into following chapters:

Chapter one:

The first chapter deals with the background of the study, profile of the concern organization, statement of the problem, objective of the study,

significance of the study, limitation of the study and organization of the study.

Chapter two:

The Second chapter deals with available literature review. It include conceptual framework, review of the published and unpublished books, journals articles previous unpublished master's dissertation.

Chapter three:

Research Methodology, I will try to develop a visual concepts and the brief introduction of the techniques and tools those have utilized in the data presentation and analysis.

Chapter four:

Presentation and Data Analysis, this is the main study of the research. It contains the ingredients to fulfill the objectives of the study. It contains the data numerical and the other those have provided by the business firm and major findings.

Chapter five:

I will try to present the summary of the study, conclusion and recommendations though that is appropriate to the study.

Besides this, a list of Bibliography and appendixes are attached at the end of this study.

CHAPTER – 2

REVIEW OF LITERATURE

2.1 Theoretical Framework

In order to make a research on the research on the subject some other literature should also be reviewed. Review of the literature is supported to revise the eminent literature related to the study. Main purpose of literature review is to find out the works done in the subject on the areas of research. Some possible study and conceptual prospective available in this respect have been reviewed. Various books, articles, journals, bulletins, reports, news statement, research study published by various institutions and some thesis etc. are the bases for preparing it. Some philosopher's writers or researchers have given the contribution for preparing it.

Planning and controlling are the primary functions of business. A business cannot success or live a minute in competitive or global environment without it. In most cases, cost-volume-profit analysis is not only the most important but also the most difficult to prepare or calculation. Cost- volume profit analysis provides the management decisions about effective budgeting of a company and based on those decisions, it is an organized approach for planning, appraisal or coordination and control.

Usually, Profit won't occur, profits are managed. When management plans profit performance it is known as profit plan. Before we can make an intelligent approach to the managerial process of profit planning, it is

that we must understand the management concept of profit. The process of preparing and using budget to achieve management objective is called budgeting. In this chapter, the researcher has presented the various CVP analyses done by the various companies and the study that had done by the different magazine (business) and the business houses and the CVP definition those have presented in various book and the articles.

2.1.1 Profit

A payment or commitment to a person undertaking the hazards of enterprise, remuneration or reward for uncertainty bearing, “pure” profits a residual and cannot ordinarily be predetermined. By the way of contrast, risk, it is being calculable in advance, like rent, and frequently insurable, as a cost rather than a profit. In any objective probability sense, profit can be accurately measured only in expected; hence any preliminary imputation of profit is wholly subjective in character and is labeled accordingly (Koheler, 1975:379-380).

Several economists have their different views in respect of the term profit. According to F.B. Hawley, profit is the reward for risk taking in business Schumpeter expressed that an entrepreneur earns profit as a reward for his introducing innovation. J.M. Keynes held the view that profit resulted from favorable movements of general price level. Robinson and chamberlain opined that the greater the degree of monopoly power, the profit made by the entrepreneur (Kapur, 1993:115).

In marketing, excess of selling price overall cost and expenses incurred in making a sale. In finance, the reward to the entrepreneur for the risks assumed by him or her in the establishment, operation and management of a given enterprise or undertaking (Jerry, 1983:396).

2.1.2 Planning

Planning is essential for accomplish goals. It reduces uncertainty and provides direction to employees by determining the course of action in advance, formal planning, indicates the responsibilities of management and provides an alternative to grow. Planning on the other hand involves, the determination of what should be done, how the goals may be received as what individuals are to assume responsibility and to be held accountability (Chaudhari, 1972:10).

The planning process of the enterprise would generally involve four fundamental steps (Pandey, 1985:216).

- i. Establishing the objectives.
- ii. Determining the short-range objectives or goals.
- iii. Developing strategies.
- iv. Formulating profit plan or budgets.

Planning is deciding in advance who will do what a certain time and how it is to be achieved. In order to achieve anything of importance it is necessary to look ahead and plan. It focuses in on making thing happen. It is the first management function. Planning involves the determination of objectives based on intelligent forecasting and development of prosperity of any organization in a competitive and ever-changing environment. Planning is essential to accomplish goals. It reduces uncertainty and provides direction to the employees by determining the course of action in advance (Pandey, 2003:238)

2.1.3 Profit Planning and Control

Once the planning is determined, it must be carried out under control. Controlling shares management activity and for this, managers compare actual performance against the planned performance and find out the decision taking remedial steps to remove the deviations. Immediate action should be taken to remove the deviations to make an improvement in the performance because promptness is the essence of an effective control. Controlling is the measurement and correction of performance in order to make sure those enterprise objectives and the plans devised to attain them are accomplished (Kothari, 1990:69).

Profit planning involves streamlining activities in order to get employees profit minded and to secure maximum benefit from minimum effort and expenditure. A best result seems to be obtained from a single product. The planner is a given the right to prove economics, the organization, the mode of operation, the pricing in the marketing or any other fact of making and selling the product that in his judgment affects profit acquiring from that product. The concentration of profit efforts upon to gross traditional boundaries of the enterprise to translate needs from one group to another and to obtain consumed profit building efforts among these who can affect profits are the fundamental factors that contribute to the success of profit planning (Chamberlain). Profit planning is a comprehensive plan expressed in financial terms by which an operating program is effective for a given period of time. Business managers are continually involved in planning, organizing and controlling the operation of both large and small business organizations. Budgeting is one of the most important management tool used to plan and control business operations. Budgets are financial plans prepared

as a guide to plan and control business operations. A financial plan must be designed to serve as a guide for the activities. Best results are obtained when the planning period is the same as the company's fiscal year. The annual budget is broken down by months, weeks and days of operations. The budget should be designed to co-ordinate the effort of the sales department and the other entire department (Bajracharya, et.al, 2004:344).

Controlling means evaluating the firm's activities against the plan and deciding what should be done if the plan is not being followed. It is a process of ensuring that actual activities confirm to plan activities. Control helps in correction. Therefore, planning and controlling are the major functions of management (Lynch & Williamson, 1995:112).

Of course, it is difficult to confuse the actual meaning and definition of PPC. But now a days it has been realized that PPC is somewhat, rather than narrow traditional view of a budget as a critically derived set of quantitative schedules prepared by an accountant. In the past year, there has also been a tendency to view the budget primarily as mathematical model for an organization development by computer programmers.

- i. These views completely overlook the three most relevant aspect of the PPC concept.
- ii. PPC requires major planning decisions by management.
- iii. PPC entails pervasive management control activities.
- iv. PPC recognizes many of the critical behavioral implication through the organization.

In comprehensive sense we can say that, PPC one of the most important approaches that has been developed to facilitate effective performance of the management process.

2.1.4 Fundamental Concepts of Profit Planning and Control (PPC)

PPC helps the management to perform its planning functions by developing a strategic (long run) and tactical (short run) profit plan. Both of these plans include monetary expectations for assets, liabilities, profit and return on investment. The foundation for the strategies profit plan includes the objectives, broad goals, planning premises and strategies of the enterprises as developed by top management. The tactical profit plan can actually be viewed as the first year of the strategic plan. If it is detailed plan for the enterprises and for each of its responsibility centers. PPC also helps management to perform its control function by providing realistic goals and standards that are then compared with actual results to measure performance. Under PPC this performance measurement extends from the top to the lowest organizational level in the enterprises.

Profit planning is simply the development of your operating plan for the coming period. Your plan is summarized in the form of an income statement that serves as your sales and profit objective and your budget for cost. Development of your profit plan should usually begin with a forecast of your expected sales and gross profit for the coming year. The sales and gross profit must be considered together since they are so closely interrelated. Gross profit percentages are determined by pricing policy, which also affects expected sales volume. A decision to increase the expected gross profit

percentage will usually tend to decrease expected sales, while reducing the expected gross profit percentage should increase sales. It is a systematic and formalized approach for starting and communicating the firm's expectation and accomplishing management in such a way as to maximize the use of a profit plan is to achieve the maximum benefit from the resources available to an organization over a particular span of time. It serves basically as a tool for management control. The maximum objective of PPC is to assist in systematic planning and in control the operation of the enterprises. In fact it is best source of communication & an important tool in the hand of management. The purpose of PPC may be summarized as follows.

- i. To state the firm's expectations (goals) in clearly formal terms to avoid confusion and facilitate their attainability.
- ii. To communicate expectation to all concerned with the management of the firm so that they can understand, supports and implement.
- iii. To provide a detailed plan of action for reducing uncertainty and for its proper direction of individual and group efforts to achieve goals.
- iv. To co-ordinate the activities and efforts in such a way that the use of resources is maximized.
- v. To provide a means of measuring and controlling the performance of individuals and units and to supply information on the basis of which the corrective action can be taken.

The PPC Model includes:

- a. Development and application of broad & long range objective of the enterprise;

- b. Specification of enterprise goal;
- c. Development of enterprise goals;
- d. Specification of a strategic long range profit plan detailed by assigned responsibilities.
- e. Establishment of a system of periodic performance reports detailed by assigned responsibilities;
- f. Development of follow up procedure.

2.1.5 Cost Volume Profit Analysis (CVP) as a Tool of Profit Planning & Control

The analysis of relationship between cost, volume and profit is known as cost – volume - profit analysis. It is an analytical tool for studying relationship between volume, cost, price and profit. Cost-volume-profit analysis is great helpful in managerial decision-making. Specially, profit planning and cost control is possible with the help of cost-volume-profit analysis.

Cost volume profit analysis is an important tool of profit planning because it provides the information the information about the behavior of cost in relation to volume, production or sales where the business will break-even, sensitivity of profit due to variation of output, amount of profit for a projected sales volume and quantity of production and sales for a target profit level etc. CVP analysis is also defined as a managerial tool which shows the relationship between various ingredients of profit planning. CVP analysis is great helpful in managerial decision-making. Specially, profit planning & control is possible with the help of CVP analysis. Profit planning

is the fundamental part of the overall management functions. Profit planning can be done only when the management has the information about the cost of the product and selling price of the product.

CVP analysis is the process of examining the relationship among revenues, cost and profit for a relevant range of activity and for a particular time frame. It is one of the most important and powerful tools that managers have at their command in short-term planning it help managers to understand the interrelationship between cost, volume and profit in an organization. CVP analysis seeks to estimate the profit or loss at different activity level. The aim of cost-volume-profit analysis is to have a fair estimate of: (a) Total cost (b) Total revenue, and (c) profit at various sales volumes.

CVP analysis provides only on overview of the profit planning process. It provides management with a comprehensive overview of the effects on revenue and cost of all kind of short-run financial changes. It is related to profit, sales volume and cost.

2.1.6 Assumptions for CVP Analysis

- i. Changes in the level of revenues and cost arise only because of changes in the number of product (or services) unit produced and sold.
- ii. Total costs can be divided into a fixed component and a component that is variable with respect to the level of output.

- iii. When graphed, the behavior of total revenues and total costs is linear (straight-line) in relation to output units within the relevant range (and time period)
- iv. The unit selling price, unit variable costs, and fixed costs are known as constant.
- v. The analysis either covers a single product or assumes that the sales mix when multiple products are sold will remain constant as the level of total units sold changes.
- vi. All revenues and cost can be added and compared without taking into account the time value of money. (Source: www.google.com)

2.1.7 Cost and Its Classification

In economics, business, and accounting, a cost is the value of money that has been used up to produce something, and hence is not available for use anymore. In business, the cost may be one of acquisition, in which case the amount of money expended to acquire it is counted as cost. In this case, money is the input that is gone in order to acquire the thing. This acquisition cost may be the sum of the cost of production as incurred by the original producer, and further costs of transaction as incurred by the acquirer over and above the price paid to the producer. Usually, the price also includes a mark-up for profit over the cost of production. Classification means to put an item or thing under a certain category.

In accounting, costs are the monetary value of expenditures for supplies, services, labor, products, equipment and other items purchased for use by a business or other accounting entity. It is the amount denoted on

invoices as the price and recorded in book keeping records as an expense or asset cost basis.

Costs are classified as either arising directly or indirectly. Indirect costs are ones that can be specifically related to the production of a particular good. Indirect costs are those that are not so specifically related. Classification of depends upon the purpose, methods, nature and so on. But this study needs classification of cost on the basis of cost behavior to meet the depth. So, it is described in this way:

Cost Behavior

The way a specific cost reacts to changes in activity levels is called cost behavior. Costs may stay the same or may change proportionately in response to a change in activity. Knowing how a cost reacts to a change in the level of activity makes it easier to create a budget, prepare a forecast, determine how much profit a new product will generate, and determine which of two alternatives should be selected. There exists a relationship between costs and the volume of activity relation between cost and activity is called cost behavior. In most of the organization, costs can be classified as fixed, variable and mixed.

i) Fixed costs:

Fixed costs are constant in total over the relevant range. Fixed costs per unit often cause difficulties because of the inverse relationship between fixed costs and increases in production. As production increases, total fixed costs stay the same within the relevant range, but since we are dividing a constant numerator [total fixed costs] by a progressively larger denominator [total production or sales], the resulting costs per unit

become smaller and smaller. Fixed costs include things like rent, insurance premiums, salaries, depreciation and property taxes.

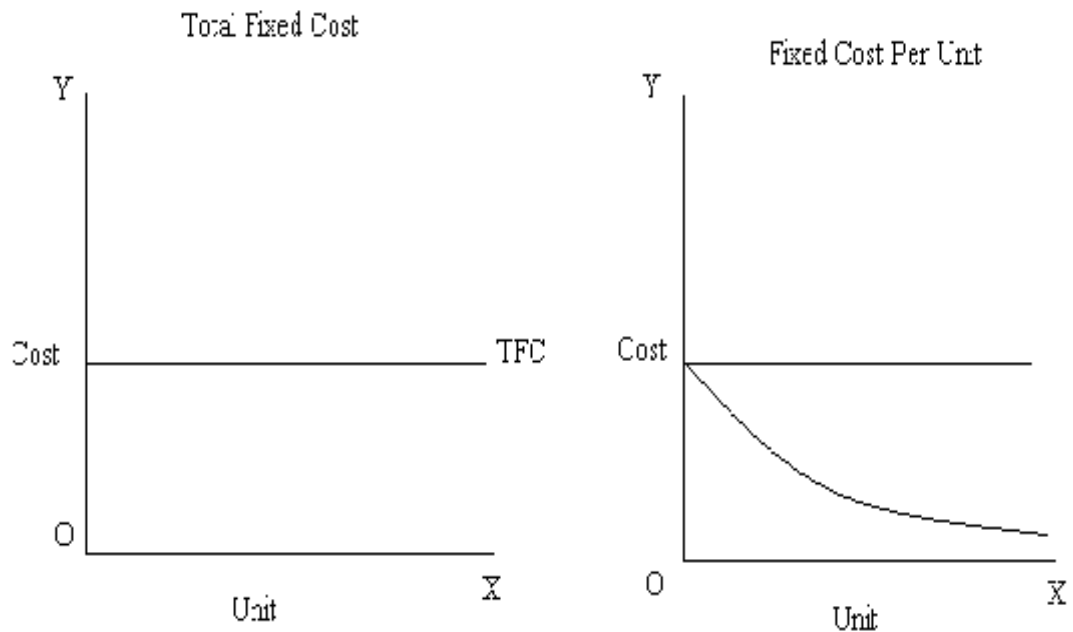


Figure 1

Some key features of fixed costs are as follows:

- a. Fixed costs remain constant in total.
- b. Per unit fixed cost is variable.
- c. Fixed costs are capacity costs, time costs or committed costs.
- d. Fixed costs are regulated and controllable under top management.
- e. Fixed costs cannot be controlled in short run.

ii) Variable costs:

Variable costs vary in total with volume, but are constant per unit within the relevant range. Total variable costs for a given situation are equal to the number of units multiplied by the variable cost per unit. Variable

costs include things like labor and materials. Some overhead [indirect costs] such as indirect labor, supplies and some utilities are also variable.

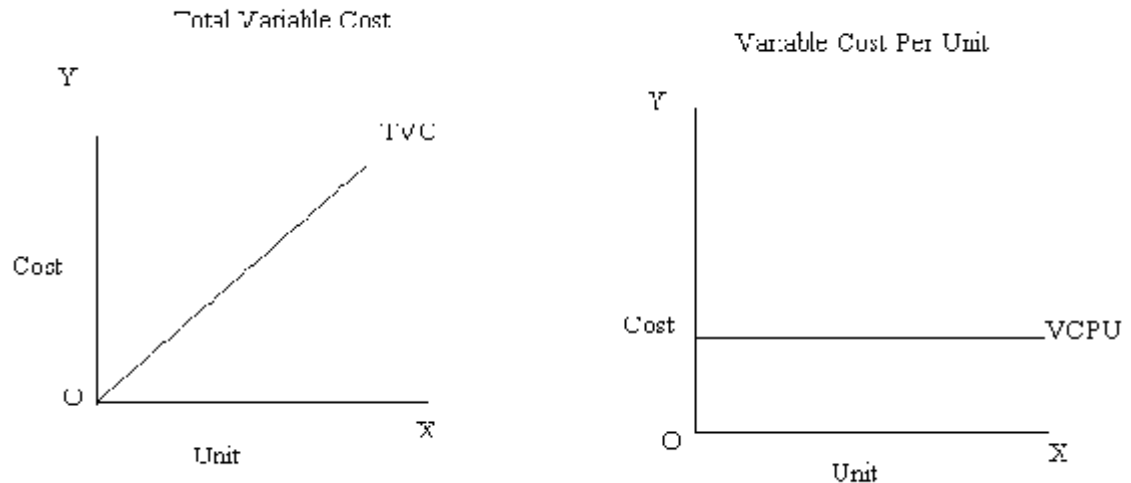


Figure 2

Variable costs show following characteristics;

- a. Proportionately related to activity.
- b. Per unit variable is fixed.
- c. Variable costs can be regulated and controlled in the same responsibility center and in the short-run as well.

iii) Mixed costs:

A mixed cost contains both fixed and variable elements. There are a variety of procedures that can be employed to separate the fixed and variable components. Those expenses which increase or decrease as output or activity increases or decrease, but not in exact proportion to change in the activity both fixed and variable costs. It is neither fixed in

total amount nor fixed per unit. Semi variable costs remain fixed to certain extent and there after these vary with the increase in output or activity levels.

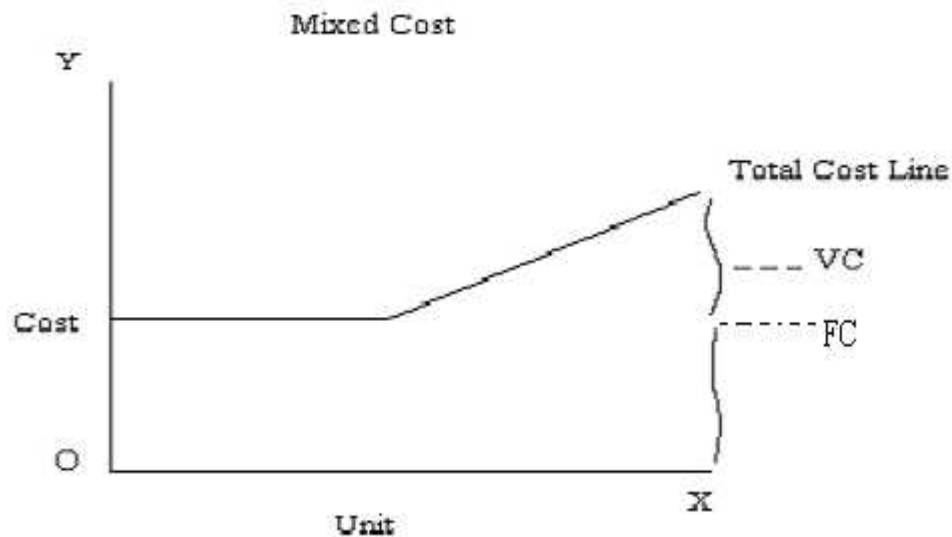


Figure 3

For CVP Analysis, such mixed cost should segregate into variable and fixed by using following methods.

High-low method:

The high-low method divides the change in costs for the highest and lowest levels of activity by the change in units for the highest and lowest levels of activity to estimate variable costs.

Least-squares regression analysis:

The least-squares regression analysis is a statistical method used to calculate variable costs. It requires a computer spreadsheet program (for example, Excel) or calculator and uses all points of data instead of just two points like the high-low method.

By now you have probably figured out that the relationship between revenues, costs, and production or sales volumes can be an important element in understanding the economics of a business. These relationships are typically referred to as cost volume profit [CVP] relationships. Analysis of these relationships is usually called CVP analysis.

2.1.8 Application of Cost Volume Profit Analysis

Cost-volume-profit analysis is applied specially for break-even analysis and profit planning. Business organization is run to earn profit providing the service to its customers. Profit is the fundamental part of the overall management function. Profit planning can be done only when the management has the information about the cost of the product. Before we can see how CVP analysis works, we need to define an important concept:

1. Contribution Margin Analysis
2. Break Even Analysis
3. Profit Volume Analysis

2.1.8.1 Contribution Margin Analysis

The contribution margin represents the amount of income or profit the company made before deducting its fixed costs. Said another way, it is the amount of sales rupees available to cover (or contribute to) fixed costs. When calculated as a ratio, it is the percent of sales rupees available to cover fixed costs. Once fixed costs are covered, the next rupee of sales results in the company having income. Contribution margin is the excess of sales revenue over variable costs. So, contribution margin is the balance of sales revenue left after covering

variable expenses, available to recover fixed expenses and then contribution to realize profit for the period. So, contribution margin is used first to cover the fixed expenses, and then whatever remains after the fixed expenses goes towards profit. If the contribution margin is not sufficient to cover the fixed expenses, and then a loss occurs for the period. Key calculations when using CVP analysis are the contribution margin and the contribution margin ratio. (Singh, Ojha and Acharya 2004:386)

So,

$$i) \text{ Contribution margin} = \text{Sales} - \text{Variable cost}$$

OR

$$ii) \text{ Contribution margin} = \text{Fixed cost} + \text{Profit}$$

Contribution margin usually expressed as a percentage of sales that is contribution margin ratio or profit volume ratio

$$\text{Contribution margin ratio} = \quad I. \quad \frac{\text{Contribution Margin}}{\text{Sales}}$$

OR

$$II. \quad 1 - \frac{\text{Variable Cost}}{\text{Selling Cost}}$$

OR

$$III. \quad \frac{\text{Difference in Profit}}{\text{Difference in sales}}$$

OR

$$IV. \quad 1 - \frac{\text{Difference in cost}}{\text{Difference in sale}}$$

2.1.8.2 Break Even Analysis

A breakeven analysis is used to determine how much sales volume in business requires starting making a profit. The breakeven analysis is

especially useful at the time of developing a pricing strategy, either as part of a marketing plan or a business plan. The relations among cost, volume and profit can be found out clearly through break even analysis. Break even analysis is regarded as a sophisticated method or tool used in management. It is a part of cost volume-profit analysis. It is always taken as an important part of profit planning as it gives to the planner many insights into the data with which he or she is working. Profit planning of each firm begins with Break even analysis.

a) Break- Even Point:

Break-Even Point is the level of activity where total cost is equal to total sales. It is a specific volume of sales, which breaks the revenues and cost evenly. It is a point of "no profit no loss". If the sales are higher than break-even volume, there will be profit. In the same way if the sales is less than

break even volume, there will be a loss. It can be summarized in following way:

Conditions	Results
Actual sales equal to break even sales	No profit, No loss
Actual sales exceeds to break even sales	Profit
Actual sales is less than break even sales	Loss

(Dangol & , Gurung 2061:466)

b) Computation of Break-Even Point:

There are two types of methods which helps computing the Break Even Point. They are as follows:

i) Formula Method:

Break-even point can be determined by the use of formula. It is also termed as algebraic method. According to the definition of breakeven point it is such a level of sale or activity, where there is neither profit nor loss. It is that level of sales, where total cost is equal to total sales revenue. It can be presented in equation form in the following way:

$$\text{Sales Revenue} = \text{Total Cost}$$

$$\text{Or, Sales Revenue} = \text{Fixed Cost} + \text{Variable Cost}$$

For finding out sales revenue,

We have,

$$\text{Sales Revenue} = \text{Selling Price per Unit} \times \text{Sales Unit}$$

Symbolically,

$$\text{Sales Revenue} = S \times Q$$

For finding out Total Cost

We have,

$$\text{Total Cost} = \text{Fixed Cost} + \text{Variable Cost per Unit} \times \text{Sales Units}$$

Symbolically,

$$\text{Total Cost} = FC + V \times Q$$

From the early definition,

$$\text{We have, Sales Revenue} = \text{Total Cost}$$

$$\text{i.e. } S \times Q = FC + V \times Q$$

$$\text{Or, } S \times Q - V \times Q = FC$$

$$\text{Or, } Q = \frac{FC}{S - V}$$

$$S - V$$

Where, Q = Break-Even Point in Units

FC = Fixed Cost

S = Selling price per units

V = Variable price per units

Similarly,

Sales = Total Cost

Sales = FC + VC

Sales = FC + Sales x VC Ratio

Sales - Sales x VC Ratio = FC

Sales (1-VC Ratio) = FC

$$\text{Sales} = \frac{\text{FC}}{\text{CM Ratio}}$$

And

$$\text{BEP (Rs)} = \frac{\text{FC}}{\text{P/V Ratio}} \text{ or, BEP (Units) x Selling Price per Unit}$$

$$\text{Where, P/V Ratio} = \frac{S - V}{S}$$

ii) Graphic Method:

Break-Even Point can also be determined by using graph. The relation shown among cost, volume and profit with the help of diagram is described as break-even chart. There can be neither profit nor loss and the break-even sales. However, if the sales exceed the breakeven point, the result will be profit. The loss will be reported if the sales are less

than the break-even sales. Below is a simple illustration to a break even chart:

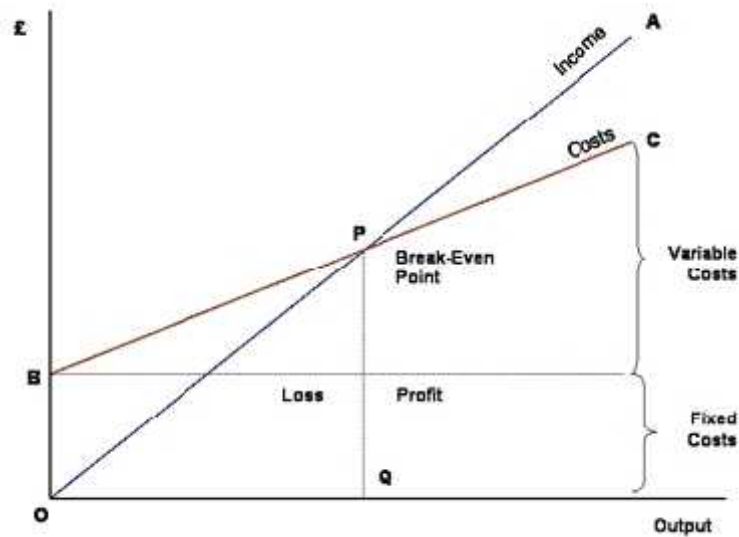


Figure 4

In the diagram above, the line OA represents the variation of income at varying levels of production activity ("output"). OB represents the total fixed costs in the business. As output increases, variable costs are incurred, meaning that total costs (fixed + variable) also increase. At low levels of output, Costs are greater than Income. At the point of intersection, P, costs are exactly equal to income, and hence neither profit nor loss is made. (Source: http://tutor2u.net/business/production/break_even.htm)

c) Cash-Break Even Point:

For cash breakeven point, cash fixed cost is considered and fixed cost that does not involve cash like depreciation cost is excluded from cost. Cash breakeven point is calculated using formula below:

$$\text{Cash BEP} = \frac{\text{Cash Fixed Cost}}{\text{Unit CM/ PV Ratio}}$$

While calculating cash breakeven point, the cash fixed costs i.e. fixed cost less depreciation and deferred expenses are considered. The cash BEP helps the management in determining the level of activity below which there is a chance of insolvency on account of the firm's inability to meet cash obligation unless alternative arrangements are made.

d) Break-Even Capacity:

It provides information about at what percentage of normal capacity will result the break-even point. In other words, Break-Even capacity provides information about the normal capacity for breakeven point. It is calculated using following formula:

$$\text{Break Even Capacity} = \frac{\text{BEP Sales} \times 100}{\text{Actual Sales}}$$

e) Other Uses of Break Even Analysis:

Break even analysis can be used in a change situation in different elements. The different cases and formula are given below:

i) Required Sales for desired profit (in units) = $\frac{\text{Fixed Cost} + \text{Desired Profit}}{\text{Unit Contribution}}$

Margin

ii) Required Sales for desired profit (in Rupee)

$$= \frac{\text{Fixed Cost} + \text{Desired Profit}}{\text{P/V Ratio}}$$

iii) Required Sales in units for desired profit after tax

$$= \frac{\text{Fixed Cost} + \text{Desired Profit after tax}}{\text{Unit contribution margin} \times (1 - \text{tax rate})}$$

iv) Required sales in Rs. for desired profit after tax

$$= \frac{\text{Fixed Cost} + \frac{\text{Profit after tax}}{1 - \text{tax rate}}}{\text{P/V Ratio}}$$

v) Required sales volume for changes on selling price

$$\text{Revised Break-Even point in units} = \frac{\text{Fixed Cost}}{\text{Revised unit contribution margin}}$$

$$\text{Revised Break-Even pint in Rs} = \frac{\text{Fixed Cost}}{\text{Revised P/V Ratio}}$$

vi) Required sales volume for changes in variable cost:

$$\text{New Breakeven Point (units)} = \frac{\text{Present FC} + \text{Additional FC}}{\text{Unit Contribution Margin}}$$

$$\text{New Breakeven Point (Rs)} = \frac{\text{Present FC} + \text{Additional FC}}{\text{P/V Ratio}}$$

f) Income Tax Impact:

As a shortcut to computing the effects of volume on the change in after tax income the following formula can be used:

Change in net income =

$$\text{Change in sales unit} \times \text{Contribution margin per unit} \times (1 - \text{tax rate})$$

Each unit beyond the breakeven point adds to after tax net profit at the unit contribution margin multiplied by (1- income tax rate)

With tax effect the breakeven point itself does not change because there is no income tax at a level of zero profit. (Horngren, Sundem & Stratten, 2004:65)

2.1.8.3 Profit-Volume Analysis:

Profit volume ratio expresses the relationship of contribution to sales. It is termed contribution margin ratio, contribution sales ratio or variable profit ratio. If the contribution margin is divided by sales revenue, the result is profit volume ratio. Symbolically, it is:

$$\text{P/V Ratio} = \frac{\text{Contribution Margin}}{\text{Sales}}$$

Profit volume ratio can be taken as significant evaluation tool for earning capacity of a business enterprise. The earning capacity of an enterprise can be measured by the profit-volume ratio. The higher profit volume ratio reflects the firm's ability for increasing profitability.

The profit volume ratio is used to determine the following facts:

- a. For the analysis of break-even point.
- b. For determination of selling price.
- c. For an ascertainment of profit at a budgeted sales volume.
- d. For an ascertainment of profit on selling price.
- e. For calculation of sales amount to earn a target profit.
- f. For determination of profit on cost etc.

2.1.9 Cost-Volume-Profit Analysis for a Multi Product Firm

For any organization selling multiple products, the relative proportion of each type of product sold is called the sales mix. It is a relative combination in which a company's products are sold. The sales mix is an important assumption in multi products business. This is because such changes in the sales mix can cause interesting variation in company's profits. Since contribution on each product may be different, any change in the mix would affect profit, BEP and margin of safety of business as whole. A shift in the sales mix from high margin items to low margin can cause total to decrease even though the total sales may increase even though total sales decrease. Break even analysis is somewhat more complex if a company sells

more than one product. The reason is that different products will have different selling prices, different costs and contribution margin. Consequently, the break-even point will depend on the mix in which the various products are sold. If the sales mix changes, then the breakeven point will also change. Thus, to enhance the profit, the firm may introduce required changes in the ratio with the help of break-even analysis.

In multi product firm, BEP is calculated in aggregate. The sales mix is used to compute a weighted average unit contribution. This is the average of the several products unit contribution margin weighted by the relative sales proportion of each product. Following procedures are followed to calculate BEP for multi product firm.

- i. CMPU for each product

- ii. Proportion of sales = $\frac{\text{Individual sales}}{\text{Total sales}}$ OR $\frac{\text{Individual Sales Unit}}{\text{Total Sales Unit}}$
- iii. Weighted Average CMPU = $\frac{\sum \text{Sales Mix (units)} \times \text{Unit Contribution}}{\text{Margin}}$

And

$$\text{Weighted Average CM Ratio} = \sum \text{Sales Mix (units)} \times \text{CM Ratio}$$

- iv. BEP (in units) = $\frac{\text{Total Fixed Cost}}{\text{Weighted average CMPU}}$
- v. BEP (in units) = $\frac{\text{Total Fixed Cost}}{\text{Weighted average CM Ratio}}$

2.1.10 Margin of Safety

The soundness of business is indicated by margin of safety. The difference between total sales and break-even sales is identified by margin of safety. The high margin of safety is good for business. It indicates that there can be substantial falling of sale and yet profit can still be made. On other hand, if margin of safety is small, it indicates the weak position will adversely affect the profit position of business. If margin of safety is unsatisfactory, the following steps can be taken:

- i. By increasing the production and sales volume.
- ii. By increasing the selling price.
- iii. By decreasing the fixed cost.
- iv. By reducing the variable cost.
- v. By changing the sales or product mix ratio.

Margin of safety is ascertained by using the following formula:

a. Margin of safety = Actual sales – Break Even sales

b. Margin of safety in units = $\frac{\text{Profit}}{\text{Unit contribution margin}}$

c. Margin of safety in amount = $\frac{\text{Profit}}{\text{Profit volume ratio}}$

d. Margin of safety % = $\frac{\text{Actual Break Even sales}}{\text{Actual Sales}} \times 100$

i.e. Margin of safety Ratio = $\frac{\text{Margin of Safety}}{\text{Actual Sales}}$

2.1.11 Sensitivity of Analysis of CVP

Sensitive analysis in the measurement of responsiveness in outcome with the change in determinant variables. We know that goal of a business enterprise is to maximize profits. Profits are the excess of revenues over the total cost.

$$\text{Net Profit} = \text{Total sales revenue} - \text{Total Cost}$$

$$= \text{Sales units} \times \text{SPPU} - \text{Sales units} \times \text{UVC} - \text{FC}$$

But none of the factors remain unchanged. Sometimes the manager can intentionally change the price and cost factors, a part of strategic decisions. But the strategy should focus more on the factor, which is more sensitive, or responsive for profits. Therefore, to measure the sensitivity of CVP factors one can see the impact of certain percentage of change in volume, price or cost factors on net profits.

- i. **Impact of price changes:** - An increase in the selling price will be the increase the P/V ratio and as a result will lower the break-even point. On the contrary a decrease in selling price will deduce the P/V ratio and therefore, result in a higher breakeven point.
- ii. **Impact of volume changes:** - A changes in volume, not accompanied with changes in the selling price and/or costs, will not affect P/V ratio. As a result, the break-even point remains unchanged. Profit increase in volume and will reduced with a decrease in volume.
- iii. **Impact of changes in fixed costs:** - A change in fixed cost doesn't influence P/V ratio. Other factors remaining unchanged, a fall in the fixed cost will, however, lower the BEP and raise profits. An increase in fixed costs caused either due to some external factors or due to some changes in the management policy, will raise BEP. Increase in factory rent or insurance and taxes are examples of external factors, while increased depreciation or salaries of managers may be the result of management decision.
- iv. **Impact of change on variable cost:** - The impact of the change in variable cost on profit is straight forward if it does not caused any changed in selling price and volume. An increase in variable costs will lower P/V ratio, push up the BEP and reduce profits. On the other hand, if the variable cost decline, P/V ratio will increase, BEP will be lowered and profit would rise.
- v. **Impact of changes in a combination of factors:** - The management accountant, evaluating profit plans or budgets, must realize that a change in one factors leads to a changes in another factors. Therefore, all such changes should be carefully visualized and their net impact on profit must be seen.

2.1.12 Assumption of Cost-Volume-Profit Analysis

Cost-volume-profit analysis is based on a specific set of assumption that should be clearly understood. These underlying assumptions are as follows:

- i. Costs can be classified and measured realistically as variable and fixed.
- ii. There is a relevant range of activity for using the results of the analysis.
- iii. The sales price does not change as units of sales change.
- iv. There is only one product, or in case of multiple products sales mix among the products remains constant.
- v. Basic management polices about operations will not change materially in the short-run.
- vi. General Price level will remain essentially stable in short run.
- vii. Sales and production levels are synchronized i.e. inventory remains essentially constant or is zero.
- viii. Efficiency and productivity per person will remain essentially unchanged in the short run. (Welesh, Hilton, Gordon, 2002:507)

2.1.13 Limitations of Cost-Volume-Profit Analysis

- i. According to the assumption of break-even-point, total cost can be divided into only fixed and variable costs, which is not practical in real life. There are some costs, which are neither fixed nor variable. Those costs are described as semi-fixed or semi variable costs.
- ii. The assumption that fixed cost always remains constant is not true. Sometimes it can be increased, especially in that situation, when production or operation technique is changed.
- iii. The assumption that variable cost per unit always remains constant cannot be entirely true.
- iv. Constant selling price is also not true. In case of increase in sales volume, some modification can be made in selling price by considering the nature of demand for the goods.
- v. The assumption that either the firm produces only a single product or product mix ratio remains constant is also obviously quite unrealistic. An industry producing several types of goods has to bring about modification in the product mix ratio time to time.
- vi. The assumption that the production level and sales level should be equal is another drawback of break-even point. Such a condition is hardly found in practice.
- vii. The capital investment in business is also a significant element of profit planning & control. However, it is not given a place in break-even point.

viii. It also ignores the non-operating income & non-operating expenses.

2.2 Review of Previous Research

Research in the area of cost –volume –profit analysis as tools to measure effectiveness of PPC/Budgeting of a company in Nepalese context are not made. But many researches have been made in the area of profit planning and control and management accounting covers major of the aspects of cost- volume-profit analysis, researches made on these areas are taken into consideration for the sake of review to examine how profit planning and control and management accounting practices in Nepalese companies. Many of the researches have been made of manufacturing concerns and except a few most of them are not profound. An attempt is made here to review some of the researches, which have been submitted in profit planning and control and management accounting in the context of Nepal.

Sapkota, S. (2003), had conducted the research entitled "Profit Planning of Nepal Lever Ltd." Mr. Sapkota had connected his study to examine the application of profit planning concept in Nepal Lever Ltd.

The data and other necessary information had been accumulated from secondary as well as primary source. The time periods covered by the research was five years from 2054/55 to 2059/60.

Mr. Sapkota had pointed out various findings. Some remarkable findings were as follows:

- a. No proper practice of profit plan had been exercised.

- b. No preparation of proper budget regarding sales, production expenditure, income material etc.
- c. The manager of concerned department in consultation with managing directors makes yearly budget of income and expenditure as well as other plans regarding production sales etc.
- d. Lack of optimum utilization of capacity.
- e. Various costs are not diagnosed as controllable expenses and non controllable expenses.
- f. The company had no practice segregating cost into fixed, variable, semi variable cost.
- g. The sales territories could be divided as domestic and export sales mainly export consists of the good in India.
- h. The company had also given the priority to rural market by packing the products in mini packets affordable to the rural citizens.
- i. The domestic sales of the company were in increasing trend and exports sales of the company were in decreasing trend.
- j. Well developed policies regarding personnel managements could be found. Annually at least five days refreshment training was provided to employees.
- k. Profitability of each product line couldn't be measured the expanses for each responsibility centered had not been managed.
- l. Low stable policy regarding inventory had been followed.

Rijal, M. (2005), had conducted research on the topic "Cost-Volume-Profit Analysis as a tool to measures effectiveness of profit planning and

control: a case study of NEBICO Private Ltd." Mr. Rijal had concentrated his study to examine the CPV analysis as a tool to measure effectiveness of PPC, present practice of CVP analysis and identify the area where CVP analysis could be applied to strengthen the NEBICO Pvt. Ltd.

The data and other necessary information had collected secondary as well as primary sources of data. Mr. Rijal had pointed out various findings. Some remarkable findings were as follow:

- a. The company's sales trend had fluctuated trend but not satisfactory trend of increasing.
- b. The company's variable cost was high proportion than fixed cost in total amount, which contributed for lower contribution margin.
- c. There was no plan to reduce cost. There was lack of effective cost control Programmers or techniques.
- d. Profit trend of the company was not satisfactory.
- e. The company has no detailed any systematic expenses plan i.e. fixed, variable and mixed cost.
- f. The goal and objective of the company were not clearly communicated to operating level of management.
- g. The inventory management, raw material handling and controlling system were not efficient and effective.
- m. Wages structure was based on accordance with the level of skill. Since, unskilled workers were great in number with approximately 84% wages captured in total production wages.
- n. The pricing policy of the company was not scientific because BOD directly interference to price of biscuit and confectionary product.
- o. The company has tried to adopt the new technology for improvement of qualitative products.

- p. Financial position of the company was so good. Net profit margin, profitability ratios and other things were not satisfactory.
- q. The company has not utilized its full capacity.

Dahal, U.K. (2006), had conducted research on the topic "Cost volume profit analysis as a tool to measure the effectiveness of profit planning with special reference to Dabar Nepal Ltd". This was submitted to Nepal Commerce Campus, TU in Partial fulfillment of Master's Degree in the year 2006. He found given findings and recommendation on his study.

- a. Dabur Nepal Pvt. Ltd constitutes lack of adequate inventory policy.
- b. No control over external factory i.e. it has poor SWOT analysis.
- c. Dabur Nepal Pvt. Ltd. does not prepare strategic and policies for long term.
- d. Dabur Nepal Pvt. Ltd is not able to co-ordinate among various departments.
- e. Dabur Nepal Pvt. Ltd is not prepared raw material requirement budget and raw material purchase budget systematical.
- f. The researcher also provides the following recommendations:;
- g. CVP analysis should be considered while formulating profit plan.
- h. Profit planning manuals should be communicated from top level to lower level.
- i. The company management should look carefully into the basis of setting target for sales and achieving those targets meaningfully.
- j. Dabur Nepal Pvt. Ltd should focus on the relationship between expenditure and benefit, expenses planning and controlling is necessary to obtains companies goals.
- k. To get the idea of future cash requirement and application of the form, it should make cash budget systematically.

1. The company should prepare raw material budget and production budget scientifically.

Timsina, D. (2007), had conducted research on the topic “Cost volume profit analysis of Himalayan distillery limited (HDL). This was submitted to Nepal commerce Campus, TU in partial fulfillment of Master s Degree in the year 2007. The general objective of this study is to evaluate the C-V-P analysis of multi Products manufacturing company. The specific objectives of this study are as follows:

- a. To analyze different components of cost as per cost behavior.
- b. To analyze the impact of fixed cost on profit.
- c. To analyze breakeven point of overall firm as well as individual product.
- d. To show the relationship of, cost volume and profit between multi products.
- e. To provide suggestions and recommendations on the basis of major findings.

Mr. Timsina had pointed out some major findings in his research. Some major findings are as follows:

- a. Different types of profit planning tools, which are used in the academic field, are not found applied by HDL.
- b. C-V-P analysis is not applied by HDL as no segregation of cost in to fixed and variable. The classification of cost is not scientific and systematic. So, HDL has not been able to use C-V-P analysis and make the realistic and smart budget.

- c. Production and sales are comparatively low than production capacity.
- d. Avoiding C-V-P analysis tool and not utilizing full capacity the company is bearing loss. Promoter and director and staff of the company are enjoying by achieving allowance and salary respectively. Other part, general shareholders are not achieving dividend and government could not claim for income tax since loss and loss and loss recovery situation. The researcher also provides the following recommendations;
- f. Classification of expenses item as variable and fixed or controllable and non controllable must be made within specific framework of responsibility and time.
- g. Separate cost control department should be established for the effective management and reduction of cost.
- h. HDL should consider about the product line to improve its profit. Market studies on demand. Supply and pricing of product should be carried out and loss oriented costs should be identified and control.
- i. HDL should consider BEP analysis which preparing sales plan. Production plan and selling price of its products.
- j. HDL is multi product Company: more emphasis should be provided the product having high contribution so as have more profit.
- k. Some portion of fund should be allocated to research and development program so that new technology could be found which provide more competitiveness in the market.

- l. HDL should have proper manpower planning.
- m. System of periodical performance reports should be strictly followed to be conscious about poor performance and take corrective action immediately and timely.
- n. New market areas should be identified for the coverage of interested activities of companies.

Karki, S. (2008), had conducted research on the topic of “Cost Volume Profit Analysis as a tool of profit planning" as case study of Bottler Nepal Ltd. The data and other necessary information were collected by primary as well as secondary sources. Major findings and recommendation providing by his are as follows:

- a. The company had not maintained the broad and long range objective periodic report and objectives were limited to the high ranking official only.
- b. Relevant internal and external market variables were not fully explored.
- c. Sales and production targets were not achieving because there was not an effective forecasting system.
- d. Enterprises have no financial plan; they had only sales and production plan in term of required target.
- e. The company's production trend was in an increasing trend.
- f. There was no any effective plan for cost reduction and control.
- g. There was lack of effective cost control programmers or techniques.
- h. The profit of the company was not satisfactory as compared to profit proportion was very low with fluctuated trend.
- i. The company had no detailed and systematic expenses plan.

- j. In the company there was no effective inventory policy. The inventory management, raw material handling and controlling system were not efficient and effective.
- k. The company had not proper practice of segregating the costs into fixed and variable or controllable and non controllable.
- l. Management information system was not performance based.
- m. There were no any proper criteria for performance evaluation for financial tools.
- n. Classification of expenses item as variable and fixed or controllable and non controllable must be made within specific framework of responsibility and time.
- o. Separate cost control department should be established for the effective management and reduction of cost.

Poudel, M. (2009), had conducted research on the topic of "Revenue Planning of Public Enterprises" Mr Poudel had conducted a research entitled "profit Planning in Manufacturing Public Enterprise: A Case Study in Hetauda Cement Industry Ltd." Mr Poudel had focused her study in the application of Revenue planning concepts.

Necessary data and other information were collected from both the secondary and primary sources of data. Mr Poudel had pointed out various findings. Some remarkable findings were as follows:

- a. No proper application of any effective sales forecasting techniques.
- b. Planning of budgeting policy of the company is very poor and there is no system of taking corrective action for pre- planning.
- c. Decision making power is centralized.
- d. There are no clear cut duties and responsibilities of the employee.

Budhathoki, D. (2010), had conducted research on the topic “Cost volume profit analysis of information technology magazine publication House Special Reference with PC-info private limited.” This was submitted to Nepal commerce Campus, TU in partial fulfillment of Masters Degree in the year 2010.

- a. To analysis of breakeven point.
- b. To analysis the fixed cost utilization at optimum level.
- c. To reduce cost by increasing the span of control since fewer supervisors are needed.
- d. To help the management for considering expected future trends and condition.
- e. To suggest the management to give time and adequate attention to the effect of the expected trend of general business condition and recommended with the help of major findings.

Mr. Budhathoki has Pointed out various findings and recommended in his research. Some remarkable findings were as follows.

- a. Fixed cost is in increasing trend that the fixed cost is not being utilized to its optimum level or the capacity utilization is in decreasing trend.
- b. Actual sales is in decreasing trends so that it will lower the contribution margin and it will affect the power of bearing fixed cost by the company and the company expressed itself towards the loss.
- c. Profit volume ratio is in decreasing trend which reflects that the overall profitability is in decreasing trend or the variation between sales and the variable cost is in decreasing trends.

- d. Margin of safety is in decreasing trend that it reflects that company's safety has been lowered over the year.
- e. Fixed financial cost interest seemed fixed or constant over the year the period that reflects the company has not redeemed its debt during the year.
- f. Variable cost per unit is also in increasing trends which will affect the contribution margin per unit and the overall profitability of the company.

2.3 Research Gap.

There is a gap between this research and previous research. The researchers studied earlier on the topic of cost volume profit analysis are mainly focused on single product. But some of the researches are there analysis to multi product firms, but these researches couldn't reach to the depth of the study. Other researchers have applied the CVP tools on surface or in aggregate. But, this study is concentrated to find the product sales and profit. Contribution of product on total sales and benefit from each product is clearly shown in this research. Due to sustention problem of the IT magazine in Nepal this study focuses on the one of the most effective part of the business that is CVP. I couldn't get above remarkable points in other researches, rather than it clear picture of cost, sales, profit, BEP, margin of safety, sensitivity of CVP, CVP impact on productivity can be ascertained in this study. Likewise, data are processed by using different types of statistical and mathematical tools in effective manner. So, I think this research becomes successful research to fulfill the gap between this research and previous researches.

CHAPTER – 3

RESEARCH METHODOLOGY

3.1 Introduction

In the previous chapter, general background, the role of IT and CVP analysis has been presented and the role of the CVP analysis in the business firm has described in review of literature with possible review of relevant books, articles and research finding has also been discussed along with the function of Commercial Banks, types of deposit, loan classification. This has equipped the researcher with the input necessary for the study and helped the researcher to make choice of research methodology to support the study in realistic terms with sound empirical analysis. "Research Methodology" refers to the various sequential steps to be adopted by a researcher in studying a problem with certain objectives in view, in other words: research methodology describes the method and process applied in the entire subject of the study.

This chapter equipped the researcher with the inputs necessary for the study and helped the researcher to make choice of research methodology to support the study in realistic terms with sound empirical analysis. "Research Methodology" refers to the various sequential steps to be adopted while studying a problem with certain objectives in view. In other words: research methodology describes the methods and process applied in the entire subject of the study. The chapter research methodology includes research design, resource of collection data and processing procedures tools for analysis, test of hypothesis, methods of analysis and presentation.

3.2 Research Design

Research Design is the overall plan, structure and strategy of investigation conceived so as to obtain answer to research question and control variance (Howard K. and Pant 1975:43). The design of the research project guides how to conduct the study. The research designing implies procedures, techniques and tasks which guide to evaluate the objective of the study and propounds ways for research viability. The data use for design Secondary data it is the overall plan of a proposal study to specify the appropriate research methods and procedures for obtaining specific finding validity, objective, accuracy and economically as possible.

Besically, research studies fall into two broad categories: empirical and analytical. The empirical/experimental studies are conducted mainly in the science type as well as technical subjects and the analytical/descriptive/literacy studies are conducted in the arts type subjects related to human beings. In the empirical study, statistical methods for testing hypothesis need to be described and examined for appropriateness whereas analytical design stress and highlights the facts collected from related sources.

3.3 Data Collection Procedures

The sources of data were secondary sources. All the required data and information would be collected from IT magazine publication house and BNL. The study would be followed description and analytical research to analyze the company's performance of PC Info Pvt. Ltd. A simple interview procedure has been adopted and the other data had been extracted from the financial reports of the company.

3.3.1 Nature and Source of Data

Data and information are the foundation of the study. Data may be obtained from several sources. It is not easy to list them in detail. Each research project has its own data have been mainly taken from annual report, auditor reports, and balance sheet, P/L account, Cost detail sheet. Previous thesis and other relevant published and non published documents related to Bottler Nepal Limited. For further information informal interviews were conducted with the concern authority.

3.3.2 Population and Sampling

The large group about which the generalization is made is called the population under study. Research population would be all manufacturing company of Nepal. Due to various circumstances it would not be possible to attempt all the number of research population regarding in this discretion. Out of them only Botteler's Nepal Limited is taken as a sample.

3.4 Tools and Techniques of Data Analysis

The financial data has been categorized to the relative variables and the cost concept has been developed through the views derived from the questionnaires under staying within following assumptions and limitation:

3.4.1 CVP analysis tools

CVP analysis was included the following techniques.

1. Contribution Margin (CM) = Sales-Variable Cost

2. Variable Cost Ratio = $\frac{\text{Variable cost}}{\text{Sales}}$
3. Contribution Margin Ratio = $\frac{\text{Contribution Margin}}{\text{Sales}}$
4. Break Even Point in Units and in Revenue

(A) Operating BEP

$$\text{BEP}_{\text{operating}} (\text{Units}) = \frac{\text{Fixed Cost}}{\text{Contribution Margin per unit}}$$

$$\text{BEP}_{\text{operating}} (\text{Rs.}) = \frac{\text{Fixed Cost}}{\text{Profit Volume Ratio}}$$

Where contribution margin is derived through the deviation between selling price per unit and the variable cost per unit and the profit volume ratio is derived by the following formula:

CMPU divide by selling price per unit

[Breakeven point defines the sales level to be achieved to get null profit i.e. the company will earn no profit and suffers no loss or in other words the total revenue covers the total cost of the organization.]

(B) Financial BEP

$$\text{BEP}_{\text{financial}} (\text{unit}) = \frac{\text{Fixed Cost} + \text{Interest}}{\text{Contribution Margin per unit}}$$

$$\text{BEP}_{\text{financial}} (\text{Rs.}) = \frac{\text{Fixed Cost} + \text{Interest}}{\text{Profit Volume Ratio}}$$

[Breakeven point defines the sales level to be achieved to get null profit after interest payment to the debt capital i.e. the company will earn no profit and suffers no loss after the payment of the interest or in other words the total revenue covers the total cost of the organization in this point total cost includes both operating and non operating expenses i.e. interest]

$$5. \text{ Margin of Safety Ratio} = \frac{\text{Margin of Safety}}{\text{Actual Sales}}$$

[This ratio shows the safety level of the organization]

6. Required sales to desired profit Study

$$(A) \text{ Required sales to Desired Profit in (unit)} = \frac{\text{Fixed cost} + \text{Desired profit}}{\text{CMPU}}$$

$$\text{Required sales to Desire Profit in (Rs)} = \frac{\text{Fc} + \text{Desire Profit}}{\text{CM Ratio}}$$

$$\text{Required Sales in Unit DPAT} = \frac{\text{Fc} + \text{DPAT}}{\text{CMPU} (1-t)}$$

$$\text{Required Sales in Rs DPAT} = \frac{\text{Fc} + \text{DPAT}}{\text{CM Ratio} (1-t)}$$

$$\text{Safety Margin (in unit)} = \text{Actual Sales} - \text{BEP in Units}$$

$$\text{Safety Margin (in Rs.)} = \text{Actual Sales} - \text{BEP in Rs.}$$

$$\text{Margin of Safety Ratio} = \frac{\text{Actual Sales} - \text{BE Sales}}{\text{Actual Sales}}$$

3.4.2 Statistical Tools

The Relation Ship two or more variables can be measured by using statistical tools in this study following tools is used:-

3.4.2.1 Mean

The sum of all the observations divided by the number of observations is called mean. In such cases all the items are equal important it is denoted by X it is defined by the following formula

$$\text{Mean [X]} = \frac{\sum X}{n}$$

[Where x is the variable that is under study like FC, Total Cost, Sales or profit. Mean defines the average of the historical data presented and the expected value for next future period]

3.4.2.2 Time Series or Regression Analysis under Least Square Method

Where,

$$Y = a + bx$$

In which Y is the dependent variable and the x is the independent variable under study.

Where,

$$b = \frac{\sum xy}{\sum x^2} \quad \text{and} \quad x = \bar{X} - X$$

3.4.3.3 Standard Deviation of the Profit

The standard deviation is defined as the positive root of the mean of squared deviation from their mean of a set of values. It is also known as root mean square deviation. It is denoted by the Greek letter σ (smallSigma)

$$\text{S. D.} = \sqrt{\frac{\sum (X - \bar{X})^2}{N-1}}$$

Standard deviation shows the risk level of the organization.

3.4.3.4 Coefficient of variation (CV)

$$CV = \frac{\sigma}{\bar{x}}$$

Coefficient of variation shows the risk level per rupee of the profit.

Pre Testing:

Pre testing has been done with the data availed by the company and the data seems to be quite relative to the study.

3.4.3.5 Pearson's Correlation Coefficient (r)

The degree of relationship between two variables at a time is called correlation in other words two variables are correlated in such way that if one variable changes than other variables also subsequently it can be calculated by using following formula.

$$r = \frac{\sum (X - \bar{X})(Y - \bar{Y})}{\sqrt{\sum (X - \bar{X})^2 \sum (Y - \bar{Y})^2}}$$

Where x and the y are the variables of those correlation is being studied.

The value of **r** lies between ± 1

If $r > + 0.5$ High degree of positive correlation is predicted

$r < + 0.5$ Low degree of positive correlation is predicted and vice versa of the negative correlation.

3.4.3.6 Coefficient of Determination (r^2)

A meaningful analysis is available from the squares of correlation coefficient (r^2), which is called the coefficient of determination and calculated using the following formula.

Co-efficient of determination (r^2) = $r \times r$

$$(P.E.) = 0.6745 \times \frac{1-r^2}{\sqrt{N}}$$

CHAPTER – 4

DATA PRESENTATION AND ANALYSIS

Profit planning is called the pre plan of revenue and expenditures how much income will be generated and how it should be spend in order to meet investment and profit requirement. Profit planning involves streaming activities in order to get employees profit minded and to secure maximum benefit from minimum effort and expenditure. A best result seems to be obtained from a single product. The planner is a given the right to prove economics, the organization, the mode of operation, the pricing the marketing or any other fact of making and selling the product that in his judgment affects profit acquiring from that product. The concentration of profit efforts upon to gross traditional boundaries of the enterprise to translate needs from one group to another and to obtain consumed profit building efforts among these who can affect profits are the fundamental factors that contribute to the success of profit planning (Chamberlain). Profit planning is a comprehensive plan expressed in financial terms by which an operating program is effective for a given period.

Generally, two types of range, range of profit plans and short-range profit plan are prepared and which are referred to as budget.

4.1 Current and Future Activities of BNL

BNL is one of the top ten companies listed in the NEPSE in term of market capitalization. It is manufacturing and processing co. which was established

in 1979 under the co. act, 1964. The objective of NBL is producing and bottling soft drinks and distributing to the people. It is imported most of the materials from foreign country and exported inputs to Nepalese market and foreign market.

The co. has invested Rs.90mm in building capabilities to produce PET packages. The PET package launched these fiscal years, has been extremely successful and has contributed significantly to comply with the coca cola co., environmental policy and to help the local environment they have initiated to install the waste water treatment facilities inside the factory premises. The co. has also introduced a brand which name is Kinley water, which has 1 liter, PET Bottlers in the market.

The co. is also planning to launch various new products to market to fulfill the consumer demand. In addition, the co. continues to invest in cold drink equipment and containers to improve the availability and quality of their product in market. The performance of BNL (Terai) Ltd, a subsidiary volume growth has helped to offset most of loss incurred.

4.2 General Concept of Sales Plan

Sale plan is the first plan of beget to be prepared. It is an estimate of the goods that will be sold. All plans are depended upon sales plan so it the corner stone of profit plan. A sales budget is a forecast of total sales expressed and incorporated in qualities and money. All operational activities are directly related with the sales plan. So it is known as backbone of the enterprises.

Sale plan provides basic managerial decision about marketing based on those decisions. It is an organized approach for developing comprehensive sale plan. So different important decision

The co. is also planning to launch various new products to its market to fulfill the consumer demand. In addition, the co. continues to invest in cold drink equipment and containers to improve the availability and quality of their product in the market. The performance of BNL (Terai) Ltd, a subsidiary co. has been also encouraging. Though profit has declined, the increased volume growth has helped to offset most of the loss incurred.

There are cordial relations between the management and employees throughout the year. The co. had entered at 2 yearly collective bargaining agreements with the Union effective October 2004 overall industrial relations continue to remain harmonious. The communication system has been upgraded by instilling a direct leased line to Singapore. This will help to reduce the telecommunication cost and ensure to time saved.

BNL produces its product within year. But its working hour is not same for whole year. It depends on demand and weather. The co. are divided their produced into three groups for producing 12 months in a year. The first group has January, February, November and December. The second group has March, April and September and October. Similarly, the third group has May, June, July and August. The first group works for 8 hours for a day, second group works for 16 hours, for a day and the third group works for 24 hours for a day. But all of the groups, there are leaved 2 hours for a day for rest of all equipment, machines and manpower.

Now a day, the co. has to easy for producing because it has recently installed an Electronic Bottle inspector in its 430 BPM line. The management is working hard to upgrade the current 220 BPM line to manufacture PET and new returnable glass bottlers.

According to analyze the profit plan of BNL there are not more available data, so the available of data, I try to present the data to use the financial tools.

4.3 Sales Plan/ Sales Budget

Bottler's plan provides basic managerial decision about marketing based on that decision. It is an organized approach for developing comprehensive sales plan. So different important decision such as production purchases, expenses are made by sales unit, which is budgeted, likely production volume depends upon sales target and labor, material and production cost depends upon the production volume.

The sales plan is the foundation for periodic planning in the first because particularly all other enterprise planning is built on it. The primary source of cash is sales. The capital additions needed the amount of expenses to be planned, the manpower requirement, the production level, and other important operational aspects depend on the volume of sales. Therefore, the sales plan must be realistic.

A comprehensive sales plan includes both strategic and tactical sales plan. Both sales plans must be prepared in comprehensive profit plan. Strategic sales plan is known as long range sales plan. Usually, it is 5 to 10 years

strategic sales plan. It is to be developed as annual amount. It require depth analysis of future market potentials, which may built up from a basis foundation such as population changes, state of economy, industry projections and company objectives.

The effects of long-term strategic are also brought to bear on the long-term sales plan. They would effect in such area as pricing, development of new product line, innovation of product, expansion of distribution channel, cost patterns. Similarly, tactical sales plan is to be developed for short-term period in a company for future 12.months detailed by month and quarter. So it is also called, short range sales plan. Tactical sales plan includes detailed plan for each major products and from grouping of minor products. Short-term sales plan are usually developed in term of physical units or jobs and in sales or dollars.

For planning & controlling purposes, short-term sales plan must be developed by sales responsibility. Because short-term profit plan provides major considerations for planning & controlling purposes, it is also necessary for completing other components of profit plan.

4.3.1 Sales Plan of BNL

BNL is one of the manufacturing and processing companies, with produces and sales many types of soft drinks in the market. Sales budget of BNL is prepared on the basis of sales forecast but sales budget should not be viewed as forecast. It snows the data of sales at actually.

Sales manager of BNL is directly responsible for the preparation of sales budget but chief executive should also participate in the process. Board of direction and top level management always estimate the selling price. They don't distribute directly to the consumer. So the distribution channel

of the company one is producer to distributor to consumer and another is producer to retailer to consumer. The distribution channel used company percentage is same effective rate.

Some times company gives commission to distributors & retailer on sales price, which is to impress to increase the sales. But no has any policy to discounting the selling price. The system of the commission is likely 8 to 9 percentage which is more help to provide the increase of sales. The strategic long-term plan is used in company. And the company in long-term basis uses all this system. The company has segmented its total market into National market & International market. It's always focusing the advertisement for the sales promotion.

It is fundamental plan of overall profit planning. It provides basic management decision about marketing. It is an organized approach for developing comprehensive sales plan. Different important decision such as production, purpose, expenses etc. are made on the basis of sales budget. The following table shows the sales target and achievement of BNL (in Rs) of five years from 2006/07 to 2010/11.

Table-1
Budgeted Sales and actual sale in Rs '000'

Year	Budget ed sales (X)	Increase / (Decrease) %	Actual; Sales (Y)	Increase / (decrease) %	Achievement %
2006/07	567000	-	535494	-	94.44%
2007/08	670000	18.17%	609654	13.85%	90.99%
2008/09	740000	10.45%	632114	3.68%	85.42%
2009/10	745000	0.66%	614739	(2.75)%	82.52%
2010/11	775000	4.03%	621827	1.15%	80.24%

Source: Appendix I

The table 1 shows that the budgeted sale is in increasing trend up to fiscal year 2010/11. But actual sale is in increasing trend up to fiscal year 2007/08 and it is decrease in the fiscal year 2008/09. The highest increase rates in budgeted and actual sale are 18.17% and 13.85% in fiscal year 2007/08. The table's shows that sales achievement is always less than the sales target but it is more than 80% achievement in almost years. In the fiscal year 2006/07 actual sales are 94.44% of budgeted sales that are the best result among the five years period. In order to examine the nature of actual sales and budgeted sales of different years. The arithmetic means., standard deviation, coefficient of variation, correlation coefficient, probable error, regression equation of best fit and coefficient of determination calculated in appendix II, have presented in table 2. From the result sale achievement sale less fluctuated than budgeted sales being the lower CV of actual sales than budged sales. Similarly, mean sales and standard deviation of actual sale

Table -2

Summary of Statistical Calculation of Sales Data

Particulars	Budgeted sales	Actual sales (Y)
Mean	$\bar{X} = 699400$	$\bar{Y} = 602765.6$
Standard deviation (S.D.)	$\dagger X = 83422.419$	$\dagger Y = 38538.766$
Coefficient of variation (C.V.)	11.92%	6.39%
Correlation coefficient (r)	0.9240	
probable error (P.E)	0.0441	
Regression equation of best fit	$Y = 304219 + 0.4269X$	
Coefficient of determination (r^2)	0.8538	

Source: Appendix II

The table 2 shows that there is not a systematic and realistic sales plan. Budgeted is based on historical data only and seems that planning section of BNL ignores all other factors that affect the budgeted. Here for the planning section of BNL should research and try to consider those factors that can affect the budgetary process.

Here value of correlation coefficient is 0.9240 which shows that there is high positive relationship between actual sales and budget sales. The value of probable error shows that the actual value of correlation coefficient is highly significant since Correlation Coefficient $0.9240 > 0.2646 (6 \times P.E.)$.

The value of coefficient of determination is 0.8538 which shows that 85.38% variation in actual sales is explained by the variation in budgeted sales.

The regression equation $Y=304219+0.4269X$ shows the relationship between actual sales (Dependent Variable) and Budgeted sales (Independent Variable) by the use of which we can estimate the value of actual sales from the value of budgeted sales. The estimated actual sales (Y) calculated in appendix II is oriented in table 3 below.

Table-3

Estimated sales in Rs'000'

Year	Budged Sales (X)	Actual sales(Y)	Estimated Actual sales $Y= 304219+0.4269X$
2006/07	567000	535494	546271
2007/08	670000	609654	590242
2008/09	740000	632114	620125
2009/10	745000	614739	622260
2010/11	775000	621827	635067

Source: Appendix II

4.3.2 Production Plan of BNL

Production planning is the second step of profit planning and control in a manufacturing company. Past sales data and production data are the basic foundations of production budget. It is affected by the planned ending inventory of finished goods. To find the budgeted production following equation should be considered by the management.

Budgeted production = budgeted sales + budgeted ending inventory - beginning inventory.

The production plan of BNL is based upon various controllable factories. It is adopted seasonal production that is on peak season and slack season. The management of BNL Company hasn't hard and fast rules but the role of management is concentrated towards the production. The manager of the company prepares production plan with the help of factory supervisors, Marketing Managers and other members. The industry has sufficient capacity to produce the goods with fulfill the demand of budgeted sales. So BNL is unable its full capacity. The following table shows the production target and achievement at cost of BNL in Rs of five years from 2006/07 to 2010/11.

Table -4

Budgeted production and Actual production in RS'000'

Year	Budgeted production (X)	Increase/ (Decrease) %	Actual production (Y)	Increase / (Decrease) %	Achievement %
2006/07	320000	-	308341	-	96.36%
2007/08	405000	26.56%	376174	22%	92.88%
2008/09	425000	4.94%	371348	1.28%	87.38%
2009/10	460000	8.24%	380282	2.41%	82.67%
2010/11	483000	5%	382395	0.56%	79.17%

Source: Appendix III

The table 4 shows that the budgeted production is increased but increasing rate is not uniform and actual production is also increased up to fiscal year 2010/11 except fiscal year 2008/09. The highest increasing rates in budgeted and actual production are 26.56% and 22% in FY 2007/08. The table shows the production target and production achievement at the period of FY 2006/07 to 2010/11. The table 4 shows that the production achievement is always less than the production target but it is more than 90% achievement in last two years and more than 80% in remaining three years. In the FY 2006/07 actual production is 96.36% of budgeted production that is the best result among the five years period and in the FY 2010/11 only 79.17% of budgeted production achieved which was poorest result among the five years period.

In order to examine the nature of variability of actual production and budgeted production of different years the arithmetic mean, standard deviation, coefficient of variation, correlation coefficient, probable error, regression equation of best fit and coefficient of deviation calculated in appendix IV have presented in table 5, From the result production achievements are less fluctuated than budgeted production being the lower CV of actual production than budgeted production. Similarly, mean production and standard deviation of actual production are less than that of budgeted production.

Table -5

Summary of Statistical Calculation of production Data

Particulars	Budgeted Production (X)	Actual Production(Y)
Mean	X =418600	Y= 363708
Standard deviation (S.D.)	=62867	=31238
Coefficient of variation (C.V.)	15.02%	8.59%
Correlation coefficient (r)	0.9202	
Probable error (P.E.)	0.0462	
Regression equation of best fit	Y =172308+ 0.4572X	
Coefficient of determination (r ²)	0.8468	

Source: Appendix IV

The table 5 shows that there is not a systematic production plan. Budget is best on historical data only and seems that planning section of BNL should search and try to consider those factors that can affect the budgetary process.

Here value of correlation coefficient is 0.9202 which shows that there is high positive relationship between actual production and budgeted production. The value of probable error shows that the calculation value of correlation coefficient is highly significant. Since co-relation coefficient $0.9202 > 0.2772$ (6x P.E.).

The value of coefficient of determination is 0.8468% variation in actual production is explained by the variation in Budgeted Production.

The regression equation $Y = 172308 + 0.4572X$ shows the relationship between actual production (Depended variable) and budgeted production (Independent variable) by the use of which we can estimate the value of Actual production from the value of budgeted production. The estimated actual production in appendix IV is presented in table 6 below.

Table -6

Estimated Production in RS. '0000'

Year	Budgeted Production (X)	Actual production(Y)	Estimated Actual production = $17,2308+0.4572X$
2006/07	320000	308341	318612
2007/08	405000	376174	357474
2008/09	425000	371348	366618
2009/10	460000	380282	382620
2010/11	483000	382395	393136

Source: Appendix IV

4.3.3 Sales- Profit Relation of BNL

The basis objectives of running any business organization are to earn profit is taken to measure the competency of the management. In other words Profit is the primary measurement of business success in any economy profit is a resident in com left after the payment for other factors of production. The difference between the outflow of expenses and inflow of incomes is called profit. It is reward for business activities. Profit determines the strength of financial position of the company.

The uniformity or variability of net profit of BNL is analyzed and relations between actual sales and net profit is also studied under this topic. The actual sales and net profit of the company during the five years period has presented in the table below.

Table -7

Actual Sales and Actual profit in RS '000'

Year	Actual Sales (x)	Increase (Decrease) %	Actual profit (Y)	Increase/ (Decrease)%	Achievem ent %
2006/07	535494		48610		9.08
2007/08	609654	13.85%	19372	-60.15%	3.18
2008/09	632114	3.68%	21595	11.48%	3.42
2009/10	614739	(2.75%)	34735	60.85%	5.65
2010/11	621827	1.15%	(57319)	-265.02%	-9.22

Source: Appendix V

The table 7 shows that the actual sale is increasing trend up to fiscal up to fiscal year 2008/09 and it is decrease in the fiscal year 2009/10. But the profit of the company is in fluctuating trend. The high increasing rate in actual sales is 13.85. In FY 2007/08. But the high increasing rate in actual profit is 60.85% in FY 2009/10.

In order to examine the nature of variability of actual sales and actual profit of different years, the arithmetic means standard deviation. Coefficient of variation, correlation coefficient, probable error regression equation of best fit and coefficient of determination calculated in appendix VI, have presented in table 8. From the result, sales achievements are less fluctuated than actual profit being the lower CV of actual sales than actual profit.

Table -8

**Summary of calculation of sales and statistical calculation
of sales and profit**

Particular	Actual Sales (X)	Actual Profit (Y)
Mean	$\bar{X} = 602765.6$	$\bar{Y} = 13398.6$
Standard deviation (S.D.)	$\dagger X = 38538.766$	$\dagger Y = 41228$
Coefficient of Variation (C.V.)	6.39%	307.7%
Correlation coefficient (r)	-0.500	
Probable error (P.E,	0.2262	
Regression equation of best fit	$Y=335812-0.5349X$	
Coefficient of determination (r^2)	0.25	

Source: Appendix VI

The table 8 shows that the value of correlation co- coefficient is -0.5 which shows that there is negative relationship between actual sales and actual profit. The value of probable error shows that the calculated value of correlation coefficient is not significant. Since co-relation co-efficient -0.5 0.2262 (P.E.). The value of coefficient of determination is 0.25 which shows that 25% variation in actual profit is explained by the variation in actual sales, remaining 75% variation in actual profit is due to some other variables.

The regression equation $Y=335812-0.5349X$ shows the relationship between actual profit (Dependent variable) and actual sales (Independent variable) by the use of which we can estimate the value of actual profit from the value of actual sales.

Table-9

Estimated profits in RS '000'

Year	Actual Sales (X)	Actual Profit (Y)	Estimated Actual Profit $Y=335812 - 0.5349X$
2006/07	535494	48610	49376
2007/08	609654	19372	9708
2008/09	632114	21595	(2306)
2009/10	614739	34735	6988
2010/11	621827	(57319)	3197

Source: Appendix VI

4.4 Raw Material Plan of BNL

Material budget deals with the requirement and procurement of direct materials. The determination of material usage budget demonstrates the buildup of the quantities of each material to be used. BNL also preparation the raw material budget, requirement of raw materials for company. Mainly it imports the raw material from outside of the country. The table 10 shows the purchases and consumption of raw materials in the company over the period.

Table -10**Raw Material Plan of BNL in Rs '000'**

Particulars	2006/07	2007/08	2008/09	2009/10	2010/11
Opening stock of raw materials	50992	85288	122780	79958	142773
Work in process	572	640	1023	1576	1379
Production of Co2 gas	<u>5840</u>	<u>6166</u>	<u>6606</u>	<u>5862</u>	<u>5878</u>
Total opening stock	57404	92094	130409	87396	150030
Add: Purchase of raw materials during the year.	284041	350780	232947	347870	224047
Add/(less): transfer from or (to) BNL	<u>(323)</u>	<u>(8753)</u>	<u>13430</u>	<u>(8555)</u>	<u>(11167)</u>
Total stock available	<u>341122</u>	<u>434121</u>	<u>376786</u>	<u>426711</u>	<u>362910</u>
Less: closing stock of raw materials	85288	122780	79958	142773	81601
Work in progress	640	1023	1576	1379	1075
Damaged stock written off	<u>0</u>	<u>0</u>	<u>1308</u>	<u>0</u>	<u>0</u>
Total closing stock	<u>85928</u>	<u>123803</u>	<u>82842</u>	<u>144152</u>	<u>82676</u>
Material cost of production	255194	310318	293944	2 82559	280234

Source: Annual Reports; BNL

4.5 Inventory Consideration

Inventory plays an important role in profit planning for every organization. The main objective of the Inventory is to meet its future requirement of production. Raw materials and supplies, worker in progress and finished stock are the main types of inventories. A certain level of inventory is need for smooth production activities of any organization. BNL have a policy to maintain some stock for primary production. The following table 11 shows the actual inventory of raw material, work in progress and finished goods over the period.

Table 11

Stock of BNL in RS '000'

Year	Stock of raw material		Stock of work in progress		Stock of finished goods	
	Opening	Closing	Opening	Closing	Opening	Closing
2006/07	50992	85288	572	640	5979	7840
2007/08	85288	122780	640	1023	7840	7751
2008/09	122780	79958	1023	1576	7751	10722
2009/10	79958	142773	1576	1379	10722	7466
2010/11	142773	81601	1379	1075	7466	7133

Source: Annual report; BNL

The table 11 shows that the inventory of finished goods in fluctuate trend. It doesn't represent the any type of inventory policy. The table shows that the closing inventory is lowest in the year 2010/11 and it is highest in the year 2008/09.

4.6 Selling and Distribution Overhead Expenses of BNL.

Selling and distribution expenses are not product cost and are allocated to specific products; all those cost related to selling, distribution, delivery of products to customers is distributing expenses. Here, the detail selling and distribution overhead for the five year period is given in the table 12.

Table 12

Selling and Distribution Overhead Expenses in RS. '000'

Particulars	2006/07	2007/08	2008/09	2009/10	2010/11
Distribution	25015	24156	24199	19736	16955
Trade discount	18959	44572	52573	51340	56673
Advertisement	7563	7534	5360	3933	2790
Production	17205	18607	13195	5955	4628
Charity and donation	33	47	94	124	139
Registration and breakages	7897	4201	6710	6638	1902
Product transfer fees	1367	6502	5945	7774	6780
Total	78039	105619	108076	95500	89867

Source: Annual Reports; BNL

The table 12 shows that there are particulars expenses related to selling and distribution expenses. The variation in selling and distribution expenses each year is very high, so the company has not any systematic plan related to selling and distribution expenses.

4.7 Administration Expenses Budget of BNL

The budget includes the expenses of office administration and the overhead expenses of company. BNL doesn't prepare the overhead budget separately. Here are the office and general expenses of BNL for five years period in table 13 given below.

Table 13

Office and General Expenses in RS '000'

Particular	2006/07	2007/08	2008/09	2009/10	2010/11
Production, wages and other employee cost	23156	26691	26560	27881	32743
Contribution to provident fund, gratuity	3814	2906	2876	976	2543
Rent	626	1007	628	402	1381
Repair and maintenance	2892	4063	4793	5001	6764
Security expenses	1570	32	12	382	
Electricity, fuel and water	172	155	103	118	156
Travelling expenses	1717	1363	1847	3240	6790
Sap related expenses					6291
Audit fees	220	220	220	220	220
Legal and professional fees and expenses	533	521	7775	648	1131

Rants and taxes	492	133	182	187	352
Bank charges	4853	153	672	307	288
General meeting expenses	25	21	35	48	52
Insurance premium	215	247	941	87	180
Communication	5075	3305	3690	6844	5493
Printing and stationary	713	680	813	715	1313
Training	11	157	717	1316	8110
Uniform	505	307	517	476	613
Obsolete stock and fixed assets written off	397	556	2655	5805	717
Management fees	1425	2817	4421	6276	6643
Miscellaneous expenses	1837	1031	1238	768	971
Total	50248	46392	60695	61697	82751

Source: Annual Reports; BNL

The table 13 shows that there is remarkable variation in expenses for different years. So we can say that the performance of administration is not good.

4.8 Cost Heads and Their Variability

Identification of the variability of cost is necessary in planning and control of the cost. Thus the knowledge of cost behavior is very

important. Generally, cost behavior in two ways with relation to the volume of output. One is fixed cost that remains constant in total for a certain level of output and the period. Second is variable cost that charge directly in total with the change of output level but remains constant in cost per unit of output.

In the case of BNL there if no any applicable basis of cost classification in to variable and fixed cost to segregate the mixed cost in to fixed and variable cost of company has provided the information about the degree of variability of cost. All semi variable cost have segregated on the basis of the given information and details of segregation has presented in appendix four. The following table 14 shows information about the degree of variability of cost provided by the company.

Table -14**Cost Heads and their Variability**

Cost Heads	Cost variability	Cost Heads	cost Variability
Direct material	Variable	Rates and taxes	Fixed
Production cost	30% Fixed	Bank charges	Fixed
Distribution expenses	30% fixed	General meeting expenses	Fixed
Interest expenses	Fixed	Insurance premium	Fixed
Depreciation and amortization	Fixed	Communication	90% Fixed
Accommodation expenses	Fixed	Printing and stationary	70% Fixed
Staff bonus	Fixed	Advertisement	50% Fixed
Salaries, wages and other employs cost	Fixed	production Promotion expenses	70% Fixed
Contribution to provident fund, gratuity	Fixed	training	70% Fixed
Security expenses	Fixed	Charity and donation	Variable
Tread discount	Variable	Uniform	Fixed
Rent	Fixed	Rejection and breakages	Variable

Repair and maintenance	50% fixed	Management fees	Fixed
Electricity, fuel and power	20% fixed	Obsolete stock and fixed assets written off	Fixed
Travelling expenses	Variable	Product transfer fees	variable
Audit fees	Fixed	Miscellaneous expenses	50% fixed
Legal and professional fees and expenses	50%	SAP related expenses	Variable

Source: Annual Reports; BNL

4.9 Profitability and Financial Ratios

An arithmetic relationship expressed in the form expressed in the form of presentation or in fraction is known as ratio. Ratio analysis is a technique of analysis and interpretation of financial statement. To evaluate the performance of an organization by creating the ratio from the figures of different accounts consulting in balance sheet and income statement is known as ratio analysis. Ratio can be classified in to two broad groups. One of them profitability ratio shows the overall efficiency of the business concerns. Another one financial ratio shows the long term as well as short term as well as short term solvency of the concern.

4.9.1 Profitability Ratio analysis

Profitability ratios can be determined on the basis of either production or investments. Different profitability ratios calculated in appendix VII to appendix XI are presented in table 15 below.

Table -15

Profitability Ratios

Ratio	2006/07	2007/08	2008/09	2009/10	2010/11
Gross profit ratio	42.76%	38.28%	43.31%	41.87%	43.54%
Operating profit ratio	19.10%	13.56%	16.62%	16.49%	15.92%
Net profit ratio	9.08%	3.18%	3.42%	5.65%	(9.22%)
Return on equity shareholders fund	6.98%	2.80%	3.03%	4.65%	(8.18%)
Return on total assets	4.69%	1.87%	2.40%	3.51%	5.45%

Source: Appendix VII, VIII, IX, X, XI

From the table 15, it can be said that the rate of return either a term of production or in term investment is not stable or it is in fluctuation trend. Gross profit ratio is highest in the FY year 2010/11 and lowest in the FY year 2007/08. Operating profit ratio is highest in the FY year 2006/2007 and lowest in the FY year 2007/08. Net profit ratio return on equity shareholders fund and return on total assets are negative in the FY 2010/11 because of net loss. So net profit ratio return on equity shareholders fund and return on total assets cannot be considered as satisfactory.

4.9.2 Financial Ratio Analysis

Financial ratios are calculated to see the short term as well as long term solvency of the firm. Different financial ratios calculated in appendix XII to appendix XVI presented in table 16 below.

Table -16

Financial Ratios

Ratios	Ideal Ratio	2006/07	2007/08	2008/09	2009/10	2010/11
Current ratio	2;1	1.49	1.60	2.57	2	1.58
Quick ratio	1:1	0.43	0.28	0.79	0.13	0.36
current assets to fixed assets ratio		0.96	1.09	1.02	1.04	0.88
Proprietary ratio	0.3	0.67	0.66	0.79	0.75	0.67

Source: Appendix XII,XIII,XIV,XV,XVI

The table 16 shows that the current ratio is in fluctuating trend and in the FY 2009/10 current ratio are 20 which maintain the ideal ratio. And it is higher than ideal ratio in FY 2008/09 but it is lower than ideal ratio in other years. Quick ratio is always than the ideal ratio but in the FY 2008/09 it is considerable. And in the FY 2009/10 it is improved than 2006/07 therefore, it can be sad that the solvency of the company is being improved. Fixed assets to capital employee ratio are Considerable in each year. Current assets ratio is in fluctuating trend. Current assets it fixed assets ratio is the lowest in

the FY 2010/11 proprietary ratio is much higher than the ideal ratio because there is no any long term debt of the company shown in the balance sheet expect FY 2010/11. The financial condition and solvency of the company is satisfactory.

4.10 Break Even Analysis of BNL

The relationship among cost, revenue and profit is known as cost volume profit analysis. CVP analysis is a powerful instrument in management decision making especially in cost control and profit planning. It helps to determine the minimum production volume to above losses and the production volume at which the targeted profit amount of the company will be achieved.

Profit planning can be done only when the management has information about the cost of products. Both fixed and variable costs and the selling price of the product. CVP analysis is specially applied for profit planning and control. The Cost Volume Profit relationship will be established by break even analysis.

4.10.1 Break Even Analysis of BNL

Table -17

Income Statement for the year 2006/07 to 2010/11 in '000'

Particulars	2006/07	2007/08	2008/09	2009/10	2010/11
Production revenue	535494	609654	632114	614739	621827
Less: Variable cost	352344	442872	439687	423915	430753
Contribution margin	183150	166782	192427	190824	191074
Less: fixed cost	145594	149166	160827	150345	163497
Earnings before tax	37556	17616	31600	40479	27577
Profit volume ratio	0.34	0.27	0.30	0.31	0.31
Break even production	428218	552467	518797	484984	527410
Percent of break even production	80	91	82	79	85
Margin of safety	107276	57187	113317	129785	94417
Margin of safety ratio	20	10	18	21	15

Source: Appendix XVII, XVIII

The table 17 shows the calculation of profit volume ratio of BNL for the five year period. An increase in contribution margin would mean increase in profit only because fixed costs are assumed to be constant at all levels of production. This ratio would remain constant at different levels of production since variable costs as a proportion remain constant at

various levels. Management should try to increase the value of the ratio by reducing the variable cost or by increasing the selling price. The break even analysis increase 2009/10 than 2008/09 than the variable cost increase F.Y. 2008/09 so there was different at profit volume ratio and breakeven and margin of safety ratio.

4.10.2 Cash Break Even Point

The CVP relationship can also be used to show the liquidity position of the form. This is one through the computation of cash breakeven point or cash break even sales revenue (BEP amount). It can be expressed by:

$$\text{CBEP} = \frac{\text{Cash fixed cost}}{\text{PV ratio}}$$

Table -18**Cash breakeven point for the year 2006/07 to 2010/11 in RS'000'**

Particulars	2006/07	2007/08	2008/09	2009/10	2010/11
Production revenue	535494	609654	632114	614739	621827
Contribution margin	183150	166782	192427	190824	191074
Cash fixed cost	93631	89742	94800	88763	98112
Profit volume ratio	0.34	0.27	0.30	0.31	0.31
Cash breakeven point	273385	332378	316000	286332	316490
Present of breakeven production	52	55	50	47	51
Margin of safety	260109	277276	316114	328407	305337
Margin of safety ratio	49	45	50	53	49

Source: Appendix XVIII, XIX,XX

The table 18 shows the margin of safety of BNL over the five year period. Margin of safety of BNL is in increasing trend up to FY 2009/10 but it is decrease in the FY 2010/11. The higher margin of safety indicates the better profitability of the company. It is highest in the FY 2009/10 and it is the lowest in the FY 2006/07. This affect on safety margin ratio it increase F.Y. 2009/10 than F.Y. 2008/09.

4.11 Change Effect and Relationship of CVP Analysis Factors

Profit is the function of variety of factors. It is affected by changes in volume, cost and price. Profit may be affected by the changes in price volume variable cost, fixed cost and combination of factors, which shows proportionate relationship positive relationship inverse relationship and no relationship. Lower BEP is better than the higher BEP for the comparison of result.

4.11.1 Change Effect of sales Volume

An increase in the production value will increase profit volume will increase profit volume ratio and as a result, will lower the breakeven point. On the opposite a decrease in production value will reduce the profit volume ratio and therefore result in a higher breakeven point. If increase and decrease of production value by 10% with other factors assumed to remain the same, it gets following result.

Table -19**Income Statement with change in sales for the year 2006/07 to 2010/11 in RS '000'**

Year	Particulars	Sales	VC	CM	FC	Profit	p/v ratio	BEP	% change in BEP
2006/07	Original	535494	352344	183150	145594	37556	34	428218	
	10% increase	589043	352344	236699	145594	91105	40	363985	(15)
	10% increase	481945	352344	129601	145594	(15993)	27	553237	25
2007/08	Original	609654	442872	166782	149166	17616	27	552467	
	10% increase	670619	442872	227747	149166	78581	34	438724	(21)
	10% increase	548689	442872	105817	149166	(43349)	19	785084	42
2008/09	Original	632114	439687	192427	160827	31600	30	536090	
	10% increase	695325	439687	255638	160827	94811	37	434668	(19)
	10% increase	568903	439687	129216	160827	(36611)	23	699248	31
2009/10	Original	614739	423915	190824	150345	40479	31	484984	
	10% increase	676213	423915	252298	150345	101953	37	406338	(16)
	10% increase	553265	423915	129350	150345	(20995)	23	653674	35
2010/11	Original	621827	430753	191074	163497	27577	31	537410	
	10% increase	684010	430753	253257	163497	89760	37	441884	(16)
	10% increase	559644	430753	128891	163497	(34606)	23	710857	35

Source: Annual Reports; BNL

The table 19 shows the break event amount has decrease with the increase in production value of 10% that indicates the price of value of production and breakeven point has inverse relation. Similarly, the decreased production value by % increased the break even production.

There is the increasement of BEP by 25% 42% 31% 35% and 35% with the 10% decrease in production volume in the year 2006/07, 2007/08, 2008/09, 2009/10 and 2010/11 respectively. Similarly, there is the reduction of BEP by 15% 21% 19% 16% with 10% increase in production volume in the year 2006/07, 2007/08, 2008/09, 2009/10 and 2010/11 respectively.

From the observation the rate of increment is higher than the rate of reduction in BEP with the constant change of production volume in the respective years. Therefore, it can be said that the decrease in production affects the company more than the increase in production by same percent. However the production trends in increase and decrease order the company should careful in the function production especially in those controllable that may reduce the production volume.

4.11.2 Change Effects of Variable Costs

The impact of change in variable costs on profit is straight forward if it does not cause any changes in selling price or volume. An increase in variable cost will decrease profit volume ratio and a result. Will higher the breakeven point. On the opposite a decrease in variable cost will increase the profit become ratio as a result. Will lower the breakeven point. If increase and decrease of variable cost by 10% with other factors assumed to remain the same, it gets following result.

Table-20**Income Statement with Change in Variable Cost for the year 2006/07 to 2010/11 in RS '000'**

Year	Particular	Sales	VC	CM	FC	Profit	P/V ratio	BEP	% change in BEP
2006/07	Original	535494	352344	183150	145594	37556	34	428216	
	10% increase	535494	387578	147916	145594	2322	28	519379	21
	10% decrease	535494	317110	218384	145594	72790	41	355107	(17)
2007/08	Original	609654	442872	166782	149166	17616	27	532467	
	10% increase	609654	487159	122495	149166	(126671)	20	745830	35
	10% decrease	609654	398585	211069	149166	61903	35	426189	(23)
2008/09	Original	632114	439687	192427	160827	31600	30	536090	
	10% increase	632114	483656	148458	160827	(12369)	23	679248	30
	10% decrease	632114	395718	236396	160827	75569	37	434668	(19)
2009/10	Original	614739	423915	190824	150345	40479	31	484984	
	10% increase	614739	466307	148432	150345	(1913)	24	626438	29
	10% decrease	614739	381524	233215	150345	82870	38	395645	(18)
2010/11	Original	621827	430753	191074	163497	27577	31	527410	
	10% increase	621827	473828	147999	163497	(15498)	24	681238	29
	10% decrease	621827	387678	234149	163497	70652	38	430255	(18)

Source: Annual Reports; BNL

The table 20 shows that the 10% increase in variable costs increase the breakeven point and 10% decrease in variable cost decrease the breakeven point which indicates that variable costs and breakeven point have positive relationship. There is the increment of BEP by 21%, 35%, 30%, 29% and 29% with the 10% increase in variable cost in the year 2006/07, 2007/08, 2008/09, 2009/10 and 2010/11 respectively. Similarly, there is the reduction of BEP by 17%, 23%, 19%, 18%, and 18% with the 10% decrease variable cost in the year 2006/07, 2007/08, 2008/09, 2009/10 and 2010/11 respectively.

From the observation the rate of increment is higher than the rate of reduction in BEP with the constant change in variable cost in the respective years. Therefore it can be said that the increase in variable cost affects the company more than the decrease in variable cost by same percent. Therefore company should careful in the fluctuation of variable cost especially in those controllable factors that may increase the variable cost and should try to control the cost to get stability in variable cost.

4.11.3 Change Effect of Fixed Costs

A change in fixed cost does not influence the PV ratio. Other factors remaining the same a full in the fixed costs will lower the BEP and rise the profit. An increase in fixed costs causes an incensement in BEP and decrease the profit. The changes of fixed costs with other factors reaming the same it will get the following result.

Table 21**Income statement with change in Fixed Cost for the year 2006/07 to 2010/11 in Rs. '000'**

Year	Particular	Sales	VC	CM	FC	Profit	P/V ratio	BEP	% change in BEP
2006/07	Original	535494	352344	183150	145594	37556	34	428218	
	10% increase	535494	352344	183150	160153	22997	34	471038	10
	10% decrease	535494	352344	183150	131035	52115	34	385397	(10)
2007/08	Original	609654	442872	166782	149166	17616	27	532467	
	10% increase	609654	442872	166782	164083	2699	27	607715	10
	10% decrease	609654	442872	166782	134249	32533	27	497219	(10)
2008/09	Original	632114	439687	192427	160827	31600	30	536090	
	10% increase	632114	439687	192427	176910	15517	30	589700	10
	10% decrease	632114	439687	192427	144744	47683	30	482480	(10)
2009/10	Original	614739	423915	190824	150345	40479	31	484984	
	10% increase	614739	423915	190824	165380	25444	31	533484	10
	10% decrease	614739	423915	190824	135311	55513	31	436487	(10)
2010/11	Original	621827	430753	191074	163497	27577	31	527490	
	10% increase	621827	430753	191074	179847	11227	31	580156	10
	10% decrease	621827	430753	191074	147147	43927	31	474668	(10)

Source: Annual Report ;BNL

The table 21 shows that the 10% increase in fixed costs increases the BEP with same percentage and the 10% decrease in fixed cost decrease the

BEP with same percentage. Therefore it can be concluded that breakeven point and fixed costs have proportionate relationship. From the absorption the change in fixed cost affects the BEP in same rate and the fixed cost of company is in increasing trend. Therefore company should analyze the nature and variability of cost and find the real and actual fixed cost since the current system of cost analysis and segregation is not scientific and practical.

4.12 Major Findings of the Study

From the above analysis of data informal discussion, it can be said that BNL is facing with so, many problems in the process of formulation and implementing profit plans. Though the company has been earning profit since many years, the future picture of the co from the view-point of profit is not bright until reduces unnecessary costs and adopt systematic way for PPC system. External and internal factors are affecting the company work. BNL isn't working at full capacity

The following are some major findings of BNL

- The company hasn't maintained the broad and long range objectives and period report and objectives are limited to the high ranking official only.
- Relevant internal and external market variables are not fully explored.
- Unable to define clearly the duties and responsibilities of their employees. So there is role conflict and no coordination between departments and personnel.
- The top executives are only involved in planning and decision making and lower participation is encouraged.

- Cost classification isn't systematic. There is no practice of segregating semi-variable cost into variable and fixed.
- BNL isn't achieving full capacity.
- Management information system isn't performance based.
- Sales and production targets aren't achieving due to defective forecasting.
- Shortage of raw materials is creating difficult to achieve full capacity utilization and continuous production.
- Enterprises has no financial plan, they have only sales and production forecast.
- There are no any proper criteria for performance evaluation for financial tools.
- The company records in performance variance because its actual performance fall below budgeted.
- There isn't also systematic in purchases for necessary equipment and fixed assets.
- In the company there is no effective inventory policy. The inventory management Raw material handling and controlling system are not efficient and effective.
- The company has no detailed and systematic expenses plan. The fixed variable and mixed expenses plan is the necessary elements for profit planning and control.
- The company production trend is in an increasing trend.
- There is no any effective plan for cost reduction and control.

- The profit Trend of the company is not satisfactory as compared to profit proportion is very low with fluctuated trend.

CHAPTER- 5

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary

The main objective of this study is to enhance the lack of study of the Cost Volume Profit Analysis in the organization, which can enhance the performance of the organization and take a significant look on the cost utilization. Major finding that this study showed are as follows:

BNL is one of the top ten companies listed in the NEPSE in term of the market capitalization. It produces such soft drinks, which have highly demand in the national market. BNL has covered nearly 90% of the Nepalese market compared with other bands of the similar products. This co. produces five varieties of soft drink like Coke, Fanta, Lime, Sprite and Soda. This co. is managed by F&N Coca-Cola Pvt. Co. Ltd. Based in Singapore. BNL is also providing drink water under the brand name of Kinley.

Profit planning of the companies and firm has become very important and necessary tools for both deficit and surplus units of the growing financial markets of our country Nepal. So, profit plan is the lifeblood of every organization, which not only keeps it alive but also assures the future and creates the soundness on it. PPC means the development of objectives, which motivate the organization to achieve the objectives effectively and efficiently. It is one of the most important mechanisms for planning and controlling business operations. The effective operation of a business

concern resulting into the excess of income over the expenditure fully depends upon as to what extent the management follows proper planning, effective co-ordination and dynamic control.

The main objective of planning to increase the chance of making profit. Planning can be broadly divided into two groups as functional plan and financial plan. Functional plan includes Sales plan; Production plan, Purchase plan; labor plan and expenses plan. Financial plan includes Fund flow plan; income statement and Balance sheet. Profit plans are prepared for two dimensions consisting of strategic (5 to 10) years plan and tactical (for one year detailed by interim period) having prepared a plan it is equally important to implement effectively and watch performance. Difference between actual results and budgeted is the necessary. To assure the planned realization of the forward is plan.

Analysis and descriptive research design is followed mainly based on secondary source of data. Statistical tools like percentage, mean, standard deviation, correlation coefficient etc. have used to analyze the data. Similarly financial tools like financial ratio, CVP analysis etc., have been used.

This study has tried to analyze and examine the practice, procedure and techniques of preparing various functional budgets. It also tried to answer certain questions stated in the statement of problem.

The basic objective of the present study is to highlight and examine the present practice of profit planning and its effectiveness in BNL. For fulfillment of the objective of in BNL, various functional budgets are analyzed in detail. These data have been analyzed with the help of various statistical and financial tools. Data have been collected from secondary sources; various books; published and unpublished reports by the co. etc.

The study has been organized in six main chapters consisting of (i) Introduction (ii) Review of Literature (iii) Review of Research Work (iv) Research Methodology (v) Data Presentation and Analysis and (vi) summary, conclusion and Recommendation.

5.2 Conclusion

Different types of theoretical tools and techniques of profit planning have not been applied by BNL. It shows gap between the theory and practice. BNL has not applied cost - volumes- profit analysis and segregation of costs in to fixed and variable. Increasing operating and maintenance cost in each year is another remarkable of BNL. They have not adopted the costs control programmed. Company had no clear cot foundries to separate cost in to fixed and variable. The classification of cost is not scientific and systematic. Therefore BNL has not been able to CVP analysis and make the realistic budget. After analyzing in detail the present practice of profit planning in BNL, the following concludes can be drawn:

- There is not complete and comprehensive budgeting system. BNL doesn't prepare long term strategic profit plan but prepare short-term profit plan only in term of budget for each year.
- Lack of skilled planner and budgeting experts. Budgets are prepared on traditional basis.
- It is no research and development work for improving factory productivity capacity utilization and cost control.
- Misappropriation of materials in BNL is one of the major factors of less profitability.

- The plans are prepared from top level and later it is communicated to the lower level in terms of required target but not in the term of the action plan there is lack of authorities to formulate various plans in lower level management.
- There is no planning for purchasing of materials and sales of goods.
- Company has not analyzed co.'s strength and weakness. The following strength and weakness of the company are.

❖ Strengths:

- BNL produces best quantity cold drinks which has covered nearly 90% of Nepalese market.
- Use local manpower during peak seasons.
- Uses sugar available from local market.
- Co2 gas is produced.
- Machine & equipment were installed recently.
- Easy to sell products.

❖ Weakness:

- High production cost
- Market competition from other brands of similar product.
- The company is unable to lunch various new products to fulfill the consumer demand.
- The raw materials are not easily availability from other countries.

- The company pays large amount of tax.
 - There is excess burden of fixed cost.
- Overhead budget is not prepared in a systematic and scientific manner by BNL. All the expenses are shown in general expenditure budget.
 - Functional budgets are not prepared on modern basis. They are prepared on traditional basis.
 - There is no systematic classification of cost as fixed and variable components.
 - BNL has adopted two channel of distribution system. One is producer to distributor to consumer and another is producer to retailer to consumer.
 - BNL has no systematic forecasting for sales budget.
 - Fixed cost and non manufacturing cost are growing high and planner or financial department are not thinking to reduce fixed cost and non manufacturing cost.
 - The co has not given more emphasis for advertisement activity. Advertising activity is not sufficient so more and proper media should be used because advertise plays important role for sale of goods.
 - The pricing policy of the company is based on the going rate to determine price.
 - It has no marketing specialists. So the company is unable to develop an alternative marketing policy for sales expansion.

- The main reason for low capacity utilization is due to unavailability of right material of right quantity at right place and right time.
- There is significant correlation between sales target and sales achievement similarly production target and production achievement. It indicates that increased in targeted sales will also increase achievement sales similarly also affected in production plan.
- Total sales achievement and production of BNL are fluctuating year after year. So, the rate of trend and growth in not stable.
- BNL is labor intensive factory but it has not adopted systematic approach of labor planning to produce the planned quantities of goods on the basis of the direct labor hour and direct labor cost.
- All employees' salaries are paid on time basis which gives them a fixed salary. Due to fixed payment on time basis, qualified and creative personnel are frosted.
- BNL has not formulated competitive sales strategies. Adequate authority to decide and create new ideas to formulate various plan are not available.
- BNL has no inventory policy. The finished goods inventory levels have been fluctuating each year.
- Regression line about sales of BNL indicates a positive trend.
- There is no clear-cut policy to separate cost into fixed and variable. The costs are roughly classified and such classification is not scientific and appropriate.

- There is no fair system of reward and punishment to employees on the basis of their work and employees of BNL are not sensitive of their duties and responsibilities.
- The corporation has not development the alternative way to earn profit.
- Gross profit margin and net profit margin are not in increasing trend.
- Capital expenditures proposal are not evaluated with discounted cash flow method.
- Flexible budget shows that the profit of BNL increase, sales will increase.
- Co-efficient of determination of sales as well production shows that another reason also effect forecasting of sales.
- The Company has developed performance evaluation system.
- The Company is earning profit but the profit trend is not increasing.

5.3 Recommendations

On the basis of the study of use of CVP analysis to plan the profit of BNL. It seems necessary to develop implement and improve the process of CVP analysis from beginning to end with PPC. Nepal is proceeding towards

globalization with membership of WTO. Nepalese company should fit with the global environment with best fitted managerial strategies for better utilization of the limited resources and achieve goal through strong

competition application of advance profit planning and control tools can be great help. Thus after the detail analysis of the profit planning system of BNL the following points can be recommended for effective profit plans.

- BNL should have major programs to achieve set up objectives by taking full advantages of the latest techniques.
- The management of the co. needs to increase production and sales volume for the utilization of available capacity.
- The company should develop long term strategic plan.
- The objectives are the basic guidelines of the company therefore BNL should clearly define its broad objectives and should have in depth analysis of the company's strength and weakness.
- Sales and production budget should be prepared on the systematic approach. Sales & production forecasting should be made after analyzing all the variables that affected the market of the company.
- Participative management, profit planning manuals and effective budget education should be introduced.
- The company should identify duties and responsibilities clearly for employees. All the departments should be assigned full authority and should be made accountability to decide and create new ideas to formulate various policies.
- Alternative supply sources of raw materials should be developed to increase capacity utilization.

- BNL should maintain proper co-ordination between and market demand.
- Direct labor expenses budget should be prepared.
- Volume of finished goods inventory & raw materials inventories should be reduced to optimum level.
- Reward and punishment system should be effective and should be based on work performance. So, internal evaluation must be followed.
- Selling and distribution expenses should be fixed on terms of sales revenue and market programmers introduced and implemented.
- Plastics and proper pouches package should be introduced by the co. for the convenience of the consumers.
- The co. should to launch various training new products to fulfill the consumer demand.
- The co. should launch various training and orientation programs within and outside the company for all levels of employees which will help in bridging gaps between motivation and morale.
- Classified of an expenses items as controllable and non controllable must be made within a specific framework of responsibility.
- Efforts should be made to avoid the idle working time strict supervision is necessary to watch and control the wastage of working hour of the employees.

- BNL should study the present cost structure and develop cost effectiveness program for planning profit. There should be a good system of dividing cost into fixed and variable.
- BNL should adopt more effective advertising system to communicate the significance of products because advertising plays most important role in the marketing.

Finally, a system of periodical performance reports should be strictly followed to be conscious about poor performance and take corrective actions immediately. So the BNL should regulate a systematic comprehensive profit planning. This can considerably increases the profitability of the company.

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