COST-VOLUME-PROFIT ANALYSIS AS A TOOL OF PROFIT PLANNING AND CONTROL

(A case Study on Unilever Nepal Limited.)

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RECOMMENDATION

This is to certify that this thesis

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"Cost -Volume- Profit Analysis as a tool of profit planning and control, A case study on Unilever Nepal Limited."

has been approved by this department in the prescribed format of Faculty of management Tribhuvan University. This thesis is forwarded for evaluation.

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We have conducted the Viva-Voce examination of the

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and found that thesis to be the original work of the student and written according to the prescribed format. We recommend this thesis to be accepted as partial fulfillment of the requirement for:

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<u>VIVA-VOCE COMMITTEE</u>

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Lastly, I want to say that this research paper is my original work. I do not want to declare that this study is perfectly satisfactory and complete as there may be limitations and short comings because of limitation time and resources. I hereby want to take the responsibility of all those.

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DECLERATION

*I, hereby declare that the work reported in this thesis entitled **"Cost Volume Profit Analysis As a Tool of Profit planning and control, A case study on Unilever Nepal Limited."** Submited to Balkumari Collage, Faculty of management, Tribhuvan University, is my original work done in the form of partial Fulfillment of the requirement for the master Degree in Business study under the Supervision of Mr. Shiva Prasad Poudel, Lecturer, Balkumari Collage.*

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CHAPTER - I

INTRODUCTION

1.1.   Background of the Study

Industrialization is an important factor for achieving the basic objective of a country's economic and social progress. Now a day's industrialization is considered as an essential for the economic development of a country. It facilitates on effective mobilization of resources such as capital and skill, which might otherwise remain unutilized. It also acts as a vehicle for fostering innovation and technological improvement for industrial development, thus has a multiplier effect on the economy.

There are a number of features mainly social and economic, which are common to all the poor countries and Nepal is not an exception to this. Most of the population is engaged in agriculture resulting the semi-unemployment. Incomes are far less equally distributed. Land is short:, our country has every possible characteristics of the least developed nation of the world. It is dominated by agriculture which accounts for 40 percent of Gross Domestic Product (GDP), provides employment to 75 percent of the economically active population of the country in 2007. Hence, Nepal has remained as one of the poorest country in the world with around 325 us dollar per capita income, (**ADB Report 2007).**   This can be attribute to inefficient use of the resources in both sector i.e. agriculture and industry. But in recent years the non-agricultural sector is contributing more in GDP than the agricultural sector. The area of information and communication retains the importance as an inevitable infrastructure for the development of the country. (**Economic and Industrial Report, United Nations**. (**1994)**

Present context of the world is the mixed economy. In such system the private sector has to play a predominate role in market orient and competitive economic activities in order to increase production through efficiency and enhancement in resources use. However the government involvement also exists in some of the

specific services, development pre-requisites, services and industries assisting in the improvement of the economic condition of rural poor and the down trodden and relating to important defense matters.

"Industrial backwards lends to economic backwardness. Industrialization therefore helps to create a country's economic infrastructure and gives a path for diversification in to a new area of activities. One of the merits of industrialization is that it makes possible for countries to satisfy their own requirements to the greater degree. (**Economic and Industrial Report, United Nations**. (**1994)**

In recent years the growth rate is not so more satisfactory however the manufacturing sector has to face numerous problems, which have acted as constraints in the growth rate 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- avalilty of assured energy at reasonable rates, non avality 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, scarcity of Electricity, labour union strike, insecurity of transportation etc. are faced by Nepalese private manufacturing organization.

The Industrialization was thus the result of different forces. Industrial units were founded in areas, which ensured an abundant supply of raw materials with the return of business operation to normal after the world war, most of companies were liquidated. They couldn't sustain the post war recessionary affects and much of foreign capital was withdrawn. These short lived industries were thus of war time babies which demised caused a big set to the process of industrialization.

In Nepalese context both import substitution and export promoting industries are needed. Our first attention is toward the establishment of import substitution industries. These two import substitution industries and export promoting industries have great importance to our economy. Import substitution industry will

help to minimize the import of the goods as well as local resources such as capital, material, labour etc. will got employment within the nation. Besides this, these industries will generate revenue more maximize the export of goods and will generate income to the nations fund.

Now, Nepal has adopted the policy of economic liberalization and privatization and also got the membership of world trade organization (WTO) through the globalization. For strengthening the economy of any country both the private and public sector should play vital role. Now government is adopting liberal foreign direct investment policy to encourage foreign investors. These policies create positive impact to the private manufacturing companies for industrial development. Due to the poor performance in term of capacity utilization, productivity, efficiency and profitability of Nepalese public sector manufacturing company need to take competitive strategy, innovation, research and development to be alive in competitive environment of globalization today. Industries can sustain their existence and growth only through a continuous process of innovation in functions, quality and cost of product.

1.2 Brief Overview of Unilever Nepal Limited

This study attempts to focus on Unilever Nepal Ltd. Unilever Nepal ltd. (UNL) was formed as a subsidiary company of Hindustan Unilever ltd. of India. It is a multinational company. Unilever Nepal ltd. Is first joint venture of Hindustan lever limited outside India. The factory is situated at Basamadi VDC-5 of Makawanpur District, 6 Km. far from Hetauda of central development region of Nepal. The corporate office of the company is situated at Heritage plaza II, Kamaladi, Kathmandu. UNL was formed as a public limited company in 1993 and production started from December 1994. It was registered under company Act 2053. As a growing manufacturing company, UNL has main objective of expanding the domestic business by introducing new brands and categories in the domestic market and import substitution of foreign goods too. UNL is producing different consumer goods in Nepal by using the developed and advanced technology. It has earned the significant popularity in short period because of its service towards the consumer and the contribution made for the economic development of the country.

Despite, difficult trading conditions, the company's domestic business achieved market growth of 27 percent during the year 2064/065. As indicated in the earlier year there has been substantial increase in export rating by 25.51 percent. Further withdrawal of the rebate on income tax on profit on exports and the high cost in manufacturing for exports from Nepal has made the export business unviable but overall volume of business of UNL has increased by 25.72 percent during year 2064/065 (i.e. from 15th Annual Report)

The domestic turnover has increased by 20 percent in the current year than the previous and the export turnover increased by 15 percent for the year. Hence the overall turnover is marginally higher by 22.5 percent for the financial year 2064/065(i.e. From 15th Annual Report)

The company received the **"First FNCCI national excellence award"** for it's overall performance.

UNL is taking a great corporate social responsibility. It has contributed in various ways to the social sector. UNL is proud of its role in the income and employment generation opportunities in the country. UNL has been providing direct employment to a nearly 133 Nepalese citizens and indirect employment per over 10 times through it's network of suppliers, distributors and ancillaries (15 th annual report 064/065). It is already one of the largest corporate taxpayers of government of Nepal.

It is involving in various social projects. The UNL employee trusts mobile medical unit, which is extensively used in Makawanpur district for providing emergency medical services. A three months "sewing machine training programme." for 33 women has been conducted at the Makawanpur district periodical health hygiene awareness programme were conducted together with health check ups programme for local people. This was funded by one-day salary of all the employees with matching contribution of the company. Pepsodent and Nepal dental association together celebrated weeks health broadcasting, health message on T.V, Radio and press. A number of free dental checkups clinics were conducted with support of pepsodent.

UNL continued to lunch many innovative marketing initiatives focusing on the domestic business. Close up toothpaste sponsored "**sinners in Heaven 2005"** a lively youth event attended by over 1500 youth. Sunsilk and fair & lovely sponsored Padmakanya fair. Similarly, close up Hits F.M. music awards, the most prestigious award that honors the performance of musical community of Nepal made live telecast on National television and hits F.M. the program was well responded and had very good press coverage. Further on the occasion of valentines day close-up organized a special event which included 3 days long musical and interactive programs covered on F.M. radio. Sunsilk celebrated international women's day by organizing 3 days long programs on F.M radio channels named "**Sunsilk strength of women, 2007."**

Products Producing by UNL:

Detergents and cakes   :   Wheel, Vim, Rin, Surf excel

Soaps   :   Lux, Liril, Breeze, Lifebuoy , Pears

Tea   : Lipton taaza, Lipton green level, Brooke bond,
                                  Red lable, Brooke bond & Yellow label

Shampoo   :   Sunsilk, Clinic plus

Toothpaste   :   Close up, Pepsodent

Oil   :   Clinic all clear, Nihar

Other Cream   :   New   fair   &   lovely   cream,   Fair   and
handsome cream,Vaseline, Lipgurd & Ponds

1.3 The Corporate Purpose of Unilever Nepal Ltd.

The main objective of UNL is to carry on its business of manufacturing detergent toilet soaps personal products, scourers, soap noodles, laundry soap, tea and Vanaspati.

Other objective of Unilever Nepal Ltd. Is to meet the every day needs of people everywhere to anticipate the aspirations of consumers and to respond creatively and competitively with the branded products and services, which rises up quality of life. They bring their wealth of knowledge and industrial expertise to the service of local consumers.

UNL has deep roots in local culture that the markets are unparallel inheritance thus has become foundation for the company's future growth.

For its long term success, UNL requires a total commitment to exceptional standards of performance and productivity to working together effectively and willingness to embrace new ideas and learn continuously. The company believes that the success required the highest of corporate behavior toward it's employees, consumer, society and the world in which it operates. Thus Unilever Nepal needs the sustainable profitable growth and long-term values creation for their shareholders and employee i.e. for their stakeholders.

1.4   Ownership of Unilever Nepal Limited

It is a subsidiary company of Foreign investment operating for technology transformation. It has an authorized capital of Rs. 30,00,00,000 (Thirty crores) divided in to 30,00,000(Thirty Lakhs) ordinary shares of Rs. 100 each. The issued subscribed and paid up capital reached to the limit of Rs. 9,20,70,000 (i.e. 9,20,700 ordinary shares of Rs. 100 each). The company is listed in Nepal stock exchange center and has a positive response from its investors. The composition and percentage of sharing on capital are as follows:

Group	Allocation of Shares	% of Shares	No. of Shares
A	Hindustan Lever Ltd,. India	80%	7,36,560
B	Shiva Kreem Land and Ind. Co. (Pvt.) Ltd, Kathmandu	5%	46,035
C	Shares Subscribed by the general public	15%	1,38,105
	Total	**100%**	**9,20,700**

Sources: Nepal Unilever Ltd. 15th Annual Report 2064/065

1.5 Introduction of Cost Volume Profit Analysis

Profit planning involves two aspects, profit and planning. Profit is the primary objective of business. Profit in the accounting sense tends to become a long term objective which measure not only the success of product but also it's Development in the market similarly planning means deciding in advance what is to be done in future. It is a method of thinking out acts before hand. Planning is the foundation of profit realization and a plan is a projected course of action.

In the context of Nepal the history of comprehensive and systematic budgeting is not so long. The first formal government budget was introduced in 2008 BS. Business budgeting in the complete and systematic manner was the rare case in the Nepalese commercial and industrial sector. Even application of comprehensive budget is still rarely being found Nepalese economy is agro-based. The business environment and current situation of commerce and industry is dismal. Few governments owned enterprises have been playing vital role in the economy. The Government has emphasized privatization of public enterprises in its eight-five years plan. (**National Planning Commission, Eight plan.)**

Management is the process of planning organizing, directing, decision making and controlling. In modern days profit planning is taken an important technique of decision making it is also regarded as a way of management and is given the name profit planning programmed. Success of any business enterprises by the capacity on surplus generation and it is not a matter of chance. Therefore every business organization should make a plan to estimate the profit with a help of various types of tools and techniques. Cost - volume - profit analysis can be used in profit planning because it provides the information about the behavior and relation of cost with volume and sales where the business will give zero profit or loss. It also provided the information about sensitivity of profit due to variation in projected amount of output or sales. It gives the idea about the amount of profit form the project sales volume and vice-versa.

Cost volume profit analysis may therefore be defined as a management accounting tools to show the relationship between the elements of profit planning. The whole picture of profit planning is associated with cost volume profit inter relationship. A popular technique to study cost volume profit relationship is breakeven analysis. Break even analysis is concerned with the study of revenues and cost in relation to sales of which the firm's revenues and total cost will be actually equal or the net income will be zero. It is a "**No profit No loss**" Situation. More precisely it is called the break even point. Cost -volume -profit analysis is sometimes referenced to simply as breakeven analysis. This may be misleading

because break even analysis is just one part of the entire CVP concept. Yet it is always taken as an important part of profit planning as it gives the planner many insights in to the data with which he/she is working Profit planning of each firm begins with break even analysis.

"CVP analysis is based on an explicit model of the relationship between three factors Cost, revenues and profit and how they change in a predictable way as the volume of activity changes." (Blocher chen and Lin, 1998)

There are three factors of cost volume-profit analysis which are inter-relationship and depend upon the costs and cost depends upon the volume of production. It assumes that under constant underlying condition, CVP analysis deals with how profit and loss change with the change in volume. Last but not least cost- volume-profit analysis is a helpful tool in managerial decision making, specially cost control, cost reduction and profit planning. In fact CVP analysis provides answer to question such as:

- What level of sales is needed to avoid the losses?
- What sales volume is needed to earn target profit?
- What would be the effect on profit if we reduce our selling price and sell more units?
- What sales volume is required to meet the additional fixed charges arising from advertising campaign?
- What will be the effect on the profit, where sales mix is changed?
- What will be the new-breakeven point when there is change in prices, costs, volume and sales mix?
- Which product or product mix is most profitable?
- Which product or product mix should be discontinued or not ?

1.6 Statement of the Problems

This study focus on CVP analysis as a management accounting tools to show the relationship between the ingredients of profit planning. Profit planning is the function of management to budget and revenue, loss and profit. The entire range

of profit planning is associated with CVP. Therefore it is also called the complementary of profit planning. CVP analysis provides the techniques of profit planning frameworks.

Based on the annual report published, performance of the Nepalese Industries can not be considered as satisfactory. Poor performance is the outcome of poor planning, controlling and decision making. This has raised the question whether Nepalese managers are competent enough? Do they practice cost -volume - profit analysis tools and technique to carryout planning, decision making and controlling function? The research questions are:

- Whether or not Unilever Nepal Ltd. is practicing CVP analysis?
- What are the major difficulties in the application of CVP analysis?
- In which areas of the business operation CVP analysis can be applied to improve the competitiveness of the company?
- Which parts (i.e. CM, BEP, MOS etc.) of CVP analysis are mostly practiced and which are not practiced till now?
- What is the situation of budgeted and actual activities?

It tells many things about the relationship between the business variables. 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 supplementary tools of planning of profit. CVP analysis applied in both profit making and non- profit making organization and also both manufacturing and non- manufacturing organization. CVP analysis is great helpful in managerial decision making, especially in cost control and profit planning. CVP analysis is a management accounting tools to show the relationship between the ingredients of profit planning. Profit planning is the function of the selling price of product and units sold. The entire amount of profit planning is associated with CVP inter-relationships. CVP analysis provides the managers with powerful tools for identifying these courses of action that will and will not improve profitability.

CVP plays significant role in PPC. When the discussion areas about private organization in the cost volume profit analysis as a tools of profit planning and control of the Unilever Nepal Ltd**.**

1.7.   Objectives of the Study

The main objective of this study is to examine, "Cost volume profit Analysis as a tools of profit planning and control of Unilever Nepal Limited." To other objectives are:-

- To study the relationship of cost volume and profit as a applicable tools of budgeting.
- To evaluate the profitability, financial position and sensitivity of Unilever Nepal Ltd.
- To analyze the cost, volume and profit of the company and it's impact in profit planning.
- To examine the practices and effectiveness of profit planning in Unilever Nepal Ltd.

1.8 Significance of the Study

The present research work is the study of the practice of cost volume profit analysis in Unilever Nepal Limited. This study will be significant in the following ways:

- It examines the application of CVP analysis in the company.
- It explores the problems and potentialities of the selected company. It will be useful to the potential managers, accounts, policy makers and planners etc.
- It provides information of the application of the tools under profit planning in different circumvents.
- This study also directed towards providing necessary recommendations to the related department of the company.
- It provides literature to the researcher who wants to carry on further research in this field.

1.9 Limitation of the Study

The study is concerned to CVP analysis as a tool of PPC. Every study is not free from problems of limitation. Similarly, this study is not free from limitation given below:

- Cost volume profit analysis covers the time of last five years only. (i.e. FY 2060/061 to 2064/065).
- The analysis is mainly based upon secondary data, which has obtained from the company's management.
- The accuracy of this study is based on true response and the data available from management of the company.
- The study mainly focuses to keep sensitivity analysis of cost.
- Due to limited time and resource constraint this study is neither the comprehensive nor extensive.
- This study is only related with some managerial, Financial and accounting aspects and it has not related with other areas.
- Being a case study, the result is not thoroughly applicable to all type of private organization.

1.10 Organization of the Study

For every research or study it is necessary to organize the study work it helps researcher by providing for making analyses and preparing report. The entire study has been organized in to five main chapters as:

Chapter – I: Introduction

The first chapter consider the brief introduction of the subject matter i.e. Background of the study, need of the study statement of the problem, objective and limitation of the study.

Chapter – II: Review of Literature

This part will be dealing broad picture of CVP analysis is a supplementary tools of PPC. In other words it focus on the

theoretical part of the study, including conceptual reviews and reviews of book, articles, Journals and thesis.

Chapter – III: Research Methodology

This chapter will be dealing with methodology that includes research design, nature and sources of data, data gathering procedure and analytical tools and technique used etc.

Chapter – IV: Presentation and Analysis of Data

This will be the most important and most extensive chapter as it includes the main theme of the study. This chapter consists of organizing, tabulating data, performing accounting and statistical analysis and conclusion are met.

Chapter – V: Summary, Recommendation and Conclusion

This is the concluding chapter where a brief Summary of the whole study will given, major findings of the research has been concluded and recommendations will be put together.

CHAPTER – II

CONCEPTUAL FRAMEWORK AND REVIEW OF LITERATURE

Conceptual framework and review of the literature is supported to revise the eminent literatures relating to the study. Various books, articles, statement and thesis etc. are the basis for preparing it. Some philosophers, writers or researcher have given the contributions on it since many years.

Planning and controlling are the primary function of business. A business can not 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 co-ordination and control.

2.1 Concept of Profit Planning

Profit: The basic objectives of running any business organizations is to earn profit. Profit serve a yardstick for judging the competence and efficiency of the management (Maheshwari, (2000) : C. 171)

"An investor will view it is gange of the return his or her money. In internal revenue agent might regard it as the accountant will define it simply as the excess of firm revenue occur the expense of producing revenue in a given fiscal period." (Willianson,(1992), P.N. 99-100).

In other words, profit is the primary measures of business success in any economy. Profit is not just happen but it is managed. If a firm can not make profit, it can not generate capital for future. Profits are residual income left after the payment of the contractual rewards to others and for production. The difference between the outflow of expenses (i.e. cost of production and selling that product) and inflow of income (i.e. sales price)

is called profit. It is a reward for business activities profit is obtained by subtracting the cost from revenue. Profits determine the financial position, liquidity and solvency of the company.

Planning: Profit do not just fall, it should be properly planned. In other words, profit is not a matter of change; it comes from effective and realistic plan. Planning is deciding in advance or forward thinking what is to be done in future? Planning is the process of developing enterprise's objectives and selecting future course of action to accomplish them. It is the method of thinking about acts and purpose before planning starts from forecasting and determination of future events. It is the first essence of management and all other functions are performed with in the framework of planning. Planning is the basic foundation of profit plans. Planning includes the establishing enterprises, objectives, developing promise about the environment in which they are to be accomplished, selecting a course of action for accomplishing the objectives, initiating activities necessary to translate plans into actions and current re-planning to correct deficiency. Planning is the basic foundation of profit planning and a plan is projected course of action "planning is a techniques were by the use pattern of resources is carried out." (Agrawal and Lal, (1989), Pp 348).

"Planning is deciding in advance what is to be done in future" (Bhusan, (1993), Pp 43). A planning process includes setting goals, evaluating resources, forecasting by different methods and formulating a master plan. Planning depends upon the organized objectives. Planning is the feed forward process to reduce uncertainty about the future. It is a method of thinking out acts and purpose beforehand. Management planning and control be gains with the establishment of the fundamental objection of the organizations and continuous as the process by which necessary resources are provided and employed effectively and efficiency toward the achievement of the goals. Planning involves the determination of what should be done, how the goal may be reached and what individuals or units are assure responsibility and be held accountable.

It is essentially a decision making process that provides a basis for economically and defective action in the future. Effective planning sets the stage for integrated action to take place, reduce the number of enforceable crises, promotes to use of more efficient methods and provides the basis for the management function of control, there by assuming to causes on organization objectives (Filppo, (1990), Pp 49).

Planning is the process of developing enterprises objectives and selecting future course of action to accomplish them it includes :
- Establishing enterprises objectives and goals.
- Developing premises about the environment in which they are to be accomplished.
- Making decisions about course of action.
- Initially actions to achieved the plans and
- Evaluation performance feedback for re-planning" (Welsh, Hilton and Gordon, 1992, Pp 51).

Profit Planning: Profit planning is, therefore a fundamental part of the overall management functions and is a vital part of the total budgeting process. The management determines the profit goals and prepares budgets that will lead them to the realization of these goals. Profit planning can be done only when the management has the information about the cost of the products both fixed and variables, and the selling price at which it will be in a position to sell the products of the company (Maheshwari, (2000) : C. 171).

Profit planning is planning for future operation in such a way as to maximize the profit or to maintain a specified level of profit. A comprehensive profit planning is also known as broad budgeting schedule developed in financial statement. Profit planning deals with the development of objectives, specification of short term goals and development of strategic and tactical profit plan. In other words, profit plan is a details expression of the expected results from the planning decisions profit planning is an important approach developed to facilitate for effective

performance of management process like as planning, organizing, staffing, controlling etc. Therefore, profit planning carryout the responsibility of forward thinking about the future operation of the organization.

A successful profit plan depends on many factors. The essential for successful profit plan are as follows:
- Support of top management.
- Clear and realistic goals.
- Assignment of authority and responsibility.
- Creation of responsibility center.
- Adoption of accounting system.
- Full participation and effective communications.
- Budget education and flexibility.

2.2 Profit Planning Process and Basic Elements

Profit is not just happen but it is planned. The major processes of profit planning are as follows: (Welsch, (1979): Pp 73-75).

- Identification and evaluation of external relevant variable.
- Development of the broad objectives of the business.
- Development of specific goals for the business.
- Development and evaluation of business strategies.
- Specification executive management planning instructions.
- Preparation and evaluation of project plans.
- Development and approval of strategic and tactical profit plan.
- Implementation of profit plan.

The basic elements of profit planning are as follows:

(i)   Comprehensive and Co-ordinate Plan

The profit planning considers all activities and operations of an organization. The budget prepared by different departments inside an organization gave to be complied or co-ordinate and it is done by profit planning. So before preparing a profit planning firstly, all the

departments have to be complied and that budget is known as comprehensive budget or profit planning.

(ii)   Expressed in Financial Terms

All activities covered by budgets are related with funds. Therefore, the budget has to be expressed in money units. (I.e. Rupees, Dollars, Pounds etc.)

(iii)   Plan for Operational Resources and Expenses

It is a plan for the firm's operating and resources of budget is a mechanization to plan for the firm's all operations or activities. The two aspects of every operation are revenue and expenses. The budgets must plan for the quantity revenue should not be done for revenue and expenses only. The plan should be made for carryout the operations. The planning for resources will include planning assets and sources of funds.

(iv)   Future Plan

It is a plan for specific period. Time dimension must be added to a budget. A budget is meaningful only when it is related to specific time. The budget estimates will be relevant only for some specific period.

2.3 Components of Profit Planning and Control

Profit planning and control is a systematic and formalized approach for accomplishing and planning, co-ordination and control responsibilities of management. Components of PPC are bones of a business/an enterprise. Which help it operate properly, efficiently and effectively? The components of PPC are as follows: (Welsch, (1979): 74).

(i)   The Substantive Plan

-    Broad objectives, missions, and short-term goals of the enterprises.
-    Specified enterprise goals,structure/responsibility, and authority.

- Enterprise policies and strategies.
- Instructions and communications of executive management planning.

(ii) **The Financial Plan**

   a) **Strategic long-rang profit plan**
   - Sales, Cost and Profit projections.
   - Major projects and capital additions.
   - Cash flow and financing
   - Personnel requirements.

   b) **Tactical Short-range profit plan**
   - Operating plan: It includes planned income statement sales plan, production for merchandise purchase plan, administrative expenses budget and appropriation type budget.
   - Financial position plan : It includes planned balance sheet (i.e. assets, liabilities, owner's equity)
   - Cash-flow plan.

(iii) **Variable Expense Budget (i.e. output : expenses formula)**

(iv) **Supplementary data (i.e. CVP analysis, Ratio Analysis)**

(v) **Performance Reports**

(vi) **Follow up, Corrective action and Preparing Reports**

2.4 Major Tools Use in Profit Planning and Control

Profit planning and control represents an overall plan of operations which covers a definite period and formulates of planning decision of management. It consists of three main budgets, which are:

(i) **Operating Budget**

The operating budget covers revenue and expenses. In other words, operating budget relates to the physical activities or operations of a firm such as sales, production, purchased, labour and other different expenses budgets. In specific term an operating budget has the following term:

a. Sales Budget: A sales budget is a detailed schedule of expected sales for coming period which is usually expressed in both amounts and units. Once the sales budget has been set, a decision can be made on the level of production that will be needed to support sales and the production budget can beset well. The sales budget is constructed by multiplying the expected sales in units by the sales price (Grrison, 1985).

Sales budget is prepared from sales forecast where as a sales forecast encompass potential sales for the entire industry as well as potential sales for the firm preparing the forecast. Sales results from prior years are used as a starting point in preparing a sales forecast (Welsch, Hilton and Gordon,(1992) : Pp173).

b. Production Budget : After the sales budget has been prepared, the production requirements for the forth coming budget period can be determined and organized in the from of a production budget sufficient goods will have to be available to meet sales need and provides for the desired ending inventory. A portion of these goods will already exist in the from of beginning inventory. The remainder will have to be produced. Thus, production need can be determined by adding budgeted sales units to the desired ending inventory and deduction the beginning inventory from the total (Horngree, Foster and Datar, (1999) :Pp 182).

c. Purchase Budget: In case of merchandising firm, instead of preparing production budget, it would prepare a merchandise purchase budget showing the amount of goods to be purchased from it's suppliers during the period. The merchandise purchase budget is in the same basic format as the production budget, except that, it shows goods to be purchased rather than goods to be produced.

d. Direct Materials Budget: After the production needs have been computed a direct material budget should be prepared to show the materials that will be required in the production process.

e. Direct Labour Budget : The direct labour budget is also developed form the production budget. Direct labour requirement must be computed so that the company will know whether sufficient labour time is available to meet production needs.

f. Manufacturing Overhead Budget: The manufacturing overhead budget provide a schedule of all costs of production other than direct material and direct labor. These costs should be broken down by cost behavior for budgeting purposes and a predetermined overhead rate is developed.

g. Selling and Administrative Budget : The selling and administrative expenses overhead budget contains a listing of anticipated expenses for the budget period that will be incurred in areas other than manufacturing the budget will be made up of many.

(ii) Financial Budgets

Financial budgets are concerned with expected cash receipts/disbursement financial position and result of operations. The components of financial budgets are:

a. Budgeted Income Statement: The budgeted income statement is one of the key schedules in the budget process. It is the document that tells how profitable operations are anticipated to be in the forth-coming period after it has been prepared, it stands as a bench mark, against which subsequent company performance can be measured (Garrison, (1985) :Pp 313).

b. Cash Budget: Cash budget is the detail showing cash receipt, cash disbursement and the balance cash. The cash budget is composed of four major sections: The receipts section, the disbursements sections, the cash excess or deficiency section and the financing section.

c. Budgeted Balance Sheet: Budgeted balance sheet is a statement of assets and liabilities prepared after the preparation of operating budget and financial budgets. It is based on functional or operating budgets, cash budget, projected income statement and the previous year, assets and liabilities. In other words, budgeted balance sheet develop by beginning with the current balance sheet and adjusting if for the data contained in the other budgets.

(iii) Appropriation Budget: The appropriation budget covers all types of expenditure on advertising and research sectors: A part from above budgets, PPC also has relationship with following additional budgets, CVP analysis, and completion of profit plan and performance reports:

a. Flexible Budgets: Flexible expense budget relates only to expenses or costs. They are also called dynamic, activity or output adjusted expenses budgets. The concept of flexible expense budget is that all expenses are incurred balance of passage of time, output, activity or combination of time and output or activity. They should be adjusted to actual output for comparison with actual expenses in periodic performance report.

b. Capital Expenditure Budget: Capital expenditure budgeting is a process of planning and controlling of the long term and short term expenditure for expansion, replacement, and contraction of fixed assets. Capital budgeting is useful to earn future profit and reduce future costs. The major elements of a capital expenditure budget are cash out flow and cash-in-flows. Cash outflow includes the cost of the project. The cash flows are affected by the provision of

residual value of old equipments, tax position, addition working during the life of a project. The non-cash expenses like depreciation and tax position can affect the cash inflows.

c. Zero Based Budgeting : Zero based budgeting is the method of budgeting in which managers are required to start at zero budget levels every year and to justify all cost as if the programmes involved were being initialed for the first time. No costs are viewed as being on going in nature; the manager must start at the ground level each year and present justification for all costs in the proposed budget regard less of the types of cost involved.

d. Activity Based Budgeting: Activity based costing can be lead to improved decision making which principles extend budgeting. Activity based budgeting focuses on the lost of activities to produce and sell products and services. It separates indirect costs into separate homogeneous activity cost pools. Management uses the cause and effect criteria to identify to cost drivers for each of these indirect cost pools.

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

f. Completion of Profit Plan: The principal output of a budgeting is a comprehensive profit plan that ties together all phases of an organization's operations. Completion of profit plan means the process of profit planning ends with the planned balance sheet.

g. Performance Reports: Performance report is an important part of a comprehensive PPC system. The performance reporting phase of a comprehensive PPC programme significantly influences the extent to which the organization's planned goals and objectives are attained.

2.5   Simple Structure of Profit Planning and Control

Figure No. 2.1

Simple Structure of Profit Planning and Control

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                    ┌─────────────────────────────┐
                    │ Profit Planning and Control │
                    └─────────────────────────────┘
                                   │
        ┌──────────────────────────┼──────────────────────────┐
        ▼                          ▼                          ▼
  ┌──────────┐          ┌──────────────────────┐        ┌──────────┐
  │ Planning │          │ Appraisal or co-      │        │ Control  │
  │          │          │ ordination           │        │          │
  └──────────┘          └──────────────────────┘        └──────────┘
        │                          │                          │
        ▼                     ┌────┴────┐              ┌───────┴───────┐
  ┌──────────┐           ┌────────┐  ┌──────────┐  ┌──────────────┐
  │ Revenue  │           │ Capital│  │ Master   │  │ Performance  │
  │          │           │ Budget │→ │ Budge    │  │ Reports      │
  └──────────┘           └────────┘  └──────────┘  └──────────────┘
        │                     ▲       ┌──────────┐  ┌──────────────┐
        ▼                     │       │ BEP      │  │ Flexible     │
  ┌──────────────┐            │    →  │ Analysis │  │ Budget       │
  │ Sales and    │         ┌──────┐   └──────────┘  └──────────────┘
  │ Services     │         │ Cost │─────────────────────→
  │ Budget       │         └──────┘
  └──────────────┘            │
                              ▼
                       ┌───────────────────┐
                       │ Production Budget  │
                       └───────────────────┘
                       ┌───────────────────┐
                       │ Material Budget    │
                       └───────────────────┘
                       ┌───────────────────┐
                       │ Labor Budget       │
                       └───────────────────┘
                       ┌───────────────────┐
                       │ Overhead Budget    │
                       └───────────────────┘
                       ┌───────────────────┐
                       │ Cash Budget        │
                       └───────────────────┘
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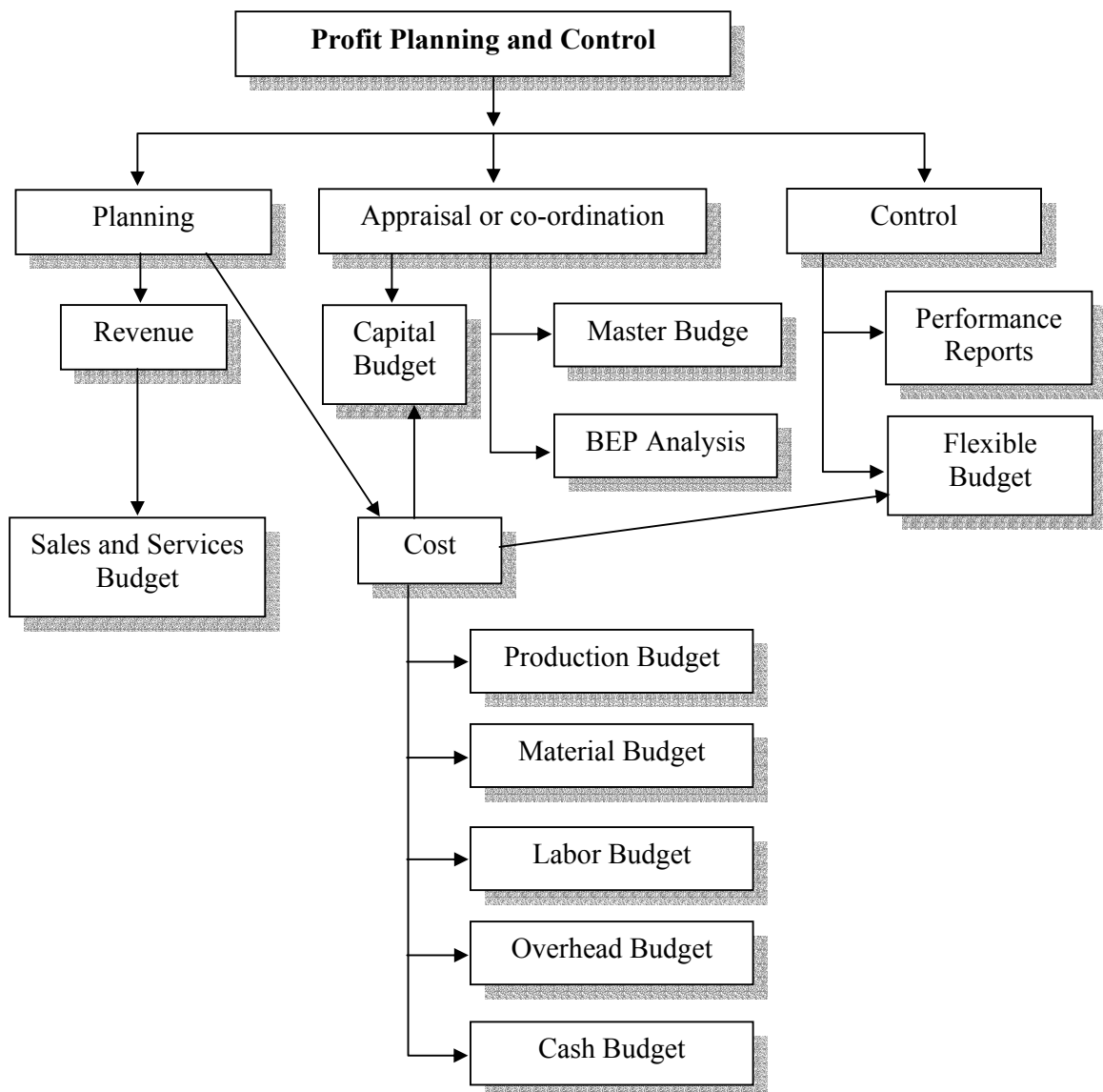
Chart : Structure of PPC

(Sources: Unpublished Thesis, Rijal Madhav, 2005)

2.6 Cost-Volume-Profit Analyses as Tools of Profit Planning and Budgeting

Cost volume profit analysis is an important tools of profit planning because it provides the information about the behavior of cost in relation to volume of production or sales where the business will break even, sensitivity of profit due to variation of output, amount of profit for a projection sales volume and quantity of production and sales for a target profit level etc. CVP analysis may therefore by defined as a managerial tools showing the relationship between various ingredients of profit planning (i.e. cost, selling price and volume of activity). CVP analysis is an important media through which the management can have an insight into effects on profit on account of variations in cost and sales and take appropriate decisions. CVP analysis is great helpful in managerial decision making. Specially, cost control and profit planning is possible with the help of cost volume profit 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. Cost volume profit analysis provides the answer to the question such as:

- What sales volume is needed to avoid losses?
- What sales volume is needed to earn a desired net profit?
- What will be the effect of change in price?
- Which product or operation of a plan should be discontinued?

2.7 Concept of Cost-Volume-Profit Analysis

The dictionary meaning of 'cost' is the price paid to acquire, produce, accomplish or maintain any things. 'Volume' is a mass or quantity of something or amount, 'profit' is the ratio of such pecuniary gain to the amount of capital invested and analysis is resolution, separation or breaking into parts. But actually cost-volume-profit analysis is the process of examining the relationship among revenues, cost and profits for a relevant range of activity and for a particular time frame. Basically CVP analysis involves finding the most favorable combination of variable costs, fixed costs, selling price, sales volume and mix of products sold.

CVP analysis provides the managers with powerful tools for identifying that course of action that will and will not improve profitability.

CVP analysis is a management accounting tools to show the relationship between the ingredients of profit planning; profit planning is the function of the selling price of product and units sold. CVP analysis is a technique explores the relationship which exists between costs, revenue, out level and resulting profit. Cost-volume-profit analysis can be extended to cover the effects on profits of changes in selling prices or services fees, cost, income tax rate and product mix. The aim of cost volume profit analysis is to have a fair estimate of total cost, total revenue and profit at various sales volumes. CVP analysis provides the management with a comprehensive overview of the effects on revenue and costs of all kinds of short-run financial changes. It is related to profit, sales, volume and cost.

Generally cost-volume-profit analysis provides information regarding (Munakarmi, (2003) : Pp124).

- Minimum level of sales to avoid losses.
- Sales level to earn target profit.
- Effects of change in prices, costs and volume on profits.
- Effect of changes in sales mix on profit.
- New break-even point for changes.
- Impact of expansion plan on CVP relationship.
- Products those are most profitable and least profitable.
- Whether to continue or discontinue the sales of product or operation of plant.
- Whether to close or not the firm for a short-term.
- Effect on operating profit with the increase in fixed costs, etc.

2.8 Use of CVP Analysis in Profit Planning

Planning, controlling and decision making are the essential managerial function. Cost-volume-profit analysis helps the managers to plan for profit to control cost and make decision. As such it helps (Munakarmi, (2003):Pp123–124):

- To determine the break-even point in terms of unit or sales value.
- To ascertain the margin of safety.
- To estimate profits or losses at various level of output.
- To help management to find the most profitable combination of cost and volume (units).
- To determine the optimum selling price.
- To determine the sales volume at which the profit goal of the firm will be achieved.
- To determine the maximum sales volume to avoid losses.
- To determine most profitable and least profitable product.
- To determine new break-even point for changes in fixed or variable cost.
- To assess the likely effect of management decisions such as an increase or a decrease in selling price adoptions of new method of production to reduce direct labour and increase output.

2.9 Application of Cost-Volume-Profit Analysis

Cost-volume-profit analysis is a apply specially for break-even analysis and profit planning. Business organizations are run to earn profit. 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. If the product, both fixed and variable cost and selling price of the product. The CVP relationship will be established by break-even analysis. Therefore, cost-volume-profit analysis uses for (Maheshwari, 2003).

- (i) Contribution margin analysis.
- (ii) Break-even analysis
- (iii) Profit-volume analysis

2.9.1 Contribution Margin Analysis: The difference between selling price and variable cost (i.e. the marginal cost) is known as "contribution margin" or "gross margin". In other words, fixed cost plus the amount of profit is

equivalent to contribution margin. It can be expressed by the following formula :

Contribution margin = Selling price –Variable cost

= Fixed cost + Profit

We can derive from it that the profit can not result unless contribution exceeds fixed cost. In other words, the point of no profit no loss shall be arrived at where contribution is equal to fixed costs (Maheshwari,(2000) : Pp176).

CVP analysis is the amount of contribution margin available from the sales volume of absorbs fixed cost and also contributes towards company's profit goal after deducting all variable cost of sales. When the contribution margin is high then also profit be high. Contribution margin usually is expressed as a percentage of sales or contribution margin ratio i.e.

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

$$= 1 - \frac{\text{Variable cost}}{\text{Selling price}}$$

The variables usually uses in cost-volume-profit analysis are :

(i) **Sales Value:** Any firm or company may have different products, services etc. The sales value is actually includes the quantity of total sales multiply by selling price per unit or sales rupees. Sales rupees is calculated by units multiply price per unit.

(ii) **Variable Cost:** Variable cost is that cost which is directly affected by change in the activity level. The per unit variable cost always constant. If the activity level is decrease, the variable cost also decrease. If the activity level or production level increase, than the variable cost also increase change of variable cost effects to P/V ratio, BEP and net income. When variable cost increase: Net income, P/V ratio and margin of safety will be decrease but it helps to increase BEP.

(iii) **Fixed Cost:** Fixed cost remain constant in total amount despite the changes in the level of activities. That is the fixed various. When other factors remain unchanged, the change in fixed cost effects to BEP and Net income. When increase the fixed cost: increase the volume of BEP and decrease the Net income or vice-versa. Fixed cost also called capacity cost. Such as factory supervision salary, rent, depreciation of factory etc.

(iv) **Mixed Cost:** Expenditure that cannot be categorized as purely fixed or variables is termed as mixed cost or semi-variable cost. Mixed cost contains both variable and fixed cost elements. Repair and maintains, supervision, telephone cost, electricity charge are some example of mixed cost. It should be separated from the variable and fixed cost elements as the function of profit planning, cost control and decision making.

(v) **Jumping Cost:** Some costs remain fixed over a wide range of activity, but jump to a different amount for activity levels outside that range. Such costs are called jumping costs or step fixed cost or moving fixed cost or ladder fixed costs.

2.9.2 Break-even Analysis: Break-even analysis is widely used technique to study cost-volume profit relationship. The narrower interpretation of the term break-even analysis refers to a system of determination of that level of activity where total cost equal total selling price. The broader interpretation refers to that system of analysis which determines probable profit at any level of activity. It portrays the relationship between cost of production, volume of production and the sales value. CVP analysis includes the entire amount of profit planning. While break even analysis is one of the techniques used in this process. However is so popular for studying CVP analysis that the two terms are used as synonymous terms (Maheshwari, (2000): C. 175 - 181).

The relationship between sales volume and profitability is explored in cost volume profit planning. Break-even analysis is a method of determining the point at which sales will just covers costs, that is the point at which the firm will break even, it also shows the magnitude of the firm's profit or loss if sales exceed or fall below that point. Break-even analysis is a logical extension of marginal costing. It is bases on the principles of classifying the operating expenses into fixed and variable components. Now a day it has become a powerful instrument in the hands of policy makers to maximize profits. It is a managerial technique to check the effect on profit change due to change in the level of production.

"Break even analysis is a method of relating fixed costs, variable costs, and total revenues to show the level of sales that must be attained. If the firms to operate at a profit." (Western and Brigham, Pp 60).

"It may be interpreted in two senses: narrow sense and broad sense. In narrow sense it refers to a system of determining that level of operation where total revenues equal total expenses. i.e. the point of zero profit. Taken in its broad sense it denotes a system of analysis that can be used to determine the probable profit at any level of operations" (Jain and Narang, Pp 5-9).

The break-even point is the level of activity where total cost equal to total revenue. It is a point of "no profit no loss". If the sales or productive is higher than break-even volume, there will be profit. In the same way if the sales is less than break-even sales, there will be loss. Break even analysis is important in the planning process, because the cost volume profit relationship can be greatly influenced by the proportion of the firm's investment in assets, which are fixed and changes in the ratio of fixed to variable assets are determined when financial plans are set.

(i) **Break-even Point:** The point which breaks the total cost and the selling price evenly to show the level of output or sales at which there shall be neither profit nor loss, is regarded as break-even point. At this point the income of the business exactly equals its

expenditure. Break-even point can be determined by the two methods (Maheshwari, 2000).

a. The Equation Method: Break-even point can be calculated by using following algebraic equations:

BE sales value   =   F.C. + VC ± 0

Or,   (BE sales units × SPPU)   =   FC + (BE Sales units × VCPU) ± 0

b. The Unit Contribution Method: BEP can also be ascertained through unit contribution margin approach. In this approach, BEP can be calculating by using following formula:

$$\text{BEP in Units} \quad = \left[\frac{\text{Fixed Cost}}{\text{CMPU}} \right] = \left[\frac{\text{Fixed Cost}}{\text{SPPU} - \text{VCPU}} \right]$$

$$\text{BEP in amount} = \frac{\text{Fixed Cost}}{\text{P/V Ratio}} = \left[\frac{\text{F.C.}}{\text{CMPU}} \times \text{SPPU} \right]$$

At break even point, the desired profit is zero. In case the volume of output or sales is to be computed for a 'Desired profit' the amount of 'Desired profit' should be added to fixed cost in the formula given above.

- **Cash Break-even Point :** It is the point where cash breaks even (i.e. the value of sales where cash realizations an account of sales will be just sufficient to meet immediate cash liabilities. While the calculating this point cash fixed cost (i.e. excluding depreciation and deferred expenses) and cash contribution (i.e. selling price less the cash variable costs) are considered. The point helps the management in determining the level of activity below which there are chances of insolvency on account of the firm's inability to meet cash obligations unless alternative arrangement are made (Maheshwari, (2000): Pp 178).

$$\text{Cash BEP} = \left[\frac{\text{Cash Fixed Cost}}{\text{Cash Contribution per unit}} \right] \text{in units}$$

- **Composite Break-Even Point :** In case a concern is dealing in several products, a composite break-even point can be computed according to the following formula (Maheshwari, (2000) : Pp 179) :

Composite BEP in Amount = $\left[\dfrac{\text{Total F.C}}{\text{Composite P/V Ratio}}\right]$

- **Cost Break-Even Point :** It refers to a situation where the costs of operating two alternative part is equal. The point enables the firm to identify which plant is the best to operate at or given level of output assuming that sales price per unit is the same (Maheshwari,(2000) : Pp 179-180).

(ii)   Break-Even Chart : The relationship between costs, sales and profit can be shown in the form of chart. Such a chart not only depicts the level of activity where there will be neither loss nor profit but also shows the profit or loss at various level of activity (Maheshwari, (2000) : Pp 181).

Figure No: 2.2

Break-Even Chart
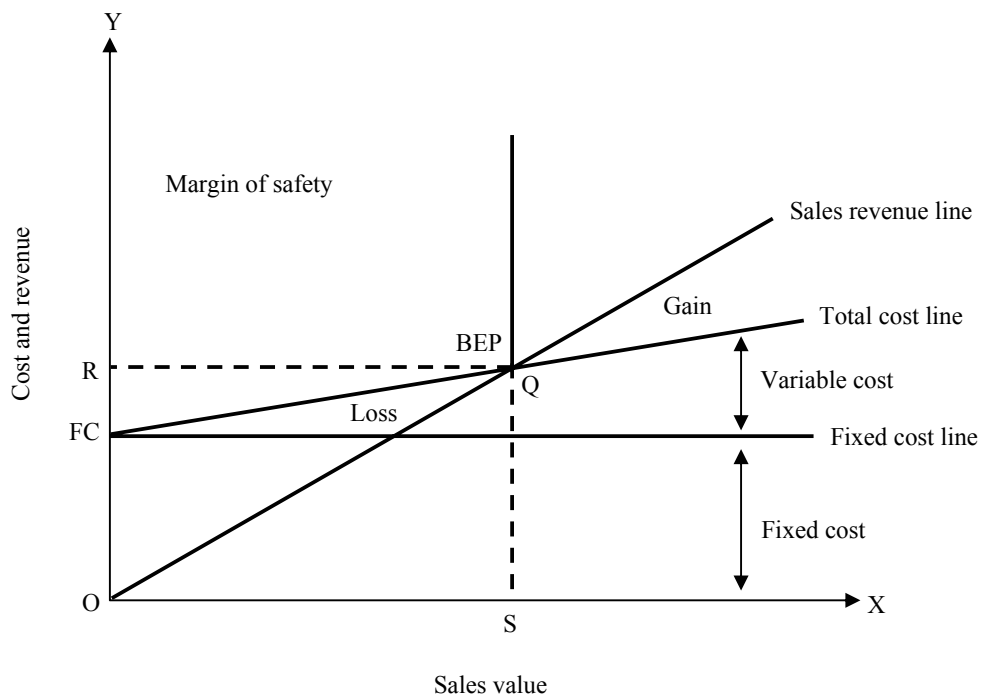
In the above Break-even chart, an equilibrium point between sales or revenue curve and total cost curve is "Q" knows as BEP. Therefore "OS" is the break-even sales volume and 'OR' is the break-even sales in amount. If the actual sales volume is more than break-even sales, the organization will earn profit and if the actual sales is less than the break even sales, the organization will suffer from loss.

2.9.2.1 Application of Break-Even Analysis : Break-even concept can be used to some of these applications are :

- Determination of profit at different levels of sales and margin of safety (MOS).
- To find the level of output to get the desired profit.
- Effect of price reduction on sales volume and changes in sales mix.
- Selection of most profitable alternative and make or buy decisions and drops and/or adds decisions.

2.9.2.2 Assumptions of Break-Even Analysis: Contribution analysis and break-even analysis are based on a specific set of assumptions that should be clearly understood. These underlying assumptions are :

- All cost can classify into two parts, fixed cost and variable cost. There is not cost other than fixed and variable.
- There is a relevant range of validity (activity) for using the results of the analysis and sales price does not change as units of sales change.
- There is only one product or in case of multiple products the sales mix among the products remains constant.
- Basic management policy about operation will not change materially in short run.
- The general price level (inflation/deflation) will remain essentially stable in the short-run.

- Sales and production levels are synchronized, that is inventory remains essentially constant or zero.
- Efficiency and productivity per person will remains essentially unchanged in the short run.

If any of the above assumption were changed, revised budget would be needed for a new analysis.

2.9.2.3 Limitations of Break-even Analysis: Break-even analysis in many business situations can be used for effective decision making but there are many short coming limitations in its analysis and interpretations. Some of these can be listed as :

- The assumption of producer's market phenomenon may not hold good for all types of commodities.
- The fixed costs may not remain constant as well as the variable costs may not vary in fixed proportions at different levels of output.
- With variation in the prices of the items or services which also depend on the factors affecting its demand and supply will certainly affect the demand of the commodity. This phenomenon is not covered in break even analysis.
- Identification of fixed and variable costs involved in production process is very complicated. A shift in product mix may change the break-even point.
- Consumers may be given certain discount an purchases to promote sales. This revenue may not be perfectly variable with level of sales output.

2.9.3 Profit-Volume Analysis: The analysis of relationship between profit and volume is known as profit-volume analysis. The two factors profit and volume are interconnected and dependent with each other. Profit depends upon sales; selling price to a greater extent will depend upon the volume of production. Thus, the entire volume of profit planning is associated with cost-volume profit inter-relationship.

Profit/Volume Ratio: This term is important for studying the profitability of operations of a business. Profit/volume ratio (i.e. P/V ratio) establishes a relationship between the contribution and the sales value. The ratio can be shown in the form of a percentage also. The formula can be expressed by (Maheshwari,(2000) : Pp 184).

$$\text{P/V Ratio} = \frac{\text{Contribution}}{\text{Sales}} = \left[\frac{S-VC}{S}\right] = \left[1-\frac{VC}{S}\right]$$

This ratio can also be called as contribution margin ratio. This ratio can also be known by comparing the change in contribution to change in sales or change in profit to change in sales.

Any increase in contribution would mean increase in profit only because fixed costs are assumed to be constant at all level of production. Thus;

$$\text{P/V ratio} = \left[\frac{\text{Changes in contribution}}{\text{Change in sales}}\right]$$

$$\text{Or,} \quad \left[\frac{\text{Change in profit}}{\text{Change in sales}}\right]$$

$$\text{P/V ratio} = \frac{\text{Fixed expenses} + \text{Profit}}{\text{Sales}}$$

This ratio would remain constant at different levels of production since variable costs as a proportion to sales remain constant at version levels. This ratio is useful for determination of the desired level of output or profit and for the calculation of variable costs for any value sales. The variable cost can be expressed as under:

$$\text{VC} = \text{Sales} (1 - \text{P/V ratio})$$

Comparison of different P/V ratios is usually made by the management to find out which product is more profitable management tries to increase the value of the ratio by reducing the variable cost or by increasing the selling prices.

2.10 Economic Characteristics of Cost-Volume-Profit Analysis

Where cost-volume-profit analysis is reasonably accurate, they can help management decision making. Essentially, CVP analysis offers greater insight into the economic characteristics of a company and may be used to determine the approximate effect of various alternatives. CVP analysis is based on estimate however and the arithmetical manipulations, generally involve average, hence the results should never be interpreted as precise, rather, the analysis may be used to develop and test, with a minimum of effort, the approximate effect on costs and profits of several types of management decisions (Welsch, (1979) : Pp 467-468).

Figure No.: 2.3

Economic Characteristics of Cost-Volume-Profit Analysis
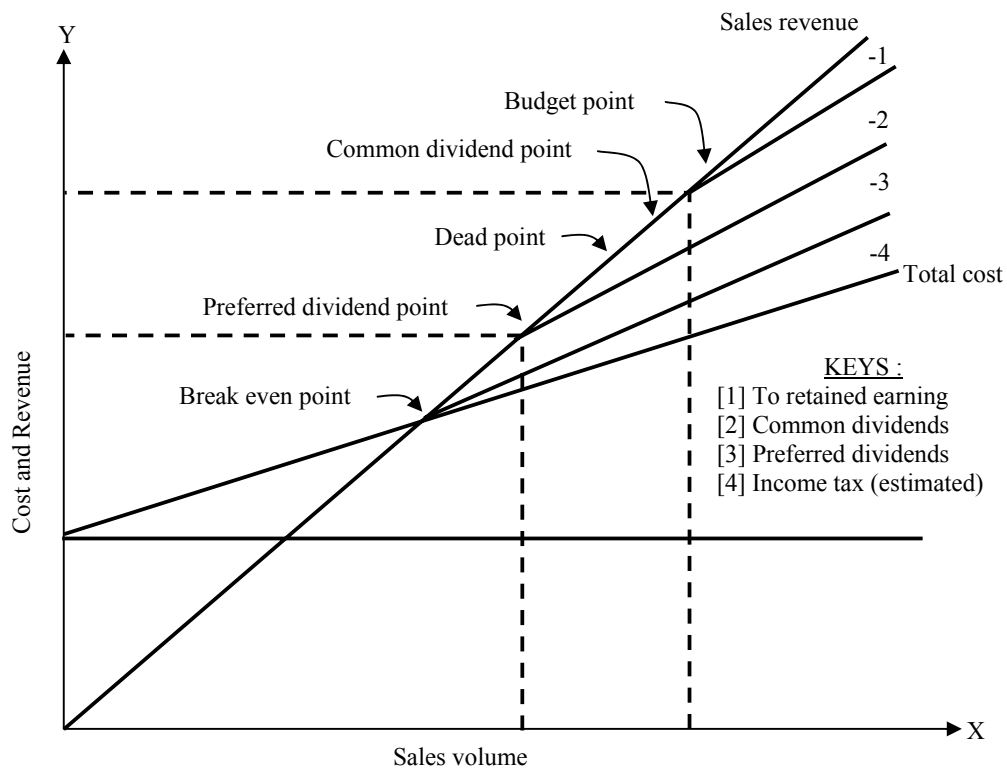
Above break even chart with economic characteristics indicates few of the economics characteristics of a business. Which are (Welsch,(1979) : Pp 468).

- Fixed costs, variable costs and total costs at varying volumes.
- The profit and loss potential, before and after income taxes, at varying volumes.
- The margin of safety, the relationship of budget volume to break even volume.
- The break even point.
- The preferred dividend or danger point the point below which preferred dividends are not earned.
- The dead point the point where management earns only the going rate on the investment.
- The common dividend or unhealthy point the point below which earnings is insufficient to play the preferred dividend and the expected dividend on the common stock.

All these points, and as others can be computed if data are developed for cost-volume profit purposes.

2.11 Margin of Safety

Margin of safety is the excess of budgeted or actual sales over the break-even sales volume. In other words, it is the difference between the budgeted or actual sales revenue and the break-even sales revenue. It is a position above the break-even point. It gives management a feel for how close projected operations are to be organization's break-even point. Managers often consider the size of the company's margin of safety when making decisions about various business opportunities. The larger is the safety margin the greater is the chances for a company to earn profit (i.e. larger the margin of safety). A high margin of safety is particularly significant in times of depression when the demand for the company's or firms' product is falling. A low margin of safety may result for a firm which has a low contribution ratio. When both the margin of safety and the P/V ratio are low, management should thin of the possibilities of increasing the selling price, provided it does not adversely affect the sales volume, or reducing variables

costs, by bringing improvement in manufacturing process. Margin of safety can be ascertained by using the following formula (Munakarmi, (2003), Pp 127).

Margin of safety = (Actual sales value – Break even sales value)

$$= \left[\frac{Profit}{Profit\ Volume\ Ratio} \right] in\ amount$$

$$= \left[\frac{Profit}{Unit\ Contribution\ Margin} \right] in\ units$$

The relation between margin of safety and actual sales is known as margin of safety, ratio which is determined as follows (Munakarmi (2003): Pp 127).

$$Margin\ of\ safety\ ratio = \left[\frac{Actual\ Sales - Break\ Even\ Sales}{Actual\ Sales} \right]$$

The following steps are needed to rectify margin of safety:

- With increasing selling price.
- With increasing sales volume, if the capacity of fixed cost is not fully utilized.
- With reducing fixed cost if possible.
- With reducing variable cost (with reducing the cost of raw materials, wages and other direct cost).
- With substituting product line by more profitable one.

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

The relative proportion of sales of product is called the sales mix or the product mix. In the case of a multi-product firm, the contribution for each product can be found out by deducting its variable costs from sales revenue. The break-even point for each product can be calculated only if the total fixed costs of the firm are distributed and fixed cost for each product is known. The firm's overall break-even point can be calculated by dividing the total fixed costs by the contribution ratio for the firm. The multi product firm's P/V ratio will be the weighted average of the P/V ratios for all the products, the weights being the relative proportion of each product's sale. The P/V ratio for the multi-product firm can also be calculated by dividing the total contribution from all products by total sales.

A change in the product mix will not affect the firm's break even point and profit. If each product has the same P/V ratio. However, a change in the product mix will change the break-even point and profit when products have unequal P/V ratios (Maheshwari, (2000): Pp 187).

Break-even point for multi-product company/firm: In multi-product firm we have to calculate the BEP in aggregate. The sales mix is used to compute a weighted average unit contribution. This is the average of the several product unit contribution margin weighted by the relative sales proportion of each product.

Following procedure is followed to calculate BEP for sales mix or multi-product (Munakarmi, (2003): Pp 137).

- Calculate contribution margin or profit-volume ratio for each product.
- Calculate proportion of sales mix in units or values as follows :

$$\text{Sales mix} = \left[\frac{\text{Individual products sales units or value}}{\text{Total of all products sales units or value}} \right]$$

- Calculate weighted average for all products as follows :

Weighted average = Sales mix (Units) × Unit contribution margin

Or, = Sales mix (value) × P/V ratio

- Calculate break even point (BEP)

$$\text{Break-even point} = \left[\frac{\text{Fixed cost}}{\text{Weighted average}} \right]$$

2.13   Cost-Volume-Profit Analysis and Limiting Factors

CVP analysis is helpful; in profit planning and a company will be able to producing number of output of its choice (desires). But in real word it is not possible, because of some critical factors like finishing machine or raw material or labour. These critical factors in the CVP analysis are known as constraint.

2.13.1   CVP Analysis with a Single Constraint: Score resource should be efficiently allocated in order to maximize the contribution margin. A particular simple and instructive situation arises when there is only one constraining resource. This can occur if the firm products are all produced

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on a single machine and output is limited by hours available on this machine. In the same way, single resource constraint arise, if the firm's products are all produced with only one material and output is a constraint for a scare resources to have alternative uses, the contribution per unit should be calculated for each of these uses. Then, the available capacity for such scare resources should be allocated to alternative uses on the basis of contribution per scare resources (Munakarmi, (2003) : Pp 146).

2.13.2   CVP Analysis with a Multiple Constraints: Where more than one scare resource exists, the optimum production programme can not easily be established by the simple process applied in single resources constraint. Under the circuments simple allocation of resources or the basis of contribution margin per unit is neither feasible nor desirable. Contribution margin per unit of scare resources may be different for different scarce resources may be the ranking of products because production processes are affected by many constraints factors rather than single constraint. In such situation, linear programming technique may be used to optimize product mix. The linear programming formulation is required to determine a production plan that maximizes contribution from the product mix. Linear programming is a mathematical technique which shows how to arrive at the optimum results, allocation available resources in a meaningful manner. It is basically concerned with the problem of allocating limit resources among competitive activities in an optimal manner. It is a technique to optimize the allocation of scare resources in product mix-problem which provides a valuable extension to cost-volume-profit analysis (Munakarmi, (2003) : Pp 148).

2.14   CVP Analysis under Condition of Uncertainty

CVP analysis have been used for various purpose such as choosing between machine and products planning of profit and most significantly fixing up of selling price. Management has used this as a conveniently tools of profit planning without giving consideration of risk and concertinos involved in it. Although, margin of safety ratio explains the degree of sensitivity of the project and product

in general but it fails to explain the among of certainty in the product and also between the alternatives. To cover come such a difficulty, risk and uncertainty analysis like in other management decision making can also be used in CVP analysis.

Probability distribution approach is a simple statistical tool which may be used to measure the risk and uncertainty involved in CVP analysis. A probability distribution theory normally suggests for postulation of various possibility of happening of the event in consideration. This may be done either taking into consideration of the experience in the past or may be done by considering the personal in tuition of the persons doing so. In business reference of past experience are hardly available not a person is likely to behave in the same manner in the similar situation in different time. Therefore, personal judgment plays significant. Role in the management decision making. The condition thus, postulated are assigned probability (i.e. ones judgment towards likeness of happening of the condition forecasted). It must be understood here that probability assigned here is a subjective probability based in, personal judgment of the man making such a analysis (Pandey I.M., (2003). Pp 17).

2.15   Step (Jumping) Fixed Cost and Multiple BEP

Break-even point is determined by dividing the fixed costs by the contribution margin per unit. If the fixed cost jumping one (i.e. step fixed) then if is required to considered a different amount of fixed cost corresponding to each step. As such, BEP is computed for each level of fixed cost. Some of these compute BEP may not be feasible because they may violate the limits imposed by the relevant range corresponding to the level of fixed costs considered in their computation. As a result real or actual BEP is determined though trial and error approach (Munakarmi, (2003) Pp : 136).

2.16   Assumptions Underlying CVP Analysis

Break-even analysis is the most useful technique of profit planning and control. It is a device to explain the relationship between cost, volume and profit. The

discussion of the CVP analysis (break even analysis). So, for is based on the following assumptions. (Pandey I.M., 1994).

- **Cost segregation:** The total costs can be separated into fixed and variable components. Constant fixed cost is the total fixed cost that remains unchanged with changes in the sales volume. Constant unit variable cost is variable cost per unit is constant and total variable cost changes in different proportion to the sales volume.
- **Constant Selling Price:** The selling price per unit remains the constant, that is, it does not change with volume or because of other factors.
- **Constant sales mix:** The firm manufactures only one product or if there are multiple products, sales mix does not change.
- **Synchronized production and sales:** Production and sales are synchronized that is inventories remain the same.

2.17   Limitations of CVP Analysis

Assumptions limit the utility and general applicability of the CVP analysis. Therefore, the analysis should recognize these limitations and adjust data, wherever possible, to get meaningful results. The CVP analysis suffers from the following limitations (Pandey I.M., 1999).

- It is difficult to separate costs into fixed and variable components.
- It is not correct to assume that total fixed cost would remain unchanged over the entire range of volume.
- The assumptions of constant selling price and unit variable cost are not valid.
- It is difficult to use the break even analysis for a multi product firm.
- The break-even analysis is a short run concept and has a limited use in long range planning.
- The break-even analysis is a static tool.

2.18   Special Problems in Cost-Volume-Profit Analysis

Cost-volume-profit analyses are applied to individual products or parts of a business and all the products or activities combined. In the latter case, there are three special problems may be encounted (Welsch, Hilton & Gordon, 2001).

(i) **The Activity Base**

When two or more products or activities are combined for break-even analysis, the activity base is usually in amount. Product unit is used for single product. The activity base must be in additive units using a common denominator of volume or output in multiple products. Therefore, for the company as a whole, net sales amount are usually the only satisfactory common denominator because manufacturing, selling and administrative activities are expressed in combination.

(ii) **The Change in Inventory**

Usually the budgeted changes in inventories (i.e. finished goods and work-in progress) are immaterial in amount and thus may be disregarded in cost-volume profit analysis on the other hand, when the change in budgeted inventory is significant, it should be included in the analysis. Including the effect of inventory changes in cost-volume profit analysis requires subjective judgments about what management might do (about making inventory changes) at different volume levels and the conceptual precision that is desired. Management considers two practical approaches and policies in inventory changes often used:

(a)   Disregard the inventory changes.

(b)   Include the inventory changes.

(iii) **The Non-Operating Incomes and Expenses**

Non-operating incomes (gains) and expenses (losses) and extra ordinary gains and losses. If material in amount, cause another problem in CVP analysis. The basic issue is whether they should be included or excluded. Extra-ordinary gains and losses are non-recurring and unusual; therefore, they should be excluded. Non-operating incomes and expenses are recurring but they are not related to ongoing operations. Management consider the policy may be to :

(a)   Include the non-operating incomes and expenses.

(b)   Exclude the non-operating incomes and expenses.

2.19   Cost Structure and Operating Leverage

2.19.1   Cost Structure: Cost structure refers to the relative proportion of fixed and variable cost in an organization. The relationship of a company's variable and fixed cost is reflected in it's operating leverage. The highly labour intensive organizations have high variable cost and low fixed cost and thus have low operating leverage and a relatively low break-even point. Conversely, organization that are highly capital intensive have a cost structure that includes low variable and high fixed costs. Such a structure reflects high operating leverage and relatively high break-even point. Company with lower fixed costs and higher variable costs will enjoy greater stability in net income and will be more protected from losses during bad years but at the cost of lower net income in good years (Munakarmi, (2003) : Pp145).

2.19.2   Operating Leverage: Operating leverage is a measures of the extent to which fixed costs are being used in organization. The relationship of a company's variable and fixed costs is reflected in it's operating leverage. Generally highly labour intensive organization have high variable costs and low fixed costs and this have low operating leverage and a relatively low break-even point. Conversely, organizations that are highly capital intensive have a cost structure that includes low. Variable and high fixed which reflects high operating leverage with high break-even point. It shows that fixed costs and operating leverage has direct relationship. Higher the amount of fixed costs higher the operating leverage and break-even point and vice-versa. In other words, the firm with relatively high operating leverage has proportionally high fixed expenses, the firm's break-even point will be relatively high. The operating leverage, factory is determine as under (Munakarmi, (2003) : Pp 145).

$$\text{Degree of operating leverage (DOL)} = \left[\frac{\text{Contribution margin}}{\text{Net income}} \right]$$

2.20   Segregation of Semi-Variable (Mixed) Costs

Cost-Volume-profit analysis required segregation of all costs between two parts: Fixed and variable. This means that the semi-variable cost will have to be segression into fixed and variable elements. This may be done by any one of the following methods (Maheshwari, 2000).

(i) Levels of Output Compared to Levels of Expense Method : According to this method, the output at two different levels in compared with corresponding level of expenses. Since the fixed expense remain constant the variable overheads are arrived at by the ratio of change in expenses to change in output; where as :

$$\text{Variable Elements} = \left[\frac{\text{Change in amount of expens}}{\text{Change in activity or quantity}} \right]$$

(ii)   Range Method: This method is similar to levels of output compared to levels of expense method except that only the highest and lowest points of output are considered out of various level. This method is also designated as 'High and Low' method. The high low method is explained, step by step as follows :

(a)   Select the highest pair and the lowest pair.

(b)   Compute the variable rate 'b' using the formula :

$$\text{Variable rate} \quad = \left[\frac{\text{Different in cost 'y'}}{\text{Difference in activity 'x'}} \right]$$

(c)   Compute the fixed cost portion as :

(Fixed cost portion = Total semi-variable cost – variable cost)

(iii)   Degree of Variability Method: In this method, degree of variability is noted for each item of semi-variable expense. Some semi-variable items may have 30 percent variability while others may have 70 percent variability. The method is easy to apply but difficulty is faced in determining the degree of variability.

(iv) Scatter-Graph Method :-In this method, the given data are plotted on a graph paper and line of best fit is drawn, where as semi-variable expenses is plotted on the vertical axis (y-axis) and activity measure is plotted on the horizontal axis (x-axis). The method is explained below:

(a) The volume of production is plotted on the horizontal axis and the costs are plotted on the vertical axis.

(b) Corresponding to each volume of production costs one are than plotted on the paper, thus several point are shown on it.

(c) A straight line best fit is then drawn through the points plotted. This is the total cost line. The point where the line interest the vertical axis is taken to be the amount of fixed element.

(d) A line parallel to the horizontal axis is drawn from the point where the line of best fit interests the vertical axis. This is the fixed cost line.

(e) The variable cost at any level can be known by nothing difference between fixed cost and total cost lines.

The scatter-graph method is relation easy to use and simple to understand. However, it should be used with extreme caution, because it does not provide an objective test for assuring that the regression line drawn is the most accurate fit for the underlying observations.

(v)   Least Squares Method: One popularly used method for estimating the cost-volume formula is regression analysis. Regression analysis is a statistical procedure for estimating mathematically, the average relationship between the dependent variable (y) and the independent variable (x). The regression method does include all the observed data and attempts to find a line of best fit. To find the line of best fit a technique called the method of least squares is used method of least squares is based on the mathematical technique of fitting an equation with the help of

a number of observations. The linear equation, (i.e. a strategic line equation) can be assumed as:

Y = a + bx and the various sub-equations shall be,

$$\sum y = a + \sum x$$

$$\sum xy = a\sum x + b\sum x^2$$

An equation of second order (i.e. curvilinear equation) can be drawn as:

Y = a + bx + cx^2 and the various sub-equations to solve it i.e. to find out the values of constraints a, band c, shall be :

$$\sum y = nab\sum x^2$$

$$\sum xy = a\sum x + b\sum x^2 + c\sum x^2$$

$$\sum x^2 y = a\sum x^2 + b\sum x^3 + c\sum x^4$$

Similarly, the equation can be fitted for any number of order or degree depending upon the number of observations available and the accuracy desired.

Compute per unit variable cost (b) and fixed cost (a) by using the following formula:

$$b = \left[\frac{N\sum xy - \sum x.\sum y}{N\sum x^2 - \left(\sum x\right)^2} \right]$$

$$a = \left[\frac{\sum y - b\left(\sum x\right)}{N} \right]$$

Where, y = Total cost,   a = Fixed cost

b = Variable cost per unit   x = production units

N = No. of series $\sum$ = sum of

2.21 Impact of Changes on Profits

Profit is the function of a variety of factors: it is affected by changes in volume, cost and prices, profits may be affected by the changes (increase or decreases), in the following factors (Pandey I.M., 1999).

(i) **Effect of Price Changes :** An increase in the selling price will 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 reduce the P/V ratio and therefore, result in a higher break-even point.

(ii) **Effect of Volume Changes :** A changes in volume, not accompanied with a changes in the selling price and costs, will not affect P/V ratio. As a result the break even point remains unchanged. profit will increase with an increase in volume and will be reduced with a decrease in volume.

(iii) **Effect of Price and Volume Changes:** A price reduction may increase demand of the product and consequently, may result in increased volume. on the other hand, increase in price may adversely affect the demand and thus, reduce volume. The impact on profits under these circumstances is not obvious. Profit may increase with a price reduction if volume increases substantially. Similarly, a price rise may reduce profits if there is material fall in volume.

(iv) **Effect of Changes in Variable Costs:** The impact of the changes in variable costs on profits is straight forward if it does not cause any changes costs will lower P/V ratio, push up the BEP and reduce profits. on the other hand, if the variable costs decline, P/V ratio will increase, BEP will be lowered and profit would rise.

(v) **Effect of Changes in Fixed Costs:** A change in fixed cost does not influence P/V ratio. Other factors remaining unchanged a fall in the fixed costs 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 the 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 decisions.

(vi)   Effect of Changes in a Combination of Factors: The financial managers or the management accountant, evaluating the profit plans or budgets, must realize that a change in more faster leads to the changes in an other factors. therefore all such changes should be carefully visualized and their net impact on profit must be seen.

2.22   A Brief Review of Previous Research Work

Research in the area of 'cost-volume-profit' analysis as a tolls to measure effectiveness of PPC/budgeting of a company in Nepalese context are not made. but many research have been made in the area of profit planning and control and management accounting etc. in Nepalese context. as profit planning and control and management accounting covers major of the aspects of cost volume profit analysis, researchers 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 researchers 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 researchers, which have been submitted in profit planning and control and management accounting in the context of Nepal.

(i) Mr. Ojha Khagendra Prasad (1995) had conducted a research in the topic "Profit planning in manufacturing public enterprises : A case study of Royal Drugs Limited and Herbal Production and Processing Company Limited." This research of Mr. Ojha was mainly centered with the current practice of profit planning and its effectiveness in RDL and HPPCL.

The data and other necessary information were collected by using secondary as well as primary sources of data. Mainly, primary data have

be collected and secondary data have been used as per necessity. interview and questionnaire approaches are the main techniques of primary sources of data statistical tools like percentage, mean, standard deviation, coefficient of variation, time series, correlation and regression have been used to analysis the data : Similarly, financial tools like financial ratio, flexible budget, CVP analysis, variance analysis have been also used.

Mr. Ojha has pointed out various finding and recommendations based on the analysis of data and information some remarkable findings were as follows :

- Inadequate planning's of profit due to lack of skilled planner.
- Inadequate authority and responsibility to planning department.
- Various costs are not diagnosed as controllable and non-controllable expenses.
- Pricing system is not scientific.
- Failure in achievements due to inadequate evaluation of internal and external variables.
- Failure due to inadequate forecasting system.
- Lack of entrepreneurship and commercial concepts in overall operations of the enterprises.

(ii) Miss Dangol Pramila (2001) had conducted a research entitled "Profit Planning in Manufacturing Public Enterprises; A Case Study in Hetauda Cement Industry Ltd.". Miss Dangol has focused her study in the application of profit planning concepts in PEs.

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

- No proper application of any effective sales forecasting technique.
- Planning of budgeting policy of the company is very poor and there is no system of taking corrective action for pre-planning.

- Decision making powers are centralized.
- There is no clear cut duties and responsibilities of the employee.

(iii) Mr. Sharma Sagar (2002) has conducted a research entitled "Management Accounting Practices in the Listed Companies of Nepal." Mr. Sharma had concerned his study to examine and study the practice of management. Accounting tools in the listed companies in Nepal.

Mr. Sharma's research is based on primary data only. Stratified random sampling with proportionate allocation of percentage is followed to draw the sample. No secondary data has been used for his study. In his research, Mr. Sharma has pointed out various findings and recommendations. Some remarkable findings were as follows :

- Different types of management accounting tools, which are taught is the colleges are not found applied by the listed companies of Nepal.
- Management accounting is to help managers in overall managerial activities by providing information and helping in planning, controlling and decision making.
- Nepalese listed companies are in infant stage in practicing of management accounting tools. Such as capital budgeting, annual budgeting, cash flow, ratio. Analysis, zero based budgeting, activity based budgeting, activity costing, target costing and value engineering.
- Lack of information and extra cost burden are the main reason behind not practicing such tools.
- As Nepal is proceeding towards globalizations and all companies are recommended to apply management accounting tools do fit with the global environment.

(iv) Mr. Tharu Man Singh (2006) had conducted a research entitled "Profit Planning and Control, A Case Study of Nepal Telecom". Mr. Tharu had focused his study in the application of profit planning concept in public enterprises (NTC)

On the basis of comprehensive analysis of the data, observation and informal discussion, the following major findings have been drawn :

- NTC fail to maintain its periodic performance report, systematically, goal and objectives are centralized in urban areas.

- NTC is operating in profit but it is not gaining satisfactory in monopoly situation of NTC.

- The balance sheet of NTC shows the huge amount of current assets not utilizing properly.

- The management of NTC is not success to utilization of their current assets properly since it has more than 4 times than its current liabilities.

- The corporation has no proper practice of segregating cost into fixed and variable.

- Overhead expenses are not classified systematically and it creates problem to analyze expense properly.

2.23   Research Gap

There is the gap between the present research and the previous researchers. Previous researchers conducted on accounting on profit planning and control and management covered only the budgeting practices in the manufacturing companies especially in public enterprises. The previous researcher did not disclose which of the profit planning and controls tools are in practice which is not and why. Thus, to fill up costs-volume-profit analysis gap, the current research is conducted. Mainly the research is accounting and financial data analysis types of research. Moreover This Study has not done by previous researcher as separately .Further no one had test the correlation , further here the researcher has analyzed the t-test of correlation of coefficient. Thus, to fill the gap, this study will be milestone in the field of CVP analysis in UNILEVER Nepal Ltd. In spit to above, multiple gaps among the researcher's view as as well as there is time gap regarding the study of CVP analysis.

CHAPTER – III

RESEARCH METHODOLOGY

This chapter entitled "Research Methodology" that highlights about the research methodology used in the process of the study this chapter basically focus about population and sample, sources of data, data analysis procedure which are analyzed in this study.

3.1 Introduction

Research methodology is the way to solve systematically about the research problem. Research is essentially a systematic inquiry seeking facts through objectives verifiable method in order to discover the relationship among them and to deduce from them broad principal. The research methodology refers to the various sequential steps to be adopted by researcher in studying of problem with certain objective in view. Research methodology should be paid due attention and concentration to reach right and relevant conclusion. Thus, the term research refers to a critical, careful and exhaustive investigation or enquiry or examination or experimentation having as its aim the revision of accepted conclusion, in the light of newly discovered facts.

3.2 Research Design

Data and information are the life blood or major job of any study. Research design means defining procedure and techniques which guide to study and propound ways for research work. The research design thus is a stepwise plan or strategies used towards reaching and conclusion from the research work. A study design is the arrangement of conditions for collection and analysis of data in manner that aims to combine relevance to the study purpose with economy in procedure. This study is an intensive base an analysis of the past financial performance. To fulfill the objective of the study, primary as well as secondary data will be used and study data will be descriptive as well as analytical.

3.3 Population and Sample

Private manufacturing company in Nepal has been established in various sector as product manufacturing, trading, and services sector for the overall development of the country. Unilever Nepal Ltd. Is a sample and population itself. This study based on revenue planning and cost volume profit analysis of UNL. It is not centered with any branch or product. So there is not any different in sample and population.

3.4 Nature and Sources of Data

In this study, both primary and secondary sources of data will be used to fulfill the objectives. But mostly secondary data has been used. The data have been collected from following sources:

- Annual report of UNILEVER Nepal limited.
- Magazine, Newspaper, Booklets, Documents, Advertisement.
- Some published as well as unpublished records of UNL.
- Government report, bulleting and other published statement of UNL.
- Previous studies made in this field.
- Website www.nepalstock.com

3.5 Data Analysis Tools and Techniques

The data collected and arranged in proper form, have been analyzed and interpreted through budgeting approach, financial and statistical tools are CVP analysis, BEP analysis, Ratio analysis, S.D., Mean and Coefficient of variation, Correlation, Hypothesis test, Graphs, Diagram and Budget.

3.5.1 Budgeting Tools:

(i) **Production Budget:** Production plan refers the development of policies about efficient production level, use of production facilities and inventory level. For the purpose of the formation of profit plan, the sales requirement is to be translated in production plan. In the case of manufacturing concern, the sales plan compulsorily is to be translated in production plan.

Production = Planned sales + Final inventory – Initial inventory

(ii) Sales Budget: Sales budget is the budget which forecasts future sales of each product in each region in each unit of time. A sales budget should be prepared to show the details like product wise, region wise, and time wise sales to meet overall objectives of organization. Sales budget is the foundation all other budgets. Therefore, a sales plan should be realistic. If it is not realistic, most other parts of the overall profit plan also would not be realistic.

Sales budget = Sales units × Selling price per unit

(iii) Cost Volume Profit Analysis: The analysis of relationship between cost, volume and profit analysis, is known as cost volume profit analysis. It is an analytical tool for studying the relationship between volume cost and profit. It is also an important tool, used profit planning in business. It is great helpful tool in decision making, especially for cost control, and profit planning. Cost volume analysis is also called as break even point. It means "**no profit and no loss**" situation for the organization. If sales is higher than BEP then there will be profit and vice versa.

$$BEP = \frac{Fixed\ costs}{Contributions\ margin\ ratio}$$

(iv) Contribution Margin: The difference between sales amount and variable cost is known as the contribution margin. In other words, fixed cost plus the amount of profit is equivalent to contribution margin. Contribution margin can be expressed by:

Contribution margin = (Sales Rupees – Variable cost)

3.5.2 Statistical Tools:

(i) Mean: The average value is a single value with in the range of the data that is used to represent all of the values in the series. Since an average represent the entire data it's value lies somewhere in between the two extremes i.e. the largest and the smallest items. It's value is obtained by adding together all the items

and by dividing this total by number of items. The formula is given below:

$$X = \frac{\sum x}{n}$$

Where, x = Arithmetic mean

$\sum x$ = Summation of all items

n = Number of items.

(ii)   Standard Deviation: The standard deviation is the most important and widely used tool to study dispersion. It is known as root mean of the mean of the square deviation from the arithmetic mean. The lower standard deviation means a high degree of uniformity of the observation as well as homogeneity of a series; a large standard deviation means just the opposite. Hence standard deviation is extremely useful in judging the representative of the mean.

$$\sigma = \frac{\sqrt{\sum (X - \hat{X})^2}}{N}$$

(iii)   Co-efficient of Variation (CV) : The co-efficient of variation is the corresponding relatives measure of dispersion comparable across distribution, which is defined as the ratio of the standard deviation to the mean expressed in resulting percentage (Kothari, CR 1990).

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

Where, CV = Coefficient of variation

σ = Standard deviation

$\bar{x}$ = Mean

In the study, CV is calculated for liquidity, activity, profitability etc.

(iv) Coefficient of Correlation: Correlation is defined as the relationship between (among) the one dependent variable and one (or more than one) independent variable. In the other word,

correlation is the relationship between (or among) two or more variables. Karl Pearson's coefficient of correlation is calculated to study the extent or degree of correlation between two variables. It can be either perfect positive or negative. The coefficient of correlation always varies between the two limits of +1 and -1. the formula for the calculation of co-efficient of correlation is given below :

$$r = \frac{(X-\hat{X})\,(Y-\hat{Y})}{\sqrt{(X-\hat{X})^2(Y-\hat{Y})^2}}$$

3.5.3 Financial Tools:

(i) **Percentage Analysis:** This ratio is calculated to measure the acceleration or relationship of any variable to the company in each year. This helps the company to identify the degree how the variable is moving in each year. It also helps the organization to take the suitable direction it is calculated in following way:

Annual percentage change

$$= \frac{\text{Amount of this year - Amount of last year}}{\text{Amount of last year}} \times 100$$

(ii) **Current Ratio:** This ratio is computed as dividing current assets by current liabilities. It measures the availability of current assets for meeting current liabilities. Current assets include sundry debtors, inventory, cash, pre-paid expenses etc. similarly current liabilities include sundry creditors, short term loan, received in advance etc. Generally the current ratio of 2:1 is considered to be satisfactory. It is calculated by using this formula:

$$\text{Current Ratio} = \frac{Current\ Assets}{Curent\ Liabilities}$$

(iii) **Fixed Assets Ratio:** This ratio is computed as dividing fixed assets dividing by capital employed. Capital employed

calculated by total assets minus current liabilities. It is calculated by using this formula:

$$\text{Fixed Assets Ratio} = \frac{\text{Fixed Assets}}{\text{Capital Employed}}$$

Capital Employed = Total Assets – Current Liabilities

(iv) **Net Profit to Fixed Assets Ratio:** This ratio is calculated to measure the operating profit (Before interest and Tax) against the amount invested in fixed assets to ascertain where fixed assets are being utilized properly or not. It is calculated as under:

Net profit to Fixed Assets Ratio

$$= \frac{\text{Net Profit Before Intrest and Tax}}{\text{Total Fixed Assets}} \text{ x100}$$

(v) **Gross Profit Margin Ratio :** Gross profit margin ratio express the relationship between gross profit and the sales amount. Gross profit margin ratio can be expressed by the following formula:

$$\text{Gross profit margin ratio} = \frac{\text{Gross profit}}{\text{Sales}} \times 100$$

A higher ratio is a sign of good management. A low gross profit margin ratio may reflect higher cost of goods sold due to company's inability to purchase at favorable terms.

(vi) **Net Profit Margin Ratio:** Net profit margin ratio establishes a relationship between net profit after tax and the sales amount. Net profit margin ratio expressed by the following formula:

$$\text{Net profit margin ratio} = \frac{\text{Net profit after tax}}{\text{Sales amount}} \times 100$$

A higher ratio is an indication of the higher overall efficiency of the business and better utilization of total resources. Poor financial planning and low efficiency is that indication of lower ratio.

(vii) Operating Ratio: Operating ratio express the relationship between total operating expenses and the sales amount. The operating ratio can be calculated by using following formula:

$$\text{Operating ratio} = \frac{\text{Total operating expenses}}{\text{Sales amount}} \times 100$$

Lower the operating ratio indicates the higher operating profit. So, minimum percentage of operating ratio is preferable.

(viii) Profit-Volume Ratio: The ratio of relationship between profit and volume is known as profit volume (P/V) ratio. The two factors profit and volume are interconnected and dependent variable. Profit depends upon sales. Profit volume ratio can express by following formula:

$$\text{P/V ratio} = \frac{\text{Selling price - Variable cost}}{\text{Sales}}$$

$$\text{Or,} = 1 - \frac{\text{Variable cost}}{\text{Sales}}$$

$$\text{Or,} = \frac{\text{Difference in profit}}{\text{Difference in sales}}$$

$$\text{Or,} = \frac{\text{Profit}}{\text{Margin of safety}}$$

Higher the P/V ratio indicates the higher overall efficiency of the business and better utilization total resources. The management always tries to increase selling price and decrease variable cost.

(ix) Margin of Safety: Safety margin is the different between the budgeting or actual sales revenue and the break-even sales revenue. Safety margin can express by:

Margin of safety = (Actual sales – Break-even point)

The larger margin of safety indicates the better profitability of the company.

(x) **Net Profit to Total Assets Ratio:** This ratio measures the profitability with respect to the total assets. It reflects the efficiency of the company on utilizing its overall resources. This is found by using the following formula:

Net profit to total assets ratio = $\dfrac{\text{Net profit}}{\text{Total assets}} \times 100$

The numerator indicates the position of net income left to the interval equities after all costs, charges, expenses have been deducted. Total assets comprise those assets, which appear on the assets side of the balance sheet. The high return on total assets ratio, usually indicates that high profit margin and high turnover assets and vice-versa.

(xi) **Net Sales to Total Assets:** This ratio is computed by dividing net sales by total assets. It indicates the relationship between sales to total assets and it shows the efficiency of utilizing assets. It is calculated by using this formula:

Net sales to total assets ratio = $\dfrac{\text{Net sales}}{\text{Total assets}} \times 100$

Total Assets = Total Assets- Depreciation

(xii) **Return on Assets:** This ratio is computed by dividing net profit after tax by total assets. It indicates the relationship between net profit tax and total assets. It is calculated by using this formula :

Return on assets ratio = $\dfrac{\text{Net profit after tax}}{\text{Total assets}} \times 100$

3.6 Scheme of the Study

The whole study is divided in to five main chapters. The first chapter of this study is 'Introduction' chapter. Under which there are the studies of background statement of problems, objectives, limitations and significance of study. The second chapter conceptual framework and review of literature contains due study of various books, articles, thesis, newspaper etc. the third chapter 'Research

methodology' contains study design, sources and types of data, population and sample, data analysis tools and techniques (i.e. budgeting tools, statistical tools, financial tools), scheme of the study. The fourth chapter 'Data analysis' contains data analysis and major finding and the fifth chapter deals with summary, conclusion and recommendations.

Chapter - IV

PRESENTATION AND ANALYSIS OF DATA

Profit planning is used for development and acceptance of proper objectives and goals for an organization. It is also used to move the organization efficiently to achieve pre set objectives and goals. Cost-volume-profit analysis, a tool of PPC, can be the most important device to utilize the cost with effective and efficient way. CVP analysis has become a powerful instrument in managerial decision making especially cost control and profit planning. The cost volume-profit analysis is a specific way of presenting and standing the inter-relationship between costs, volumes and profit.

The basic objectives of the study to examine CVP analysis as a tools to measure effectiveness of PPC, present practice of CVP analysis and identify the area where CVP analysis could be applied to strengthen the Unilever Nepal Ltd. This chapter presents the analysis and interpretation of the data.

Data presentation and analysis is this important part of the research work. It is known as the heart of research. Major finding of the research depends on data presentation and analysis. Here, the researcher has tried to present and interprets the collected data in systematic manner and meaningful ways. To meet the said objectives, the secondary data is used for sales trend analysis, budgeted and actual sales analysis, statistical analysis, Cost plan analysis, inventory analysis, profitability ratio analysis, operating leverage analysis and cost-volume profit analysis etc. The secondary data are collected from profit and loss account, cost details sheet balance sheet etc, which is provided by account section of the company (i.e. Annual report)

Use of CVP in profit planning is the basic objectives of this study. It will examine the present practice of CVP analysis and identify the area where CVP analysis can be applied in manufacturing company; Unilever Nepal Ltd. is presented, for

that purpose sales revenue, profit, income statement contribution margin and sensitivity test are done.

This study has tried to cover the activities of the Unilever Nepal Ltd. For last Five Years (i.e. from fiscal Year 2060/061 to fiscal Year 2064/065). The information, which have been collected from Unilever Nepal Ltd. Are given and analyzed in the coming pages accordingly.

4.9   Sales Plan of Unilever Nepal Limited

Sales planning are the necessary components of profit planning and control. It provides the basis management decision about marketing and help to develop comprehensive sales plan. If the sales plan is not realistic, most other parts of the overall profit planning also are not realistic. Since, a sales plan should be realistic. Every organization prepares sales plan, if the sales plan is Unrealistic it will not beneficial to the organization.

A good plan is required to examine and analyze external and internal variables. External strategies, government policy, technological advancement and environmental condition. Internal variable such as working condition of the company, management policy, capacity and equipment, financial strength etc.

Sales are the primary source of cash and the other entire functional budgets/plans are prepared on the basis of sales budget/plan. Sales plan is the first plan in developing profit plan. It is not only the most important but also the most difficult to prepare. Sales plan provides basic guidelines for purchase of materials and preparing production budget. Sales budget is prepared by according to the demand of the consumer. They are government, business, residential special, service and non-service. It is and organized approach for developing a comprehensive sales plan. Short-term sales plan is prepared for 12 months. Similarly, UNL has prepared strategic sales plan for 5 to 10 Years. They have the policy of selling the production produced in the factory.

The following table shows the budgeted (Target) sales and actual sales of Unilever Nepal Limited (UNL) from Fiscal Year 2060/061 to 2064/065.

Table No. 4.1

Budgeted Sales Revenue and Achievement of UNL for Five Years

(Rs. **In million**)

Year	Budgeted Sales	Increase/ Decrease%	Actual Sales	Increase/ Decrease%	Achievement%
2060/061	1339.53	-	1246.75	-	93.07
2061/062	1530.50	14.25	1524.90	22.31	99.63
2062/063	1625.39	6.19	1481.56	(2.85)	91.15
2063/064	1729.53	6.40	1434.95	(3.14)	82.96
2064/065	1805.30	4.38	1818.53	26.73	100.73

Source: Annual Report of UNL

The above table shows that the budgeted sales are in increasing trend but Actual sales is fluctuated. Increasing trend of budgeted sales is zick Jack where as the actual sales is increase in decreasing rate. The highest increasing rate in budgeted sales are 14.25 % in F.Y. 2061/062, and highest increasing rate is Actual sales are 26.73% in F.Y. 2064/065.

The table shows the sales target and sales achievement at the period of F.Y. 2060/061 to 2064/065 which shows that the sales achievement is always less then the sales target except the F.Y. 2064/065 but it is more then 82.96% achievement in almost Years. In F.Y. 2064/065 actual sales are 100.73% of budgeted sales that are the F.Y. 2063/064 only 82.96% of budgeted sales achieved, which was poorest result among the five Years period.

Figure. 4.1

Sales Target and Sales Achievement of UNL
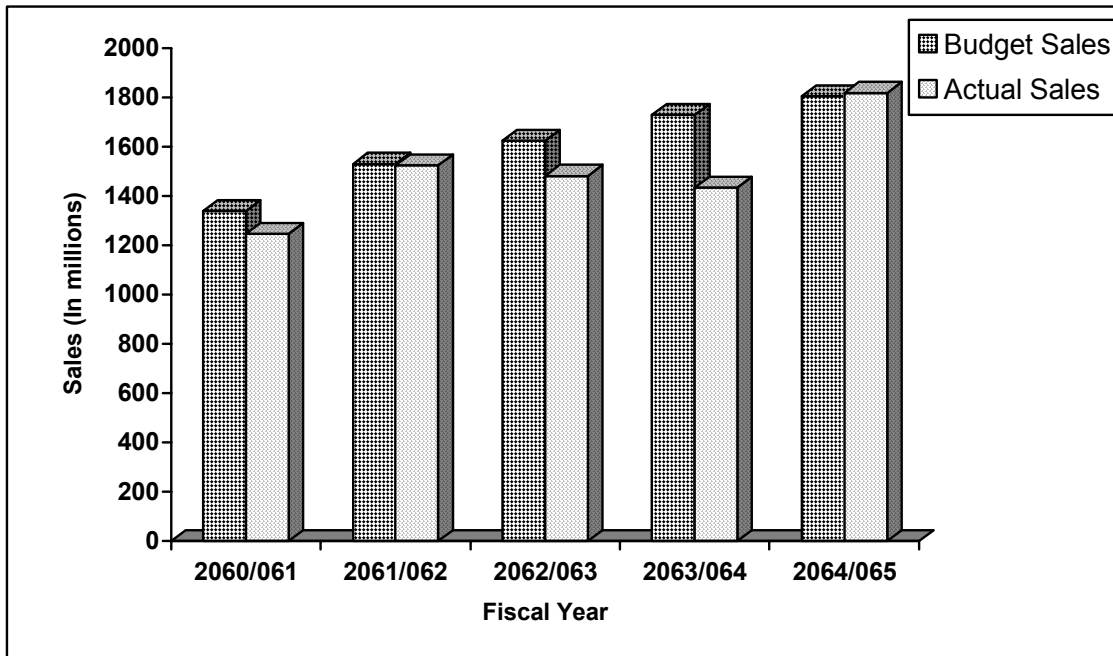
The bar diagram shows the clear picture of budgeted sales and actual sales of UNL. This figure shows the budgeted sales is higher then the actual sales except F.Y. 2064/065. But budgeted sales revenue line is higher then the actual sales revenue line which means that is not so satisfactory result of planning department of UNL. So UNL should try to meet the targeted sales revenue for the coming year.

One of the most important objectives of statistical analysis is to get one single value that describes the characteristics of the entire mass of huge unwieldy data. Such a value is called the control value or an average. Here on attempt in made to present arithmetic mean and standard deviation with coefficient of budgeted and actual sales of UNL. This analysis covers a period of Five Years i.e. 2060/061 to 2064/065 and is calculate in appendix I and summarized below.

Table No. 4.2   (Rs. in Millions)

Nature of Variability of Actual and Budgeted Sales of UNL.

Details	Budgeted Sales	Actual Sales
Mean	1606.05	1501.33
Standard Deviation (S.D.)	162.52	184.81
Coefficient of Variation (C.V.)	2.023	2.46
Correlation Coefficient (r)	0.803	
Probable Error (P.E)	0.1071	
Coefficient of Determination (r^2)	0.6448	
Regression equation of Best fit	0.9131X + 34.80	

Sources: Appendix- I

The above result shows that actual sales are more variable then budgeted sales. Budgeted sales are more homogeneous or more stable then actual sales. Hence, the coefficient of variation of budgeted sales is lower then the coefficient of variation of actual sales achievement.

Coefficient of correlation is a statistical tool that can be used to analyze the relationship between budgeted and actual sales. As per the calculation done in Appendix (I) the value of r is 0.803 this shows that there is high degree of positive correlation between budgeted sales and actual sales revenue. The significance of correlation (r) is tested with probable error (P.E), calculation is shown in Appendix- (I). The value if PE= 0.1071 here r>6 PE that means (r) is definitely significant.

We can fit the regression line to show the degree of relationship between budgeted sales and actual sales and to predict approximately actual sales with the given budgeted figure.

So the regression line of achievement Y on budgeted X is as follows:

Y= 0.9131 X + 34.80

The detail calculation of above equation is presented in Appendix- (I). This computation shows that the expected actual sales would be 0.9131 times of budgeted sales plus 34.79. The estimated actual sales Y calculated in Appendix (I) is presented in table below:

Table No. 4.3

Estimated Actual Sales of "UNL"   (in millions)

Year	Budgeted Sales (X)	Actual Sales (Y)	Estimated Actual Sales Y= 0.9131X + 34.80
2060/061	1339.53	1246.75	1257.91
2061/062	1530.50	1524.90	1432.29
2062/063	1625.39	1481.56	1518.93
2063/064	1729.53	1434.95	1614.02
2064/065	1805.30	1818.53	1683.21

Source: Appendix- I

From the above if we have the budgeted sales of 2064/065 we can calculate the expected actual sales of that period. The value of the coefficient of determination $(r)^2$ 0.6448 explain the actual sales achievement up to 64.48% due to budgeted sales and remaining 35.52% due to other reason. Therefore factors except budgeted sales that can affect the actual sales should be consider.

Least square method can also be used to analyze the trend of actual sales and to estimate the possible future sales for a given time or Year. To fit the straight line, the time factor is considered as independent factors and sales revenue is considered a dependent upon time.

The straight line trend calculated in Appendix II shows that the sales will increase by Rs. 105.36 per Year. If sales trend of past Years will continue for future, the sales revenue for F.Y. 2065/066 assuming 2062/063 as a base year would be

$Yc= 1501.33+ 105.36×3$

= 1817.41 (in millions)

Figure No. 4.2

Sales Trend of UNL
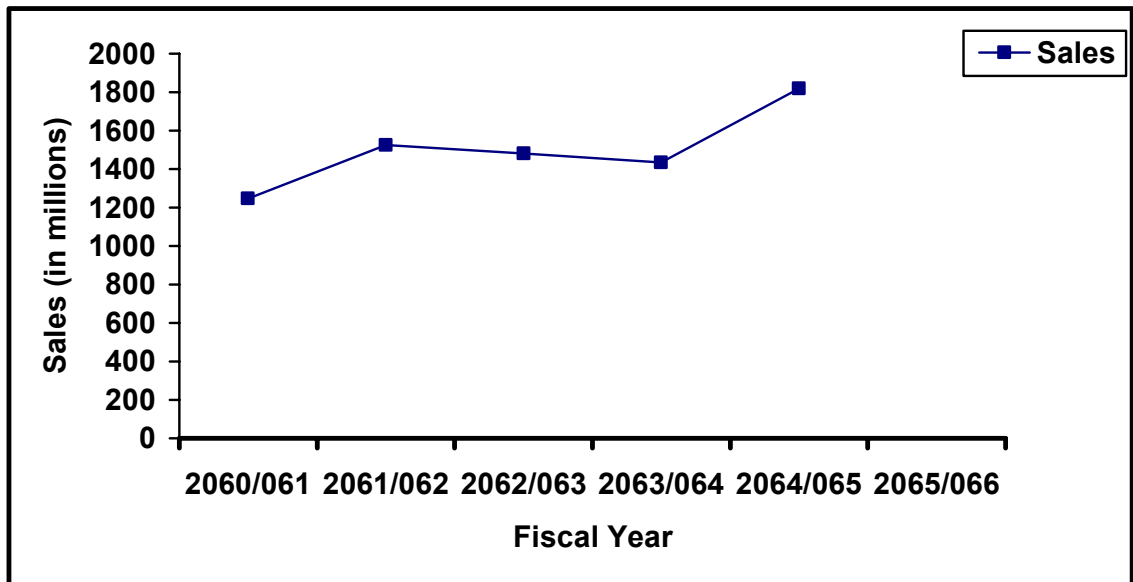
Source: Appendix- II

4.10 Expenses Planning and Control of Unilever Nepal Ltd

Expenses planning and controlling is not reduction of lost but it means better utilization of limited resources. Expenses planning and controlling should focus on the relationship between expenditure and benefits derived from those expenditure. Expenses planning and controlling is necessary to obtain company's goals. There are different kinds of expanses in the manufacturing company. Expenses planning support the objective and planned program to be ruled.

Expenses must be established for each responsibility center in the enterprises after estimating the amount of cost of sales, Distribution cost, Depreciation, loss on fixed assets, provision for staff bonus etc. born by UNL. The table below shows the different expenses and percentage change over F.Y. 2060/061 to 2064/065.

Table No. 4.4

Expenses Trend of UNL (Rs.In millions)

Cost type	2060/061	2061/062	2062/063	2063/064	2064/065
Cost of Sales	843.14	969.10	937.82	940.23	1281.62
Distribution Cost	44.11	46.32	40.22	27.37	37.53
Administrative exp^n	41.72	43.58	38.78	36.06	43.63
Promotional exp^n	164.32	250.08	203.32	170.53	157.39
Interest exp^n	2.60	1.78	1.76	1.78	1.05
Depreciation	167.89	184.34	193.70	203.56	209.08
Loss on fixed Assets	0.25	0.77	5.20	0.93	4.95
Provision for staff bonus	13.78	21.53	28.41	30.46	34.55
Total	**1277.81**	**1517.5**	**1449.21**	**1410.92**	**1769.79**
% Change then previous Year	-	18.75%	(4.50%)	(2.64%)	25.23%

Sources: Annual report of UNL.

Figure No. 4.3

Expenses Trend of UNL
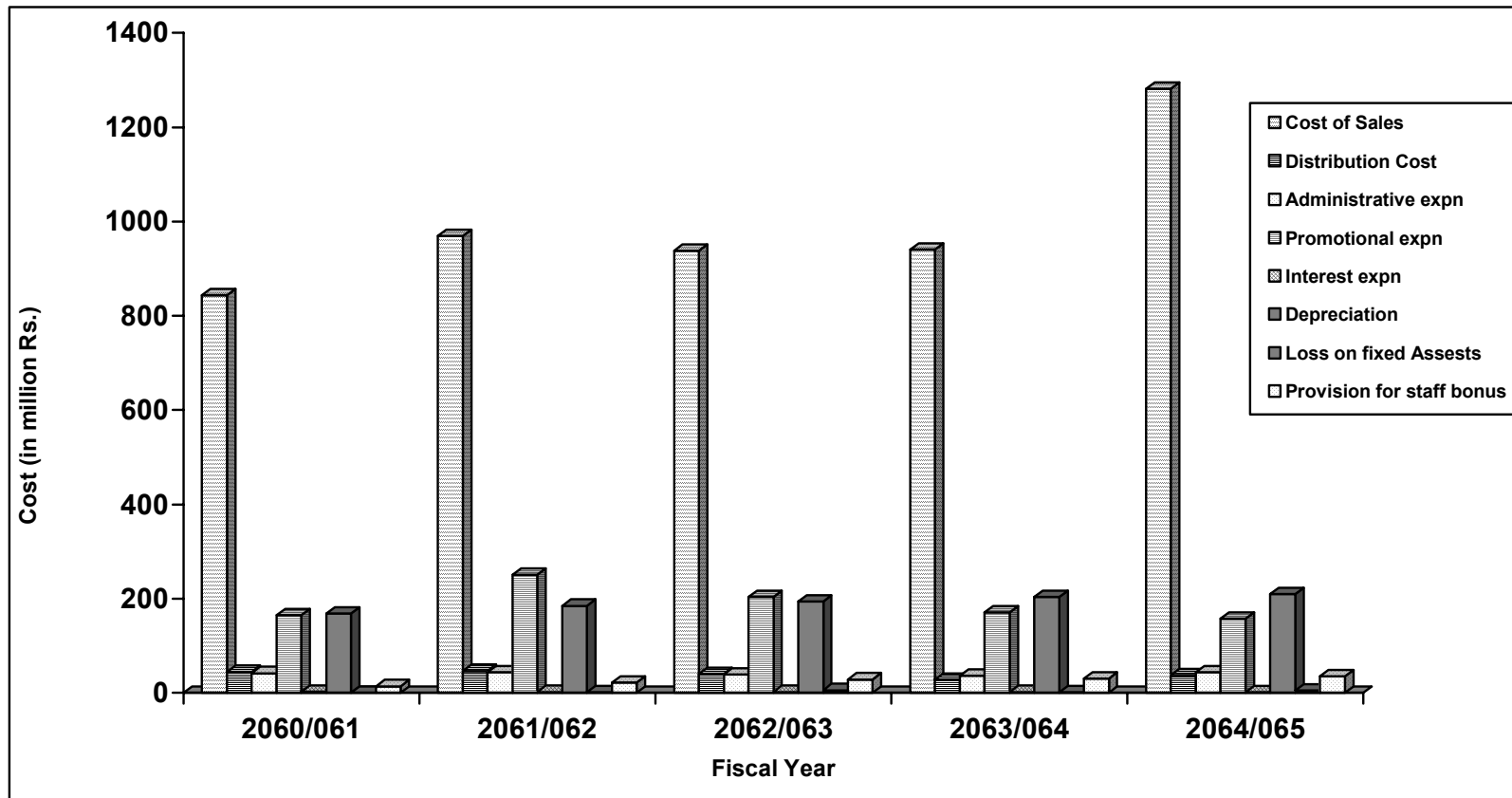
Sources: Table No. 4.4

Above table shows the component and total cost of UNL for different fiscal Years. Where cost of sales is fluctuated in different fiscal Year. Distribution cost, Administrative expenses, promotional expenses, also be zick jack increasing decreasing both from FY 2060/061 to 2064/065. Depreciation expenses and is in increasing trend. A provision for staff bonus also be in increasing trend.

The bar diagram shows that total expenses are increasing in every fiscal year except 2062/063 and 2063/064. In those year the corporation has been able to reduce total expenses then previous year but in FY 264/065 the expenses highly increasing i.e. 25.23%.

4.11 Sales/ Profit Relation of Unilever Nepal Limited

The basic objective of running any business organization is to earn profit. Profit is taken as measurement of the competency and efficiency of the management. In other words, profit is the primary measurement of the business success in any economy. Profit is a residual income left after the payment to other factors of production. The difference between the outflow of expenses and inflow of incomes is called profit. It is a reward of business activity. Profit determines the strength of financial position of the company.

The Uniformity or variability of net profit of UNL is analyzed and relation between actual sales revenue and net profit is also studied under this topic. The actual sales and net profit of the company during the five Year period had presented in the table below:

Table No. 4.5

Net Profit and Sales of "UNL".

(Rs. In millions)

Year	Actual Sales (X)	Increase/Decrease %	Profit	Increase/Decrease %
2060/061	1246.75	-	93.17	-
2061/062	1524.90	22.31	140.78	51.10
2062/063	1481.56	(2.85)	189.19	34.39
2063/064	1434.95	(3.14)	238.15	25.87
2064/065	1818.53	26.73	263.06	10.45

Source: Annual Report of UNL

The above table shows that both sales and profit of the UNL is in fluctuating trend. The highest increasing rate in sales revenue is 26.73% in fiscal Year 2064/065 but highest increasing rate in profit is 51.10% in fiscal Year 2061/062.

In order to examine the nature of variability of sales revenue and profit of different years, the mathematic means, standard deviation and coefficient of variance calculated in Appendix-I has been presented in table below:

Table No. 4.6

Summary of Statistical Calculation of Sales/ Profit of UNL (In millions)

Particulars	Sales (X)	Profit (Y)
Mean	1501.33	184.87
Standard Deviation (S.D)	184.81	46.16
Coefficient of Variation (C.V)	11.50%	33.62%
Correlation of Coefficient (r)	0.8801	

Sources: Appendix- III

The correlation between sales and net profit has been observed to be 0.8801, which is shown in Appendix III Therefore, there is significant relationship between

sales and net profit. Therefore, it is concluded that the changes in sales results in the change of net profit.

Test of Significance of Correlation Coefficient

To test the significant of correlation of Coefficient we can use 'T' statistic: Here sample size is less then 30 so we can use' T' statistics.

Here,   r = 0.8801

$$\textbf{T statistic} = r\sqrt{\frac{n-2}{1-r^2}}$$

Where,   r = Correlation Coefficient

n = No. of Observation

Now,

Null hypothesis (H_o) = 0 i.e. 'r' is not significant.

Alternative Hypothesis (H_1) $\neq$ 0 i.e. 'r' is significant.

Now, Test statistic,

$$T = r\sqrt{\frac{n-2}{1-r^2}} = 0.8801\sqrt{\frac{5-2}{1-0.8801^2}} = \textbf{3.21}$$

Now, the tabulated value of /t/ for (n-2) i.e. 5-2=3 degree of freedom for two tailed test at 5% level of significance is 3.18

Decision,

Since, calculated /t/ is > tabulated value of /t/ at 3 degree of freedom at 5% level of significance we reject Ho, which indicate that correlation coefficient between variables are significant or r is significant.

4.12 Financial Analysis of Unilever Nepal Limited

Ratio analysis is a tool of scanning the financial statement of the firm. Though this, one comes to know in which areas of the operation the organization is strong and in which areas it is weak.

It is calculated here in summary of key financial position of Unilever Nepal Ltd. From the Balance sheet and Profit & Loss Account of different fiscal years. The financial statement analysis provides information to plan evaluate and control operations with in the company management itself can use these parameters to

improve the organization's performance in future, because a true know how of the strength and weakness is requires. For exploiting maximum benefits and to correct the weakness to meet the challenges.

Regarding the financial analysis, profitability is an important measure of company's operating success. There are two areas for judging profitability. The first measure in the profit margin and the second one is the return on investment. This analysis helps the investors to decide about a company as an investment opportunity at a point of time.

Profitability ratios are almost important concern for every organization. These ratios are calculated to enlighten the result of company's activities. Which is the sole criterion of the overall efficiency of a business concern. The following are the important profitability ratios of UNL.

4.4.1 Summary of Key Financial Analysis of UNL

From the table 4.7 it can be said that the ratio of return in terms of sales is not stable or it is fluctuating trend. Where as in terms of investment it is in increasing trend.

Regarding the financial ratio, current ratio is the most widely used ratios. It is the ratio of current assets to current liabilities. The ratio has standard measure of 2:1 or total current assets should be two times of the current liabilities. In the table the current ratio is in decreasing trend so the management should be consider for that because total current liabilities. The ratio of 1.106 times on an average indicates that the enterprise has current assets of 1.106 for the liabilities of Rs. 1.70 conclude this interpretation we can say that UNL's position of liquidity is considerable in overall F.Y. fixed assets ratio is in decreasing trend and it is considerable in overall F.Y. except 2062/063 which shows the condition of company is not satisfactory. Net sales to total assets ratio is decreasing trend except 2064/065. It shows the company financial condition is being expanded. Current assets to fixed assets ratio is in fluctuated which shows the ratio is no significant change in ratio in overall F.Y. The overall financial ratio of

UNL shows that the financial condition and solvency of the company is in sound position.

Table No. 4.7

Summary of Financial Analysis of UNL

Ratios	2060/061	2061/062	2062/063	2063/064	2064/065
Financial Ratios:					
Current Ratio (2:1)	1.38:1	1.33:1	1.01:1	0.99:1	0.82:1
Fixed Assets Ratio (<1)	0.89	0.75	13.59	-0.79	-1.16
Net Sales to total assets Ratio	211.35%	210.54%	166.20%	193.49%	292.04%
Current Assets to Fixed assets Ratio	4.03	5.33	6.97	5.09	4.18
Profitability Ratios:					
Gross profit ratio	32.21%	36.44%	36.70%	36.89%	29.52%
Net profit margin ratio	7.47%	9.23%	12.76%	16.59%	14.44%
Operating ratio	87.98%	81.54%	81.71%	84.13%	86.44%
Return on assets	16.23%	19.68%	21.42%	32.36%	42.41%
Net profit to fixed assets ratio	63.74%	103.74%	148.06%	163.39%	176.63%

Sources: Appendix- IV

From the above table the overall profitability ratio's of UNL is highest in F.Y. 2064/065 except gross profit ratio and Net profit ratio. From above table gross profit ratio is fluctuating every year the gross profit of UNL is satisfy balance this margin is decreases in 2064/065 F.Y. In the context of Net profit margin ratio of UNL is fluctuating every year. This ratio shows that the company has not success to increases profit every year. Operating ratio is the relationship between cost structure and sales. The above table shows that the operating ratios not less then 80% of sales in overall F.Y. so in UNL, cost of sales and operating expenses is very high, which indicate that the management are not able to control the overall cost in company.

Return on Assets (ROA) is calculated to measure the profit against the amount invested in total assets to ascertain whether assets are being utilized properly or not. The above table shows the increasing trend of ROA in overall F.Y. which indicates the sound position of UNL. On the other Net profit to fixed assets ratio is also is in increasing trend therefore it can be said that the solvency of the company is being improved.

4.13 Identification of Cost Variability

Identification of the variability of cost is necessary in planning and control of the cost generally cost behaviors 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 changes directly in total with the change of output. But there are some other types of cost that is semi-variable cost, which are neither variable not fixed. These pass some characteristic of both fixed and variable.

Cost classification plays most important role in CVP analysis. It helps for the strategy formulation by the management in response to production and return. In case of UNL have different types of cost or expenses. But the public enterprises in Nepal have not practice of CVP analysis. So they don't have any applicable basis of cost classification in to variable and fixed as per suggestion and detail by the guide and senior staff of the enterprises which is presented in table above.

Table No. 4.8

Cost Heads and their Variability

Cost Heads	Cost Variability
Cost of sales	Variable
Distribution Expenses	Variable
Administrative Expenses	Fixed
Promotional Expenses	Fixed
Interest Expenses	Fixed
Depreciation	Fixed
Provision for Staff Bonus	Fixed
Royalty	Variable
Loss on Fixed Assets	Fixed

4.14 Cost Volume Profit Analysis of "UNL"

CVP analysis is an important tool of profit planning. It is generally used to determine break even point or to gain certain amount of profit. It is method to cover fixed, variable cost and have an estimation of profit. CVP analysis provides attention directing motive in the overall performance of the business enterprises. It indicates at which volume cost and revenues are in equilibrium. BEP is defined as this level of production where revenues and cost of firm are equal and there is neither profit nor loss. The cost volume profit analysis of UNL is based on following cost.

4.6.1   Variable Cost of UNL

Table No. 4.9

Variable Cost of UNL

(Rs.In million)

Cost Head	2060/061	2061/062	2062/063	2063/064	2064/065
Cost of Sales	843.14	969.10	937.82	940.23	1281.62
Distribution Expenses	44.11	46.32	40.22	27.37	37.53
Royalty	20.25	16.87	8.60	7.61	8.65
Total	**907.50**	**1032.23**	**986.64**	**975.21**	**1327.8**
% Change	-	13.75%	-4.42%	-1.15%	36.15%

Sources: Annual Report of UNL

From the above table the variable cost of UNL is cost of sales, Distribution expenses, Royalty. The total variable cost is Rs. 907.50 million in year 2060/061 which is increase by 13.75% in year 2062/063 and reach Rs. 986.64 million and decrees by 1.15%. The variable cost in 2064/065 is Rs. 1327.8 million, which is highest in overall F.Y. and increases by 36.15% then previous fiscal year 2063/064. So that variable cost is controllable cost so: management should try to reduce this cost.

4.6.2 Fixed Cost of UNL

Table No. 4.10

Fixed Cost of "UNL"

(Rs.In million)

Cost Head	2060/061	2061/062	2062/063	2063/064	2064/065
Administrative Expenses	41.72	43.58	38.78	36.068	43.63
Promotional Expenses	164.32	250.08	203.32	170.53	157.39
Interest Expenses	2.60	1.70	1.76	1.78	1.05
Depreciation	167.89	184.34	193.70	203.56	209.08
Provision for Staff Bonus	13.78	21.53	28.41	30.46	34.55
Loss on Fixed Assets	0.25	0.77	5.20	0.933	4.95
Total	**390.56**	**502.08**	**471.17**	**443.33**	**450.65**
% Change		28.56	-6.15	-6.67	1.65

Sources: Annual Report of UNL

Fixed cost remains constant in total despite when production cost level of activity with in every year when production cost or service cost are changed but fixed cost remains same. The per unit fixed cost may decrease while the numbers of production units are increased. Though, fixed cost of UNL is presented in table.

From the above table there are fluctuations in fixed cost of UNL. In year 2060/061 total fixed cost is Rs. 390.56 million, which in increased by very high percentage of 28.56% and reach to 502.08 million. But fixed cost is decreased by 6.15% and 6.67% on coming years 2062/063 and 2063/064 respectively. In F.Y. 2064/065 total fixed cost is increased by 1.65% then previous year. Total fixed cost of UNL is very high because of high amount of interest on long term loan and depreciation. High fixed cost increase the break-even level. So, unusual fixed cost should control if possible.

4.6.3 Analysis of Contribution Margin (Profit/Volume) Ratio, BEP, Margin of Safety

In cost-volume profit analysis we have to compute various ratios, which are important part of CVP analysis. CVP analysis's aim will fulfill when we are able to analyze these all parts of CVP's tools.

The table below shows the variable cost ratio (V/V Ratio) CM (P/V) Ratio, Break- even sales, margin of safety, and its percentage to sales and BEP and margin of safety considering other income of UNL are calculated.

i) V/V Ratio: Variable cost volume ratio shows the proportion of variable cost to each rupee of sales volume. From the above it is clear that variable cost is high and which is in increasing trend. V/V ratio is an average of 70%, which shows that the UNL should control over variable cost to earn better profit.

Table No. 4.11
Computation of Various Ratios of UNL and Analysis (Rs.In millions)

S.N.	Particulars	2060/061	2061/062	2062/063	2063/064	264/065
1.	Sales Revenue	1246.75	1524.90	1481.56	1434.95	1818.53
2.	Variable Cost	907.50	1032.97	986.64	975.21	1327.8
3.	V/V Ratio	0.727	0.677	0.665	0.679	0.731
4.	Contribution Margin (S-V)	339.25	491.93	494.92	459.74	490.73
5.	P/V Ratio (CM/Sales)	0.272	0.323	0.334	0.321	0.269
6.	Fixed Cost	390.56	502.08	471.17	443.33	450.65
7.	BEP in Amount	1435.89	1554.43	1410.69	1381.09	1675.28
8.	BEP % on Sales	3.67	3.095	2.994	3.115	3.717
9.	Margin of Safety (SR- BE)	-189.14	-29.53	70.87	53.86	143.25
10.	MOS as Percentage of Sales (Ratio)	-15.17%	-1.935	4.785	3.755	7.88%

BEP considering other income and other expenses

$$BEP= \frac{\text{Fixed Cost} - \text{Other income} + \text{Othere Expenses}}{\text{P/V Ratio}}$$

	Fixed Costs	390.56	502.08	471.17	443.33	450.65
11.	Non Operation income (Other income)	7.13	27.55	42.81	77.12	87.78
12.	FC after deducting other income (6-11)	383.43	474.53	428.36	366.21	362.87
13.	BEP (12/PV ratio)	1409.67	1469.14	1282.52	1140.84	1348.95
14.	Margin of Safety (SR-BEP)	-162.92	55.76	199.04	294.11	469.65
15.	MOS% (MOS/Sales revenue)	-13.065	3.66%	13.44%	20.49%	25.82%
Cash BEP = (Fixed Cost- Non Cash Expenses (Dep^n))/ PV Ratio						
16.	Non-Cash Expenses (Depreciation)	167.89	184.34	193.70	203.56	209.08
17.	FC after deduction of depreciation (6-16)	222.67	317.74	277.47	239.77	241.57
18.	**Cash BEP (17/PV Ratio)**	**818.63**	**983.72**	**830.74**	**746.94**	**898.03**

Sources: Annual Report of UNL

ii) P/V Ratio or Contribution Margin Ratio : Contribution margin means how much is left from sales revenue after covering variable expenses that are contributed towards the covering of fixed expenses and then towards profit for the period. The profit volume ratio is 0.272, 0.323, 0.334, 0.321 and 0.269 for the F.Y. 2060/061 to 2064/065 respectively. The P/V ratio of UNL is in decreasing trend it is 30% on an average, which denotes that UNL is not able to cover fixed lost and earn reasonable return.

iii) Break-Even-Point: The point, which breaks the total costs and selling price evenly to show the level of output or sales at which there shall be neither profit of loss, is regarded as break-even point. Cost volume profit analysis is sometimes referred to simply as break-even analysis. Yet it is

always taken as an important part of profit planning as it gives the planner may insights into the data which he/she working. Profit planning of each firm's begins from break-even analysis.

The break-even point can be also determined with the help of a graph. A simple illustration of break-even chart of Unilever Nepal Ltd. For the F.Y. 2064/065 is given below, where sales revenue is shown in X axis and cost amount is shown in Y- axis. (Rs.In million).

Figure No. 4.4

Break-Even-Point Analysis
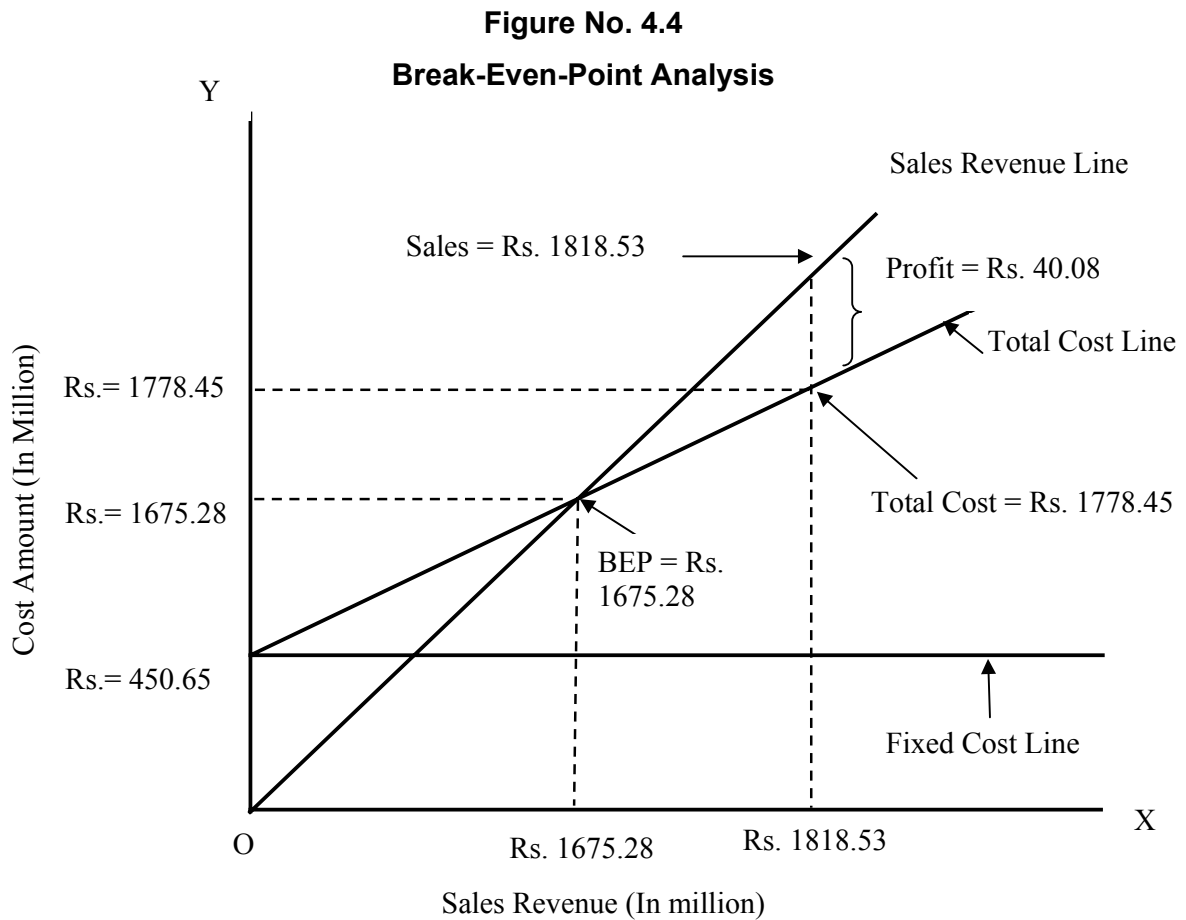
Above chart shows that fixed cost is always equal within a certain level of activity, so fixed cost curve is parallel to X axis. Total cost increases with increase in sales revenue. As a result total cost curve is slopping upwards to right side. The total cost curve starts from fixed cost amount Rs. 450.65 (in million). The amount Rs. 450.65 (million) is also total cost when the

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sales revenue is zero. The sales revenue curve originates from the origin because sales revenue is zero when the sales volume is zero.

The chart also shows that sales curve is also slopping upwards to right. An equilibrium point between total cost and total revenue curve is known as break-even point where both the cost and revenue is equal at Rs. 1675.28 (in million). If the actual sales amount is more then break-even sales amount the company will earn profit and if the actual sales is less then the break even sales the firm will suffer from loss. Above chart of UNL F.Y. 2064/065 clearly shows that the actual sales amount Rs. 1818.53 (in million) is greater then total cost amount Rs. 1778.45 (in million), which generate the profit amount Rs. 40.08 (in million).

Similarly, above table No. 4.11 shows the break-even point for five fiscal year 2061/062 to 2064/065. The break-even points are Rs. 1435.89, 1554.45, 1410.69, 1381.09 and 1675.28 for the F.Y. 2061/062 to 2062/063, 2063/064 and 2064/065 respectively. The trend of break-even sales considering of their income and other expenses. That the BEP is less then sales revenue so the enterprises has not to bear risk UNL is in profit position from all years. BEP is in increasing trend but BEP percentage as on sales is decreasing to the management of the UNL is very good in case of control the cost. As well as BEP volume of the UNL is computed including other income, which shows that BEP is less then sales revenue that is satisfactory result.

In the above table UNL's cash BEP is also calculated after deduction of depreciation from the total fixed cost of the UNL. The calculated cash BEP is 818.63, 983.72, 830.74, 746.94 and 898.03 in F.Y. 2060/061, 2061/062, 2062/063, 2063/064 and 2064/065 respectively this is less then sales revenue in overall fiscal year. In fact, UNL has been generating positive cash from operating activities. So in the short run UNL has not face the difficulty in paying its bills.

iv) Margin of Safety: Margin of safety is the excess budgeted/actual sales over break-even point. The margin of safety ratio indicates how safe the future of the firm is. The higher the M/S ratio the safer is the firm.

In above table No. 4.11 UNL's break-even sales is higher then actual sales revenue so safety margin is in negative and less by 15.17%, 1.93% in F.Y. 2061/062 and 2062/063 safety margin is in positive and fluctuating by 4.78%, 3.75% and 7.88% in F.Y. 2063/064 and 2064/065 respectively. It shows that F.Y. 2061/062 and 2062/063 UNL is suffering from loss so it's financial position is not good but in F.Y. 2063/064 and 2064/065 the ratio is increasing and positive so it's financial position is going to be good.

On the other hand, other income which is non-operating income of UNL, is included in fixed cost and computed BEP and margin of safety. It has reduced the BEP volume and increased safety margin and its percentage. Lower the break-even volume shows the good for the UNL too earn profit and increasing margin if safety ratio indicated that how safe the future of the firm is.

4.15 Sensitivity Analysis

It is another popular technique of testing the cost volume profit variables. When there is any change in variables, the impact on other factors is sure. Sensitivity analysis measures the elasticity of the change in CVP factors on break-even point or given profit. To measure the sensitivity of CVP factors we can see the impact of certain percentage or amount change in volume, price or cost factors on net profit which shows proportionate relationship, positive relationship, inverse relationship and no relationship for measurement of sensitivity we have various variables but those all are not possible to test. So the main factors like sales, fixed cost and variable cost change impact are shown below for the enterprise lower BEP is better then the higher BEP for the comparison of results.

4.15.1 Degree of Operating Leverage and BEP for UNL

Degree of operating leverage (DOL) may be defined as the percentage change in net operating income associated with a given percentage

change in sales. To create a degree of operating leverage means of employment of higher amount of fixed costs which eventually increase the break-even point also.

Table No. 4.12

Degree of Operating Leverage and BEP   (Rs.in Million)

$$DOL = \dfrac{\text{Contribution Margin}}{\text{Net Operating Income}}$$					
Particulars/Year	**2060/061**	**2061/062**	**2062/063**	**2063/064**	**2064/065**
Contribution Margin	339.25	491.93	494.92	459.74	490.73
Net Operating	133.56	190.33	248.27	295.47	298.35
Income	$\dfrac{139.25}{133.56}$	$\dfrac{491.93}{190.33}$	$\dfrac{494.92}{248.27}$	$\dfrac{459.14}{295.47}$	$\dfrac{490.75}{298.35}$
DOL=	=2.50	=2.58	=1.99	=1.56	=1.65
BEP	**1435.89**	**1554.43**	**1410.69**	**1381.09**	**1675.28**

Sources: Annual Report of UNL

The above table shows that the DOL of UNL is decreasing trend. The greater degree of operating leverage is indicating the greater amount of business risk. Operating leverage of UNL for the bare year 2064/065 is 1.65, which indicate that if sales income by 100%, the amounts of EBIT increase by 165%. It is clear that UNL absorbed more fixed cost aim to gain more profit. It indicates that return efficiency area cover to capital structure.

4.15.2 Assessing the Impact When Sales Revenue or Operating Income is Change

Break-even level of enterprises will change when total sales revenue is changed. Because change is sales revenue impact on contribution margin and it's ratio. An increase in the sales value will increase profit volume ratio and as a result, will lower the break-even point. On the opposite, a decrease in sales value will reduce the profit volume ratio and therefore, results in a higher break-even point. If increase and decreased of sales revenue by 10% with other factors assumed to remain the same it gets following result.

Table No. 4.13

Sensitivity Analysis of UNL

Income Statement by 10% Change in Sales Revenue

(Rs.in million)

Years		Sales	VC	CM	FC	Profit	P/V Ratio	BEP	% Change in BEP
2060/061	Original	1246.75	907.50	339.25	390.56	-51.31	0.272	1435.88	-
	10% Increase	1371.42	907.50	463.92	390.56	73.36	0.339	1152.09	-19.76%
	10% Decrease	1122.07	907.50	214.57	390.56	175.99	0.192	2034.17	41.67%
2061/062	Original	1524.90	1032.97	491.93	502.08	-10.15	0.323	1554.42	-
	10% Increase	1677.39	1032.97	644.42	502.08	142.34	0.384	1307.5	-15.89%
	10% Decrease	1372.41	1032.97	339.44	502.08	162.64	0.247	2032.71	30.76%
2062/063	Original	1481.56	986.64	494.92	471.17	23.75	0.334	1410.68	-
	10% Increase	1629.71	986.64	643.07	471.17	171.9	0.395	1192.84	-15.45%
	10% Decrease	1333.40	986.64	346.76	471.17	-124.41	0.260	1812.19	28.46%
2063/064	Original	1434.95	975.21	459.74	443.33	16.41	0.321	1381.09	-
	10% Increase	1578.44	975.21	603.23	443.33	159.90	0.382	1160.54	-15.96%
	10% Decrease	1291.45	975.21	316.24	443.33	-127.09	0.245	1809.51	31.03%
2064/065	Original	1818.53	1327.8	490.73	450.65	40.08	0.269	1675.28	-
	10% Increase	2000.38	1327.8	672.58	450.65	221.93	0.336	1341.22	-19.94%
	10% Decrease	1636.67	1327.8	308.87	450.65	-141.78	0.189	2384.39	42.33%

Sources: Annual Report of UNL

The above table shows the break-even amount has decreased with the inverse in sales revenue by 10% that indicates the price or value of sales and break-even point have inverse relation. Similarly the decreased sales value by 10% increases the break-even sales. There is the increment of BEP by 41.67%, 30.76%, 28.46%, 31.03%, and 42.33% with the 10% decrease. In sales revenue in the year 2060/061, 2061/062, 2062/063, 2063/064 and 2064/065 respectively. Similarly there is the reduction of BEP by 19.76%, 15.89%, 15.45%, 15.96%, and 19.94% with the 10% increased in sales revenue in the year 2060/061, 2061/062, 2062/063, 2063/064 and 2064/065 respectively.

From the observation the rate of increment is higher then the rate of reduction in BEP with the constant change of sales revenue in the respective year. Therefore, it can be said that the decreases in sales affect the company more then the increase in sales by same percent. So UNL should careful in the fluctuation sales especially in those controllable factors that may reduce the sales volume.

4.15.3 Assessing the Impact when Variable Cost Changed

The impact of changes 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 lower the PV ratio and decrease in variable cost will increase the PV ratio. Increase and decrease of variable by 10% with other factors assumed to remain the same it gets following results.

Table No. 4.14

Sensitivity Analysis of UNL

Income Statement by 10% Change in Variable Cost   **(Rs. in million)**

Years		Sales	VC	CM	FC	Profit	P/V Ratio	BEP	% Change in BEP
2060/061	Original	**1246.75**	**907.50**	**339.25**	**390.56**	**-51.31**	**0.272**	**1435.88**	-
	10% Increase	1246.75	998.25	248.5	390.56	-142.06	0.20	1952.80	36%
	10% Decrease	1246.75	816.75	430	390.56	39.44	0.345	1132.05	-21.16%
2061/062	Original	**1524.90**	**1032.97**	**491.93**	**502.08**	**-10.15**	**0.323**	**1554.42**	-
	10% Increase	1524.90	1136.27	388.63	502.08	-113.45	0.254	1976.69	27.17%
	10% Decrease	1524.90	929.68	595.22	502.08	93.14	0.390	1287.39	-17.18%
2062/063	Original	**1481.56**	**986.64**	**494.92**	**471.17**	**23.75**	**0.334**	**1410.69**	-
	10% Increase	1481.56	1085.30	396.26	471.17	-74.91	0.267	1764.69	25.09%
	10% Decrease	1481.56	887.98	593.58	471.17	122.41	0.40	1177.93	-16.49%
2063/064	Original	**1434.95**	**975.21**	**459.74**	**443.33**	**16.41**	**0.320**	**1385.40**	-
	10% Increase	1434.95	1072.73	362.22	443.33	-81.11	0.252	1759.25	26.98%
	10% Decrease	1434.95	877.69	557.26	443.33	113.93	0.389	1139.67	-17.74%
2064/065	Original	**1818.53**	**1327.8**	**490.73**	**450.65**	**40.08**	**0.269**	**1675.28**	-
	10% Increase	1818.53	1460.58	357.95	450.65	-92.70	0.196	2299.24	37.24%
	10% Decrease	1818.53	1195.02	623.51	450.65	172.86	0.342	1317.69	-21.34%

Sources: Annual Report of UNL

Above table shows that by 10% increase in variable cost increases the break-even point and 10% decrease in variable costs decreases the break-even point, which indicates that variable cost and break-even point have positive relationship. There is the increment of BEP by 36%, 27.17%, 25.09%, 26.98% and 37.24% with the 10% increase in variable cost in the year 2060/061, 2061/062, 2062/063, 2063/064 and 2064/065 respectively. Similarly the reduction of BEP by 21.16%, 17.18%, 16.49%, 17.74% and 21.34% with the 10% decrease in variable cost in year 2060/061, 2061/062, 2062/063, 2063/064 and 2064/065 respectively.

From the observation, it is seen that the rate of increment is higher then 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 then the decrease in variable cost by same percentage.

4.15.4 Impact of Changes of Fixed Costs in BEP

Fixed cost is constant cost, which don't change for certain level. In CVP analysis when fixed cost is changed it does not bring any change in contribution margin and PV ratio. But only when fixed cost is changed net income and BEP amount also change. Here the 10% change on fixed cost of UNL are measured are as follows.

Table No. 4.15

Sensitivity Analysis of UNL

Income Statement by 10% Change in Fixed Cost

For the Fiscal Year 2064/065

(Rs.in millions)

Particulars	Original	10% Increase	10% Decrease
Sales	1818.53	1818.53	1818.53
Less: Variable Cost	1327.80	1327.80	1327.8
Contribution Margin	490.73	490.73	490.73
Less: Fixed Cost	450.65	495.72	405.58
Net Income/Loss	40.08	-4.98	85.15
P/V Ratio	0.269	0.269	0.269
BEP	**1675.29**	**1842.82**	**1507.73**
% Change in BEP	-	10%	10%

Sources: Annual Report of UNL

The table shows that the 10% increment in fixed cost increase the BEP amount with same percentage and 10% decrement in fixed cost decrease the BEP amount by 10%. Therefore, it can be concluded that break-even point and fixed cost have positive relationship. So the 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 segression is not scientific and practical.

4.16 Major Findings:

The major findings of this study based on the analysis of available secondary and primary data and other information are pointed out as follows:

1. The company's sales trend has fluctuated trend but not satisfactory trend of increasing. The sales achievement is always less then the sales target. But it is more then 91.15% achievement in almost years except F.Y. 2063/064. Budgeted sales are more homogeneous or more stable then actual sales. Hence the coefficient of variation of budgeted sales is lower then the coefficient of variation of actual

sales achievement. The value of r is 0.803 this shows that there is high degree of positive correlation between budgeted sales and actual sales revenue.

2. The value of P.E. 0.1071 where r > 6 P.E. that means r is definitely significant the value of coefficient of determination (r^2) 0.6448 explain the actual sales achievement of UNL up to 64.48% due to budgeted sales and remaining 35.52% is due to other reason.

3. The total expanses of UNL is in fluctuated trained mainly the total expenses is cove by cost of sales. Distribution, Administrative, promotional, Interest, all are in decreasing trained except Depreciation expenses.

4. The both sales revenue and profit of the UNL is in fluctuating trend the highest increasing rate in sales revenue is 26.73% in F. Y. 2064/065 and it is 51.10% on profit in the F.Y. 2061/062. Being the lower CV of sales revenue 11.50% then net profit 33.62%. Sales revenue is less fluctuated then net profit.

5. The correlation between sales and net profit is 0.8801. Therefore, there is significant relationship between sales and net profit and it is concluded that the change in sales results change of net profit. 'T' statistics also indicate that there is significant relationship between sales and net profit.

6. The company's have not practice CVP analysis so they don't have any applicable basis of cost classification into variable and fixed cost so semi-variable cost also accumulated in total cost. Different cost items are classified into variable and fixed cost only.

7. The company has no proper practice of segregating cost into fixed and variable. Also the total variable and fixed cost of the company is more fluctuating almost years.

8. The current ratio is in decreasing trend, the ratio of 1.10 times on an average indicates that the company has current assets of 1.10 for the liabilities of Rs.1 which shows the UNL's position of liquidity is satisfactory.

9. The current assets to fixed assets ratio is no significant change in ratio (i.e. decreasing trend) of UNL in overall F.Y. on the other hand fixed assets ratio is no significant because of decreasing trend.

10. The gross profit margin ratio and net profit margin ratio of UNL is fluctuating trend. The ratio is 34.35% on an average of gross profit and net profit margin ratio is 12.10% on an average in all F.Y. which indicate the company's position is satisfactory.

11. The operating ratio is not less then 81% of sales in overall F.Y., which indicate that the management are not able to control the overalls cost in company's.

12. Return on assets of UNL's is in increasing trends in overall F.Y. That shows that the management performance is optimistic. On the other hand. Net profit to fixed assets ratio also be increasing trends in overall F.Y. so the company's position is high satisfactory.

13. The V.V ratio of UNL is on average of 70% and contribution margin is not sufficient to cover fixed cost. The PV ratio is in decreasing trend it is 30% on an average so UNL has not occurs the sufficient profit, for the period.

14. BEP of UNL is higher then sales in F.Y. 2060/061 and 2061/062. After F.Y. 2061/062 the BEP is less then sales and it is in increasing trend but BEP percentage as on sales is decreasing so the management of the UNL is slightly good in case of control the cost.

15. UNL cash BEP is less then the sales revenue but it is in fluctuating trend in overall F.Y. so in the short run UNL has not face the difficulty in paying its bills.

16. MOS of UNL is in increasing pattern, which indicates that future of the firm's, are safe.

17. The Break-even amount has decreased with the increase in sales revenue and increase when the decreased sales value by 10% that indicates the price or value of sales and break-even point have inverse relation. The fluctuation sales especially in those controllable factors that may reduce sales value.

18. The impact of change in variable cost on profit. That 10% increase in variable cost increase the BEP and 10% decrease in variable cost

decrease the BEP which indicates that variable cost and break-even point have positive relationship. To careful in the fluctuation of variable cost, especially in those controllable factors that may increase the variable cost.

19. The break-even point and fixed cost have proportionate relationship. The total fixed cost of UNL is very high. Increasing the fixed cost decreasing the profit and decreasing the fixed cost increasing the profit. It indicate that company should reduction the fixed cost.

20. The high BEP and high DOL indicate the high risk. The high DOL of UNL shows that the firm goes in to loss sooner as sales decline and earns more as sales increase. So UNL should be focused to increase sales.

Chapter - V

SUMMARY, RECOMMENDATION AND CONCLUSION

5.4   Summary

In the present era, industrialization has become essential element for development of the country. Industry promotes economic development by providing employment and by mobilizing the unutilized resources. Therefore, the strong need of public sector and private sector is felt for the growth and economic development of the company though industrialization. By the realization of this fact many public and private enterprises were established.

But unfortunately the performances of Nepalese enterprises are remained unsatisfactory due to various factors such as lack of clear-cut goals and objectives, poor planning, corruption in economy, extensive bands and strikes, Increasing number of competitors, price problem due to underutilization of production capacity, Raw material problem due to unstable government's policy, political motivation of top level management etc. In Nepalese organization, effective and efficient planning system is rarely found in practice. Comprehensive profit planning and control system which is considered as the life blood of any organization and keys the organization alive, assures the future and creates the soundness on it, is not fully utilized and most of the managers are lacked of it.

The profit planning and control is used for the development and acceptance of objective and goals and moving an organization efficiently, systematically, and timely has achieved the predetermined objectives and targeted goals. Therefore every business organization should make plan with a help of various types of tool and techniques. Cost-volume profit analysis can be used in profit planning because it provides the information about the behavior and relation of cost with volume and sales where the business will give zero profit or loss. It also provided the information about sensitivity of profit due to variation in projected amount of

output or sales. The whole picture of profit planning is associated with cost volume profit inter relationship.

According to the objectives, this study is examine the use of CVP analysis to plan the profit on the case study of Unilever Nepal Limited. It main purpose is to meet the everyday needs of people everywhere to anticipate the aspirations of it's consumer and customers and to respond creatively and competitively with branded products and services which raise the quality of life. It's fulfillment the necessary goods for everyone to everywhere with a reasonable price. The main objective of this study was to highlight the cost-volume-profit analysis as a tool of profit planning and control of Unilever Nepal Limited. So, the study was fully devoted to examine the CVP analysis of the industry. A part from the qualitative data related to CVP, other behavioral aspects of comprehensive profit planning and control were also studied. As per the objective of the study, various primary and secondary data were collected for five years from F.Y. 2060/061 to F.Y. 2064/065.

The collected data from primary and secondary sources were analyzed with descriptive and analytical approach. Sales revenue analysis, sales trend analysis, cost analysis, BEP analysis, profitability analysis, sensitivity analysis were done with the help of various accounting, statistical and financial tools. Primary data were collected by direct interview with concerned officers and personals. Secondary data were drawn from the various documents like annual report, company's bulletins, news letters, advertisement etc. published by industry and concerned authority.

From the analysis, the company's has not a systematic and realistic plan. Budget is based on historical data only and seems that planning section of UNL is ignoring the actual sales and achievement, which will be lead to plan. The key financial analysis like net profit ratio, operation ratio, current ratio, fixed assets ratio, net sales to total assets ratio, current assets to fixed assets ratio, Return an assets, gross profit margin has been done. Management of the organization to improve

Organization/performance while developing future planning could use this result of the study. All of the ratios of the company is fluctuating trend.

From the computation of various ratios VV ratio, PV ratio, BEP, which is important part of CVP analysis and is an important tool of profit planning. Position of UNL is satisfactory level; firstly decrease then after increasing trend. The sensitivity test of cost-volume-profit analysis shows that cost increase (i.e. variable and fixed), the BEP will also increase and when the costs decrease the BEP will decrease. It indicates the relationship between cost and BEP is positive correlated where as the relationship between selling price and BEP is negative correlate, To fulfill the company's objectives, it take burden of all types of fixed costs but not control effectively. Company's profit condition is satisfactory.

The profit is increasing trend so that the company's financial position is very good. Lack of details information and extra cost burdens are the main reasons behind not practicing profit panning and control tools like a CVP analysis in most of private companies as well as public enterprises in Nepal.

5.5   Recommendations

On the basis of the study of CVP analysis as tools of PPC of Unilever Nepal Limited, it seems necessary to develop, implement and improve the process of CVP analysis from beginning to and with PPC. As Nepal has already got the membership of WTO, BIMSTEC, SAFTA and other international organizations. Nepalese industries should fit with this environment. Nepalese products will be in the trap of cutthroat competition. The future of the Nepalese industries largely depends on their strategic fit and for this, managers should be aware of the current business issues and their strategic impact in own business. For better utilization of the limited resources and achieving goal through cutthroat competition, application of advance profit planning and control tools can be great help. Thus the following recommendations based on the finding of the research study are:

1.   Unilever Nepal Limited should clearly define their broad objectives, because objectives are the basic guidelines of the company. Duties

and responsibilities should be identified in clear-cut way between the objectives. The company should use management by objectives (MBO).

2. To strengthen the competitiveness of Nepalese manufacturing company, substitute the import products and to carry out PPC activities, the use of profit planning and controlling tools are recommended. For planning activities tools like budgeting, CVP analysis etc. it is recommended to analysis cost and benefit of the tools.

3. Classification of expenses item as variable and fixed or controllable and non-controllable must be made with in a specific frame-work of responsibility and time.

4. Participative management should be introduced in formulation of plans and policies of the organization. Profit planning manuals should also be communicated to lower level of management. Effective budget education should be provided to improve profit planning system in UNL.

5. As the share of the industry in Nepalese market is only about 27% of the total market. The company should follow effective advertising policy and other promotional campaigns. Marketing specialists should involve to increase present sales volume and to find new areas where profit potential is high. The industry should further innovation and expand its products to international market especially in south Asia.

6. The industry should consider the cost-volume profit relationship while fixing the price of its products.

7. To improve profit planning system in UNL trained and qualified professionals should be hired.

8. The industry does not have any detailed and systematic practice of cost plan, which is one of the essential elements of profit planning and control. Therefore, it is recommended to initiate the cost planning system.

9. UNL is bearing huge amount of fixed costs for employee expenses and Depreciation which is not good for the organization. Therefore the industry should initiate the cost control programme.

10. Price raising is not only one alternative to increase revenue or sales amount controlling is necessary and by which wasteful expenses are automatically decreased. Therefore, it is recommended to adopt effective controlling tools.

11. UNL has invested big amount in fixed costs for generate profit by maximum utilization of available resources, but analysis shows the poor utilization of fixed assets. Therefore, the industry should put stress on effective utilization of fixed assets.

12. UNL is paying huge amount as interest on long term loan, which is not good for the industry. So, it should emphasize internal financing to minimize such burden. Therefore, UNL must restructure its capital structure so that the industry burden will decrease.

13. Volume of finished goods inventories and raw material inventories should be reduced to optimum level.

14. The company should fix a target sales and production.

15. The company should make sales promotion schemes in domestic and foreign market through effective different Medias like TV, FM, Radio, Newspaper etc.

16. The company should develop alternative supply sources of raw material.

17. The company should improve its full capacity utilization by increasing the production or by introducing new product.

18. As the industry is facing the problem of poor communication, among production, administration, technical, engineering, procurement and marketing department, the strong need of co-ordination among various departments and should co-ordination between production and market demand is recommended.

19. The industry should consider about the product line to improve its position. As shown by the analysis, the soap products are more profitable then other products, therefore, the industry should

allocate more resources used to produce soaps, which might help to improve it's present condition of profit.

20. The company should to launch various new products to fulfill the consumer demand. Also should use 'SWOT' analysis.

21. UNL should have major programme to achieve set up objectives by taking full advantages of the latest techniques.

22. Reward and punishment system should be effective and should be based on work performance, so internal evaluation must be followed.

23. Performance reports should be strictly followed to make conscious towards poor performance and take corrective action timely.

24. Effective programme should be improving the productivity of labour, employee morale should be increased and incentive plan should be started to motivated employee.

25. Finally, to strengthen the competitiveness, to substitute the import products and to carryout PPC activities of the industry, the use of profit planning and controlling tools are recommended. For planning activities tools like, budgeting, CVP analysis etc. It is recommended to analyze cost and benefit of the tools.

5.6 Conclusion

Different types of profit planning tools, which are taught in the academic filed are not found applied by Unilever Nepal Limited. It shows gap between the theory and practice. Cost-volume-profit analysis is not applied by UNL nor segression of costs in to fixed and variables. Increasing operating and maintains cost in each year is anther remarkable problem for UNL. They have not adopted the cost control programme. Long term liability is very high; therefore must of the income is utilized on paying interest. Hindustan Unilever Ltd. Which is the majority share holder provided the company all information related to new product innovations, marketing mix, information on price movements of commodities, system related information and technology etc. No information was provided to the company by any other substantial shareholders. So that the decisions making process is slow. Company has no clear cut boundaries to separate cost into fixed and variable.

The classification of cost is not scientific and systematic. Therefore, UNL has not been able to CVP analysis and make the realistic budget.

The CVP analysis shows that the company has low contribution margin. It successes to increase the contribution margin by increasing sales revenue more than the increasing variable cost. Due to the increasing of fixed costs, the company's BEP also increased, but heavy increase in sales revenue, it could increase profit and safety margin. The sensitivity of CVP analysis in response to change in fixed cost is equal where as it is very high in response to change in sales revenue and variable cost.

Goal and objective of the company are not communicating to the lower level. Consequently there are substantial gap between planned and actual achievement. CVP relationship is not considered while developing sales plan, production plan and pricing strategy. On the other hand, the sales revenue is fluctuation trend because of the political situation of the country. Competitors position, Government rules and regulation etc. are affected the sales revenue. Also the fixed cost of the company is also not stable for each year. So if the management do not consider the behavior of costs and not control the costs, the Unilever Nepal Limited may bear high deficit in future.

Lastly, the past year has been a difficult year of Nepal. Business environment during the year remained unfavorable due to record numbers of continuous bands in most of its major markets, power shortage and cartel formation by truck associations. Disruption in supply 0f raw materials consequent to disturbances at the borders and lack of industrial security hampered industrial production. GDP of the country grew by an estimated 2.29% during the FY 2064/065 compared to growth of 3.14% in FY 2063/064. On the cost front, high international petroleum prices resulted in record high prices for most of its key raw material. On the taxation from, income tax rebate for companies listed at the Nepal stock exchange was withdrawn in the 2064/065 budget.

Notwithstanding such challenges, the company responded magnificently to the challenges and posted yet another strong performance delivering superior shareholder returns.

1. Turnover grew by 27%.
2. Net profits increased by Rs. 24.9 million from Rs. 238.2 million during 2063/064 to 263.1 million during 2064/065.
3. Return on capital employed grew from 136% during 2063/064 to 148% during 2064/065.
4. Earning per share rose by 10.4% from Rs. 259 in 2063/064 to Rs. 286 in 2064/065.
5. Market share of Unilever Nepal products increased by 2.8% over same period last year i.e. Rs. 3800 each at Nepal stock exchange as on 16th July 2008, against face value of Rs. 100 per share.
6. Domestic sales is increases by 20% on this year i.e., 22,409 tons of total products. Due to tax exempt manufacturing sites in India and with existing duty stricture of Nepal on imported raw material and packing materials, exports of our products continued to be uncompetitive and the company did not export any product.
7. UNL has been awarded "**FNCCI National excellence Award- 2062"** and "**Best presented Accounts Award- 2064**".
8. UNL continued to single-mindedly concentrate on driving market development in Nepal leading to a domestic business growth of 27%.
9. UNL has been provided staff bonus at 10% of the net profit after such bonus.
10. UNL has been provided 400% proposed dividend to it's stakeholders, from Net profit.

Bibliography

- Agrawal, A.N., and Lal Kunda, 1989: **Economic of Development and Planning**, New Delhi: Vikash Publishing house Pvt. Ltd.

- Agrawal, Govinda Ram, 2004: **Dynamic of Business Environment In Nepal**, Kathmandu, M.K Publishers and Distributors.

- Alay, Srijana, 2005: **Profit Planning in Manufacturing Company in Nepal: A Case Study of Nepal Lever Limited**. An Unpublished Master Degree Thesis. Shanker Dev Campus.

- **Asian Development Bank Report, 2007:** Nepal and ADB sign partnership Agreement to Fight Poverty, Kathmandu.

- Dangol, Pramita, 2001: **Profit Planning in Manufacturing Public Enterprises: A case study in Hetauda Cement Industry Limited**. An Unpublished Master's Degree Thesis T.U.

- Dangol, R.M., and Prajapati, K., 2001: **Accounting for Financial Analysis and Planning**, Kathmandu: Teleju Prakasan.

- Economic and Industrial Report, 1994: United Nations.

- Fago, G., 2003: **Profit Planning and Control**, Kathmandu, Buddha Academic Enterprises Pvt. Ltd.

- Garrison, R.H., 1985: **Business Publication Inc. Plan**, Texas.

- Ghimire, Suresh, 2007: **Cost Volume Profit Analysis as a Tool Profit Planning and Control in Nepalese Public Enterprises: A Comparatative Study of Nepal Electricity Authority and Nepal Telecom**: An Unpublished Master's Level Thesis, Balkumari College.

- Horngreen, C.T., Foster George and Datar, S.M., 1999: **Cost Accounting: A managerial Appraach**, New Delhi, Prentice Hall of India Pvt. Ltd.

- Jain, S.P., and Narang, K.L., 1993: **Advanced Accounting**, New Delhi: Kalyani Publishers.

- Khan, M.Y., and Jain, P.K., 1996: **Financial Management**, New Delhi: Tata Mcgraw Hill Publishing Company.

- Maheshwari, S.N., 2000: **Management Accounting and Financial Control**, New Delhi, Sultan Chand and Sons Educational Publishers.

- Maheshwari, S.N., 2003: **Management Accounting and Financial Control**, New Delhi, Sultan Chand and Sons Educational Publishers.

- Munakarmi, Shiva Pd, 2003: **Management Accounting**, Kathmandu: Buddha Academic Enterprises, Pvt. Ltd.

- **National Planning Commission**, 2061: The Tenth Five year plan Central Bureau of Statistics, Kathmandu (2060-065).

- Ojha, Khagendra Prasad, 1995: **Profit Planning in Manufacturing Pubic Enterprises, A Case Study of Royal Drugs Limited and Herbal Production and Processing Company Limited**. An Unpubished Master's Degree Thesis T.U.

- Pandey, I.M., 1994: **Management Accounting**, New Delhi: Vikas Publishing House private Limited.

- Pandey, I.M., 1999: **Management Accounting**, New Delhi: Vikas Publishing House private Limited.

- Pant, P.R., 2003: **Business Environment in Nepal**, Kathmandu: Buddha Academic Publishers and Distributors Pvt. Ltd.

- Sharma, sagar, 2002: **Management Accounting Practices in the Listed Companies of Nepal**. An Unpublished Master's Degree Thesis, T.U.

- Tharu, Man Singh, 2006: **Profit Planning Control**, **A Case Study of Nepal Telecom**: An Unpublished Master's Degree Thesis, Balkumari College.

- **Unilever Nepal Limited, Annual Reports**, Heritage Plaza II, Kamaladi Kathmandu, F.Y. 2060/061 to 2064/065.

- Van Horne, J. C., 1998: **Financial Management and Policy**, New Delhi: Prentic Hall of India Pvt. Ltd.

- Welsch, G.A., 1979: **Budgeting Profit Planning and Control**, New Delhi: Prentic Hall of India Pvt. Ltd.

- Welsch, G.A., Hilton, R.W. and Gordon, P.N., 2001: **Budgeting: Profit Planning and Controlling**, New Delhi: Prentic Hall of India Pvt. Ltd.

- Weston, J.F. and Brigham, E.F., 1990: **Essential of Managerial Finance**, Chicago: The Drydon Press.

- Weston, J.F. and Copeland, J.E., 1992: **Managerial Finance**, Chicago: The Drydon Press.

Appendix-I

(Rs.In million)

Year	Budgeted Sales (X)	Actual Sales (Y)	$(X-\hat{X})$	$(Y-\hat{Y})$	$(X-X)(Y-\hat{Y})$	$(X-X)^2$	$(Y-\hat{Y})^2$
2060/061	1339.53	1246.75	-266.52	-254.58	67850.66	71032.91	64810.98
2061/062	1530.50	1524.90	-75.55	23.57	-1780.71	5707.80	555.55
2062/063	1625.39	1481.56	19.34	-19.77	-382.35	374.03	390.85
2063/064	1729.53	1434.95	123.48	-66.38	-8196.60	15247.31	4406.30
2064/065	1805.30	1818.53	199.25	317.20	63202.10	39700.56	100615.84
Total	**8030.25**	**7506.96**			**120692.44**	**132062.61**	**170779.52**

Mean budgeted sales ($\overline{X}$)= $\dfrac{\sum X}{n}$ = $\dfrac{8030.25}{5}$ = **1606.05**

Mean Actual Sales ($\overline{Y}$) = $\dfrac{\sum Y}{n}$ = $\dfrac{7506.69}{5}$ = **1501.33**

Standard deviation budgeted sales (σ_x) = $\sqrt{\dfrac{\sum(X-\hat{X})^2}{n}}$

$= \sqrt{\dfrac{132062.61}{5}}$

= **162.52**

Standard deviation of actual sales (σ_Y) = $\sqrt{\dfrac{\sum(Y-\hat{Y})^2}{n}}$

$= \sqrt{\dfrac{170779.52}{5}}$

= **184.81**

Coefficient of variation of budgeted sales (CV$_X$) = $\dfrac{\sigma_x}{\overline{x}}$ = $\dfrac{162.52}{8030.25}$ = **2.023%**

Coefficient of variation of actual sales (CV$_Y$) = $\dfrac{\sigma_Y}{\overline{Y}}$ = $\dfrac{184.81}{7506.69}$ = **2.46%**

Correlation coefficient (r) $= \dfrac{(X - \hat{X})(Y - \hat{Y})}{\sqrt{(X - X)^2(Y - \hat{Y})^2}}$

$$= \frac{12.692.44}{\sqrt{(132062.61)(170779.52)}}$$

$$= \frac{120692.44}{150178.52} = \mathbf{0.803}$$

Probable error (P.E) $= 0.6745 \dfrac{1 - r^2}{\sqrt{n}} = 0.6745 \times \dfrac{1 - (0.803)^2}{\sqrt{5}} = \mathbf{0.1071}$

Coefficient of determinations $= r^2 = (0.803)^2 = 0.6448$ regression equation of actual sales (Y) on budgeted.

Sales (X) is given by,

$$Y - \overline{Y} = r\frac{\sigma_Y}{\sigma_X}(X - \overline{X})$$

$$Y - 1501.33 = 0.803\frac{184.81}{162.52}(X - 1606.05)$$

$$Y - 1501.33 = 0.9131X - 1466.53$$

$$\mathbf{Y = 0.9131X + 34.8}$$

Calculation of estimated sales

Year	Estimated sales
2060/061	$\hat{Y}$ = 34.80 + 0.9131X = 34.80 + 0.9131X1339.53 = **1257.91**
2061/062	$\hat{Y}$ = 34.80 + 0.9131X = 34.80 + 0.9131X1530.50 = **1432.29**
2062/063	$\hat{Y}$ = 34.80 + 0.9131X = 34.80 + 0.9131X1625.39 = **1518.93**
2063/064	$\hat{Y}$ = 34.80 + 0.9131X = 34.80 + 0.9131X1729.53 = **1614.02**
2064/065	$\hat{Y}$ = 34.80 + 0.9131X = 34.80 + 0.9131X1805.30 = **1683.21**

Appendix- II

Time series Analysis of sales for "UNL"

Fitting Straight line trend by least square method

(Rs. in million)

Year	Actual sales (Y)	X	X^2	XY
2060/061	1246.75	-2	4	(2493.50)
2061/062	1524.90	-1	1	(1524.90)
2062/063	1481.56	0	0	0
2063/064	1434.95	1	1	1434.95
2064/065	1818.53	2	4	3637.06
	$\Sigma Y = 7506.69$	$\Sigma X = 0$	$\Sigma\ X^2 = 10$	$\Sigma XY = 1053.61$

Source:- Annual Report of

UNL

Where, assumed 2062/063 as base Year.

The straight line trend $Y_c = a + bx$

Where, $a = \frac{\Sigma Y}{N} = \frac{7506.69}{5}$ = **1501.33**

$b = \frac{\Sigma XY}{\Sigma X^2} = \frac{1053.61}{10}$ = **105.36**

So, 1501.33 + x.105.36x

The straight line trend shows that the production will increase by Rs. 105.36 per year. If sales trend of past years will continue for future, the sales revenue for FY 2065/066 assuming 2062/063 as base year would be.

$Y_c = 1501.33 + 105.36 \times 3 = $ **1817.41**

$\therefore$ Expected actual sales for FY 2065/066 is **Rs. 1817.41** (In million)

Appendix- III

Calculation of correlation between sales and Net profit

(In Rs. millions)

Year	Actual Sales (X)	Net profit (Y)	$(X-\hat{X})$	$(Y-\hat{Y})$	$(X-\hat{X})(Y-\hat{Y})$	$(X-\hat{X})^2$	$(Y-\hat{Y})^2$
2060/061	1246.75	93.17	-254.58	-91.7	23344.98	64810.97	8408.89
2061/062	1524.90	140.78	23.57	-44.09	-1039.20	555.54	1943.93
2062/063	1481.56	189.19	-19.77	4.32	-85.40	390.85	18.67
2063/064	1434.95	238.15	-66.38	53.28	3536.72	4406.30	2838.76
2064/065	1818.53	263.06	317.20	78.19	24801.87	100615.84	6113.68
	ΣY=7506.69	ΣY=924.35	ΣX- $\overline{X}$ = 0	Σ$(Y-\hat{Y})$ = 0	Σ$(X-\hat{X})(Y-\hat{Y})$ = 50558.97	Σ$(X-\hat{X})^2$ = 170779.5	Σ$(Y-\hat{Y})^2$ = 19323.93

Mean Sales $(\hat{X}) = \sum \frac{X}{n} = \frac{7506.69}{5}$ **= 1501.33**

Mean Net Profit $(\hat{Y}) = \sum \frac{y}{n} = \frac{924.35}{5}$ **= 184.87**

Standard Deviation of Sales $(\sigma x) = \sqrt{\frac{\sum(x-\hat{x})^2}{n}}$

$$= \sqrt{\frac{170779.5}{5}}$$

= 184.81

Standard Deviation of Net profit $(\sigma y) = \sqrt{\frac{\sum(y-\hat{Y})^2}{n}}$

$$= \sqrt{\frac{19323.93}{5}}$$

= 62.17

Coefficient of Variation of Sales (CVx) = $\frac{\sigma x}{X}$

$$= \frac{184.81}{1606.05} = \textbf{11.50 \%}$$

Coefficient of Variation of Net Profit (CVy) = $\frac{\sigma y}{\bar{y}}$

$$= \frac{62.17}{184.87} = \textbf{33.62}$$

Correlation Coefficient (r) = $\dfrac{\left(X-\bar{X}\right)\left(Y-\bar{Y}\right)}{\sqrt{\left(X-\bar{X}\right)^2\left(Y-\bar{Y}\right)^2}}$

$$= \frac{50558.97}{\sqrt{170779.5 \times 19323.93}}$$

$$= \textbf{0.8801}$$

Appendix- IV

Calculation of Different Financial Ratio of UNL(Rs. In Million)

1) **Current Ratio:**

Current Ratio = $\frac{Current\ Assets}{Current\ Liabilities}$

2060/061= $\frac{589.89}{426.45}$ = **1.38:1**

2061/062= $\frac{724.25}{543.71}$ = **1.33:1**

2062/063= $\frac{891.42}{882.03}$ = **1.01:1**

2063/064= $\frac{741.61}{742.23}$ = **0.99:1**

2064/065= $\frac{622.67}{750.46}$ = **0.82:1**

2) **Fixed Assets Ratio:**

Fixed Assets Ratio = $\frac{Fixed\ Assets}{Capital\ Employed}$

Capital Employed = Total Assets – Current Liabilities

2060/061= $\frac{146.17}{163.44}$ = **0.89**

2061/062= $\frac{135.72}{180.54}$ = **0.75**

2062/063= $\frac{127.78}{9.40}$ = **13.59**

2063/064= $\frac{145.78}{(184.28)}$ = **(0.79)**

2064/065= $\frac{148.94}{(127.80)}$ = **(1.16)**

3) **Net Sales to Total Assets Ratio**

Net Sales to Total Assets Ratio = $\frac{Net\ Sales}{Total\ Assets} \times 100$

Total Assets = Total Assets- Depreciation.

2060/061= $\frac{1246.75}{589.89} \times 100$ = **211.35%**

2061/062= $\frac{1524.90}{724.25}\times100$ = **210.54%**

2062/063= $\frac{1481.56}{891.42}\times100$ = **166.20%**

2063/064= $\frac{1434.95}{741.61}\times100$ = **193.49%**

2064/065= $\frac{1818.53}{622.68}\times100$ = **292.04%**

4) Current Assets to Fixed Assets Ratio:

Current Assets to Fixed Assets Ratio = $\frac{\text{Current Assests}}{\text{Fixed Assests}}$

2060/061= $\frac{589.89}{146.17}$ = **4.03**

2061/062= $\frac{724.25}{135.72}$ = **5.08**

2062/063= $\frac{891.42}{127.78}$ = **6.97**

2063/064= $\frac{741.61}{145.78}$ = **5.05**

2064/065= $\frac{622.67}{148.94}$ = **4.18**

5) Gross Profit Ratio:

Gross Profit Ratio = $\frac{\text{Gross Profit}}{\text{Net Sales}}\times100$

2060/061= $\frac{401.58}{1246.75}\times100 =$ **32.21%**

2061/062= $\frac{555.80}{1524.90}\times100 =$ **36.44%**

2062/063= $\frac{543.75}{1481.56}\times = 100 =$ **36.70%**

2063/064= $\frac{529.45}{1434.95}\times100 =$ **36.89%**

2064/065= $\frac{536.91}{1818.53}\times100 =$ **29.52%**

6) Net Profit Margin Ratio:

Net Profit Margin Ratio = $\frac{\text{Net Profit After Tax}\times100}{\text{Sales}}$

$$2060/061 = \frac{93.17}{1246.75} \times 100 = \textbf{7.47\%}$$

$$2061/062 = \frac{140.78}{1524.90} \times 100 = \textbf{9.23\%}$$

$$2062/063 = \frac{189.19}{1481.58} \times 100 = \textbf{12.76\%}$$

$$2063/064 = \frac{238.15}{1434.95} \times 100 = \textbf{16.59\%}$$

$$2064/065 = \frac{263.06}{1818.53} \times 100 = \textbf{14.46\%}$$

7) Operating Ratio:

$$\text{Operating Ratio} = \frac{\text{Total Operating Expenses}}{\text{Sales}} \times 100$$

$$\frac{Total\ Operating\ Expenses = COGS + Operating\ Exp.\ (Distribution\ Expenses + Ad\min istrative\ Expenses + Depreciation)}{Sales} x100$$

$$2060/061 = \frac{843.14 + 44.11 + 41.72 + 167.89}{1246.75} \times 100 = \textbf{87.97\%}$$

$$2061/062 = \frac{969.10 + 46.32 + 43.58 + 184.34}{1524.90} \times 100 = \textbf{81.54\%}$$

$$2062/063 = \frac{937.82 + 40.22 + 38.78 + 193.70}{1481.56} \times 100 = \textbf{81.72\%}$$

$$2063/064 = \frac{940.23 + 27.37 + 36.068 + 203.56}{1434.95} \times 100 = \textbf{84.13\%}$$

$$2064/065 = \frac{1281.62 + 37.53 + 43.63 + 209.08}{1818.53} \times 100 = \textbf{86.44\%}$$

8) Return on Assets:

$$\text{Return on Assets} = \frac{\text{Net Income} + \text{Intrest Exp.}}{\text{Total Assets}} \times 100$$

$$2060/061 = \frac{93.17 + 2.06}{589.89} \times 100 = \textbf{16.23\%}$$

$$2061/062 = \frac{140.78 + 1.78}{724.25} \times 100 = \textbf{19.68\%}$$

$$2062/063 = \frac{189.19 + 1.76}{891.41} \times 100 = \textbf{21.42\%}$$

$$2063/064 = \frac{238.15 + 1.79}{741.61} \times 100 = \textbf{32.36\%}$$

$$2064/065 = \frac{263.06 + 1.06}{622.68} \times 100 = \textbf{42.41\%}$$

9) Net Profit to Fixed Assets Ratio:

Net Profit to Fixed Assets Ratio = $\dfrac{\text{Net Profit Before Interest Tax}}{\text{Total Fixed Assets}} \times 100$

2060/061= $\dfrac{93.17}{146.16} \times 100 = \mathbf{63.74\%}$

2061/062= $\dfrac{140.78}{135.71} \times 100 = \mathbf{103.74\%}$

2062/063= $\dfrac{189.19}{127.78} \times 100 = \mathbf{148.06\%}$

2063/064= $\dfrac{238.16}{145.77} \times 100 = \mathbf{163.39\%}$

2064/065= $\dfrac{263.06}{148.93} \times 100 = \mathbf{176.63\%}$

Appendix- V

Balance Sheet

In '000' NRS

(Up to 2060/061-2064/065)   (Figure in brackets represents deductions)

Particular/Year	2060/061	2061/062	2062/063	2063/064	2064/065
Capital & Liabilities					
Share Capital	92,070	92,070	92,070	92,070	92,070
Reserve & Retained earning	2,66,359	3,03,943	1,24,863	1,32,844	1,42,717
Total	**3,58,429**	**3,96,013**	**2,16,933**	**2,24,914**	**2,34,787**
Assets					
1. Fixed Assets					
Gross Block	3,14,057	3,17,825	3,19,233	3,47,735	3,36,971
Less: Depreciation	(1,67,899)	(1,84,348)	(1,93,708)	(2,03,563)	(2,09,085)
Assets Under Construction	-	2,233	2,252	1,604	21,047
Net Block	1,46,158	1,35,710	1,27,776	1,45,776	1,48,934
Total	**1,46,158**	**1,35,710**	**1,27,776**	**1,45,776**	**1,48,934**
2. Investments					
Government Bonds	48,836	79,764	79,764	79,764	-
Fixed Deposit	-	-	-	1,83,650	2,13,650
Total	**48,836**	**79,764**	**79,764**	**2,63,414**	**2,13,650**
3. Current Assets					
Inventories	1,26,107	1,84,215	2,29,764	2,56,167	3,04,326
Trade other receivables	64,775	97,062	1,57,721	1,38,318	1,36,449
Cash and Bank Balance	3,17,404	3,91,531	4,43,311	2,42,671	1,01,602
Pre Paid, Advance loan and Deposits	81,598	51,434	60,617	1,04,447	80,291
Total	**5,89,884**	**7,24,244**	**8,91,414**	**7,41,603**	**6,22,670**
Less: Current Liabilities					

and Provisions					
Trade and other Payable	2,47,008	3,35,716	3,70,237	3,53,309	3,68,484
Short term loan	-	-	-	-	-
Provisions	1,79,442	2,07,989	5,11,785	3,88,922	3,81,983
Total	**4,26,450**	**5,43,705**	**8,82,022**	**7,42,231**	**7,50,467**
Net current Assets	1,63,434	1,80,539	9,392	(625)	(1,27,796)
Grand Total	**3,58,429**	**3,96,013**	**2,16,933**	**2,24,914**	**2,34,787**

Appendix- VI

Profit and Loss Account

In '000' NRS.

(Up to 2060/061-2064/065)   (Figure in brackets represents deductions)

Particular/Year	2060/061	2061/062	2062/063	2063/064	2064/065
Sales income Less: Cost of Sales	12,44,727 (8,43,141)	5,24,901 (9,69,108)	14,81,560 (9,37,817)	14,69,685 (9,40,236)	18,18,527 (12,81,620
Gross Profit	4,01,585	5,55,792	5,43,742	5,29,449	5,36,907
Housing Fund	(17,873)	(25,473)	(14,953)	-	-
Distribution Cost	(44,110)	(46,321)	(40,223)	(27,376)	(37,536)
Administrative overheads	(41,724)	(43,587)	(36,976)	(36,068)	(43,639)
Advertisement and Promotional Expenses	(1,64,324)	(2,50,088)	(2,03,324)	(1,70,533)	(,157,388)
Operation Profit	1,33,552	1,90,321	2,48,265	2,95,470	2,98,342
Other Income	7,130	27,551	42,813	42,374	87,779
Interest Expenses	(2,602)	(1,787)	(1,765)	(1,789)	(1,059)
Profit/Loss in Sale of Fixed Assets	(253)	(771)	(5,203)	(933)	(4,940)
Provision for Staff Bonus	(13782)	(21531)	(28411)	(30465)	(34556)
Profit Before Tax	1,24,045	1,93,782	2,55,699	3,04,656	3,45,564
Income Tax	(30,877)	(53,000)	(66,500)	(66,500)	(82,500)
Net Profit	93,167	1,40,782	1,89,199	2,38,156	2,63,064
Dividend out of Current Profit 250 & 275%	-	-	-	(2,30,175) 7,981	(2,53,192) 9,872
Previous Years Balance	2,56,005	2,66,359	3,03,943	1,24,863	1,32,844

Income Tax Provision for Previous Year	-	(37,828)	(1,89,199)	-	-
Housing Fund Provision Written Back	-	26,700	-	-	-
Available for Appropriation	**3,49,172**	**3,96,013**	**4,93,143**	**1,32,844**	**1,42,717**
Appropriation - Proposed Dividend	(82,863)	(92,070)	(1,38,105)	-	-
- Other Reserve Fund	-	-	(2,30,175)	-	-
Transferred to Balance Sheet	**2,66,359**	**3,03,943**	**1,24,863**	**1,32,844**	**1,42,717**