COST VOLUME AND PROFIT ANALYSIS: AS A TOOL TO MEASURE EFFECTIVENESS OF PROFIT PLANNING AND CONTROL

(With reference to Salt Trading Corporation Limited)

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RECOMMENDATION

This is to certify that the thesis

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has been prepared as approved by this Department in the prescribed format of the Faculty of Management. This thesis is forwarded for examination.

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

Master of Business Studies (MBS)

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DECLARATION

I hereby declare that the work reported in this thesis entitled " **Cost Volume and Profit Analysis: As a tool to Measure Effectiveness of Profit Planning and Control (With reference to Salt Trading Corporation Limited)**" submitted to Office of the Dean, Faculty of Management, Tribhuvan University, is my original work done in the form of partial fulfillment of the requirement for the degree of Master of Business Studies (MBS) under the supervision of **Prof. Dr. Kamal Deep Dhakal** and **Joginder Goet** of Shanker Dev Campus.

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Balaram Sharma

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

A/C	:	Account
Asst.	:	Assistant
BE	:	Break Even
BEP	:	Break Even Point
CM	:	Contribution Margin
Cor.	:	Corporation
CV	:	Coefficient Variation
CVP	:	Cost Volume Profit
Dept.	:	Department
FC	:	Fixed Cost
GDP	:	Gross Domestic Product
GP	:	Gross Profit
HMG	:	His Majesty's Government
i.e.	:	That is
Km.	:	Kilometer
Ltd.	:	Limited
MBS	:	Master of Business Studies
NOP	:	Net Operating Profit
NTC	:	Nepal Telecommunication
NWSC	:	Nepal Water Supply Corporation
OP	:	Operating Profit
PE's	:	Public Enterprises
P/L	:	Profit/Loss
P/V Ratio	:	Profit Volume Ratio

PPC	:	Profit Planning and Control
Prof.	:	Professor
STCL	:	Salt Trading Corporation Limited
VC	:	Variable Cost

CHAPTER-I

INTRODUCTION

1.1 Background of the Study

Nepal is a South Asian, land locked, least developed country situated in north hemisphere. This country is surrounded by two big countries India and China. These two countries are big in the sense of population, land coverage, economic development and others. Nepal is small in size but rich in different natural resources and cultural diversity like: powerful river rush out of the Himalaya beautiful temples, culture and festivals. As of September, 2006, a complete rewrite of the country's constitution was still expected to happen in the near Nepal**,** officially known according to its Interim Constitution as the State of Nepal is a landlocked Himalayan country in South Asia that overlaps with East Asia, bordered by Tibet to the north and by India to the south, east and west. For a small territory, the Nepali landscape is uncommonly diverse, ranging from the humid Terai in the south to the lofty Himalayas in the north. Nepal boasts eight of the world's top ten highest mountains, including Mount Everest on the border with China. Nepal has been made famous for its tourism, trekking, hiking, camping, mountain biking, national wildlife parks, jungle safaris, river rafting, sport fishing, and its many beautiful temples and places of worship. Kathmandu is the capital and largest city. The other main cities include Pokhara, Biratnagar, Lalitpur (Patan), Bhaktapur, Birendranagar, Bharatpur, Siddhartanagar (Bhairahawa), Birgunj, Janakpur, Nepalgunj, Hetauda, Dharan and Mahendranagar.

Due to absence of tools, techniques and research on different field of economy 25.39% (Economic survey, 2010) of total population are below poverty line and more than 80% (Economic, Survey 2007) of total population are engaged in agriculture sector is the backbone of economic development which contributes

around 33% of GDP(Economic Survey, 2010). Agricultural sector was given top priority in the planning documents in the past considering the fact that the sustainable economic development was not possible without the development of agriculture. Long-term agriculture development plan is under implementation aiming to reduce poverty and increase economic growth by means of increasing employment improvement on agriculture activities is not being improves as policy. Due to lack of own policy practice and political instability, poverty has stood as a serious challenges to the country. In this context, there need to be responsible for policy making, implementation and controlling of the all economic activities by the government.

After multiparty system of 2046 B.S., Nepal is being fully liberal for implementing government policy through general public is the result of increment of different pub private company for production of goods and services and distribution of these products among require people with country and outside country. And also now after constitution assembly of 2064 B.S. many of the foreign investors invest in different sector in Nepal. In Nepalese public enterprise the objectives are mainly social welfare or they are for fulfilling the social obligation. Basically objectives of most of the public enterprise is social welfare, profit is less emphasized. But they cannot survive only with social concern so have commercial obligation too. In this case corporation should earn profit also. Therefore cost-volume-profit analysis is the most important part of every business organization to achieve their goals whether they are manufacturing or non-manufacturing and public or private enterprises.

1.2 Introduction of Salt Trading Corporation

Public enterprises are the establishment of a business character, managed and owned 51 percent or more by the government for providing services to people. Most of the public enterprises are established not for gaining or earning profit but for providing services or fulfillment of most public concerns. Salt trading

corporation limited is also one of the public enterprises of Nepal, which was established in 2020 B.S. (1963 A.D.) through the joint efforts of His Majesty Government Nepal and private sector to ensure proper supply of consumer's items throughout the country. Its first task was to makes edible salt readily available. The irregularities in the distribution have to correct through organized supply and delivery system. The salt trading corporation limited was not only able to meet the demand but also maintain quality and later was able to provide lionized salt to prevent goiter a diseases that once plagued the Nepalese society.

Salt trading corporation has equity in many pioneering and leading industries in the country such as Khaddhya Udyog Ltd. Spinning Mills Ltd. Gorachakali Rubber Udyog Ltd. Morang Sugar Mills Ltd and Gharelu Hastakala Udyog Ltd. Nepal Vegetables Ghee Udyog Ltd. The organization has also been assigned the responsibility of implementing the Nepal India Goiter Control project. The groups turn over exceeds NRs 2 billion and investment in fixed assets in close to NRs 1.5 billion. Salt trading corporation limited a major catalyst in bringing about the desired economic changes and growth in Nepal, signing of the first salt contract between the representatives of STCL and state trading corporation of India on 14th July 1965. The organization's accessibility to these remote areas have been turned out to be very rewarding and fruitful as it also provides the opportunities to procure commodities that are locally produced in different part of the country. STCL has been playing a very significant role in procuring goods from different parts of the country and supplying them in areas where they derive optimum value.

The organization began its trading activities by dealing in salt and now it imports, exports produces and supplies good of vast diversities. Industrial products, agricultural products and industrial raw materials are the major components of its trade. With the introduction of the liberal economic policy the organization is committed to boost exports to bring about a more favorable change in the balance

of trade. The organization also conducts triangular trade dedicated to the task of promoting more exports for the benefit of exporters and importers alike.

Salt trading corporation limited, we know, deals with importing products and distributing or taking it to public reach through sales. Sales, cost profit analysis is very important tool of profit planning and control. This tool examines the behavior of total revenue, total cost and operating income as changes occur in the output level, the selling price, the variable cost per unit, and fiscal cost of a product. It is an analytical technique for studying the relationship between volume, cost, prices, and profits. It is used to determine the profit planning process of the firm. It is a simple but powerful tool for planning of profit and therefore, of operations. It provides an answer to "what if" theme-telling the volume required producing a target amount of profit. For a coordinate approach towards achieving production and profit goals. It has grown into a basic technique with a focus on future. It has gained greater utility and respectability.

In Nepalese public enterprise the objectives are mainly social welfare or they are for fulfilling the social obligation. Basically objectives of most of the public enterprise is social welfare, profit is less emphasized. But they cannot survive only with social concern so have commercial obligation too. In this case corporation should earn profit also. Therefore cost-volume-profit analysis is the most important part of every business organization to achieve their goals whether they are manufacturing or non-manufacturing and public or private enterprises.

1.3 Statement of the Problems

Salt Trading Corporation is one of the trading corporations, large amount is invested from various sectors, and therefore, the successful operation of the industry is very much important. The success of the industry will not only attract

the foreign investment in the country but also increase the private sector within the country. But financial performance of the industry is not satisfactory.

How the business is being operated largely depends upon how the business operation is planned. Poor performance is the outcome of poor planning, controlling ad decision-making. Profit just doesn't happen by chance, it is to be managed. CVP analysis is a supplementary tool of planning for profit. CVP analysis is immensely helpful for developing alternative strategies in sales planning and cost estimation. This study is basically designed to solve the following problems by taking into account the budget's role in planning the profit.

- Is the company practicing the appropriate budgeting system?
- Is the company practicing CVP analysis for its profit planning?
- Are there any difficulties facing by the STCL in the application of the CVP analysis?
- What is the impact of CPV analysis profitability?

1.4 Objectives of the Study

The general objectives of this study are to examine cost-volume-profit used by Salt Trading Corporation. The major objectives of this study are highlighted as below:

- To study cost-volume-profit trend of Salt Trading Corporation Limited.
- To assess the impact of CVP analysis on profitability.
- To examine the sensitivity analysis of Salt Trading Corporation.
- To provide appropriate suggestions.

1.5 Significance of the Study

This research's work is based mainly on cost-volume-profit analysis and its effectiveness in Salt Trading Corporation. This is one of the public enterprises. The finding can be equally important to other public enterprises too. Many other

organization taking care of profit planning and control in their management also can be benefited from it. Cost-volume-profit analysis and other information of the study can be useful for further research to university students and others too. Lastly the suggestion and recommendation will serve the concerned people while making analyzing cost-volume-profit.

1.6 Limitation of the Study

This study is based solely on Salt Trading Corporation. The study goes through cost-volume-profit analysis but still has some limitations.

- This study is based on data and trend of only 5 years period of 2064/065 to 2068/069.
- Analysis is concentrated in some managerial financial and accounting aspects and it doesn't cover the other area of the enterprise.
- This is based on secondary data provided by the management of Salt Trading Corporation.
- The study is a case study of the corporation. Findings, recommendation and suggestions are not for directing Salt Trading Corporation Limited.
- The study only concerns with the partial requirement in the fulfillment of the master of business studies. (MBS)

1.7 Organization of the Study

As specified format of the research study, this study also comprises of five major chapters. They are:

Chapter I - Introduction

This chapter includes focus of study on scenario of STL, statement of problem, objectives of study, significance of study and limitation of study.

Chapter II –Conceptual Framework & Review of Literature

This chapter concerns about the concepts of PPC, cost-volume-profit and review of related thesis to highlight the related terms and to present the available information about previous related studies.

Chapter III- Research Methodology

This chapter includes introduction, research design, sources and nature of data, data gathering instruments, statistical tools used for the study.

Chapter IV-Data Presentation and Analysis

Various data are gathered from the application of the different methods and presented and tabulated as required by the research objectives. Data are interpreted and analyzed with the help of various analytical tools and technique. Major findings of the study are also included in this chapter.

Chapter V- Summary, Conclusions and Recommendations

This chapter includes summary and conclusion of the study. It also includes recommendation on the basis of the study.

At the end of the study, bibliography and appendix are also incorporated.

CHAPTER - II
CONCEPTUAL FRAMEWORK & REVIEW OF LITERATURE

2.1 Conceptual Framework

2.1.1 Meaning and Definition of Profit Planning and Control (PPC)

A profit planning or budget is the formal expression of enterprises' plans and objectives states in financial terms, for a specified future period of time (Pandey, 1993: 216).

Profit do not just happen profits are managed when a management plans its profit performance that is knew as "profit planning" (Lynch and Williamson, 1986: 99). Profit planning is a part of overall planning process of an organization "profit planning" include towards "profit" and "planning". Them it is required to explain them separately.

2.1.2 Profit

Profit means excess of company's revenue over the expenses of producing revenue in a given period of time. It is a primary measure of success of a company. Profit is the primary measure of business success in an economy if a firm cannot make profit, it cannot obtain capital, it cannot secure and retain other resources, such as manpower, material and machines etc. In other word, more profitable enterprises are more attractive to the holders of the available capital. Since, these enterprises can attract capital they have the money needed to buy other resources. The key here is that capital and other resources are scare, they are allocated to the profit makers in roughly descending order of their profit potential" (Groy, et al., 1973:125).

Economic theories on profit may be put in broad categories, the first theory looks upon profit as the reward for bearing risks; the second views profit as the consequence of friction and imperfections in the competitive adjustment of the economy to dynamic changes, the third sees profit as the reward or successful innovation.

At last, it should be noted that profit are residual income left after the payment of the contractual to other factor of production (Joshi, 1993: 170).

2.1.3 Planning

Planning means setting of goals for the firm, considering various ways of meeting those goals and picking out what appears to be the best way to meet those goals (Lynch and Williamson, 1995 : 18). Till planning, the management is concerned with lying down objectives and determining the course of action to be followed out of the several alternatives available to meet those objectives.

Planning is the process of developing enterprise objectives and selecting future course of action to accomplish them. It includes (Welsch, et al., 1999:3).

- Establishing enterprise objectives.
- Developing premises 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 action.
- Current re-planning to correct current deficiencies.

Planning is essential to accomplish goals. Planning reduces uncertainty and provides effective direction to the employees by determining the course of action in advance.

2.1.4 Control

Control can be defined as process of measuring and evaluating performance of each organizational component of an enterprises, and initiating corrective action when necessary to ensure efficient accomplishment of enterprise objectives, goals, policies and standards. Planning established the goals, objectives, policies and standards of an enterprise.

Controlling is the measurement and correction of performance in order to make sure that enterprise objectives and the plans devised to attain them are accomplished.

Controlling means evaluating the firm's activities against the plan and deciding what should be done of the plan is not being followed (Lynch and Williamson, 1995:18).

Planning and controlling are interdependent and thus closely related with each other because a manager cannot control unless he has planned a course of action for an effective and smooth managerial behavior into proper post and progress on behalf of company, firm or enterprise. Under this condition to be applied, both planning and controlling are mutually inseparable.

Thus, it can be said that profit is a tool which may be used by the management in planning the future courses of action and controlling the actual performance

2.1.5. Meaning and Definition of Profit Planning

Of course, it's difficult to confess the actual meaning and definition of PPC. But nowadays it has been realized that PPC is somewhat, rather than narrow traditional view of a budget as a clerically derived set of quantitative schedules prepared of an accountant. In past years, there has also been a tendency to view the budget,

primarily as mathematical model for an organizational development by computer programmers.

These views completely overlook the three most relevant aspects of the PPC concepts:

- PPC required major planning decision by management.
- PPC entails pervasive management control activities.
- PPC recognizes many of the critical behavior implication throughout the organization.

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

Profit planning represents an overall plan of operation, covers a definite period of time and formulates the planning decisions of management. It consists of the operating budget, the financial budget and appropriation budget (Kulkarni, 1992: 310).

Profit planning is especially effective in enabling middle management to help plan profit and control cost.

Profit planning is a technique of preparing and using an operating plan for the purpose of achieving the maximum profit or a profit target set by management. Such planning may be done for a short period or for a long period (Pandey, 1995: 329).

Profit planning or budgeting is a forward planning and involves the preparation in advance of the quantitative as well as financial statement to indicate the intention of management in respect of the various aspect of the business profit planning, in fact, is a managerial technique and it is a written plan in which all aspects of

business operation with respect of definite future period are included. It is a formal statement of policy, plan, objectives and goal established by the top management in respect of some future period. Profit planning is a predetermined detailed plan of action developed and distributed as a guide to current operation and as a partial basis for the subsequent evaluation of performance. Thus, we can say that profit planning is a tool which may be used by the management in planning the future course of action and in controlling actual performance (Gupta, 1992: 521).

Profit planning is a systematic and formal means of decision-making and attaining organizational objectives and goals at a specific future period of time by the application of diversified managerial tools for utilization of available resources at a reasonable manner.

A profit plan is a comprehensive statement of intentions, expressed in financial plan for the operation of the firm for a short period. It is a plan of the firm's expectation and is used as a basis for meaning and controlling the actual performance managers and their unity (Pandey, 1999: 257).

Profit planning thus becomes a well throughout operational plan with its financial implications expressed as both long and short range profit plans in the form of financial statement, including balance sheet, income statements, and cash and working capital projections.

Profit planning is now an important responsibility of the finance managers or the chief executive has the ultimate responsibility for profit planning and control program. Welsch suggests that "A comprehensive profit planning and control as a systematic and formalized approach for performing significant phase of the management planning and control function."

Long-range profit planning is a systematic and formalized process for purposefully directing and controlling future operation with a view to achieving desired objectives for periods extending beyond one year. And the success of each enterprise in realizing its optimum profit is determined by the extent, to which it attains is objectives, develops coordinated plans to realize them and exercises control of its entire process constitutes a budgetary planning and control program (Kulkarni, 1992: 315).

When the management plans for profit for a certain period of times it is called profit plan. Profit plan is defined "as an estimation and predetermination of revenue and expressed that estimates how much income will be generated and how it would be spent in order to meet investment and profit requirement. In case of institutional operations it presents a plan for spending income in a manner that does not result in loss. It represents an overall plan of operations, covers a definite period of time and formulates the planning decision of management.

In summary, profit planning means the development and acceptance of objectives and goals and moving an organization efficiently the achieve objectives and goals.

2.2 Strategic and Tactical Profit Plan

When managers of the various responsibility centers in the enterprise receive the executive management planning instruction and the projected plans, they began intensive activities to develop their respective strategic and tactical profit plans. The strategic plan, which is also, called long range plan and tactical plan which also called short range plan developed currently.

A short term profit plan which is for one or less than one year called tactical profit plan. The (actual profit plan is details and encompasses, a one year time coming

year. These types of plan are prepared taking the bases of long range profit plan and profit plan. Tactical profit plan includes those detail essential:

- To provide a general understanding of the annual profit plan.
- To provide on overall view of the comprehensive short range profit plan the organizational chart and the statements of broad objectives, the specific goals, the strategies and planning premises memo as background before studying these schedule.
- To provide detailed classification by month responsibility and product.

2.2.1 Strategic Profit Plan

A long range plan which is prepared for more than one year is defined by strategic profit plan. Generally strategic profit plan may be five years. Strategic profit plan is main goal of the enterprise and other plans and programs deals along this plan. Strategic profit plan is broad and should summary data. Part of long range plan is more or less informal as represented by tentative commitments made by the executive committee in its planning session. The long range plan includes the following basic components detailed by each year.

a. Income statement
b. Cash flow projection
c. Capital expenditure plan
d. Manpower requirement
e. Research plan, and
f. Long range market plan.

2.3 Objectives of Profit Planning

"A comprehensive profit planning is systematic and formalized approach for stating and communicating the forms expectation and accomplishing management is such a way as to maximize the use of the profit plan is to achieve the maximum benefit from resources available to an organization over a particular span of time.

It serves basically as at tool of management. The maximum objectives of PPC is to assist in systematic, planning and in control the operation and the enterprise. In fact it is best source of communication and an important tool in hand of management. The purpose of budgeting or PPC may be summarized as follows.

1. To state the firms expectations (goals) in clear, formal term to avoid confusion and to facilities their attainability.

2. To communicate expectations to all concerned with the management of the firm so that they are understood, supported and implemented.

3. To provide a detailed plan of action for reducing uncertainty and for the proper direction of individual and group effort to achieve goals.

4. To coordinate the activities and efforts is such a way that the use of resources is maximized.

2.4 Profit planning process and Basic Elements

Profit is not just happen but it is planned. The major processes of profit planning are as follows:

Overview of PPC Process

Management function	Sequential phases of the PPC process	Primary responsibility
Planning Leading Controlling	1. External relevant variables–identity and evaluate 2. Board objectives of business-develop or revise 3. Specific enterprise goals–develop consistent with item 2 above 4. Enterprise strategies-Specify major thrusts to attain the objectives and goals 5. Executive management planning instructions – specify planning premises (or guidelines) for managers (based on items 1-4 above) 6. Project plans – develop and evaluate for each project 7. Strategic profit plan (long-range) develop for 3, 5 or 10 years 8. Tactical profit plan (short-range) develop for upcoming year 9. Implementation of profit plans –Implement throughout the budget year 10. Performance reports-prepare monthly reports by responsibility 11. Follow-Up-Provide feedback, take corrective action, and replan	Executive management Middle management Management levels All management levels

[Source: Welsch, et al., 1999: 73]

The PPC process given in table typically is repeated each budget year. Also, the components of a PPC program typically are restated for each budget year.

The basic elements of profit planning are as follows:

*** Comprehensive and coordinate plan**

The profit planning considers all activities and operations of an organization. The budgets prepared by different departments inside an organization gave to be complied or coordinated and profit planning does it. So before preparing a profit planning, firstly, all the departments have to be compiled and that budget is known as comprehensive budget or coordinate plan.

*** 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. in rupees, Dollars, Pounds etc.)

*** Plan for Operational Resources and Expenses**

It is a plan for the firm's operating and resources of budget are 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 and quantity revenue and expenses related to specific operation planning should not be done for revenue and expenses only. The plan should be made for carry out the operations. The planning for resources will include planning assets and sources of funds.

*** 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 a specific time. The budget estimates will be relevant only for some specific period (Welsch, 1979: 73-75).

2.5 Process of Profit Planning and Control

The process

The process of PPC outlines the sequential phase that management must perform the development of objective for the business through control corrective action and re-planning. Economic, political, social and technological factor operating in the external environments have significant impact on all organization; the management must understand them and try to harmonize the internal environment with them. Thus, the basic tasks of managing, planning, organizing, directing and controlling are the same in business and non-business enterprises.

The planning process should involve periodic, consistent and in depth re-planning so that all aspects of operations are carefully reexamined and reevaluated. This prevents a budget planning approach that involves only justification of increase over the period the concepts of revaluation and the necessity to justify all aspect of the plans periodically finds its strongest support in what has been zero base budgeting.

2.5.1. Identification and Evaluation of External Variable

The variable identification phase of the PPC process focus on identification and evaluating the effects of the extent variables. Identification also involves. Separate consideration of variable that are controllable and those are non-controllable so the management can take advantage of potential favorable impacts and minimize potential unfavorable impacts of the enterprises. Analysis and evaluation of the environmental variables must be a continuing concern of management of particularly significant phase of this analysis includes an evaluation of the present strength and weakness of the enterprises by all executive managers.

2.5.2. Developing of the Broad Objectives of the Enterprises

In this phase of PPC executive management specify there broad objectives based on a realistic evaluation of the relevant variable and assessment of the strength and weakness. Its purpose is to provide enterprise identify, continuity and definition.

a. To define the purpose of the company.
b. To clarify the philosophy of the company.
c. To create a particular environment.
d. To set down a guide for manager.

The statement of broad objectives normally should not specify quantitative goals. Rather, it should be a narrative expression of the purpose, objectives and philosophical character of the business.

2.5.3. Development of Specific Goals for the Enterprises

The purpose of this phase is to bearing the statement of broad objectives into sharper focus and to move from the realm of general information to more specific planning information. It provides both narrative and quantitative goals that are define and measurable. The specific goals provide a basis for performance measurement. This specific goal may be interims of production goals, profit margin, return an investment, market share and cash flow.

2.5.4. Development and Evaluation of Company Strategy

The purpose of developing and disseminating enterprise strategies is to find the best alternative for attaining the planed broad objectives and specific goals. A particular strategy may be short term or long term but for development and evaluating of company strategies the management must focus on critical areas.

2.5.5 Executive Management Planning Instructions

This phase involves communication of the substantive plan to middle and lower levels management. It explains the broad objectives, enterprise goals, strategies and other instruction needed to develop the strategic and tactical profit plans. Executive management planning instruction is necessary for implementation of strategies for lower level which are direct involve to implementation of plan.

2.6 Cost Volume Profit Analysis

Cost volume profit analysis is a supplementary tool of planning for profit. It is immensely helpful for developing alternative strategies in sales planning and the cost estimation.

"Cost volume profit analysis examines the behavior of total revenues, total cost and operating income as changes occur in the output level, the selling price, the variable cost per unit and the fixed cost of a product" (Horngren, et al., 2003).

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 volumes, cost, price and profit. Cost-volume-profit analysis is great helpful in managerial decision making. Specially, cost control and profit planning is possible with the help of cost-volume-profit analysis.

Completion of Profit Plan

The principal output of a budgeting is a comprehensive profit plan that ties together all phases of an organization's operation. The completion of profit plan is comprised of many separate budgets or schedule that is interdependent. In other words, completion of profit plan means the process of profit planning ends with the planned income statement and planned balance sheet.

Performance Report

Performance report is an important part of comprehensive PPC system. The performance reporting phase of a comprehensive PPC program significantly influences the extent to which the organization's planned goals and objectives are attained. Performance reports deal with control aspects of PPC or management control function of management defined as "the action necessary to assure the objectives, plans, policies and standards are being attend" or in the words, the objectives of control is to guarantee the achievement the planned objectives of the management by introducing periodic systematic correction measure. Performance report is one of the vital tools of the management to exercise of control function effectively.

2.7 Cost-Volume-Profit Analysis: A Tool of Profit Planning and Control

Profit is the most important measure of the firm's performance. In the free-market economy, profit is a guide for allocating resources efficiently. An analysis of the effects of various factors on profits is an essential step in the financial planning and decision making.

The analytical technique used to study the behavior of profit in response to the changes in volume, costs and prices is called the cost-volume-profit (CVP) analysis. It is the device used to determine the usefulness of the profit planning process o the firm, in fact, the entire field of profit planning has become associated with the CVP inter-relationships. As a starting point in profit planning CVP analysis helps to determine the minimum sales volume to avoid losses and the sales volume at which the profit goal of the firm will be achieved. As an ultimate objective, it helps management is seeking the most profitable combination of cost and volume. A dynamic management, therefore, uses CVP analysis to predict and evaluate the implications of its short-run decision about fixed cost, variable cost,

volume and selling price for its profit plan on a continuous basis. Generally, CVP analysis provides answers to questions such as:

- What sales volume is needed to avoid losses?
- What should be the sales level to earn a target profit?
- What will be the effect of changes in prices, costs and volume on profit?
- How will profit be affected when sales mix is changed?
- What will be new break-even point under (3) and (4) above?
- What will be the impact of plant expansion on cost-volume-profit relationships?
- Which product of the most profitable and which one is the least profitable?
- Should sales of a product or operation of a plan be discontinues?
- Should the firm be shelf-down temporarily (Pandey, 1993: 267) ?

The CVP analysis is of immense utility to management as it provides an insight into the effect and interrelationship of factors which influence profit of the firm.

Cost-Volume-Profit (CVP) analysis examines the behavior of total revenues, total costs, and operating income as changes occur in the output level, the selling price, the variable cost per unit, and/or the fixed costs of a product (Horngren, et al., 2003 : 105).

Cost-Volume profit analysis is a systematic method of examining the relationship between changes in activity and change in total sales revenue, expenses and net profit. As a model of this relationship CVP analysis simplifies the real world condition that a firm will face. Like most models, which are abstractions form reality, CVP analysis is subject to a number of underlying assumption and limitations, nevertheless, it is a powerful tool for decision making in certain situation (Drury, 2000 : 307).

Cost-Volume-Profit analysis a management accounting tool to show the relationship between the elements of profit planning. Profit planning is the function of the selling price of product, demand, variable cost, fixed costs, taxes etc. The whole picture of profit planning is associated with cost-volume-profit interrelationship (Bajracharya, et al., 2004:225).

Cost-Volume-Profit analysis is a supplementary tool of planning for profit Cost-volume profit analysis is immensely helpful for developing alternative strategies in sales planning and cost estimation. A certain relationship exists between the variables like selling price, sales volume, expenses and taxes. Cost-volume-profit analysis is an accounting technique showing the relationship between these variables. This technique is applicable in all economic sectors.

2.7.1 Basic Features of Cost-Volume-Profit Analysis Information

- Sales revenue: Total sales revenue fluctuates in direct proportion to the units sold. Revenue per unit is assumed to remain constraint.
- Variable costs: Total variables costs change in the same proportion and in the same direction as the volume of output changes, and the per unit variable costs remain fixed.
- Fixed costs: Total fixed costs remain unchanged for the same period of time whatever may be the level of output within the relevant range. Per unit fixed costs are variable.
- Semi-variable costs: Those costs, which are neither constant in total amount nor constant, in per unit are mixed or semi-variable costs.

CVP analysis required a separation between fixed and variable costs. Semi-variable or mixed costs can be segregated into variable and fixed components by

applying any of the cost segregation methods as: visual fit methods, high-low point method or least square regression analysis method.

2.7.2 Utility of Cost-Volume Profit

Cost-volume-profit analysis is the most useful technique of profit planning and control. It is a device to explain the relationship between cost, volume and profits. The utility of CVP analysis lies in the following advantages:

- It is a simple device to understand accounting data.
- It is a useful diagnostic tool.
- It provides basic information for future profit improvement studies.
- It is useful method for considering the risk implication of alternative actions.
- It helps to determine most profitable and least profitable product.

2.7.3 Assumptions of CVP Analysis

Cost-volume-profit analysis is based on the following assumptions. The total cost can be separated into fixed and variable components.

- The total cost can be separated into fixed and variable components.
- That total fixed cost remains unchanged with change in sales volume
- That variable cost per unit is constraint and total variable

Cost changes in direct proportion to sales volume:

- The selling price per unit remains constant; that is, it does not change with volume or because of other factors.
- The firm manufactures only one product or if there are multiple products, the sales mix does not change.
- Production and sales are synchronized; that is, inventories remain the same (Pandey, 1993:216).

2.8 Approaches to Cost-Volume-Profit Analysis

The CVP relationships can be analyzed through different approaches which are (Dhakal, 2004: 54).

2.8.1 Contribution Margin Approach

Contribution margin reflects the revenue remaining after certainty all variable costs. In managerial accounting language, contribution margin is the excess of sales revenue over variable costs. So contribution margin means how much is left form sales revenue over variable costs. So contribution margin means how much is left from sales revenue, after covering variable expenses that are contributed toward the covering of fixed expense and then toward profit for the period. If the contribution margin is not sufficient to cover the fixed expense, then a loss occurs for the period. Basically contribution margin indicates why operating income changes as the volume of sales changes:

It can be expressed as:

Contribution margin = Sales – Variable cost

Or

Contribution margin = Fixed cost + Profit

Contribution margin is usually expressed as a percentage sales which is known as contribution margin ratio or profit volume ratio. That is:

$$\text{CM Ratio or P/V Ratio} = \frac{Individual\ \ products\ sales\ unit\ or\ value}{Total\ of\ \ all\ \ products\ sales\ units\ or\ value}$$

$$= 1 - \frac{VC}{SP}$$

2.8.2 Formula Approach

The most popularly practice approach to the breakeven point and cost volume profit analysis is to formula, also known as the equation, ti is particularly because the equation provides the most general and the easiest to remember – approach uses an algebraic equation to calculate the breakeven point. The answer provides by solving the equation may sometimes, need to be rounded to whole number of units or lots sizes. The rounding of break even points is always done upward because this will provide a small profit rather than the small loss that would be shown form rounding downward (Chaibon, et al., 1993 : 65).

The calculation in the equation approach is similar to that of the contribution margin statement approach. The equation is merely a restatement of the other.
BE sales value = FC + VC I profit

BE sales unit x SPPU = FC + (BE sales unit x VCPU) + 0

Contribution Margin Approach	Symbol or Equation
Sales volume (units)	Q
Selling price per unit	P
Sales revenue (Rs.)	Q x P
Less variable costs	Q x VCPU
Contribution margin	Q x P – Q x VCP
Less fixed costs	FC
Net profit	Q x P-Q x VCPU- FC

2.8.3 The Graphic Approach to CVP Analysis

A break even chart is used to graphically depict the relationship among revenues, variable costs, fixed cost and profit (or losses). The no profit, no loss point (the breakeven point) is located at the point where the total cost and total revenue lines cross. Below this point, the firm, losses, and above this point, the firm earns profit (Bajracharya et al., 2004: 231-232).

In the graph given below the fixed costs remain constraint within the relevant range; the fixed cost curve is parallel to 'ox' axis. Variable cost slope downward from the origin to right but the slope depends on variable cost ratio. The total costs curve parallels the variable cost curve. So the angle 'o' equals the angle 'v', it is because total cost = total fixed costs plus total variable costs at volume 'Q'.

Total costs = TFC + Q x **VCPU**

At volume 'Q +N'

Total costs = TFC + (Q +N) x VCPU

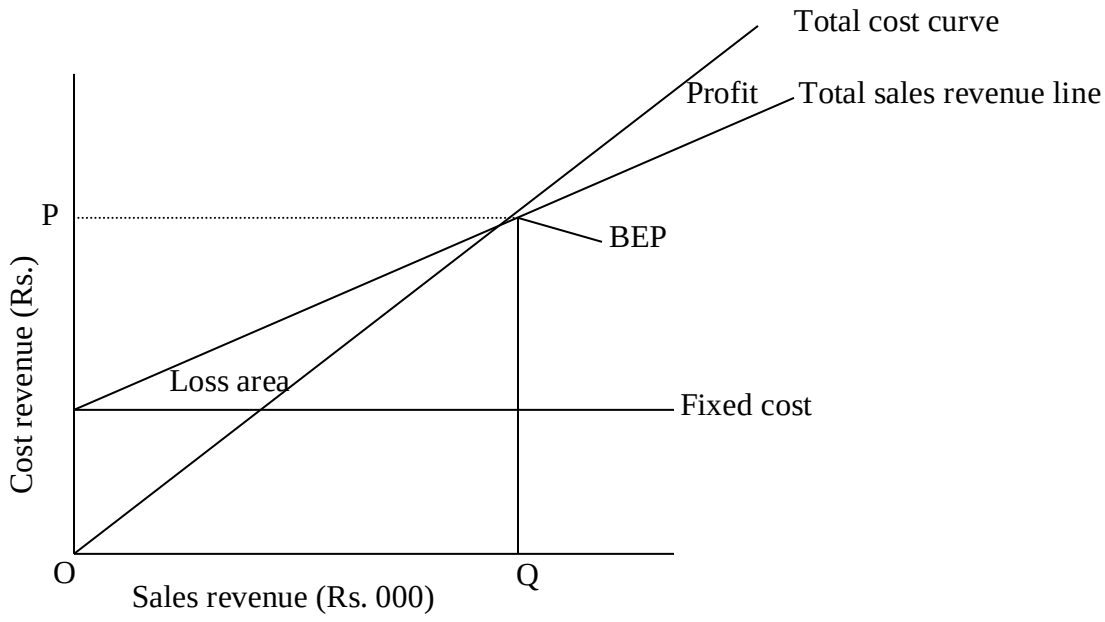
Total costs = O + n x VCPU

Total Cost = Variable Costs

That's why the slope of the total cost curve equals the slope of variable costs curve.

Figure : 2.1

Graphical Approach to CVP



The above graph clearly shows that of the company can reach the point of BEP it can generate sufficient revenue to cover all its operating expenses. At this point, the total revenue equal the total cost. Here, the revenue curve breaks up (intersects) the total cost curve, that's why this point is called breakeven point. In short, breakeven point is the point where, total sales revenue = total cost.

2.8.3.1 Limitation of Break-Even Analysis

Break-even analysis is 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 assumptions of producer's market phenomenon may not hold good for all type of commodities.
- The fixed costs may not remain constant as well as the variable costs may post 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 and supply will certainly affected the demand of the commodity.
- 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 on purchases to promote sales.
    - This revenue may not be perfectly variable with level of sales output (Maheshwari, 2000:184).

2.8.3.2 Application of Break-Even Analysis

Break even concepts can be used to formulate different policies in a business enterprise. Some of the applications are:

- Determination of profit at different levels of sales and margin of safety.
- Effect of price reduction on sales volume and changes in sales mix.

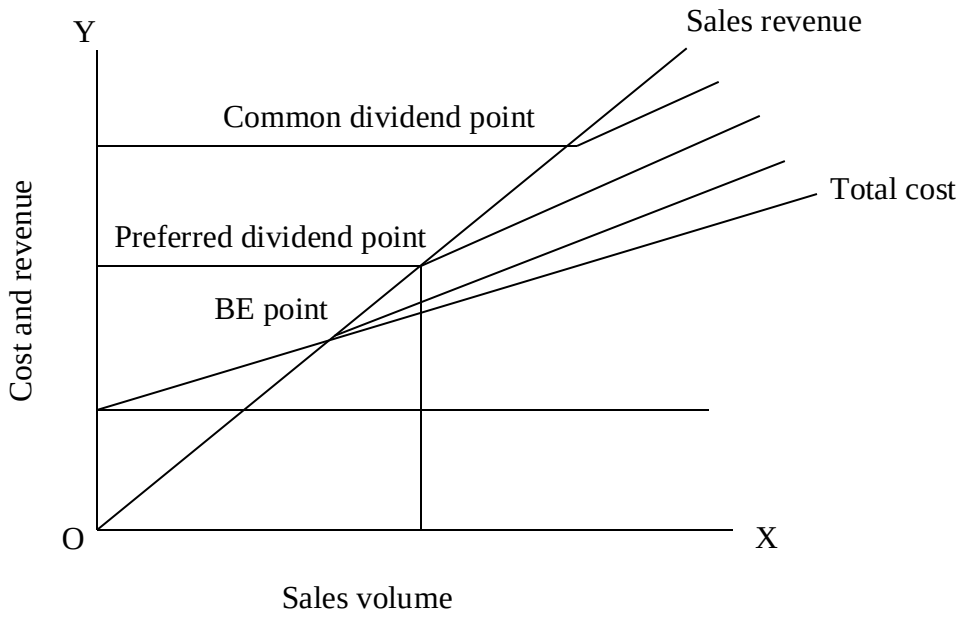
- Effect of fixed cost or variable cost changes
- Selection of most probable alternative make or by decisions and drop and I add decision (Dhakal, 2000: 58-59).

2.9 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 estimates, however, the arithmetical manipulation generally involves averages, and hence the result should never be interpreted as precise. Rather, the analysis may be characterized approximately as a 'slide-rule' approach that may be used to develop and test with a minimum of effort, the approximate effect on cost and profits of several types of management decisions (Welsch, 1979: 467-468).

Figure : 2.2

Economic Characteristics of Cost Volume Profit Analysis



Above break-even chart with economic characteristics indicates few of the economic characteristics of a business, which are (Welsch, 1979: 468).

- Fixed costs, variable costs and total costs at varying volumes.
- The profit and loss potential, before and after income taxes, it varying volumes.
- The margin of safe-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 earning is insufficient to pay the preferred dividend and the expected dividend on the common stock.

All the point, and as others, can be computed if dale or developed for cost-volume-profit purposes.

2.10 Margin of Safety

The margin of safety is the excess of budgeted (or actual) sales over the break-even volume of sales. It states the amount by which sales can drop before losses begin to be incurred in organization. Margin of safety = Budgeted sales – Break even sales.

The higher the margin of safety, the safer is the business. For example, if the ratio of the margin of safety to the projected sales is 40%, the firm will cover its fixed

cost burden at 60% of the projected sales. The firm will earn profit equal to the contribution margin of 40 percent of the expected sales. Margin of safety can be ascertained by using the following formula:

Margin of safety = (Actual sales value – B.E. sales value)

$$= \frac{\text{Profit}}{\text{Profit volume ratio}} \text{ in amount}$$

$$= \frac{\text{Profit}}{\text{Unit contribution margin}} \text{ in units}$$

The relationship between margin of safety and actual sales in known as margin of safety ratio, which is determined as follows:

$$\text{Margin of safety ratio} = \frac{\text{Actual sales} - \text{Break} - \text{even sales}}{\text{Actual sales}}$$

The following steps are needed to rectify margin of safety:

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

Sales mix can be defined as the relative combination of two or more products represented in total. It is not only the sales revenue that makes profit. The proportion of the sales contributed by different products greatly changes the amount of profit. Managers try to achieve that combination, or mix, that will yield the greatest amount of profit. If a company sells more than one product, these may not be equally profitable. So, the company's profit will depend upon the ratio of each products sale to total sales revenue. Profit will be greater if high margin items make up a relatively large proportion of total sales than of sales consist mostly of low margin items. Changes in sales mix can cause great variation in a company's profit. A shift to low-margin items to high margin items can cause the reverse

effect-total profit may increase even through total sales decrease (Bajracharya, et al., 2004: 260).

Following procedures are followed to calculated BEP for sales mix or multi-product:

- Calculated contribution margin or profit-volume ratio for each product.

Calculated proportion of sales mix in units or values as follows:

$$\text{Sales mix} = \frac{\text{Individual products sales unit or value}}{\text{Total of all products sales units or value}}$$

Calculated weighted average for all products as follows:

Weighted average = [Sales x (units) x Unit C.M.]

= [Sales mix (value) x P/V ratio]

Calculated break-even point (BEP)

$$\text{BEP} = \frac{\text{Fixed Cost}}{\text{Weighted Average}}$$

2.12 Risk Measurement: The operating Leverage and Break-Even Point

Operating leverage tells us how profit change with the change in sales. It is evident that profit changes profit more rapidly than sales. Why do profit change more rapidly than the sales? It is because some costs do not change. So, if sales decline, variable costs also decline in the same ratio so that contribution margin also decline proportionately. But fixed costs do not decline. So the net operating income declines more rapidly. The same thing applied in the case of increase as well. Sales revenue change, but some part of costs, known as fixed costs, remains unchanged. That Is why net operating income changes more rapidly. This change

is called in the operating leverage. Operating leverage can be measured in terms of the "degree of operating leverage." A DOL shows the time of percentage change in net operating income of the given percentage change in sales. Degree of operating leverage (DOL) may be defined as the percentage change in net operating income or EBIT associated with a given percentage change in sales.

$$\text{DOL} = \frac{\%\text{ on Change in net Operating Income or EBIT}}{\%\text{ Change in Sales}}$$

Or

$$\text{DOL} = \frac{\text{CM}}{\text{Net Operating Income}}$$

$$\text{Or, DOL} = \frac{\text{Q(SP} - \text{VCPU)}}{\text{Q(SP} - \text{VCPU)} - \text{FC}}$$

Where,

Q = Total demand in unit

SP = Selling price per unit

VCPU = Variable cost per unit

Higher fixed cost increases the DOL and they also increase the break-even point. So, there is a close relationship between the degree of operating leverage and the break-even point. A high DOL and a high BEP both are the indicators of higher risk of high degree of operating leverage (DOL) makes good times better and bad times worse.

2.13 Sensitivity Analysis of CVP

Sensitivity analysis is the measurement of elasticity of the change in cost-volume-profit factors on break-even point or given profit. The strength should focus more on the factor, which is more sensitive or responsive for profit. To measure the

sensitivity of cost-volume-0profit factors one can see the impact of certain percentage or amount change in volume, price or cost factors on net profit. In order words, sensitivity analysis is the measurement of responsiveness in outcome with the changes in determined variables. We know that the goal of a business enterprise is to maximize profit. Profit is the excess of revenue over the total costs.

Net Profit = Total Sales Revenue – Total Costs
= Sales Units x SPPU – Sales Units x VCPU – FC – Taxes

So, that profit = F (sales volume, selling price, VC, FC, taxes etc) means, profit are the function of volume, price, VC, FC, taxes and so on.
But none of the factors remain unchanged. Sometimes the manger can intentionally change the price and cost factor as a part of strategic decisions. But the strategy should focus more on the factor, which is more sensitive or responsive of profit. Therefore, to measure the sensitive of cost-volume-profit factor we can see the impact of certain percentage or amount change in volume, price, or cost factors on net profit.

2.14 Segregation of Semi-Fixed (Mixed) Costs

Cost-Volume-Profit analysis requires segregation of all costs between two parts fixed and variable. This means that the semi-variable costs will have to be segregation into fixed and variable elements. This may be done by any of the following methods:

1. Level of Output Compared to Levels of Expenses Method:

According to this method, the output at two different levels in compared with corresponding level of expenses. Since the fixed expense remains constant, the variable overheads are arrived at by the ratio of change in expenses to change in output whereas;

$$\text{Variable Elements} = \frac{\text{Change in amount of expenses}}{\text{Change in activity or quality}}$$

2. Range Method

This method is similar to levels of output compared to level of expenses method expect 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:

- Select the highest pair and the lowest pair
- Compute the variable rate 'b' using the formula, variable rate = Difference in cost 'y'/Difference in activity 'x'.
- Compute the fixed cost portion as,

Fixed cost portion = Total semi-variable cost – variable cost.

3. 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% variability while others may have 70% variability. The method is easy to apply but difficulty to face in determining the degree of variability.

4. Scatter-graph Method

In this method, the given data are plotted on a graph paper and line of best fit is drawn, whereas semi-variable expenses are plotted on the vertical axis (x-axis). The scatter graph method is relatively easy to use and simple to understand. However, it should be used with extreme caution because it does not provide an object test for assuring that the regression line drawn is the most accurate fit for the underlying observation.

5. Least Square Regression Method

Management must have some way of estimating fixed and variable costs. Also the financial analyst would like to know how much of a firm's given costs are fixed and how much are variable. Among the approaches to cost estimation, the Least Square Regression method, a statistical technique, is considered as more objective and precise approach of estimating fixed and variable costs. Regression analysis starts by assuming that a linear relationship exists between the dependent variable and the independent variable. Also supplies information about the reliabilities and the confidence that can have in the estimate. The method uses mathematical formulas to fit the regression line and takes all of the data into account when estimating the cost formula (Munankarmi, 2002:27).

2.15 Impact of Changes on Profits

Profit is the function of a variety of factors. It is affected by changes in volume, cost and prices; profit may be affected by the changes in the following factors.

- **Effect of Price Changes**

An increase in the selling price will increase the PV 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.

- **Effect of Volume Changes**

A change in volume, not accompanied with a change in the selling price and/or 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.

- **Effect of Price and Volume Changes**

A change is price invariably affects volume. A price reduction may increase in 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.

- **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 change in selling price and/or volume. An increase in variable costs will lower P/V ratio, push up the BEP and reduce profits. On the other hand, if the variable costs decline P/V ratio will increase, BEP will be lowered and profit would rise.

- **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 in depreciation or salaries of managers may be the result of management decision.

- **Effect of Changes in a Combination of Factors**

The financial manager or the management accountant, evaluating the profit plans or budgets, must realize that a change in one factor leads to a change in other factor or factors. Therefore, all such changes should be carefully visualized and their net impact on profit must be seen (Pandey, 1999:203-208).

2.16 Limitations of CVP Analysis

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

2.17 Special Problem in Cost Volume Profit Analysis

Cost-volume-profit analysis are applied to individual procedures or part of a business and all the products are activities combined in the later, there are three special problems may be encountered (Welsch, et al., 2001:513-518).

- The activity base: When two or more product or activities are combined for break even analysis, the activities based are usually in amount. Production 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 amount denominator because manufacturing, selling and administrative activities are expressed in combination.
- The change in inventory: Usually the budgeted change in inventories (i.e. finished goods and work in progress) is immaterial in amount and there may be disregard 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 change 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 consider two practical approaches or policies in inventory change often used:

  a. Disregard the inventory changes, b. include the inventory changes.
- The non-operating incomes and expenses: Non-operating incomes and expenses are 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 gain 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 considers the policy may be to: (a) include the non-operating incomes and expenses (b) exclude the non-operating income and expenses.

2.18 CVP Analysis under Condition of Uncertainty

CVP analysis have been used for various purposes such as choosing between machine and products, planning and profit of most significantly fixing up of

selling price management has used this as conventionally took of profit planning without giving consideration of risk and uncertainty 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 it also between the alternative. To overcome such a difficulty, risk and uncertainty analysis like in any other management decision making can also be used in CVP analysis.

2.18.1 Probability Distribution

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 during 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 likeliness 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, 2003: 17).

2.19 Jumping Fixed Cost and Multiple BEPS

BEP is determined by dividing the fixed cost by the contribution margin per unit. If the fixed cost is jumping one i.e. step fixed, then it is required to be considered a different amount of fixed costs corresponding to each step. As such, BEP is computed for each level of fixed cost. Some of these computed BEPs might 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 through trial and error approach.

2.20 Review of Previous Research Works

The research topic of this study is cost-volume profit analysis as a tool to measure effectiveness of profit planning and control. Most of the researches are in the area of profit planning and control. Out of the previous research studies only few researches is conducted to analyze the cost-volume profit of private enterprise and the study is limited by various constraints. Therefore, this study is attempted to review the previous research work in PPC as well as management accounting. As CVP is one of the tools of PPC, the previous studies related to PPC are also reviewed.

Dahal (2008) has conducted a research topics on "*Cost volume Profit Analysis as a tool to Measure the Effectiveness of Profit Planning with Special Reference to Dubar Nepal Ltd*". This was submitted to Nepal Commerce Campus, T.U in Partial fulfillment of Master's Degree in the year 2008.

Main Objectives:

- To examine the sensitivity analysis of Dabur Nepal Pvt. Ltd.
- To study profit planning of Dabur Nepal Pvt. Ltd.
- To provide the recommendation and suitable suggestion to corporation.
- To assess the impact of profit analysis on Profitability.

Major Findings :

- Dabur Nepal Pvt. Ltd constitutes lack of adequate inventory policy.
- No control over external factory i.e. it has poor SWOT analysis.
- Dabur Nepal Pvt. Ltd. does not prepare strategic and policies for long term.

- Dabur Nepal Pvt. Ltd is not able to co-ordinate among various departments.
- Dabur Nepal Pvt. Ltd is not prepared raw material requirement budget and raw material purchase budget systematical.

Major Recommendations :

- Profit planning manuals should be communicated from top level to lower level.
- The company management should look carefully into the basis of setting target for sales and achieving those targets meaningfully.
- To get the idea of future cash requirement and application the form, it should make cash budget systematically.
- The company should prepare raw material budget and production budget scientifically.

Karki (2009) has conducted the research on the topic of "*Cost Volume Profit Analysis as a Tool of Profit Planning*" as case study of Bottler Nepal Ltd. The data and other necessary information were collected by primary as well as secondary sources.

Main Objectives :

- To examine the sensitivity analysis of Bottler Nepal Ltd.
- To study cost-volume-profit trend of Bottler Nepal Ltd.
- To provide recommendations and suitable suggestions to the company.
- To assess the impact of CVP analysis on profitability.
- To analyze the variance between targets and the actual data of the company.

Major Findings :

- Relevant internal and external market variables were not fully explored.

- Sales and production targets were not achieving because there was not and effective forecasting system.
- Enterprises have no financial plan; they had only sales and production plan in term of required target.
- The company's production trend was in an increasing trend.
- There was lack of effective cost control programmes or techniques.
- The profit of the company was not satisfactory as compared to profit proportion was very low with fluctuated trend.
- The company had no detailed and systematic expenses plan.
- The company had not proper practice of segregating the costs into fixed and variable or controllable and non controllable.
- Management information system was not performance based.
- There were no any proper criteria for performance evaluation for financial tools.

Major Recommendations :

- Classification of expenses item as variable and fixed or controllable and non controllable must be made within specific framework of responsibility and time.
- Separate cost control department should be established for the effective management and reduction of cost.
- Cost benefit analysis and CVP analysis should be taken in to consideration while developing sales plan fixed assets purchase plan and pricing strategies.
- The theoretical formula for production as well as stable production policy except unusual case should be considered if possible.

Shrestha (2010) has conducted the research on the topic on "*Comparative study of Profit Planning in Nepal water supply corporation and Nepal*

Telecommunication Corporation". He has focused his study to examine the current practice and effectiveness of profit planning in NWSC and NTC .And tried to understand the practical aspects of the industry and highlight in the current practice of profit planning in NWSC & NTC.

Main Objectives :

- To examine the sensitivity analysis of NWSC and NTC.
- To study profit planning of NWSC and NTC.
- To provide the recommendation and suitable suggestions to corporation.
- To assess the impact of profit analysis on profitability.

Major Findings:

- Planning department of NTC and NWSC does not have any authority to decide and create new ideas while formulating various plan. Basically few higher level officials formulate plans, particularly decision making is not considered necessary in the corporation.
- Redtops are another main obstacle in decision making and implementation of plans and program me.
- Nepalese public enterprise lack budgeting experts and skilled planners.
- NWSC and to some extent NTC are not efficiently able to adopt new technology advancement. That's why the cost of production are too high than they should be.
- NWSC and NTC have not a practice of systematic forecasting which lack of skilled experts is.
- Cost-volume profit relationship has not been considered while developing the sales plans fixed assets purchase plan and pricing strategy.

- The leakage of drinking water which is assumed 25% should be controlled by NWSC. Rules and regulation should be strictly implemented to control leakage.

Major Recommendations:

- All PEs should adequately identify and evaluate the internal and external variable which has influences on the enterprises.
- Nepalese public enterprise should clearly define their broad objectives. NWSC and NTC should develop the objectives to create the minimum and optimum environment that maximize the interest and motivation.
- NWSC and NTC should decide to develop effective programme to expand growth rate. Both NWSC and NTC should adopt participatory management policy as well as management by objectives. NWSC and NTC should decide and make policy about research and developing, productivity, capacity utilization and cost control.
- Cost benefit analysis and CVP analysis should be taken in to consideration while developing sales plan fixed assets purchase plan and pricing strategies
- The theoretical formula for production as well as stable production policy except un usual case should be considered if possible.

Khatri (2012) has conducted a research topic on *"cost volume and profit analysis as a tool to measure effectiveness of planning and control"* . He has centered his study to examine CVP analysis and its impact in profit planning.

Main Objectives :

- To examine the sensitivity analysis of Salt Trading Corporation.
- To study cost-volume-profit trend of Salt Trading Corporation Limited.
- To provide recommendations and suitable suggestions to the corporation.
- To assess the impact of CVP analysis on profitability.

- To analyze the variance between targets and the actual data of the industry.

Major Findings :

- The corporation's variable costs is high proportion than fixed cost in total cost amount, which contributes for lower contribution margin.
- Salt trading corporation does not practice the scientific appropriate cost classification technique. So it is difficult to use financial tools such as degree of operating leverage, CVP, flexible budget etc.
- Financial position of corporation is satisfactory as compared to previous year but net profit margin, profitability ratio and other things are not satisfactory.
- The practice of CVP analysis has not been used yet.
- The corporation does not apply any appropriate and effective action for the re-planning.
- The corporation has high fixed costs (i.e. salary ,depreciations and interest).
- The goal and objective of the corporation are not clearly communicated to operating level of management.
- The corporation is not confined within the narrow territory of its profit trend. But it has launched the public awareness program me in different media.

Major Recommendations :

- The corporation should segregate costs into fixed and semi-fixed costs which help to control/reduce the cost and easy to find out unit variable cost.
- The corporation should operate training activities and plan for successor.
- The corporation should prepare a periodic performance report to evaluate the poor performance.
- The corporation should select economic suppliers and transportation mechanism to minimize material cost.

- To run the corporation more effectively and to achieve the targeted mission it should depend on convincing method of market survey and statistical tools likes regression analysis, time series analysis, barometric technique, input-output analysis for sales forecasting.
- Since the corporation is service oriented it should promote the depot so that it can provide the easy service for the consumer and it can enhance the sales of corporation.

Koirala (2012) has conducted a research topic on "*Cost volume profit analysis of Salt Trading Corporation Limited*". He has focused his study to analyze the sales and purchase budget of salt trading corporation Ltd.

Main Objectives :

- To examine the sensitivity analysis of Salt Trading Corporation.
- To study cost-volume-profit trend of Salt Trading Corporation Limited.
- To assess the impact of CVP analysis on profitability.
- To provide recommendations and suitable suggestions to the corporation.

Major Findings:

- There is needed of systematic and comprehensive expenses planning for profit planning and control but the Corporation has no details of systematic expenses.
- The fixed cost of corporation are high. (i. e. Administration cost, Depreciation expenses and interest expenses).
- Salt trading corporation does not practice the scientific appropriate cost classification technique. So it is difficult to use financial tools such as degree of operating leverage, CVP, flexible budget etc.

- The planning process of STC is little bit ambitious the actual achievement is lower than that of targeted figure.
- STC has practiced only short term planning rather than long term planning.
- Minimum expenditure is made in advertisement. In fact most people don't know that STC deals in product other than salt.

Major Recommendations :

- STC should develop elastic strategic plan as well as tactical plan regarding sales, purchase, and expenses.
- Long term objectives of the STC should be clearly formulated so as to make clear distribution between profit motive and social motive.
- STC needs to explore business opportunities and develop it as a self sustainable public enterprise.
- To improve the profit pattern of STC should develop profit plan formulation and make proper implementation.

2.21 Research Gap

Cost-volume profit analysis is a major tools to measure the effectiveness of profit planning and control. Cost-volume-profit analysis and the sensitivity of their variable in modern business is a current issue but these facts are rarely study. Since the former researcher have not studies the sensitivity analysis, cost volume, profit trend and its impact on profitability. The researcher is interested to research on it. The researcher will examine the current practice of CVP analysis of STCL which will be the influential study to those interested person, parties, students, teachers, civil society, government for academically as well as policy prospective and especial STCL.

CHAPTER-III

RESEARCH METHODOLOGY

3.1 Introduction

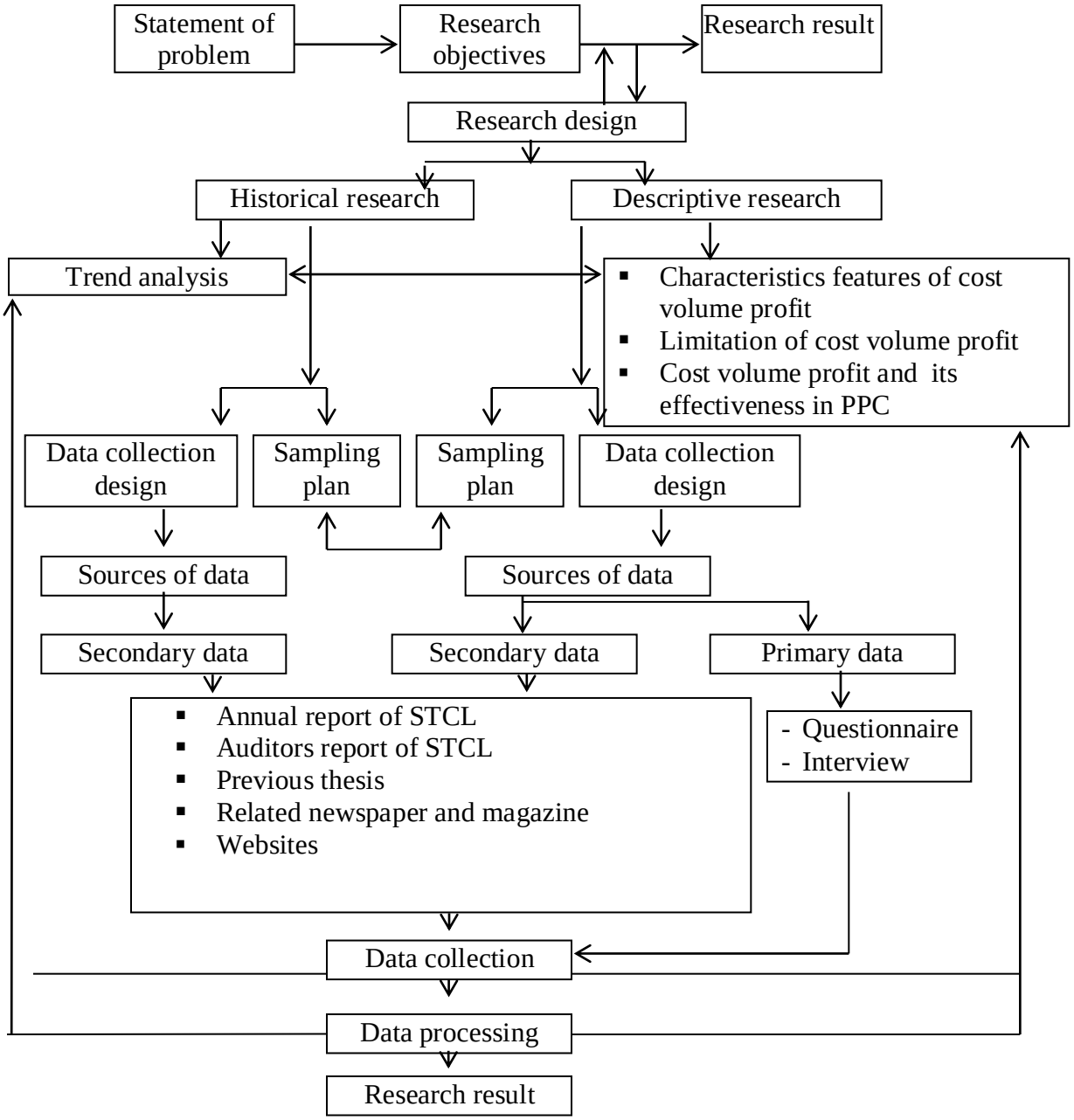
In the previous chapter, general background, the role of IT and CVP analysis has been presented and the role of the CVP analysis in the business firm has described in review of literature with possible review of relevant books, articles and research finding has also been discussed along with the function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

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

Research design is the plan structure and strongly of investigation conceived to obtain answer of research question and control variability. This study attempts to show the relationship among cost-volume and profit and various functional budgets for their achievement and effective application within the conceptual framework of profit planning for solving the problems that have accused in STCL.

Therefore, this study is closely related to various accounting statement as well as the actual result of the budget. To facilitate the assessment, research. To facilitate the assessment, researcher collect quantitative information from salt trading company and related data are tabulated manipulated and analysis according to research objectives. Only the secondary data are used.

3.2 Research Design



Research design is the plan structure and strongly of investigation conceived to obtain answer of research question and control variability. The research design of the study is analytical as well as descriptive. This study attempts to show the relationship among cost-volume and profit and various functional budgets for their achievement and effective application within the conceptual framework of profit planning for solving the problems that have accused in STCL. Therefore, this study is closely related to various accounting statement as well as the actual result of the budget. This study is not only analytical but also descriptive. To facilitate the assessment, research. To facilitate the assessment, researcher collect quantitative information from salt trading company and related data are tabulated manipulated and analysis according to research objectives. Both primary and secondary data are used.

3.3 Period Covered

The period covered by the study is five years for trend analysis and one year for the analysis of cost-volume-profit variable and related aspects. This period covered is from FY 2064/65 to 2068/69.

3.4 Population and Sample

There are 36 public enterprises operating in Nepal, those are the population of study. For this study, only Salt Trading Corporation is selected as sample.

3.5 Nature and Source of Data

The study is based on secondary data. Some additional information have been collected through the discussion and interview with the concerned personal and employee and secondary data and information have been taken mainly from annual reports, balance sheet auditor's report, P/L account, official records and other form published and unpublished books and booklets.

3.6 Tools and Techniques

Collected data have been analyzed by using statistical and financial tools which are: mean regression, graphs, BEP charts, bar diagram, percentage, ratio etc. Similarly, the accounting tools used as per necessary are: contribution margin, breakeven point, sensitivity analysis etc.

CHAPTER-IV

PRESENTATION AND ANALYSIS OF DATA

4.1 Sales value of Salt Trading Corporation Limited

Sales value is the major part of profit planning and control because it provides the basic management decision about marketing as well as provides ground for other budgets. It is an organized approach for developing the sales value. Sales value should be realistic. Salt trading corporation limited does not have long range and short range sales value. It hasn't properly maintained the annual sales budget. Therefore, actual sales value has been analyzed. Sales value means total monetary value of unit sold by salt trading corporation limited.

Table : 4.1

Actual Sales Revenue

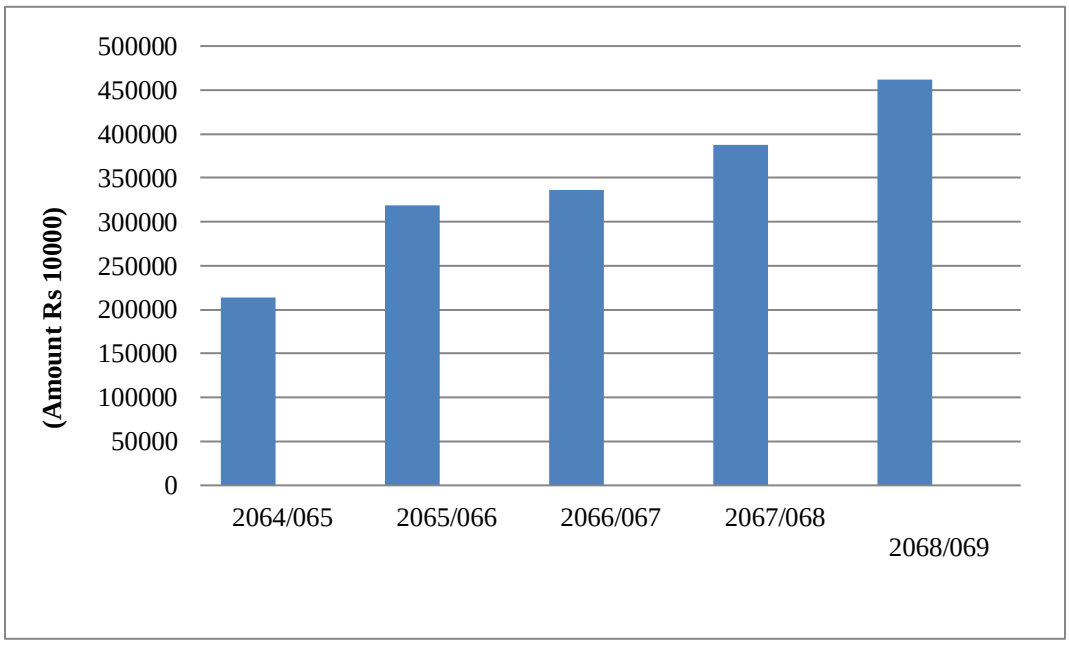
(Amount in Rs.)

Fiscal Year	Sales Revenue	% change
2063/064	1916218180	------
2064/065	2138957424	11.62
2065/066	3190432746	49.16
2066/067	3366335450	5.51
2067/068	3874061721	15.08
2068/069	4619853406	19.25

Source: Annual Report of STC

Figure : 4.1

Sales Revenue



The above table and figue shows that sales value of salt trading corporation limited has been increasing from the fiscal year 2064/65 to 2068/69 by Rs.2138957424, 3190432746, 3366335450, 3874061721 & 4619853406 respectively. But It can be seen sales percentage has been fluctuating from the fiscal year 2066/67 to 2068/069 and even that the increasing rate has gone slightly up.

There are various reasons which cause the variation on sales revenue. The significant factors responsible for the variation in sales revenue are demand condition of the product, cost of products, political conflict, transitional period & socio-political condition of the country, government policy, tough competition with imported product etc. National and international reason also causes for fluctuating sales value.

In the fiscal year 2064/065 the total revenue collection by salt trading corporation is Rs. 2138957424 which is increased by 11.62 percent of previous year of

2063/064. But in the year 2065/066 sales revenue collected by salt trading corporation is increased continuously by 49.15, 5.51 15.08 and 19.25 percent as respectively. Therefore the above mentioned fact clearly shows that the sales revenue of the corporation is unstable.

To analyze the trend of actual sales, least square method can be used to estimate the possible future sales for given time or year. A straight line trend will show the relationship between time period and actual sales of the relevant year. In this method, it is assumed that the changes in sales revenue in consistent way as previous year. In this method, time factor is considered as independent factor and sales is considered as dependent factor upon time. The straight line trend of actual sales (y) depends upon the time (x) which is expressed as:

$y = a + bx$,For the calculation, the value of a (constant) and b (variable) can be obtained by solving the following two equations.

$\sum y = na + b\sum x$ …… (i)

$\sum xy = a\sum x + b\sum x^2$ ….. (ii)

Table : 4.2

Time Series Analysis

Fitting Straight Line Trend by Least Square Method

Fiscal Year	**Actual Sales(Y)** (in Rs.)	**X(Base Year 2066/067)**	**x^2**	**XY**
2064/65	2138957424	-2	4	-4277914848
2065/066	3190432746	-1	1	-3190432746
2066/067	3366335450	0	0	0
2067/068	3874061721	1	1	3366335450
2068/069	4619853406	2	4	9239706812
	$\sum y$=17189640747	0	$\sum x^{2=}$ 10	$\sum xy$ =5137694668

Therefore, a = 3437928148 and b =513769466.8

Thus, y = 3437928148 +513769466.8 x, is the trend of sales figure which shows the positive sales revenue in the future. By using this trend equation we can estimate the actual sales, for the year 2069/070. y = 3437928148 + 513769466.8 x 6 = 6520544949.

Therefore, if the trend does not change, the possible sales for the year 2069/070 will be Rs. 6520544949.

Table : 4.3

Forecasted Sales

(Amount in Rs.)

Fiscal Year	A	b	x	Sales Forecasted
2069/70	3437928148	513769466.8	6	6520544949
2070/71	3437928148	513769466.8	7	7034314416
2071/72	3437928148	513769466.8	8	7548083882
2072/73	3437928148	513769466.8	9	8061853349
2073/74	3437928148	513769466.8	10	8575622816

The presentation of the above figure with the trend will be more effective by following graph.

Figure : 4.2

Actual Sales Trend

Time Series Analysis of Sales Revenue

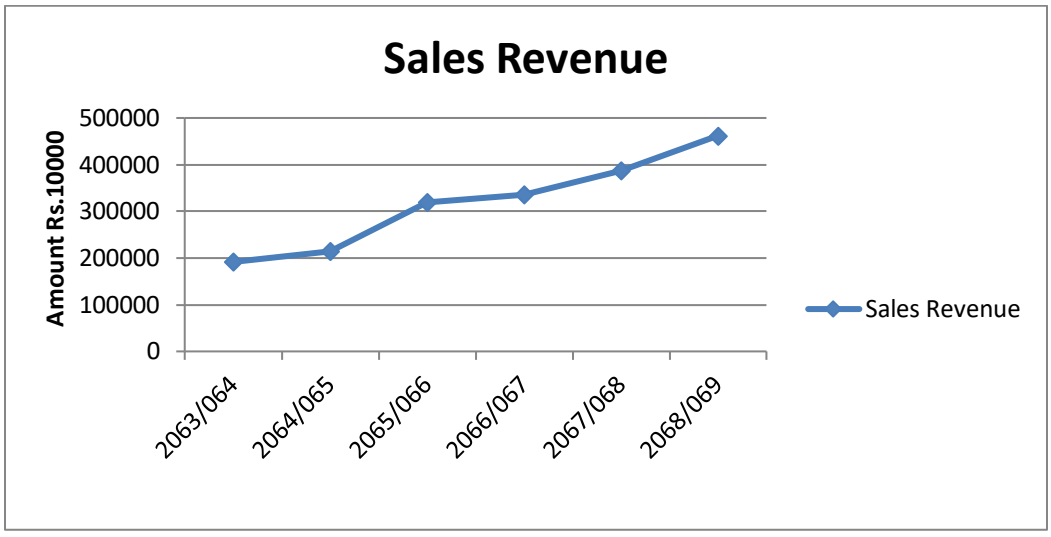
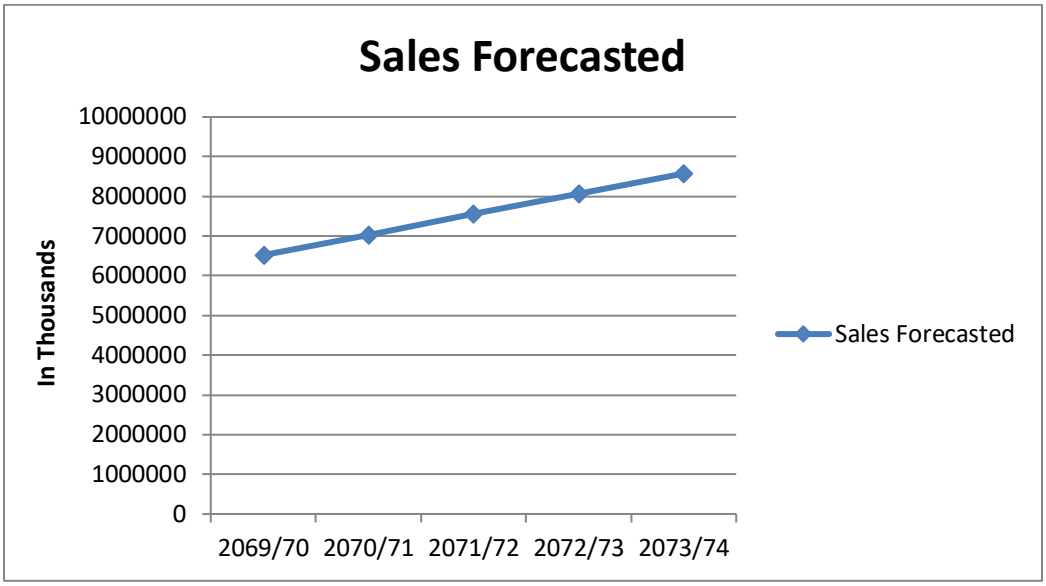


Figure : 4.3

Forecasted Sales



The above table & figure show that estimated sales for the year 2069/70 to 2077374 is Rs. 6520544949, 7034314416, 7548083882, 8061853349 & 8575622816 respectively.

From the above graph it shows that the sales up to 2066/067 is somehow in fluctuating trend where as from year 2068/069 the sales will increase continuously for the ten years.

4.2 Variable Cost Analysis of Salt Trading Corporation Limited

Variable costs which increase directly and proportionately with the increment in production unit are called variable costs. A variable cost is changed in the same proportion due to change into production volume. If other thing remains constant, variable cost per unit is not changed. But total variable cost is changed due to changing in production volume. Variable cost per unit is constant within the one fiscal year. Variable cost per unit are varies for different fiscal year affected by internal and external environment of the company. According to the company's costs detail sheet, separate the following variable cost by nature and used of them.

Table : 4.4

Variable Costs Analysis of STCL

(Amount in Rs.)

Details	**2064/065**	**2065/066**	**2066/067**	**2067/068**	**2068/069**
1. Cost of Sales	1837630785	2813514025	2846981343	3223898614	4074791857
Total cost of sales (a)(70% of sales)	1286341550	1969459818	1992886940	2256729030	2852354300
1. Administration Cost(b)					
Salary	49077476	52987869	68368634	75748221	84454221
Salaries and allowance (70% of salary)	34354233.2	37091508.3	47858043.8	53023754.7	591179547
TADA	5030640	10472556	10682336	11073027	7524493
Ticket and telephone	3059448	3170962	3532961	3890676	2572600
Stationery expenses	1636773	1395578	2074648	2948347	2624566
Petrol expenses	2952908	3858293	4024889	4582361	5139173
Cloths allowances	358933	2246027	2107700	2419400	3348230
Anniversary expenses	414438	460937	549660	764779	767681
Books and newspaper	775511	263481	273254	340913	346979
Charity expenses	1570970	2846820	4179416	5829878	4046206
Consultancy fees	647488	1032970	2982957	2694166	1589990
Training expenses	680324	208635	803684	664546	44000
General assembly	125909	126246	313772	490014	264725
Meeting allowances	1644618	1930776	2636794	1352465	1657759
Worshipping expenses	366125	534300	330170	762070	893392
Hosting expenses	1644618	1170886	2821736	1259389	2009700
Water and electricity (70% of Total)	1114871	1143381	1403522	2070917	1286803
Misc. expenses	465672	334295	49530	221995	84000
Overwriting	0	0	7278200	2460000	75000000
Fees and tax	914678	2866997	3769565	2910273	2075259
Total administration cost	57758157.2	71154648.3	97672855.8	175507191	786909324
Total Variable cost(a+b)	**1344099707**	**2040614466**	**2090559796**	**2432236221**	**3639263624**
%Change in variable cost	-	51.82	2.45	16.34	49.63

Source: Annual Report of STC

The above table shows that there is variation in variable cost of sales and administrative cost for different years. Because various factors effected to these cost from different angle. All these variable costs are fluctuating trend. In the above table also shows that salaries and allowances, TA-DA, petrol expenses, ticket and telephone, stationary expenses, consultancy fees, meeting allowances, hosting expenses, water and electricity expenses, fees and tax, books and newspaper cost contribute to increase amount of variable administrative cost for every year. Similarly variable cost of sales also contributes to increase amount of variable cost every year.

Total variable cost amount increase by percent, 2.44 percent, 16.34 percent, 49.63 percent in the years, 2066/67, 2067/68, 2068/69, respectively than the last based years. Mainly, cost of sales contributes to increase amount of total variable costs.

4.3 Fixed Costs Analysis

Those costs which do not change due to changing in to production units is known as fixed costs. Such costs remain constant in total amount and are unaffected by changing into production units. Main features of fixed costs are:

- The fixed costs are not changed due to change into production unit.
- Fixed cost per unit is changeable due to change into production units.
- Fixed cost cannot be controlled by the manager.

But fixed cost in total may vary for different fiscal year. The fixed cost of STCL is presented in the table below:

Table : 4.5

Fixed Costs Analysis

(Amount in Rs)

Fixed Cost Analysis of STCL					
Details	2064/065	2065/066	2066/067	2067/068	2068/069
1. Cost of sales	1837630785	2813514025	2846981343	3223898614	4074791857
cost of sale(30% of total)	**551289235.5**	**844054207.5**	**854094402.9**	**967169584.2**	**1222437557**
2. Administration cost (b)					
Salaries	49077476	52987869	68368634	75748221	84454221
Salaries and allowance(30% of Total)	14723242.8	15896360.7	20510590.2	22724466.3	25336266.3
Medical expenses	3379939	4180938	6125540	7672547	9036764
Maintenance expenses	3512649	3983071	5030400	7233847	5994029
water & electricity	334461.3	343014.3	421056.6	887535.3	551487
House rent	5779363	7022272	9050352	7801225	7170330
Bank commission	647488	1032970	2982957	2694166	1589990
House & land tax	1155936	951632	870317	2121565	498374
Insurance	9789776	14889497	17114649	21106634	23498417
audit fees	177650	195500	215050	215050	225000
Bribe expense		12546014	20902989	62203358	7170880
Total(b)	**39500505.1**	**61041269**	**83223900.8**	**210408614.6**	**165525758.3**
Selling and distribution cost(c)					
Advertisement	775511	1134246	1788552	3207162	1969173
sales promotion	5375836	8459469	12024866	12544199	8455924
Total©	**6151347**	**9593715**	**13813418**	**15751361**	**10425097**
Other fixed cost					
Depreciation	5169703	7064647	7719126	7287132	6835193
Interest	152956369	197195114	260201790	294577494	310039338
Total(d)	**158126072**	**204259761**	**267920916**	**301864626**	**316874531**
Total fixed cost	**755067159.6**	**1118948953**	**1219052638**	**1495194186**	**1715262943**
% Change in fix cost		**48.19**	**8.95**	**22.65**	**14.72**

Source: Annual Report of STC

The above table shows that there is increasing in fixed costs. This variation is caused by the variation of cost of sales, administrative cost, selling and distribution cost and other fixed costs namely depreciation and interest.

The above table show that administrative cost is increased in the FY 2064/65 to 2067/68 by Rs. 39500505.1, 61041269, 83223900.8 and 210408614.6

respectively. But FY 2068/2069 is decreased by 165525758.3. Selling and distribution cost is increase in the FY 2064/65 to 2067/2068 by Rs. 6151347, 9593715, 13813418 and 15751361 respectively. But in FY 2068/69 decreased by Rs.10425097. The other fixed costs namely depreciation and interest are also increasing trend but in year 2067/068 to 2068/2069 and depreciation is decreased from Rs.7719126 to Rs.7287132 and 7287132 to 6835193.

The total fixed cost is Rs. 755067159.6 in the FY 2064/65. In the FY 2068/069 it has reached to Rs. 1715262943.

4.4 Profitability Ratio Analysis of STCL

An arithmetical relationship between two figures is known as 'ratio.' it is computed by dividing one item of relationship with the other. Ratio analysis is technique of analysis and interpretation of financial statesmen. To evaluate the performance of an organization by creating the ratio form the figures of different accounts consisting in balance sheet and income statement is known as ratio analysis.

Ratio can be classified into four broad groups. One of them, profitability ratio shows the overall efficiency of all business concerns. The relation of the return of the firm to either its sales or its equity or its assets is known as profitability ratios. Profitability ratios are two types, profitability in relation to sales and profitability in relation to investment. But this analysis concerns only with profitability in relation to sales.

Gross profit is the amount left after deducting cost of sales form total sales revenue. The operating profit of the corporation has been derived after adding gross profit with other income and then deducting administrative cost.

The net operating profit of the industry is calculated by subtracting interest and depreciation expenses from operating profit.

Table : 4.6

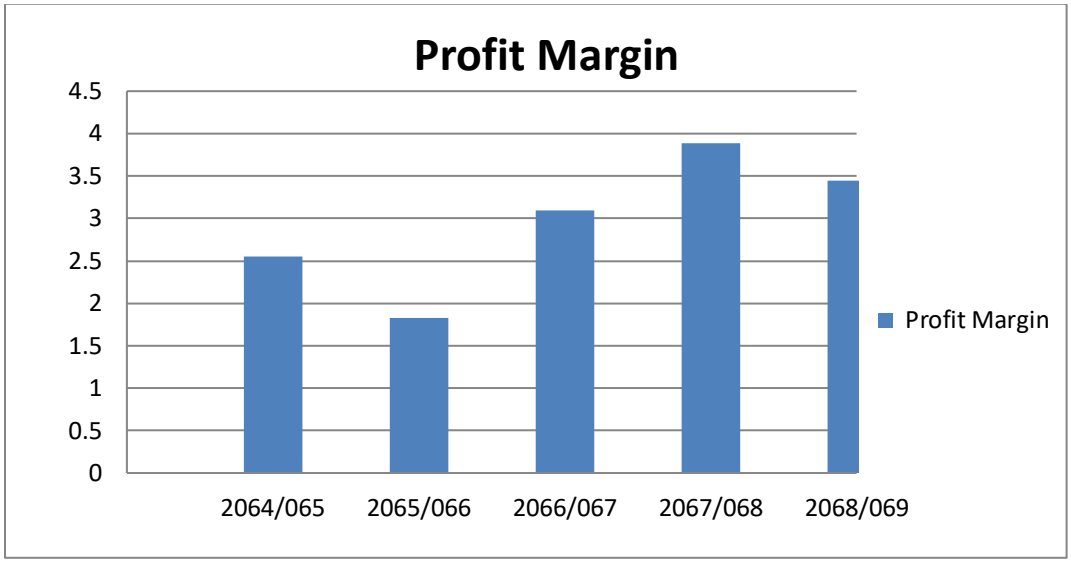
Profitability Analysis of Salt Trading Corporation Limited

Fiscal Year	Sales(1) (in Rs.)	Net Operating Profit(2) (in Rs.)	Profit Margin(%)
2064/065	2138957424	54635534	2.55
2065/066	3190432746	58409685	1.83
2066/067	3366335450	103986682	3.09
2067/068	3874061721	150546510	3.89
2068/069	4619853406	158847679	3.44

Source: Annual Report of STC

Figure : 4.4

Profit Margin



The above table and figure show that the percentage change in sales in the year 2064/065 has gone 2.55 percent . In the year the 2065/066 the percentage in sales is decreased to 1.83 percent due to net operating profit is very slightly increased rather than the sales. In the year 2066/67 and 2067/68 percentage change in sales also nearly equal which has gone to 3 percent but in the year 2068/2069 small decreased by 0.45 percent. Comparative profitability ratio analysis for the FY 2066/67 to 2067/068.

Table : 4.7

Income Statement for the Fiscal Year 2067/068 and 2068/069

(Amount in Rs.)

Particular	**Amount(Rs) 2064/065**	**Amount(Rs) 2065/066**	**Amount(Rs) 2066/067**	**Amount(Rs) 2067/068**	**Amount(Rs) 2068/069**
Sales revenue	2138957424	3190432746	3366335450	3874061721	4619853406
Less: cost sales	1837630785	2813514025	2846981343	3223898614	4074791857
Gross profit	301326639	376918721	518354107	650163107	545061549
Add: other incomes	25788804	28214940	47146529	51033585	254724182
Total gross profit including other income	327115443	405133661	5655100636	701196692	799785731
Less: Administrative expenses	114353837	142464215	193593038	248785556	324063521
Operating income	212761606	262669446	5461507598	452411136	475722210
Less: Other fixed cost: Depreciation Interest	 5169703 152956369	 7064647 197195114	 7719126 260201790	 294577494 7287132	 310039338 6835193
Net operating incomes	54635534	58409685	103986682	150546510	158847679
Add: Profit on sale of assets	8996	2953	1287081	75632	521151
Profit before tax and bonus	54644530	58412638	105273763	150622142	159368830
Less: Bonus	2240412	2600194	6393586	9851265	8113944
Profit before tax and advance	24644530	28602138	70329449	140770877	151254886
Less; advance	30000000	29810500	34944314	42258224	20757162
Profit before Tax	22404118	26001944	63935863	98512653	31497724
Less: Tax	12364110	15276583	27753494	52324899	-
Add Deferred tax	(2987193)	(829720)	(968651)	(13815343)	(23202715)
Net profit	13027201	11555081	37151020	70567653	104342152

Source: Annual Report of STC

4.4.1 Gross Profit Margin Ratio

Gross profit margin ratio expresses the relationship between gross profit margin and sales amount. A firm should have a reasonable gross profit margin to ensure adequate coverage for operating expenses of the firm and sufficient return to the owners of the business. Gross profit margin ratio can be expressed by the following formula.

$$\text{Gross Profit Margin Ratio} = \frac{\text{Gross profit}}{\text{Sales}}$$

Table : 4.8

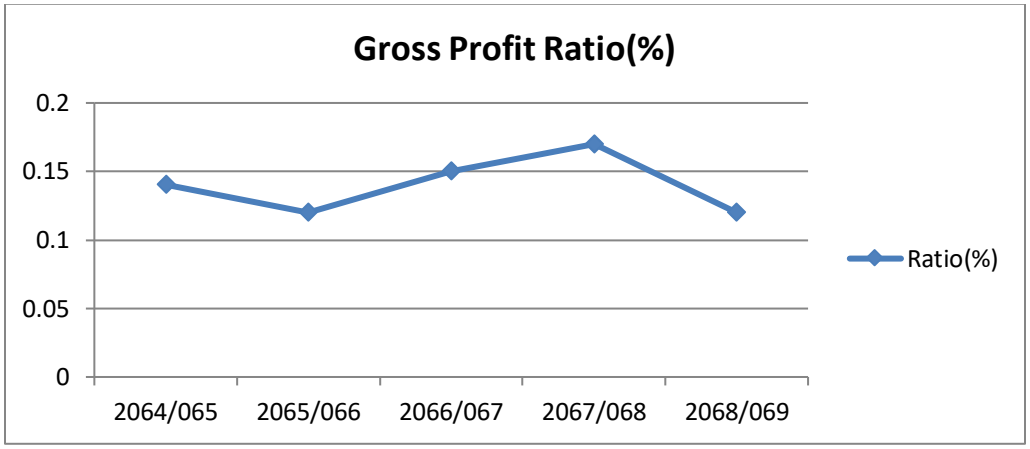
Gross Profit Margin Ratio

(Amount in Rs)

year	Gross Profit (A)	Sales (B)	Ratio
2064/065	301326639	2138957424	0.14
2065/066	376918721	3190432746	0.12
2066/067	518354107	3366335450	0.15
2067/068	650163107	3874061721	0.17
2068/069	545061549	4619853406	0.12

Figure : 4.5

Gross Profit Ratio



The above table and figure show that gross profit ratio has fluctuating in every year. In the fiscal year 2064/65 to 2068/69 Profit margin is 0.14, 0.12, 0.15, 0.17 and 0.12 respectively. Gross profit margin ratio of corporation for the fiscal year 2068/69 is less than the fiscal year 2067/68 since it should be proper management as it implies that the cost of sales of corporation is relatively low.

A higher ratio is a sign of good management. A low gross profit ratio is definitely a dangerous signal, requiring a careful and detailed analysis of the factors responsible for it.

4.4.2 Net Profit Margin Ratio

This ratio measures the overall profitability of the firm by establishing relationship between net profit and sales. The relationship between net profit and sales indicates management's ability to operate the business with sufficient success not only to cover the cost of production, operating expenses of business and cost of borrowed fund but also to leave a margin of reasonable compensation to the owners for providing their capital at risk. This ratio is calculated by dividing net profit after tax and interest by sales.

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

Table : 4.9

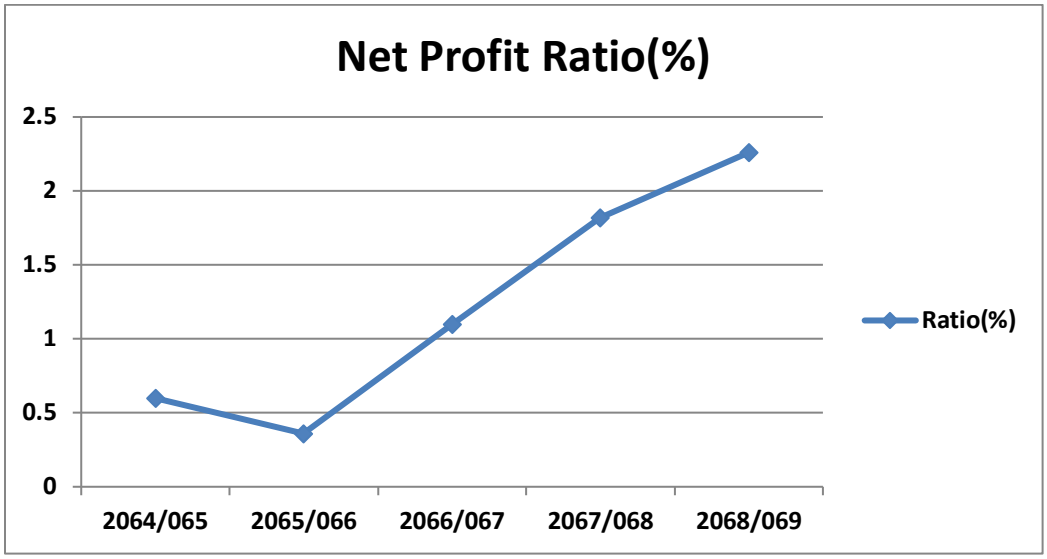
Net Profit Margin Ratio

(Amount in Rs)

year	Net Profit(A)	Sales(B)	Ratio(%)A/B
2064/065	13027201	2138957424	0.60
2065/066	11555081	3190432746	0.36
2066/067	37151020	3366335450	1.10
2067/068	70567653	3874061721	1.82
2068/069	104342152	4619853406	2.26

Figure : 4.6

Net Profit ratio



The above table and figure show that net profit margin ratio has increased from 2065/66 to 2068/69 but 2064/65 to 2065/66 has also decreased.

On the basis of fiscal year 2067/68, the company's net profit margin ratio is 1.55 percent. But for the fiscal year 2068/69, the company's ratio is 2.26 percent which is greater than the previous fiscal year's ratio. It indicates that, at present company's overall efficiency is better than previous fiscal year from the net profit margin view.

4.5 Cost-Volume-Profit Analysis of Salt Trading Corporation Limited

Cost-volume-profit analysis is a management accounting tool to show the relationship between costs volume and profits with given change in cost or volume. What is the expected change in profit ? While volume is a function of price, cost is a function of volume. That is, CVP technique analysis the behavior of the three key parameters of costs, volume and profits. It is thus based on cost

behavior patterns – how costs respond to changes in output levels. 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. CVP analysis helps to determine the minimum sales volume to avoid losses and the sales volume at which the profit goal of the corporation will be achieved. And this analysis is possible only when the management has information about variable cost and fixed cost and selling price of the product or sales revenue.

Table : 4.10

Income Statement for the Year 2064/65 to 2068/69

(Amount in Rs.)

Particulars	**2064/65**	**2065/66**	**2066/67**	**2067/68**	**2068/69**
Sales Revenue(1)	2138957424	3190432746	3366335450	3874061721	4619853406
Less: variable cost					
Cost of sale(70% of Total)	1286341550	1969459818	1992886940	2256729030	2852354300
Administration expenses	57758157.2	71154648.3	97672855.8	175507191	786909324
Total V.C.(2)	1344099707	2040614466	2090559796	2432236221	3639263624
C.M.(1-2=3)	794857717.3	1149818280	1275775654	1441825500	980589782
Less :F.C. Cost of sale	551289235.5	844054207.5	854094402.9	967169584.2	1222437557
Admin. Cost.	39500505.1	61041269	83223900.8	110408614.6	165525758.3
Selling &Distribution cost	6151347	9593715	13813418	157513611	**10425097**
Depreciation	5169703	7064647	7719126	7287132	6835193
Interest	152956369	197195114	260201790	294577494	310039338
Total Fixed cost(4)	**755067159.6**	**1118948953**	**1219052638**	**1295194186**	**1715262943**
Profit(3-4=5)	39790557.7	30869327.7	56723016.4	146631314	254066383
P/V Ratio=CM/sales	0.371609883	0.360395712	0.378980548	0.372174116	0.2122556
BEP=fixed cost/PV Ratio	2031881268	3104778764	3216662817	3480075938	3811046246
Margin of safety=As-BES	107076155.8	85653981.71	149672632.7	393985783	808807160

Source: Annual Report of STC

4.6 Analysis of Contribution Margin Ratio, BEP and Margin of Safety

An alternative approach to cost-volume profit analysis is based on the contribution margin. Contribution margin is the excess of sales price of unit of output over its variable cost. i.e.(S-V). It is the different between the portions of rupees that is left after variable expenses are deducted. Variable cost is the sum of manufacturing

costs and marketing and administrative cost. Contribution margin can be written in the formula form as (contribution margin = sales revenue – variable cost).

The CM approach is particularly useful in determining the break-even point and target profit breakeven point defined as the output level which evenly breaks-even the costs and revenue. Break-even sales volume is the level of sales volume in which a corporation neither makes a profit nor suffers losses. At this level of activity the sales just covers the total costs, and the profit are zero.

Margin of safety is an excess amount of a corporation's actual sales revenue over the break even sales revenue. The greater this margin the less sensitive the company to any abrupt fall in revenue. In the formula Margin of safety cab be written as (Margin of safety = Actual sales – Break even sales).

Table : 4.11

Analysis of Contribution Margin Ratio, BEP and Margin of Safety

(Amount in Rs.)

Particular	Fiscal Year				
	2064/065	**2065/066**	**2066/067**	**2067/068**	**2068/069**
1. Sales Revenue	2138957424	3190432746	3366335450	3874061721	4619853406
2. Contribution margin	794857717.3	1149818280	1275775654	1441825500	980589782
3. CM ratio/PV ratio	0.37	0.36	0.38	0.37	0.21
4. BE (%)	94.99	97.31	95.55	89.83	82.49
5. Margin of safety	107076155.8	85653981.71	149672632.7	393985783	808807160
6. Margin of Safety(%)	5.00	2.68	4.45	10.17	17.51

The above table shows that contribution margin of the corporation is in increasing trend from the fiscal year 2064/065 to 2067/068.But the fiscal year 2068/069 are decreased. Higher contribution margin ratio is better for the company.

The % of BE of the corporation is in decreasing trend from 2065/066 to 2068/069.But the fiscal year 2064/065 to 2065/066. Therefore lower BE is better for the company.

The margin of safety for year 2064/65 is Rs. 107076155.8.Where as in year 2065/066 it is decreased to Rs. 85653981.71.And that after it is increasing in year 2066/67 to 2068/069. For the fiscal year 2068/69 the corporation makes the highest margin of safety which is Rs. 808807160.

The point at which the corporation makes neither profit nor gain is termed as BEP. At this point the total sales revenue is just sufficient to cover both variable and fixed costs. Following computation shows the BEP in Rs. for the fiscal year.2064/65 to 2068/69.

Fiscal Year	**2064/065**	**2065/066**	**2066/067**	**2067/068**	**2068/069**
BE Sales (Rs.)	2031881268	3104778764	3216662817	3480075938	3811046246

4.7 Measuring Risk: Degree of Operating Leverage (DOL)

Operating leverage tells us how profit change with the change in sales volume. Degree of operating leverage can be measured interims of 'Degree of Operating Leverage'. A DOL shows the time of percentage change in operating income to the given percentage change in sales. It may be defined as the percentage change in net operating income or EBIT associated with a given percentage change in sales (Pandey, 2004).

$$DOL = \frac{\%\ Change\ in\ net\ Operating\ Income\ or\ EBIT}{Percentage\ Change\ in\ Sales}$$

Alternatively

$$DOL = \frac{\text{Contributi on Margin}}{\text{Net Operating Income}} = \frac{CM}{CM - TFC + Int.}$$

Table : 4.12

Degree of operating Leverage

(Amount in Rs.)

Year	Contribution Margin(A)	Net Operating Income(B)	DOL(A/B)
2064/065	794857717	6602857510	0.12
2065/066	1149818280	228064441	5.04
2066/067	1275775654	316924806	4.03
2067/068	1441825500	241208808	5.98
2068/069	980589782	424633823	2.31

The above table shows that degree of operating leverage 2064/65 to 2068/69 is 0.12, 5.04, 4.03, 5.98 and 2.31 respectively. The DOL has also fluctuating in every year. Higher fixed cost increases the DOL and they also increase the break-even point. So, there is a close relationship between the degree of operating leverage and the break-even point. A high DOL and a high BEP both are the indicators of higher risk of high degree of operating leverage (DOL) makes good times better and bad times worse.

4.8 Sensitivity Analysis: Accessing the Impacts of Change in Cost-Volume-Profit Variables

Sensitivity analysis is the measurement of elasticity of the change in cost-volume-profit factors on breakeven point or given profit. To measure the sensitivity of cost-volume-profit factors one can see the impact of certain percentage or amount change in volume, price or cost factors on net profit. In other words, sensitivity

analysis is the measurement of responsiveness in outcome with the change in the determinant variables. As we know the profit is the function of volume, price, fixed cost, variable cost etc. Here we systematically deal with the following sensitivity analysis.

4.8.1 Assessing the Impact When Selling Price is Changed

An increase in the sales value will be the increase profit-volume-ratio and as a result, will lower the breakeven point. On the contrary a decrease in sales value will reduce the profit volume ratio and therefore, result in a higher break-even-point, if increase and decrease of sales value by 10 percent with other factors assumed to remain same; it gets following result for the fiscal year 2068/69.

Table : 4.13
Income Statement with Change of Sales Value for the Fiscal Year 2068/069

(Amount in Rs.)

	Original Sales	**10% Increase**	**10% Decrease**
Sales Revenue	4619853406	5081838747	4157868065
Less: Variable Cost	3639263624	3639263624	3639263624
Contribution Margin	1980589782	1842575123	518604441
Less: Fixed Cost	1715262943	1715262943	1715262943
Profit/Loss	254066383	287312180	-1196658502
P/V Ratio =(CM/Sales)	0.21	0.36	0.12
BEP =	3811046246	3730710611	4257868081
% in BEP	0.82	0.73	1.02

Source: Annual Report of STC

The above table shows that when sales value increases by 10%, profit also increases to 287312180 from 254066383. Similarly, profit volume ratio is increased to 0.429249 forms 0.372174. The break even amount is decreased to 3730710611 from Rs. 3811046246.

When the sales value is decreased by 10%, corporation becomes in loss. P/V ratio is only 0.1247 But BEP amount is increased to Rs. 4257868081 form 3730710611.

4.8.2 Accessing the Impact When Variable Cost is Changed

If the variable cost is changed without changing the selling price and fixed cost, we can easily predict the result. When variable cost is increased profit volume ratio will be decreased as a result profit will be decreased and vice-versa when variable cost is decreased.

Table : 4.14

Income Statement by 10% Change in Variable Cost

(Amount in Rs.)

Particular	Original Variable Cost	10% Increase in Variable Cost	10% Decrease in Variable Cost
Sales	4619853406	4619853406	4619853406
Less: Variable cost	3639263624	4003189986	3275337262
Contribution margin	1980589782	616663420	1944516144
Less: Fixed costs	1715262943	1715262943	1715262943
Profit/Loss	254066383	-1098599523	229253201
P/V ratio= (CM/Sales)	0.21	0.13	0.42
BEP = FC/PV Ratio	808807160	1285022503	1095185168
% change in BEP=BEP/Sales	0.82	2.78	0.23

The above table shows that, when no change is brought in variable cost, the contribution margin is Rs. 1980589782 and net profit is Rs. 254066383. But when, the variable cost is increased by 10% the corporation insures loss because contribution margin is not enough to cover the fixed cost. But in the other hand when variable cost is decreased by 10%, contribution margin is increased and the

loss of the corporation is decreased. When the change is brought in variable cost profit volume ratio is also changed and as a result BEP sales value is also changed.

4.8.3 Assessing Impact When Fixed Cost is Changed

The change in fixed cost does not bring any change in contribution and P/V ratio. When only fixed cost is changed without any change in other factors, net income and BEP amount are also changed.

Table : 4.15

Income Statement by 10% Change in Fixed Cost

(Amount in Rs.)

Particular	Original Fixed Cost	10% Increase in Fixed Cost	10% Decrease in Fixed Cost
Sales	4619853406	4619853406	4619853406
Less: Variable cost	3639263624	3639263624	3639263624
Contribution margin	1980589782	1980589782	1980589782
Less: Fixed costs	1715262943	1886789237	1543736649
Profit/Loss	254066383	27111895	276150733
P/V Ratio= (CM/Sales)	0.21	0.21	0.21
BEP = FC/PV Ratio	808807160	1028083533	702068335

The above table when fixed cost is increased by 10% net profit is decreased because more amount of fixed cost is to be covered by the same amount of contribution margin. As a result BEP amount is also increased when fixed cost is increased. It is observed from the above table that, fixed cost is increased by 10% BEP amount is also increase by 10%. On the other hand, fixed cost is decrease by 10% amount of profit is increased. This is because less amount of fixed cost is to be covered by same amount of contribution margin. It is seen form the table that 10% decrease in fixed cost causes the same percentage decrease in BEP amount.

4.9 Major Findings

From the presentation and analysis of various data has collected from primary and secondary sources, the major findings of the study are as follows:

- The actual sales have being increasing trend in every fiscal year.
- The corporation's variable cost has been increasing trend.
- The fixed cost has being increasing trend. The proportion of variable cost is higher than fixed cost in total cost amount.
- As per profitability analysis, the profit margin has been fluctuating trend.
- As per income statement, the operating profit has being increasing trend.
- The Gross profit margin ratio has been fluctuating trend in every fiscal year.
- Net profit margin ratio has being increasing trend from 2065/066 to 2068/069, which is decreasing in the beginning year 2064/065 to 2065/066.
- The contribution ratio has being fluctuating trend in every fiscal year.
- The % of BE has being decreasing trend from 2065/66 to 2068/069, which is increasing in the beginning year 2064/065 to 2065/066.
- The margin of safety has being increasing trend from 2065/066 to 2068/069, which is decreasing in the beginning year 2064/065 to 2065/066.
- From sensitivity analysis sales value has being decreasing by 10%, corporation becomes in loss. P/V ratio is only 0.12 But BEP amount has being increasing to Rs. 4257868081 from 3730710611.
- The Degree of Leverage has being fluctuating in every fiscal year.
- Financial position of corporation is satisfactory as compared to previous year but net profit margin, profitability ratio and other things are not satisfactory.
- The practice of CVP analysis has not been used yet.
- The corporation has high fixed costs (i.e. salary, depreciations and interest).

CHAPTER -V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

The government of Nepal has established many public enterprises to provide the services toward the people. Most of the public enterprises are suffering from loss. Available resources and capacity are not utilized properly. Many tools are not practiced in public enterprises for measurement of financial performances. Business organization establishes profit objectives and builds budget plans so that the objective may be realized. In profit planning, management must know the selling price of the unit of product, the variable cost to make and sell it, and the difference between the selling price and the unit variable cost. In short management must know what the contribution margin is for each unit of each product line that is handled. Several factors will affect for profits. They are selling price, the number of units sold the unit variable cost, total fixed cost and the mix in which the various product lines are sold. All these factors must be considered in profit planning. These processes will be based on the historical cost and their trend. Nature of the cost and their ratio will be seen by using various statistical tools.

Cost-volume-profit analysis examines the behavior of total revenues, total costs and operating income as changes occur in the output level, the selling price, and the variable cost per unit and/or the fixed costs of a product. The study entitled cost volume profit analysis as tools to measure effectiveness of profit planning and control. The main objective of this study is, to analysis sale trend of corporation, to evaluate cost volume profit trend, to evaluate sensitivity of the corporation and to provide suggestion and recommendation to the corporation.

To make research fruitful, review of related studies has been concerned in second chapter. To obtain major findings and to reach close to conclusion explanation of the tools and technique has been concerned in chapter third and then implemented.

Even in the critical situation prevailing in the country the corporation is committed to serve the country, people and the consumer with the supply of quality goods salt trading corporation should seek for drastic change on its policy and should plan for using CVP tools for profit plan immediately. It would be beneficial to manage according to the recommendation given below.

5.2 Conclusions

- As per findings, Corporation has not been able to achieve the goal. CVP analysis are not practicing by Salt Trading Corporation Ltd. Corporation has not proper method to segregate cost into fixed and variable.
- Actual sales are increasing in trend which is favorable part of this organization. But net profit margin was decreasing in trend in beginning years but after increasing. Which seems variable cost & Fixed cost of this organization is in increasing way.
- The main problem faced by the corporation is increment in variable operating costs because it has adopted neither the cost control system nor systematic and scientific plan for classification of costs.
- The corporation earns profit as increasing trend as compared to previous year. Even though the corporation contribution margin has increased by increase in sales revenue but the increase in fixed cost has increased BEP to higher level.
- The corporation does not apply any appropriate effective action for replanting.

- Financial position of the corporation is satisfactory as compared to previous year but net profit margin, profitability ratio and other things are not so satisfactory due to ignorance of CVP relationship.
- The corporation has both profit making objectives and social responsibilities to the stakeholders even in the critical situation prevailing in the country.
- Profit is not increased as desired by management. Corporation has been providing prompt supply of goods and services at the time of crises.

5.3 Recommendations

As per finding and conclusions the following recommendation is given to improve the present condition of the corporation on the basis of research work;

- The corporation should try to increase sales to enhance productivity and efficiency.
- The corporation should reduce the variable cost in the minimum level for higher contribution margin.
- The corporation to reduce fixed cost of this organization & push up for gaining greater profits in coming year.
- The Corporation should segregate costs into fixed and semi-fixed costs which help to control/reduce he cost and easy to find out unit variable cost.
- The Gross profit ratio should be increased by reduction of variable cost & fixed cost.
- The Net profit ratio should increase in better for a corporation.
- The Operating profit margin should be increase by enhancing productivity & efficiency with effectively.
- The CM ratio should increase in a positive way not fluctuation if possible. Higher contribution ratio is better for the company.

- The BEP sales should try to meet in lower volume to achieve the higher profit.
- The MOS should increase by corporation. The analysis of data in the corporation, it is satisfactory level.
- The DOL should decrease for better performance to a company. A high DOL is the indicator of higher risk.

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APPENDICES

Appendix-I

Balance Sheet for Five Years

(Amount in Rs.)

	2064/65	2065/066	2066/067	2067/068	2068/69
Share capital and liabilities:					
Share capital	24777700	28537500	32859200	39468300	53331400
Reserve and profit	15351720148	1285722894	1285103580	1305967205	1428715633
Mid-term and long-term loan:					
Secured loan	437625683	432886967	430737324	442085043	390866089
Total	**1814123531**	**1747147361**	**1748700104**	**1787520548**	**1482047033**
Fixed assets:					
Net assets	1361452939	1343390052	1308870098	1276914568	1252921675
Investment	383312777	401406589	403477607	427941544	1783606688
Current Assets:					
Deferred Tax	2987193	3816913	4785564	18600907	23202715
Inventory	611621230	1007175635	1447506550	1579415218	1547784946
Debtors	224310407	244732573	223039125	293813091	263161240
Cash and bank	62952414	104834296	65295940	111689211	259345248
Paid in advance	975640222	1167344054	1138652562	1301361321	932030589
Total	**1874524273**	**2524086558**	**2874494177**	**3286278841**	**3002322023**
Current liabilities	1808153651	2525552751	2842927342	3222215312	2913015588
Total assets	66370622	-1466193	31566835	64063529	89306435
Total	**1814123531**	**1747147361**	**1748700104**	**1787520548**	**1482047033**

Appendix-II

Income Statement for the Year 2064/65 to 2068/69

Particular	Amount(Rs) 2064/065	Amount(Rs) 2065/066	Amount(Rs) 2066/067	Amount(Rs) 2067/068	Amount(Rs) 2068/069
Sales revenue	2138957424	3190432746	3366335450	3874061721	4619853406
Less: cost sales	1837630785	2813514025	2846981343	3223898614	4074791857
Gross profit	301326639	376918721	518354107	650163107	545061549
Add: other incomes	25788804	28214940	47146529	51033585	254724182
Total gross profit including other income	327115443	405133661	5655100636	701196692	799785731
Less: Administrative expenses	114353837	142464215	193593038	248785556	324063521
Operating income	212761606	262669446	5461507598	452411136	475722210
Less: Other fixed cost: Depreciation Interest	 5169703 152956369	 7064647 197195114	 7719126 260201790	 294577494 7287132	 310039338 6835193
Net operating incomes	54635534	58409685	103986682	150546510	158847679
Add: Profit on sale of assets	8996	2953	1287081	75632	521151
Profit before tax and bonus	54644530	58412638	105273763	150622142	159368830
Less: Bonus	2240412	2600194	6393586	9851265	8113944
Profit before tax and advance	24644530	28602138	70329449	140770877	151254886
Less; advance	30000000	29810500	34944314	42258224	20757162
Profit before Tax	22404118	26001944	63935863	98512653	31497724
Less: Tax	12364110	15276583	27753494	52324899	-
Add Deferred tax	(2987193)	(829720)	(968651)	(13815343)	(23202715)
Net profit	13027201	11555081	37151020	70567653	104342152

Appendix-III

Income Statement for the Year 2064/65 to 2068/69

(Amount in Rs.)

Particulars	**2064/65**	**2065/66**	**2066/67**	**2067/68**	**2068/069**
sales Revenue(1)	2138957424	3190432746	3366335450	3874061721	4619853406
Less: variable cost					
Cost of sale	1286341550	1969459818	1992886940	2256729030	2852354300
admin exp.	57758157.2	71154648.3	97672855.8	175507191	786909324
Total V.C.(2)	1344099707	2040614466	2090559796	2432236221	3639263624
C.M.(1-2=3)	794857717.3	1149818280	1275775654	1441825500	980589782
Less:F.C.Cost of Sale	551289235.5	844054207.5	854094402.9	967169584.2	1222437557
Admin.Cost.	39500505.1	61041269	83223900.8	110408614.6	165525758.3
Selling &Distrib.cost	6151347	9593715	13813418	157513611	**10425097**
Depreciation	5169703	7064647	7719126	7287132	6835193
Interest	152956369	197195114	260201790	294577494	310039338
Total Fixed cost(4)	**755067159.6**	**1118948953**	**1219052638**	**1295194186**	**1715262943**
Profit(3-4=5)	39790557.7	30869327.7	56723016.4	146631314	254066383
P/V Ratio=CM/sales	0.371609883	0.360395712	0.378980548	0.372174116	0.2122556
BEP=fixed cost/PV Ratio	2031881268	3104778764	3216662817	3480075938	3811046246
Margin of safety=As-BES	107076155.8	85653981.71	149672632.7	393985783	808807160
% of BEP=BEP/sales	94.99400247	97.3152864	95.55384082	89.83016247	82.49279601
% of Margin of safety	5.005997531	2.684713596	4.446159183	10.16983753	17.50720399