CHAPTER ONE
INTRODUCTION

1.1 Background of the study

In Nepal, the agro and forest based industries dominate the industrial land scope in terms of numbers employment and value added. The number of agro industries has been gradually increasing. To a greater extent, these industries are absorbing local agriculture and forest Products as their raw materials of for value addition activities (Pant, 2004:42).

Modern liquor industries are a part of agro and forest based industries. These industries are contributing significantly to the production of agro-based products to meet internal as well as external demand. Therefore, the promotion of liquor industries should be a critical element of the growth strategy in Nepal. It contributes about 20% to government revenue (Business age, 2004:35).

In Nepal context, manufacturing organizations are facing so many problems. There are need for a large of good managers and good managerial decisions. Most of organizations are in loss; profit earning is necessary to survive. Achieving objectives of the business organization needs profit. A firm would be able to obtain funds from the capital market if it earns profit.

Nepal is in infancy period of industrialization .The manufacturing sector is very small .In recent years the growth rate is relatively more satisfactory. The manufacturing system has to face numerous problems which have acted as constraints in the growth of manufacturing industry manly such problems are caused by the land-luck situation of the country, undeveloped situation of physical human financial & administrative infrastructure & non-arability of energy at reasonable rates, non availability of trained &skilled manpower, shortage of capital, small size of market higher cost of production low productivity of inputs, manpower & technology, instabilities in government policy etc.

Profit planning is the process of determining the required amount from each principal unit of business. A profit plan is framework of expected achievement at most efficient operating standards. It is established against which actual accomplishment is regularly compared.

Profit planning is the estimation and predetermination of revenues and expenses that estimate how much income will be generated and how it should be spent in order to meet investment and profit requirement. In the case of institutional operation, it presents a plan spending income in a manner that does not result in a loss (Ninemeirer and Schmidgall, 1984:133). The profit plan tells managers how much money remains to be spent in each expense category. Profit plans are also used to develop new budgets.

Cost-volume profit analysis (CVP) is one of the most important tools in profit planning.

Profit planning or budgeting is forward planning and involve the preparation in advance of the quantitative as well as financial statements to indicate the intention of the management in respect of the various aspects of the business. Profit planning in fact, is a management techniques and a business budget is such a written plan, in which all aspects of business operations with respect to a definite future period are included. It is a formal statement of policy, plan and objectives and goal established by the top management in respect of some future period.

The primary purpose of planning in business then is to increase the chances of are operating planning document committed performance budgets are caused profit plan.

Profit earning is necessary for every industry. Among the objectives of the industries, Profit is the most dominant success & failure of industries, depend on quantity of profit. A Industry would those succeed to obtain funds from the capital market, if it has been earning profit or has but in Nepalese context all manufacturing organization aren't earning profit. Some carpet industry is a example of carpet industry which has been bearing loss every year. It's facing so many problems because of huge losses.

Profit is derived from the business operations profit don't just happen. It should be managed through coordinated & controlled business operations. Profit planning & control (PPC) allow management to plan future activities for the desired amount of profit. Through profit planning management can plan about what level of operating activities will generate desired amount of profit or it also determines or projects its future amount of profit at certain specified volume of activities. Profit planning is building the way through which management can accomplish it's objectives of earning desired amount of profit. Management set profit or operating target for future operation. Profit planning helps management to decide & build the path so that target can be met.

Cost volume profit (CVP) analysis is an important tool for PPC. It is one of the management tools used for establish & analyze the relationship between total cost, total revenue & total profit. For this it establishes a relationship between elements of PPC. There is no debate that profit is the function of several elements like selling price, sales unit, variable cost & fixed cost of the product. These are also affected by other some subjective economic environmental factors. C-V-P analysis helps to study relationship between revenue & cost to determine the level of activity. It is hence, known as a supplementary tool of profit planning. It is immensely helpful in developing different alternatives courses of action for planning & controlling profit.

1.1 STATEMENT OF PROBLEM

The study is more concerned with the cost-volume-profit analysis by considering all benefits and cost components, management skill of carpet industry. Cost-volume-profit analysis is the vital technique that provides supplementary information for profit planning. Every business starts with the target of break-even and then it aims to earn profit over its life. But the business firm passes through many ups and downs. CVP analysis helps to plan for every set of goals in the short-run. The modern business organization's motive is to make more profit or being the condition of at least break-even though there may occur the situation of fluctuation due to different factors affecting things. CVP analysis supports and guides through prescribed techniques thereby helps to make plan and decision making setting of goals in short as well as long-run time frame.

How the business is being operated largely depends on how the business operation is planned. Poor performance is the outcome of poor planning, controlling and decision-making. The key motive of every business enterprise is to make and maximize profit. Profit just doesn't happen by chance, it is to be managed. Cost-volume-profit analysis is a supplementary tool of planning for profit. CVP analysis is immensely helpful for developing alternative strategies in sales planning and cost estimation.

However the success of organization largely depends upon the planning for future operation. CVP is one of the most important managerial devices for the effective profit planning and control. In this context the study tries to answer the following research questions:

The study of basically designed to solve the following problems;-

- Weak managerial functioning existed in the manufacturing company,
- Lack of knowledge of technique to be used,
- Shortage of economic support,
- Shortage of skill development program relating to CVP analysis like other accounting techniques.
- Absence of necessary materials regarding CVP analysis,
- Few knowledge regarding cost classification,
- Lack of the new innovation of the product and the product lines as required.

1.4 OBJECTIVES OF THE STUDY

The main objective of this study is to examine "cost-volume profit analysis as a tool to measure the effectiveness of carpet indusdry". To achieve this, the following objectives have been carried out:

- To study the relationship of cost-volume-profit analysis & its applicability as a tool of budgeting.
- To define the cost classification practice of the company.
- To evaluate the sales volume to break even & to predict desire profit.
- To suggest & recommend on the carpet industry based on major finding.

1.6 SINGFIGNANT OF STUDY

This study will be significant in the following ways:

- It examines the application of cost-volume-profit analysis in the company
- It explores the problems and potentialities of manufacturing industry on the basis of selected organizations. It is useful to the potential managers, accountants, policy makers and planners etc.
- It provides information on the application of the tool under profit planning in different circumstances.
- It finds out the difference in cost, volume and profit and its impact in the break even point.

- This study is also directed towards providing necessary recommendations to the related departments of the company.
- It provides literature to the researchers, who want to carry on future research in this field.

1.7 LIMITATION OF THE STUDY

Each and every research has some limitations. Basically, not availability of required data and information would be the major limitations of the study. The study has been conducted with the following limitations.

- The study would base on primary as well as secondary data.
- Due to limited time and resource constraint, these studies will neither the comprehensive nor extensive.
- Last five fiscal years will be the basis for the study.
- The accuracy of this study would base on the response and the data available from the management of the company.
- This study would only concerned with fulfilling the partial requirement in Master of Business studies (MBS).

1.8 ORGANIZATION OF THE STUDY

This study has divided into five parts Viz. introduction, review of literature, research methodology, presentation and analysis of data, conclusion, summary and recommendations.

Chapter 1 - Introduction

This chapter is introduction framework that includes background of the study, focus of the study, profile of the company, statement of the problems, objectives of the study, significance of the study, limitations of the study and organization of the study.

Chapter 2 – Review of the Literature

This chapter will review the existing literature in the relevant area. Mainly, it includes review of theories and journal, review of previous research work and research gap.

Chapter 3 – Research Methodology

This chapter deals with methodology that includes research design, sources of data, data collection techniques, method of analysis and research variable.

Chapter 4 - Presentation and Analysis of Data

This chapter deals with the presentation and analysis of collected data and information. For this purpose various analytical tools will be used.

Chapter 5 - Summary, Conclusion and Recommendations

This chapter will be the final chapter of the study that includes summary of the study, conclusion and recommendations.

The Bibliography appendix will be included in the last of the thesis.

CHAPTER TWO
REVIEW OF LITERATURE

This chapter is basically concerned with review of literature relevant to the topic "A Comparative Analysis of Cost Volume and Profit Analysis of Manufacturing Organization" Every study is very much based on past knowledge. The previous study cannot be ignored because they provide the foundation to the present study. There must be continuity in research. This continuity research is ensured by linking the present study with past research studies. This chapter highlights the literature that is available in concerned subject as to knowledge, research work, and relevant study on this topic, review of journals and articles and review of thesis work performed previously.

2.1 Profit

Profit is the primary measure of success of business enterprise. It is the main task of the business enterprises performance. Simply stating profit is the excess of income over cost of product or service.

In a general sense, profit is required as income accruing to the equity holders. The maximizing of the profit is different to different people. The owners' point of view of profit is not of rentable assists and interest occurs the money lender. To a layman, profit means all income that how to the investors. To an accountant, profit is the excess of revenue overall paid out costs including both manufacturing and overhead expenses. For all practical purposes, profit or business income means profit in accounting or plus non-allowable expense. In the economic sense, profit is surplus of revenue and above all paid out cost, including manufacturing overhead expenses plus opportunity cost. Besides, in economics profit is considered to be a short terms phenomenon, it does not exists in the long run, especially under perfect competitive condition.

According to the economists perception, some economists say that profit is a rent of ability. Some says profit as reward for risk bearing of business. It is also said that profit is return to uncertainty bearing, is also as reward for innovation. Innovations are these new products or processes, which increase national income more than they increase national cost *(Reaki,1988, p 380-381).*

The word 'profit' implies a compensation of the operation of business between two specific dates, which are usually separated by an interval dated, which are usually separated by an interval of one year. In order to optimize those corporate course those of wealth in which national prosperity depends or those corporate financial objectives of the

company is to maximize within social acceptable limits, profit form the use of the funds employed by them. The maximization of profit within a socially acceptable limit implies that a proper regard to public interests has been paid. No company survive long without profit, for profit is the ultimate measure of its effectiveness and in capitalized society there is no is a profit, which really is a measure of how will a business performs economically; profit is signal for the allocation of resources and a yardstick for judging managerial efficiency *(Kulkarni 1987, P-245).*

Every company, sooner or latter, is faced with the necessarily to mount a cost reduction or profit improvement effort to, accomplish results, which have not been possible in the normal budgeting routine.

Profit is a primary objective of the business. In the view of heavy investment, which is necessary for the success of most enterprises, profit is the accounting sense tends to become a long term objective, which measures not only the success of product but also a development of the market for it . The manager of business firms are vitally concern, without which the firms cannot long survive. They want to be able to predict how various managerial actions will affect profit *(Dominik, 4th Edition, P-17).*

It clearly shows that the variation among economists in regard to the meaning of profit. In general, there are four types of production factors i.e. land, labors, capital and organization. The factors of production help to production goods and services. But in the course of their assistance in production process they need incentives. Then the excess of revenue over such incentives is known as profit and profit is always given to organization. Profits are the expenses made or raw materials, labor, interest or borrowed money, fuel, power are included entrepreneurs would earns, as given to these are excluded from conventional accounting profits. Because, these opportunity cost does not appear to book of account. But the economist hold the view that factor should also be considered or subtracted to arrive at net profits. The word “profit” implies a comparison of the operation to business between the specific dates, which one usually separated by an interval of one year.

2.2 Planning

Planning is the first extreme of management and all other functions are performed within the frame work of planning. Planning means deciding in advance, what is to be done in future? Planning starts from forecasting and predetermination of future extent. Planning is

the whole concept of any business organization. No firm can achieve its predetermined goods and objectives in the absence of proper plan. Hence, it is lifeblood of any organization, which makes efficiency run towards the completive environment.

The planning process which involves both short and long term is the most crucial component for operation and for control. It is both foundation and the bond for the other elements because it is through the planning process that we determine what we are going to do, how we are going to do it and who is going to do it. It operates as the brain central of the organization.

The fundamental purpose of planning is to provide a feed forward process for operations or the most difficult task facing by the manager and it is one of the very easy to pro-castigate. Feedback is also an important ingredient of both re-planning and control. Planning rests up on the view that the future success of on entity can be enhanced by continuous management action. Planning is positioned conformably with the operational or organizational sub-divisions of the entity. Therefore, planning must re-compenses on evaluation because they will have significant impacts on the planning of realistic objectives and goals. The development of enterprises objective is the must fundamental level of decision making in the planning process. The next planning level is known as goal, which represents broad objective brought into shaper focus by explicitly specifying;

- Time dimensions for attainment,
- Quantitative measurement,
- Subdivisions of responsibilities

The most detailed law of planning occurs whose management a practical objective, goals and strategies already established by incorporation into the profit plan Planning begins with the setting on general goals, proceeds to cost volume profit analysis of various alternatives and ends with the proposition of a detailed quantitative plan of action the budget.

2.3 Profit Planning and Control

Of course, it is 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 by an accountant. In post year, there has also been a tendency to view the budget primarily as mathematical model for an organization development by computer programmers.

These views completely overlook the most relevant aspects of the PPC concepts;

- PPC requires major planning decisions by management,
- PPC entails pervasive management control activities,
- PPC recognized may of the critical behavioral implication thought 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.

Five function of management as follows;

(a) Planning,
(b) Staffing and human resource management,
(c) Controlling,
(d) Organizing and,
(e) Leading and interpersonal influence.

The integration of these five management functions constitutes the management process because they are concurrently and continuously being performed in managing or enterprise.

Among these five management functions, generally three of them are given more emphasis as subject of profit planning and control they are;

- Planning decision,
- Control activities,
- Interpersonal behavior within the organization.

Movement, which handles these subjects efficiently, only can get success in future time period. In this sense, PPC is role of management in itself. Whereas both high and law level management has got priority to perform management rule.

2.3.1 Principle and Purpose of Profit Planning and Control

The main principle and purpose of profit planning are as follows:

a. To provide a realistic estimate of income and expenses for a period and the financial position at the close of the period detailed by areas of management responsibility.
b. To provide a co- ordinate plans of action, which is designed to active the estimates reflected in the budget.
c. To provide a comparison of actual results with those budgeted and an analysis and interpretation on of deviation on by areas responsibility to indicate course of corrective action and to lead to improvement in procedures in building future plan.

d. To provide a guide for management decision in adjusting plans and objectives as To help management to find the most profitable combination of costs and volume.

a. To determine the optimum selling price.
b. To determine the sales volume at which the profit goal of the firm will be achieved.
c. To determine the most profitable and least profitable product.
d. To determine new break-even point for changes in fixed or variable cost.

2.5.2 Application of CVP Analysis

Business organization is run to earn a profit. Planning is the fundamental part of the overall management function. Profit planning can be done only when the management has the information about the cost of product, variable cost, fixed cost and selling price of the product. Profit of a business organization is affected by selling price of the product, volume of sales, unit variable costs, fixed cost and sales mix. The most important factor that affects the planning for profit is cost (both fixed and variable) and volume of sales. The CVP relationship will be established by break-even analysis. CVP analysis is applied especially for (Munankarmi, 2003:4.01-4.02).

a. Contribution Margin Analysis
b. Break-Even Analysis
c. Profit-Volume Analysis

2.6 Computation of CVP Analysis

2.6.1 Break-even Analysis

Break-even analysis is the term used to study of the relationship between cost, volume and profit at various level of activity. It is the most widely known from of CVP analysis. Break-even analysis is a special case of CVP analysis.

Break-even analysis uses the same concepts as contribution analysis. However, it emphasizes the level of output or productive activity at which sales revenue exactly total costs that is there is no profit or loss. Break- even analysis rests upon the foundation of cost variability-separate identification and measurement of the fixed and variable

components of cost. It is usually applied on a “total company” basis (Saksena, 1995:112-113).

The break-even point is that point where total revenue equals total costs incurred. Thus it is the point at which a company begins to earn a profit. There is neither a profit nor a loss at the BEP. Although management typically plans for a profit each period, the break-even point is concern, if sales fall below the BEP, losses are incurred. Management must determine the break-even point in order to compute the margin of safety. When planning new venture or product lines, management can quickly measure the likelihood success finding the projects BEP.

2.6.1.1 Determining the Break-even Point

The following three approaches can be used to compute the break-even point.

a. Contribution Margin Approach (Income Statement)
b. Formula Approach (Equilibrium Method)
c. Graphic Approach

a. Contribution Margin Approach:

Contribution margin is the excess of revenue over all variable costs related to particular sales volume. A product lines contribution margin represents its net contribution to pay off fixed cost and to profit. Adding contribution margin CVP analysis changes the make up of the equations as well as the format of the income statement. The equation now becomes.

S-VC = CM-FC = NI (i.e. Contribution)

Contribution margin may be expressed as total absolute amount, a unit absolute amount, a ratio and a percentage. The variable cost ratio or variable cost percentage is defined as all variable costs divided by s ales. Thus a contribution margin ratio of 20% means that the variable cost ratio is 80 percent (Hongren& Sundem, 1995:49).

$$\text{Contribution Margin Ratio} = \frac{\text{Sales} - \text{Variable Cost}}{\text{Sales}}$$

$$= \frac{\text{Sales}}{\text{Sales}} - \frac{\text{Variable Cost}}{\text{Sales}}$$

$$= 1 - \frac{\text{Variable Cost}}{\text{Sales}}$$

The CM ratio of 20% or 0.20 indicates that 20% of sales are available to cover fixed costs and generate profit. In the other words, Rs 0.20 of Rs. 1 sales is available to cover fixed costs and earn a profit. Since profit at the BEP is zero, dividing fixed costs by the contribution margin ratio gives the sales volume that is necessary to cover total fixed costs.

b. Formula Approach:

The most popular practical approach to the break-even pint and cost volume profit analysis is the formula also known as the equation. The formula approach uses an algebraic equation to calculate the break-even point. The answer provided by solving the equation may sometimes need to be rounded to whole numbers of units or lot sizes. The rounding of break even point unit is always done upward because this will provide a small profit rather than the small loss that would be shown from rounding downward (Rainborn, 1993:89).

The BEP can be computed in terms of unit or in terms of monetary value of sales volume or as a percentage of estimated capacity while formula approach is followed. 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. To develop the cost volume profit equation.

Contribution Margin Approach	Symbol or Equations
Sales volume (units)	Q
Selling price per unit	P
Sales revenue (Rs.)	Q× P
Less: Variable cost	Q×VCPU
Contribution margin	Q×P─Q×VCPU
Less: Fixed cost	FC

Net profit	Q×P─Q×VCPU─FC

The table helps to understand the computation of the net profit easily, in which the multiplication of the sales volume and selling price per unit has generated the total sales revenue. When we deduct variable cost from the sales revenue then the result comes as a contribution margin. Contribution margin measures the organizations profitability and higher the contribution margin shows better position of an organization but it is not sufficient indicator at all where the fixed cost included in fixed assets are not included. Net profit is that profit which shows the proper profitability position of an organization and it is taken as a basic indicator to measure the financial position of an organization.

2.6.1.2 Application of Break-even Analysis

Break-even analysis concept can be used to formulate different policies in a business enterprise. Some of these applications are (Maheshwari, 2000:182).

a. Determination of profit at different level of sales and margin of safety.
b. To find the level of output to get the desired profit.
c. Effect of price reduction on sales volume and changes in sale mix
d. Effects of fixed cost or variable cost changed on sales volume.
e. Selection of most profitable alternative, make or buy decision and drop and or add decisions.

2.6.1.3 Assumptions of Break-even Analysis

Contribution analysis and break-even analysis are based on a specific set of assumption that should be clearly understood. These underlying assumptions are (Maheshwari, 2000:182-83).

a. All cost can be classified in to two parts, fixed cost and variable cost.
b. There is a relevant range of validity (activity) for using the result of the analysis and sales change.
c. There is only one product or in case of multi products, the sales mix among the products remains constant.
d. Basic management policy about operation will not change materially in short run.

e. The general price level (inflation/deflation) will remain essentially stable in the short run.
f. Sales and production levels are synchronized, that is inventory remains essentially constant or zero.
g. Effectively and productivity per person will remains essentially unchanged in the short run.
h. If any of the above assumptions were changed, revised budget would be needed for a new analysis.

2.6.1.4 Limitations of Break-even Analysis

Break-even analysis in many business situations can be used effective decision making, but there are many short coming s or limitations in its analysis and interpretations. Some of these can be listed as (Maheshori, 2000:183-84).

a. The assumptions of producer's market phenomenon not hold goods for all types.
b. The fixed cost may remain constant as well as the variable costs may not vary in fixed proportion at different level of output.
c. With variance in the prices of the items or services, which also depend on the factors, affecting the demand and supply will certainly affect the demand of the commodity. This phenomenon is not covered in break-even analysis.
d. Identification of fixed and variable costs involved in production process is very complicated. A shift in product mix may change the break-even point.
e. Customers may be given certain discount on purchase to promote sales. This revenue may not be perfectly variable with level of sales output.

2.6.1.5 Application of Break-even Analysis

The applications of break-even analysis are as follows:

a. Sales volume required to produce desired operating profit/target net profit.
b. Sales volume required to produce the desired profit after tax.
c. Operating profit at a given level of sales volume.
d. Effect on operating profit at a given percentage increase in sales volume (in Rs).

e. Additional sales volume required offsetting a reduction in selling price or sales volume needed to maintain present profit level or a sales volume to offset reduced selling price.
f. Effects of changes in fixed cost (Munankarmi, 2002:132).

2.7 Sensitivity analysis on CVP Analysis

Sensitivity analysis is the measurement of elasticity of the change in CVP factors on break-even point or given profit. The strategist should focus more on the factor, which is more sensitive or responsive for profit. To measure the sensitivity of CVP factors one can see the impact of certain percentage or amount change in volume price or cost factors on net profit. I n other words, sensitivity analysis is the measurement of responsiveness in outcome with the changes in determinant variables. We know that the goal of business enterprises is To Whom It May Concern: maximizing profit. Profit is the excess of revenue over the total cost.

Profit = Total Sales Revenue – Total Sales

Net Profit = Sales Unit × SPPU – Sales Unit × VCPU – Fixed Cost – Taxes

So that, Profit = F (Sales volume, selling price, VC, FC, tax etc.)

Means profits are the function of volume, price, VC, FC, Taxes and so on. But none of the factors remain unchanged: some times the manger can intentionally change the price and the cost factors as a part of strategic decision. But the strategy focuses more on the factor, which is the more sensitive or responsive for profit. So to measure the sensitivity of CVP factors, we can see the impact of certain percentage or amount of change in volume, price or cost factors on net profit (Bajracharaya, et.al, 2004:245).

2.8 Risk Measurement on CVP Analysis as Operating Leverage

Operating leverage tells us how profit change in sales. It is evident that profit change more rapidly than sales. Why do profit change more rapidly than the sales? It is because some costs do not change say 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 some tiling applies in the case of

increase well. Sales revenues changes but some part of costs, known as fixed cost, remains unchanged. This usually net operating income changes more rapidly. This change is called the operating leverage.

Operating leverage can be measured in terms of the “Degree of operating leverage” (DOL). DOL shows the times of percentage change in net operating income of the given percentage change in sales. DOL may be defined as the percentage change net operating income

1. price;
2. To carry out the export and import business;
3. To act as an agent for domestic as well as foreign companies;
4. To make investments in new as well as old industries;
5. To import and distribute chemical goods and fertilizer;

Major Findings:-

1. Cash Management in the STCL is primary based on the traditional practices lacking in scientific approach. A more serious aspect of cash management has been the absence of any formalized system of cash planning and cash budgeting in STCL.
2. The STCL could not make the best use of available cash balance prudently.
3. The average cash turnover time in a year is found 40 times which is in fluctuating trend over the study period.
4. Management has taken liberal credit policy to sales of goods. Hence, the cash and bank balance of the study period is minimal of account receivable.
5. Modern practices with respect to debt collection, monitoring the payment behavior of customers and relevant banking arrangements in connection with collection of receivables have been virtually ignored in STCL.
6. No optimum cash balance is maintained. The cash & bank balance with respect to current assets has been fluctuating trend similar is the case with respect to the total assets.

Thapa, Amit (2008) has conducted a research on the topic " Profit planning and control: A case study of Nepal Telecom. Mr. Thapa has pointed out the following objectives and major finding.

The main objectives of the study were.

1) To examine the present comprehensive profit planning system applied by NTC.
2) To evaluate the targeted variable and actual variables of NTC.
3) To analyze the gap between budgeted and actual revenue.
4) To examine the financial performance the NTC.

The major findings were as follows.

1) NTC is lacking the proper System of Performance report.
2) NTC has not practices of control policy considered controllable and inconsolable variables affecting the organization.
3) The sales plan and achievement is satisfactory to some extent.
4) Financial Performance of NTC is not so good.
5) NTC does not consider the use of flexible subjective.

Ghimire (2008) has made research on Impact of Budgeting on Profitability, a case study of NEA, In this study Mr. Ghimire has pointed out following objectives and major findings.

Objectives:-

1. To analyze the various functional budget of NEA;
2. To obtain a true picture of profit planning diversification of NEA;
3. To analyze the variance between budget and actual achievements of the authority;
4. To printout the major shortcomings and recommended suggestive measures;

Major findings:-

1. Actual sales are more fluctuating than budgeted sales and budgeted sales is more fluctuating than actual production.
2. NEA has a practice of preparing both strategic and tactical budgeting but tactical short range plan is prepared for external purpose and strategic plan is prepared for internal purpose.

3. NEA has been paying huge amounts of interest on long term loan.
4. There is perfect correlation between budgeted and actual sales and budgeted and actual production.
5. Actual sales are always less than actual production due to power loss which is a main problem of NEA.

Shrestha (2009) has made research on Profit Planning in Public Utility Sector of Nepal – A case study of NEA. In this study Mr. Shrestha has pointed out following objectives and major findings.

Objectives:-

1. To examine profit planning system applied by NEA;
2. To analyze the financial performance of NEA by using various financial tools;
3. To observe the various functional budgets of NEA associated with comprehensive profit planning;
4. To evaluate budgeted and actual achievement of NEA;
5. To provide a package of recommendations and suggestions to be taken instantly and further to be encountered with identified budgeting & profit planning problems on the basis of findings;

Major Findings:-

1. Budgeted sales are more variable than actual sales.
2. Budgeted production is more fluctuating than actual production.
3. Authority formulates various functional budgets as a part of comprehensive profit plan.
4. NEA has been paying a large amount of interest on long term loan.
5. Power leakage is significantly high in NEA.

Bhattarai, Samir (2010) has submitted his thesis on the topic "Cost Volume Profit Analysis of Bottlers Nepal Limited" with some remarkable objectives for measuring the applicability of CVP analysis on budgeting, for finding the profitability of the Bottlers Nepal Pvt. Ltd as a tool of financial performance analysis, for the examination of the risk position, and then Mr. Katwal concluded some remarkable finding with respect to these objectives are as follows:

a. BNL does not practice the scientific and appropriate cost classification technique.
b. BNL has not maintain proper sales plan
c. Out of total cost of BNL, variable cost is almost 60% in every year, which causes the low contribution margin.
d. The company has moderate risk.
e. The actual sales of BNL have crossed the BEP for five years. So, the company is in profitable condition.
f. The financial position of the company is profitable.
g. The company has not maintained the broad and long-term objectives.
h. Only the top executives are involved in planning and decision-making and lower participation is not encouraged.
i. The fixed cost of BNL is fluctuated trend. It means the BNL is unable to manage the fixed cost.
j. There is not systematic purchasing of necessary equipment and fixed assets.
k. The company does not apply any appropriate and effective sales forecasting technique.

2.25 RESEARCH GAP

There is the gap between the present research and the previous researches. Previous researches were mainly conducted on profit planning and control and budgeting practices in the manufacturing companies especially in public enterprise

The previous researcher did not disclose which of the profit planning and control tools are in practices in, which are not and why. But few of the researches were conducted on simple cost volume profit analysis of public and private limited companies. But to fill gap, it examines the multi product cost volume profit analysis as a tool of profit planning and control, in the Paramount Carpet Industry Limited.

CHAPTER –III

RESEARCH METHODOLOGY

3.1 INTRODUCTION

Research methodology refers to the various sequential steps that to be adopted by a researcher during the course of studying a problem with certain objectives. It tends to solve the search problem in a systematic way. Hence, overall research method methodologies in a greater extent and also use the descriptive part based on both technical aspect and logical aspect. This research tries to perform a well deigning quantitative quantities research in a very clear and direct way using both financial and statistical tools.

3.2 RESEARCH DESIGN

A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevancy of the research purpose with economy in procedure. It is the plan and formulation of investigation idea and strategy to obtain answers to research questions and to control variance.

Kerlinger (1986) describes that “Research design is the plan, structure, and strategy of investigation conceived so as to obtain answers to research questions and to control variance. The plan is the overall scheme or program of the research. It includes an outline of what the investigator will do from writing the hypotheses and their

operational implications to the final analysis of data. The structure of the research is more specific. It is the outline, the scheme, and the paradigm of the operation of the variables. With the aid of the diagrams that outline the variables and their relation and juxtaposition, it is possible to build structural schemes for accomplishing operational research purposes.

3.3. POPULATION & SAMPLE

The large group about which the generalization is made is called the population under study, or the universe and small portion on which the study is made is called the sample of the study.

Total top 10 carpet industries are taken as population due to largest top 10 carpets industries which exports more than 19000 SQM. It couldn't be possible to attempt all the number of research population in this research. Paramount Carpet Industry is the largest exporter Industry in Nepal 2009. So researcher has taken. Paramount Carpet Industry as a sample among 10 Industry The Research had been defined nature and size of population and sample which are presented in appendix X.

Table No-3.1

Population and Sample of Carpet Industry

Population	Sample
Paramount Carpet Industry	Paramount Carpet Industry
Sherpa Carpet Industry	
Senon Carpet Industry	
Himalayan Art Industry	
TT Carpet Industry	
Pioneer Carpet Industry	
Exoticoriental Crafts Industry	
Garma Rug Industry	
Pari Carpet Industry	
Himali Rug House	
Total Top Carpet Industry 10	1

3.4 SOURCE AND TYPES OF DATA

Data may be obtained from several sources; it is not easy to list them in detail. Each research project had its own data needs and data sources. However, the general classification of data sources has the following dimensions.

i. **Primary Source of Date**; Primary source of data are the data which are elected by direct visit by the researcher himself \herself to the field. These data are not used by other people & are collected by the researcher for the fulfillment of his research work. Some of the data are collected through questionnaire as well as interviews with the concerned officer, manager & consultants by the researcher himself for the special need of this report work.

   Basically following technique were adopted for the collection of primary data;-

   - Questionnaire.

ii. **Secondary Source of Data**; Data which already used are the secondary source of data. Following are the main secondary source of data of the industry used in this study;-

   Library, books & journal\magazines, annual reports of the company, booklets, Company publication, various cost records, Internet & websites etc.

3.5 VARIABLE OF STUDIES

Variables are characteristics of person, things groups, object etc. a variable is thus a symbol to which numerals or values are assigned. In other words, a variable can take on many values. The research had used two types of variables, independent variable and dependent variables, which are presented as below;

A. **Independent Variables:** A variable is called independent variable if it is not influenced by any other variable under study. The independent variables are those, which are the basis of production.

B. Dependent Variable: A variable is called dependent variable if its values depend upon the other variables. The investigators purpose is to study analyze and predict the variability in the dependent variable. The dependent variable is the variable that is being predicted.

\There are three factors (ie. cost, volume and profit) of C-V-P analysis, which are interconnected and dependent on one another.

So these factors are depending variables. But, testing relationship between theses variable following criteria are assumed:

Table No 3.2

Classification of Variables

S.N.	Independent Variable	S.N	Dependent Variable
1	Sales Unit	1 2 3	Sales Rs. Cost (Variable & Fixed) Profit

3.6 METHODS OF DATA COLLECTION

Both primary and secondary data were used in the study the secondary data were collection from the company's annual reports and other related document, company's website and books published reports etc.

The primary data were obtained through questionnaire method followed in most cases Fill the questionnaire of selective 15 person of the company. The profit of the respondents can be shown in the following way.

Table no 3.3

Profiles of Respondents

S.N.	Categories of Respondent	Questionnaires	
		Number	%
1	Top Level	4	26.67%
2	Middle Level	8	53.33%
3	Lower Level	3	20%
Total		15	100

Sources; Appendix-IX

3.7 METHODS OF ANALYSIS & PRESENTATION

Analysis and presentation of the data is used the core of each and every research work. In order to get the concrete results from this research, data are analyzed by using different types of tools. Basically, following two techniques are used to explain the collected data.

3.7.1 Descriptive Technique

Descriptive technique is a fact-findings operation searching for adequate information. It is a type of a study, which is generally conducted to assess the opinions, behaviors or characteristics of given population and to describe the situation and events occurring at present. Descriptive technique is a process of an accumulating fact. It dose not necessary seek to explain relationships, test hypothesis, make predictions, or get at meanings and implications of study.

3.7.2 Quantitative Technique

Descriptive techniques would not be enough prepare excellent research report. To fulfill in gap, or make the research report attractive and for better understanding the following profit planning and statistical tools were used:

CVP Analysis Tools

C-V-P Analysis was included the following techniques:

1. Contribution Margin (CM) = Sales – Variable Cost
2. Contribution Margin Ratio $= 1-\frac{\text{VariableCost}}{\text{Sales}}$

3. Break Even Point (BEP) in units $= \dfrac{\text{TotalFixedCost}}{\text{SPPU} - \text{VPCU}}$

4. Break Even Point (BEP) in Rs. $= \dfrac{\text{TotalFixedCost}}{\text{CMRatio}}$

5. Break Even Point (% of capacity) $= \dfrac{\text{BEPinUnits/Rs}}{\text{TotalCapacityinUnits/Rs}}$

6. Cash BEP (in Rs) $= \dfrac{\text{FixedCost} - \text{NonCashOutlay}}{1 - \dfrac{\text{VariableCost}}{\text{Sales} - \text{NonCashOutlay}}}$

7. Require sales for desired profit (in units) $= \dfrac{\text{FC} + \text{DesiredProfit}}{\text{CMPU}}$

8. Require sales for desired for DPAT $= \dfrac{\text{FC} + \text{DesiredProfit}}{\text{CMRatio}}$

9. Require sales in units for DPAT $= \dfrac{\text{FC} + \dfrac{\text{DPAT}}{(1-\text{T})}}{\text{CMPU}}$

10. Required sales in Rs for DPAT $= \dfrac{\text{FC} + \dfrac{\text{DPAT}}{(1-\text{T})}}{\text{CMRatio}}$

11. Safety margin (in Units) = Actual sales units-BEP in unit

12. Safety margin (in Rs) = Actual sales Rs.-BEP in Rs

13. Margin of safety Ratio $= \dfrac{\text{Actual/BudgetedSales} - \text{BESales}}{\text{Actual/BudgetedSales}}$

For Multi Product Firm

Overall BEP (in units)= $\dfrac{\text{TotalFixedCost}}{\text{WeithtedCMPU}}$

Overall BEP in Rs $= \dfrac{\text{TotalFixedCost}}{\text{WeithtedCMRatio}}$

Required Sales for desired profit (in units) = $\dfrac{\text{FC} + \text{DesiredProfit}}{\text{WeithtedCMPU}}$

$$\text{Required Sales for DP (in Rs.)} = \frac{FC + DesiredProfit}{WeithtedCMRatio}$$

$$\text{Required Sales for DP after tax (in Units)} = \frac{FC + \frac{DPTA}{(1-T)}}{WeightedCMPU}$$

$$\text{Required Sales for DP after tax (in Rs)} = \frac{FC + \frac{DPTA}{(1-T)}}{WeightedCMRatio}$$

i. **Statistical Tools;-** The relation between two or more variables can be measured by using statistical tools. In the study the following tools are used.

ii. **Bar Diagram:-** Bar diagram are one of the easiest and the most commonly used methods of presenting the numerical data. They present the data by means of bars, or rectangles of equal width. The length of bars represents the given figures and the width may be of any size.

iii. **Mean:-** The sum of all observation divided by the number of observation is called mean. In such cases all the items are equally devoted by X. if is defined by the following formula:

$$\text{Mean(X)} = \frac{\sum X}{N}$$

Where, $\sum X$ = the sum of observations

N = No. of observation

iv. **Standard Deviation (S.D.):-** The standard deviation is defined as the positive root of the mean of the squared deviations from their mean of a set of values. It is also known as Root Mean Square Deviation. It is usually devoted by the Greek letter δ (Small sigma).

The SD is calculated by the following formula:

$$\text{Standard Deviation (SD)} = \sqrt{\frac{\sum X^2}{N} - \left(\frac{\sum X}{N}\right)^2}$$

v. **Coefficient of Variation (C V):-** The relative measure of dispersion based on SD is called coefficient of SD. Thus

Coefficient of SD = $\frac{¢}{\bar{X}}$

100 times coefficient of SD is called coefficient of variation. It is denoted by C.V. Thus,

Coefficient of Variation = $\frac{¢}{\bar{X}} \times 100$

vi. **Times Series Analysis (Trend Analysis);-** The collection of reading or data regarding to different time is called time series. There are two variables in this case one most be time and other variables may be population, production, sales, profit etc. A widely and most commonly used method to describe the trend is the method of least square.

The straight line is given by the following:

Y = a + bx

Where,

Y = Values of dependent variables

a = y-intercept

b = slope of the trend line

x = values of independent variables (times)

vii. **Correlation Analysis;-** The degree of relations between two variables at a time is called correlation. In other words, two variables are correlated in such way if one variable changes then other variable also changes subsequently.

It can be calculated by following formula:

Co-efficient of correlation (r) = $\frac{N\sum XY - \sum X \sum Y}{\sqrt{\left[N\sum X^2 - \left(\sum X\right)^2\right]} - \sqrt{\left[N\sum Y^2 - \left(\sum Y\right)^2\right]}}$

The correlation coefficient measures the degree of correlation between Y on X. it should be +1 and -1. If not there is no correlation between two variables.

viii. Co-efficent of Determination (r^2):- A meaningful analysis is available from the square of correlation coefficient (r^2), which is called the coefficient of determination and calculated using the following formula:

Co-efficient of determination (r^2) = $\frac{\left[N\sum XY - \sum X.\sum Y\right]^2}{\left[N\sum X^2 - \left(\sum X^2\right)\right]\left[N\sum Y^2 - \left(\sum Y^2\right)\right]}$

OR

r^2 = rxr

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

CHAPTER-IV
PRESENTATION AND ANALYSIS OF DATA

4.1 Introduction

Data presentation & analysis is the one of the important part of the research work. The basic objective of this chapter is to analyze and elucidate the collected data following the conversion of unprocessed data to an understandable presentation. Thus, this chapter presents the analysis and interpretation of the data related to merchant banking.

4.2 Profit (Loss) Pattern of PCI

Profit is the major element of each and every Business endeavors for survival, further development and fulfilling social expectation. In modern business, effectiveness and efficiency of any business organization or management are measure form profit. But PCI is suffering loss from the beginning of its operation year. The profit pattern of PCI is presented below. The profit (loss) pattern is analysis on the basis of actual sales achievement.

Table no 4.1

Profit (Loss) trend of PCI (Rs '000')

Year	Sales		Profit	
	Rs.	% Change	Rs.	% Change
2005/06	561281000	114.13	10331237	33.28
2006/07	620592000	10.56	12755260	23.46
2007/08	417690000	(32.56)	(12629308)	(199)
2008/09	508739000	21.79	12466047	198.7
2009/10	366576000	(27.94)	(976873)	(107.83)
2010/11	415756000	(11.82)	14408797	147.49

Source Annual report of PCI (2005/06 to 2010/11)

The above shows that the profit (loss) trend is flucating annually. The flucating rate of loss in abnormal condition. The decreasing rates of losses are 33.28%, 23.46%,

(199%),198.7%, (107.83%) and 147.49% in fiscal year 2005/06, 2006/07, 2007/08, 2008/09, 2009/10 and 2010/11 respectively.

4.3 Cost Analysis

Cost planning and control id not reduction in cost but it means better utilization of limited resources. Expenses planning and controlling should focus on the relationship between expenditure and benefits derived from those expenditure. Cost analysis is necessary to attain enterprise goals. There are different types of cost incurred in the company.

Generally costs are classified in to four categories, which are

i. cost of production
ii. administrative expenses
iii. selling and distribution expenses
iv. financial expenses

Cost of Production: the costs which are relater with production and included raw materials, packaging materials, direct expenses, water and electricity, repair and maintenance, blending charge, other expenses etc.

Administrative expenses: administrative expenses are a part of management cost. it includes salary and allowance, P/F contribution, printing and stationary, water and electricity, communication expenses, bank charges, repair and maintenance, meeting fesses, traveling expenses, conveyance and fuel expenses, computer software expenses, AGM expenses, rent, taxes and fees, guest entertainment, notices publication expenses security expenses, members fees and subscription, legal and professional fees, insurance premium, training and recruitment expenses, miscellaneous expenses etc.

Selling and Administrative expenses: it is the cost incurred for selling and distribution of the product and included: transportation cost and insurance expenses, advertisement, hoarding board rental, distributions meeting exp traveling, expenses

of sales man, complementary expenses, sales promotion expenses, leakage and breakage etc.

Financial expenses: it includes interest on overdraft, interest on term loan etc.

4.3.1 Fixed Cost Analysis of PCI

Such costs are those in which the total fixed costs remain constant over a relevant range of volume/out put, while the unit fixed costs vary with out put. As the production units increase fixed cost per unit decrease, it is because same cost will be dispersed in more production unit. Fixed cost in total are variable for different fiscal year affected by internal and external environment factor of the company. The fixed cost of PCI is presented in the table below.

atio is also known as contribution margin ratio. As the contribution margin fluctuates generally, but CM ratio also fluctuation and the case is same here. The P/V ratio is minimum 0.0843 in F/Y 2009/10 and maximum 0.1115 in the fiscal cost is assumed to be constant at certain level of activity. Higher contribution margin ratio is better and management always put effort to increase this ratio. Management tries to increase the value of the ratio by reducing the variable cost or by increasing the selling price.

4.6.5.2P/V Analysis for Selected Product Lines

The above table no 4.15 shows the P/V ratios of 150kont 100kont and 60kont. The P/V Ratio 150kont in F/Y 2005/06 to 2009/10 are constant 0.25 all year. The P/V Ratio of all is constant condition.. Similarly, the P/V ratio of 100kont is also in increasing condition. The P/V ratios are 0.44, in F/Y 2005/06, to 2009/10 respectively. But the P/V ratio of 60kont is increasing annually but The P/V ratios are constant 0.55 in the F/Y 2060/61, 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 respectively. Since, higher the P/V ratio increases the profit. So, management always put effort to increase the P/V ratios.

4.7 summary of the projection

In the above study we are forecasted the various factors of PCI like sales, variable cost, fixed cost etc for the coming fiscal year 2010/11 by using time series regression equation which can be presented in the following table;

Table no. 4.22

Summary of the study of PCI

Particular	past yr.	past yr.	Past yr.	past yr.	past yr.	past yr.	Budgeted yr.
Year	2006/07	2007/08	2008/09	2064\65	2009/10	2010/11	2010/11
Sales	561281000	620592000	417690000	508739000	366576000	415756000	341910000
Variable Cost	501515525	558285799	380780350	462495995	335691194	375231200	322935620
Fixed Cost	49434238	49550941	49538958	33776958	31861679	32929656	20596041
Profit &loss	10331237	12755260	(12629308)	12466047	(976873)	7795144	(1621661)
BEP	464171249	493535269	562942704	371583696	366367806	268131447	265815989
Cash BEP	465713827	495417765	1033455608	642685450	61723580	448500054	598087719

Source; Annual Report of PCI (F/Y 2005/06 to 2010/11)

4.8 Analysis of primary data

The outcomes of the questionnaires distributed to the sample size of 15 employees and management who used to work in PCI. Many transactions are involved in budgeting procedure. Some organizations follow one types of procedure and other follow the next. different organization follow the different procedure as their requirement criteria of planning external and internal forces planning of different activities using of different managerial planning tools adoption of controlling practice. Practice of decision-making and planning clarity of sales goals responsibility accepted by different level of management commitment for development of budget by different management level participation of personnel in decision-making and implementation and other so many factors are involved in budgeting procedure. To analyze the production procedure of PCI researcher used the questionnaire filled by the respondents. The outputs of questionnaire are presented below and analyzed all by using percentage and diagram.

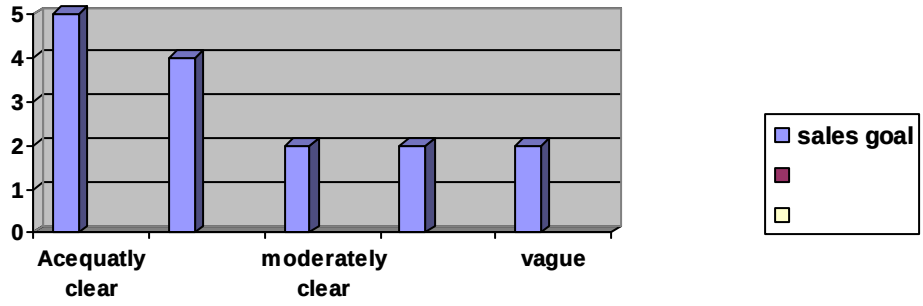
4.8.1 Analysis of Sales Plans

The following Table No-4.24 is occasionally shows the company Sale plans based on Different category.

Table No-4.23

Sales Plans of PCI

Clarity of sales goals



Sales Goal

4.9 Major Finding

- The company has no details and systematic expenses plan. The Fixed cost variable cost and mixed cost expenses plan is necessary elements for the profit planning and control.
- The cost of PCI is classified into fixed and variable. There is no practice of identifying semi variable and their segregation into variable and fixed by using scientific techniques.
- The total fixed
- of company decreasing condition.
- For profit achievement, the company should be adjusted fixed cost, variable cost, sales and profit by ratio analysis.
- The study showed the 26.6% respondents pointed for managerial guide lines 20% manufacturing capacity 20% availability of raw materials and 33.4%. So, the sales plan based on all of above.
- The study showed the 26.7% survey method, 26.7% market study and experimentation methods and 46.6% statically methods. So the company applied sale forecasting method is statically method.
- The study showed the 46.6% respondents pointed for top management 33.4%for middle management and 20% for lower management. So the decision should be top management is more responsible for preparing sales plan.
- The study showed the different mean value for different criteria. The mean value of intuition, past experience, external experts and stastical method are

2.8, 4.8, 2.7, and 3.13 respectively. Past experiences have highest mean value ie. 4.8. It means that PCI uses the past experience as basis to prepare sales plan. The next important criteria followed by PCI to prepare sales plan is statistical method which have the 2nd highest mean value 3.13 and PCI give less priority for intuition and external experts.

- The study showed the total score and mean value of external and internal forces considered by the PCI. The mean value of external forces and internal forces 4.46 and 2.93 respectively both of them mean value of external forces is higher (4.46) than internal forces. We can make conclusion that the PCI give high consideration for the external force and the lower value ie.2.93 for internal. So the PCI give less priority for internal force. For more effective present at total score computed in external forces in preparing sales plan.
- Study showed that 33.64% respondents express their view for adequately clear sales goals. So the conclusion is the sales goal of PCI is clear.

CHAPTER-V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

Business organization establishes profit objectives and builds budget plans so that the objective may be realized. In profit planning, management must know the selling process 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 affected profits. They are selling price the number of unit sold (quantity), the unit variable costs, the total fixed costs and the combination in which the various product lines are sold. All the factors must be considered in profit planning.

Cost volume profit analysis, a most important tool of profit planning means of predicting the effect of changes in costs and sales level on the income of business. In its simplest form it involves the determination of sales level at which a company neither earns a profit nor incurs a loss, or in other word the point at which it break even. Often break even analysis is known as CVP analysis. But break even analysis is a special case of CVP. However, CVP analysis techniques is included to find out sales volume to earn a zero profit or desired profit, to affect income of by changes in selling

price, to check income if new machine will be installed, to examine operating profit it fixed cost as well as unit variable cost will be changes etc. solving such alternatives CVP analysis is more appropriate than break even analysis.

In this way company may use CVP analysis as planning tool when sales volume, unit selling price and variable and fixed cost are known, then to find out profit, as target profit at certain sales volume. By using CVP analysis tools, the management of the company can control the costs also.

As per the need of the study, the researcher has analyzed the primary as well as secondary data. The needed secondary data were collected from the period of fiscal year 2005/06 to 2010/11. The financial statement i.e. balance sheet, income statement and other related data were found from annual report of the PCI, Which was provided by the company. The needed primary data were collected from designed questionnaire. Those questionnaires were given to the staffs of the PCI.

The main objectives of the research is to analyze different components of cost as per cost behavior to analyze the impact of fixed cost on profit and to analyze break-even-point of overall firm as well as individual product. For the purpose completion of the study, the related books, articles, journals and published thesis were studied by the researcher, which is presented in the second chapter the review of literature.

To accomplish the objectives of the research, the accounting and statistical tools and techniques have been used, which are presented in the chapter four data analysis.

Management effectively achieves organizational objectives through the efficient use of scarce resource in a changing environment. Future is uncertain which creates risk and reduce risk; the only reliable weapon is good management. C-V-P analysis is an analytical technique for studying the relationship between volume, cost and profit which helps to manage future cost and profit. Profit planning is a management technique and it is a written plan in all aspect of business operation for specific future period. C-V-P analysis is a device used to determine the usefulness of profit planning process of the firm. In fact, the entire field of profit planning has become associated with C-V-P inter-relationship.

Cost-volume-profit analysis, a most important tool of planning means of predicting the effect of changes in cost and sales levels on the Income of business. In its simplest

form, it involves the determination of sales levels at which a company neither earns a profit nor incurs a loss, or in others word the point at which it breaks even. Often break-even analysis is known as C-V-P analysis. But break-even analysis is a special case of C-V-P analysis. however C-V-P analysis techniques is included to find out sales volume to earn a zero profit or desired profit, to affect income by changes in selling price, to check income if new machine will be installed, to examine operating profit if fixed cost as well as unit variable cost will be changes etc. solving such alternative C-V-P analysis is more appropriate then break-even analysis.

In this way company may use C-V-P analysis as planning tool when sales volume, unit selling price and variable and fixed cost are known, then to find out profit, as target profit at certain sales volume. By using C-V-P analysis tools the management of the company can control the costs also.

The C-V-P analysis tool is applied in the Paramount Carpet Ltd. to find out whether the tool is practicing or not. Paramount Carpet ltd. , one of the leading weaving manufacture which is the largest player in international market and for decades has been synonymous with quality product, had not practicing C-V-P analysis tools, costs are not segregated as fixed costs and variable costs where there are not proper mechanism to segregate semi-variable or semi-fixed costs into fixed and variable cost. To solve the problems regarding C-V-P analysis and not application, some objectives are formulated: cost segregation as fixed and variable cost, unit variable by adopting suitable mechanism and computation of

C-V-P analysis by its extension tools. To fulfill the objectives of the study, historical as well as managerial research design is adopted.

Hence, descriptive and quantitative technique are used to analyze and interpretation the data. After it, some finding: major and others are also achieved.

5.2 Conclusion

Since, not adopting C-V-P analysis tool for profit planning, before and after operation of venture, the company had incurring profit and loss annually changing condition. The actual sales of the F/Y 2007/08 to 2009/10 are not reached at BEP. The huge amount had invested into fixed costs. The contribution margin is very low cause of higher unit variable cost. Depreciation and interest on long-term loan is increasing

annually. Other controllable cost is also increasing. Since lower sales than BEP or estimated sales, the MOS ratio is satisfactory.

and smart bud

get. Hence, avoiding C-V-P analysis tool and not utilizing full capacity, the company is bearing loss. Promoter and director, and staff of the company are enjoying by achieving allowance and salary respectively. Other part, general shareholders are not achieving dividend and government couldn't claim for income tax since loss and loss recovery situation.

5.3 Recommendations

- PCI should consider about the product line to improve its profit. Market studies on demand, supply and pricing of product should be carried out and loss oriented costs should be identified and control.
- PCI should consider BEP analysis which preparing sale plan, production plan and selling price of its products.
- PCI is multi Product Company; more emphasis should be provided the product having high contribution so as have more profit.
- Classification of expenses item as variable and fixed or controllable and non controllable must be made within specific framework of responsibility and time.
- Expenses planning
- . There may be high cost rather then consider supplier. So decision- making
- New market should be identified for the coverage of increased activities of companies.

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APPENDIX - I

REQUEST LETTER

I would like to introduce myself as the student of Tribhuvan University MBS (final Year). In order to fulfill the partial requirement of masters degree in Management, I am conducting a research work entitled **"Cost volume profit analysis of carpet industry in Nepal (with special reference to Paramount Carpet Industry)"** I would very much appreciate if you kindly spare few of your busy and valuable time for completing my research work. Your views are purely used for my academic purpose only. I anticipate your suggestions as soon as possible.

Questionnaire

Name Of Respondent ;

Position ;

Department ;

Please help the researcher by giving correct information of the questions listed in this questionnaire. The 1^{s}category that is general questions you can wrote &tick (√) what question demand and 2nd special question please tick (√) for correct answer, give the rank of options and give the marks for options according to the nature of questions.

SOME QUESTIONAIRE QUESTION

General Questions

1) When & Where Paramount carpet industry is established?
.....BS.....Zone....District.....VCD\Municipality.....word No.....
.

2) What is the registered & contact office located?
i).....zone. ii) .....district. iii) .....VDC\ Municipality.

3) Where are the main objectives to establish this industry?
i)..... ii)..... iii)..... iv).....

4) What kind of raw material are being used?
i)..... ii)..... iii)..... iv).....

5) What are the product producing of the industry?
i)..... ii)..... iii)..... iv).....

6) Does the industry meet the target sales& earning target (sufficient) income?
i) Yes ii) No

7) If not, what is the reason?
i) Variable cost is high. ii) fixed cost is high.
iii) Negligence of Personnel . iv) All of above.

8) Is the industry practicing cost volume profit analysis tools to forecast or evaluate cost volume & profit?
i) Yes ii) No iii) Occasionally

9) If YES which tools of cost volume profit is practiced?
i) Contribution margin ii) Break even point
iii) Margin of safety iv) Any other

10) Is the cost volume profit analysis is important for profit planning?

i) Yes ii) No

11) What are the major problem being faced in the application of cost volume profit analysis?

i)..... ii).....
iii).....

Special Questions

1) What is the base of sales plan?

i) Managerial guidelines ( )
ii) Manufacturing capacity. ( )
iii) Availability of raw materials ( )
iii) All of above ( )

2) What methods & tools is used for sales forecasting?

i) Survey method. ( )
ii) Market study & experimentation methods. ( )
iii) Statistical methods. ( )

3) Who in your organization are responsible for preparing sales plan?

i) Top Management ( )
ii) Middle Management ( )
iii) Lower ( )

4) To what extent are the following criteria followed in preparing sales plan?

	Very High	High	Moderate	Less	Very Less
Intetion	( )	( )	( )	( )	( )
Past experience	( )	( )	( )	( )	( )
External exprets	( )	( )	( )	( )	( )
Statistical Method	( )	( )	( )	( )	( )

5) To what extent are the following internal and external forces evaluated and considered in preparing sales plan?

	Very High	High	Moderate	Less	Very Less
External	( )	( )	( )	( )	( )
Internal	( )	( )	( )	( )	( )

6) How Clera are the sales Goals of your organization?

i) Adequatly clear ( )
ii) Clear ( )
iii) Moderately Clear ( )
iv) Ambiguous ( )
v) Vague ( )

APPENDIX - II

Let Actual and Budgeted Sales be denoted by x & y respectively

6 Year	X(0000000)	Y(0000000)	U=X-A	V=Y-B	U2	V2	UV
2005/06	561.281	1050	52.572	50	2760.66	2500	262710
2006/07	620.592	1100	111.853	100	12511.09	10000	11185.3
2007/08	417.690	1000	-91.049		8289.92		-
2008/09	508.739	1000	-	-	-		-
2009/10	366.576	800	-142.163	(200)	20210.31	40000	28492.6
2010/11	415.756	900	-92.983	-100	8645.83	10000	9298.3
N=6	X=2890.634	Y=5850	U=-161.8	V=(150)	U2=52417.83	V2=62500	UV=51603.3

For actual sales:

$$\text{Mean } (\bar{X}) = \frac{\sum X}{N} = \frac{2890.634}{6} = 481.77$$

For Budgeted Sales:

$$\text{Mean } (\bar{Y}) = \frac{\sum Y}{N} = \frac{5850}{6} = 975$$

Let,

A=Assumed Mean for X = 481.77

B=Assumed Mean for Y = 975

Computation of Standard deviation (±)

For Actual Sales:

$$\pm x = \sqrt{\frac{\Sigma U^2}{N} - \left(\frac{\Sigma U}{N}\right)^2} = \sqrt{\frac{52417.83}{6} - \left(\frac{-161.8}{6}\right)^2} = \quad 89.49$$

For,

Budgeted Sales:

$$\pm y = \sqrt{\frac{\Sigma V^2}{N} - \left(\frac{\Sigma V}{N}\right)^2} = \sqrt{\frac{62500}{6} - \left(\frac{(-150)}{6}\right)^2} = 98.95$$

Computation of C.V

For Actual Sales:

$$C.V_{x} = \frac{\sigma x}{X} x100 = \frac{89.49}{481.77} x100 = 18.575\%$$

For Budgeted Sales:

$$C.V_{y} = \frac{\pm y}{Y} \times 100 = \frac{98.95}{975} x100 = 10.148\%$$

Computation of Correlation Co-efficient (r)

$$r = \frac{N.\Sigma UV - \Sigma U.\Sigma V}{\sqrt{N.\Sigma U^2 - (\Sigma U^2)}\sqrt{N.\Sigma V^2 - (\Sigma V^2)}}$$

$$= \frac{6x51603.3 - (161.8)x(-150)}{\sqrt{6 \times 52417.83 - (-161.8)^2}\sqrt{6 \times 62500 - (-150)^2}}$$

$$=0.89$$

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

$$=0.6745 \times \frac{1 - (0.89)^2}{\sqrt{6}} = 0.6745 \times \frac{0.2079}{2.4494} = 0.572$$

APPENDIX-III

Calculation of the trend lines of sales of 150k. (Rs. In '0000')

Years	Total (Y)Sales{0000}	X-2008/09	XY	X2
2005/06	12133	(3)	(36399)	9

2006/07	13000	(2)	(26000)	4
2007/08	7125	(1)	(7125)	1
2008/09	9132	0	0	0
2009/10	6452	1	6452	1
2010/11	8321	2	16442	4
Total	Y =56163	X=-3	XY=(46430)	X2=19

Calculation of value of a and b

We know,

The straight line trend is give by the following formula.

$Y = a + bx$

Where,

Y = Values of total sales.

a = total assets

b = rate of changes of total sales

x = Year

For the calculation of a sales of 150 knot in can be obtained by solving the following two equations.

$\Sigma Y = na + b\Sigma X$ ……. (i)

$\Sigma XY = a\Sigma X + b\Sigma X2$ ……..... (ii)

56163=6a-3b

-46430=-3a+19b

By solving the above equation.

We get,

a= 13710.99

b =-2118.68

Y=a+bx

Y= 13710.99+(2118.68)x3

Y= 7354.95

Calculation of the trend lines of sales of 100k. (Rs. In '0000')

Years	Total (Y)Sales{000}	X-2008/09	XY	X2
2005/06	20120	(3)	(60360)	9
2006/07	20800	(2)	(41600)	4
2007/08	12120	(1)	(12120)	1
2008/09	14120	0	0	0
2009/10	10232	1	10232	1

2010/11	11230	2	22460	4
Total	Y =88622	X=(3)	XY=(81388)	X2=19

Calculation of value of a and b

We know,

The straight line trend is give by the following formula.

$Y = a + bx$

Where,

Y = Values of total sales.

a = total assets

b = rate of changes of total sales

x = Year

For the calculation of a sales of 150 knot in can be obtained by solving the following two equations.

$\Sigma Y = na + b\Sigma X$ ……. (i)

$\Sigma XY = a\Sigma X + b\Sigma X2$ ……..... (ii)

88622=6a-3b

-81388=-3a+19b

By solving the above equation.

We get,

a= 8836.25

b =-1048.48

Y=a+bx

Y= 8836.25+(1048.48)x3

Y= 5690.82

Calculation of the trend lines of sales of 60k. (Rs. In '000')

Years	Total (Y)Sales{000}	X-2008/09	XY	X2
2005/06	50431	(3)	(151293)	9
2006/07	55133	(2)	(110250)	4
2007/08	41232	(1)	(41232)	1
2008/09	50313	0	0	0
2009/10	37123	1	37123	1
2010/11	32326	2	64652	2
Total	Y =266550	X=(3)	XY=(201000)	X2=19

Calculation of value of a and b

We know,

The straight line trend is give by the following formula.

$Y=a + bx$ …….. (i)

Where,

Y= values of total sales.

a = total sales.

b = rate of change of total sales.

x = year.

For the calculation of a (constant) and b (variable) can be obtained by solving the following two equations.

$\Sigma Y = na + b\Sigma X$ ……. (i)

$\Sigma XY = a\Sigma X + b\Sigma X 2$ ……..... (ii)

266550 = 6a + b (-3) ……..….. (i)

-201000 = a (-3) + b 19 …… (ii)

By solving the above equation

We get,

a = 42490 b = -3870

We know,

Y = a + bx

Y= 42490 + (-3870) × 3 =30880

APPENDIX-IV

Calculation of the trend of total Fixed cost of PCI (in Rs)

Years	Total Fixed cost (Y)(0000)	X-2008/09	XY	X2
2005/06	4943.4238	(3)	(14830.2714)	9
2006/07	4955.0941	(2)	(9910.1882)	4
2007/08	4953.8958	(1)	(4953.8958)	1
2008/09	3377.6958	0	0	0
2009/10	3186.1679	1	3186.1679	1
2010/11	3292.9656	2	6585.9312	4
Total	Y =24709.243	X=(3)	XY=(22647.6375)	X2=19

Calculation of value of a and b

We know,

The straight line trend is give by the following formula.

Y=a + bx …….. (i)

Where,

Y= values of total Fixed Cost

a = total Fixed Cost.

b = rate of change of total Fixed Cost.

x = year.

For the calculation of a (constant) and b (variable) can be obtained by solving the following two equations.

$\Sigma Y = na + b\Sigma X$ ……. (i)

$\Sigma XY = a\Sigma X + b\Sigma X2$ ……..... (ii)

247092430 = 6a + b (-3) ……..... (i)

-226476375 = a (-3) + b 19 ……. (ii)

By solving the above equation

We get,

a = 38241210 b = -5881713

We know,

Y = a + bx

Y= 3824210 + (-5881723) × 3

= 205960410

Calculation of the trend of 150kont Fixed cost of PCI (in Rs)

Years	Total Fixed cost(Y)}	X-2008/09	XY	X2
2005/06	6345232	(3)	(19035696)	9
2006/07	6224800	(2)	(12449600)	4
2007/08	4900547	(1)	(4900547)	1
2008/09	3519356	0	0	0
2009/10	3101697	1	3101697	1
2010/11	2904100	2	5808200	4
Total	Y =26995732	X=(3)	XY=(27475946)	X2=19

Calculation of value of a and b

We know,

The straight line trend is give by the following formula.

Y = a + bx

Where,

Y = Values of total Fixed Cost.

a = total Fixed Cost

b = rate of changes of total Fixed Cost

x = Year

For the calculation of a 150 knot fixed cost can be obtained by solving the following two equations.

$\Sigma Y = na + b\Sigma X$ ……. (i)

$\Sigma XY = a\Sigma X + b\Sigma X2$ ……..... (ii)

26995732 = 6a + b (-3) ……..... (i)

-27475946 = a (-3) + b 19 ……. (ii)

By solving the above equation

We get,

a = 4099914.95 b = -798747.43

We know,

Y = a + bx

Y= 4099914.95 + (-798747.43) × 3

= 1703672.66

Calculation of the trend of 100kont Fixed cost of PCI (in Rs)

Years	Total Fixed cost(Y)}	X-2008/09	XY	X2
2005/06	11691256	(3)	(35073768)	9
2006/07	10945351	(2)	(21890702)	4
2007/08	8946031	(1)	(8946031)	1
2008/09	5856564	0	0	0
2009/10	5361915	1	5361915	1
2010/11	4356149	2	8712298	4
Total	Y =47157266	X=(3)	XY=(51836288)	X2=19

Calculation of value of a and b

We know,

The straight line trend is give by the following formula.

Y = a + bx

Where,

Y = Values of total Fixed Cost.

a = total Fixed Cost

b = rate of changes of total Fixed Cost

x = Year

For the calculation of a 100 knot fixed cost can be obtained by solving the following two equations.

$\Sigma Y = na + b\Sigma X$ ……. (i)

$\Sigma XY = a\Sigma X + b\Sigma X2$ ……..... (ii)

47157266 = 6a + b (-3) ……..….. (i)

-51836288 = a (-3) + b 19 ……. (ii)

By solving the above equation

We get,

a = 7052182.76 b = -1614723.14

We know,

Y = a + bx

Y= 7052182.76 + (-1614723.14) × 3

= 2208013.33

Calculation of the trend of 60kont Fixed cost of PCI (in Rs)

Years	Total Fixed cost (Y)	X-2008/09	XY	X2
2005/06	26373900	(3)	(79121700)	9
2006/07	32380790	(2)	(64761580)	4
2007/08	35692381	(1)	(35692381)	1
2008/09	24400680	0	0	0
2009/10	23398067	1	23398067	1
2010/11	18855754	2	37711505	4
Total	Y =161101572	X=(3)	XY=(118466086)	X2=19

Calculation of value of a and b

We know,

The straight line trend is give by the following formula.

Y=a + bx …….. (i)

Where,

Y= values of total Fixed Cost

a = total Fixed Cost

b = rate of change of total Fixed Cost

x = year.

For the calculation of a (constant) and b (variable) can be obtained by solving the following two equations.

$\Sigma Y = na + b\Sigma X$ ……. (i)

$\Sigma XY = a\Sigma X + b\Sigma X 2$ ……..... (ii)

161101572 = 6a + b (-3) ……..... (i)

-118466086 = a (-3) + b 19 ……. (ii)

By solving the above equation

We get,

a = 25766967.71 b = (2166588.57)

We know,

Y = a + bx

Y= 25766967.71 + (2166588.57) × 3

= 19267202

APPENDIX - V

Calculation of the trend of total Variable cost of PCI (in Rs)

Years	Total Variable cost (Y)	X-2008/09	XY	X2
2005/06	501515525	(3)	(1504546575)	9
2006/07	558285799	(2)	(111657158)	4
2007/08	380780350	(1)	(380780350)	1
2008/09	462495995	0	0	0
2009/10	335691194	1	335691194	1
2010/11	375231200	2	750462400	4
Total	Y =2111542843	X=(3)	XY=(910830489)	X2=19

Calculation of value of a and b

We know,

The straight line trend is give by the following formula.

Y=a + bx …….. (i)

Where,

Y= values of total Variable Cost.

a = total Variable Cost.

b = rate of change of total Variable Cost.

x = year.

For the calculation of a (constant) and b (variable) can be obtained by solving the following two equations.

$\Sigma Y = na + b\Sigma X$ ……. (i)

$\Sigma XY = a\Sigma X + b\Sigma X2$ ……..... (ii)

2111542843 = 6a + b (-3) ……..... (i)

-910830489= a (-3) + b 19 ……. (ii)

By solving the above equation

We get,

a = 347782637.70 b = (8282339)

We know,

Y = a + bx

Y= 347782637.70 + (8282339) × 3

= 322935620.70

Calculation of the trend of 150kont Variable cost of PCI (in Rs)

Years	Total Variable cost(Y)(Rs. 00}	X-2063\64	XY	X2
2005/06	909975	(3)	(2729925)	9
2006/07	975000	(2)	(1950000)	4
2007/08	534375	(1)	(534375)	1
2008/09	684900	0	0	0
2009/10	483900	1	483900	1
2010/11	617364	2	1234728	4
Total	Y =1205514	X=(3)	XY=(3495672)	X2=19

Calculation of value of a and b

We know,

The straight line trend is give by the following formula.

Y = a + bx

Where,

Y = Values of total Variable Cost

a = total Variable Cost

b = rate of changes of total Variable cost

x = Year

For the calculation of a (constant) and b (variable) can be obtained by solving the following two equations.

$\Sigma Y = na + b\Sigma X$ ……. (i)

$\Sigma XY = a\Sigma X + b\Sigma X2$ ……..... (ii)

4205514 = 6a + b (-3) ……..... (i)

-3495672= a (-3) + b 19 ……. (ii)

By solving the above equation

We get,

a = 661121.43 b = (79595.14)

We know,

Y = a + bx

Y= 661121.43 + (79595.14) × 3

= 422336.01

Calculation of the trend of 100kont Variable cost of PCI (in Rs)

Years	Total Variable cost(Y)(Rs.000}	X-2008/09	XY	X2
2005/06	120720	(3)	(362160)	9
2006/07	124800	(2)	(249600)	4
2007/08	72720	(1)	(72720)	1
2008/09	84720	0	0	0
2009/10	61392	1	61392	1
2010/11	65961	2	131922	4
Total	Y =530313	X=(3)	XY=(491166)	X2=19

Calculation of value of a and b

We know,

The straight line trend is give by the following formula.

Y = a + bx

Where,

Y = Values of total Variable Cost

a = total Variable Cost

b = rate of changes of total Variable cost

x = Year

For the calculation of a 100 knot variable cost can be obtained by solving the following two equations.

ΣY = na + bΣX ……. (i)

$\Sigma XY = a\Sigma X + b\Sigma X2$ ……..... (ii)

530313= 6a + b (-3) ……..…. (i)

-491166= a (-3) + b 19 ……. (ii)

By solving the above equation

We get,

a = 94842.91 b = (12914.83)

We know,

Y = a + bx

Y= 94842.91 -12914.83 × 3

= 56098.43

Calculation of the trend of 60kont Variable cost of PCI (in Rs)

Years	Total Variable cost (Y)	X-2008/09	XY	X2
2005/06	2269395	(3)	(6808185)	9
2006/07	2480625	(2)	(4961250)	4
2007/08	1855440	(1)	(1855440)	1
2008/09	2264085	0	0	0
2009/10	1670535	1	1670535	1
2010/11	1356940	2	2713880	4
Total	Y =11897020	X=(3)	XY=(9240460)	X2=19

Calculation of value of a and b

We know,

The straight line trend is give by the following formula.

Y=a + bx …….. (i)

Where,

Y= values of total Variable Cost.

a = total Variable Cost.

b = rate of change of total Variable Cost.

x = year.

For the calculation of a (constant) and b (variable) can be obtained by solving the following two equations.

$\Sigma Y = na + b\Sigma X$ ……. (i)

$\Sigma XY = a\Sigma X + b\Sigma X 2$ ……..... (ii)

11897020= 6a + b (-3) ……..….. (i)

-9240460= a (-3) + b 19 ……. (ii)

By solving the above equation

We get,

a = 1888780.95 b = (188111.43)

We know,

$Y = a + bx$

$Y = 1888780.95 + (188111.43) \times 3$

$= 1324446.67$

APPENDIX -VI

Calculation of the trend of total Semi-Variable cost of PCI (in Rs)

Years	Total Variable cost (Y)(Rs 000)	X-2008/09	XY	X2
2005/06	1960	(3)	(5880)	9
2006/07	2026	(2)	(4052)	4
2007/08	2223	(1)	(2223)	1
2008/09	2456	0	0	0
2009/10	2596	1	2596	1
2010/11	2511	2	5022	4
Total	Y =13772	X=(3)	XY=(4537)	X2=19

Calculation of value of a and b

We know,

The straight line trend is give by the following formula.

$Y=a + bx$ …….. (i)

Where,

Y= values of total Sami-Variable Cost.

a = total Sami-Variable Cost.

b = rate of change of total Sami-Variable Cost.

x = year.

For the calculation of a (constant) and b (variable) can be obtained by solving the following two equations.

$\Sigma Y = na + b\Sigma X$ ……. (i)

$\Sigma XY = a\Sigma X + b\Sigma X2$ ……..... (ii)

$13772 = 6a + b (-3)$ ……..... (i)

$-4537= a (-3) + b 19$ ……. (ii)

By solving the above equation

We get,

$a = 2427.26 \quad b = 263.857$

We know,

$Y = a + bx$

$Y= 2427.26 + 263.857 \times 3$

= 3218.83(000)

APPENDIX -VII

Calculation of the trend of total BEP of PCI (in Rs)

Years	Total BEP (Y)(Rs)	X-2008/09	XY	X2
2005/06	464171249	(3)	(1392513747)	9
2006/07	493535269	(2)	(987070538)	4
2007/08	562942704	(1)	(562942704)	1
2008/09	371583696	0	0	0
2009/10	366367806	1	366367806	1
2010/11	268131447	2	536262894	4
Total	Y =2526732171	X=(3)	XY=(2039896278)	X2=19

Calculation of value of a and b

We know,

The straight line trend is give by the following formula.

Y=a + bx …….. (i)

Where,

Y= values of total Break Even Point

a = total Break Even Point

b = rate of change of total Break Even Point.

x = year.

For the calculation of a (constant) and b (variable) can be obtained by solving the following two equations.

$\Sigma Y = na + b\Sigma X$ ……. (i)

$\Sigma XY = a\Sigma X + b\Sigma X2$ ……..... (ii)

25266732171 = 6a + b (-3) ……..….. (i)

-2039896279= a (-3) + b 19 ……. (ii)

By solving the above equation

We get,

a = 398935451.50 b = (44373153.91)

We know,

Y = a + bx

Y= 398935451.50 + (44373153.91) × 3

= 265815989.8

Calculation of the trend of 150kont BEP of PCI(in Rs)

Years	Total BEP (Y)(Rs.000}	X-2008/09	XY	X2
2005/06	25380	(3)	(76140)	4
2006/07	24899.16	(2)	(99798.32)	1
2007/08	19602	(1)	(19062)	0
2008/09	14077.427	0	0	1
2009/10	12406.756	1	12406.756	4
2010/11	11253.372	2	22506.744	
Total	Y =107618.715	X=(3)	XY=(110086.82)	X2=19

Calculation of value of a and b

We know,

The straight line trend is give by the following formula.

$Y = a + bx$

Where,

Y = Values of total Break Even Point

a = total Break Even Point

b = rate of changes of total Break Even Point

x = Year

For the calculation of 150 knot BEP of PCI can be obtained by solving the following two equations.

$\Sigma Y = na + b\Sigma X$ ……. (i)

$\Sigma XY = a\Sigma X + b\Sigma X2$ ……..... (ii)

107618.715 = 6a + b (-3) …….. (i)

-110086.82= a (-3) + b 19 ……. (ii)

By solving the above equation

We get,

a = 16328.53 b = (3215.86)

We know,

Y = a + bx

Y= 16328.53 + (3215.86) × 3

= 6680.95(000)

Calculation of the trend of 100kont BEP of PCI (in Rs)

Years	Total BEP (Y)(Rs.000}	X-2008/09	XY	X2

2005/06	29228.13	(3)	(87684.39)	9
2006/07	27363.36	(2)	(54726.72)	4
2007/08	22365.09	(1)	(22365.09)	1
2008/09	4641.410	0	0	0
2009/10	13404.706	1	13404.706	1
2010/11	10624.754	2	21249.508	4
Total	Y =107627.45	X=(3)	XY=(130121.986)	X2=19

Calculation of value of a and b

We know,

The straight line trend is give by the following formula.

$Y = a + bx$

Where,

Y = Values of total Break Even Point

a = total Break Even Point

b = rate of changes of total Break Even Point

x = Year

For the calculation of 100 knot BEP can be obtained by solving the following two equations.

$\Sigma Y = na + b\Sigma X$ ……. (i)

$\Sigma XY = a\Sigma X + b\Sigma X2$ ……..... (ii)

107627.45 = 6a + b (-3) …….. (i)

-130121.986= a (-3) + b 19 ……. (ii)

By solving the above equation

We get,

a = 15757.67 b = (4360.47)

We know,

Y = a + bx

Y= 15757.67 + (4360.47) × 3

= 2676.26

Calculation of the trend of 60kont BEP of PCI (in Rs)

Years	Total BEP (Y)(Rs)	X-2064\65	XY	X2
2005/06	46837366	(3)	(140512.10)	9
2006/07	58874138	(2)	(117748.76)	4
2007/08	64895199	(1)	(64895.199)	1
2008/09	4436488	0	0	0

2009/10	42541200	1	42541.200	1
2010/11	32590.192	2	65180.38	4
Total	Y =290102.977	X=(3)	XY=(215434.479)	X2=19

Calculation of value of a and b

We know,

The straight line trend is give by the following formula.

Y=a + bx …….. (i)

Where,

Y= values of total Break Even Point

a = total Break Even Point

b = rate of change of total Break Even Point.

x = year.

For the calculation of a (constant) and b (variable) can be obtained by solving the following two equations.

$\Sigma Y = na + b\Sigma X$ ……. (i)

$\Sigma XY = a\Sigma X + b\Sigma X2$ ……..... (ii)

290102.977 = 6a + b (-3) ……..….. (i)

-215434.479= a (-3) + b 19 ……. (ii)

By solving the above equation

We get,

a = 46339.55 b = (4021.88)

We know,

Y = a + bx

Y= 46339.55 + (4021.88) × 3

= 34273.91

APPENDIX -VIII

Calculation of the trend of Cash BEP of PCI (in Rs)

Years	Total BEP (Y)(Rs)	X-2008/09	XY	X2
2005/06	465713827	(3)	(1397141481)	4
2006/07	495417765	(2)	(990835530)	1
2007/08	1033455608	(1)	(1033455608)	0
2008/09	642685450	0	0	1
2009/10	61723580	1	61723580	4
2010/11	448500054	2	897000108	

Total	Y =314796284	X=(3)	XY=(2462708931)	X2=19

Calculation of value of a and b

We know,

The straight line trend is give by the following formula.

Y=a + bx …….. (i)

Where,

Y= values of total Break Even Point

a = total Break Even Point

b = rate of change of total Break Even Point.

x = year.

For the calculation of a (constant) and b (variable) can be obtained by solving the following two equations.

$\Sigma Y = na + b\Sigma X$ ……. (i)

$\Sigma XY = a\Sigma X + b\Sigma X2$ ……..... (ii)

3147496284 = 6a + b (-3) ……..….. (i)

-2462708931= a (-3) + b 19 ……. (ii)

By solving the above equation

We get,

a = 499183834 b = (50797759)

We know,

Y = a + bx

Y= 49918334 + (50797759) × 3

= 346790556

APPENDEX-IIX

Calculation of overall BEP sales of PCI

For the fiscal year2010\11

S. N	Products	Sales	Sales Mix	VC of each product	CM of each product	CM ratio	Weighted CM ratio (CM ratio x sales Max)
1	150kont	83209952	0.37	61736416	21473536	0.25	0.0925
2	100kont	111798975	0.49	65961395	45837580	0.40	0.196
3	60kont	32237786	0.14	13623094	18614692	0.55	0.077
Total		227246713	-				0.3655

APPENDEX-IX

Name of Respondents

Serial Number	Company Name	Name of Respondent	Desination of Respondent
1	PCI	Mr Deepak K. Bhattrai	Managing Director
2	PCI	Mr S B Shaha	Sr. Manager(export)
3	PCI	Mr Deep SHahi	Sr. Manager(Import)
4	PCI	Mr. Meen K. Luitel	Dyeing Officer
5	PCI	Mr Madhav Neupane	Data Entry Officer
6	PCI	Mr Raju Chalise	MR.Officer
7	PCI	Mr Rameshwor Subedi	Production Officer
8	PCI	Mr Karna Bdr. Poudel	Account Officer

9	PCI	Miss Anju Shrestha	Ass. Data Entry
10	PCI	Mr. Pradeep Nepal	Ass.Export
11	PCI	Mr.Ishwor Rimal	Store Incharge
12	PCI	Mr Bal Kirshna Poudel	Ass.Production
13	PCI	Mr. Upendra Mandal	Supervisor Washing
14	PCI	Mr Munna Singh	Supervisor Streaching & Bending
15	PCI	Mr. Mohamad Muslim	Supervisor Cutting

APPENDEX-X

Name of Top 10 Carpet Industries in Nepal

Serial Number	Name of Carpet Industry	Export 2009(sqm)
1	Paramount Carpet Industry	48045
2	Sherpa Carpet Industry	42025
3	Senon Carpet Industry	37388
4	Himalayan Art Industry	25227
5	TT Carpet Industry	26328
6	Pioneer Carpet Industry	24324
7	Exoticoriental Crafts Industry	24234
8	Garma Rug Industry	22340
9	Pari Carpet Industry	19249
10	Himali Rug House	19327

Source; Carpet Magazine from the land of Himalayan No-12 January 2010