COST VOLUME PROFIT ANALYSIS OF CARPET INDUSTRY IN NEPAL

(With special reference to Paramount Carpet Industry)

A THESIS

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Exam Roll No.: 250907/064

Submitted to:

Office of The Dean

Faculty of Management

Tribhuvan University

In Partial Fulfillment of the Requirements for the

Master's Degree of Business Studies (M.B.S.)

New Baneshwor, Kathmandu,

April,2011

RECOMMENDATION

This is to certify that the thesis

Submitted By:

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Entitled

COST VOLUME PROFIT ANALYSIS

OF

CARPET INDUSTRY IN NEPAL

(with special reference to Paramount Carpet Industry)

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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VIVA-VOCE SHEET

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OF

CARPET INDUSTRY IN NEPAL

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and found that the thesis to be the original work of the student and written according to the prescribed format we recommended the thesis to be accepted as

partial fulfillment of the requirements for the

Master's Degree of Business Studies (M.B.S.).

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DECLARATION

I hereby declare that this thesis entitled **COST VOLUME PROFIT ANALYSIS OF CARPET INDUSTRY OF NEPAL (with special reference to Paramount Carpet Industry.)** submitted to Research Department. Nepal Commerce Campus New Baneshwor, Kathmandu Nepal my original work done in the form of partial fulfillment of the Master's Degree in Business Studies (M.B.S.) under the supervision of **Dr.Prakash Neupane** and **Ram Prasad Acharya of Nepal Commerce Campus Kathamandu.**

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ACKNOWLEDGEMENTS

At first, I would like to thank Nepal Commerce Campus (NCC) for its greatest support to complete my MBS degree thesis and also helping me throughout my research work. The infrastructures of the campus have played an eminent role to complete this thesis in time. My supervisor **Prakash Neupane**, and **Ram Prased Acharya** had assisted me throughout the completion of this thesis and therefore I am very much indebted to his contributions. His assistance for this research work has been preferred to be very prudent and I would like to thank from the core of my heart. There have been considerable helping hands from many other personalities of the campus. In this regard, I would like to thank to all of them. .

I am thankful to all known and unknown lecturers and other staff members of Neapal Commerce Campus for helping me to make my final work productive one. The librarians of Central Library & Nepal Commerce Campus will always be remembered for their assistance to provide me necessary documents related to my thesis. The Annual Report relating to Paramount Carpet Industry has also been very fruitful to complete my study. So, I am also thankful to PCI , family members and my friends Mr. Ramesh & Navin have always been kind to all my inquiries to complete my works in time.

I am thankful to Ramesh, Jivan, Gopal Sharma and all my friends for helping to the typing and formatting this thesis to make this more productive and comprehensive. Finally, I am indebted to all the associates who had contributed to make this thesis completed.

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CHAPTER – I

INTRODUCTION

1.1 BACKGROUND

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.

Industrialization is an important factor to develop a country. It helps to fulfill the basic needs of people, proper utilization of resources release population pressure on land export prorogation import substitution, employment generation increase income levels. Now a day, industrialization is considered as an essential factor for the economic development & social progress.

Nepal the steepest country in world descend height of the Mount Everest to the tiger prowling jungles below. Between are valleys rich in more than 2500years of culture where Hinduism & Buddhism have met & created undreamed of glories of spiritualism through stone brick & metal for the eye of behold &for the soul to experience. The most beautiful Himalayan kingdom country discover the world of mountain river jungle & culture in the world of Nepal (visit Nepal 1998;1, and 2011,1, Nepal Tourism Board,Kathmandu.)

Carpet industries belong to agro-based industry. They are known as Garment Industry. Carpet industries are absorbing local agriculture product as their raw materials for value addition activities. Carpets collection wool from farmers & played then provide finish wool & ready hand knotted carpet to customers.

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.

1.2 HISTORICAL BACKGROUND OF CARPET INDUSTRY

Nepal is a Himalayan country. The area of weaving is an old tradition in the of Nepal especially in the mountainous region of the country, Radi, Pakhi, Bacchus, Dari (with pile) are well known Nepalese products produced using indigenous of these products was confined to the domestic market.

The development of on export quality carpet was initiated with the influx of Tibetan refugees in the early sixties. Credit goes to the Swiss association for technical association (SATA) for their contribution. In the development of the carpet industry in Nepal through financial & technical support to the Tibetan refugees resettlement programs. In the beginning it was lunched as a source of livelihood for the Tibetan refugees & marketing was limited to tourist visiting the kingdom efforts to gain access to the international market arena paid off in 1964 when the first commercial shipment left to Europe namely Switzerland with vision & Entrepreneur skill. It transformed into an actionably recognized commercial commodity & remains the most important export product in Nepal.

Nepalese - Tibetan carpets contains a very high degree of hand processing & qualities ranging from 60-150konts per square inches. Regularity safe guard are in place to ensure that only highest quality fleece wool is imported for the use of these carpets. Buddhism basically influences the traditional design & color in markets tastes. A wide rang of sizes from 0.25sqm has replaced the traditional size to 56sqm & in shape such as round, octagon & customer shapes. The desired designs styles & shades are the certain of local designers & engineers with regular feedback from the market.

At present 95% of the production of carpet is concentrated in the Kathmandu valley with the remaining 5% spreading over a number of other districts of the country.(Carpet Bulletin,2009:3)

Carpet industries provides qualitative carpet to foreign customer at world wide level, the demand of hand knotted qualities carpets is increasing day by day carpet industry buys wool at a reasonable price in regular basis then makes qualitative carpet & exports with foreign customer for their carpet to export the reasonable price to shipment of their foreign customer to fulfill these objectives. The carpet industry has been working from its set up.

Carpet industry is playing vital role to improve the economic condition of weavers & whole Nepalese people as well as it business. Carpet industry is providing various product lines in the market which are as follows;

- Pasmine shawl
- 150 kont carpet
- 100 kont carpet
- 60 kont with different name carpet.
- Others woolen goods etc.

Carpet industry has been collecting wool in our country as well as import from Tibet. Carpet industry has been playing vital role to increase export business &up lift the economic condition of Nepal.

1.2.1 Potential of Carpet Industry

Products have become the important part of earning foreign currency. It has important role in our export sector of nations. The uses rate of hand knotted Nepalese carpet is increasing every year in foreign country. It provides qualitative hand knotted Nepalese carpet to the customer of national & international. The demand of carpet products are increasing day by day because of high quality & hygiene. Carpet has helped the all related area to improve their standard of life by purchasing wool at reasonable & suitable price. It has worked to uplift the life standard of poor people.

Nepal is an agricultural country where 80% of the total people are depended on agriculture sector. Their main source of income & employment is agriculture sector. A few people rely on export business. They produce wool in high quality which is the main raw martial of carpet industries. Carpet production is increasing by 2% every year. The Government focus its attention in increasing carpet production. Three Years interim plan (2064/065-2066/067) makes many policy & strategies in export sector to fulfill its goal & objectives which increase future potentiality of carpet industries.(Annual report of PCI)

1.2.2 Profile Of Paramount Carpet Industry

The following aspects are included in the Paramount Carpet Industry;

While the nations was facing the problem of export business at that time some of business man think & study alternative export market & production to increase export business production of hand knotted carpet weaving & export.

That study showed & gave the priority together & promote wool producer to establish carpet industry in the thinking of declared to establish carpet industries in Kathmandu. After the long thinking & discussion was formed to register at Gothatar VDC word No-4 Kathmandu. He registered carpet industry in the name of Paramount Carpet Industry in 2045 BS.(memorandum of association)

1.2.3 Introduction to Paramount Carpet Industry

There are nearly about dozen famous carpet industry in establish at Kathmandu valley. Among them paramount carpet industry is one of the famous carpet exporter company which is established in 2045B.S. in Gothatar VDC word no 4 by the founder of Mr. Deepak Kumar Bhattrai. Its main object to establish this industry to earn maximum profit by providing qualities products as well as to increase export business & also to help the government by earned maximum foreign currency.

At present, industry cover about 20% of the market of carpet export. The sales volume of this industry is increased by 20% for the comparison of last year.(Annual Report of PCI) .

1.3 STATEMENT OF PROBLEM

The industrialization process in Nepal is being developed very slowly in spite of various attractive polices of the government in respect of industrialization. New investment made on industrial sector isn't satisfactory. The financial performance of established manufacturing industry is also not good .most of the industry is operating in losses & such condition of the well established industry discourage new investment both in manufacturing & non-manufacturing sector. There may be various & different reasons for the poor performance of the manufacturing industries such reasons should be investigated & should be taken corrective measures for the improvement of their performance.

Paramount carpet industry is the famous carpet industry of private sector in the country providing different kinds of carpets. A huge amount of money is invested for this industry. But the financial performance of the industry is not satisfactory & it is bearing a heavy loss every year.

How the business is being operated largely depends on how the business operation is planned. Poor performance is the outcome of poor planning, controlling & decision making .the main key motives of every business is to make & 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. Cost-volume-profit analysis is immensely helpful for developing alternatives strategies in sales planning & cost estimation.

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

- Is the paramount carpet industry practicing cost-volume -profit analysis tools & technique to carrying out planning, decision making & control functions?
- What are the major difficulties in the application of cost-volume-profit analysis in carpet industry?
- In which area of the industry cost-volume-profit analysis can be applied to improve the performance of the carpet industry?
- Which part of cost-volume-profit analysis is mostly practiced till date?

1.4 OBJECTIVES OF THE STUDY

The planning objective of the study is to identify and evaluate the current proactive of cost-volume-profit analysis & its effectiveness in carpet industry with special reference to carpet industry the specific objectives of the study are;-

I To evaluate the sales volume for break even of the company.

II To study the relationship of cost-volume-profit analysis & its applicability as a tool of budgeting.

III To analysis the cost classification practice of the company.

IV To provide suggest and recommend to necessary suggestion and recommendation the carpet industry based on major finding.

1.5 FOCUS OF THE STUDY

Although more money chasing isn't business, the main objective of business is to earn reasonable profit. It helps continuity in the business. The survival, expansion & diversification of business depend upon its ability to earn profit. The profit is the measuring rod for business efficiency & effectiveness. There fore, the business should earn reasonable profit which will be beneficial of both business & Society.

Like every business organization, Paramount Carpet Industry is also established to earn profit Cost Volume Profit analysis serves as a technique of profit planning. It analysis is helpful in Managerial decision making. It examines the response of the profit to change in volume. Every business organization must use Cost Volume Profit Technique to plan profit. One of the major cause of poor performance is the outcome of not using Cost Volume Profit technique & tools properly.

This has raised a question whether Nepalese manager are competent enough? Do they practice Cost Volume Profit analysis tools & techniques to carryout planning controlling functions & decision making? Thought Paramount Carpet Industry is currently having a fair estimate of total cost total revenue & profit at various level of volume due to the lack of application, Cost Volume Profit analysis tool & technique. Therefore the study focuses as the Cost Volume Profit analysis.

1.6 SINGFIGNANT OF STUDY

Cost-volume-profit analysis is one of the powerful management tools to show relationship between the element of profit planning & use for decision making in certain situation .cost-volume-profit analysis is one of the tools of profit planning & controlling so this study will be significant is the following ways;-

- It highlights the relationship between cost - volume & profit as an applicable tool of profit planning.
- This study would be very useful to the potential Managers Accountants Policy maker & Researcher because of its deals with practice of cost-volume-analysis of carpet industry as an important tool of profit planning & controlling.
- This study is helpful to the related department of carpet industry by providing necessary recommendations.
- It is also useful for interested parties, investor, shareholders & other stake holder.

1.7 LIMITATION OF THE STUDY

These are the main limitations of the studies are as follows;-

- The study covers the data of 6 year only (2061/62-2066/67).

- Primary as well as secondary data are based on the information provided by the industry.
- Being the student resources constraint such as time, financial, & other many more the scope of the study.
- Analysis is concentrated in cost-volume-profit & it doesn't cover the other area of the industry.

1.8 ORGANIZATION OF THE STUDY

CHAPTER-I; -The first chapter includes background of study an introduction of carpet industry statement of problem objectives importance & limitation of the study.

CHAPTER-II; -The second chapters consist in review of literature under which the terms cost-volume-profit have been described.

CHAPTER-III; -The third chapters submit, the research methodology follows to achieve the purpose of the study which includes research design, period covered nature & sources of data tools used to analysis the data & research variables etc.

CHAPTER-IV; -The fourth chapter takes the data collected through the various sources have been presented. It manly consist the analysis of sales plan, variable cost plan fixed cost plan & other relevant factors are analyzed from profit & loss account balance sheet .A part from this sensitivity analysis & cost-volume-profit analysis with product mix has also been analyzed & finding has been summarized.

CHAPTER-V; -The last chapter deals with the summary, conclusion & recommendations. This ends the study paper.

The bibliography appendix & glossary have been submitted at the end of the study paper.

CHAPTER –II

REVIEW OF LITERATURE

2.1 INTRODUCTION

The Purpose of reviewing the literature is to develop some expertise in ones area to see what new contribution can be made & to receive some ideas for developing are research design. Their relevant finding issues arguments logics & suggestion, which will give a glimpse guide line to go further depth of the study. In other word there has to be continuity in research. This continuity in research is ensured By linking the present study with the post research studies.

2.2 CONCEPTUAL FRAMEWORK

Review of literature is supposed to revise the eminent literatures relating to the study various books articles journals bulletins reports news statements & thesis etc are the basis for preparing it. Philosophers, writers or researchers have given the contribution on it since many years.

2.2.1 Concept of Profit

Generally profit is known as the part of income of the firms. Profit is the motivating force in the business. Success of business depends on profit. Profit promises to provide satisfaction to consumer we can simply define the word profit as the primary measurement of success of management effectiveness in business enterprise. In other words profit means the excess of total revenue over total cost of production. Usually profits don't happen they are managed or produce.

Thus it is quit obvious that profit is obtained by subtracting the cost from the revenues & it is also the reward for tacking risk. Profit plays a vital role not only in managerial decision but also in the general life standard of human beings. Therefore management should continuously evaluate efficiency of the company in term of profit.

2.2.2 Concept of Planning

The word planning stats thinking & deciding what ought to be done in advance. It is also a process of developing enterprises. Objective & selecting future courses of action to accomplish them.

Planning is the process of developing enterprises objectives & selecting future course of action to accomplish them. It includes (welsch,1992:3)

- Establishing enterprises objectives
- Developing premises about the environment in which they are to be accomplished.
- Selecting a course of action for accomplishing the objects.
- Initiating activities necessary to translate plans in to action
- Current re-planning to correct deficiencies

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

Thus, planning establishes the objectives, goals strategies, policies and standards of enterprises. Past is the father of present and to a great extent, present is a guide for future. Therefore, planning for future needs proper guidance to be taken from past event and adequate acquaintance should be made of present action.

2.2.3 Concept of Control

Once the planning is determined, it must be carried out under control. Controlling shares management actively and for this managers compare actual performance against the planned performance and find out the deviations taking remedial steps to remove the deviations to make an improvement in the performance because promptness is the essence of an effective control.

Controlling means evaluating the firm's activities against the plan and deciding what should be done if the plan is not being followed. (Lynch and Williamson, 1999:18)

Control is the process of ensuring that actual activities confirm to plan activities. Control helps in correlation. Therefore, planning and controlling are the major function of management.

- According to Welsch, controlling involves
- Establishing goals and standards.
- Comparing measured performance against the established goals and standards.
- Reinforcing successes and correcting shortcomings
- Control provides timely information that may prompt the revision of goals.

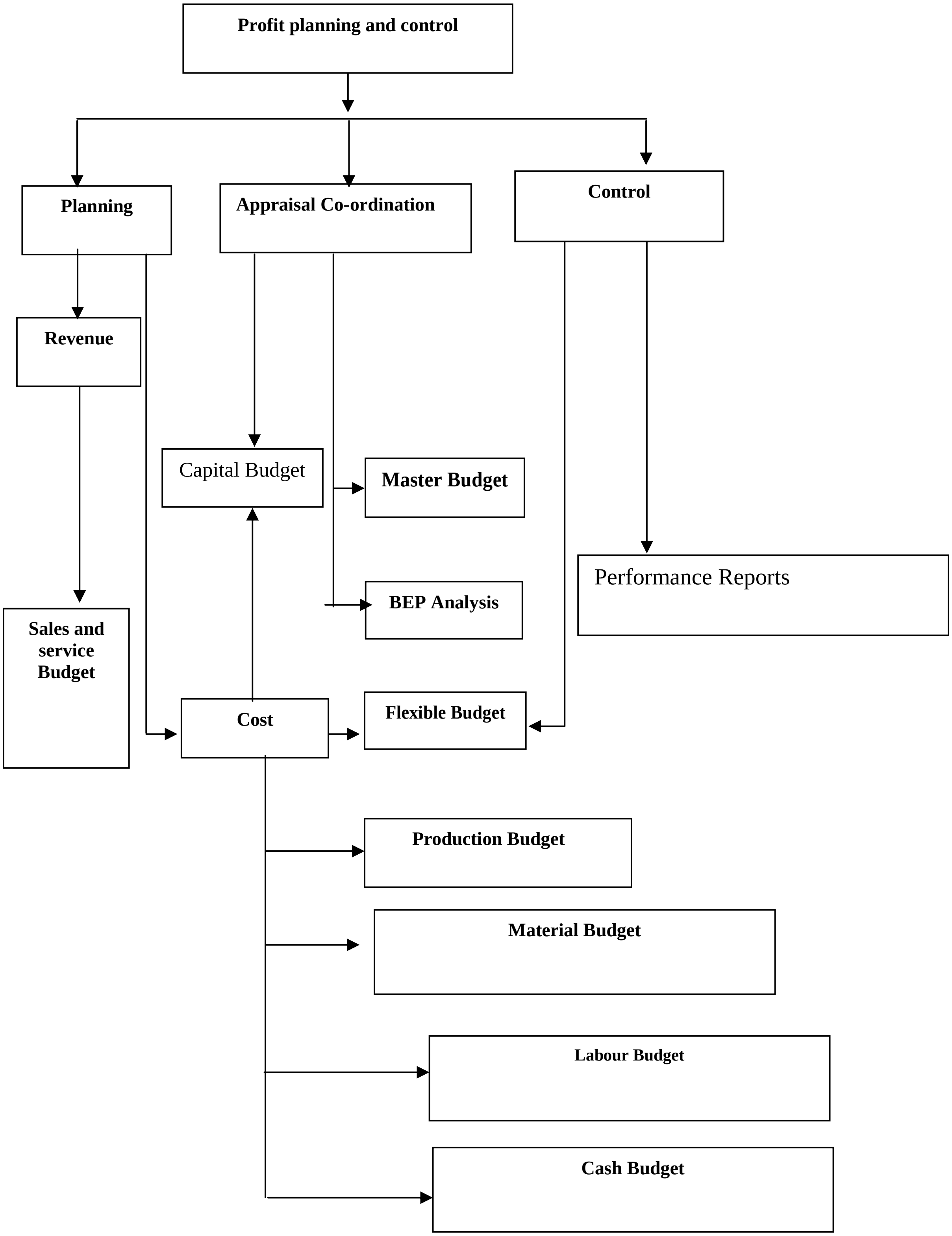
The purpose of control is achieved with setting standards, comparing predicted and actual results against these standards and taking corrective actions.

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

Structure of Profit Planning and Control:

Figure 2.1

Simple structure of PPC



(sources:Adhikari, 2010:21)

2.3 MEANING AND DEFINITION OF PROFIT PLANNING

Profit planning is one of the most important managerial functions, profit planning is merely a tool of management, which is used to plan and control business operation and inter action.

When a management plans, profit for a specific period of time that is known as profit planning. Every firm has to make a plan of profit if it has to survive and grow in the business line or business world in future.

The phrase "comprehensive profit planning and control" is a new term in the language of business but it is not new concept in the management. Commonly, comprehensive profit planning and control have been identified as 'a way of managing'. The term "comprehensive" means the application of the board concept of profit planning and control all phases of operations on an enterprises and the application of a total system approach.

Profit planning is the process of determining the required amount of profit from each principle unit of business. A profit plan is an advance decision of expected achievement based on the most efficient operating standards of time. It is established against which actual accomplishment is regularly compared.

Profit planning is the estimation and predetermination of revenues and expenses the estimate how much income will be generated and how it should be spend in order to meet investment and profit requirement. In the case of institutional operation, it presents a plan for spending income in a manner that doesn't result in a loss (Ninemeire, 1984:133). Explaining the use of profit plans and budget, they further mention that once it is developed, managers know that when actual expenses exceed budget limitations, there may be problems. The profit plan tells managers how much money remains to be spent in each expenses category, profit plans are also used to developed new budgets.

Profit planning or budgeting is a forward planning and involves the preparation in advance of the quantitative as well as financial statement to include the intention of management in respect of the various aspects 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, objective 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 operations 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, 1997:521).

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.

Provides a disciplined approach to the solution of business problems

Develops throughout the organization and atmosphere of profit mindedness, encouraging an attitude of the coast consciousness and maximum asset utilization.

Coordinates the operating plans of the diverse segments of the business into a single, comprehensive plan. Encourage a high standard of performance by stimulating competition, providing a sense of urgency and serving as an incentive to perform more effectively

Affords the opportunity to appraise systematically every facet of the business as well as examine and restate periodically its basis policies and guiding principles.

Aids and directing capital and effort into the most profitable channels.

Provides yardsticks or standards to measure performance and gauge the managerial judgment and ability of the individual executive.

According to Welsch, the three most relevant aspect of PPC concept are:

PPC requires major planning decision by management.

PPC entails pervasive management control activities.

PPC recognizes many of the critical behavioral implications throughout the organization.

In the opinion of J. Batty, when dealing the question of profit planning it is usual to consider (Batty, 1982: 322).

- The volume of out put in terms of numbers of product or other units.
- The verity to be produced (the product mix)
- The cost to be incurred.
- The prices to be charged.

The aim of profit planning should be to ensure and adequate return on capital employed and financial stability. Therefore, profit planning includes a complete financial and operational plan for all phases and facts of the business.

A profit plan is a comprehensive statement of intentions, expressed in financial terms, for the operations of the firm or a short period. It is a plan of the firm's expectations and is used as a basis for measuring and controlling the actual performance of managers and their units (Panday, 1999:257).

Thus, profit planning is used for development and acceptance of objectives and goals and moving an organization effectively to achieve those objectives and goals. Profit planning is developed to meet the objective of effective performance of the management process.

Profit planning is an integral part of the management; by the help of it any enterprises should earn realistic profit return on investment. It is financial and narrative expressions of the expected results form the planning decision. By using profit planning technique, one can achieve the desired goals. Profit plan is flexible and depends upon the size and nature of the firms.

2.3.1 Use of CVP Analysis in Profit Planning & Control

Planning, controlling and de3cision-making are the essential managerial functions. Const-volume-profit analysis helps the managers to plan for profit, to control cost and make decision. As such it helps (Munakurmi, 2002:123)

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

2.4.1 APPLICATION OF CVP ANALYSIS IN PROFIT PLANNING & CONTROL

Profit planning is the fundamental part of the overall management faction and cost-volume-profit analysis is major tools of profit planning therefore, cost-volume-profit analysis use for following respects (Dangol, 2058:235).

- It helps in determining the level of output where all the costs can be met.
- It is helpful in cost control.
- It helps in fixation of selling price.
- It also assists the management in understanding the behaviors of cost and help in budgetary control.
- It assists the management in performance evaluation for the purpose of management control.
- It helps very much in making managerial decision such as make or buy a part, drop or continue a department or product line, accept or reject a special order, selection of a profitable product mix etc.

2.4.1 Cost-volume-profit Analysis as a tool of Profit Planning and Control

Cost volume profit analysis examines the behavior of total revenues, total costs and operating income as changes occur in the output level, the selling prices, the variable cost per unit and/or fixed costs of a product (Horngreen,1999:350).

Cost volume profit analysis is a systematic method of examining the relationship between change in activity (i.e. output) and changes in total sales revenue, express and net profit. As a model of their relationship CVP analysis simplifies the real world condition that a firm will face. Like most models, which are abstractions from reality, CVP analysis is subject to a number of underlying assumptions and limitations. Nevertheless, it is a powerful too for decision making in certain situations (Drury, 2000:296).

Most of the businesses fail after a few years, sometimes months, of starting because they tend to do anything for volume without thinking how it's going to affect bottom line. Cost-volume-profit analysis is a management accounting tool to show the relationship between the elements of profit planning. Profit planning is the function of the selling price of the product, demand, variable costs, fixed costs, taxes etc. the whole picture of profit planning is associated with cost-volume-profit interrelationship (Bajracharya, 2004:225).

CVP analysis is and important media through which is the management can have an insight into effects on profit on account of variation in cost and sales and take appropriate decisions. Profit planning can be done only when the management has the information about the cost of the product and selling price of the product.

The key motive of business enterprises is to make and maximize profit. Profit doesn't happen by chance. It is to be managed. CVP is a supplementary tool of planning of profit. It is immensely helpful for developing alternative strategies in sales planning and cost estimation. CVP is an accounting technique showing the relationship between the above mentioned variables. This technique is equally important in profit making and non profit making organization.

Cost-volume-profit analysis is a management accounting tool to show the relationship between the ingredients of profit planning. Profit planning is the function of selling price of the product, the variable costs and volume to be sold. The entire scope of profit planning associated with CVP interrelationship. A widely used technique to study CVP relationship is break even analysis. Bread even analysis is concerned with the study of revenues and costs in relation to sales at which the firm's revenue and total costs will be exactly equal (or net income is zero). Thus the BEP may be defined an point at which the frim's total revenues are exactly equal to total costs, yielding zero income, the 'no profit' 'no loss' is an break even point or a point at which losses and profit begins (Khan and Jain, 1993:235)

Cost-volume-profit analysis can be regarded as a sophisticated method or analytical tool used in management. It is extremely useful profit planning and control, management decision, cost control, building etc.

2.5 CONCEPT OF COST VOLUME PROFIT ANALYSIS

CVP analysis is an analytical tool for analyzing the relationship among cost, price, profit, sales and production volume. Mainly, there are three elements in CVP analysis. They are cost, sales of production volume, and profit. All these terms are interconnected and dependent on one another. For instant, profit per unit of a product depends on its selling pries and cost of sales. The selling price to a greater extent will depend on the cost and costs depend on the volume production. It is highly essential for the management to have the completed knowledge about the interrelationship among the cost, volume and profit. A study concerning this interconnection is undertaken through cost-volume-profit analysis.

CVP analysis is a supplementary tool of profit planning. It tells many things about the relationship between the business variable. Total variables costs are proportionate to the sales volume; where as the total fixed costs remain unchanged within the relevant range of the output levels. That is why; net incomes are not in proportion to sales knowing the relationships, one can assess the profit at forecasted sales volume; likewise, required sales can be ascertained for he minimum level of profit. If a company sales more than one product, called the product mix, each product many not be equally profitable. So the company's profit will depend up on the ration of each products sale on the total sales revenues. Profit will be greater if high margin items make up a relatively large proportion of total sales than if sales consist mostly of low margin items. Changes in sales mix can cause great variations in a company's profit. A shift to low margin items can cause the total profit to decrease even though total sales increase. On the contrary, a shift in the sales mix form low-items to high margin items can cause the reverse effect; total profit may increase even though total sales decrease. (Adhikari,2009:23)

Thus, CVP analysis is t he techniques of summarizing the effects of changes in a organization volume of activity on its cost, revenue and profit. Cost volume profit analysis applies marginal or variable costing principles while establishing the effect of the future course of activities on the financial results of the firm. Knowledge of how cost behaves in response to change in volume and how profit beaver in response to change cost and volume helps management to make numerous short terms optimal decisions relating cost control and profit maximization.

2.6 COST AND ITS CLASSIFICATION

2.6.1 Concepts of Cost

Sacrifice or foregoing of resource made for the attainment of specific purpose is known as cost and are measured in monetary terms. Cost are collected, classified, determined, analyzed and controlled keeping in view the very purpose for which it has been incurred. Cost must be paid for production or purchase of goods and services. Usually costs are incurred with a view to obtained more return or resources in future. Immediate effect of cost is that it causes decrease in assets or increase in liabilities.

2.6.2 Classification of Costs

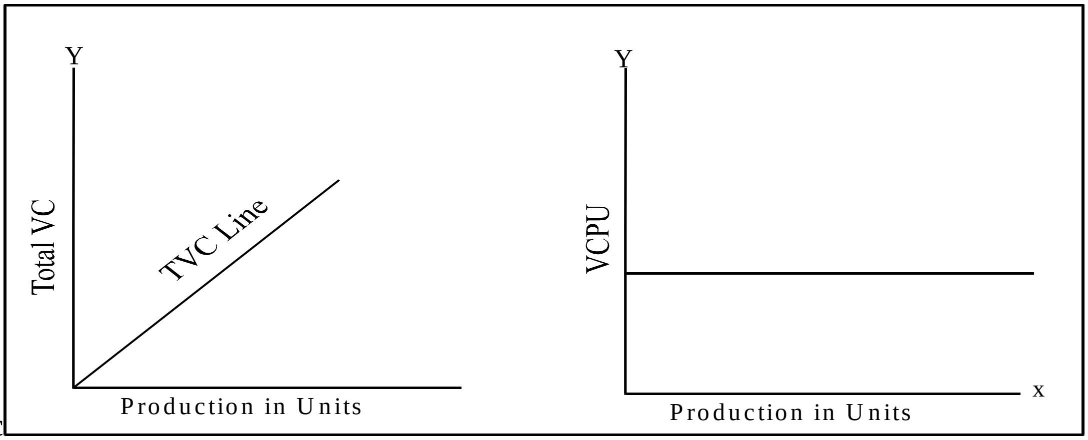
Cost classification is the process of grouping costs according to their characteristic. In other word, it is the placement of like items together by virtue of their common features. Though costs are identified with cost units, cost centers or cost objectives in general, the same figres can be classified differently depending upon the very purpose or specific requirement of the management. Cost classification not only helps management in determining product costs for stock valuation and profit measurement but also helps in decision-making planning and control.

2.6.2.1 Behavior Wise Classification of Cost

All costs do not show the same behavior throughout the operation. There exits a relationship between cost and volume of activity. Cost behavior implies the relationship between cost and activity. In most of the organization, cost can be classified as variable, fixed and mixed as these behave in relation to activity volume.

Variable cost: These costs tend to very in direct proportion to the volume of output. In other words, when volume of output increases, total variable cost also increases. But the variable cost per unit remains fixed. Its include direct materials, direct wages, power, royalties, normal spoilage, small tools, and commission of salesman, etc. It is shown in the figure below.

Figure 2.2



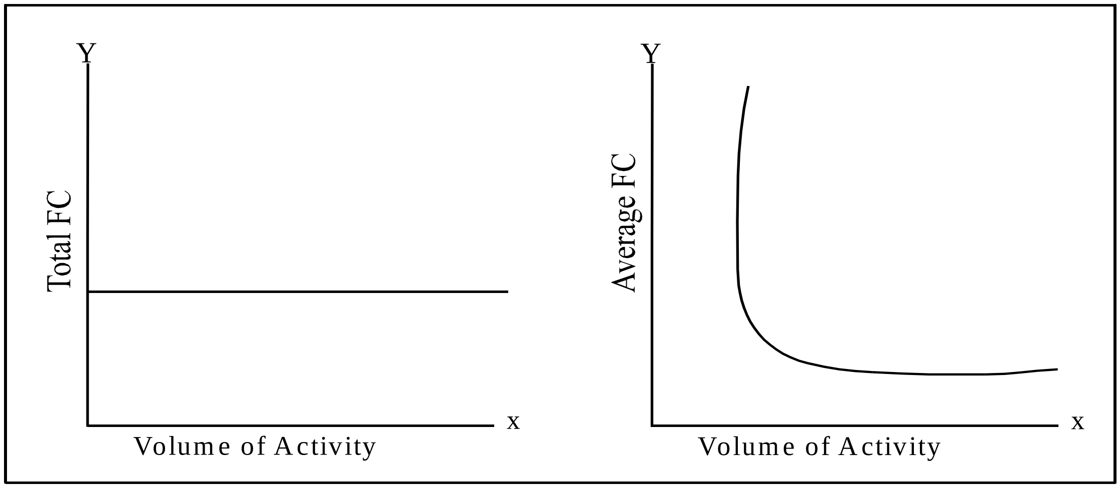
Variable Cost c

(Source;- Munakarmi,2002:21,24)

Fixed Cost: These costs remain fixed in "total" amount and do not increase or decrease when the volume of production changes. But the fixed cost per unit increases when volume of production decreases and vice versa. Fixed cost per unit decreases when the volume of production increases. It includes rent and leaser, municipal tax, managerial salaries; building insurance, salaries and wages of permanent staffs etc. it can be shown in the figure below.

Figure 2.3:

Fixed costs

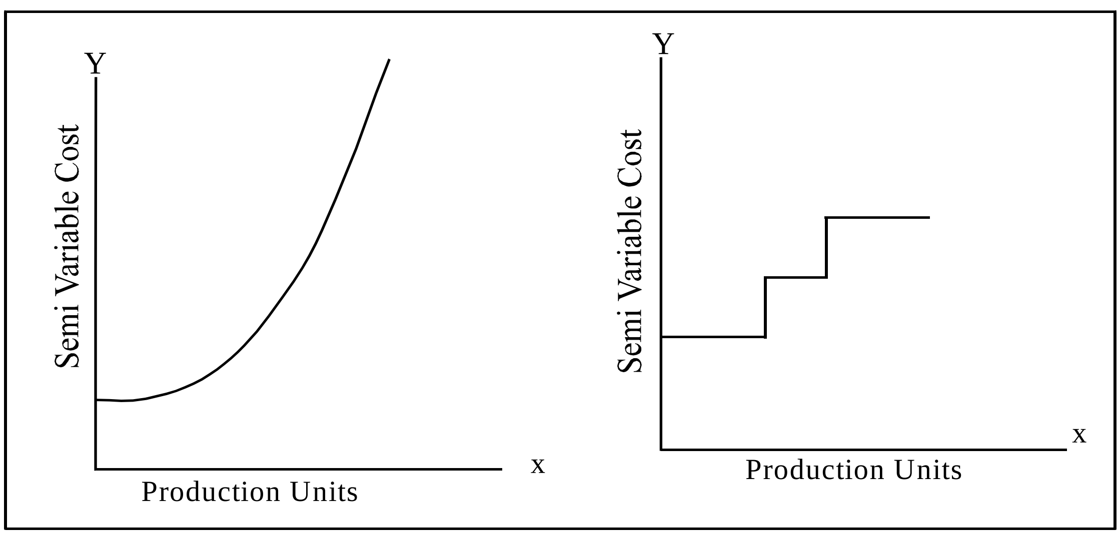


(Source;-Munakarmi, 2002:24)

Mixed Costs: these are partly fixed and partly semi variable costs has often a fixed element below which it will not fall at any level of output. The variable elements in semi variable costs changes either at a constant rate or in lumps. For example, interlocution of an additional shift in the factory will require additional supervisor and certain cost will increase in lumps. In the case of telephone, this is a minimum charge and after a specified number of causes, the charges are made according to the number of calls made. Thus, there is not fixed pattern of behavior of semi variable cost. It includes supervision, light and power, telephone expenses, maintenance and repairs, depreciation, compensation for accidents etc. Semi variable cost can be shown in the figure below.

Figure 2.4:

Semi Variable/Mixed cost



(Source;-Munakarmi,2002:24)

2.6.2.2 Segregation of Semi Variable Cost

The semi variable cost can be divided into two parts fixed and variable cost. The division of cost to fixed and variable cost is known as segregation of fixed and variable cost is known segregation of cost. There are many method of separating semi variable cost in to fixed and variable cost. The main to methods are as follows;

a. High-low method

b. Least square method

a) **High-low method**: This method assumed that the change in semi variable or semi-fixed cost is caused by variation in output or activity.

The following steps should be followed for segregation of semi-variable or mixed cost under high-low method.

- Step 1 to elect highest and lowest level of activity
- Step 2 to take the corresponding cost of highest and lowest level of activity.
- Step 3 to find out the different between highest and lowest points and ascertains the variable cost per unit by using following formula.

$$\text{Variable Cost per unit (b)} = \frac{\text{High cost} - \text{low cost}}{\text{High Activity lable} - \text{low activity lable}}$$

- Step 4 to find out the fixed cost by using the following equation:

Fixed cost=Total cost - (Variable cost per unit × activity level) (Adhikari, 2009:27).

b) **Least square method**: Least square method is a statistical method. It is an accurate and trusted method of segregation fixed and variable cost from mixed cost. In this method, firs of all, variable cost per unit is calculated. After this, the fixed cost is calculated. The fixed and variable cost can be separated by adopting the stepwise process as shown below.

- Step 1 Assume the activity level or production units as 'x' find out the summation of x i.e. ∑X.
- Step 2 Assume the mixex cost as 'y' and find out ∑y.
- Step 3 multiply X and Y, and sum the product i.e. find out ∑Xy
- Step 4 convert x in to x2 and find out the sum of x2 i.e. ∑X2
- Step 5 using the following given below, find out unit variable cost (b).

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

- Step 6 using the formula given below find out fixed cost (a):

$$a = \frac{\sum Y - b\left(\sum X\right)}{N}$$

Notes:

2. For finding out the value of 'a' the following formula could be used:

$$b = \frac{N\sum X^2 \sum Y - \sum X.\sum Y}{N\sum x^2 - \left(\sum x\right)^2}$$

2.7 APPROACHES TO COST VOLUME PROFIT ANALYSIYS

The CVP relationship can be analyzed through different approaches, which are

I. Contribution margin approach

II. Cost and revenue equation approach

III. The graphic (break even chart) approach

2.7.1 Contribution Margin Approach

The profit of a business enterprise is indicated by contribution margin approach. It high lights the relationship among cost, sales and profit. Contribution margin is the excess of sales price of a unit of output over its variable cost. Contribution margin enables to meet fixed costs and add to the profit. The total fixed costs are covered by it and balance amount is an additional to the net profit. Contribution margin can be represented as:

I. Contribution Margin=Sales - Variable cost

II. Contribution margin= Fixed cost + Profit

III. Profit = Contribution Margin - Fixed Cost

2.7.2 Contribution Margin Ratio:

Contribution margin ratio also expresses the relationship pf contribution to sales. It is also termed as profit volume ratio, contribution sales or variable profit ratio. If the contribution margin is divided by sales revenue, the result is profit volume ration. Symbolically, it is:

P/V ration=C/S

Where, C = Contribution margin and S= sales

Profit volume ration can be calculated in the following ways too:

I. $$\text{P/VRatio} = \frac{\text{Fixed Cost} + \text{Profit}}{\text{Sales}}$$

II. $\text{P/VRatio} = \frac{\text{Fixed Cost} - \text{Profit}}{\text{Sales}}$

III. $\text{P/VRatio } 1 = \frac{\text{Varaible Cost}}{\text{Sales}}$

IV. $\text{P/VRatio} = \frac{\text{Different in profit of two periods}}{\text{Different in sales two periods}}$

2.7.3 Uses of profit volume ratio

Profit volume ration can be taken as a significance evaluation tool on earning of business enterprises. The earning capacity of enterprises can be measured by the profit volume ratio. The higher profit volume ration reflects the firm's ability for increasing profitability.

The profit volume ration is used to determine the following facts;

I. **Determination of selling price**: selling price can be determined with the help of profit volume ration. In order to fix the selling price, it is essential to know about the fixed cost, variable cost and budgeted profit. Besides production volume is also required to be fixed. The selling price can be determined by using following formula

$$\text{Selling price per unit} = \frac{\text{Contribution margin}}{\text{P/V ratio x sales unit}}$$

$$\text{Selling price per unit} = \frac{\text{Varaiable cost per unit}}{1 - \text{P/V Ratio}}$$

II. **Ascertainment of profit a budget sales volume:** The profit can be determined with the help of margin ration. For this purpose, the following elements should be determined before hand:

1. Sales amount
2. Variable cost
3. Fixed cost

The following formula used to ascertain the profit:

Profit=sales P/V ratio) - Fixed cost

III. **Ascertainment profit on selling price**: Profit volume ration can be used for finding out the profit on selling price. For this purpose, the following formula is used:

Profit= sales units after break -even × unit selling price XP/V ratio

IV. Determination of profit on cost: Profit can be determined on the basis of variable cost and sales with the help of profit volume ration. In order to ascertained the profit, the following formula used:

$$\text{Profit} = \frac{\text{Varaible cost x P/VRatio}}{\text{Variable cost ratio}}$$

Where, variable cost ratio =1-P/V ratio

The formula ascertained the profit per unit for the sales after break even sales.

2.7.4 Cost and Revenue Equation Approach

The cost and revenue equation approach is based on the income statement concept. It represents the most convenient and accurate approach to cost volume profit analysis. The various formulations in CVP are derived from the revenue and cost function. The relationship between cost, volume and profit can be expressed algebraically as:

Profit= Total revenue - Total cost

Total revenue and total are affected by sales volume. The addition of quality in above equation will provide information for knowing the effect of revenue, costs and volume as operating profits. When the quantity is included in the above equation, its algebraic form will be as follows.

Profit= Total revenue -Total variable cost- Fixed cost

Or,

Profit= (unit selling price × sales unit) - (Unit variable cost × sales Units) - Fixed cost

Or,

P = (SxQ) - (VxQ) - FC

Or,

P = Q(S-V)-FC

Where,

P = Profits

Q = Sales Units

S = Units Selling Price

V = Unit variable cost

FC = Fixed cost

2.7.5 Break Even Analysis

The relation among cost, volume and profit can be found out clearly through break-even analysis. Break-even analysis is regarded as a sophisticated method or tool used in management. It is the most widely known form of cost-volume analysis. So these two terms are used interchangeably.

The break-even point used under break-even analysis. Break-even point is the level of activity where total cost is equal to total sales. It is a specific level of activity or volumes of sales, which breaks the revenues and costs evenly. It is point of activity or volumes of sales, which breaks the revenues and costs evenly. It is point of "no profit, no loss". If the sale or production is higher than breakeven volume, there will be profit. In the same way if the sales is less the break even sales, there will be a less.

2.8 COMPUTATION OF BREAK EVEN POINT

Break-even point can be determined by following method

A) Algebraic or Formula Method

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

Sales Revenue = Total Cost

Or,

Sales Revenue = Fixed Cost + Variable Cost

For finding out sales Revenue, we have,

Sales Revenue = Selling price per unit × sales unit

Symbolically,

Sales Revenue = $S \times Q$

For finding out, total cost, we have

Total Cost = Fixed Cost + (Variable Cost Per Unit × Sales Unit)

Symbolically,

Total Cost = $FC + (V + Q)$

From the early definition, we have,

Sales revenue = total cost

I.e. S x Q = FC+ (V x Q)

Or,

(S x Q) - (V x Q) = FC

Or,

Q (S - V) = FC

Q = FC/(S-V)

Where,

Q = Break-even point in units

FC = Fixed cost

S = Selling price per unit

V = Variable cost per unit

B) Graphic or Chart method

A break even chart is used to graphically depict the relationship among revenues, variable costs, fixed costs and profit (or losses). The no profit, no loss point (the break even 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, 2004:231 & 232)

In the graph given below the fixed costs remain constant without the relevant range; the fixed cost curve is parallel to 'ox' axis, variable cost slope downward from the origin to right but the slop depends on variable cost ratio. The fixed cost curve parallels the variables cost curve. So the angle '0' equals the angle 'V' it is because total cost=total fixed cost plus total variable costs at volume 'Q'.

Total costs = TFC+QXVCPU

At, volume 'Q+N'

Total costs = TFC+ (Q + n) X - VCPU

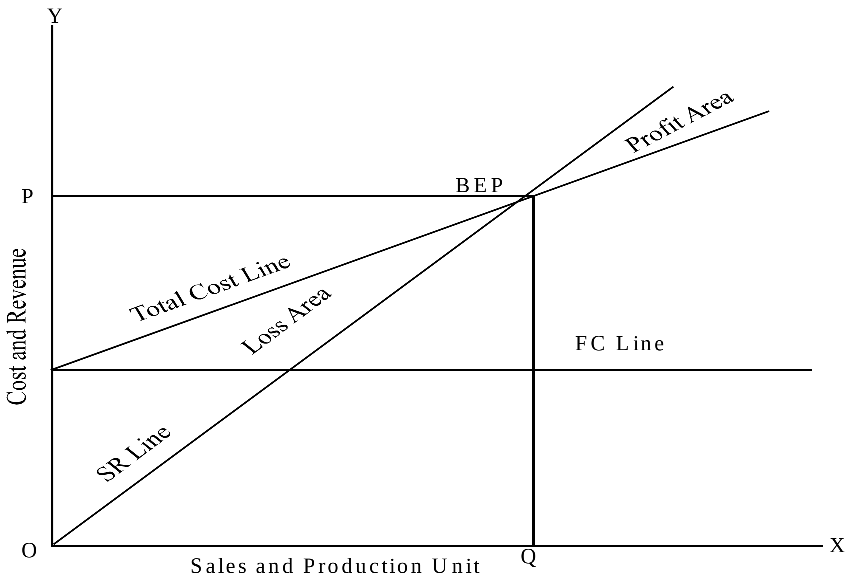
ΔTotal cost = O+N×VCPU

ΔTotal costs = ΔVariable costs

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

Figure 2.5:

Graphic approach to BEP



(Source;-Munakarmi,2002:145)

The above graph clearly shows that if the company can reach the pint of BEP it can generate sufficient revenues to cover all its operating expenses. At this point, the total revenues equal the total cost. Here, the revenue breaks up (intersect) the total cost curve that's why this point is called break even point. In short, Break Even point is that pint where,

Total sales revenues = total costs

2.9 MAJOR TOOLS USED IN PROFIT PLANNING AND CONTROL.

Profit Planning and control consists of there main budget which are:

a. Operating Budget.

b. Financial Budget.

c. Appropriation Budget.

a. **Operating Budget ;-** It is relates to the physical activities or operations of a firm such as sales, production, purchased, labor and other different expenses budgets. In specific term an operating budget has the following term:-

   i. **Sales budget :-** Sales budget is prepared from sales forecast where as a sales forecast encompass potential sales for the entire industry as well as potential sales for the firm preparing the forecast. Sales results from prior year are used as a starting point in preparing a sales forecast (Welsch, 1922:173).

   ii. **Production Budget :-** Production budget is the initial step in budgeting of manufacturing operations. The production budget is an estimation of planned quantity of goods to be manufactured during budget period. After the sales budget has been prepared, the production requirement for the for the-coming budget period are detrained and organized in the form of a production budget. Sufficient goods will have to be available to meet sales needs and for the desired ending inventory. A portion of these goods will have already existed in the form of beginning inventory. The remainder will have to be produced Thus, the expected volume of production is determined by subtracting the estimated inventory at the beginning of the period from the sum of the units expected to be sold and the desired inventory at the end of the period (Adhikari, 2009:36).

The production budget is an estimate of the quantity of goods to be manufactured during the budget period. The production budget is developed in three steps. They are:

- Formulate policies relation to inventory levels, and/or production levels.
- Determine the total quantity of each product that is to be manufactured during the budget period.
- Schedule this production by interim periods.

The budgeted production having been developed for the budget period, interim production must be planned so as to:

Have sufficient goods to meet interim sales requirements.

Keep interim inventory levels within reasonable limits.

Manufacture the goods as economically as possible.

iii. **Purchase Budget:**-Non-manufacturing enterprises are the merchandise goods. Instead of preparing the production budget they prepare a merchandise purchase budget showing the amount of goods to be purchased from suppliers during the periods. The merchandise purchase budget is in the same basic format as the production budget; expect that, it show goods to be purchased rather than good to be produced (Adhikari, 2009: 36).

iv. **Direct Material Budget** :- The material budget specifies the quantities and timing of each raw material needed. Direct materials are essential for production and must be purchased in each period in sufficient quantities to meet6 production needs and to confirm to the company's ending inventory policies. Sufficient raw materials will have to be available to meet production needs and to provide for the desired ending raw material inventory for the budget period. Part of this raw materials requirement will already exist in the form of a beginning raw material inventory. The remainder will have to be purchased from supplier.

v. **Direct Labor Budget** :- The direct labor budget is also developed from the production budget. Firstly, direct labor requirements must be computed so that the company will know whether sufficient labor is available to meet production needs. By knowing in advance, the company can develop a plan to adjust the labor force as the situation may require. Direct labor requirements can be computed by multiplying product to be each period by the number of direct labor-hours required to produces a unit. Many different types of labor may be involved. If so, then computation labor resulting from these computations can then be multiplied by the direct labor cost per hour to obtain the budgeted total direct labor costs (Adhikari, 2009:36).

vi. **Manufacturing Overhead Budget :-** Manufacturing overheads are the part of the total production cost, which is not directly identifiable with specific products or jobs. The manufacturing overheads budget provides a schedule of all costs of production other than direct material and direct labor. These costs should be broken down by cost behavior for budgeting purposes and a predetermined overhead rate developed. This rate will be used to apply manufacturing overheads to units of product through the budget period (Adhikari, 2009:37).

vii. **Selling and Administrative Overhead Budget :-** The selling and administrative expenses overhead budget contains a listing of anticipated expenses for the budget period that will be incurred in areas other than manufacturing. The budget will be made up of many smaller, individual budgets submitted by various persons having responsibility for cost control in selling and administrative matters. If the number of expenses item is very large, separate budgets may be needed for the selling and administrative functions (Adhikari, 2009:37).

b. **Financial Budgets :-** Financial budget is important because it is useful min predicting claim on future cash activities financial position and result of operations. The components of financial budget are (Adhikari,2009:38)

i. **Cash Budget :-** A cash budget is developed after all the operational budgets and capital expenditure outlay has been accomplished. A cash budget shows the planned cash inflows, outflows and ending position by interim period for a specific time span. The cash budget is composed of four major sections; the receipts section, the disbursements section, the cash excess or deficiency section and the financing section. The receipt section consists of the opening balance of cash added to what ever is expected in the way of cash receipt during the budget period. The disbursement section consists of cash payments that are planned for the budget period. The cash excess or deficiency section total and the cash disbursement section total. He financial section provides a details account of the borrowing and repayments projected to take place during the budget period (Adhikari, 2009:38).

ii. **Budgeted income statement :-** The budgeted income statement is one of the key schedules in the budge process. It is the documents that tell how profitable operations are anticipated to be in the forth coming period. After it has been prepared, it stands as a benchmark against which subsequent company performance can be measured. The income statement will be completed after addition of the interest expenses, which is computed after the cash budget, has been prepared. It can be developed by time period, sales district and product by assembling appropriate budget amounts form schedules already developed (Adhikari, 2009:38).

iii. **Budgeted balance sheet** :- The budgeted balance sheet is developed by beginning with the current balance sheet data and by adjusting it for the data contained in the other budgets. It is based on functional of operating budgets, cash budget, projected income statement and the previous year's assets and liabilities. In other word budgeted balance sheet is a statement of assets and liabilities prepared after the preparation of operating budgets and financial budgets (Adhikari, 2009:39).

iv. **Appropriation budget :-** All types of expenditure on advertising and research sectors are coverts in appropriation budget. A part from above (operation and financial) budgets, PPC also has relationship with following additional budgets, CVP analysis and completion of profit plan and performance reports (Adhikari, 2009:39) .

v. **Capital Expenditure budget :-** Capital budgeting involves t he entire process of planning and controlling the expenditures for expansion and contraction of investment in operating (Fixed) assets with returns that are expected to extend beyond one year. Capital expenditures includes such fixed (i.e. operation) assets as property, plant, equipment, major innovations and patents. The major elements of a capital expenditure budget are cash out flow and cash inflow. Cash outflow includes the cost of the project as cash outlays at different times during the life of a project the cash outflows are affected by the provision of residual value of old equipment, tax position, additional working capital needed etc. cash inflows are expected cash revenue during the life of a project. The non-cash expenses like depreciation and tax position can affect the cash inflows (Adhikari, 2009:39).

vi. **Flexible budgets :-** Flexible budgets directly relate only to expenses of cost. Flexible budgets are also called variable, dynamic, activity and output adjusted expenses budgets, the fundamental concept of flexible budgets for expenses is that all expenses are incurred because of (a) the passage of time (b) output or productive activity (c) a combination of time and output or activity. Flexible expenses budget concept is complementary to tactical profit plan, its help to provides expenses plans adjusted to actual output for comparisons with actual expenses in periodic performance report (Adhikari,2009:40).

vii. **Activity based budgeted budgeting**: - Activity based budgeting recognizes that it is which cause costs and is a more focused method of budgeting. It is activities, which drive costs, and the aim is to control the causes (drives) of costs directly rather than the cost themselves. Activity based budgeting focuses on thesis costs of activities to produce and sell products and services. It separates indirect costs into separate homogeneous activity cost pools. Management uses the causes and effect criterion to identify to cost drivers for each of these indirect cost pools (Adhikari, 2009:40).

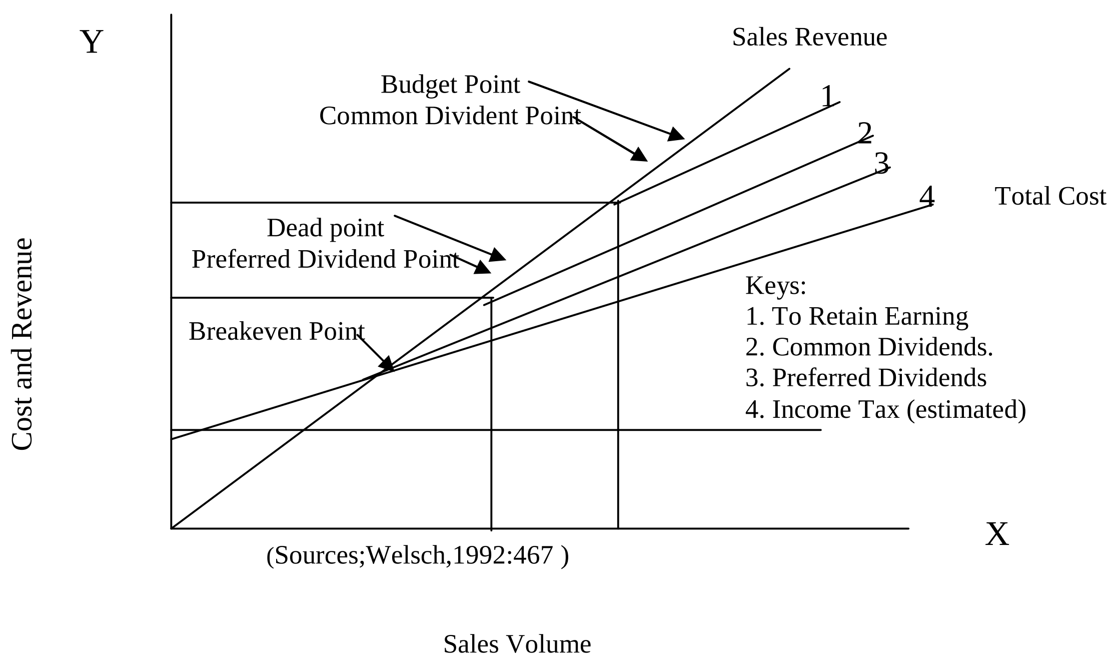
viii. **Zero based budgeting :-** Zero base budgeting a new approach to the budgeting process. It is a method of budgeting in which managers are required to start zero budget level every year and to justify all costs as if the programs involved were being ongoing in nature: the manager must start at the ground level each year and present justification for all costs in the proposed budget regardless of the type of cost involved. This is done in a series of "decision package" in which manager rank all the activities in the department according to relative importance, going from essential to least importance. Presumably, this allows top management to evaluate each decision package independently and to and to pare back in those areas that appear less critical or that do not appear to be justified in terms of cost involved (Adhikari, 2009:40).

2.10 ECONOMICS CHARACTERISTICS OF COST VOLUME PROFIT ANALYSIS

Where cost volume profit analysis is reasonably accurate, the 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, and the arithmetical manipulations generally involve average; hence the results should never be interpreted as precise. Rather than analysis may be characterized appropriately as “Slide rule” approach that may be used to developed and test with a minimum of effort, the approximate effect of cost and profits of several types of management decision.

Figure 2.6

Economic Characteristics of CVP Analysis



(Sources;Welsch,1992:467)

Above break even chart with economic characteristics indicates few of the economics characteristics of a business, which are (Welsch, 1992:468)

Fixed costs, variable costs and total costs at varying volumes.

The profit and loss potential, before and after income taxes, at varying volumes.

The margin of safety the relationship of budget volume to break even volume

The break even point

The preferred dividend or danger point the point below that 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 points below which earning are insufficient to pay the preferred dividends and the expected dividend on the common stock.

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

2.11 APPLICATION OF BREAK EVEN ANALYSIS

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

Determination of at different level of sales and margin of safety.

To find the level of output to get the desired profit.

Effect of price reduction on sales volume and changes in sales mix.

Effect of fixed cost or variable cost changes on sales volume.

Selection of most profitable alternative, make or buy decision and drop or add decisions.

2.12 ASSUMPTIONS OF BREAK EVEN ANALYSIS

Contribution analysis and break even analysis are based on a specific set of assumptions that should be clearly understood. These underlying assumptions are (Maheshwary, 2000: 182& 183)

- All cost can be classified parts fixed cost and variable cost. There is no cost other than fixed and variable.
- There is a range of validity (activity) for using the results of the analysis and sales price doesn’t change as units of sales change.
- There is only one product or in case of multiple products, the sales mix among the products remain constant.
- Basic management policy about operation will not change materially in short run.
- The general price level (inflation deflation) will remain essentially stable in the short run.
- Sales and production levels are synchronized. That is inventory remains essentially constant or zero.
- Efficiency and productivity per person will remains essentially unchanged in the short run.
- If any of the above assumptions were changed, revised budget would be needed for a new analysis.

2.13 LIMITATIONS OF BREAK EVEN ANALYSIS

Break- even analysis in many business situations can be used for effective decision- making but there is many shortcoming or limitations in its analysis and interpretations. Some of these can be listed as (Maheshwary, 2000:183 & 184).

The assumptions of producer's market phenomenon not hold good for all types of commodities.

The fixed costs may not remain constant as well as the variable costs may not vary in fixed proportions at different levels of output.

With variation of the prices of the items or services, which also depend on the factors affecting it, demand and supply will certainly affect the demand of the commodity. This phenomenon is not covered in Break even analysis.

Identification of fixed and variable costs involved in production process is very complicated. A shift in product mix may change the break even point.

Customers may be given certain discount on purchase to promote sales. This revenue many not be perfectly variable with level of sales output.

2.14 OTHER USE OF BREAK EVEN ANALYSIS

Break even analysis can be used in a changed situation in different cases and formula are given below.

$$\text{Required sales for desired profit (units)} = \frac{\text{FC} + \text{Desired Profit}}{\text{CMPU}}$$

$$\text{Required sales for desired profit (in RS)} = \frac{\text{FC} + \text{Desired Profit}}{\text{CMRatio}}$$

$$\text{Required Sales in units for DPAT} = \frac{\text{FC} + \dfrac{\text{DPAT}}{(\text{I} - \text{T})}}{\text{CMPU}}$$

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

Required sales volume change on selling price

$$\text{Revised BEP in Units} = \frac{\text{Fixed Cost}}{\text{RevisedUnit Contribution Margin}}$$

$$\text{Revised Break- Even point in Rs.} = \frac{\text{Fixed Cost}}{\text{Revised PV Ratio}}$$

Required sales volume for changes in selling price:

Revised unit contribution Margin = New unit selling price - Unit variable cost

$$\text{Revised Break even point in units} = \frac{\text{Fixed Cost}}{\text{RevisedUnit Contribution Margin}}$$

Required sales volume for changes in fixed cost:

$$\text{New Break even point} = \frac{\text{Fixed cost present + Additional fixed cost}}{\text{Unit contribution Margin}}$$

2.15 CASH BREAK –EVEN POINT

To find out the volume sales that will equalize the cash out flow during a particular period. Cash break even point is used. It is a modification of the traditional accrued basis break even analysis. The fixed costs are divided in to two groups for finding out the cash break even point.

Those are:

Fixed costs requiring cash e.g. salary rent, wage, insurance etc.

Fixed cost not requiring cash e.g. deprecation, deferred expenditure etc.

The following formula is used for finding out cash break even point.

The following formula is used for finding out cash break even- even

$$\text{Cash Break even point} = \frac{\text{Cash Fixed Cost}}{\text{Unit Contribution Margin or P/V Ratio}}$$

2.16 BREAK-EVEN SALES VOLUME IN THE PRESENCE OF STEP OR MOVING FIXED COST.

Determination of breakeven sales volume so far was based on the vary assumption that the times of fixed costs will remain stable over a board, relevant range of normal operating volume. But it may not be so. Though some items of fixed cost such as deprecation and rent may remain consent but other items such as supervision, repairs and maintenance may change various items between the capacity volume and relevant range of normal operating volume. Calculation of breakeven volume in the presence of such step or moving fixed cost items requires more homework.

A process of trial and error or resort to specific step helps to overcome such a problem. The points to note here is, we are concerned with the earlier breakeven sales volume as there are numerous break even volumes increasing each time with every increase in step or moving fixed cost (Wagle and Dahal, 2004: 4.7).

2.17 COST- VOLUME- PROFIT ANALYSIS FOR A MULTI PRODUCT FIRM

The relative proportion of sales of product is called the sales mix or the product mix. In the case of a multi- product firm, the contribution for each product can be found out by deduction its variable costs firm sales revenue. The break- even point for each product can be calculated only if the total fixed costs of the firm are distributed and fixed cost for each product is known. The firms overall break- even can be calculated by dividing the total fixed costs by the contribution ratio for the firm. The multi- product firms PV ratio will not affect the firm’s break even point and profit if each product has the same PV ratio. However a change in the product mix will change the break even point and profit when products have unequal PV rations.

2.17.1 Break Even Point of Multi- Product Company/ Firm)

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

Following procedures are followed to calculate BEP for sales mix or multi- Product

- Calculate contribution margin profit- volume ration for each product.
- Calculate proportion of sales max in units or values as follows.

$$\text{Sales mix} = \frac{\text{Individual produc's sales units or value}}{\text{Total of product's sales units or value}}$$

Calculate weighted average for all products as follows:

Weighted average = $\sum$ Sales Mix x CMPU

Weighted average = $\sum$ sales mix (value) × P/V ratio

Calculate break even point (BEP):

$$\text{Break – even point} = \frac{\text{Fixed cost}}{\text{Weighted average}}$$

Some Important Formulas

$$\text{Overall BEP (in Units)} = \frac{\text{Total Fixed Cost}}{\text{Weighted CMPU}}$$

$$\text{Overall BEP in Rs} = \frac{\text{Total Fixed Cost}}{\text{Weighted CM Ratio}}$$

$$\text{Required Sales for desired profit (in units)} = \frac{\text{FC + Desired Profit}}{\text{Weighted CMPU}}$$

Required sales for DP (in Rs.) $= \dfrac{\text{FC + Desired Profit}}{\text{Weighted CM Ratio}}$

Required Sales for DP after tax (in Units) = $\dfrac{\text{FC} + \dfrac{\text{DPAT}}{(\text{I} - \text{T})}}{\text{Weighted CMPU}}$

Required sales for DP after tax (in Rs) $= \dfrac{\text{FC} + \dfrac{\text{DPAT}}{(\text{I} - \text{T})}}{\text{Weighted CM Ratio}}$

2.18 MARGIN OF SAFETY

Margin of safety is the excess of the budgeted or actual sales over the break even sales volume. In other words, it is the difference between the budgeted or actual sales revenue and the break even sales revenue. It is the position above the break even points. It gives management a feel for how close projected operations are to be organizations break even point. Managers often consider the size of the company's margin of safety when making decisions about various business opportunities. The larger is the safety margin, the greater is the chance for the company to earn profit (i.e larger the margin of safety, safer the company). A high margin of safety is particularly significant in times of depression when the demand if the company's or firm's product is falling. A low margin of Safety Company's or firms firm which has a low contribution ratio. When both the margin of safety and the PV ratio re low, management should think of the possibilities of increasing the selling price, provided it does not adversely affect the sales volume or reducing variables costs by bringing improvement in the manufacturing process, Margin of safety can be ascertained by using the following formula (Munankarmi, 2002: 127).

Margin of Safety = (Actual Sales value- Break- even Sales Value)

$= \dfrac{\text{Profit}}{\text{Profit volume ratio}}\text{ in Amount}$

$\dfrac{\text{Profit}}{\text{Unit contribution margin}}\text{ in units}$

The relationship between safety and actual sales in known as margin of safety ratio which is determined as follows (Munakarmi, 2002:127).

Margin of Safety Ratio = $\dfrac{\text{Acual Sales} - \text{Breakeven sales}}{\text{Actual sales}}\text{ in units}$

The following steps are needed to rectify margin of safety.

With increasing selling price.

With increasing sales volume, if the capacity of fixed cost is not fully utilized.

With reducing fixed cost if possible.

With reducing variable cost (redacting the cost of raw materials, wages and other direct cost)

With substituting product line by more profitable one.

2.19 COST–VOLUME PROFIT ANALYSIS AND LIMITING FACTORS

CVP analysis is helpful in profit planning and a company will be able to produce any number of output, numbers of output of choice (desires). But in real world it is not possible, become of some critical factors like finishing machine or raw material or labor. These critical factors in the CVP analysis are known as constraint.

2.19.1 CVP Analysis with a Single Constraint

Scarce resource should be efficiently allocated in order to maximize the contribution margin. A particular simple and instructive situation arises when there is only one constraining resource. This can occur if the firm's products are all produced on a single maintained and outer is imagery hours available on this machine. In the same way , single resource constraint arise, if the firms product are all produced with only one material and output is limited by quantity available for that to have alternative uses, the contribution per unit should be calculated for each of these uses. Then, the available capacity for such scare resource should be allocated to the alternative uses on the basis of contribution per resource (Munakarmi, 2002:146).

2.19.2 CVP Analysis with a Multiple Constraints

Where, more than one scarce resource exists, the optimum production program can not easily be establisher the simple process applied in single resource constraint. Under the circumstances simple allocation of recourse constraint or the basis of contribution margin per unit is neither feasible nor desirable. Contribution margin per unit of scarce resources may be different for different scarce resources may be the ranking of product, because production processes are affected by many constraints factored rather than single constraint. In such situation, linear programming technique may be uses to optimize product mix. The loner programming formulation is required to determine a production plan that maximizes contribution from the product mix. Liner programming is a mathematical technique which shows how to arrive at the optimum results, allocation of available with the problem of allocating limit resource among competitive activities in an optimal manner. It is a technique to optimize the allocation of scarce resource in product mix problems which provides a valuable extension to cost.- volume profit analysis (Munankarmi, 2003: 148).

2.20 ASSUMPTIONS UNDERLYING CVP ANALYSIS

Break even analysis is the most useful technique of profit planning and control it is a device to explain the relation ship between cost volume and profit. The discussing of the CVP analysis (or break even analysis) so far is based on the following assumptions (Pandey, 1999:241).

a. **Cost Segregation –** The total cost can be separate in to fixed an variable components. Constant fixed cost is the total fixed cost that remains unchanged with changes in sales volume. Constant unit variable cost is the variable cost per unit is constant and total variable cost changes in directive proportion to the sales volume.

b. **Constant Selling Price –** The selling per unit remains the constant; that is it done notchange with volume or because of other factors.

c. **Constant Sales Mix** - The firms manufacture only one product or if there are multiple precut the sales mix does not change.

d. **Synchronized Production and Sales** - Production and sale saner synchronized that is inventories remain the same.

2.21 LIMITATION OF CVP ANALYSIS

Assumption limits the utility and genera applicability of the CVP analysis. Therefore, the analysis should recognized these limitations and adjustment data, wherever possible, to get meaningful results. The CVP analysis suffers from the following limitations (Pandey, 1999:214).

It is difficult to separate costs in to fixed and variable components

It is not correct to assume that total fixed cost would remain unchanged over the entire range of volume.

If is difficult to use the break even analysis for a multiple produced firm.

The break even analysis is a short run concept and has a limited use in long range planning.

The break even analysis is a static tool.

2.22 PURPOSE OF CVP ANALYSIS

Cost- Volume- Profit Analysis helps management in a number of ways. The following purposes are served by it (Dangol, 2058:160).

- Calculation of profit resulting from a budgeted sales volume.
- Calculation of sales volume of break-even
- Calculation of sales volume to produce desired profit.
- Effect or changes on price, costs and profits.
- Determinations of new break- even point for changing in cost and selling price.
- Measurement of effect of changes in profit factors.
- Choosing the most profitable alternative.
- 'Determining the optimum sales mix.
- Determining the optimum sales mix.
- Determination of capacity and equipment selection
- Long- term decision on continuances of products.
- Make or but decisions on sub- assemble or part.
- To contemplate the increase or decrease in profit due to change in method of production etc.

2.23 SENSITIVITY ANALYSIS

Sensitivity analysis is the measurement of elasticity if the change in cost, volume and profit factors or break even point or give profit. The strategist should focus more on the factor, which is more on the factor, which is more sensitive or responsive for 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 one on net profit. In other words, sensitivity analysis in the measurement of responsiveness in outcome with the changes in determination variable. We know that the goal of business enterprises is to maximize profit. Is the excess of revenues over the total cost.

Net profit = Total Sales Revenues - Total Cost

= Sales unit x SPPU- Sales unit x VCPU - Fixed cost -Taxes

So that, profit = F (Sales volume, selling price, VC, FC, Taxes etc. means, profit are function, price, VC, FC taxed and son on.

But one of the factors remain unchanged sometime the manger can internationally change the price and cost factors as a part of strategic decision. But the strategy should focus more one the favor, which is more sensitive or responsive for profit. Therefore, to measures the sensitivity of cost volume profit factors, we can see the impact of certain percentage or a out change in volume price or cost factors on net profit (Bajrachary, 2004:245).

2.24 REVIEW OF THE RELATED STUDIES

There is few research paper- concerning cost volume profit analysis has been conducted. Mot of the researcher is in n the profit planning and control. Very few dissertations have been submitted related to cost volume profit analysis. Out of the previous research studies only few research are 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 on profit planning and control as well as management accounting. As CVP is one of the tools of PPC, the previous studies related to PPC, are reviewed.

Chalise,(2001),The thesis entitled **"Profit Planning in manufacturing company (a case study of Nepal Lever Limited)"** is prepared by Mr. Ishowor Raj Chalise. This thesis was submitted to Nepal commerce campus, T.U. Kathmandu.

The primary objective of this research was to highlight the system of profit planning applied and its effectiveness in Nepal. Lever Ltd in coordination to these main objectives that was focused to meet the following objectives.

- To evaluate the variances between target and actual of Nepal Lever Ltd.
- To analyze the various functional plans formulated and implemented in Nepal Lever Ltd.
- To examine the practice and effectiveness of profit in Planning in Nepal Lever Ltd.
- To evaluate the practice and effectiveness of profit planning applied in Nepal Lever Ltd with conceptual prescriptions.
- To point out feasible suggestion and recommendation to make betterment of Nepalese manufacturing enterprise with special reference on Nepal Lever Ltd.
- To analyze the various functional budgets adopted in this enterprise

On the basis of different analysis, observation and informal discussion, the following major findings have been drawn.

- The company has no panning division, It has no skilled and expert and planners as well.
- The company has no proper practice of cost segregation.

- Yearly budget for income and expenditure prepared by general manager with mutual cooperation of other top level managers and which the board of directors finally approves. The middle and lower level manager and other workers are not participated in preparing the budget.
- The company has been suffering from many internal and external factors in formulating and implementing plans. However, it has no proper practice of environment scanning.
- Nepal Lever Ltd target is more variable than actual because there is no any proper plan and policy during the operating period of the company.
- In Nepal Lever Ltd there is detail plan of manpower and systematic approach to labor planning. The company plans for direct labor hour and direct labor cost needed to produce the planned quantities of goods.
- The company has not a practice of preparing long range production plan; The company prepares annual production plans of each product.
- The company has no depth analysis of the company's strength and weakness or opportunity and threats.
- The company has no practice of sales forecasting Sales and Production are made on ad-hoc basis.
- The company has not a problem in production labour force and material but suffers from unavailability of market.

Some suggestions have been recommended on the basis of major finding of the study of profit planning in Nepal Lever Ltd.

Trained and qualified manpower of profit planning should be hired and present manpower should be trained to develop and implement the profit plans effectively.

The company should improve productivity of its product by providing sufficient technical staff and technical equipment.

There is lack of periodical performance reports about the activities of the industry. There system of periodical performance reports should be strictly followed to be considered followed to be considered towards poor performance and to take correct action timely.

The company makes every effort to run the existing plans and utilize the idle equipment and facilities.

For better performance, company should prepare strategic and tactical profit

Nepal Lever Ltd should appoint reliable agents and dealers to improve its sales performance.

Different cost in the company should be diagnosed as controllable and non- controllable within a specific framework of responsibility and time and effective programs should be launched to reduce the controllable expenses.

Modern strategic management system should the introduced instantly.

Finally, the company should adopt a systematic approach to profit planning,

Rijal(2005) Mr. Rijal had studied on the topic " **cost volume profit analysis to measure the effectiveness of profit planning and control (a case study of Nebico Pvt. Ltd)**' The study was based on both primary data as well as secondary data and analysis was based on only five years data. It was submitted to Shankar Dev Campus, T.U. Kathmandu.

The main objective of that research analysis is as follow.

To study relationship of cost volume and profit as an appli9cable tools of budgeting.

To evaluate the stability, financial position and sensitivity of Nebico's activities.

To analysis the cost volume and profit of the company and its impact in profit planning and

To provide suggestions and recommendations for improving Nebico's condition etc.

Mr. Rijal, had pointed out some major findings in this research although most of these findings were out of objectives of the study. Some major findings are as follows:

- The company's sales have fluctuation but not satisfactory trend of increasing.
- The company's variable cost is in high proportion than fixed cost in comparison with total cost. This contributes for lower contribution margin.

NEBBICO had no any plan to reduce cost.

The profit trend of the company was not satisfactory.

There were not effective sales forecasting techniques.

NEBICO Pvt. Ltd. had not practice of segregating the cost into fixed variable and controllable or non-controllable.

Net profit margin profitability ration and other things were not satisfactory.

The company has not utilized its full capacity.

CVP relation is not considered while developing sales plan production plan and pricing strategy.

The following suggestions have been recommended on the basis of this research;

NEBICO should consider BEP analysis while preparing sales plan production and setting the price of its products.

Classification of expenses as variable and fixed or controllable or uncontrollable must be made within a specific framework of responsibility and time.

Cost control department separately established which is divided the cost by production and control the cost.

A systematic approach should be made towards comprehensive profit planning. This cans considerable contribute to the increase in profitability of NEBICO Ltd.

CVP analysis and PPC manuals should be communicated from top to lower levels. As company as unable to generate, profit as per investment make in fixed cost, company should put address on effective utilization of fished cost.

All personal should participated on decision making and planning process.

Dahal(2006)-Mr. Udya Kumar Dahal, has studies on the topics of "**Cost volume profit analysis as tool to measure the effectiveness of profit planning with special reference to Dabur Nepal Ltd**" This was submitted to Nepal commerce Campus, T.U. in partial fulfillment of Master' Degree in the year 2006.

The main objective of the research was;

Examine the variance between target and actual sales and production.

To show the capacity utilization of Dabur Nepal Ltd.

To forecast future production and sales.

To analyze financial performance.

To analyze the CVP of company and its impact of profit planning

To analyze the trend of profit over the time covered by the study.

To provide recommendations and suggestions for improving the profit planning systems of Dabur Nepal Pvt. Ltd.

To Conclusion of the research regarding the present practice of profit planning of Dabur Nepal Pvt Ltd. has given below.

Dabur Nepal Pvt. Ltd constitutes lack of adequate inventory policy No control over external factor 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 coordinate among various departments

Dabur Nepal Pvt Ltd not prepares raw material requirement budget and raw material purchase budget systematical.

The researcher also provides the following recommendation;

- analysis should be considered while formulating profit plan.
- 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.
- Dabur Nepal Pvt. Ltd should focus on the relationship between expenditure and benefit, expenses planning and controlling is necessary to obtains companies goals.
- To get the idea of future cash requirement and application of the form it should make cash budget systematically.
- The company should prepare raw material budget and production budget scientifically.

Gautam(2006)-Mr. Gautam, has studies on the topes " **An analytical and comparative study on cost volume profit analysis of Unilever Nepal Ltd and Dabur Nepal Private Limited**" His research was in partial fulfillment of MBS submitted to the Nepal commerce campus, T.U. His Objectives of the study was;

- To calculate of profit resulting from a budgeted sales volume,
- To calculate break even point CM analysis margin of safety analysis and profit volume analysis.
- To calculate sales volume to produce desire profit
- To contemplate the increase or decrease in profit due to the change in volume of production
- To suggest and recommended with the help of major findings.
- To encourage greater use of CVP approach to manufacturing enterprise in profit planning and control.

Mr. Gautam, has pointed out various findings and recommendations based on the analysis of data and information.

Some of the major recommendations are as follows

- Classification of expenses items as variable and fixed or controllable and non controllable must be made with in specific framework of responsibility and time.
- Separate cost control department should be established for the effective management of cost.
- UNL and DNPL should be considered BEP analysis while preparing sales plan production plan and selling price of its products.
- Both companies should consider about he product should be carried out and loss oriented cost should be identified and controlled.

- As UNL and DNPL is multi- Product Company, more emphasis should be provided the product having high contribution so as more have more profit.

Some person of profit should be allocated to research and development program so that new technology could be found which provide more competitiveness on the market.

UNL and DNPL should have proper manpower planning.

System of periodical performance reports should be strictly followed to be consists about poor performance and take corrective action immediately and timely.

New market areas should be identifying for the coverage of increased activities of companies.

- A systematic approach should be made towards comprehensive profit. This can considerably contributed to the increased in profitability to UNL and DNPL. Sine separate on of cost in to their fixed and variable elements each and the heart of CVP analysis, all decision makers sought to be fully aware of and understand the coat structure of their operation otherwise CVP analysis will provide meaning less information.

Pokharel(2006)-Mr. Pokharel, had conducted his MBS level thesis on the topic of "**Cost-Volume-Profit" analysis of manufacturing organization (spical refernce to Himalayan Distillery LTD)** & submitted to Nepal Commerce Campus to Kathmandu.

The main objectives of that research were as follows-;

- To analyze the impact of fixed cost profit.
- To compute Break Even Point, Contribution Margin analysis, Margin of safety analysis & Profit Volume analysis of Cost Volume Profit Analysis.
- To analysis the different component of cost.
- To suggest on Cost\Revenue Profit planning to the company on the basis of finding of the study.
- To achieve all above objectives he had adopted case study research design by using historical data of the concerned company. He had also use a primary as well as secondary source of data.

Mr. Pokharel, had pointed out some major finding in his research some finding are as follows;-

The company hadn't practice of classification of cost in to Fixed cost & Variable cost.

Contribution Margin ratio is much low to cover Fixed Cost.

. There was perfect negative correlation between actual sales & budgeted sales.

Further following points are selected form his recommendations;-

The management should segregate cost in to fixed cost & variable cost through behavior mechanism.

The company should Control Fixed cost by using various techniques.

The company also should minimize variable cost.

The company should analyze other profit planning tools.

Manandhar(2007) -Miss Manandhar, had conducted her MBS level thesis on the topic "**Cost-Volume-Profit" analysis in Kathmandu Dairy** & submitted to Nepal Commerce Campus TU Kathmandu.

The main objective of that study is to examine cost-volume-profit analysis as a tool to measure effectiveness of profit planning & control of Kathmandu Dairy. Some finding of her research are as follows;-

- The company has failed to achieve budgeted sales during the study period.
- The financial position of the corporation isn't satisfactory.
- The corporation hasn't utilized its full capacity due to the lack of raw martial & skilled workers.
- The company hasn't applied any special technique for segregation of cost into fixed & variable.
- There is no costing system for allocation of cost to each product.
- Further the following product are selected form her recommendations-
- A systematic approach show be made to words comprehensive planning Kathmandu Dairy hould effort to increase sales volume.
- Kathmandu dairy should try to use optimal capacity.

Timalsina(2008)- Mr.Timalsina had submitted a dissertation on the topic "Budgetary performance and its impact on profitability (A case study of Dabur Nepal Pvt. Ltd " in partial fulfillment of the requirement for the degree of Master in Business Studies to Nepal Commerce Campus, Minbhaban, Tribhuwan University in 2008. The study was made to fulfill these objectives as follows:

- To asses the relationship between sales budget and profit of DNPL
- To analyze the varience of budgeted amount and actual achievement
- To assess the impact of budgeting on profitability
- To recommend the steps to be taken to improve the figure by planning through the process of budgetary management and control

His Major Findings are:

- Mean and standard deviation of sales achieaement is lower than budgeted sales

- There is a posetive correlation between sales target and sales achievement. However sales achievement in respect to sales and yet to be achieved
- Correlation analysis shows the posetive relationship between budgeted sales and actual sales
- C.V is found to be marginally higher in comparsion with budgeted sales which indicate that the functionally in budgeted sales and actual sales are almost same
- DNPL does not prepare production budget as separate. They asssume budgeted sales itself is the budgeted production
- Inventory turnover of the company are not satisfactory. Inventory turnover are found to be fluctuating over the past 6 years
- The gross profit margin shows the decreasing trend which signifies the increasing trend of cost of goods sold
- The N.P has not been able to go along with sales
- Operating expenses are in increasing trend which has affected the profit margin
- Provision are in inceasing trend
- DNPL has adopted cost plus pricing strategy. The price is found to be cheaper than Nepal Lever's product
- Sales revenue was found to be very high than BEP which is very good for the company
- There is very high degree positive correlation between profits, cost and sales

The Following Suggestions and Recommendations are:

- DNPL should define the clear long range and short range profit plan formalised approach for accomplishing the planning , cordination and control resposibilities of management
- A systematic approach should be made on implemention of profit plan
- The company should devlop the systematic periodic performance reports
- Veriance analysis should be effectively done
- The company should prepare separate production budget and direct lobour plan
- A separate costing section should be established
- Pricing policy should be revised. Cost plus pricing method should be adopted to fix price
- The company should adopt the effective cost control technique

- There should be continuous flow of information among various level of management and various groups of employees. The goals objectives and strategies should be communicated from top low level
- DNPL has to increase in sales volume to increase in profit. For this comprehensive advertisement campaign should be undertaken
- Acceptance null hypothesis implies budgeting control over sales is remarkable or effective. Thus, attention must be paid on market analysis as well as so that probable change can be incorporate in budget to take advantage of market opportunities and to face the challenges.

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 is the process of a systematic and in-depth study or search of any particular topic, subject or area of investigation backed by the collection, complication, presentation and interpretation of the relevant details or data. It is a careful search or inquiry into any subject matter, which is an endeavourer to discover or find out valuable facts, which will be use full for future application or utilization. The research that involves the discovery of new techniques, a modification of old concepts or a knocking off an existing theory, concept or technique. It may develop a hypothesis and test it by established relationship between different variables and identify the means for problem solving.

Research methodology is the process of arriving at the solution of the problems through a planned and systematic dealing with the collection analysis and interpretation of the facts and figures. The objectives of this study will be to analyze, the CVP relationship in Paramount Carpet Industry and there by forward some measures to improve the situation.

Research methodology is the way to solve systematically about the research problem. It consists of the research design, research population and sample, sources and types of data, variables and method of analysis and presentation.

3.2 RESEARCH DESIGN

The research design is an organization approach and not a collection of loose unrelated parts. It is an integrated system that guides the researcher in formatting, implementing and controlling the study. Useful research design can product the answer to the proposed research questions. The research design is thus an integrated frame that guides the researcher in planning and executing the research works.

Data and information are the lifeblood or major portion of any study. This study would be attempted to show the relationship among cost, volume, profit and various functional budgets for their achievement and effective application within the conceptual framework of profit planning for solving the problems that had accrued in Paramount Carpet. A study design is the arrangement of the conditions for collection and analysis of data in that aims to combine relevancy to the study purpose with the economy in producer. These studies will an intensive based on analysis of the past financial performance.

To fulfill the objective of the study primary as well as secondary data be used and study design will descriptive as well as analytical.

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 carpet producing industries, which exports more than 19000 SQM. All carpet industries are population. It couldn't be possible to attempt all the number of research population in this research. Paramount Carpet Industry is selected as sample of the study.

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 3.1

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 3.2

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 = $\frac{\text{TotalFixedCost}}{\text{SPPU} - \text{VPCU}}$

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

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

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

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

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

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

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

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 $= \frac{\text{Actual/BudgetedSales} - \text{BESales}}{\text{Actual/BudgetedSales}}$

For Multi Product Firm

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

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

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

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

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

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

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

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

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

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

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:

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

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:

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

OR

$r^2 = rxr$

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

CHAPTER-IV

PRESENTATION AND ANALYSIS OF DATA

4.1 Introduction

Profit panning is used for development and acceptance of proper objective and goals for an organization. It is also used to move the organization efficiently to achieve to preset objectives and goals. In profit planning, cost-volume-profit analysis can be the most important devices to utilize the cost with effective and efficient way. CVP analysis has becomes a powerful instrument in managerial decision making specially cost control and profit planning. The CVP analysis is a specially way of presenting and studying the inter-relationship between cost, volume and profit. The basic objective of this study is to examine the presentation practice of CVP analysis and identify the area where CVP analysis could be applied to strengthen the Paramount Carpet Industry. This chapter presents the analysis and interpretation of data.

4.2 Analysis of Budgeted and Actual sale

PCI is the multi-product manufacturing company producing and selling different types of products. The attempt begins to present and analysis the previous budgeted sales and actual sales performance. The following table presents the budgeted and actual sales achievement from fiscal year 2061/62 to 2066/67.

Table No 4.1

Total Budgeted and Actual Sales Volume of PCI(in 000000)

Year	Budgeted sales	Actual sales	Achievement in %
2061/62	1050	561.281	76.36
2062/63	1100	620.592	80.60
2063/64	1000	417.690	59.68
2064/65	1000	508.739	72.68
2065\66	800	366.576	65.46
2066/67	900	415.756	71.46

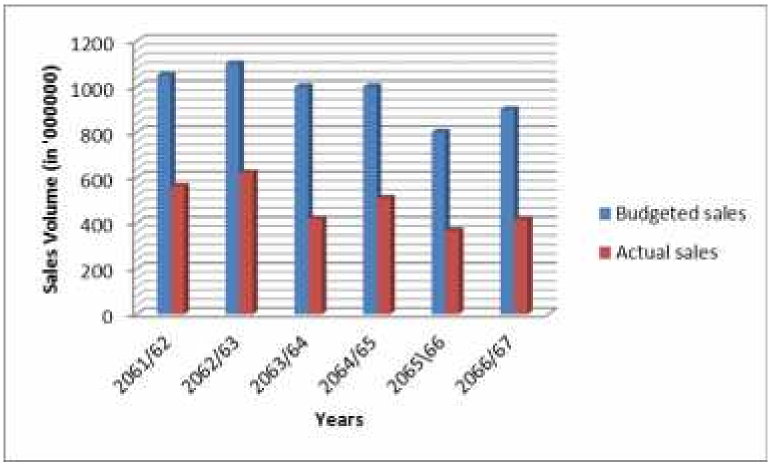
Source: Annual Reports of PCI2060\61 to 2066\67

From the above table, it becomes clear that the total sales unit of PCI is fluctuating. There are various reasons, which cause the variation. The actual sales shown on the table above are according to invoice issued. . The sales revenue, taxation and charges were shown in the balance sheet of the company as current liabilities

The above table shows that there is high gap between actual sales and budgeted sales. The sales trends have unfavorable because actual sales of all fiscal years are very less than budgeted sales. But the percentages of achievement are fluctuating. So, it can be expected that the gap between actual sales and budgeted sales won't be fulfilled in future also. We can present the sales target and achievement more effective by bar diagram and trend line as below.

Figure No 4.1

Actual Sales and Budgeted Sales in Bar Diagram



In order to find out the nature of variability of target sales and sales achievement of different years, we have to calculate arithmetic mean, standard deviation and coefficient of variation of target and achievement figure of PCI for six years. These statically tools are calculated by using spreadsheet method and summarized here under.

Here, Actual sales = X

Budgeted sales =Y

Table no 4.2 Fiscal Year

Summary of statistical calculation of PCI

Statistical Tools	**Actual Sales(X)**	**Budgeted Sales(Y)**
Mean(X)	481.77	975
Standard Deviation (δ)	98.95	89.49
Coefficient of Variation (C.V)	20.53	9.178
Correlation Coefficient (r)	0.89	

Coefficient of determination (r^2)	0.792
Probable Error	0.572

Source: Calculation from appendix-II

The calculation value of different statistical tools presented above in table no. 42 shows that budgeted sales mean is grater than actual sales mean. But standard deviation of actual sales is greater than the budgeted sales. The coefficient of variation of actual sales is more than coefficient of variation of budgeted sales. This shows that the budgeted sales fluctuation less than actual sales for the company. Having smaller C.V budgeted sales are more homogenous or homogenous or less variable or uniform of more consistent that actual sale.

Similarly, the correlation co-efficient between two variable (i.e. Budgeted sales and Actual sales) is 0.879. It shows that there is positive correlation between two variables of the PCI.

The significance of correlation is tested with probable error. The value of correlation coefficient is greater than 6 PE (i.e. 0.51>6×0.035) the calculation value of r is signification for PCI.

Trend Analysis

To analysis 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 sales consistently changes (increase or decrease) with the change in time and such can be expressed by the component of time factor. 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 times (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:

$\sum Y = na + b \sum X$.................. (1)

$\sum XY = a \sum X + b \sum X^2$..................... (2)

Table No 4.3

Calculation of the Trend of Total Sales of PCI (Amount in Rs 000000)

Year(X)	Total Sales(Y)	X= (x-2064/65)	XY	X^2
2061/62	561.281	-3	-1683.843	9
2062/63	620.592	-2	-1241.184	4
2063/64	417.690	-1	-417.690	1

2064/65	508.739	0	0	0
2065/66	366.576	1	366.576	1
2066/67	415.756	2	831.512	4
Total	$\sum Y$=2890.634	$\sum X$=-3	$\sum XY$=(-2144.629)	$\sum X^2$ =19

Therefore, a = 461.79 and b = (39.96)

Thus, y = 461.79 + (39.96) X, is the trend line of sales figure which shows the positive sales revenue in the future.

By using this trend equation we can estimate actual sales, for the F/Y 2067/68

Y = 461.39+(39.96)×3 =Rs. 341,910,000

Therefore, if the trend doesn't changes, the possible sales for year will be Rs 341,910,000

4.2.1 Analysis of Sales for Selected Product Lines

Three product lines 150 kount 100 kount and 60 kount are selected for further analysis and interpretation the following table shows the sales figure of selected product lines.

Table No 4.4

Sales figure of selected product lines (Rs in 000)

Fiscal Year	150kont			100kont			60kont		
	Rs	SQM	USP(RS)	Rs	SQM	US P(RS)	Rs	SQM	USP(RS)
Ref	1	2	1÷2=3	4	5	4÷5=6	7	8	7÷8=9
061/62	12133	12133	10000	20120.	22355.5	9000	50431	6003.69	8400
062/63	13000	12322.27	10550	20800	21666.7	9600	55125	6409.88	8600
063/64	7125	6477.27	11000	12120	11824.3	10250	41232	4717.62	8740
064/65	9132	8081.41	11300	14120	13447.6	10500	50313	5602.78	8980
065/66	6452	5467.79	11800	10232	9452.19	10825	37123	4124.7	9000
066/67	8321	6710.48	12400	11230	9721.65	11500	32326	3298.57	9800

Source: Annual Reports of PCI 2061/62 to 2066/67

The above table shows that the

sales figure is in increasing trend. Higher sales volume recovers higher portion of fixed cost, and it assists to maximize profit. The unit selling price (USP) is calculated by dividing total sq. m. sold (unit) to total sales revenue. Total sales and total sq. m. are not speared as different sizes like 70/140, 140/200 etc. The company had not proper sales records of different size of product lines. The unit-selling price of the 150 kont,100 kont & 60 kont was in fluctuation condition. The number of unit sold of selected product lines was growing trend. By using time series regression equation the forecasted sales of 150kont, 100kont and 60kont for FY 2067/68 is Rs 56908200, Rs.73549500 and Rs 3088000 respectively. (Appendix III).

4.3 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 4.5

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

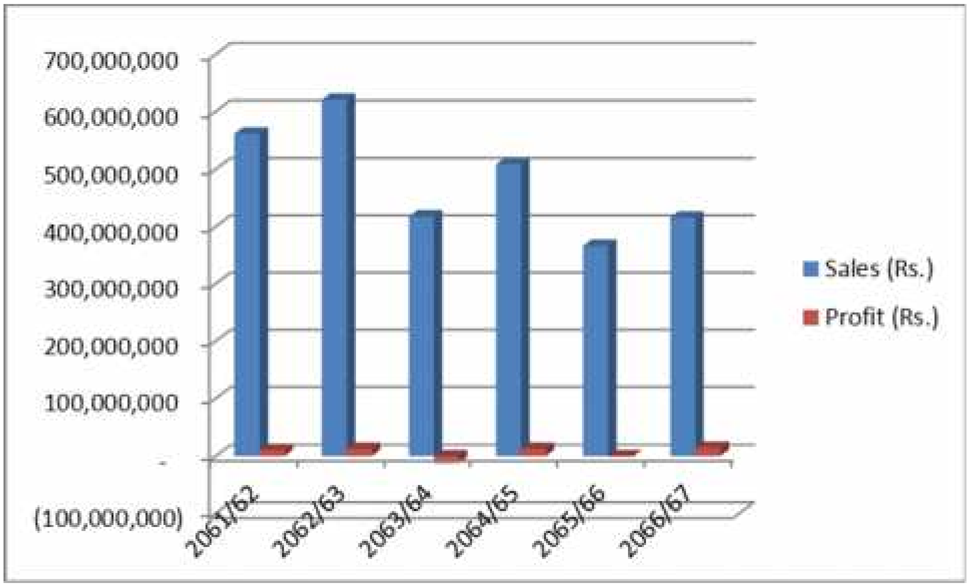
Year	Sales		Profit	
	Rs.	% Change	Rs.	% Change
2061/62	561281000	114.13	10331237	33.28
2062/63	620592000	10.56	12755260	23.46
2063/64	417690000	(32.56)	(12629308)	(199)
2064/65	508739000	21.79	12466047	198.7
2065/66	366576000	(27.94)	(976873)	(107.83)
2066/67	415756000	(11.82)	14408797	147.49

Source Annual report of PCI (2061/62 to 2066/67)

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 2061/62, 2062/63, 2063/64, 2064/65, 2065/66 and 2066/67 respectively. It can be expressed in bar diagrams computing the sales trend with profit (loss) trend.

Figure no 4.2

Sales and Profit Pattern



4.4 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.

4.4.1 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.

Table no 4.6

Fixed Cost Details of PCI

Details\Years	2061/62	2062/63	2063/64	2064/65	2065/66	2066/67
Repair & Maintenance	50000	51322	50325	54085	56089	58076
Electricity	145728	152579	180933	191334	190267	190070
Telephone	42660	43290	39680	51857	65955	68725
Water	10350	9750	10020	10882	10568	14332
Salary	145200000	16000000	18000000	20000000	22000000	20120000
Deprecation	1000000	1000000	1000000	1000000	1000000	1000000
Audit Fees	100000	100000	120000	120000	120000	120000
Rent	800000	880000	970000	1080000	1200000	1500000
Bank Charge	900000	1100000	900000	1100000	850000	90000
Export Expenses	30000000	3600000	4200000	4800000	5000000	490000
Interest On Loan	25493000	24535000	21667000	2078800	2078800	4078000
Insurance Charges	2161000	2079000	2401000	3290000	3790000	5200453
Total Fixed Cost	49434238	49550941	4938958	33776958	31861679	32929656

Source Annual report of PCI (Fiscal Year 2061/62 to 2066/67)

The items included in the field cost production expenses all are semi-variable cost. The amount shown in the table above regarding Telephone, water, electricity and repair and maintenance were segregated into fixed cost.

Similarly, the items included in the fixed selling and distribution expenses and administrative expense, all are fixed cost nature.

Salary and wages of production department increasing trend all year. The rent expenses are in increasing trend up to all year. The deprecation expenses are Fixed pattern all year.

The bank charge and insurance charge are fluctuating nature. The audit fee is increasing nature. The export expenses is increasing trend. AT last the interest on loan is decreasing trend.

4.4.2. Analysis of fixed cost for selected product lines

The specific fixed cost for selected product lines are shown in the below.

Table no 4.7

Specific Fixed Cost for Selected Product Lines

Fiscal year	60kont(RS)	100kont(RS)	Bl150kont (Rs)
2061/62	26373900	11691256	6345232
2062/63	32380790	10945351	6224800
2063/64	35692381	8946031	4900547
2064/65	24400680	5856564	3519356
2065/66	23398067	5361915	3101697
2066/67	24069407	5956149	2904100

Source Annual report of PCI (2061/62 to 2066/67)

The specific cost of the selected product lines are segregated on the basis of Production Proportion. The specific fixed costs of selected product lines are increasing annually. By using time series regression equation the forecast fixed cost of 150kont, 100 kont and 60 kont for F/Y 2067/68 are Rs 1703672.66, Rs. 2208013.33 and Rs. 19267202 respectively and total fixed cost is 21504500.74 (Appendix IV).

4.4.3 Analysis of Variable Cost

Variable costs are those in which the total cost are assumed to change in direct proportion to changes in volume/out put within the relevant range, while the unit cost remains constant, variable cost appear on a graph as a straight line with a positive slope, the lines rises as the production volume increases.

To produce finished goods and transfer these goods to the market, the company bears different types of variable cost. The company's variable cost per unit is varying in different years according to PCI's cost detail sheet; the variable costs are presented in the table below.

Table no 4.8

Statement of Detail Variable Cost of PCI

Details\Years	2061\62	2062\63	2063\64	2064\64	2065\66	2066/67
Materials used	441006500	487608000	328185000	399723500	288024000	318202300
Repair $ Maintenance	200000	205288	201301	216340	224356	246354
Electricity	1068672	1118911	1326841	1403116	139588	1513927
Telephone	383940	389610	357120	466718	593595	596270
Water	58650	55250	56780	61668	59882	57268
Wages	639320	101210	1000000	2400000	2400000	23400000
Transportation	4473749	8588130	8081230	8381250	7172520	8283143
Traveling	1650000	2350000	2125000	2450000	17200000	2230000
Sampling	1200000	1400000	1600000	1700000	2100000	1500000
Administrative	2650000	2450000	2200000	2000000	1800000	2100000
Other Mis Expenses	74894	99610	44488	87203	37453	96250
Total Variable Cost	453405725	505092199	34485350	418889795	304270394	358225512

Source: Annual Reports of PCI2061/62 to 2066/67

The costs of material consumed are included raw materials, weaving charge and packaging material. The costs of material consumed are included direct expenses of purchase. Telephone charge, water charge, electricity charge, and repair and maintenance are semi-variable cost nurture. It is separated as fixed and variable cost and cost variable cost portion is shown in the table above. Out of these items are variable cost natures.

Similarly, all items under Variable cost expenses are variable cost nature. Material consumed transportation Telephone, water, and electricity expenses are fluctuating nature. Only sampling expense is increasing annually. Water charge is 2065\66 is decreased on the comparison of other year and electricity also same condition. But other year is increased both. Repair and maintenance is increased all year. Other expenses of cost of goods sold and miscellaneous expenses are fluctuating, and administrative expense is decreasing.

The total variable cost is highly increased in the F/Y 2062/63 to Rs. 505092199 from Rs 453405725, which is 11.39% of the F/Y 2061/62. In the year 2063/64, the total variable cost is decreased by 31.72% from Rs 505092199 and reached to Rs. 344856350. In the F/Y 2064/65, the variable cost reached to Rs. 418889795 by increasing 21.46% as compared to F/Y 2063\64. In the final year of the study i.e. 2065/66 the variable cost is decreasing by 27.36% and reached to Rs 304270394 from Rs 418889795 of the previous year 2064\65. In the final year of the study i.e. 066107 thevariable cost is increasing 15.06% and reached to Rs. 358225512 from Rs. 304270394. Therefore, the total variable cost of the PCI is fluctuating annually. By using time series regression equation the expected variable cost for F/Y 2067/68 is Rs. 322935620.70 (Appendix VI).

4.4.3.1 Analysis of Variable Cost for Selected Product Lines

The variable costs for different product lines are not same. Different product line had different combination of material, labor and other expenses. Since, not availability of detail variable cost item of each selected product lines are presented lines, the total variable cost and unit variable cost of selected product lines are presented at total form in the table below.

Table no 4.9

Statement of Variable Cost for Selected Product Lines

Particular	2061/62	2062/63	2063/64	2064/65	2065/66	2066/67
150 kont						
A. Total Variable cost	90997500	97500000	53437500	68490000	48390000	61736416
B. Production in SQM	12133	12322.27	647727	8081.41	5467.79	6710.48
C. Unit variable cost (A÷B)	7500	7912.50	8250	8475	8850	9200
100 kont						
A. Total Variable cost	120720000	124800000	72720000	84720000	61392000	65961395
B. Production in SQM	22355.5	21666.67	11824.39	13447.6	9452.19	9721.65
C. Unit variable cost (A÷B)	5400	5760	6150	6300	6495	6785
60 kont						
A. Total Variable cost	22693950	24806250	18554400	22640850	16705350	13569404
B. Production in SQM	6003.690	6409.88	4717.62	5602.783	4124.7	3285.57
C. Unit variable cost (A÷B)	3780	3870	3933	4041	4050	4130

Source: Annual Report of PCI (FY 2061/62 to 2066/67)

The total variables costs of selected products lines are increasing causes of increase in production units. The variable cost of 150kont is increasing all year. Similarly, unit variable cost of 100kont and 60kont are increase. Internal and external environment, managerial decisions, productions process and technology factor affect to change in variable cost. Increasing unit selling price and also increasing unit variable cost is negative signal of higher CM per unit it helps to maximize operation profit. By using time series regression equation the expected variable costs of 150kont, 100kont and 60kont for F/Y 2067/68 are Rs , Rs. 42233601, Rs 5609843 and 1324446 respectively. (Appendix-V)

4.4.4 Analysis of Semi-Variable or Semi-Fixed Costs

The semi variable costs are the one which remain same for certain relevant range and then change as per the activity level. Semi variable expenses have some of the characteristics of both fixed and variable costs. Semi variable expenses are changed by combined effect of passage of time, activity/ output and management discretion decision. The company PCI had also incurred some costs like semi variable or semi fixed costs nature, which is shown in the table below.

Table No 4.10

Statement of Semi variable Costs

Particulars	2061/62	2062/63	2063/64	2064/65	2065/66	2066/67
Repair & maintenance	250000	256610	251626	270425	280445	262045
Electricity	1214400	1271490	1507774	1594450	1585555	1483222
Telephone	426600	432900	396800	518575	659550	690500
Water	69000	65000	66800	72550	70450	75550

Source: Annual Report of PCI (FY 2061/62 to 2066/67)

The company has not particular method to segregate the semi-variable costs into fixed and variable cost. According to the high financial officer and other managerial personal, semi-variable costs are classified into variable and fixed by relevancy, their nature and the judgment of the related officers. The total semi-variable costs are increasing causes of increasing in production units from F/Y 2003/04 to 2007/08. By using time series regression equation the expected semi-variable cost for F/Y 2067/68 is Rs 3218830 (Appendix VI)

To simplify the problem discussion were done with company's senior officers or PCI. At last, the above mentioned semi variable costs were classified into variable and fixed as per the suggestion and details given by the senior staffs of the company. The semi variable costs variable costs are classified in the following way, which is shown in the table below.

Table No 4.11

Classification of Semi-Variable Cost

Particulars	2061/62	2062/63	2063/64	2064/65	2065/66	2066/67
Production Expenses						
Repair & maintenance	250000	256610	251626	270425	280445	262045
Electricity	1214400	1271490	1507774	1594450	1585555	1483222
Telephone	426600	432900	396800	518575	659550	690500
Water	69000	65000	66800	72550	70450	75550
Total SVC	1960000	2026000	2223000	2456000	2596010	2511317
Variable Cost						
Repaire& maintenance80%	200000	205288	201301	216340	224356	209636
Electricity88%	1068672	1118911	1326841	1403116	139588	1305235
Telephone90%	383940	389610	357120	466718	593595	621450
Water 85%	58650	55250	56780	61668	59882	64217
Total VC	1711262	1769059	1942042	2147842	1017421	2200538
Fixed Cost						
Repair & maintenance20%	50000	51322	50325	54085	56089	52409
Electricity12%	145728	152579	180933	191334	190267	177986
Telephone10%	42660	43290	39680	51857	65955	69050
Water 15%	10350	9750	10020	10882	10568	11332
Total FC	248738	256941	280958	308158	1578589	310777

Source: Annual Reports of PCI 2061/62 to 2066/67

4.5 Analysis of Sales and Cost Relationship of PCI

Cost structure refers to the relative proportion of fixed and variable cost in an organization. There is no categorical answer possible of which cost structure is best. A firm might have many fixed costs but few variable cost or mixed cost and vice versa. A firm’s cost structure can have a significant impact on decision; in the matter of risk etc. company with high fixed cost will incur losses much more quickly than the company with lower fixed cost if the reversionary condition strikes the industry. In sum, company with high fixed cost will experiences wider movement in net income as changes take place in sales, with greater profit in good year and greater loss on year. Company with low fixed cost will enjoy some what greater stability in net incomes, but if will do so at the risk of losing substantial profit if sales trend upwards in the long run.

The cost analysis of PCI is briefly analyzed in the below table no 4.12 for the fiscal year from 2061/62 to 2066/67.

Table No 4.12

Cost Structure Analysis of PCI (Rs.000)

Fiscal year	Sales revenue	Total VC	Total FC	Total Cost
2061/62	561281000	501515525	49434238	550949763
2062/63	620592000	55828579	49550941	607836740
2063/64	417690000	380780350	49538958	430319308
2064/65	508739000	462495995	33776958	496272953
2065/66	366576000	335691194	31861679	67552873
2066/67	415756000	375231200	32929656	408160856

Source: Annual Report of PCI (FY 2061/62 to 2066/67)

Table No 4.13

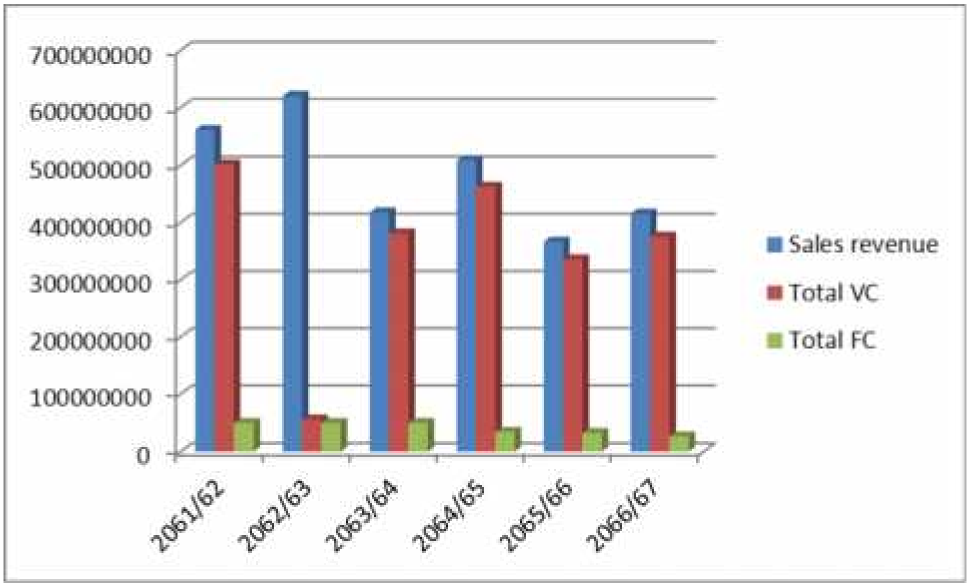
Cost Structure Analysis of PCI in Percentage

Particular	2061/62	2062/63	2063/64	2064/65	2065\66	2066/67
% of variable cost to total cost	91.02	91.84	88.48	93.19	91.33	93.49
% of variable cost to sales revenue	89.35	89.96	91.16	90.91	91.57	90.25
% of variable cost increase	14.78	10.16	(31.79	21.46	(27.41)	9.05
% of fixed cost to total cost	8.98	8.16	11.52	6.81	8.67	8.07
% of fixed cost to sales	8.8	7.98	11.86	6.64	8.69	7.92
% of sales increase	14.13	10.56	(32.69)	21.79	(27.94)	13.34

Source: Annual Report of PCI (FY 2061/62 to 2066/67)

Table No.4.13 presented above shows that the proportion of variable cost and fixed cost of PCI for fiscal year 2061/62 to 2066/67 are 91.02 %, & 8.98%, 91.84% & 8.16%, 91.84% & 8.16%, 88.48% & 11.52%, 93.19% & 6.81%, 91.33% & 8.67% and 93.49% & 8.07% respectively. Overall the proportion of variable cost is higher than the fixed cost of the company. Similarly the proportion of variable cost and fixed cost to total sales of PCI for the F/Y 2061/62 to 2066/67 are 89.35% & 8.8%, 89.96% & 7.98%, 91.16% & 11.86%, 90.91% & 6.64%, 91.57% & 8.69 and 90.25% & 7.92% respectively. Here, the proportion of variable cost to sales revenue is almost higher but the proportion of fixed cost to sales revenue is changing. Again, the percentage of sales also changing and the percentage of variable cost of PCI for the F/Y 2061/62 to 2066/67 is 10.16% & 10.56%, (31.79)% & (32.69)%, 21.46% & 21.79%, (27.41)% & (27.94)% and 9.85% & 13.34% respectively. It shows that when sales fluctuating then the variable cost also fluctuating. The relationship between sales revenue, fixed cost and variable cost of PCI can be shown in the bar diagram which is presented below

Figure No 4.3 Sales, FC & VC Trend of PCI



4.6 Cost-Volume-Profit Analysis of PCI

Cost volume profit is management accounting tool to show the relationship between the ingredients of profit planning. Profit planning is the function of selling price of the product and unit sold. The entire gamut of profit planning is associate with CVP interrelationship. CVP analysis is the technique that explores the relationship, which exists among costs, revenue, output level and resulting profit. Cost-Volume-Profit analysis can be extended to cover the effects of changes in selling prices or services fees, cost, income tax rate and product mix. The aim of CVP analysis is to have a fair estimate of total costs, total revenue and profit at various sales volumes. CVP analysis provides the management with the 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 costs. CVP analysis helps to determine the minimum sales volume to avoid losses and the sales volume at which the profit goal of the company will be achieved. And this analysis is possible only when the management has information about variable and fixed costs and selling price of the product or sales revenue. On the calculation of BEP in PCI, following assumptions should be considered:-

Activity base is selected in term of sales revenue

The concept of cost variability is valued so cost can be classified as fixed and variables

Other type of income (non operating income) is not included in the revenue

There is no opening and closing stock

Sales mix ratio among the product remain costing

Table 4.14

Income Statement of PCI for the F.Y. 2061/62 - 2066/67

Items / Year	2061/62	2062/63	2063/64	2064/65
A. Sales Revenue	561281000	620592000	417690000	508739000
B. Variable Cost: Total Variable Cost	501515525	558285799	380780350	462495995
C. Contribution Margin (A-B)	59765475	62306201	36909650	462430005
D. Fixed Cost: Total Fixed Cost	49434238	49550941	49538958	33776958
E. Profit (Loss) (C-D)	10331237	12755260	(12629308)	12466047
F. P/V ratio = (CM/Sales)	0.1065	0.1004	0.0808	0.0909
G. BEP = (FC/P/V ratio)	464171249	493535269	562942704	371583696
(A-G)	97109751	127056731	(145252704)	137155304

Source: Annual Report of PCI (F/Y 2061/62 to 2066/67) base on table no 4.1, 4.6 and 4.8

4.6.1 Computation of BEP

To fulfill the objectives of the study, BEP and other related computation are necessary to complete. These are BEP in Rs. For the entire form of the company, BEP in units and Rs. Of selected product lines, BEP percentage of capacity and cash BEP etc.

4.6.1.1 Analysis of BEP in Rupees for the Entire Company

The table no 4.14 shows that the BEP in Rs. Of each fiscal year 2063\64 is very high than actual sale. In other words, the actual sale of each fiscal year 2063\64 is not reached at BEP. But other fiscal year is good. It indicates that the company has fluctuated at that point because of the political instability and economic inflection. The actual sales of F/Y 2061/62, 2062/63, 2063/64, 2064/65, 2065/66 and 2066/67 are Different in BEP by Rs. Rs. 97109751, Rs. 1127056731, Rs. (145252704), Rs. 137155304, Rs. 208194 and Rs. 77669183 respectively.

Causes of higher BEP

Low actual sales and high variable cost: Since actual sales of each fiscal year were low, this results the lower contribution margin course of higher variable cost.

Low CM Ratio: Since low sales and low contribution margin, the CM ratio was less than 20%. The low CM ratio recovers low portion of fixed costs, this results there were need of high sales revenue to reach at BEP.

Higher the Fixed Costs: The fixed cost of PCI is increasing every year. Not recovery of higher portion of fixed cost results higher BEP.

Comparatively low difference between actual sales and BEP sales were the results of increasing CM ratio and decreasing fixed costs to variable cost ratio. By using time series regression equation the expected BEP for F/Y 2067/68 is Rs. 265815989.8 (Appendix-VII)

4.6.1.2 Computation of BEP for selected product lines.

To find out either sales revenue of selected product lines were met the BEP, for selected product lines assists to analysis, which product is profitable and which one is poor, or which needs to push, or continue or drop. The following tabular computation shows the BEP of selected product lines.

Table No 4.15

Computation of BEP for Selected Products Lines

Particular	2061/62	2062/63	2063/64	2064/65	2065/66	2066/67
150 kont A. Specific Fixed Costs (Rs)	6345232	6224800	4900547	3519356	3101697	2904100
B. Unit Selling Price (Rs)	10000	10550	11000	11300	11800	12400
C. Unit Variable Costs(Rs)	7500	7912.50	8250	8475	8850	9200
D. CM per unit (Rs)(B-C)	2500	2637.5	2750	2825	2950	3200
E. CM Ratio (D÷B)	0.25	0.25	0.25	0.25	0.25	0.25

Particular	2061/62	2062/63	2063/64	2064/65	2065/66	2066/67
F. BEP in units (A/D)	2538	2360.11	1782	1245.79	1051.42	907.53
G. BEP in Rs.	25380000	24899160	19602000	14077427	12406756	11253372
H. Actual Sales in units	12133	12322.27	6477.27	8081.41	5467.79	6710.48
(H-F)	9595	9962.16	4695.27	6835.62	4416.37	5802.95
100 kont:- A. Specific Fixed Costs (Rs)	11691256	10945351	8946031	5856564	5361915	4356149
B. Unit Selling Price (Rs)	9000	9600	10250	10500	10825	11500
C. Unit Variable Costs(Rs)	5400	5760	6150	6300	6495	6785
D. CM per unit (Rs)(B-C)	3600	3840	4100	4200	4330	4715
E. CM Ratio (D÷B)	0.4	0.4	0.4	0.4	0.4	0.41
F. BEP in units (A/D)	3247.57	2850.38	2181.96	1394.42	1238.31	923.891
G. BEP in Rs.	29228130	27363360	22365090	14641410	13404706	10624754
H. Actual Sales in units	22355.5	21666.67	11824.39	13447.6	9452.19	9721.65
(H-F)	19107.98	18816.32	9642.43	12053.18	8213.88	8797.76
60 kont:- A. Specific Fixed Costs (Rs)	26373900	32380790	35692381	24400680	23398067	18855754
B. Unit Selling Price (Rs)	8400	8600	8740	8980	9000	9800
C. Unit Variable Costs(Rs)	3780	3870	3933	4041	4050	4130
D. CM per unit (Rs)(B-C)	4620	4730	4807	4939	4950	5670
E. CM Ratio (D÷B)	0.55	0.55	0.55	0.55	0.55	0.55
F. BEP in units (A/D)	5575.877	6845.83	7425.08	4940.41	4726.88	3325.53
G. BEP in Rs.	46837367	58874138	64895199	443648818	42541200	32590192
H. Actual Sales in units	6003.69	6409.88	4716.72	5602.783	4124.7	3298.57
(H-F)	427.813	435.95	(2708.36)	662.373	(602.18)	(26.96)

Source: Annual Report of PCI (F/Y 2061/62 to 2066/67) base on table no 4.4, 4.7 & 4.9.

The BEP in SQM of 60 kont is Lower than actual sales of all fiscal year. In other word, the actual sales of 60kont crossed the BEP expect 2063/64 2065/66 & 066/67. The actual sale is excess than BEP by 435.95 SQM, 662.373 SQM, than other are below the BEP, they are (2708.36)SQM, (602.18) & (26.96) of F/Y, 2063/64, 65/66, & 2066/67 respectively. The BEP in rupee is also calculated in the above. The contribution margin per SQM is in constant condition, because the contribution margin is higher, but actual sales is crossed the BEP. The main cause of that is lower the fixed cost. Another way, the product had produced has produced at huge quantity, where high portion of fixed cost is utilized that directly increases than operating profit.

100 and 150 kont were started to produce and distribute from F/Y 2061/62. The contribution margins of 100kont and 150kont are in also constant condition. But the CM ratio of 150kont is0.25 all year and CM ratio of 100kont is 0.44. Constant the CM ratio indicates utilization of same portion of variable cost and vice versa. In this way actual sales of 150kont and 100kont are also crossed the BEP. The actual sale of 150kont is higher than BEP by 9595SQM, 9962.16SQM, 4695.27SQM, 6835.62SQM, 4416.37SQM and 5802.95 SQM of F/Y 2061/62 to 2066/67 respectively. The actual sale of 100kont is also higher than BEP by 19107.93SQM, 18816.32SQM, 9642.43SQM, 12053.18SQM, 8213.88SQM and 8797.76SQM of F/Y 2061/62 to 2066/67 respectively. So, these two products lines are also in profitability.

The two-product lines 150kont and 100kont are producing and distributing under the customer demand. The products were well established may years ago. As a result, extra product launch cost, advertisement and other fixed costs are saved. Causes of lower fixed costs, mass production and customer demand, the 150kont crossed the BEP. In addition, the 100kont is crossed the BEP. By using time series regression equation the expected BEP of 60kont, 150kont and 100kont for F/Y 2067/68 are Rs. 342739100, Rs.668095000 and 267626000. respectively (Appendix – VII)

4.6.1.3 Computation of BEP as Percentage of Capacity

In the case of entire from of the company, the computation of BEP as percentage of estimated sales may be suitable rather than capacity. It is known that PCI is the manufacturer of multiple products. The BEP of PCI had calculated in Rupees for entire from. The following table shows the computation of BEP as percentage of estimated sales of PCI

Table No. 4.16

Computation of BEP as percentage of Capacity

Particular	2061\62	2062\63	2023\64	2064\65	2065\66	2066/67
A. BEP in Rs	464171249	493535269	562942704	371583696	366367806	268131447
B. Estimated	1050000000	1100000000	1000000000	1000000000	8000000000	9000000000

sales						
C. BEP as percentage of estimate sales (A/B×100)	44.20%	44.86%	56.29%	37.16%	45.79%	29.79%

Source: Annual Report of PCI (F/Y 2061/62 to 2066/67) base on table no 4.1 and 4.14

From the above table, BEP in Rs. F/Y 2061/62 to 2066/67 are 44.20%, 44.86%, 56.29%, 37.16%, 45.79% and 29.79% of corresponding estimated sales. Of the company would be met the estimated sales, there would be profit.

Similarly, computation of BEP as percentage of capacity had possible to compute regarding selected product lines. The production capacity of PCI is to produce 400 SQM daily where six categories of products. 150kont, 100kont, 60kont, Palpa, Banana shaggy and 80kont are produced in the combined form regularly. To total production of six products might be not more than 400SQM daily. Following the computation shows the annual production capacity.

Annual production capacity = Daily production capacity × Working days in year

= 400 × 300 days (assumed)

= 120000 SQM.

Following table shows the computation of BEP as percentage of capacity for selected product lines.

Table No 4.17

Computation of BEP as percentage of capacity for selected product lines

Particular	2061/62	2062/63	2063/64	2064/65	2065/66	2066/67
A. Annual production capacity (SQM)	120000	120000	120000	120000	120000	12000
150 kont B.BEP In Units (SQM)	2538	2360.11	1782	1245.79	1051.42	907.53
C.BEP/production capacity [B/A × 100]	2.15%	1.97%	1.485%	1.039%	0.88%	0.76%
100 kont D.BEP In Units (SQM)	3247.57	2850..35	2181.96	1394.42	1238.31	923.89
E.BEP/production capacity [D/A × 100]	2.7%	2.3%	1.8%	1.1%	1.00%	0.77%
60kont F.BEP In Units (SQM)	5575.877	6845.83	7425.08	4940.41	4726.88	3325.53

G.BEP/production capacity [F/A × 100]	4.6%	5.7%	6.1%	4.1%	3.9%	2.77%
H. Total BEP in SQM (B+D+F)	11361.447	12056.29	11389.04	7580.62	7016.610	5157.25
I. Total BEP/Production capacity [H/A × 100]	9.4%	10%	9.4%	6.3%	5.8%	4.30%

Source: Annual Report of PCI (F/Y 2061/62 to 2066/67) base on table no 4.15 and the memorandum of the company

From the above table, BEP in cases of 150kont is recovered only 2.15%, 1.97%, 1.485%, 1.039% and 0.88%, and 0.76 in the F/Y 2061/62 to 2066/67 respectively. The 100kont's BEP as percentage of capacity is 2.7%, 2.3%, 1.8%, 1.1%, 1.00% and 0.77 in F/Y 2061/62 to 2066/67 respectively. Similarly, BEP as percentage of capacity of 60kont is 4.6%, 5.7%, 6.1%, 4.1% , 3.9% and 2.77% in F/Y 2061/62 to 2066/67 respectively. Its percentage is also increased expect in F/Y 2064/65 and 2065\66. The total BEP in SQM of selected product lines are 11361.447SQM, 12056.29SQM, 11389.04SQM, 7580.62SQM, 7016.61SQM 5157.25SQM in F/Y 2061/62 to 2066/67 respectively. Selected three product lines are utilized the total production capacity by 9.4% 10%, 9.4%, 6.3%, 5.8% and 4.30% in F/Y 2061/62 to 2066/67 respectively.

4.6.1.4 Computation of Cash BEP of PCI

Table No. 4.18

Computation of Cash BEP of PCI

Particular	2061/62	2062/63	2063/64	2064/65	2065/66	2066/67
A. Total Fixed costs (Rs.)	49434238	49550941	49538958	33776958	31861679	32929656
B. Deprecation (R	1000000	1000000	1000000	1000000	1000000	1000000
C. Net Fixed Costs in Rs. (A-B)	48434238	48550941	47538958	32776958	30861679	31929656
D. D. Total Sales	561281000	620592000	417690000	508739000	366576000	415765000
E. Debtors (Rs.)	949413	1360867	18143958	21182367	12852160	18418390
F. Cash sales Rs. (D-E)	560331587	619231133	399546042	487556633	353723840	397346610
G. Variable Cost in Rs.	501515525	558285799	380780350	462495995	335691194	375231200
. Contribution Margin (F-G)	58816062	60945334	18765692	25060638	18032646	22115410
I. CM Ratio (H÷F)	0.104	0.098	0.046	0.051	0.05	0.056
J. Cash BEP in	46571382	495417765	103345560	642685450	61723580	5701724

Rs.(C/I)	7		8			29
(F-J)	94617760	123813368	-633909566	--155128817	29200260	-172825819

Source: Annual Report of PCI (F/Y 2061/62 to 2066/67) base on table no 4.1, 4.6 and 4.8

The cash BEP in Rupees in computed at entire from of the company. The following table shows the computation of cash BEP in Rs. of PCI for F/Y 2061/62 to F/Y 2066/67.

The cash sales of F/Y 2061/62 to 2062/63 are reached at cash BEP and 2064/65 to 2066/67 are not reached at cash BEP. So, out of debtors and depreciation, the company had at profitability condition in F/Y 2061/62, 2062/63 and 2063/64. The expected cash BEP in F/Y 2067/68 is Rs. 346790556 (Appendix-VIII)

4.6.2 Break Even Analysis of Multi-Products & Sales Mix.

Sales mix can be defined as the relative combination of product represented in the total sales. Most companies have several products, and PCI has also more than 6 products, which are not equally profitable. Profit depends to some extent on the sales mix that company is able to achieve. Profit will be greater if high margin items make up a relatively large proportion of total sale consist mostly low margin items.

The break even analysis of multi product company like as PCI is complex because different products will have different selling prices, different costs and different contribution margins. Break even point depends on the mix which the various products are sold.

$$\text{Over BE sales} = \frac{Totalfixed\cos t}{AverageWeightedCMRatio}$$

For PCI,

Overall BE sales = 32929656/0.3655 = 90094817

The details calculation is presented in appendix –XII. The sales mix and CM ratio of each product are classified on the basis of sales. In the calculation, the break even point of PCI is Rs. 265815989.8 in sales for the F/Y 2066/67. This is computed by dividing the fixed costs by the company's average CM ratio. But Rs. 90082470.03 represents BEP for the company. If the sales mix changes, than the BEP will be change. The details sales of each product of PCI at BEP for the F/Y 2066/67 are presented below in table no 4.19.

Table No. 4.19

Product wise BEP sales of PCI

S.N	Products	Sales('000)	Sales mix	Product wise BEP

				(overall BEP × Sales mix)
1.	150kont	83209952	0.37	30787682
2.	100kont	111798975	0.49	54781497
3.	60kont	32325986	0.14	4525638
Total		227246713		90094817

Source: Base on Appendix XII

4.6.2.1 Comparison of Individual BEP and Overall BEP of Selected Products

The following table shows the individual and overall BEP of selected products:-

Table No 4.20

Comparison of BEP

S.N.	Products	Individual BEP	Products Wise BEP
1.	150kont	83209952	30787682
2.	100kont	111798975	54781497
3.	60kont	32217786	4525638
	Overall BEP		90094817

Source: Base on table no.4.15 and 4.19

In the above table, individual BEP of each product is less than the product wise BEP. This is due to the fixed cost. In the individual BEP, we use the separate fixed costs of the respective product. But in the overall BEP we use the total fixed cost of the company as a whole to calculate the BEP. The main cause of difference between individual BEP and product wise BEP is fixed cost plays the vital role in cost-volume and profit analysis.

]4.6.3 Analysis of Contribution Margin

Contribution Margin is the different between sales amount and variable cost. In other words, fixed cost plus the amount of profit is equivalent to contribution margin. Contribution margin can be as follows:-

Contribution margin (CM)= Sales value – Variable cost

Or

Contribution margin (CM) = Profit + Fixed Cost

The analysis of contribution margin is divided into two parts, which are:

Analysis of contribution margin is entire from of PCI, and

Analysis of contribution margin for selected product lines.

4.6.3.1 Analysis of Contribution Margin in Entire form of PCI

The contribution margin is fluctuating trend form F/Y 2061/62 to F/Y 2066/67 according to previous table no 4.14. The contribution margin ratio is also fluctuating trend. Fluctuating the CM ration is indicated that uncertainty of fixed costs. But this ratio is less than 20%. Since higher fixed cost at increasing trend; and lower CM ratio, the company actual sales are crossed at BEP. Except 2063/64. For higher CM ratio, sales must be increasing and variable must be decreased. Other way fixed cost should be constant or controlled or sales and production should be done in mass.

4.6.3.2 Analysis of Contribution Margin for Selected Product Lines

According to table no 4.15, the contribution margin of 150kont is in increasing condition. The CM ratio are less than 30%, But the CM ratio are 25% all year. In sprit of lower CM ratio, the actual sales 150kont are crossed the BEP. Causes is that lower fixed costs and comparative maximum production and sales.

Similarly, the contribution of 100kont is in also increasing condition but CM ratio is also in constant condition. The CM ratios are higher than 30% ie40% all year, lower fixed costs and market monopoly sales, the product had also crossed the BEP.

Another product, 60kont the Contribution margin is in increasing condition too. The CM ratio is in constant trend too. The CM ratios are more than 30% ie 55% all year. Since, lower fixed costs and mass production and selling, 60knt had crossed the BEP.

In this way, the CM ratios of selected product lines are nearly and higher 30%. To increase the CM ratio of selected product and variable cost should be minimized as far as possible by using proper decision making

4.6.4 Analysis of Safety Margin of PCI

The margin of safety (MOS) can be defined as the excess of sales over the break even volume of sales. It states the amount by which sales can drop before to be incurred in an organization. The formula for its calculation is:-

Margin of safety (MOS) = Total sales – Break even sales

Although the PCI is not reached at BEP and its CM ratio is also low. In addition to find out either high or low margin of safety of PCI, it is needed to compute margin of safety. It is known that high margin of safety is particular significant in times of depression. Following the table shows margin of safety in entire form of the company.

Table no 4.21

Computation of MOS of PCI

Particulars	2061\62	2062\63	2063\64	2064\65	2065\66	2066/67
A. Budgeted sales (Rs)	1050000000	1100000000	1000000000	1000000000	800000000	900000000
B. BEP in Rs	464171249	493535269	562942704	371583696	366367806	268131447
C. Margin of safety (A-B)	585828751	606464731	437057296	628416304	433632194	631868553
D.MOS ratio (C/A × 100)	55.80%	55.14%	43.69%	62.8%	54.2%	70.20%

Source; Annual Report of PCI (F/Y 2061/62 to 2066/67)

According to table no 4.21, MOS ratio is high all year. The high MOS ratio is the result of low CM ratio. Since, low actual sales comparative than BEP, there are not raised condition of suffering fluctuation regarding sales fall, because actual sales are fluctuating annually.

When actual sales be crossed BEP and there be arise low CM ratio and MOS ratio then the management should be think of the possibilities of increasing the price of sales or reducing variable cost by adopting in the manufacturing process.

Similarly, according to previous table no. 4.15 show, difference amount of actual sales and BEP are highly positive selected products lines. It is indicated that there is high MOS ratio. As a result, it could be ensure that selected products lines, 150kont, 100kont, and 60kont would be profitable at depression period where demand of the products be lower or falling conditions.

4.6.5 Profit-Volume Analysis

Profit volume ratio established a relationship between the contribution and sales volume. The two factors profit and volume are interconnected and dependent with each other. Profit depends upon sales; selling price to a great extent will depend upon the volume of production. It can be presented by:-

$$\text{Profit Volume (P/V) Ratio} = \frac{\text{Contribution Margin}}{\text{Sales}}$$

Since, total BEP in Rs. of PCI is higher than actual sales of all presented fiscal years. For the short term profit planning the management should adjust the price, volume and costs. The actual sales must be nearly BEP and then profit volume analysis may have proper meaning. By the way, target profit, required sales and adjustable costs can be forecasted by using P/V analysis for future operation planning.

P/V analysis is also divided into two parts which are:

P/V analysis in entire form of the company.

P/V analysis for selected product lines.

4.6.5.1P/V Analysis in Entire form of the PCI

The above table no 4.14 shows the profit volume ratio of PCI for the year 2060/61 to 2065/66. Profit volume ratio 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 2065/66 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 2061/62 to 2065/66 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 2061/62, to 2065/66 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, 2061/62, 2062/63, 2063/64, 2064/65 and 2065/66 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 2067/68 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	2061\62	2062\63	2063\64	2064\65	2065\66	2066/67	2067/68
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 2061/62 to 2066/67)

Major Finding of Secondary Data

From the analysis of various data collected by primary and secondary sources and on the basis of observation and discussion, the following major findings have been draw Sales plan of PCI is not properly maintained. There is a deviation between budgeted sales and actual sales.

Sales trend of PCI is fluctuating yearly. It shows that the net loss be decrease in future

.Expenses trend of PCI is increasing year by year.

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 cost of the company is increasing annually.
Due to the raw materials cost increasing yearly; the unit variable cost of carpet also is increasing annually.

The Unit selling price also increasing annually.
Due to the political & economical environment the sales of company decreasing condition.

For profit achievement, the company should be adjusted fixed cost, variable cost, sales and profit by ratio analysis.

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

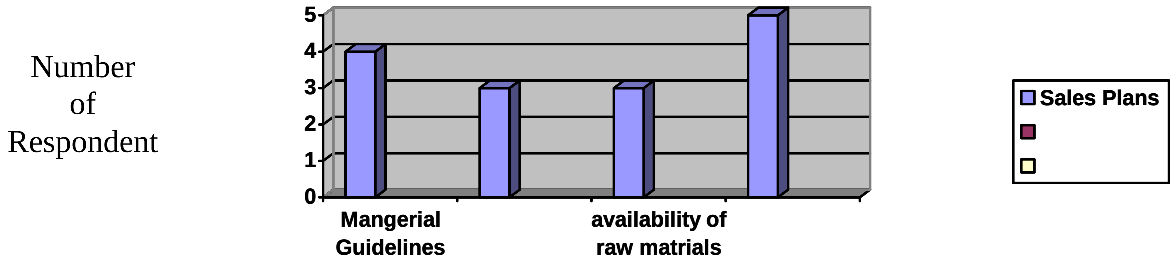
Sales Plans of PCI

S. N.	Answer	No of respondent	%
1	Managerial guidelines	4	26.6%
2	Manufacturing Capacity	3	20%
3	Availability of raw materials	3	20%
4	All of above	5	33.4%
Total		15	100%

Source; opinion survey 2010 questionnaire No -1

Figure No 4.4

Sales Plans of PCI



The table No-4.24 shows the 26.6% respondent wrote the Managerial guidelines, 20% wrote Availability of raw materials and Manufacturing Capacity and 33.34% respondent wrote all of above. So the sale plan is based on managerial guidelines, manufacturing capacity and availability of raw materials.

4.8.2 Analysis of Sales forecasting

The following Table No-4.25 is shows the company Sale Forecasting based on Different methods and tools.

Table No 4.24

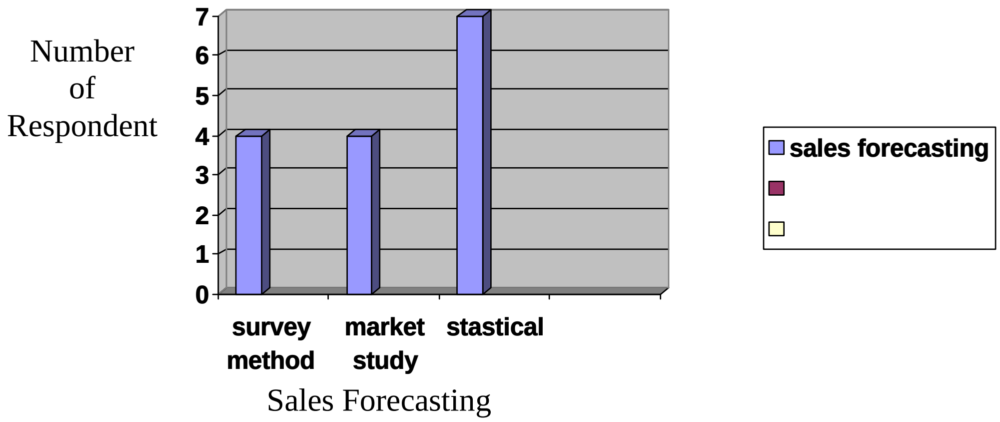
Forecasting of Sales in PCI

S. N.	Answer	No of respondent	%
1	Survey Method	4	26.7%
2	Market study & experimentation method	4	26.7%
3	Statistical Methods	7	46.6%
Total		15	

Source; opinion survey 2010 questionnaire No -2

Figure No-4.5

Forecasting of Sales in PCI



4.8.3 Responsible for preparing sales plans

The following Table No-4.26 is shows the company Sale Forecasting based on Different methods and tools below;

Table No4.25

Responsible for preparing sales plans of PCI

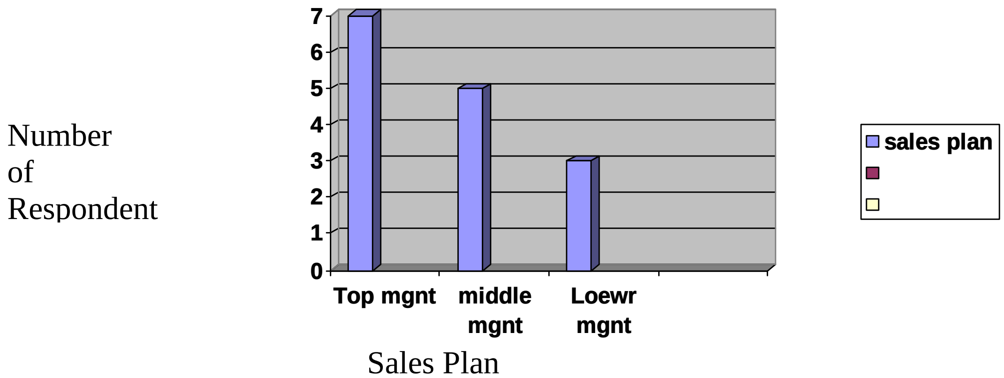
S. N.	**Management Level**	**No of Respondent**	**%**
1	Top Level management	7	46.6%
2	Middle Level Management	5	33.4%
3	Lower Level Management	3	20%
Total		**15**	**100%**

Source; opinion survey 2010 questionnaire No -3

The table no-4.26 shows the 46.6%respondent 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 responsible for preparing sales plan in PCI is depicted in figure;

Figure No 4.6

Responsible for preparing sales plans of PCI



4.8.4 Criteria followed by PCI in preparing sales plan

Different organization follows the different criteria preparing sales plan. The table 4.27 shows the criteria followed by PCI while preparing sales plan.

Table No-4.26

Criteria followed by PCI in preparing sales plan

Criteria		Frequencies				Total	Mean
	1	2	3	4	5	Score	
Intuition	4	2	2	7		42	2.8
past experience				3	12	72	4.8
External Experiences	2	4	7		2	41	2.7
Statistical		3	7	5		47	3.13

Source; opinion survey 2010 questionnaire No -4

The table 4.27 shows the different mean value for different criteria, the mean value of intuition, past experience, external experts and statistical method are 2.8,4.8,2.7 and 3.13respectively past experiences have highest mean value i.e. 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 gives less priority for intuition and external experts

4.8.5 External and internal forces in plan

External and internal forces are very important for each and every organization. PCI is also affected by different types of both forces. Such as the external forces as political, legal, economical etc. and internal forces as employees, work station, etc. External and internal forces considered by PCI to prepare sales plan is shown by the table no 4.27.

Table No-4.27 External and internal forces in plan

Forces		Frequencies					
	1	2	3	4	5	Total Score	Mean
External Forces			2	3	9	67	4.46
internal Forces	2	3	4	6		44	2.93

Source; opinion survey 2010 questionnaire No -5

The table 4.28 shows the total score and mean value of external forces and internal forces considered by PCI. The mean value of external forces and internal forces 4.46 and 2.93respectively. Both of them mean value of external forces is higher (4.46) than internal forces (2.93). So we can make conclusion that the PCI give high consideration for the external forces and the lower value 2.93for internal forces. So the PCI give less priority for internal forces.

4.8.6 Clarity of sales goals

For effective sales plan, sales goal should be clear and reliable. If there is vague sales goals then planning of sales will be very difficult. Table no4.29 shows the clarity of sales goals of PCI.

Table 4.28

Clarity of sales goals

Level of linearity	No of respondent	%
Adequately	4	26.7
Clear	5	53.4
Moderately clear	2	13.3
Ambiguous	2	13.3
Vague	2	13.3
Total	15	100

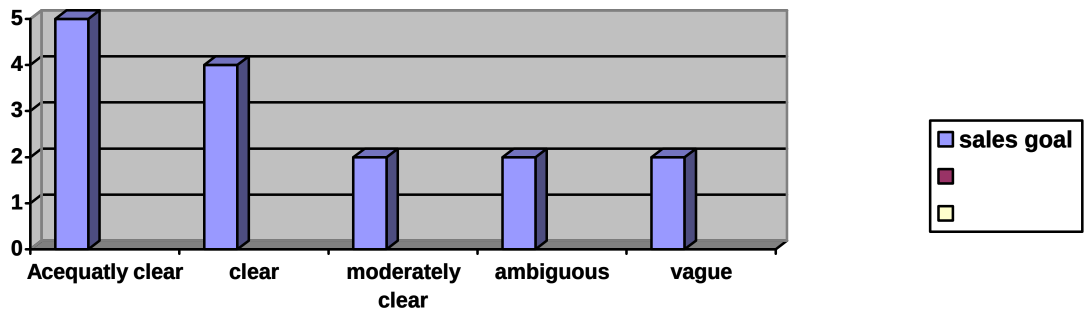
Source; opinion survey 2010 questionnaire No- **6**

The table 4.29 shows that 33.4% respondents express their view for clear sales goals and 26.7% respondents express their view for adequately clear sales goals. So the conclusion is the sales goal of PCI is clear. Clarity of sales goals of PCI is shown in figure.

Figure No4.7

Clarity of sales goals

Number of Respondent



Sales Goal

Major Finding

4.9.1 Major Finding of Primary Data

The outcomes of the questionnaire distributed to the sample size of 15 employees and management who used to work in PCI are abstained different organization followed the different procedure as their requirement criteria of planning external and internal forces planning of different managerial planning clarity of sales goals responsibility accepted by different management level participation of personnel in decision making and implementation and others many factors are involved in budgeting procedure to analyze the production procedure of PCI PVT LTD. researcher used the questionnaire filled by the respondents. The major finding from primary data are presented as follows;-

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

The C-V-P analysis occupies an important place in profit planning and control. This study mainly aims to analyze the relationship between cost, volume and profit of PCI. In Nepal, the manufacturing sector is very weak in every aspect of performance. Numbers of manufacturing industries are very few in Nepal. Among them only 32 manufacturing industries are listed in NEPSE. Here Paramount Carpet Industry is taken as sample for the purpose of the study. In the study, researcher has analyzed the sales, fixed costs, variable cost and profit (loss) of the PCI and selected product as well.

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 2061/62 to 2066/67. 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

Different types of profit planning tools, which are used in the academic field, are not found applied by PCI. It shows the gap between the theory and practice. C-V-P analysis is not applied by PCI as no segregation of cost in to fixed and variable, which is the hardcore of CVP analysis. Company has no clear-cut boundaries to separate cost into fixed and variable. The classification of cost is not scientific and systematic. So PCI has not been able to use C-V-P analysis and make the realistic and smart budget.

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 2063/64 to 2065/66 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.

The actual loss of other products and departments are recovered by selected product lines profit. Since limited Nepalese liquor market and selling and distribution activities, production and sales are comparatively low than production capacity.

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

On the basis of the study of C-V-P analysis as a tool to measure effectiveness of profit planning and control (PPC) of PCI, it seems necessary to develop, implement and improve the process of C-V-P analysis from beginning to end with PPC. Nepal is proceeding towards globalization with membership of WTO. Nepalese companies should fit with the global environment with best-fit managerial strategies development. As the completions are very high in the context of liberalization, company should provide attention towards cost minimization rather than profit maximization. For this, C-V-P analysis tools can be of great help. Thus the following recommendations based in the finding of research study are made.

- 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 and controlling should focus on the relationship between expenditure and benefits derived from those expenditure.
- Separate cost control dependent should be established for the effective management and reduction.
- 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.
- Some portion of fund should be allocated to research and development program so that new technology could be found which provide more competitiveness in the market.
- System of periodical performance reports should strictly followed to be conscious about poor performance and take corrective action immediately and timely.
- New market should be identified for the coverage of increased activities of companies.
- For overall profitability of the company, the company should analyzed other profit planning tools i.e. decision making where department wise, product wise, make or buy, drop or continue, decision are provided. The company PCI is also multiple products producer and its products some materials like ENA, denature sprit and GNA for self consumption. There may be high cost rather then consider supplier. So decision- making tool also can adopt for profit planning purpose.

- A systematic approach should be toward comprehensive profit planning. This can considerably contribute to the increase in profitability to PCI. Since separate of costs into their fixed and variable elements is at the heart of C-V-P analysis, all decision makers sought to be fully aware of, and understand, the cost structure of their operation; otherwise C-V-P analysis will provide meaningless information.

Above recommendation are concerned with short-term profit planning (c-v-p analysis) which might be helpful to plan the profit and future operation for PCI. Hence, the recommendation would be improve C-V-P relationship of PCI.

BIBLIOGRAPHY

Books

ADB. (2001), Nepal & ADB sign partnership agreement to flight poverty, Kathmandu.

Agrawal, G. R. (2004). Dynamic of business environment in nepal, Kathmandu: M.K Publishers and Distributors.

Anthony, R. N. and G.A. Welsch. (1997). Fundamentals of management accounting, Illinois: Rechard D. Irwin Homewood

Bajracharya, B. C.(2004). Business statistic and mathematics, M. K. Publisher and Disitbutors, Kathmandu, Nepal.

Bradely, J. F. (1964). Administrative financial management, USA: Holt,Rinchard and Wiston Inc.

Central Bureau of Statistics (2007). Statistics pocket book 2007. Kathmandu: Central Bureau of Statistics.

Chaudhari, A. K. & P./K. Sharma, (2003). Statistical methods, Kathmandu: Khanal Books & Stationery.

Dahal, R. K. & K. N. Wagle. (2004). Management accounting, Kathmandu: Khanal Books & Stationery.

Dangol, R. M. (2058). Management accounting, Kathmandu: Taleju Prakashan.

Drury, C. (2000). Management and Cost accounting, Business Press: Thomson Learning.

Fisher, paul M and Frank, Werner G.(1985). Cost accounting, South ,Westren Publishing Co-Cincinatiohio.

Fago, G. (2003). Profit Planning and Control, Kathmandu: Buddha Academic Enterprise Private Limited.

Goyal, S.N and Mohan, M. (1997). Management accounting. New Dhili: Schand and Company

Gupta, S. C. (1997). Advanced accounts, New Delhi: S. Chand and Company.

Gupta, S. P. (1995). Management accounting. Agra: Shahitya Bhawan Publication.

Horngreen, C. T., George, P. and S. M. Dater. (1999). Cost accounting a managerial approach, New Delhi: Printice Hall of India Private Limited.

Khan, M. Y. and P. K. Jain. (1993). Management accounting, New Delhi: Tata McGraw Hill Publishing Company Ltd.

Kothari, C. R. (1990). Research methodology, methods and techniques, New Delhi: Willey Eastern Limited.

Lynch, R. M. and R. W. Williamson, (1999). Accounting for management, New Dehli: Willey Eastern Limited.

Maheshwary, S. N. (2000). Management accounting and financial control, New Delhi: Sultan Chand and Sons Educational Publishers.

Ministry of Finance, Budget speeches. (2005/06). Kathmandu: Ministry of Finance, Nepal, Government

Munakarmi, S. P. (2002). Management accounting, Kathmandu: Buddha Academic Enterprises Pvt. Ltd.
Nepal Tourism Board,Kathmandu: (1998), and (2011). Nepal tourism board, for visit Nepal 1998 and 2011.
Ninemeire, J. D. and R. Schmidgall. (1984). Basic accounting standard, Air Publishing Company.
Pandey, I. M. (1999). Management accounting, New Delhi: Vikas Publishing House Pvt. Ltd.
Pant, P. R. (2004). Business environment-in nepal, Kathmandu: Buddha Academic Publisher & Distibuter Pvt. Ltd.
Wagle, K. N. and Dahal, R. K.(2004). Management accounting, Khanal Books Prakashan, Minbhawan, Kathmandu
Agrawal, G. R. (2004). Dynamic of business environment in nepal, Kathmandu: M.K Publishers and Distributors
Thesis
Adhikari , M. (2009). "Cost –volume figure no-4.6 profit analys of himalayan distallary pvt ltd", Unpublished Master's thesis, TU kathmandu.
Dahal, U.K. (2006). Cost volume profit analysis as a tool measure the effectiveness of profit planning with special reference to dabur nepal pvt. ltd, Unpublished Master's Thesis, Shankar Dev Campus, T.U. Kathmandu.
Chalise, I.R. (2001). Profit planning in manufacturing company : a case study of nepal lever limited, Unpblished Master's Thesis, Nepal Commerce Campus, T.U. Kathmandu.
Gautam, Y. P. (2006). An analytical and comparative study on cvp analysis of unilever nepal limited and dabur depal pvt. ltd, Unpublished Master's Thesis, Nepal Commerce Campus, T.U
Rijal, M. (2005). Cost volume profit analysis to measure the effectiveness of profit planning and control: a case study of nebico pvt. ltd, Unpublished Master's Thesis, Nepal Commerce Campus, T.U.
Manandhar R. (2007).Cost-volume profit analysis of kathmandu dairy ltd, Unpublished Master's Thesis, Nepal Commerce Campus, T.U.

Pokharel P. (2006). Cost-volume profit analysis of himalayan distillery ltd, Unpublished Master's Thesis, Nepal Commerce Campus, T.U
Timilsina, D.R. (2007) . Cost volume profit analysis of himalayan distillery limited. An Unpublished Master's Degree Thesis, Nepal Commerce Campus, Minbhaban.
Timilsina, N. (2008), Budgetary performance and its impact on profitability (A case study of dabur nepal pvt. ltd.) . An unpublished Master's degree Thesis, Nepal Commerce Campus, Minbhaban.
Wolff, H. K., & P. R. Pant (2007). Social science research & thesis writing, Kathmandu: Buddha Academic Enterprises Pvt. Ltd.
Other
Annual Reports of Paramount Carpet Industry F/Y 2061/62 to 2066/67, Kathmandu.
Carpet magazine from the land of himalayan ,No-12,march 2010.
Batty, J. (1982). Management accounting, Plymouth: The English Language Book Society and Macdonald and Evans Limited.
CIA, (2064). Bulletin central carpet acessocation

ROLE OF MIS IN NEPAL CREDIT

AND COMMERCE BANK LIMITED

ATHESIS

By
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Campus Roll No: 286/064

Exam Roll No : 250443

A Thesis Submitted to:
Office of the Dean
Faculty of Management
Tribhuvan University

in partial fulfillment of the requirements for the degree of
Master of Business Studies (M.B.S.)

Kathmandu, Nepal
April, 2011

RECOMMENDATION

This is to certify that the thesis
Submitted by:
RAMILA DAHAL

Entitled:
Role of MIS in
Nepal Credit and Commerce Bank Limited

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

Thesis Supervisors:

--------------------------	--------------------------------
Dr. Geeta Pradhan,	Dr. Diwakar Pokherel Campus Chief

Mr. Shankar Adhikari Teacher	

VIVA-VOCE SHEET

We have conducted the viva voce examination of the thesis presented by

RAMILA DAHAL

Entitled:

Role of MIS in Nepal Credit and Commerce Bank Limited

and found the thesis to be the original work of student and written according to the prescribed format. We recommend the thesis to be accepted as partial fulfillment of the requirements for Master's Degree in Business Studies (MBS)

Viva-Voce Committee

Head of Research Department :…………………………………………

Member (Thesis Supervisor) :……………………………………….

Member (Thesis Supervisor) :……………………………………….

Member (External Expert) :……………………………………….

TRIBHUVAN UNIVERSITY

Faculty of Management

Shanker Dev Campus

DECLARATION

I hereby declare that the work reported in this thesis entitled “Role of MIS in Nepal Credit and Commerce Bank 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 Master’s Degree in Business Studies under supervision of Dr. Geeta Pradhan, Associate Professor of Shanker Dev Campus and Mr. Shankar Adhikari, Lecturer of Shanker Dev Campus.

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Exam Roll No : 250443

APPENDIX

APPENDIX-I

Introduction to NCC Bank

Nepal Credit and Commerce Bank (NCCB) Limited was established on 14th October 1996 as Nepal-Bank of Ceylon Limited (NBOC), a Joint Venture Commercial Bank between Bank of Ceylon, Sri Lanka, the Pioneer Bank in Sri Lanka and Nepalese Promoters, NB Group (Nepal) Private Limited and Nepal Insurance Company Limited. It was the first private sector Bank with largest authorized capital of NRS. 1,000 Million. The Head Office of the Bank is located at Siddhartha Nagar, Rupandehi, the birthplace of LORD BUDDHA (The Light of Asia) for the first time in the Nepalese context, while its Corporate Office is placed at Bag Bazaar, Kathmandu.

NBOC started its operations from Siddhartha Nagar on October 14, 1996. Within nine months of its operation NBOC expanded its business through four branches, Siddhartha Nagar and Lumbini in Rupandehi, Bag Bazaar in Kathmandu and Barahbise The name of the Bank has been changed to NCCB on 10th September 2002. This change was effected due to the transfer of shares and management from Sri Lankan co-venture to Nepalese Promoters. At present, NCC Bank provides banking facilities and services to rural and urban areas of the Kingdom through its 17 branches.
The establishment dates and names of the braches of NCC Bank are as follows:

- Siddhartha Nagar Branch - October 14,1996
- Lumbini Branch - November 28, 1996
- Kathmandu Main Branch in Bag Bazaar - January 27, 1997
- Barahbise Branch - May 20, 1997
- Thankot Branch - March 8, 2000
- Banepa Branch - September 17,2000
- New Road Branch in Kathmandu - April 2, 2001

- Narayangarh Branch - October 21, 2001
- Biratnagar Branch - May 23, 2003
- Mahendra Nagar Branch - May 30, 2003
- Birgunj Branch - June 22, 2003
- Kalaiya Branch - June 6, 2004
- Pokhara Branch - June 15, 2004
- Chabahil Branch - June 18, 2004
- Birtamode Branch - April17, 2005
- Lagankhel Branch - April 21, 2005

The Bank has developed corresponding agency relationship with more than 150 International Banks having worldwide network. At present, NCCB is providing its services through fully computerized branches and 260 personnel.
The Bank strives to enhance shareholders' wealth acting as a catalyst to facilitate rapid economic growth and socio economic development of the nation by identifying strength, weakness, opportunity and threats (SWOT analysis), providing excellent customer oriented services. The Bank has recently issued 30% shares to general public i.e. 2,100,000 number of share worth Rs. 100/- each was successful in subscribing more than the required amount.

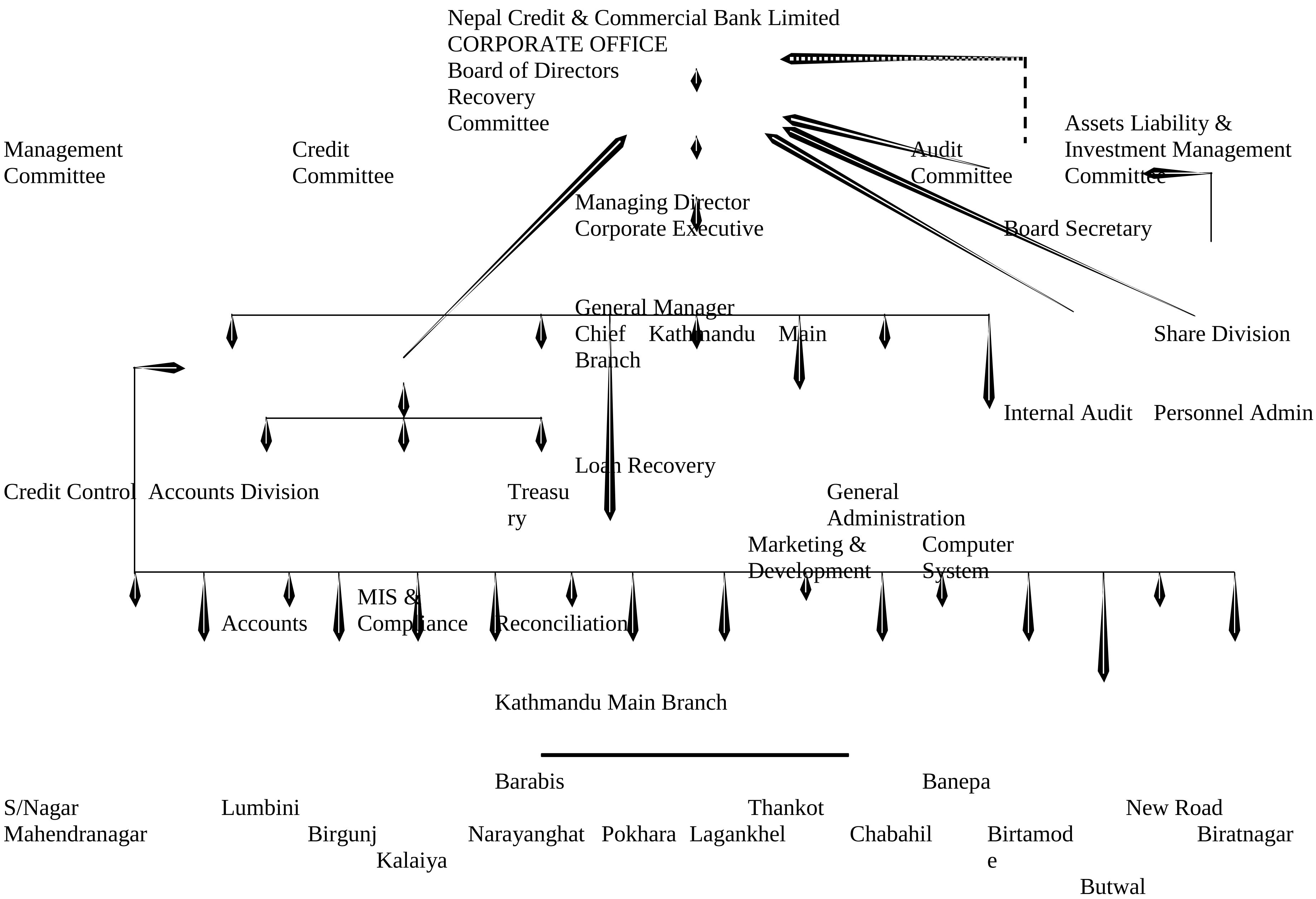
Vision of the Bank:
Bankers with the quality service strive for expansion with profitability, professionalism and personalized Banking Services.

Mission Statement:
We at NCC Bank, our goal is to provide a wide range of banking services and products in the emerging socio-economic environment within and outside the country maintaining high standards of integrity and efficiency with excellence.

Future Plans of NCCB:

- The bank strives to provide modern and Efficient and Personalized Banking facilities within the country to its customers.
- The bank also aspires to develop new and modern banking systems and technologies to provide market oriented facilities and services to its valued customers.
- The Management and staff of the Bank are committed to innovate and introduce new products in the market in order to provide maximum benefits to its valued customers.

Organizational Chart of NCC Bank


Nepal Credit & Commercial Bank Limited
CORPORATE OFFICE
Board of Directors
Recovery Committee
Management Committee
Credit Committee
Audit Committee
Assets Liability & Investment Management Committee
Managing Director Corporate Executive
Board Secretary
General Manager
Chief Branch
Kathmandu Main
Share Division
Internal Audit
Personnel Admin
Loan Recovery
Credit Control
Accounts Division
Treasury
General Administration
Marketing & Development
Computer System
Accounts
MIS & Compliance
Reconciliation
Kathmandu Main Branch
Barabis
Banepa
S/Nagar
Lumbini
Thankot
New Road
Mahendranagar
Birgunj
Narayanghat
Pokhara
Lagankhel
Chabahil
Birtamode
Biratnagar
Kalaiya
Butwal

Organizational Chart of NCCB

APPENDIX-II

Brief introduction to Kathmandu Main Branch
Nepal Credit and Commerce Bank Limited (NCCB) formally registered as Nepal - Bank of Ceylon Ltd. (NBOC), commenced its operation on 14 October, 1996 as a Joint Venture with Bank of Ceylon, Sri Lanka. It was the first private sector Bank with the largest authorized capital of NRS. 1,000 million.

CAPITAL STRUCTURE

Authorized Capital	-	Rs.1,000 million
Issued Capital	-	Rs.1,000 million
Paid-up Capital	-	Rs.700 million

The Head Office of the Bank is located at Siddhartha Nagar, Rupandehi, the birthplace of LORD BUDDHA, while its Corporate Office is placed at Bag Bazaar, Kathmandu.
The name of the Bank was changed to NCC Bank on 10th September, 2002, due to transfer of shares and management of the Bank from Bank of Ceylon, an undertaking of Government of Sri Lanka to Nepalese Promoters.

At present, NCC Bank provides banking facilities and services to rural and urban areas of the Kingdom through its 17 branches. The Bank has developed corresponding agency relationship with more than 150 International Banks having worldwide network.
NCC Bank Limited Commenced its operation on 14th October, 1996 from its Head Office located at Siddhartha Nagar, Rupendehi. The Bank opened its Kathmandu Main Branch on 27th January, 1997 as its third Branch at Bag Bazaar, Kathmandu.

The Branch has developed corresponding agency relationship with 150 International Banks having a worldwide network. The Branch's services across the globe include remittances through Social Welfare Interbank Fund Transfer (SWIFT), Demand Draft arrangement, Telegraphic Transfer, Import and Export Business, International Bank Guarantee, etc. The customers can affect their money transfer to India either through Speed Transfer arrangement or through Demand Draft arrangement. Under Speed

Transfer arrangement, money can be credited on-line to the beneficiary’s account at more than 400 branches of ICICI Bank in India. Under Demand Draft arrangement, the Branch can issue drafts payable at more than 670 locations in India.

APPENDIX-III

IT Policy 2000

Nepal has adopted IT Policy in 2000. In the same year, the country has prepared "Electronic Transaction and Digital Signature Act" and is waiting approval from the parliament. Similarly, Nepal Government has amended Telecommunication Policy and incorporated that Voice over Internet Protocol service will be licensed to the private service providers, thereby curtailing the monopoly of Nepal Telecommunication Corporation.

The commercial banks have further extended the facilities and services for electronic commerce after the adoption of open market policy and liberalization of financial sector.

Increasing use of computer, development of qualitative telecommunication network, proliferation of internet and e-mail services by private sector and growing attraction towards net-based business including e-commerce and multi-media have good indication that Nepal is a growing center for developing of information communication technology. Furthermore, the establishment of IT Park and expansion of information network at the village level is considered in contributing to multi-dimensional growth of agriculture, health, education, industry, tourism et cetera thereby uplifting the economic situation of the country.

Nepal is organizing international level information technology conference and exhibition known as "CAN INFOTECH" every year and is celebrating as a national festival of information dissemination; exhibition of newer technology, software, peripherals, books, journals; exchange of new development, ideas and sharing of experiences. The event is participated by different private, public sector of Nepal and also from other countries. This event is conducted by Computer Association of Nepal once in the Kathmandu and also in the other regions. Regional associations and member of CAN is also taking this exhibition in different towns such as Biratnagar, Pokhara and Butwal.

With the Vision like "To place Nepal on the global map of information technology within the next five years", Nepal despite of constraints of resources, is marching ahead in its direction.

Objectives of IT Policy

- To make information technology accessible to the general public and increase employment through this means,
- To build a knowledge-based society, and
- To establish knowledge-based industries.

For development and promotion of Information Technology, financial assistance has been provided to four universities of the country by HMG. With an aim to disseminate knowledge on information technology in schools, Internet service has been made available to them. Likewise, government initiated computer trainings are being conducted with a view to produce skilled manpower.

The construction of Information Technology Park in Banepa has begun. In organization front, Nepal Information Technology Centre was setup but its structure, human resource, programs and activities are still in background.

Private participation in the field of operation of Internet Services, Cyber cafes, training institutions, hardware and related equipment assembly, software development, web design and export of IT services and IT enabled services have increased. The services have covered all development regions and major commercial and tourist cities.

The active role played by Computer Association of Nepal, IT Professional Forum, ISP Association of Nepal, and other Business Associations have driven the country towards the use of ICT in economic development thereby alleviating the poverty.

The country is facing many problems and challenges, such as lack of co-ordination between the related agencies, constraint of budget, no opportunity for available manpower, no proper co-ordination between related agencies to construct physical infrastructures, government inability to use computers in ministries and offices, capacity (network, infrastructure) constraints, et cetera.

APPENDIX: IV

Questionnaire for opinion survey with general publics at NCC Bank

The following questionnaire is designed for general publics who often visit the bank for different purposes. The objective of questionnaire is to survey the perception of customer towards the existing information system in the bank and role of IT on banking industry.

1) What is your profession?

a) Businessman [ ]
b) Student [ ]
c) Social worker [ ]
d) Others (Please Specify) [ ]

2) For what purpose do you visit the bank?

a) For Loan [ ]
b) To deposit/withdraw [ ]
c) To pay interest [ ]
d) For other purpose [ ]

3) How do you often visit the bank?

a) Regularly [ ]
b) Repeatedly [ ]
c) Normally [ ]
d) Rarely [ ]

4) How you perceive the introduction of computers in the bank?

a) Fast Service [ ]
b) Quality Service [ ]
c) Fast and Quality Service [ ]
d) No difference at all [ ]

5) Are you satisfied with the services and facilities provided by the bank?

a) Strongly satisfied [ ]
b) Highly satisfied [ ]
c) Moderately satisfied [ ]
d) Not satisfied [ ]

APPENDIX: V

Questionnaire for opinion survey of staffs of NCC Bank

The following questionnaire is designed to get opinion about the computer based information system from the bank's staff. The main objective of questionnaire is to survey that whether the bank's staffs are satisfied or not with the current information system.

1) Please specify your level of management.
a) Top Level [ ]
b) Middle Level [ ]
c) Lower Level [ ]

2) How do you rate your understanding of the Management Information System (MIS)?
a) Good understanding [ ]
b) Average Understanding [ ]
c) Low Understanding [ ]
d) No understanding [ ]

3) Do you have access to computer?
a) Regularly [ ]
b) Often [ ]
c) Rarely [ ]
d) No [ ]

4) Why do you use the computer?
a) To analyze past data [ ]
b) To get the current information [ ]
c) For projection of future situation [ ]
d) All of above [ ]

5) What do you think the importance of MIS in your organization?

a) High [ ]
b) Moderate [ ]
c) Low [ ]
d) Don’t Know [ ]

6) In your opinion, how effectively MIS is being used currently in Decision Making?
a) High [ ]
b) Moderate [ ]
c) Low [ ]
d) Don’t Know [ ]

7) Which one is the major problem in your department regarding management?
a) Lack of powerful tools [ ]
b) Lack of Information [ ]
c) Others [ ]
d) Don’t Know [ ]

8) Are you satisfied with current information system?
a) Highly satisfied [ ]
b) Moderately satisfied [ ]
c) Not satisfied [ ]
d) Don’t Know [ ]

9) How far do you agree with this statement “For an MIS to be effective, the software personnel need to be properly trained.”?
a) Strongly agreed [ ]
b) Highly aggreed [ ]
c) Partly agreed [ ]
d) Disagreed [ ]

10) Do you agree that management efficiency will increase with the utilization of CBIS?

a) Strongly agreed [ ]
b) Highly aggreed [ ]
c) Partly agreed [ ]
d) Disagreed [ ]

APPENDIX: VI

Questionnaire Prepared for Interview with Concerned Personnel

The following questionnaire is designed for interview with concerned personnel of NCCB; Questionnaires are put as per requirements. Objective of this questionnaire is to gain knowledge on appreciation of the existing system.

1. Why the name of bank was changed to NCC bank?
2. At present, what facilities and services are provided by the bank?
3. What technologies are being used at the bank?
4. How many employees are working for continuously development of the system?
5. What kind of training program is used? Are they effective? Any research?
6. Are the new schemes liked and appreciated by the customers? Is it available in all the branches?
7. What are the basic objectives of the proposed/current system?
8. What is the volume of the data to be processed?
9. What type of communication system is used to co-ordinate different division of your department? Why a computer based information system (CBIS) being considered?
10. Is there any cost and benefit analysis carried out before introducing the current information system? Who conducted it and what is the result of the analysis?
11. What are the benefits expected from the system?
12. How many computers are under operation in your department?
13. How many computer experts are there in your department?
14. In an organizational chart, where the MIS department fall in?
15. What types of hardware are currently used by the bank? Is it sufficient for the effective Information System? If not, what types of hardware should be installed?
16. What types of data is used by the system as input and how the system processes it and what type of output (report) are generated by the system? Is this a regular work of the current system?

17. Is there any defect of the current system? (In your words)
18. What are the problems faced by your organization?
19. How do you coordinate different divisions of your department?
20. Which level of management does engage in this system?
21. How the managers perceive or believes in the report generated from the system?
22. Who are the end user of the system and how are they taking benefits from it?
23. Are the correct people performing the activity?
24. What are the limitations of the current information system?
25. Is there a networking within your department? If yes, what kind of networking is under operation?
26. How is a procedure performed? Could it be performed better, more efficiently or less expensively in some other manner?
27. Do you think there is possibility of improving the system for more convenient use as per your requirement for better decision making? What can be done?

CHAPTER I

INTRODUCTION

1.1 Background Information

The complexity of modern business management and competitive nature of business Requires a best-computerized automatic system for handling the business operations with Skill and precaution to avoid the business management crisis.

The use of computer technology in today's world has changed the concept of management and; makes the managerial activities easier. Thus, the use of computer provides up-to-date Information to managers to run their organizations efficiently.(Adhikari, 2005:21)

Almost all of the organizational activities such as planning, organizing, staffing, directing, Controlling etc. are based on availability of appropriate managerial information. These Activities can be conducted effectively only if information needed is made available in time and information provided are relevant and accurate.

In today's world, Information is emerged as one of the most important resources of the organization among Men, Machine, Materials, Land, and Capital. Success of any organization largely depends upon the Information System that they are using and how effectively it is been used. In the last two decades, Information Technology has emerged in the world affecting our personal, social, and public life and has made a significant impact on the quality of life. It handles data and information represented in digital, text, image, graphics or voices media and deals with communication, storage, processing and printing or exhibition in the manner and kind as desired by the users. It is an outcome of the advances in telecommunication and computer technology.

Information Technology (IT) helps to optimize the use of scarce resources through intelligent information support for decision-making, and helps further in its

Implementation by supporting coordination effort without wasteful delays. Decision-Making has become a very complex process due to competitive environment, scarce resources, time pressures, and unavoidable compulsions to achieve goals. Information technology has made decisive inroad in all occupations in offices, factories, airports, communications, entertainment, banking, education, hotels, hospitals, transportations, and shopping. It is used extensively for decision-making; ease of operations, communication, and record keeping and for obtaining higher productivity from the system in which it is put to use.

It replaces old outdated slow methods by fast ones. It allows you to handle big and complex data and its structure with ease, which was never possible earlier. It helps you to test the solution without implementing them. The distance and access are no longer technical or operational problems, as information stores anywhere can be used without its personal possession. It has affected the work culture in organization and lifestyle of each individual. Information, therefore, is considered as sixth productive resources along with Men, Machines, Materials, Money and Management. It can be developed only by designing proper information systems for the management of the organization.

Management Information Systems (MIS) are precisely such resource management agents. The initial concept of MIS was to process data from the organization and to present it in the form of reports at regular intervals.

In today's world, the concept of MIS is a system, which handles the databases, provides computing facilities to the end user, and gives a variety of decision-making tools and technique to the user of the system. MIS is also popularly known as the Information System, the Information and Decision System, the Computer Based Information System (CBIS). In this regard, MIS can be defined as the systematic or organized way of providing informational support to the managerial functions of an organization. The system utilizes computer hardware, software, manual procedures, and models for analysis, planning control and decision-making and a database. In other words, MIS is an automated system, which presents information both internal and external to the organization that aids in making a specific set of routine decisions.

1.1.1 General Background of MIS

Management Information Systems (MIS) are Information Systems, typically computer based, that are used within an organization. WorldNet describes information system as “a system consisting of the network of all communication channels used within an organization”. A MIS may be also defined as “a system that collects and processes data (information) and provides it to managers at all levels who use it for decision making, planning, program implementation, and control”.

In addition, information system is comprised of all the components that collect, manipulate, and disseminate data or information. It usually includes hardware, software, people, communication system such as telephone lines, and the data itself. The activities involved include inputting data, processing of data into information, storage of data and information, and the production of outputs such as management reports.

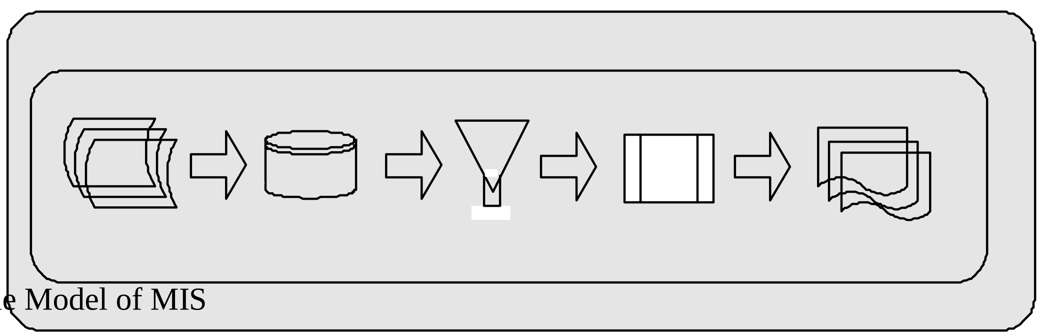


Figure 1.1: A Simple Model of MIS

The role of the MIS in an organization can be compared to the role of heart in the body. The information is the blood and MIS is the heart. In the body, the heart plays the role of supplying pure blood to all the elements of the body including the brain. The heart works faster and supplies more blood when needed. It regulates and controls the incoming impure blood, processes it and sends it to the destination in the quantity needed. It fulfills the needs of blood supply to human body in normal course and in crisis. (Jawadekar, 2003:7)

We can also define MIS by these points:

- MIS is an organized or planned effort and not the result of some sporadic attempts.
- The primary function of MIS is to provide information.
- MIS is a facilitating or supporting system to aid managerial functions and not merely help operational tasks, that is, the MIS provides information that assists managers at different levels in the organization.
- MIS is formed from a number of components, including hardware, software, manual procedures, models, and a database.
- MIS is a system of users and machines, the users are as important to the system as the machines.

Different classes of users of MIS, use it differently. Clerical users primarily provide input and data control. First line supervisors use it for operational control and detailed exception reporting. Management uses it for special reports and analysis, often employing a staff specialist to manipulate decision models and perform analysis. Because of the complexity of the process of MIS development and need for judgment, there is a need for comprehensive academic training for MIS professionals.

In one sentence, we can define MIS as a system, using formalized procedures to provide management at all levels in all functions with appropriate information, based on data from both internal and external sources, to enable them to make timely and effective decisions for planning, directing, and controlling the activities for which they are responsible. The actual process involves the collection, organization, distribution, and storage of organization wide information for managerial analysis and control.

1.1.2 Relation between MIS and Bank

In Western Europe and United States, it is estimated that today one-half of the Gross National Product (GNP) is attributed to the production, use and distribution of computer based information. In a bank, having knowledge how to process and analyze information using computers in often a determining for success. This objective requires an information system. (www.answer.com)

After the restoration of democracy, the Government of Nepal launched an economical liberalization policy. This has led to an increasing number of commercial banks in the country, due to such increment of commercial banks, competition also increased among them, which have resulted in enhanced services to the customers getting more advantage that is competitive. This is only possible through proper information technology.

Management Information System is the backbone on which logical business decisions are made in all types of business organizations. Applying this same logic to a bank, we can safely say that a bank must have good Management Information System as a minimum to survive and prosper in this exceedingly competitive world.

1.2 Focus of the Study

The role of commercial banks is extremely important for the development of industries, trade, commerce, agriculture of the country. In fact, no nation can develop itself without the development of the bank. The study from different development countries have proven that the commercial bank plays a vital role in its economy.

Nepal Credit and Commerce Bank Limited (NCCB) was established on 14th October 1996 as Nepal-Bank of Ceylon Limited (NBOC), a Joint Venture Commercial Bank between Bank of Ceylon, Sri Lanka, the Pioneer Bank in Sri Lanka and Nepalese Promoters, NB Group (Nepal) Private Limited and Nepal Insurance Company Limited. It was the first private sector Bank with largest authorized capital of NRS. 1,000 Million. The name of the Bank was changed to NCC Bank on 10th September 2002, due to transfer of shares and management of the Bank from Bank of Ceylon, an undertaking of

Government of Sri Lanka to Nepalese Promoters. NCC Bank provides banking facilities and services to rural and urban areas of the Kingdom through its 17 branches.

The bank is using the PUMORI PLUS banking software, the most commonly used software in banking sector of Nepal and offers Any Branch Banking Services (ABBS) within Kathmandu. As a management science (MIS) student, for research study, researcher has chosen the corporate office of NCC bank, as it has been operating computer based information system. In this report, author makes an effort to provide a detailed research on its existing system and a framework for future improvement of information system in the bank. The researcher has chosen the Bag Bazaar branch to study the role of MIS and effectiveness of the system. The Branch has developed corresponding agency relationship with 150 International Banks having a worldwide network. The Branch's services across the globe include remittances through Social Welfare Inter-bank Fund Transfer (SWIFT), Demand Draft arrangement, Telegraphic Transfer, Import and Export Business, International Bank Guarantee, etc.

Thus, having the broad branch network and connection with different funds transfer networks, the bank need a reliable, effective and efficient information system which help the bank to deal with all data and generate necessary report in regular interval of time to support the decision making process at the top level. Therefore, this research study mainly focused on the study of current role of management information system in the bank.

1.3 Statement of the Problem

In this technology driven era all private banks in Nepal are fully computerized and are using some sort of MIS. The private banks have also been using various kinds of high tech software system for their daily activities and they provide various technological services to its customer.

After the restoration of democracy, the Government of Nepal launched an economical liberalization policy. This has led to an increasing number of commercial banks in the country, due to such increment of commercial banks, competition also increased among them, which have resulted in enhanced services to the customers getting more advantage that is competitive. This is only possible through proper information technology.

Customer satisfaction highly depends upon the quantity and quality of services offered by the bank. Due to the broad and liberal financial policy adopted by Government, the entrance of foreign joint venture commercial banks have been increasing with an aim to provide modern banking services and facilities more efficient compared to the existing Nepalese Commercial Banks i.e. Nepal Bank Limited (NBL) and Rastriya Banijya Bank (RBB).

Management Information System is the backbone on which logical business decisions are made in all types of business organizations. Applying this same logic to a bank, we can safely say that a bank must have good Management Information System as a minimum to survive and prosper in this exceedingly competitive world.

In this regard, NCCB a foreign joint venture commercial bank being the first private bank with largest authorized capital of NRS. 1,000 Million (www.nccbank.com.np) and fully computerized, they are using the commonly used Banking Software "Pumori Plus" which is technologically outdated. As per the needs of the Bank, this software does not reach up to its expectation and do not provide the features for their requirements. They are also using other tools like excel to process data from the database system and generate various management reports. These tools do not have any means to avoid the Data Replication, Double Entry etc. that leads to error in Database. Error in Bank Database means a Complete Disaster. Even using these kinds of Tools makes the File Management very difficult. Tracking of Data files may consume a large amount of time, which is Completely Not Acceptable.

Moreover, there is no separate department like IT or similar to handle the Information System. MIS and compliance department in NCCB lies under the Account Division purely for collecting, storing, processing, and disseminating of overall banks information.

Besides the MIS department, there is another separate Computer System department that handles all the hardware and software need of the bank. This has leaded not only loss of resources in terms of manpower/time/money but it has also leaded to underutilization of the MIS.

So, need of effective and efficient Management Information System and continuous development of it is the main issue in NCCB and in this technology driven era it is the major problem to be addressed.

1.4 Objectives of the Study

Main objective of this research is to study the current role of management information system in NCCB at various level of management and at different department. Bank is the main body of the economic system of any country and there has to be a good Information System to support managerial decision-making process.

Another objective is to analyze the weakness of the current system, if there any, and to recommend a suitable MIS to cope with the current deficiencies in Managerial Decision Making process. Right information at right place and in right time is always a need of manager to make any decision. Moreover, commercial banks have to process a huge bulk of information every day. Commercial banks are often overloaded by information so they have to be ready to manage all the overloaded information.

The specific objectives of this research study in the role of MIS in the NCC bank are as follows:

- To examine the current role of management information system in the bank
- To find out any drawbacks and weakness of the current information system
- To evaluate MIS supports in decision making in the NCC bank

1.5 Significance of the Study

Since NCC Bank provides banking facilities and services to rural and urban areas of the Kingdom through its 17 branches, it has to process a huge bulk of information and have to generate different kinds of reports periodically. Therefore, there should be a good MIS to manage the information properly. Moreover, with the use of proper information system in its management, it will help the managers to take right decision regarding loan processing, investment, strategy for collection of deposits etc.

On top of that, in this Competitive world of Banking System, it is very challenging job for the Banks to Stand on the Top Position. The major key factor for the Bank to achieve or retain the Top position is the "Customer Satisfaction" which cannot be made possible without the well-managed MIS.

Thus, the significance of this study is to improve, strengthen the existing MIS in order to deliver the best Quality Services to its Customers.

1.6 Limitation of the Study

NCC Bank provides banking facilities and services to rural and urban areas of the Kingdom through its 17 branches. Among them, this study is focused only in the Corporate Office placed at Bag Bazaar, Kathmandu.

Therefore, this research study only analyze the current information system to present the current role of MIS in bank placed at Bag Bazaar, Kathmandu and tries to recommend a suitable MIS and that recommendation may not be applied for other branches.

Another limitation of this research study is that it is based on primary data, which is collected from observation, questionnaire, and interview method and it is assumed to be accurate and reliable.

The time taken to collect the primary data was maximum of two weeks during March 2007 between 10am to 5pm.

1.7 Organization of the Study

The research Study entitled “Role of MIS in Nepal Credit and Commerce Bank Limited” includes the following chapters:

Chapter I: Introduction
The first chapter provides the background information of the study, focus of the study, statement of the problem, objective of the study, significance of the study, limitation of study, and organization of the study, therefore, this chapter provides summary of overall study.

Chapter II: Review of Literature
Review of literature is very important part of every research. This chapter includes the theoretical background of MIS and review how MIS can help the managers in their decision making process in different hierarchy of organization. Unpublished Master Degree Thesis is also reviewed in this chapter.

Chapter III: Research Methodology
This chapter constitutes the methodology adopted to conduct the study, data analytical techniques, and processes. This chapter also contains research design, population and sample, sources of data, data collection methods, research software tools, data analysis tools and techniques used for data analysis.

Chapter IV: System Analysis and Data Presentation
In this chapter, system run chart, analysis of existing system, data flow diagram, entity relationship diagram, limitation of existing system, feasibility analysis, analysis of primary data and major findings are presented.

Chapter V: Summary, Conclusion and Recommendation
This chapter contains summary, conclusion and recommendation for the improvement of management information system in an organization.

CHAPTER II

REVIEW OF LITERATURE

The review of literature is the study of various literatures related to the topic. This chapter constitutes the review of literature in two aspects: the conceptual framework, and the related studies from various books, journals, articles, research reports and thesis.

2.1 Conceptual Framework

2.1.1 Management Information System

The initial concept of MIS was to process data from the organization and to present it in the form of reports at regular intervals. The system was largely capable of handling the data from collection to processing. It was more impersonal, requiring each individual to pick and choose the processed data and use it for his requirements.

This concept was further modified when a distinction was made between data and information. The information is a product of an analysis of data. This concept is similar to a raw material and the finished product. What is needed is an information and not a mass of data. However, the data can be analyzed in a number of ways, producing different shades and specifications of the information as a product. It was, therefore, demanded that the system concept should be an individual-oriented, as each individual may have a different orientation towards the information.

This concept was further modified, that the system should present information in such a form and format that it creates an impact on its user, provoking a decision, an action or an investigation. It was later realized that even though such an impact was a welcome modification, some sort of selective approach was necessary in the analysis and reporting. Hence, the concept of exception reporting was imbibed in MIS. The norm for an exception was necessary to evolve in the organization. The concept remained valid till and to the extent that the norm for an exception remained true and effective. Since the environment turns competitive and is ever changing, fixation of the norm for an exception becomes a futile exercise at least for the people in the higher echelons of the organization.

The concept was then evolved that the system should be capable of handling a need based exception reporting. This need may be either of an individual or a group of people. This called for keeping all data together in such a form that it can be accessed by anybody and can be processed to suit his needs. The concept is that the data is one but it can be viewed by different individuals in different ways. This gave rise to the concept of DATABASE, and the MIS based on the DATABASE proved much more effective.

Over a period of time, when these conceptual developments were taking place, the concept of the end user computing using multiple databases emerged. This concept brought a fundamental change in MIS. The change was decentralization of the system and the user of the information becoming independent of computer professionals. When this became a reality, the concept of MIS changed to a decision-making system. The job in a computer department is to manage the information resource and leave the task of information processing to the user. The concept of MIS in today's world is a system, which handles the databases, provides computing facilities to the end user and gives a variety of decision making tools to the user of the system. (Jawadekar, 2003:3-4)

The MIS is a concept of the last decade or two. It has been understood and described in a number of ways. It is also popularly known as the Information System, the Information and Decision System, the Computer-based Information System. The MIS has more than one definition.

The MIS is defined as

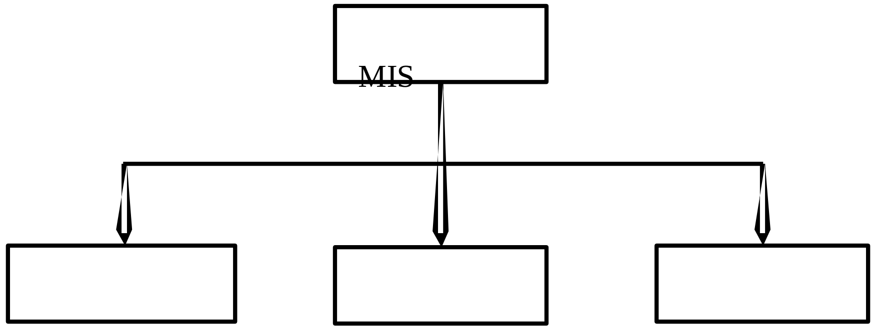
- A system which provides information support for decision making in the organization.
- An integrated system of man and machine for providing the information to support the operations, the management and the decision making function in the organization.

• A system based on the database of the organization evolved for the purpose of providing information to the people in the organization.
• A computer-based Information System

Though there are a number of definitions, all of them converge on one single point, that is, the MIS is a system to support the decision making function in the organization. The difference lies in defining the elements of the MIS.
However, in today's world, the MIS is a computerized business processing system generating information for the people in the organization to meet the information needs for decision making to achieve the corporate objectives of the organization. (Jawadekar, 2003:5-6)

MIS can be defined as a system that
• Provides information to support managerial functions like planning, organizing, directing, controlling
• Collects information in a systematic and a routine manner which is in accordance with a well defined set of rules
• Includes files, hardware, software, and operations research models of processing, storing, retrieving and transmitting information to the users. (Adhikari,2005:13)

Generally, the combination of major three components namely Management, Information, and System is known as MIS. In order to make the concept more clear each part of components is examined separately.



Management Information System

Figure 2.1: MIS and its Components

2.1.2 Management

Management is the art and science of getting things done through others, generally by organizing and directing their activities on the job. A manager is therefore someone who defines, plans, guides, assists, and assesses the work of others, usually people for whom the manager is responsible in an organization. According to Oxford Dictionary, management is the “process of dealing with or controlling people or things”.

The management is the process that visualizes the future, sets goals to be accomplished, has the ability to effectively and efficiently co-ordinate the existing financial human material and technical resources, decentralize operation, build a good team and has a social responsibility towards the nation and its people. Management is a process that is used to accomplish organizational goals; that is, a process that is used to achieve what an organization wants to achieve. An organization could be a business, a school, a city, a group of volunteers, or any governmental entity. Managers are the people to whom this management task is assigned, and it is generally thought that they achieve the desired goals through the key functions of (1) planning, (2) organizing, (3) directing, and (4) controlling. (www.answers.com)

Management is the process of planning, organizing, leading and controlling the work or organization members and of using all available organizational resources to reach stated organizational goal. It is especially in dealing with matters of time and human relationship as they arise in organizations. It is an attempt to create desirable future keeping the past and the present in mind. It is practiced in and is a reflection of a particular historical era. It is practice that produces consequences and effect that emerge over time. (Stoner, Freeman and Gilbert, 2000:21)

Management can be viewed as a function, a process, a profession or a class of people. And along with material, capital and labor, management is considered as a resource. It refers to the kind of tasks and activities that are performed by managers.

The specific natures of activities are determined by such managerial functions as planning, organizing, directing and controlling. In fact, management is a process of achieving an organization’s goals and objectives by making the fullest use of available resources like men, materials, machines, money, methods etc.

The various functions of management are as follows:

- Planning: It is the process of deciding in advance the courses of action to be followed; when and also, how to undertake these actions.

- Organizing: It refers to the grouping of people and activities in order to facilitate the achievement of the organizational objective.

- Controlling: Control is the mode of checking the progress of plans and also, correcting any deviations that may occur along the way.

- Directing: It is the process of activating the plans, structure and group efforts in the desired direction. It is needed for implementation of plans by providing the desired leadership, motivation and proper communication.

Management can be grouped into three hierarchical levels- top, middle and junior management levels. (Adhikari, 2005:5)

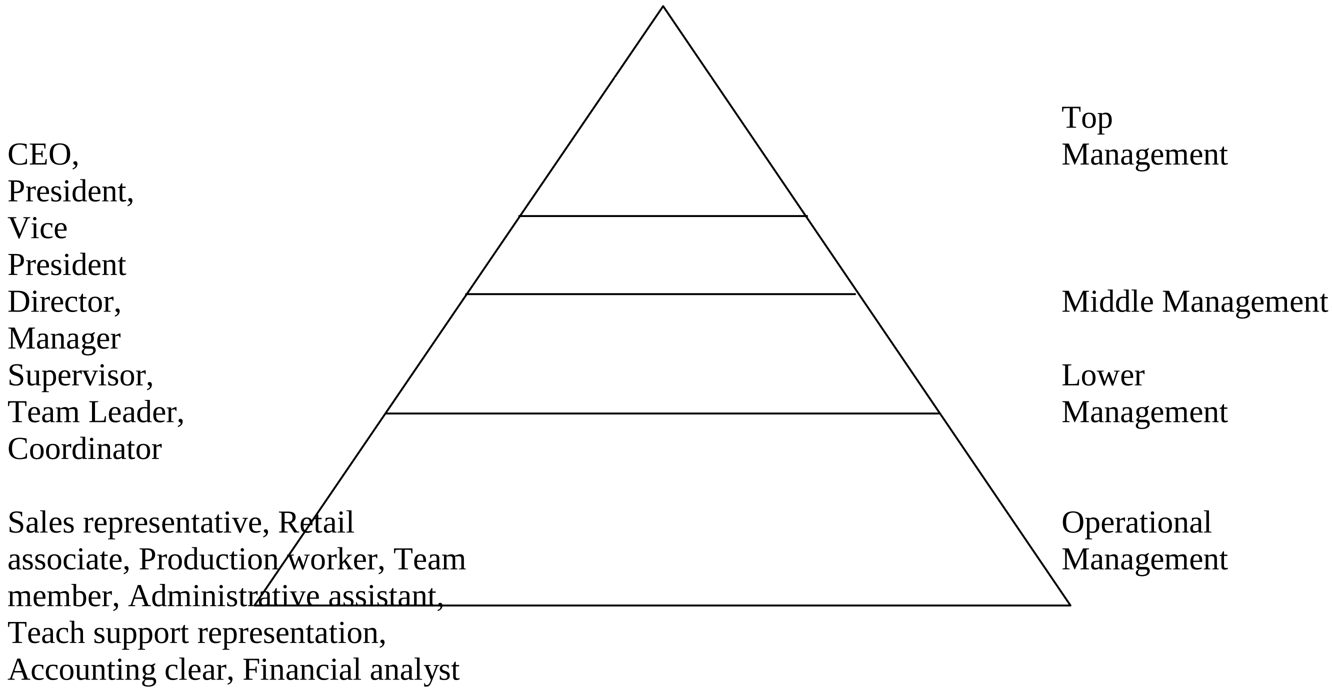


Figure 2.2: Levels of Management

Top (or strategic) management establishes the policies, plans and objectives of the organization as well as a budget framework under which various departments will operate. Middle (or tactical) management has the responsibility of implementing the policy and overall plans of the top management. Junior (or operational) management has the responsibility of implementing day-to-day operations and decisions of the middle management to produce goods and services to meet the revenue, profit and other goals, which in turn will enable the organization to achieve its overall plans and objectives.

2.1.3 Information

The word ‘information’ is used commonly in our day to day working. Information can be defined as the data, which can be organized and presented so that the decision maker may take the necessary action. In other words, information is the result/product of processing data. (Adhikari, 2005:29)

Data

Figure 2.3: Information System

Jawadekar (2003:85) defines information as the processed data, which improves representation of an entity, updates the level of knowledge, reduces uncertainty, aids in decision-making and has a surprise value.

Similarly to this, Davis and Olson defines information as the data that has been processed into a form that is meaningful to the recipient and is of real or perceived value in the current or the prospective actions or decisions of the recipient. Data is defined as groups of non-random symbols in the form of text, images or voice representing quantities, actions and objects.

Information as a concept bears a diversity of meanings, from everyday usage to technical settings. Generally speaking, the concept of information is closely related to notions of constraint, communication, control, data, form, instruction, knowledge, meaning, mental stimulus, pattern, perception, and representation. Many people speak about the Information Age as the advent of the Knowledge Age or knowledge society, the information society, and information technologies, and even though informatics, information science and computer science are often in the spotlight, the word "information" is often used without careful consideration of the various meanings it has acquired. (www.wikipedia.org)

According to the levels of management, information can be classified as the operational, tactical and strategic information.

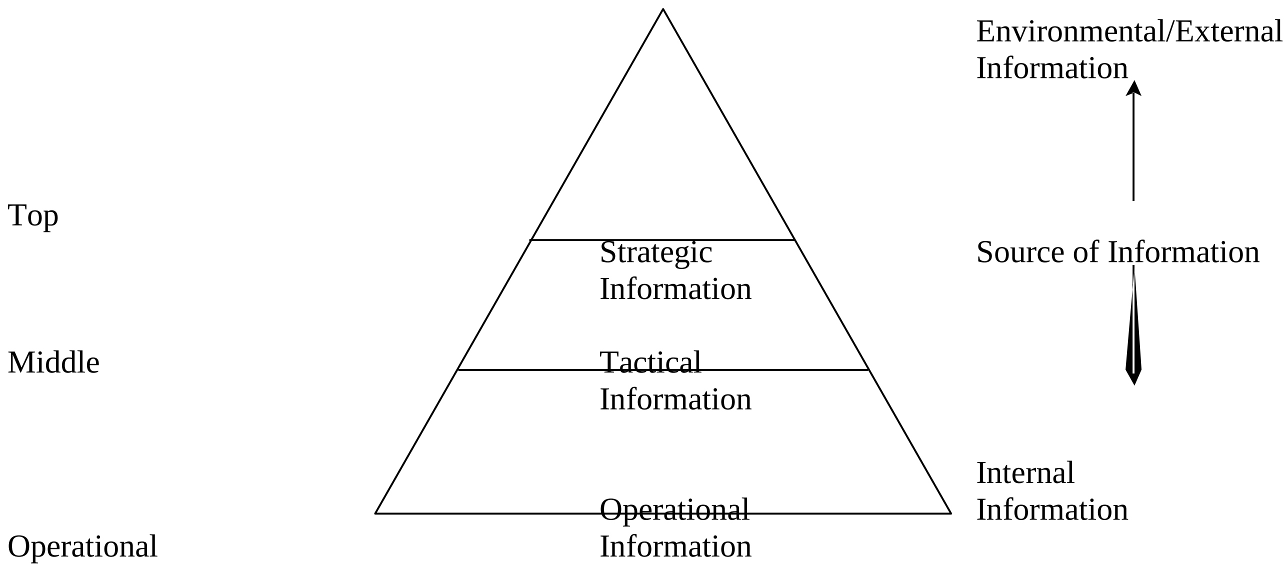


Figure 2.4: Information Classification

Strategic information is the information required for the senior managers. They need information to generate regular reports, to prepare retrieval requests, and information which would assist in identifying problem areas and opportunities.

Tactical information is carrying out the programs and plans for the senior management. Typically, they need information, which would assist in analysis, planning and reporting. Middle managers time orientation is in the range between lower management and that of top management. They need information to obtain routine cross-functional summary reports, to identify nonfactual details, to identify factual details, to generate exception reports.

Operational information is for monitoring the firm's daily activities. Lower managers are concerned primarily with the result of past operations and with conducting current operations. Lower manager's decisions usually are repetitive and structured. They need information to obtain operational data, to assist in scheduling of activities, to identify out of control situations, to generate performance and daily transaction reports.
(Adhikari, 2005:33-34)

2.1.4 Data and Information Concepts

The word data is the plural of datum, through data commonly represents both singular and plural forms. Data are raw facts to observations, typically about physical phenomenon or business transactions. For instance, take of an aircraft would generate many data describing that event. More specifically, data are objective measurements of the attributes (the characteristics) of entities (such as people, place, things and events). Data is more than the raw material of information systems. The concept of data resources has been broadened by mangers and information systems professionals. They realize that data constitutes a valuable organizational resource. Thus, data as data resources must be managed effectively to benefit all end users in an organization.

The data resources of information systems are typically organized into:

- Data bases that hold processed and organized data
- Knowledge bases that hold knowledge in a variety of forms such as facts, rules and case examples about successful business practices.

People often use the terms data and information interchangeably. However, it is better to view data as raw material resources that are processed into finished information products. Then we can define Information as data that have been converted into a meaningful and useful context for specific end users. Thus, data are usually subjected to value-added process (we call data processing or information processing) where, (1) its form aggregated, manipulated and organized; (2) its content is analyzed and evaluated; and (3) it is placed in a proper context for a human user. (O'Brien, 2004:8)

Information, therefore, like any other resource in an organization, should be properly managed to ensure its cost-effective use. It is an ingredient that is vital to good management and if properly managed, should rank in importance with the organization's personnel, material and financial resources. In an organizational context, it is increasingly being recognized as a resource independent of the technology used in manipulating it. (Adeoti-Adekeye, 1997:318-319)

2.1.5 Historical Development of Information System

The role of business information systems has changed and expanded over the last four decades. In the incipient decade (1950s and ’60s), “electronic data processing systems” could be afforded by only the largest organizations. They were used to record and store book keeping data such as journal entries, specialized journals, and ledger accounts. This was strictly an operations support role. By the 1960s, “management information systems” were used to generate a limited range of predefined reports, including income statements, balance sheets and sales reports. They were trying to perform a decision-making support role, but they were not up to the task.

By the 1970s, “decision support systems” were introduced. They were interactive in the sense that they allowed the user to choose between numerous options and configurations. Not only was the user allowed to customize outputs, they also could configure the programs to their specific needs. There was a cost though. As part of your mainframe leasing agreement, you typically had to pay to have an IBM system developer permanently on site.

The main development in the 1980s was the introduction of decentralized computing. Instead of having one large mainframe computer for the entire enterprise, numerous PC’s were spread around the organization. This meant that instead of submitting a job to the computer department for batch processing and waiting for the experts to perform the procedure, each user had their own computer that they could customize for their own purposes. Many poor souls fought with the vagaries of DOS protocols, BIOS functions, and DOS batch programming.

As people became comfortable with their new skills, they discovered all the things their system was capable of. Computers, instead of creating a paperless society, as was expected, produced mountains of paper, most of it valueless. Mounds of reports were generated just because it was possible to do so. This information overload was mitigated somewhat in the 1980s with the introduction of “executive information systems”. They streamlined the process, giving the executive exactly what they wanted, and only what they wanted.

The 1980s also saw the first commercial application of artificial intelligence techniques in the form of “expert systems”. These programs could give advice within a very limited subject area. The promise of decision making support, first attempted in management information systems back in the 1960s, had step-by-step, come to fruition.

The 1990s saw the introduction of the Strategic information system. These systems used information technology to enable the concepts of business strategy developed by scholars like M. Porter, T Peters, J. Reise, C. Markides, and J. Barney in the 1980s. The sustainability of these applications has since been called into question by N. Carr, which Piccoli and Ives, among others, have countered.
The role of business information systems had now expanded to include strategic support. The latest step was the commercialization of the Internet, and the growth of intranets and extranets at the turn of the century. (www.answers.com)

2.1.6 Information System

The rapid evolution of computer technology is expanding man’s desire to obtain computer assistance in solving more and more complex problems: problems, which were considered solely in the domain of man’s intuitive and judgmental processes, particularly in organizations, a few years ago.

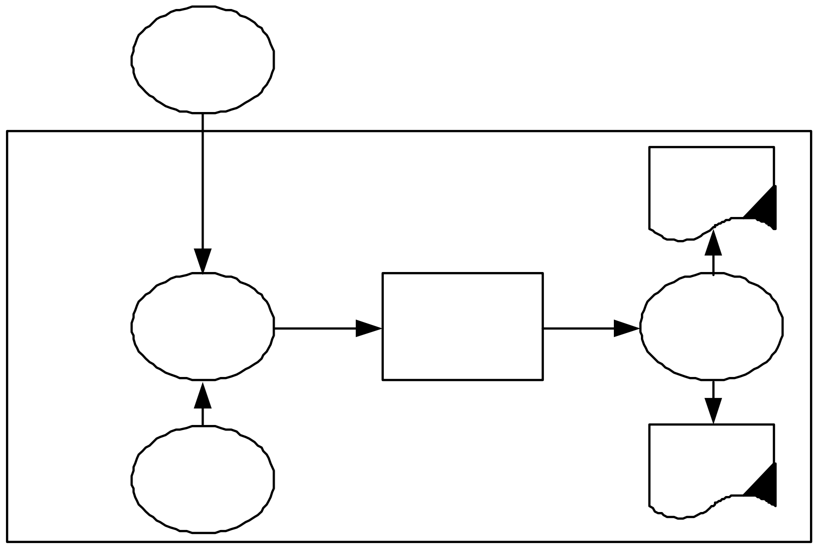


Figure 2.5: A Simple Information System

Information systems are becoming of ever-greater interest in progressive and dynamic organizations. The need to obtain access conveniently, quickly and economically makes it imperative to devise procedures for the creation, management and utilization of databases in organizations. Management information and information systems, in particular those related to effective decision-making processes in an organization, i.e. MIS, are regarded as valuable organizational resources. Simply put, an information system is a system for accepting data/information as a raw material and through one or more transmutation processes, generating information as a product.

It comprises the following functional elements, which relate to the organization and its environments:

- Perception: Initial entry of data whether captured or generated, into the organization;
- Recording: Physical capture of data;
- Processing: Transformation according to the "specific" needs of the organization;
- Transmission: The flows which occur in an information system;
- Storage: Presupposes some expected future use;

- Retrieval: Search for recorded data;
- Presentation: Reporting, communication; and
- Decision making: A controversial inclusion, except to the extent that the information system engages in decision making that concerns itself.

Information system is generally expected to provide not only a confrontation between the user and information, but also, the interaction required for relevant and timely decision making. Its main purpose is to satisfy users' information needs. Approaching information systems in an organizational content shows that it is a sub-system within an organizational system which is a "living and open" system. Academics interested in information works and information practitioners alike have defined information systems in various ways but with basic ideas of people, information technology and procedures which enable the facilitation of the generation, use and transfer of information. Although information systems are considered to belong to an applied discipline, there is need for an understanding of their underlying basic concepts by information practitioners. (Adeoti-Adekeye, 1997:321)

The definition of information systems by Duff and Assad (1980) is considered to be adequate: "A collection of people, procedures, a base of data and (sometimes) hardware and software that collects, processes, stores and communicates data for transaction processing at operational level and information to support Management decision making."

Certain deductions can be made from the above definition that:

- The definition covers the what, how and why of information systems;
- An information system can be manual or computer-based;
- That information systems have existed in organizations and always will;
- That an information system is supposed to support both the basic operations of an organization and its management;
- A distinction seems to be made between data for transaction processing purposes and information for decision-making purposes; and

- The definition has provided what can be considered as basic concepts underlying information systems, namely: people, management, information, systems and organizations.

The attributes indicated above can be considered as major attributes or essential elements for developing an information system concept in an organizational context. In order to understand the information system concept further, Salton (1975) highlighted the most important computer-based information systems as follows:

- Information retrieval system (IRS);
- Question-answering system;
- Database system (DBS);
- Management information system (MIS);
- Decision support system (DSS).

An information system collects, processes, stores, analyzes and disseminates information for a specific purpose. Information systems are often at the heart of most organizations. For example, banks and airlines cannot function without their information systems. With the advent of electronic businesses (e-businesses), if there is no information system, then there is no business.

Information systems accept inputs and process data to provide information to decision makers and help them communicate their results. Now, a World Wide Web presence and activities are expected by consumers and decision makers. So, information systems have become critical for many organizations that in the past did not rely on them. (Turban and Aronson, 2004:38)

Information is data that has been changed into a useful form of output. An information system has five key components: hardware, software, data, processes, and people. (Adhikari, 2005:30)

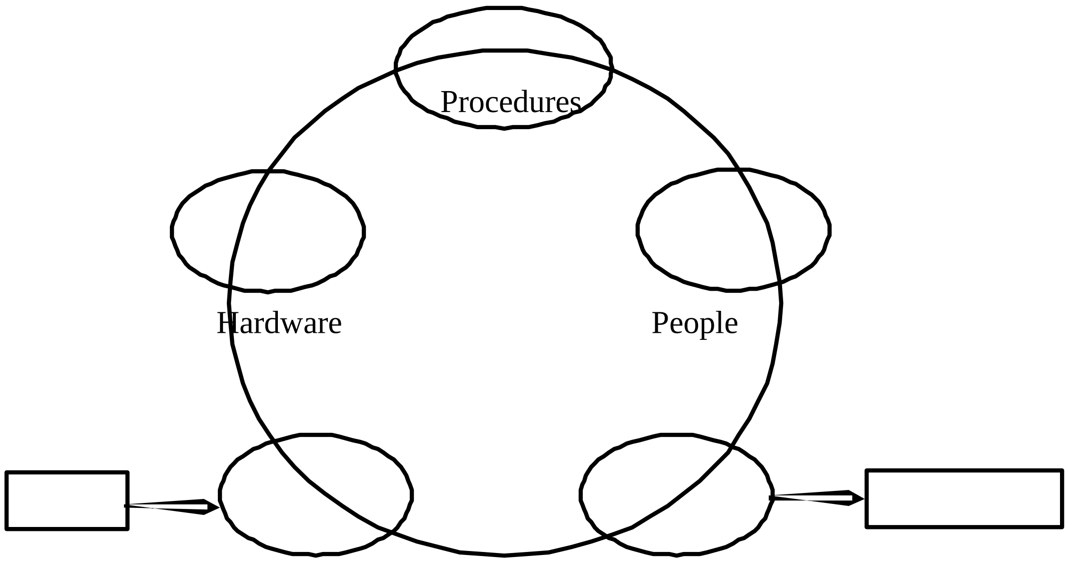


Figure 2.6: Information System Components

Interrelated components that collect, process, store and disseminate information to support decision making, control, analysis and visualization in an organization is the information system in organization. This system may contain information about significant people, places and things within the organization or in the environment surrounding it.
Three activities in an information system produce the information need for the organization. These activities are input, processing and output. The output has the control called feedback which will help the members of the organization to evaluate or correct the input stage. Typical figure of information system is given below. (Adhikari, 2005:32)

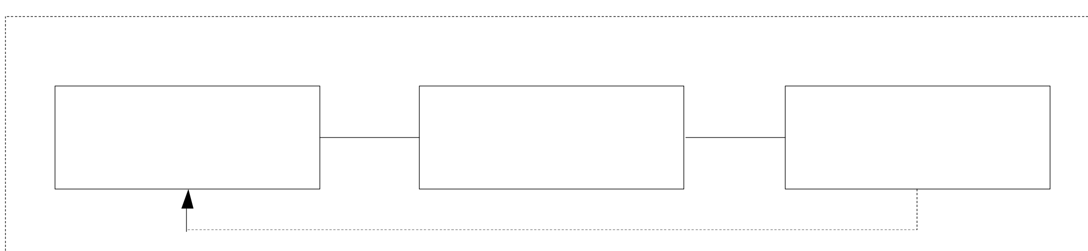


Figure 2.7: Typical Figure of Information System

2.1.7 Information System Security

For Information system held in computer-based systems, security measures need to more complex but more effective in control. Risk analyses need to be undertaken to determine the most effective methods of ensuring information security.

Basic security measures that may need to be carefully applied include:

- Adequate physical security of the buildings in which computer equipment or critical communications equipment (microwave installations or optical fiber/cable exchanges) are held including protection against both human intervention and possible natural disaster (flood, fire).
- Back-up and recovery capabilities in case of system failure including recovery of power supply, telecommunications links, hardware, and software as well as provision for manual or lower tech methods of achieving the same task in case the computer system cannot be revived and simple precautions such as daily backups of all systems and data and storage of backup media at a separate location.
- Thorough testing of all aspects of systems under production conditions prior to their being placed into production mode.
- Access controls on software and data, to prevent unauthorized external access (hacking) or internal attempts at manipulation of system configuration, system code, or data recorded.
- Thorough training of staff in the computing systems and software they are required to use, so that data is not lost or systems damaged accidentally.
- Ensuring that all staff is aware of the security precautions that need to be applied.

(Adhikari, 2005:37-38)

2.1.8 System

System (from the Latin (systēma), and this from the Greek (sustēma)) is an assemblage of entities/objects, real or abstract, comprising a whole with each and every component/element interacting or related to another one. Any object which has no relationship with any other element of the system is not a component of that system. A subsystem is then a set of elements which is a system itself and a part of the whole system. (www.wikipedia.org)

A system is group of interrelated components working together toward a common goal by accepting inputs and producing outputs in an organized transformation process. Such as a system (sometimes called a dynamic system) have three a basic interacting component or functions: Input, Processing and Output.

- Input: Involves capturing and assembling elements that enter the system to be processed. For example, raw materials, energy, data and human effort must be secured and organized for processing.

- Processing: Involves transformation process that converts input into output. For instance, a manufacturing process, the human breathing process, or mathematical calculations.

- Output: Involves transferring elements that have been produced by a transformation process to their ultimate destination. For instance, finished products, human services, and management information must be transferred to their human users.

The system concept becomes even more useful by including two additional components: feedback and control. A system with feedback and control components is sometimes called a cybernetic system, that is, a self-monitoring, self-regulating system.

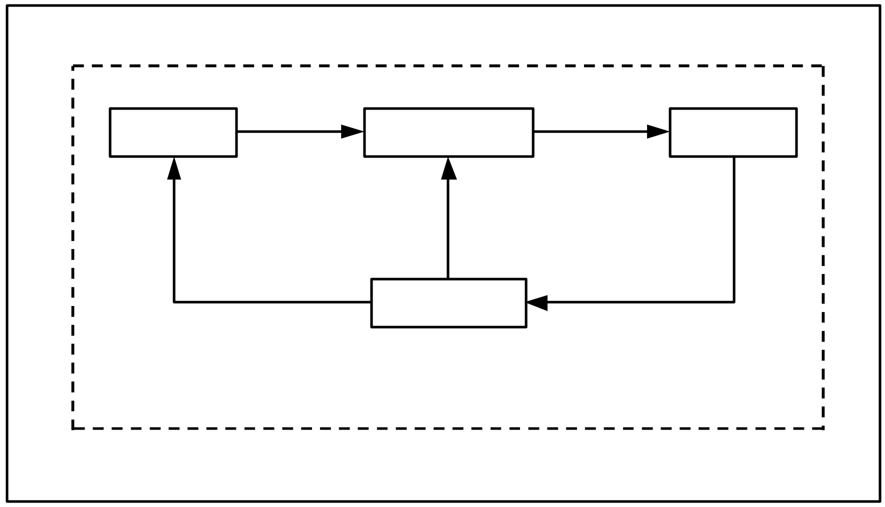


Figure 2.8: Model of System

• Feedback: Is data about the performance of a system. For example, data about sales performance is feedback to sales manger.

• Control: Involves monitoring and evaluating feedback to determine whether a system is moving toward the achievement of its goal. The control function then makes necessary adjustments to a system input and processing components to ensure that it produces proper output. For example, as sales manger exercises control when he or she reassigns sales persons to new sales territories after evaluating feedback about their sales performance. (O'Brien, 2004:8)

2.1.9 Computer Based Information System (CBIS)

Information technology has become a strategic necessity. Believe it, act on it, or become a footnote in history. The revolution in business caused by the internet and its related technologies demonstrates that information systems and information technology are essential ingredients for the success of today's inter-networked business enterprise. Therefore, as tomorrow's managers, entrepreneurs and business professionals, business students must learn how to use and mange a variety of information technologies to revitalize business processes, improve managerial decision making, and gain competitive advantage.

Thus, a CBIS demonstrates how the internet, intranets and extranets can give a business a strategic technology platform that supports electronic commerce and enterprise collaboration among the inter-networked enterprises in today's global business environment.

System is a collection of interrelated and integrated components and operates in a social context and with a computer based information system; the software usually includes application programs, which perform specific tasks for users Lucas (1997). And a CBIS is a collection of components for disseminating information regarding specific purpose.

The major components of a CBIS can include:
(1) Hardware,
(2) Software,
(3) A database,
(4) A network,
(5) Procedures, and
(6) People. (O'Brien, 2004:151)

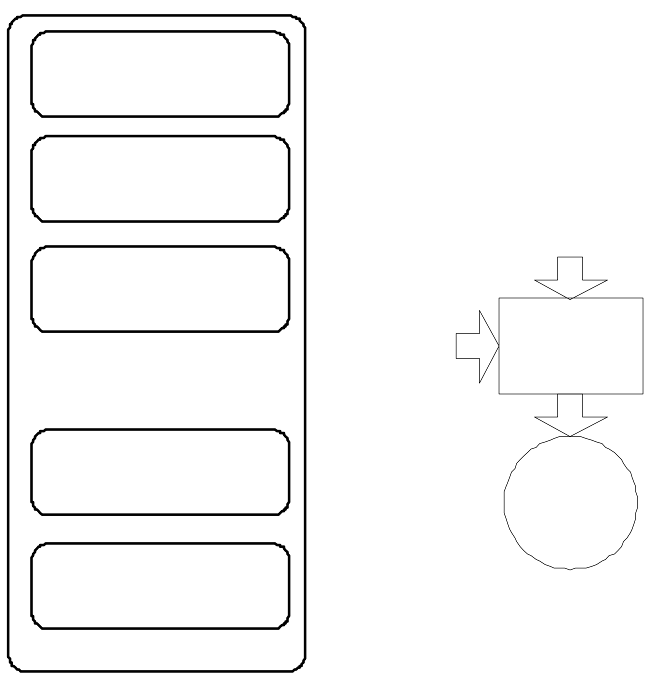


Figure 2.9: Model of CBIS Subsystems

2.1.10 Decision Making Concepts
All managerial activity revolves around decision-making. The manager is the first and foremost decision maker. Organizations are filled with decision makers at various levels. Studies reveal that managers perform 10 major roles, which can be classified into three major categories i.e. interpersonal, information and decisional.

- Interpersonal (Figurehead, Leader, Liaison)
- Informational (Monitor, Disseminator, Spokesperson)
- Decisional(Entrepreneur, Disturbance handler, Negotiator, Resource allocate)

For years, managers have considered the decision making a pure art – a talent acquired overlong period of time through experience. This is said to be the art because variety of decision-making approach can be taken to reach the same kind of decision-making problems and successfully solve it. These styles are often based on creativity, judgment, intuition, and experience rather than systematic quantitative approach grounded on scientific approach. However, the environment to which business or the operations are today is rapidly changing. The business environments the organizational environments of today are more complicated there are several alternatives available for single decision. Decisions may have several implications. (Thierauf, 1982: 12)

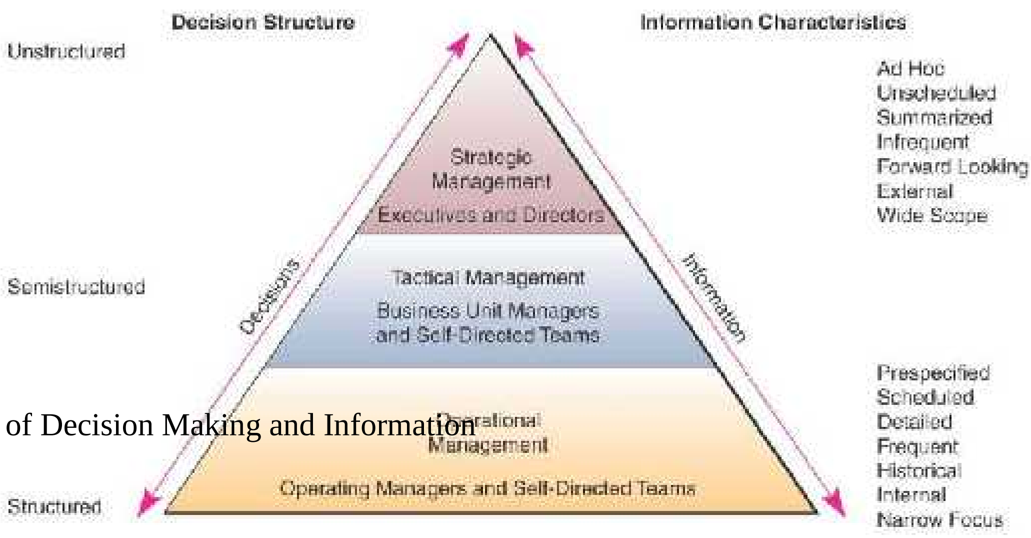


Figure 2.10: Hierarchy of Decision Making and Information

2.1.11 Decision Making and MIS

Decision Support System (DSS) is a special class of system, which is used as a support in decision-making. DSS is a set of well integrated, user friendly, computer based decision making tools that can combine internal and external data with various models to solve unstructured and semi-structured problems. Many of the decision-making situations, at all levels of management are such that, its occurrence is infrequent but the methodology of decision-making is known. Some of the methods are proven and are widely used. Such applications are separated and are packed in the DSS.

These systems use data from the general MIS and are used by a manager or a decision maker, for decision support. The DSS could be an internal part of MIS. When the decision making need is in real time dynamic mode, all such systems are designed to read, measure, monitor, evaluate, analyze and act as per decision guidance embedded in the system. The MIS would become more useful if the decision-making is made person independent and executed with well-designed DSS.

The ultimate purpose of the MIS is to make decisions at all levels of operations based upon the information flow. If decisions cannot be automated through MIS design, the objective becomes one of providing information to improve the decision-making ability of the manager. (Adhikari, 2005:20)

2.1.12 Importance of MIS to Management

In all but the smallest organizations management rarely observe operations directly. They attempt to make decisions, prepare plans and control activities by using information, which they obtain from formal sources – for example, the organization's MIS and also by informal means such as face-to-face conversations, telephone calls, through social contacts and so on.

A MIS is generally thought of as an integrated, user-machine system providing information to support operations, management and decision-making functions in an organization.

In fact, an MIS is a special-purpose system useful for management in an organization. MIS is an accessible and rapid conveyor belt for appropriate high quality information from its generation to its users. The heart of an effective MIS, therefore, is a carefully conceived, designed and executed database. Its level corresponds to adaptive decisions.

The characteristics of MIS in practice include:

- An information focus, designed for managers in an organization;
- Structured information flow;
- An integration of data processing jobs by business function, such as production of MIS, personnel MIS and so on; and
- Inquiry and report generation, usually with a database.

The MIS era has eventually contributed a new level of needed management information. The increasing interest in MIS had led to much activity in developing techniques and software for data management. However, it should be noted that the new thrust in MIS is on the uses to which the information is put and not how it is processed. The emphasis is on managing the information as a resource, which is important, and not on the intermediate processing stage.

Managements are faced with an accelerating rate of change and an ever more complex environment. Managers need relevant information, which is information that increases their knowledge and reduces their uncertainty. Thus, it is usable by the manager for its intended purpose. Without relevant information, no manager can function effectively. A worthwhile extension to the well-known adage that “management get things done through people,” would be that management get things done through people, by using relevant information retrieved from MIS. It is not an exaggeration to state that MIS is the lifeblood of management.

The efficient performance of an organization is dependent very much on the internal performance of the organization’s resources. To illustrate the use of a management information system in monitoring the performance of resources, the following examples from the human resource aspect of a management information system will suffice. An organizations output performance is directly related to the motivation and performance of its human resources.

A high staff turnover rate which is monitored by the management information system and identified as occurring in a particular department or in a particular category of staff can indicate poor performance on the part of the employer. Also, a high turnover rate of clerical staff may indicate that management practices do not assist in providing for career progression, personal development or training opportunities. Through the identification of poor human resource management, corrective measures may be taken which will in turn improve the organization's output performance. (Adeoti-Adekeye, 1997:325)
It may conclude that MIS is the lifeblood of any organization. Both public and private sectors must be committed to seeking formal or organized information before taking decisions. Management problems will be provided with specific answers through computer simulations and gaming techniques. Today's managers must be careful, as they can become inundated with only marginally relevant facts rather than be presented with concrete and absolutely useful information. This situation can be avoided where a virile and functional MIS unit is put in place.

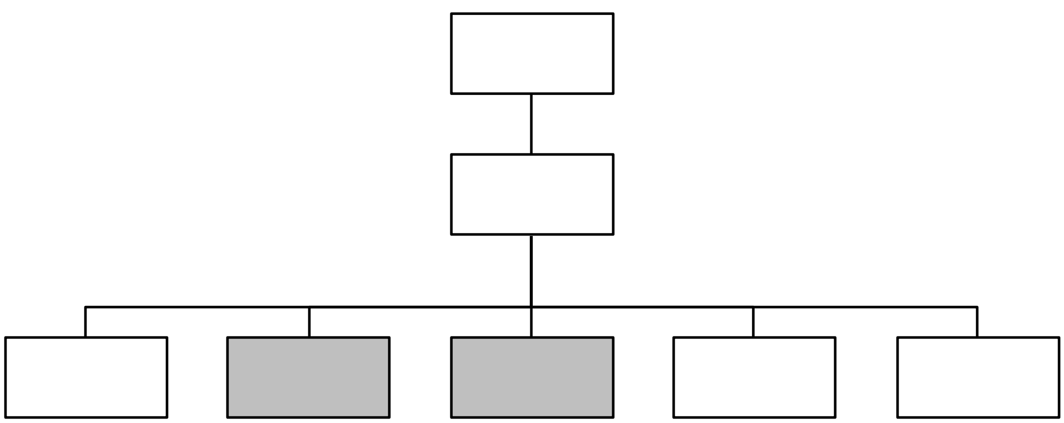


Figure 2.11: Corporate Strategy and Management Information System

2.1.13 Role of MIS

The role of the MIS in an organization can be compared to the role of heart in the body. The information is the blood and MIS is the heart. In the body, the heart plays the role of supplying pure blood to all the elements of the body including the brain. The heart works faster and supplies more blood when needed. It regulates and controls the incoming impure blood, processes it and sends it to the destination in the quantity needed. It fulfills the needs of blood supply to human body in normal course and also in crisis. (Jawadekar, 2003:7)

The MIS plays exactly the same role in the organization as heart plays in body. The system ensures that an appropriate data is collected from the various sources, processed, and sent further to all the needy destinations. The system is expected to fulfill the information needs of an individual, a group of individuals, the managers and the top management.

The MIS satisfies the diverse needs through a variety of systems such as Query Systems, Analysis Systems, Modeling Systems, and DSS.

The MIS helps in Strategic Planning, Management Control, Operational Control, and Transaction Processing.

The MIS helps the clerical personnel in the transaction processing and answers their queries on the data pertaining to the transaction, the status of a particular record and references on a variety of documents. The MIS helps the junior management personnel by providing the operational data for planning, scheduling and control, and helps them further in decision making at the operations level to correct an out of control situation.

Figure 2.12: Organization and Information Concepts

Levels of Management		Use of MIS	Nature of Information	Value of Information	Reporting Media and Structure
CEO & Board		Goal Setting, Policy Making, Strategic Planning	Key, Accurate, Futuristic	Very High, Meeting High Risk & Uncertainty Situation	Unstructured
Middle Division, Department, Product Managers		Decision Making Problems solving Monitoring & Achieving Business Goals, Planning & Schedule	Exception, Precise, Analytical Decision Oriented, Related to Past, Current Future	High, Meeting Risky Situation	Ad hoc, unformatted, Regular but Modified Frequent, Display & Print
Supervisory, Jr. Managers, Supervisors, Officers		Problem Solving & Meeting Targets	Processed & Summarized and Classified for the Current Period	Low, Meeting near Certainty Situation	Given at fixed Internal Display & Print
Operational Assistants, Clerks		To know the status facts	Detailed Relating to Current Period	Lowest	Lowest Volume Print

Source: Jawadekar, 2002:107

The MIS helps the middle management in short term planning, target setting and controlling the business functions. It is supported by the use of the management tools of planning and control.

The MIS helps the top management in goal setting, strategic planning and evolving the business plans and their implementation. The MIS plays the role of information generation, communication, problem identification and helps them in the process if decision-making. The MIS, therefore, plays a vital role in the management, administration and operations of an organization.

2.1.14 Characteristics of MIS

These are desirable characteristics of an MIS:

- An MIS supports transaction handling and record keeping.
- An MIS uses an integrated database and supports a variety of functional areas.
- An MIS provides operational, tactical, and strategic-level managers with east access to timely but for the most, structured information.
- An MIS is somewhat flexible and can be adapted to meet the changing information needs of the organization.
- An MIS can boost system security by limiting access to authorized personnel. (Adhikari,2005:15)

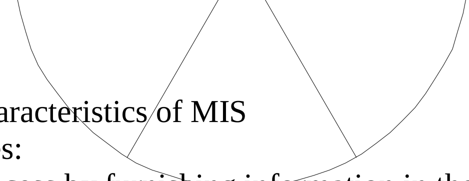


Figure 2.13: Characteristics of MIS

2.1.15 Objectives of MIS

An effective MIS has following objectives:

- Facilitate the decision-making process by furnishing information in the proper time frame. This helps the decision-maker to select the best course of action.
- Provide requisite information at each level of management to carry out their functions.

- Help in highlighting the critical factors to the closely monitored for successful functioning of the organization.
- Support decision-making in both structured and unstructured problem environments.
- Provide a system of people, computers, procedures, interactive query facilities, documents for collecting, storing, retrieving and transmitting information to the users. (Adhikari, 2005:14)

2.1.16 Limitation of MIS

Some limitations of MIS are:

- MIS cannot replace managerial judgment in decision-making. It is merely an effective tool for the managers in decision-making and problem solving.
- The quality of output of MIS is directly proportional to the quality of input and processes.
- MIS cannot provide tailor made information packages. It is required to analyze the available information before decision-making.
- In a fast changing and complex environment, MIS may not have enough flexibility to update itself quickly.
- MIS takes only quantitative factors into account.
- MIS is less useful for making non-programmed decisions.
- MIS is less effective in organizations where information is not being shared with others.
- MIS is less effective due to frequent changes in top management, organizational structure and operational staff. (Adhikari, 2005:19)

2.1.17 Problem with MIS

There is abundant evidence from numerous surveys conducted in developed countries, particularly in the UK and USA, that existing MIS, often using advanced computer equipment, have had relatively little success in providing management with the information it needs. Reasons discovered include the following:

- Lack of management involvement with the design of the MIS;

- Narrow or inappropriate emphasis of the computer system;
- Undue concentration on low-level data processing applications particularly in the accounting area;
- Poor appreciation by information specialists of management's true information requirements and of organizational problems; and
- Lack of top management support.

To be successful, an MIS must be designed and operated with due regard to organizational and behavioral principles as well as technical factors. Management must be informed enough to make an effective contribution to system design, and information specialists (including systems analysts, accountants and operations researchers) must become more aware of managerial functions and needs so that, jointly, more effective MIS are developed.

Management do not always know what information they need and information professionals often do not know enough about management in order to produce relevant information for the managers they serve.

There is no doubt that better communication between management and information professionals and a wider knowledge by both groups of MIS principles would greatly facilitate the task of developing relevant and appropriate information systems. However, it should be noted that there is no simple checklist of essential features, which, if followed, will automatically produce the perfect MIS. What is required is an awareness and understanding of key principles and functions so that the design, implementation and operation of the MIS are the result of informed decisions and judgment rather than haphazard development without regard to real organizational requirements.

For the management information system, computer is not essential but can be very useful. The study of MIS is not about the use of computers, it is about the provision and use of information relevant to the user. Undoubtedly, there is an important and growing role for computers and IT in MIS but the technology must be used with discretion. Computers are good at rapid and accurate calculations, manipulation, storage and retrieval but less good at unexpected demands or qualitative analysis or where genuine judgment is required. Computers, certainly, can be used to the best advantage for processing information. (Adeoti-Adekeye, 1997:326)

2.1.18 Success and Failure of MIS

Most organizations use MIS more successfully than other organizations. Through hardware, software and technology available are the latest and the best; its use is more for the collection and storage of data and its elementary processing.

There are some factors, which make MIS, a success while there are some factors, which make it a failure.

Factors Contributing to Success of MIS

If MIS is to be a success, then it should have all the features listed below:

- MIS is integrated in the management function. It sets clear objectives to ensure that MIS focuses on the major issues of the business. Also adequate development resources are provided and human & organizational barriers to progress are removed,
- An appropriate information processing technology required to meet the data processing and analysis needs of the users of MIS is selected,
- MIS is oriented, defined and designed in terms of the users requirements and its operational viability is ensured,
- MIS is kept under continuous surveillance, so that its open system is modified according to the changing information needs,
- MIS focuses in results and goals, and highlights the factors and reasons for non achievements,
- MIS is not allowed to end up into and information generation mill avoiding the noise in the information and the communication system,
- MIS recognizes that a manager is a human being and therefore, the systems must consider all the human behavioral aspects in the process of management,

- MIS recognizes that the different information needs for different objectives must be met with. The globalization of information in isolation form the different objectives leads to too much information and its non use,
- MIS is easy to operate and therefore, the design of MIS has such good features which make up a user friendly design,
- MIS recognizes that the information needs become obsolete and new needs emerge. The MIS design, therefore, has a potential capability to quickly meet newer and newer needs of information,
- MIS concentrates on developing the information support to manage critical success factors. It concentrates on the mission critical applications serving the needs of the top management.

Factors Contributing to Failures of MIS

Many times, MIS is a failure. The common factors which are responsible for this are as follows:

- MIS is conceived as a data processing and not as an information system,
- MIS does not provide that information which is needed by managers but it tends to provide the information generally the functions calls for. MIS then becomes an impersonal function,
- Underestimating the complexity in the business systems and not recognizing it in the MIS design leads to problems in the successful implementation,
- Adequate attention is not given to the quality control aspects of the inputs, the process and the outputs leading to insufficient checks and controls in MIS,
- MIS is developed without streamlining the transaction processing systems in the organizations,
- Lack of training and appreciation that the users of the information and the generators of the data are different, and they have to play and important role in the MIS,
- MIS does not meet certain critical and key factors of its users, such as a response to the query in the database, an inability to get the processing done in a particular manner, lack of user friendly system and the dependence on the system personnel,
- A belief that the computerized MIS can solve all the management problems of planning and control of the business,
- Lack of administrative discipline in following the standardized systems and procedures, wrong coding and deviating from the system specifications result incomplete and incorrect information,
- MIS does not give perfect information to all the users in the organization. Any attempt towards such a goal will be unsuccessful because every user has a human ingenuity, bias and certain assumptions not known to the designer. MIS cannot make up these by providing perfect information. (Adhikari, 2005:24-26)

2.1.19 Risk Associated with MIS

Risk reflects the potential, the likelihood, or the expectation of events that could adversely affect earnings or capital. Management uses MIS to help in the assessment of risk within an institution. Management decisions based upon ineffective, inaccurate, or incomplete

MIS may increase risk in a number of areas such as credit quality, liquidity, market/pricing, interest rate, or foreign currency. A flawed MIS causes operational risks and can adversely affect an organization's monitoring of its fiduciary, consumer, fair lending, Bank Secrecy Act, or other compliance-related activities.

Since management requires information to assess and monitor performance at all levels of the organization, MIS risk can extend to all levels of the operations. Additionally, poorly programmed or non-secure systems in which data can be manipulated and/or systems requiring ongoing repairs can easily disrupt routine work flow and can lead to incorrect decisions or impaired planning. (www.occ.treas.gov)

2.1.20 Assessing to MIS Risk

To function effectively as an interacting, interrelated, and interdependent feedback tool for management and staff, MIS must be "useable."

The five elements of a useable MIS system are timeliness, accuracy, consistency, completeness, and relevance. The usefulness of MIS is hindered whenever one or more of these elements are compromised.

- Timeliness: To simplify prompt decision-making, an institution's MIS should be capable of providing and distributing current information to appropriate users. Information systems should be designed to expedite reporting of information. The system should be able to quickly collect and edit data, summarize results, and be able to adjust and correct errors promptly.

- Accuracy: A sound system of automated and manual internal controls must exist throughout all information systems processing activities. Information should receive appropriate editing, balancing, and internal control checks. A comprehensive internal and external audit program should be employed to ensure the adequacy of internal controls.

- Consistency: To be reliable, data should be processed and compiled consistently and uniformly. Variations in how data is collected and reported can distort information and trend analysis. In addition, because data collection and reporting processes will change over time, management must establish sound procedures to allow for systems changes. These procedures should be well defined and documented, clearly communicated to appropriate employees, and should include an effective monitoring system.

- Completeness: Decision makers need complete and pertinent information in a summarized form. Reports should be designed to eliminate clutter and voluminous detail, hereby avoiding "information overload."

- Relevance: Information provided to management must be relevant. Information that is inappropriate, unnecessary, or too detailed for effective decision-making has no value. MIS must be appropriate to support the management level using it. The relevance and level of detail provided through MIS systems directly correlate to what is needed by the board of directors, executive management, departmental or area mid-level managers, etc. in the performance of their jobs.(www.occ.treas.gov)

2.1.21 Concept of Bank

Banks are among the most important financial institutions in the economy and essential business in thousands of local towns and cities. In this context, there is much confusion about exactly what a bank is.

Certainly, banks must be identified by the functions (services and roles) they perform in the economy. The problem is not only that the functions of banks are changing but the functions of their principals competitors are also changing.

Indeed, many financial institutions- including security dealers, brokerage firms and insurance companies are trying to be as similar as possible to banks in the services they offer. On the contrary, bankers are challenging these non-bank is better to be precise and clear.

According to Crowther, - “The banker’s business is to take the debts of other people to offer his own in exchange, and thereby create money.

Chamber’s Twentieth Century Dictionary defines a bank as an “institution for the keeping, lending and exchanging, etc. of money.”

According to Kent, - “A bank is an organization whose principal operations are concerned with the accumulation of the temporarily idle money of the general public for the purpose of advancing to others for expenditure.”

Sayer’s define the bank as, - “Ordinary banking business consists of changing cash for bank deposits and bank deposits for cash; transferring bank deposits from one person or corporation to another; giving bank deposits in exchange for bills of exchange, government bonds, the secured or unsecured promises of business men to repay, etc.” Therefore, a bank is an institution which accepts deposits from the public and in turn advances loans by creating credit through the accept deposits. According to US Law, any institution offering deposits subject to withdrawal on demand and making loans of a commercial or business nature is a bank.

The banking sector is one of the most significant service industries. It plays a vital role in the economic development and financial health of any country. An effective banking system leads to the effective mobilization of source like saving and investment, which in turn leads to the sound economy health of the country (D. Sapkota, 2002). Bank offers various types of services to its customer to facilitate the economic transaction. Service means the mediation between the bank and the customer.

Therefore, customer satisfaction highly depends upon the quantity and quality of services offered by the bank. Due to the broad and liberal financial policy adopted by Government, the entrance of foreign joint venture commercial banks have been increasing with an aim to provide modern banking services and facilities more efficient compared to the existing Nepalese Commercial Banks i.e. Nepal Bank Ltd. (NBL) and Rastriya Banijya Bank (RBB).

Commercial Banks of Nepal are:
- Nepal Bank Limited
- Rastriya Banijya Bank
- Nabil Bank Limited
- Nepal Investment Bank Limited
- Standard Chartered Bank Nepal Limited
- Himalayan Bank Limited
- Nepal SBI Bank Limited
- Nepal Bangladesh Bank Limited
- Everest Bank Limited
- Bank of Kathmandu Limited
- Nepal Credit and Commerce Bank Limited
- Lumbini Bank Limited
- Nepal Industrial and Commercial Bank Limited
- Machhapuchhre Bank
- Kumari Bank Limited
- Laxmi Bank Limited
- Siddhartha Bank Limited

- Global Bank Limited
- Citizens Bank International Limited

2.1.22 Introduction to Commercial Bank

The word ‘Bank’ is derived from the Italian word BANCA meaning a counter table or bench used by medieval moneychanger. Oxford Advanced Learners Dictionary of Current English defines bank as “An organization that provides various financial services for example keeping or lending money.”.

It is difficult to define the word ‘Bank’ because of the changing role and function of bank from age to age and country to country. A banker or a bank is a person, firm or company, having a place of business where credits are opened by the deposit or collection of money or currency subject to be paid or remitted upon draft, check or order or where money is advanced or loaned on stocks, bond, bullion and bill of exchange and promissory notes are received for discount and sale etc. (www.wikipedia.org)

An ordinary bank is run on business lines with a view to earning profit and a central bank on the other hand is primarily meant to shoulder the responsibility of safeguarding the financial and economic stability of the country, it acts only in the public interest and for the welfare of the country as a whole, and without, regard to profit as primary consideration. (www.answers.com)

A commercial bank is one which exchange money, accepts deposits, grants loans and performs commercial banking functions and which is not a bank meant for co operative, agriculture, industries or for such specific purpose.

2.2 Review of IT Background in Nepal

Nepal’s journey into the world of information technology began three decades ago, with the IBM 1401 for the population census of 1971. Institutional initiative to promote computer awareness and provide computer training began with the government’s establishment of the Electronic Data Processing Center in 1974, renamed the National Computer Center (NCC) in 1976.

In 1979, Nepal Electricity Authority started using computers. In 1981, NCC purchased the fourth generation computer, ICL 2950/10. In the same year, the Civil Engineering faculty of Institute of Engineering procured microcomputers to launch computer courses. The history of computer training dates back to 1971, when American experts provided training in Auto Coder programming to operate the IBM 1401 computer. Later, in 1973, Tribhuvan University (TU) and NCC gave FORTRAN language training to about 100 persons.

The promotion of computer education in the national education system started only in the early 1990s. The Center for Curriculum Development, under the Ministry of Education, designed computer science courses for the 9th and 10th grades in secondary schools. In 1992, eight private schools offered computer science as an optional subject for S.L.C. exams. Kathmandu University started offering one course in Computer Science for I.Sc. prior to offering admission for B.E. in computer science since 1994.

Nepal's stint with the Internet started with the e-mail services provided by Royal Nepal Academy for Science and Technology (RONAST). Mercantile Office Systems started e-mail services for commercial purposes in June 1994, and after a year, on 15 July 1995, it started to provide full online access to Internet services and a presence of Nepal on the Internet by providing home pages. (www.itpfnepal.org)

2.3 Review of ICT in 10th Five Year Plan

The main focus of 10th National plan in Information and Communication Technology (ICT) is to develop the knowledge based society, to remove the barriers in ICT reach and to help reduce the poverty.

Some main point relating to ICT in 10th plan are presented here:

- Emphasis will be given to education and trainings related with Information Technology.
- National information center running under the Science and Technology ministry will be strengthened in order to implement, supervise and monitor policies related with Information Technology and to legalize e-commerce.
- Information technology parks will be established in various parts of the country.
- Conducive environment will be created to attract domestic and international investment in industries related with development, to encourage production and utilization of soft ware and services such as data entry, digitization, medical transcription, call center, web content design etc.
- International training will be encouraged to produce high and medium level manpower and to produce highly skilled manpower to compete in the international front.
- Developing and promoting Information Technology to relay information on agriculture, education, health and other economic sectors to rural areas will be emphasized. The attempt will be made to provide Internet services to 1500 VDCs across the country.
- Website containing information on agriculture, education and health will be launched.
- Initiatives will be taken to incorporate computer education in the school curriculum.
- Private sectors will be encouraged to campaign on nature, religion, culture and heritage through Internet service.
- The participation of private sectors in Information Technology arena will be encouraged.
- Information Technology will be used to make government activities transparent, to strengthen system that provides service and to reform financial management and administration. In this regard, e-governance will be properly handled.
- Conducive environment will be created to increase the use of services related to Information Technology. To legalize the use of Information Technology necessary laws will be formulated.

- Private sectors will be encouraged to produce medium level manpower necessary for Information Technology front. Private sectors will be provided assistance to set up academic, research and development institutes.
- Emphasis will be given to computer education from school level. Internet facilities will be provided in universities and public schools to provide better quality computer education.
- Scholarships will be provided to bright but needy students from rural areas for higher-level education on information technology.
- Information technology will be used for the purpose of electricity business, electronic education and distance health. Academic institutions and hospitals situated where there is facility of tele-communication and electricity will be encouraged to use the service of information technology. And where there is no electricity facility, promotion of Information Technology will be done through solar energy.

2.4 Review of Master Degree Thesis

Researcher reviewed some unpublished master degree thesis for identifying variables relevant for research. This works helps to avoid any repetition. Researchers found that majority of the master's degree thesis are concentrated in the case study approach of public organizations. Researcher found very few theses on commercial bank's information system. However, researcher realizes that the review of old and new master degree thesis on different organization really useful to carry out this research study.

Ishwar Acharya (2002) has conducted research study entitled "Implementation of Management Information System in Royal Nepal Airlines Corporation" (a case study in marketing department). In his master's degree thesis, he used both primary and secondary data and information but findings are based on primary data which are collected through observation, questionnaire and interview methods.

His major findings are as follows:

- Royal Nepal Airlines is one of the complex organizations due to its nature of service and wide area of marketing activities.
- Marketing Department of RNAC has a multidivisional structure but in reality the structure is ambiguous.
- The information system in marketing department is based on Traditional Paper-Based Information and manually filling system. Manual flow of documents except computerized Reservation System of International flight ticket through ABACUS and other CRS software.
- Lack of capable manpower and IT experts to handle sophisticated information technology to maintain proper information system within the department.
- Centralization of authority, manual flow of documents and unnecessary political pressure generally creates obstacle to perform marketing activities smoothly.
- Information announced in Nepali medium through Radio Nepal regarding flight schedules by the marketing departments is quite traditional.
- Lack of proper informational infrastructure to communicate different domestic station causes problems in planning flight schedules.
- Use of micro computers in each division and units are off use. They are used to keep record to some extent and used to type materials whenever needed in order to submit the report to the department director and CEO, RNAC.
- Information does not flow systematically due to absence of Network based computerized Information System to coordinate and communicate different divisions and units of the Marketing department.
- Due to mishandling, misunderstanding and gap of information creates frequent flight delay, flight cancellation and changes in flight schedules.
- Network-based computerized information system is necessary for the systematic flow of information.
- Traditional paper-based information system creates delay in making decision. It should be eliminated through computerized information system.
- It is difficult to implement MIS due to lack of necessary infrastructure of the Marketing department of RNAC such as: equipment & accessories, technical manpower, IT experts and Budget for installation of new technology, and others.

Similarly, thesis entitled “A study on Micro Computers and Computerization in Nepal” - Yadhav Pradhan (1986) states that the computer has become very common in USA and Europe, computer have been part of their life because large number of services they receive are computer supported. Activities involved in business, universities and schools, government and all the communication media are supported by computer. Scientists, teachers, businessman, engineers, doctors and other professionals are also getting tremendous amount of help out of it, manufacturing, design, teaching, planning, decision making etc. are aided by the computer. All these employ computers to process vast amount of data.

The computers were developed to perform such task of swift calculation. The development and progress in these fields would have been impossible in the absence of these extra ordinary machines which can handle complex and tedious calculation in a short period of time which people cannot do or typically do not want to do. Through this research study, he found some interesting findings in the beginning era of computerization in Nepal.

His major findings are as following:

- There is an increasing trend and good scope for the use of micro-computers in Nepal. It is estimated that the total micro-computers at the end of 1986 will be approximately 610. The apple Mac computer have taken a good portion of market from the very beginning but it is estimated that IBM computers are going to be in number one position by 1987.
- Micro-computer users are mostly business organization, foreign projects, foreign organizations, government offices and corporation in Nepal.
- After the introduction of micro-computer in the organization, the average productivity has gone up to 51.5% in a particular field. A quite good numbers of users have said that there is no effect because they have not been able to use it because of lack of training or technical or administrative problem.

- The computer users were motivated towards computerization, using micro-computers was due to the growing need of the organization and the low cost of micro-computers. Thus they are not buying it as a fashion.
- The micro-computer users/operators are trained for an average of 2.32 months only. About 81.2% users/operators think they need further training to carry out their jobs independently.
- There are 36 varieties of micro-computers available in the country ranging from very popular brand names to newly introduced computer and some compatibles.
- The computer users have procured their micro-computer considering mainly its price, brand name and company or availability.
- The major field of computer application by National Computer Center to its customers are mainly in accounts and banking; education; engineering; households family and social environment; health; agriculture and land; population and others.
- The micro-computers are utilized in a daily average of 5.25 hours. Most of the micro-computers are being used for the major fields like word-processing, accounting, statistical analysis, and software development.
- Most of the micro-computes have problem of power failure and diskette problem and loosing data. The other type of major problems is reliable maintenance and repair services.

Ajit P. Bhattarai (2003) has conducted research entitled “Performance of Management Information System in Kumari Bank”. His master degree thesis is fully based on primary data collected through observation, direct communication with respondents and by questionnaire method. In his master degree thesis he argues that most organization spend huge amount of resources in setting up MIS infrastructure but on other hand they have not been able to fully capitalize the benefits of MIS, therefore, he tended to study the utilization of MIS and the factors which affect the performance of MIS.

His major findings are as following:

- Majority of the users of the MIS consider MIS to be important.

- Majority of the users of the MIS consider that MIS helps in decision making.
- Use of MIS is directed more towards extraction of current information rather than historical information.
- MIS is fulfilling the information needs of the users to different degrees of satisfaction. Higher management is less satisfied than the middle management.
- Further improvement in utilization of MIS needs better communication and training between the various stakeholders.
- MIS users are comfortable using the product and have a good understanding of the system.
- MIS users are moderately satisfied with the MIS.
- There is amole room to increase the use of MIS.
- The factors which will improve the utilization of MIS are: “Good communication channel”, “Training to end user”, “Training to software personnel”.

Devinder Thapa (2003) conducted research entitled “Future Prospective of Online Banking in Nepal”. He collected data based on the primary. The primary data were collected from structured interview. The analysis of data was presented on the tabular form, simple bar diagram and pie chart. The analysis of data has been done through various ways like percentage, average etc. and concluded that banks in future cannot survive without the support of Information Technology.

On his survey he found that only 5% respondents are satisfied with the traditional banking system and rest 95 % want immediate technical improvement in their service system. Respondents feel that the bank should imply online services to provide better facilities to them.

Based on the above conclusions, Thapa gave the following recommendations:

- The bank should developed standard based solutions which consist of open system architecture, with scalability as its main feature for taking care of future volumes in growth.

- The IT industry should closely collaborate with the banking sector in providing such serves at cost-effective prices and should gear itself to meet the requirements of the banking and financial sector with a spirit of co-operation, and partnership in making the banking industry scale the heights of international excellence.
- In order to minimize frauds and security problems, the Central Vigilance Commissioner (CVC) should direct all banks to compulsorily offer Electronic Clearing Services (ECS) to their customers.

Although there are 17 commercial banks in Nepal and all banks have various departments, this study has been confined to Treasury Department of Kumari Bank Ltd. The gap of this study is that the data used are only primary data. The conclusion and recommendation made in this study cannot generalize in other banks.

Bimal P. Adhikari (2002) has conducted research entitled "Information Technology in Security Management". In his master degree thesis, he considered both primary and secondary data but his thesis result is based on primary data. He used interview, questionnaire and survey method for data collection. As his thesis covered the huge subject area, he chose different class of people as sample like farmer, labor, students etc. He argues that Finding personal information and their location instantaneously is extremely important to take immediate decisions in critical situations of security management.

This is the most critical information playing vital role in security management functions, however, need of the security management information is not limited to these information. Finding the geographical location i.e. address of the person or any object is also critical in the security management.

His major findings are as following:

- Most of the public use citizenship card as their ID card. Security personnel as well as the government offices use citizenship card as only reliable ID card which is widely used in public dealing and official dealings.

- The security personnel and government offices ask for citizenship card for the identification purpose but it is not reliable since there is no easy verification mechanism. It is difficult to identify the fake ID cards.
- Maintaining the personal information integrated with address and availability of the same online will be highly useful. This will help to know the real identity and highly discourage the disguising activity of the criminals and terrorists.
- Joblessness, poverty and ignorance are the major causes behind the terrorism. Eliminating the root cause and campaigning education program are the major way-out of solving the conflict problems.
- Many publics agree that because or obscene of real ID card and information, they have to suffer difficulties and claim the lives many times. Citizenship card is used by common publics as ID while the job holders use office ID card instead.
- Majority of publics have no problem if government maintains personal information to maintain peace make the system transparent however, some claims that it is breach of privacy.
- Majority of the publics highly recommend government maintain such information as soon as possible. Some who pay more interest and attention also claim that maintaining such personal information and using it will solve problem of conflict as well as corruption and make administration more transparent and this is the root cause of the conflicts.
- The impact of security management information system in the security management will be strategic in nature. The information system will strengthen the planning and administration capability of the security management organization.

2.5 Research Gap

In the above thesis, most of the study is based on the system where there is no MIS system installed. Information system is based on traditional paper-based information and even lack capable manpower and IT experts. Information does not flow systematically due to absence of Network based computerized Information System to coordinate and communicate different divisions and units of the department. The thesis mainly focus on

"What will happen if MIS is installed?" or "Will it be beneficial if the MIS is implemented?".

In this thesis, instead of studying on that aspect, the current role of management information system at various level of management and at different department is studied. To study in this aspect, corporate office placed at Bag Bazaar is taken. NCC Bank has already introduced a computer based information system (CBIS) and is providing its services through fully computerized branches and 260 well trained personnel. They have also been using banking software system for their daily activities and also provide various technological services to its customer. To get the knowledge of the MIS implemented system and flow of information NCC bank is studied. The gap of this study is that the data used are only primary data, which is collected from observation, questionnaire, and interview method. The conclusion and recommendation made in this study cannot generalize in other banks and from the Review of Literature it has been found that there is no any other Research conducted on the same topic “Role of MIS in Nepal Credit and Commerce Bank”.

CHAPTER III

RESEARCH METHODOLOGY

3.1 Research Design

Research design is the plan, structure, and strategy of investigation conceived so as to obtain answers to research question. A simple survey is made to collect the opinion of the general public and the concerned personnel regarding the MIS in the NCC bank. Thus, the research design here is exploratory and descriptive in nature.

This study examines the current role of MIS with a view to make suggestions for improving the utilization of MIS. Keeping in view the nature of the study, an exploratory research design is applied because it implies to find out the current role of existing Management Information System in an organization

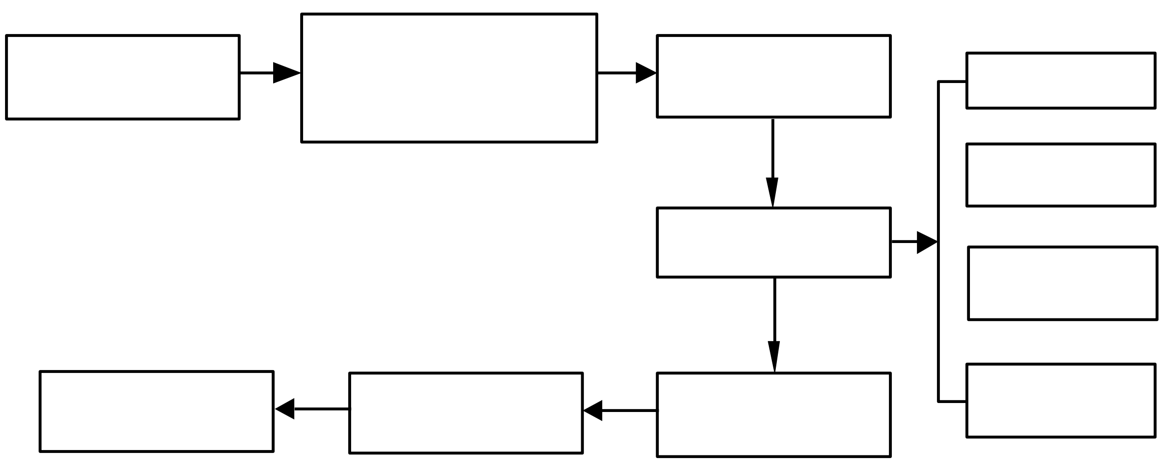


Figure 3.1: Methodology of the Research System

3.2 Population and Sample

In this research, all the employee of Nepal Credit and Commercial Bank has been taken as research population. A population in most studies usually consists of a large number of people, events of objects. Because of its large size, it is difficult to collect detailed information from each member of the population.

At present NCC Bank provides banking facilities and services to rural and urban areas of the Kingdom through its 17 branches with 260 employees; therefore it is not possible to cover the entire employee in this research study.

In this regard, Kathmandu Main Branch placed at Bag Bazaar is selected for sample. At present, the Branch has 75 dedicated and hard working staff. And out of which at least 40 staffs of Bag Bazaar Branch have been taken as sample.

Table 3.1: Population and Sample

Management level	Total	Sample	% of population
Top level	10	10	100
Middle level	20	15	75
Lower level	30	15	50
Total population	60	40	66.67

Source: Field Survey

A set of questionnaire were supplied and interview has been taken from different level of management as respondent.
Apart from this, general public who visited the Bag Bazaar Branch for different purpose has also been taken as sample. At least 30 individuals were interviewed to take their opinion on existing information system in the bank. The time taken to collect the primary data was maximum of two weeks during March 2007 between 10am to 5pm.

3.3 Sources of Data

Data is very reliable and effective source of all research reports. Data is a foundation of all research projects. Data may be obtained from several sources. It also depends on the objectives and necessity of the research report. The research design for this study was based mostly on the exploratory design method. Thus, the sources of data collection were both based on primary and secondary sources. Keeping in the view of explorative nature of the study, primary source is the main source of information and data. The sources of data collection can be better being explained as

a) Primary Data

Primary data are the original data and information, which are collected by the researcher or through agent for the first time from the related research. Thus, these data are collected for meeting the specific objectives of the study.

Primary data can be collected through various methods such as interview, mail questionnaire, and observation. This report is partially based on primary data. Primary data for the research study are collected mainly by questionnaire, observation, and interview method.

b) Secondary Data

Secondary data are that type of data that are collected and compiled by some other researchers for their own purpose.

Relevant secondary data are also used while preparing this report, but uses of secondary data have their own constraints. As other collects secondary data for their purpose, use of such data should be done with care so that researcher does not get entangled in irrelevant data.

The secondary data used are taken from annual reports, monthly Newsletters, brochure, organizational chart, and different websites related to NCC Bank.

3.4 Data Collection Methods

There are various methods of collecting primary and secondary data. The methods that are applied for this study are questionnaire, interview, observation, and reviews.

a) Questionnaire

At first, a formal list of question to be asked during the interviews was prepared to gather responses from the respondents on a given topic. Then they were prioritized according to the importance of the question. Similarly, questionnaire in a leaflet was prepared for the purpose of interview with the general public to obtain the data.

b) Interview

Structured interviews with the Branch manager, MIS manager and other concerned authority were conducted.

c) Observation

In this course of preparation of study report, researcher frequently visited to organization to collect the information through observation.

d) Review

This method primarily implies the collection of secondary data, which have been already published. Most of the secondary data have been collected from the published material and website of the organization.

3.5 Research Software Tools Used

Different software is used for preparing this research report, without help of these Software tools; it would be very difficult to present the research report.

To prepare the research report researcher used following software tools:

- Analysis Tools : Microsoft Excel 2003
- Case Tools : Microsoft Visio 2003
- Report Writing Tools : Microsoft Word 2003

3.6 Data Analysis Tools and Techniques

The data collected from secondary as well as primary sources are sorted and only the related data are considered. They are further examined in relation to the objectives. According to their pattern, available data is presented in the Data Flow Diagrams (DFD) and Entity Relationship Diagram (ERD).

3.6.1 Data Flow Diagram (DFD)

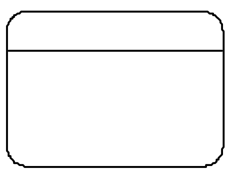
A data flow diagram (DFD) is a graphical representation of the "flow" of data through an information system but it does not show program logic or processing steps. A data flow diagram can also be used for the visualization of data processing (structured design). It is common practice for a designer to draw a context-level DFD first, which shows the interaction between the system and outside entities. This context-level DFD is then "exploded" to show more detail of the system being modeled.

With a dataflow diagram, users are able to visualize how the system will operate, what the system will accomplish, and how the system will be implemented. Dataflow diagrams can be used to provide the end user with a physical idea of where the data they input, ultimately has an effect upon the structure of the whole system from order to dispatch to restock how any system is developed can be determined through a dataflow diagram. A data flow diagram illustrates the processes, data stores, and external entities in a business or other system and the connecting data flows. The four components of a data flow diagram (DFD) are:

- External Entities/Terminators/Sources/Sinks (represented by a square or oval)
- Processes (represented by a circle or rounded rectangle)
- Data Flows (represented by an arrow)
- Data Stores (represented by two parallel lines, sometimes connected by a vertical line)

DFD objects symbols:

Table 3.2: DFD Object Symbols and Description

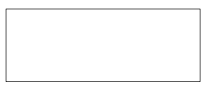
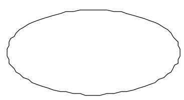
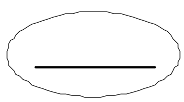
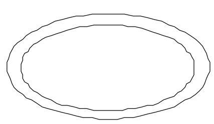
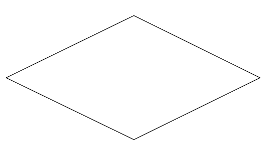
Objects	Gane/Sarson Symbols	Description
External Entity		It is a person or group, which interacts with the system, something outside the system. It is not a user. e.g., Customer, Supplier, Government Agency, Accounting Department, Human Resources System, etc.
Data Flow		It is the directional movement of data to and from External Entities, the process and Data Stores. In the physical model, when it flows into a data store, it means a write, update, delete etc. Flows out of Data Stores mean read, query, display, select types of transaction.
Data Store		It is a repository of information. In the physical model, this represents a file, table, etc. In the logical model, a data store is an object or entity.
Process (Activity, Function)		Depending on the level of the diagram, it may represent the whole system as in a Context (level 0) diagram or a business area, process (activity), function, etc. in lower levels.

3.6.2 Entity Relationship Diagram (ERD)

An entity-relationship (ER) diagram is a specialized graphic that illustrates the interrelationships between entities in a database. It helps the analyst understand the organizational system. ER diagrams often use symbols to represent three different types of information. Boxes are commonly used to represent entities. Diamonds are normally used to represent relationships and ovals are used to represent attributes. Both types of symbols representation are discussed in detail below:

ERD object symbols:

Table 3.3: ERD Object Symbols and Description

Objects	Symbols	Description
Entity		An entity is an object or concept about which you want to store information.
Attributes		Attributes are the properties or characteristics of an entity.
Key attribute		A key attribute is the unique, distinguishing characteristic of the entity. For example, an employee's social security number might be the employee's key attribute.
Multi-valued attribute		A multi-valued attribute can have more than one value. For example, an employee entity can have multiple skill values.
Relationships		Relationships illustrate how two entities share information in the database structure.

3.6.3 System Run Chart

A Run Chart is a graph that displays observed data in a time sequence. Often, the data displayed represent some aspect of the output or performance of a manufacturing or other business process. Examples could include measurements of the fill level of bottles filled at a bottling plant or the water temperature of a dishwashing machine each time it is run.

Time is generally represented on the horizontal (x) axis and the property under observation on the vertical (y) axis. Often, some measure of central tendency (mean or median) of the data is indicated by a horizontal reference line.

Run charts are analyzed to find anomalies in data that suggest shifts in a process over time or special factors that may be influencing the variability of a process. Typical factors considered include unusually long "runs" of data points above or below the average line, the total number of such runs in the data set, and unusually long series of consecutive increases or decreases.

Run Chart is a simple graphic representation of a characteristic of a process. Run chart also known as a line chart, or line graph. A chart that plots data over time, allowing you to identify trends and anomalies. Run Chart shows the history and pattern of variation. It is helpful to indicate on the chart whether up is good or down is good. This tool is used at the beginning of the change process to see what the problems are. It is used at the end (check) part of the change process to see whether the change has resulted in a permanent improvement.
Run charts are similar in some regards to the control charts used in statistical process control, but do not show the control limits of the process. They are therefore simpler to produce, but do not allow for the full range of analytic techniques supported by control charts.

A run chart is a graphic representation of system performance over time. A control chart helps us to determine if a system is stable and predictable over time (no special cause) and gives a team baseline data against which to mark future changes. Both variable and attribute data can be placed on Control Charts.

Utility:

A Run/Control Chart can tell you what kind of variation is at work on your system (special or common cause), and give you an assessment of your systems performance over time. It can help you avoid under controlling or over controlling your system by understanding what normal, predictable variation is and what is not. At the beginning of every improvement project, a team should evaluate the system performance to help gather baseline of results data against which all changes can be evaluated.

CHAPTER IV

SYSTEM ANALYSIS AND DATA PRESENTATION

4.1 Organization and System Analysis

NCC Bank Limited Commenced its operation on 14th October, 1996 from its Head Office located at Siddhartha Nagar, Rupendehi. The Bank opened its Kathmandu Main Branch on 27th January, 1997 as its third Branch at Bag Bazaar, Kathmandu.

The Branch has developed corresponding agency relationship with 150 International Banks having a worldwide network. The Branch's services across the globe include remittances through Social Welfare Interbank Fund Transfer (SWIFT), Demand Draft arrangement, Telegraphic Transfer, Import and Export Business, International Bank Guarantee, etc.

The customers can affect their money transfer to India either through Speed Transfer arrangement or through Demand Draft arrangement. Under Speed Transfer arrangement, money can be credited on-line to the beneficiary's account at more than 400 branches of ICICI Bank in India. Under Demand Draft arrangement, the Branch can issue drafts payable at more than 670 locations in India.

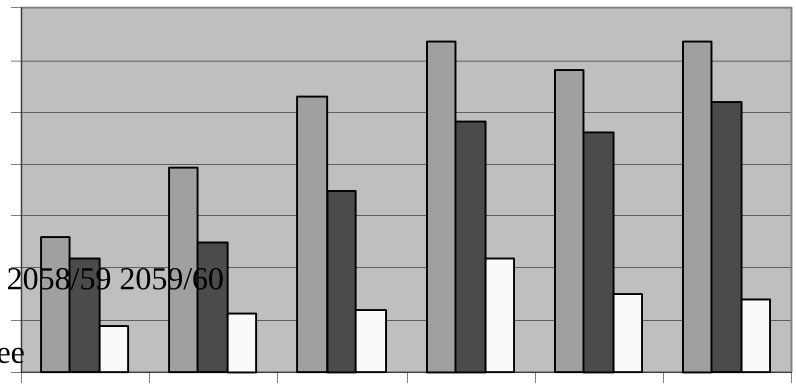
The table and chart given below reveals the picture related to deposit, lending and trade finance exposure of the Branch during the last five years period.

Table 4.1: Deposit Lending Growth

Year	Deposit (Rs. in million)	Credit (Rs. in million)	LC/Guarantee (Rs. in million)
2054/55	1300	1100	450
2055/56	1970	1250	550
2056/57	2650	1750	600
2057/58	3170	2400	1100

2058/59	2900	2300	750
2059/60	3170	2600	700

Source: www.nccbank.com.np



3500
3000
2500
2000
1500
1000
500
0
2054/55 2055/56 2056/57 2057/58 2058/59 2059/60

Rs. in million

Deposit Credit LC/Guarantee

Figure 4.1: Deposit Lending Growth Chart

The Branch is headed by Mr. Mukunda Karmacharya, Deputy General Manager, as the Chief of the Branch with able support from Mr. Rajesh Gautam, as Head of Credit Department, Mr. Sanjeeb Bhattarai, as Head of Trade Finance Department and Mr. Sandeep Pandey, as Head of Operations/Customer Services. At present, the Branch has 75 staff.

4.1.1 Human Resources

Quality of human resources is the core of success of a Bank. It is the people who make the organization perform better. It is the organization that makes the people performs better. Therefore, the creation of a right organization is a prerequisite to make the people perform better. Thus, the performance of the organization depends on personal competencies of the people and capabilities of the organization.

The capabilities of the organization can be created by developing conducive working environment within the organization, backed by defined authority, responsibility, working procedures and placement of the right man at the right job etc.

The personal competency of the people is guided by their level of knowledge about work, attitude towards work and the actual practicing behavior of the people in terms of involvement in work. NCC Bank has been trying to enhance the personal competencies of the officials of the Bank on the one hand and to improve the capabilities of the Bank on the other. In this process, the publication of the newsletter named NCC Buzz is also an attempt to that end.

NCC Buzz is trying to accommodate pertinent information on Current Economic Affairs, update of Nepalese Economy, Branch Information, Product Information and Financial Sector Review etc. with a view to arouse interest among staff members and existing and potential customers and corporate so that they will be able to update their knowledge about the financial sector and NCC Bank.

4.1.2 Management Team

NCC Bank is managed by a professional management team. The members of the management have proven track record in the banking sector. The management team of NCC bank is presented below:

Table 4.2: Management Team of NCC Bank

S.N.	Name	Corporate Designation	Functional Designation
1.	Mr. Gauri Lal Shrestha	Acting Managing Director	Managing Director
2.	Mr. Babu Kaji Shrestha	Corporate Executive	Corporate Executive
3.	Mr. Ramesh Raj Aryal	Board Secretary / Senior Manager	In-Charge, Personnel Administration, Accounts, MIS and Compliance Department.
4.	Mr. Sanjeeb Bhattarai	Manager	In-Charge, Main Branch; In-Charge, Treasury / Trade Finance

Senior Executive Officer

5.	Mrs. Bandana Pathak	Manager
	Mr. Kailash Man Shrestha	
6.	Mr. Rajesh Kumar Shrestha	Acting Manager
7.	Mr. Manoj Kaji Tuladhar	
	Mr. Angir Man Singh	Deputy Manager
8.		
9.		Deputy Manager
	Mr. Sandip Pandey	
10.	Mrs. Anita Pradhan	Deputy Manager
11.	Mr. Debu Gautam	
12.	Mr. Chandra Deo Bhatta	Deputy Manager
	Mr. Sharad G. Raj	
13.	Mr. Rajan Prasad Khanal	Deputy Manager
	Mr. Binod Kumar Karki	
14.		Assistant Manager
15.		
16		Assistant Manager
17.		Assistant Manager
		Assistant Manager

Department. Branch Manager, Chabahil Branch In-Charge, Recovery /Marketing	Department Branch Manager, New Road Branch. In-Charge, Credit Control Department In Charge, Credit Department, Kathmandu Main Branch.	In Charge, Internal Audit Department In Charge Customer Service Division, KTM Main Branch. Branch Manager, Lagankhel Branch In Charge, General	Administration Department, Corporate Office Branch Manager, Mahendra Nagar Branch Branch Manager, Narayangarh Branch In-Charge, Siddhartha Nagar Office Branch Manager, Banepa Branch
18. Mr. Arjun		Senior Executive	Branch Manager, Butwal Branch

	Jung Silwal	Officer	
19.	Mr. Madan Shakya	Senior Executive Officer	Branch Manager, Thankot Branch
20.	Mr. Arpan Pokhrel	Senior Executive Officer	Branch Manager, Birgunj Branch
21.	Mr. Tara Manandhar	Acting Senior Executive Officer	Branch Manager, Pokhara Branch
22.	Mr. Narayan Babu Panta	Acting Executive Officer	Acting Branch Manager, Biratnagar Branch
23.	Mr. Deepak Kumar Thapa	Actg. Executive Officer	Branch Manager, Birtamod Branch
24.	Mr. Sanjaya Shrestha	Junior Executive Officer	Actg. Branch Manager, Lumbini Branch
25.	Mr. Rajesh Raj Dhungel	Actg. Executive Officer	Branch Manager, Kalaiya Branch
26.	Mr. Suman Acharya	Junior Executive Officer	Branch Manager, Barahbise Branch

Source: management_team_ncc_bank.htm

4.1.3 Hierarchy of Management Team

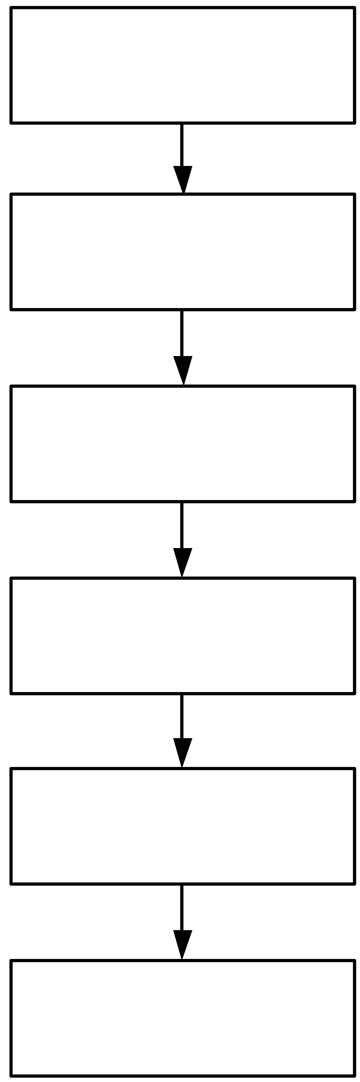


Figure 4.2: Hierarchy of Management Team

4.1.4 Services and Facilities Provided by NCCB

In the light of Vision and Mission of the Bank, the services and facilities provided by NCCB are as follows:

1. Deposits: NCCB provides various types of deposits including Savings, Current,

Fixed and Call Deposits, Saving Plus, Bal Suraksha Khata (BSK), Mahila Suraksha Khata (MSK) and Jestha Nagarik Suraksha Khata (JNSK). Saving Plus deposits hold the added benefits of interest payable on daily balance and not on monthly minimum balance. Bal Suraksha Khata, Mahila Suraksha Khata and JNSK are special schemes for children, women and senior citizens of the country respectively and are entitled to receive 1% interest above normal savings account. In addition to these all the savings deposit holders enjoy facilities like limitless free withdrawals, personal accidental insurance up to Rs. 500,000/- and medical expenses reimbursement.

2. NCC Bank has introduced Floating Rate Fixed Deposit (FRFD) in the market for the first time: NCC Bank has introduced an attractive product named as Floating Rate Fixed Deposit in the market to provide market interest rate to the investor on their long-term investment. The investors can use FRFD as a tool to manage interest rate risk.

Interest rate on FRFD is fixed as base rate plus premium. Premium on FRFD varies from 1% to 2.25% over the base rate depending upon the length of maturity period.

Interest rate will be revised at every quarter. If the depositor is inconvenient to continue to maintain FRFD account, it is possible to discontinue by giving the prior written notice to the bank subject to certain conditions.

3. Non-Funded Services:Non-funded facilities are where funds are not involved. NCCB provides non-funded functions like issue of letters of credit and guarantees, discounting of bills and remittance facilities. The income from such facilities and services constitute the key element of the total income of the Bank.

4. Funded facilities and services: In funded facilities, funds are directly involved like Term Loan, Working Capital Loans and other loans and advances. NCCB provides various kinds of loans and advances to its customers like project loans, overdrafts, term loans, personal loans, hire purchase loans, personal housing loans, car loans, self employment schemes for small entrepreneurs, soft loans to facilitate export and import business etc.

5. Besides there core-banking services the bank also provides the following services: NCC Bank is adopting the concept of Universal Banking, in contrast to traditional bank, which offers wide array of products to its client under one roof. The services provided by NCC Bank are:

- Investment Banking

NCC Bank has recently established investment-banking department in an effort to enter into Universal Banking and building competitive edge. Investment banking functions carried out by the bank in the international scenario are:

- Financial Advisory
- Project Appraisal
- Fund Management
- Managing IPOs
- Underwriting
- Merger and Acquisition
- Corporate Restructuring
- Syndication of Funds
- Remittance arrangement with ICICI (Industrial Credit and Investment Corporation of India)

NCC Bank has recently entered into an agreement with ICICI Bank which facilities its customers to remit their money to more than 670 locations of India through ICICI Bank branches and their correspondent banks in India. Its customer can affect their money transfer to India either through Speed Transfer Arrangement or through Demand Draft Arrangement, Under Speed Transfer Arrangement, money can be credited on line to the beneficiaries account at more than 400 branch of ICICI Bank located at India. Under Demand Draft arrangement, the bank can issue draft payable at more than 670 locations in India.

- Any Branch Banking facility within Kathmandu Valley
- Safe Deposit Lockers
- NCC Bank has recently introduced NCC Debit to provide various ATM facilities to its customers.

NCC Bank has also introduced a Loan scheme "Loan Against Gold" to cater to the Fund requirements of the middle class loans seekers.

NCC Bank has launched the new deposit schemes for children, elderly citizens and for women.

a) Bal Suraksha Khata (BSK): It is special deposit scheme for children, launched by NCC Bank with a view to developing a saving habit among the children and their guardians. This deposit scheme targets children below 16 years of age. Infants, preschool children and school children are eligible to open such accounts which are maintained and operated by their parents/guardians until they reach the age of 16. This product has been very well liked by the public and so far the Bank has been successful opening around 3000 such accounts maintained by children from all over the country. This unique scheme is available at all the Branches of NCC Bank.

b) Jestha Nagarik Suraksha Khata (JNSK): JNSK is an unique deposit product launched by Nepal Credit and Commerce Bank Ltd. This deposit scheme is first of its kind in Nepal and targets elderly citizens above 58 years of age.

Special Benefits

- Attractive Interest Rate on Fixed Deposits- Higher interest than the published rate of interest shall be provided on fixed deposits maintained in addition to JNSK.
- Home service- Home service shall be provided on request of JNSK clients for depositing and withdrawing cash.
- Payment of monthly utility bills- On the request from the client, the bank shall make arrangement for monthly payment of the client’s utility bills such as electricity, telephone and water.

c) Mahila Suraksha Khata (MSK): MSK is a special deposit scheme for women, launched by NCC Bank with a view to mobilize and popularize the habit of saving, among women above 16 years of age. The working women, self employed women, wage earners, housewives, students in campus and colleges are eligible to open this account. The scheme has been liked and appreciated by the public and the Bank has already attracted 282 women from all over the country to open this account. This special savings scheme is available in all the Branches of NCC Bank.

The special features of this deposit schemes are as follows:

Table 4.3: Special features of New Deposit Schemes

	BSK	JNSK	MSK
Deposit (Rs.)	2500 (Initial); 500 (Subsequent)	2,500 (Initial); 500 (Subsequent)	2500 (Initial); 500 (Subsequent)
Interest Rate	1% above NSA	1% above NSA	1% above NSA
Conditions for withdrawal	Premature withdrawal : Education of child, Emergency treatment; Withdrawal on Maturity: Account shall be converted into NSA once the child reaches 16 years of age.	Monthly Household Expenditure, Emergency treatment, Social Function.	Withdrawals permitted beyond minimum deposit requirement, Education of child, Self employment, Social purpose.
Medical Insurance	up to Rs. 10,000.00	up to Rs. 10,000.00	up to Rs. 10,000.00
Accidental Insurance	up to Rs. 500,000.00	up to Rs. 5,00,000.00	up to Rs. 500,000.00

Source: www.nccbank.com.np

4.2 Analysis of Existing System

The Kathmandu Main Branch is a full-fledged Branch of the Bank and is providing full array of Banking Services.

The Branch is providing various services to its customers, which are as follows:

- Domestic and International Trade Finance
- Various Deposit Schemes
- Various Corporate, Business and Consumer Financing

- International and Domestic Remittances
- Any Branch Banking Services within Kathmandu
- Safe Deposit Locker
- Late Deposit Counter
- Other Services viz. Tele- banking, FCY TC sales, encashment etc.

In order to facilitate the customers with state of art technology, Bank is providing Debit Card facilities under the SCT (Smart Choice Technology) Network jointly in consortium with 12 other member Banks. This facility enables the customers to withdraw cash from any of the 26 ATM (Automated Teller Machine) Terminals located at different parts of the country and to purchase goods from more than 250 shopping complexes and departmental stores under POS arrangement.

NCC Bank has relation with Western Union Money Transfer through NABIL Bank. NCC Bank is the agents for receiving the fund transferred through Western Union Money Transfer. It is here to help all the customers receiving the fund through thousands of agents located worldwide. It is the fastest and premium fund transfer system. The sender will have a MTCN (Money Transfer Control Number) which will be sent to the concerned customers by telephonic conversation, email, Fax etc. and customers will know the sender’s name, amount etc, and can obtain the fund at any of NCC Bank’s Branches within the shortest time by just filling up a form and submitting an identity. Customers do not have to maintain an account with the Bank.

NCC Bank has already introduced a computer based information system (CBIS) and is providing its services through fully computerized branches and 260 well trained personnel. At present, the Bag Bazaar Branch has 75 dedicated and hard working staffs; and is using more than 70 computers. They have also been using banking software system for their daily activities and also provide various technological services to its customer.

The Branch is using the PUMORI PLUS banking software, the most commonly used software in banking sector of Nepal and offers Any Branch Banking Services (ABBS) within Kathmandu. Telex and SWIFT are other modes of communication for efficient and effective transmission of information.

The Pumori Plus banking software, currently used in the bank, is developed by Mercantile Communication Private Limited. It is prepared for the complete banking solution in this technology driven era. Pumori Plus has been efficiently used in the outside five branches.

The Pumori Plus system is named after the Pumori Mountain. Pumori is an impressive mountain (7125 m) with outstanding views towards two of the world's highest summits, Everest and Lhotse, in Nepal - a beautiful country in South East Asia.

As stated by the developer, Pumori Plus is an on-line multi-user; multi-currency integrated banking system of international standard developed by Mercantile Office Systems, Nepal. It integrates all functions of front office and back office as one package. The system runs on Windows NT network and provides adequate security features for keeping smooth operation of the system. It also takes care of data integrity with its internal design. Pumori Plus encompasses a variety of features and can easily take care of a small financial institute to large-scale banks with international standard.

The actual development started in 1987 and the latest release is Pumori Plus III (version 2). Pumori Plus has now established itself as the most popular banking software in Nepal with a clientele of more than 40 commercial banks and finance companies with hundreds of installations all over Nepal. Pumori Plus uses latest technology prevailing in the market. The system is totally object-oriented, taking maximum advantage of Relational Database Management System (MS SQL Server).

Some of the salient features include:

•	Fully integrated system. Customer accounts and General Ledger integrated. Various other modules (Trade Finance, etc) are also integrated.
•	Highly parameterized and flexible in nature.
•	Products definable by the bank.
•	Transactions are on-line and real-time.
•	One button periodic operations (SOD, EOD).
•	Cheque printing and cheque inventory facility.
•	Deposits, loans, financial accounts, off-balance accounts are all covered. Letter of Credit, Letter of Guarantee, Document Negotiation (Export L/C), Bills, Remittances, Credit/Debit/Smart Cards supported.
•	Any Branch Banking Systems (ABBS), tele-banking, SMS banking, on-line voice recording of customer confirmation, on-line image capturing of images, etc are supported.
•	Reports definable by bank. Has built in Report Writer. Can integrate with MS Excel, MS Word, Crystal Reports.
•	Very strong consolidation and reconciliation module.
•	Multi-lingual support (fields can be added in desired language).
•	Build-in document management system for paperless office automation.
•	Built-in workflow planning.
•	Account balancing can be maintained currency-wise (automated) or can be in local currency. Currency grouping is supported (e.g. many European currencies are grouped into Euro currency).
•	Centralized, distributed or hybrid solutions available.

Pumori Plus development is heading for Enterprise Management of the entire bank or financial institute.

Pumori is banking software, which is designed, developed, and maintained by Mercantile Office Systems for general use. The system is user friendly, easy to maintain and flexible by design so that it is possible to upgrade or to add new modules in future at minimum cost. It runs under Novell NetWare. The system uses dBase IV Runtime as database engine.

Pumori was transported into SQL Sever 6.5 database using Windows NT network. Pumori Plus is purely object oriented in design (using Delphi as front end), and true Client/Server architecture. It uses BDE (Borland Database Engine) to connect with RDBMS.

Pumori Plus is redesigned and restructured using ADO technology to connect with RDBMS (SQL Server 2000 onwards). Many new features are added including office automation tools in Pumori Plus III. (www.pumoriplus.com)

In current time, Pumori the major made-in-Nepal banking software developed by Mercantile is facing tough competition from foreign software such as Globus and Flexcube. Though the system is satisfactory and many Nepalese banking institutions are using it but the main problem of mercantile is after sales service, which is often comes in media. The banks, using the Pumori software, often complain about lack of maintenance support from the supplier.

Figure 4.3: Login Window of Pumori Plus

Above picture is the login window of Pumori Plus system in NCC Main branch. The system is installed currently in all branches. To enter into the system one must have the user id and password. Id and password is provided to bank staff only, therefore, other personal cannot enter into the system.

There is separate security policy and some rules and regulation set by the bank regarding password to make the system inaccessible to unauthorized person. User id is given to employees who use the computer regularly and they set the password themselves for the easy access. Different employee can set same password but the user id cannot be same and is different for each and every employee in the bank. The system works on windows environment and it does not provide access to user without valid user id and password.

Figure 4.4: Outlook of the Pumori Plus

NCC Bank was using two banking software, Bank 2000 and the Pumori Plus. Bank 2000 is more advanced than the currently used software but due to its high cost and less knowledge to upper level; it was totally replaced by the Pumori Plus in all the branches of the Bank. Although the system 'Pumori Plus' has many features and it may provide the wide range of facilities to the bank, the bank is currently using limited features only.

The figure below shows the simple ER diagram of banking environment. Current information system of the NCC Bank is also based on similar relation as shown in the diagram. The diagram consists of mainly four entities like Bank, Account, Customer and Branch.

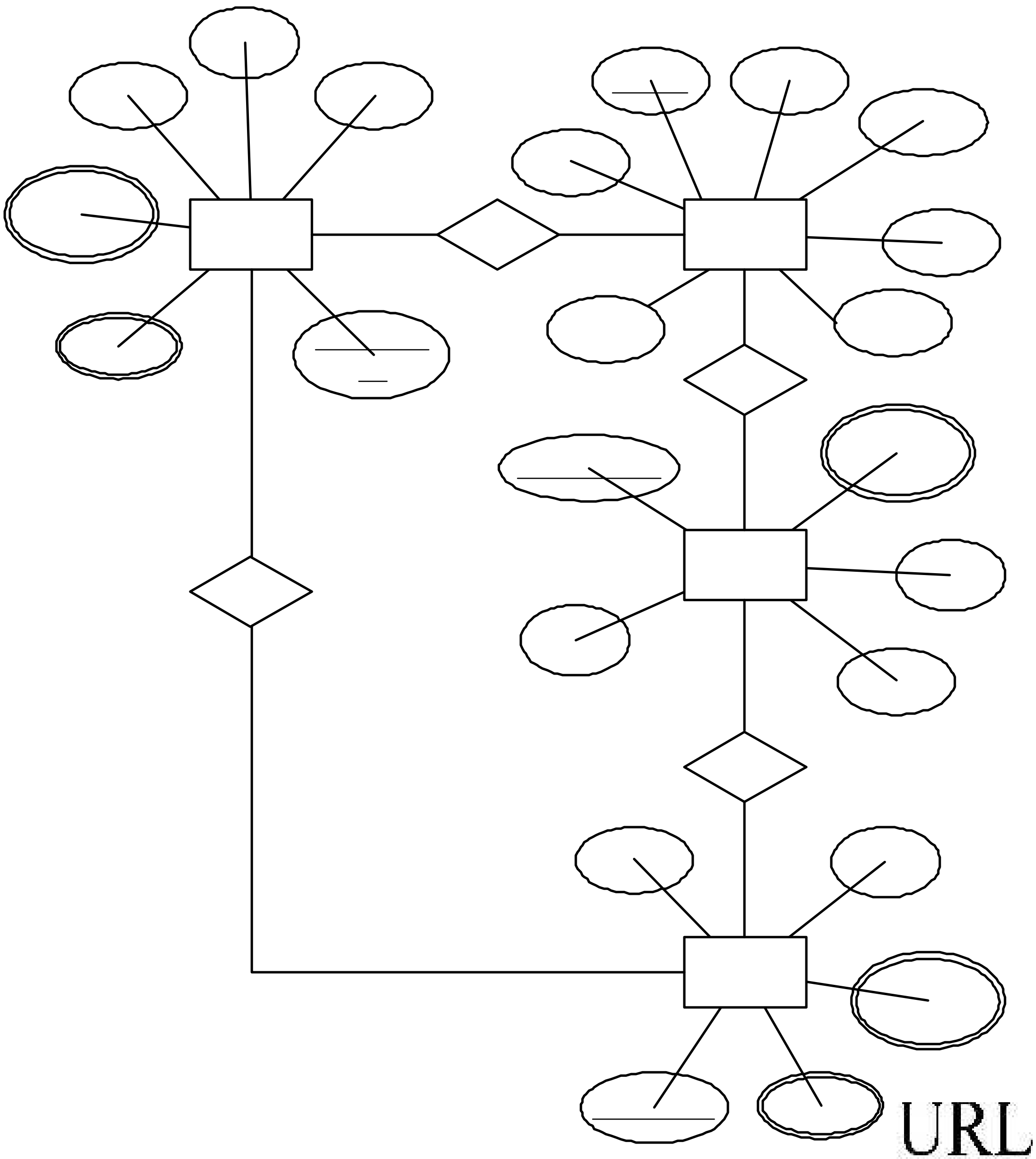


Figure 4.5: A Simple ERD of Banking Environment

Description of entities, attributes, relationship are presented below:

Entity descriptions:

Bank : Contains information of the bank, which is using the system.

Account : Customer has to open account to start transaction with the bank. It contains all details of account.

: Contains information about the customer.

: Contains information about the branch.

Customer

Branch

Attribute descriptions / Data definition

Bank:

Table 4.4: Data Definition of Bank

S.No	Data Element	Data type	Descriptions
1	Name	Character	Full name of the bank
2	Address	Character	Full mailing address of the bank
3	Telephone No.	Number	Telephone number of the bank
5	Fax No.	Number	Fax number of the bank
6	Registration No.	Number	Registration Number of the bank
7	URL	Character	Internet address of the bank

Account:

Table 4.5: Data Definition of Account

S.No.	Data Element	Data type	Description
1	Type	Character	Type of account
2	Number	Character	Unique account number
3	Opening Date	Number	Opening date of account
4	Credit Limit	Character	Credit limit or credit balance of account
5	Photo	OLE	Photo of the account holder
6	Signature	OLE	Signature of the account holder

7	Balance	Number	Balance of the account holder

Customer:

Table 4.6: Data Definition of Customer

S.No.	Data Element	Data type	Description
1	National ID No.	Number	National ID number of the customer
2	Name	Character	Full name of the customer
3	Address	Character	Full address of the customer
4	Email address	Character	Electronic mailing address of the customer
5	Telephone No.	Number	Contact numbers of the customer

Branch:

Table 4.7: Data Definition of Branch

S.No.	Data Element	Data type	Description
1	Branch code	Number	Code of the branch
2	Name	Character	Full branch name
3	Address	Character	Full mailing address of the branch
4	Telephone No.	Number	Telephone number of the branch
5	Fax No.	Number	Fax number of the branch

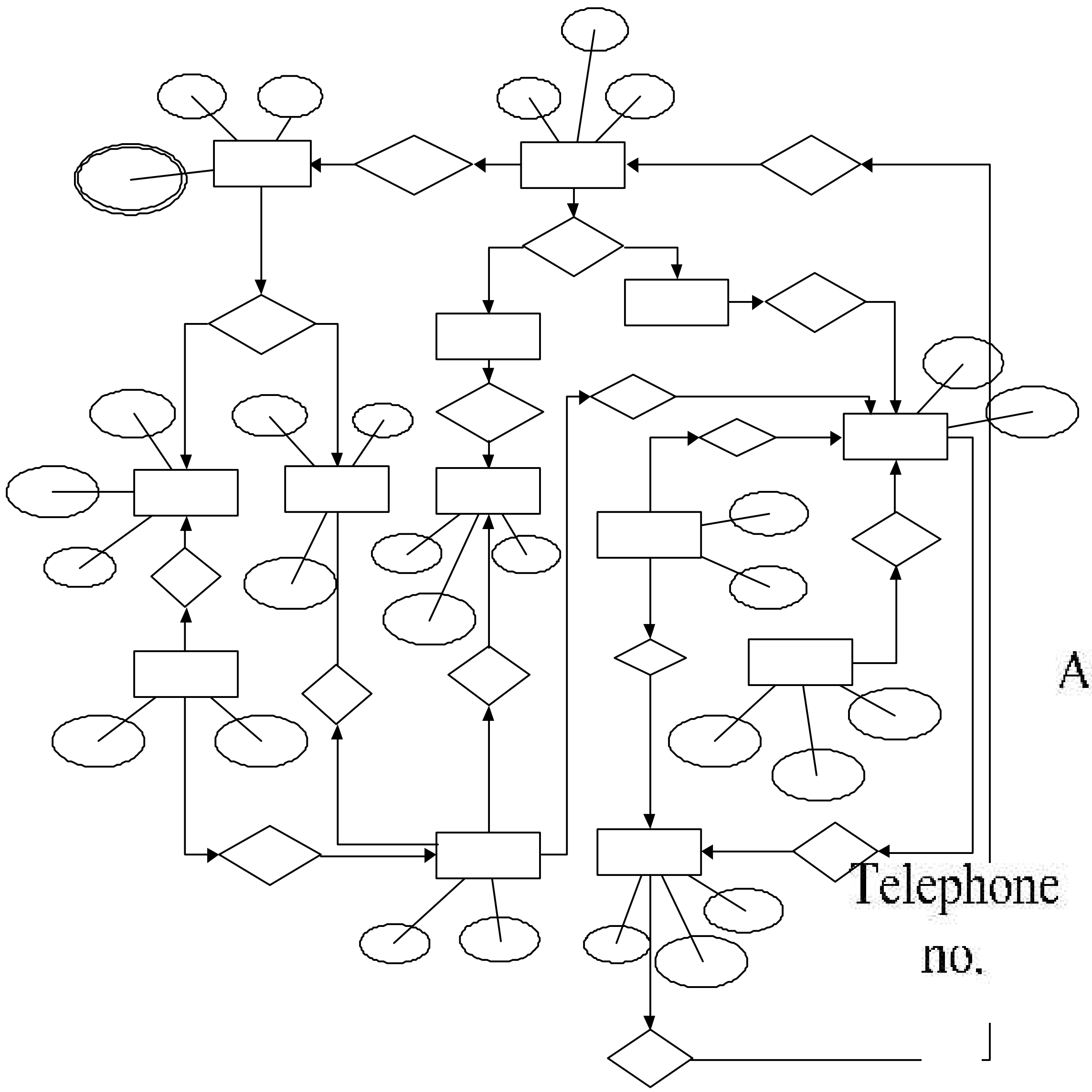


Figure 4.6: Relationship Diagram of Banking Transaction

4.2.1 Data Security

Information is valuable asset of NCCB and it must be preserved and secured carefully. Unlike other assets, information is and can be unlawfully used without depriving the legitimate owner from its possession. In short, information security and its preservation have three aspects Confidentiality, Integrity, and Availability (CIA).

In the context of NCCB, the Data and Information Security Policy defines its policy statement as "Access to data residing in systems at NCCB is to be granted only to those individuals who must, in the course of exercising their responsibilities, use the specific information. Access to data will be granted to NCCB employees only with special permission. Auditors and others may access data if the data pertains to the individuals, who are assigned by the management.

Some of the salient features of the password policy of the bank are as follows:

- Password is corporate property; it cannot be treated as private asset. Never use bad word as a password,
- Password should not be shared or disclosed unless requested by management,
- Do not use the common password like "system", " NCCB ", "Administrator", etc.

It is of utmost importance that the data at branch offices and various department of the central office must be backed up regularly.

The highlights of data backup procedures are as follows:

- Data must be backed-up at regular interval,
- Storage of backup media must be a location remote from the processing center,
- IT focal point is responsible for carrying out periodic backups,
- Computer System department will provide necessary technical assistance in the installation of backup hardware, software and procedures.

4.2.2 Role of Existing System

A management information system (MIS) is a system or process that provides the information necessary to manage an organization effectively. MIS and the information it generates are generally considered essential components of prudent and reasonable business decisions.

MIS is viewed and used at many levels by management. Because MIS supplies decision makers with facts, it supports and enhances the overall decision making process. MIS also enhances job performance throughout an institution.

At the most senior levels, it provides the data and information to help the board and management make strategic decisions. At other levels, MIS provides the means through which the institution's activities are monitored and information is distributed to management, employees, and customers.

In Bag Bazaar branch, MIS and Compliance Department is under the Account Division purely for the purpose of collecting, storing, processing and disseminating of overall banks information.

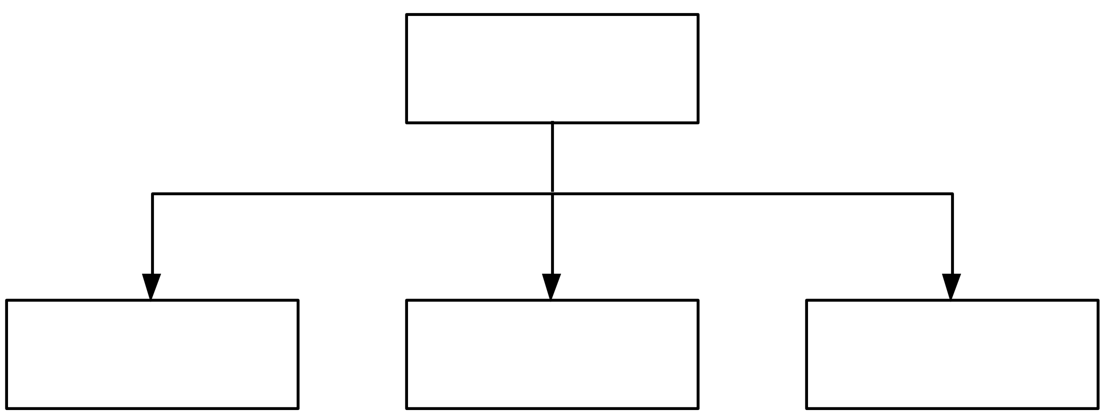


Figure 4.7: Organizational Chart of MIS and Compliance Department

Account division sends the regular data to the MIS and Compliance Department. Data are then analyzed, processed and stored in the database. The main function of the MIS and Compliance Department in central branch is to reconcile all data received from other branch and prepare various financial reports, required by the Nepal Rastra Bank. MIS and Compliance Department also provides necessary reports to the management according to their needs.

The purpose of research is how and up to what level the modern computer based information technology is being implemented in the bank. During the research it was found that there is not even a separate department like IT or similar, to handle the Information system. Although, NCC Bank is the first private bank sector of the Nepal, it never practiced information technology in past days in a serious way. Besides the IT department, there is another separate Computer System department that handles all the hardware and software of the branch only focus on hardware and software need of the bank.
Technology employed in existing information system:
For server

a) Hardware:
1. P-4 Mother Board & Processor 3.0 GHz
2. 512 MB RAM
3. 80 GB Hard disk drive
4. 21`` Color Monitor
5. 1.44 Floppy disk drive
6. 64 MB AGP Card
7. 56x CD ROM Drive
8. 56 Kbps Modem (external)
9. Multimedia Keyboard
10. Optical Mouse with pad
11. Casing with Power Supply (ATX)
12. UPS-600VA
13. Speaker

b) Software:
1. Microsoft Office XP
2. Windows NT 4.0
3. Pumori Plus II
4. Norton Antivirus 2005

For client

1. P-4 Mother Board & Processor 3.0 GHz
2. 256 MB RAM
3. 40 GB Hard disk drive
4. 14`` Color Monitor
5. 1.44 Floppy disk drive
6. 32 MB AGP Card
7. Multimedia Keyboard
8. Optical Mouse with pad
9. Casing with Power Supply (ATX)
10. UPS-600VA

For Networking

1. LAN Card (10/100 Mbps)
2. 16-Port Hub (10/100 Mbps)
3. UTP Cable
4. RJ-45 Jack

Printer

1. Dot matrix LX-300+
2. Canon laser Jet LBP 810
3. HP Inkjet BJC 1000 SP
4. HP laser Jet 1200

4.2.3 Hierarchical Chart of MIS Department

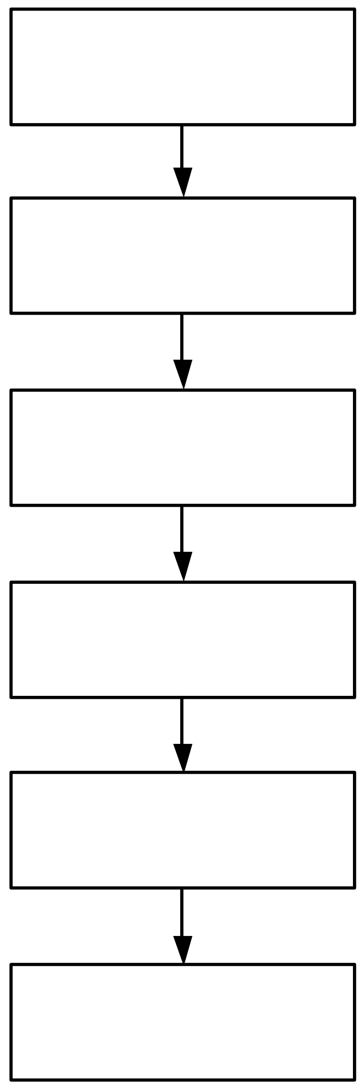


Figure 4.8: Hierarchical Chart of MIS Department

4.3 DFD of Existing system

Context level diagram and zero level data flow diagram presented below clearly define the flow of information and data in the MIS and Compliance. The both diagram are drawn by short observation of the organization and interviewing the concerned personnel.

4.3.1 Context Level Diagram of Existing System

There are mainly eight entities to explain the overall information system of the organization. Account Opening Section, Loan section, Human Resource Department, Remittance Section, Reporting Section, Cash Section and Reconciliation Department are those which uses the system most that is continuously link with the system. Other sections are not directly link with the system.

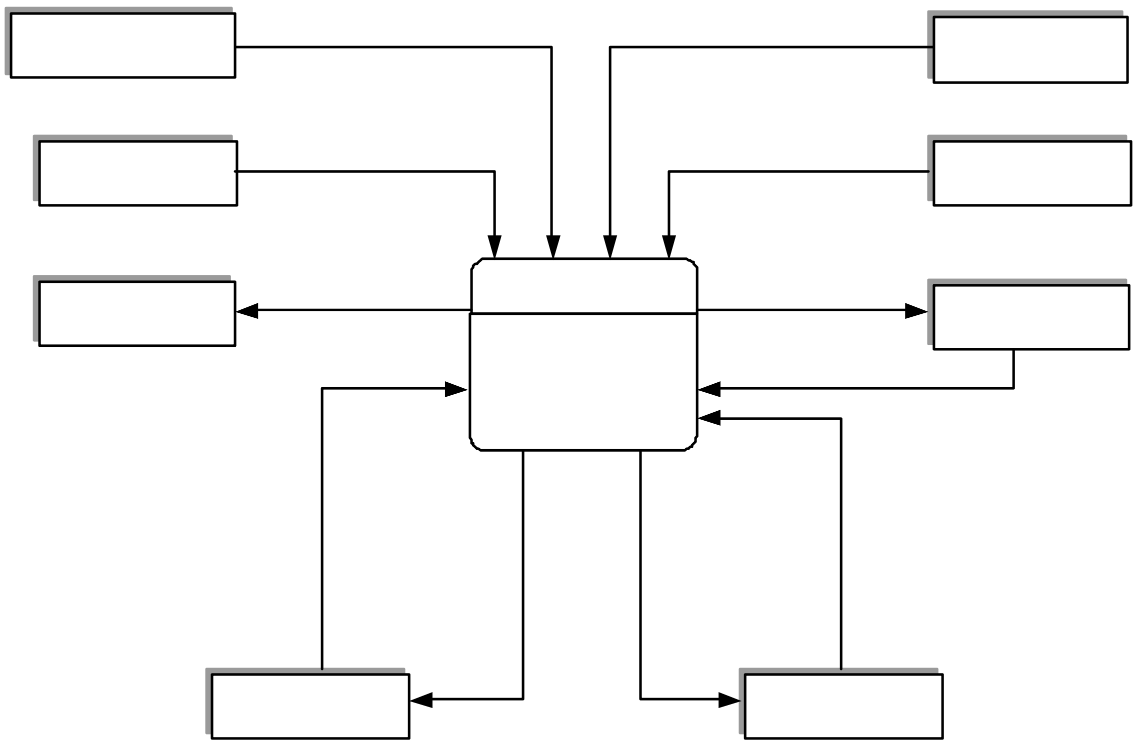


Figure 4.9: Context Level Diagram of Existing System

Description of the Context Level Diagram

All the details of account opening and closing of the customers are received by MIS and Compliance Department through account opening and closing section. Account number to the customer is given only after the approval of Customer Service Department. Human Resource Department sends all the employee records to the MIS and Compliance department. All the employee records are recorded in MIS department using the human resource software. Loan Section provides all the loan approval detail to the MIS and Compliance Department. Loan products such as Housing Loan, Hire Purchase Loan, Demand Loan, Overdraft, Loan Against Gold, Term Loan, Cash Credit, Export Credit, Consortium Loan, Bridge Gap Loan, Priority Sector Loan, Deprived Sector Loan, Trust

Receipt Loan, Bills Purchased, Personal Loan, LC, Guarantee etc. are provided by the NCC bank.

All details of payments and collection of the cash are given to MIS and Compliance Department by the cash section and these data are recorded on database in MIS and Compliance Department and whenever cash section requires any data regarding cash balance and other detail it retrieves data from database in MIS and Compliance Department and so on. All necessary data are received from remittance section and after collecting all the data MIS and Compliance Department prepares report and submits it to report section for the further process. Report section checks and finalizes the report and then it again submits it to MIS and Compliance Department for record keeping. MIS and Compliance department sends the report to Reconciliation department and further Reconciliation department merges these reports with the report of the other branches and prepares the final report. Final reports are submitted back to the MIS department. The prepared necessary final report is send to the Nepal Rastra Bank or the user groups through MIS and Compliance Department.

4.3.2 Zero Level Diagram of Existing System

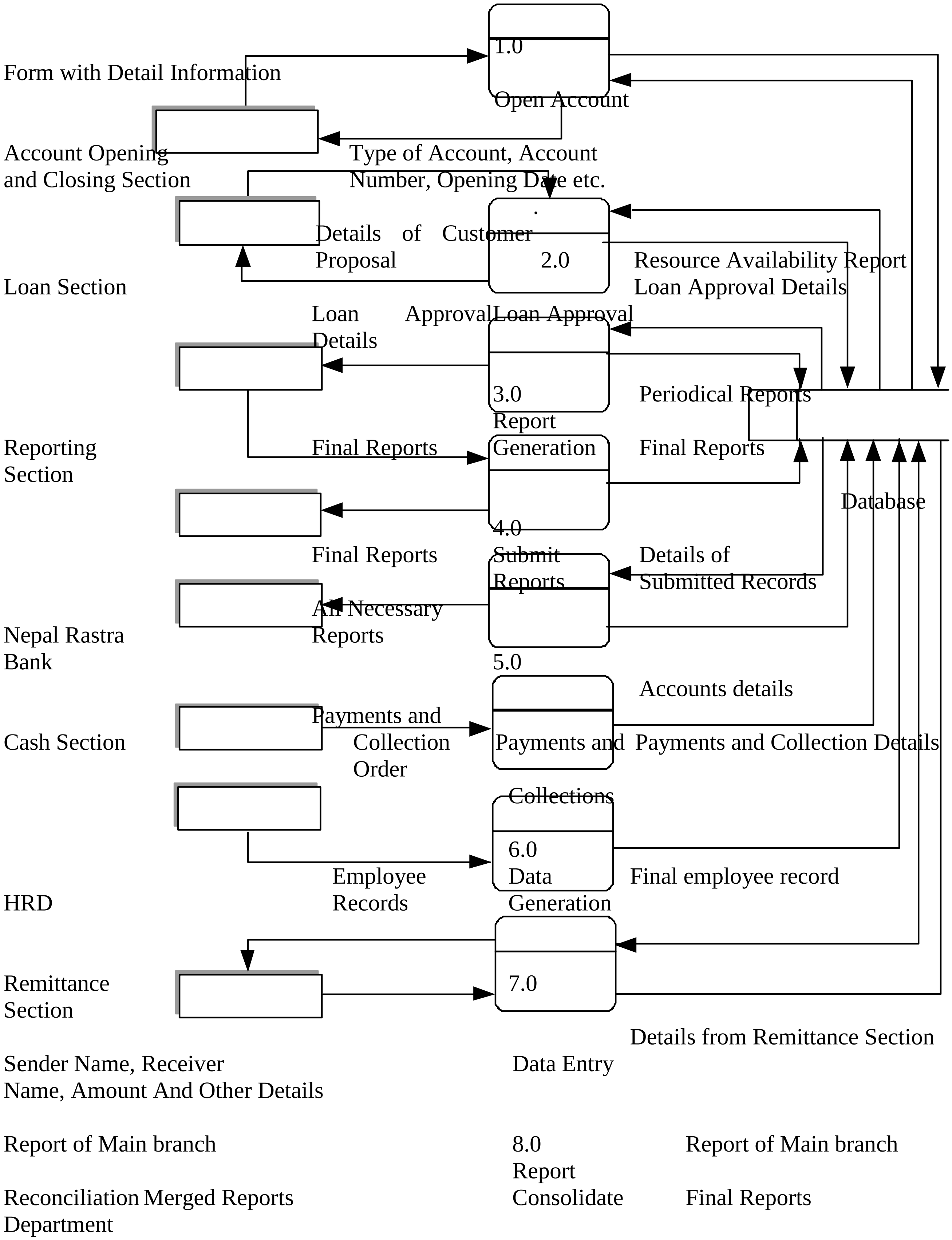


Figure 4.10: Zero Level Diagram of Existing System

4.4 Networking Structure of NCC Bank

A computer network is an interconnection of various computer systems located at different places. In computer network two or more computers are linked together with a medium and data communication devices for the purpose of communicating data and sharing resources.

The computer that provides resources to other computers on a network is known as server. In the network the individual computers, which access shared network resources, are known as workstation or nodes.

Computer Networks may be classified on the basis of geographical area in two broad categories and they are Local Area Network (LAN) and Wide Area Network (WAN).

a) Local Area Network (LAN)

A local area network is usually privately owned and links the devices in a single office, building or campus of up to a few kilometers in size. Depending on the needs of an organization and the type of technology used, a LAN can be as simple as two PCs and printer in someone’s whole office or it can extend throughout a company and include voice, sound, and video peripherals.

LANs are designed to allow resources to be shared between personal computers or workstations. The resources to be shared can include hardware, software or data.

In addition to size, LANs are distinguished form other types of networks by their transmission media and topology. In general, a given LAN will use only one type of transmission medium. Almost all the branches of Kathmandu valley is connected with the fiber-optic cable.

The most common LAN topologies are bus, ring, and star. The Kathmandu Main Branch is using the bus star topology which is the combination of the bus and star topologies.

A typical network diagram of Bag Bazaar branch is presented here:

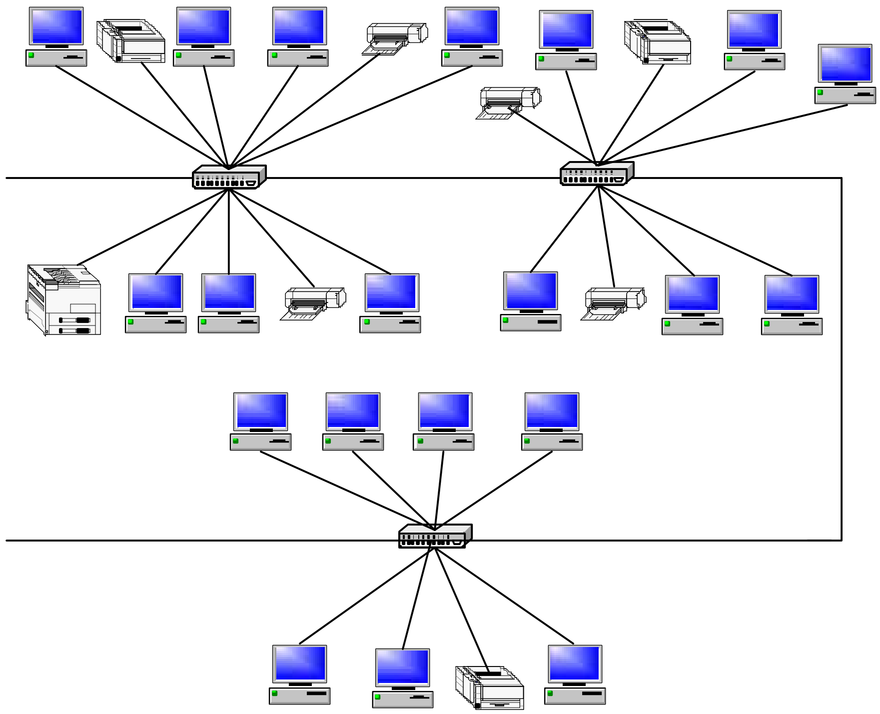


Figure 4.11: Local Area Network (LAN) of Bag Bazaar Branch
There are five different logical Local Area Networks (LAN) at the corporate office. These networks area are protected by a firewall. Firewall is a device that limits access between networks in other words creates barrier between networks. It provides necessary security for data access and also protects resources. The following diagram shows the NCCB local area network (LAN).

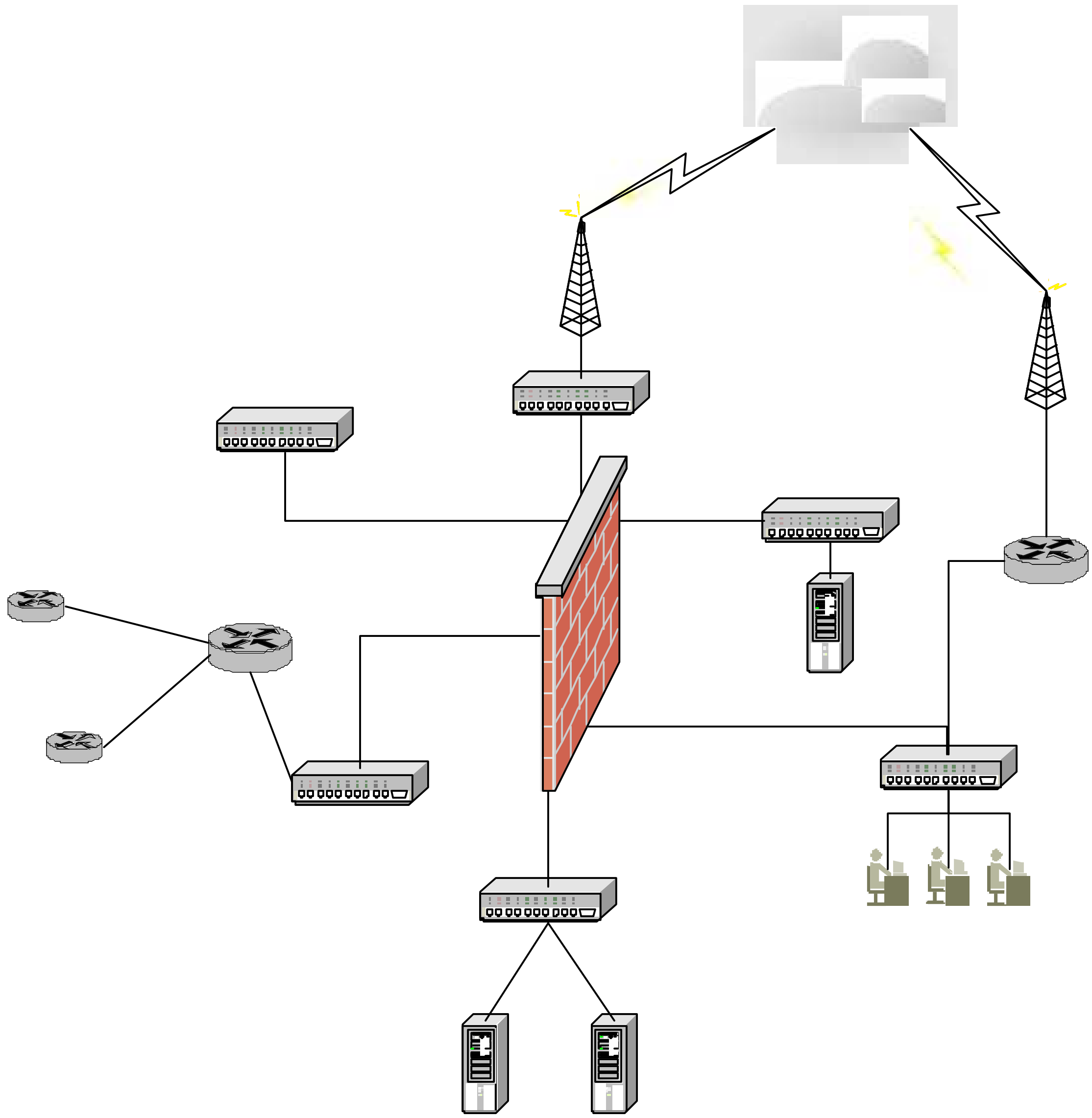


Figure 4.12: Local Area Network (LAN) of Corporate Office

b) Wide Area Network (WAN)

Computer networks which connect two or more local area networks and span a large geographical area are know as Wide Area Network (WAN). The available media for WAN connectivity in Nepal are different type leased lines, radio link, fiber optics, ISDN and VSAT.

Main station is in Kathmandu, which synchronizes the radio link, ISDN and router. Router integrates through radio link and ISDN plays vital role through the satellite.

The NCCB branch offices are situated in different geographical regions of Nepal. The goal of NCC Bank is to provide a wide range of banking services and products in the emerging socio-economic environment within and outside the country maintaining high standards of integrity and efficiency with excellence.

The following diagram shows the wide area network of NCC Bank:

Figure 4.13: Wide Area Network (WAN) of NCC Bank Figure 4.13: Wide Area Network (WAN) of NCC Bank

NSP

1. Mahendra Nagar: Kanchanpur, Mahendra Nagar
2. Lumbini: Mahilawar, Lumbini
3. Butwal: Traffic Chowk, Butwal
4. Siddhartha Nagar: Bank Road, Bhairahawa
5. Pokhara: New Road, Pokhara
6. Narayangarh: Pragatipath, Chitwan
7. Chabahil: Chabahil Central Complex, Chabahil, KTM
8. Corporate Office / Kathmandu Main Branch
NB Building, Bagbazar, Kathmandu, Nepal
Phone : (01) 4246991; Fax : (01) 4244610; SWIFT : NBOCNPKA,
Telex : 2843, 2812
Website : www.nccbank.com.np
email : nccb@nccbank.com.np
9. Birgunj: Aadarshnagar, Birgunj
10. Kalaiya: Cinema Road, Kalaiya, Bara
11. Thankot: Check Post, Kathmandu
12. New Road: Joshi Shopping Center, New Road, KTM
13. Lagankhel: Kumaripati, Lagankhel, Lalitpur
14. Barahbise: Barahbise Bazar, Barahbise
15. Banepa: Tribhuvan Chowk, Banepa
16. Biratnagar: Main Road, Biratnagar
17. Birtamod: Purba Bus Station, Anarmani, Jhapa

4.4.1 SCT ATM Network

NCC Bank Provides Debit Card which is the easiest way to carry cash. Using NCC Debit Card customers can withdraw cash as well as purchase goods from several merchants. Customers can use this card at any ATM/POS terminal that is under SCT network and can withdraw up to Rs. 25,000/- at a time. It provides secured transaction with no queue hassle at Bank.

Table 4.8: ATM Terminals

BANK NAME	LOCATION
Himalayan Bank Limited	Thamel/ Patan
Bank of Kathmandu	Kamaladi/ Newroad/ Thamel/ Pokhara
Laxmi Bank Limited	Hattisar/ Banepa/ Birgunj
Everest Bank Limited	Baneshwor/ Pulchowk/ Newroad/ Lazimpat
NCC Bank Limited	Bagbazar/ Chabahil
Machhapuchchhre Bank Limited	Putalisadak
Lumbini Bank Limited	Kingsway
Nepal Bangladesh Bank Limited	Kathmandu Plaza/ Kumaripatti
NIC Bank Limited	Newroad/ Kamaladi
Gorkha Development Bank Limited	Putalisadak
Gorkha Development Bank	
Development Credit Bank Limited	Putalisadak
Siddhartha Bank Limited	
Nabil Bank Limited	Kamaladi
	Maharajgunj
	Kantipath/ Newroad/ Kupondol/ Maharajgunj

Source:www.nccbank.com.np

4.4.2 Global Connection

NCC Bank has strategic alliance with ICICI Bank, which facilitates customers to remit their money to more than 670 locations of India through ICICI Bank branches and their correspondent Banks in India. Customers of the bank can affect their money transfer to India either through Speed Transfer Arrangement or through Demand Draft Arrangement. Under Speed Transfer Arrangement, money can be credited on-line to the beneficiary's account at more than 400 branches of ICICI Bank, India. Under Demand Draft Arrangement, the Bank can issue draft payable at more than 670 locations in India. NCC Bank is globally connected through various prominent Banks in Asia, Europe and North America like American Express Bank, Standard Chartered Bank, UBAF etc. The services of the bank across the globe include remittance, draft arrangement, import and export business, guarantee etc.

4.4.3 International Network

NCC Bank has a huge international network. It provides various currencies' draft for customers' convenience. They can transfer their university fees, business transfers and other transfers via swift at any corner of the world.

Correspondent Banks- NOSTRO A/C

Table 4.9: Correspondent Banks

S. No.	Bank's Name/Address	Address	Swift Code	A/C No.
A.	USD			
1.	AMERICAN EXPRESS BANK	NEW YORK	AEIBUS33	00733675
2.	STANDARD CHARTERED BANK	NEW YORK	SCBLUS33	3582077440001
3.	STANDARD CHARTERED BANK	NEPAL	SCBLNPKA	15139008251
4.	BANK OF CEYLON	LONDON	BCEYGB2L	02510-600241-00
5.	BANK OF CEYLON	COLOMBO	BCEYLKLX	0087-56-2100026-2
6.	NEPAL RASTRA BANK	KATHMANDU	NRBLNPKA	521401
B.	GBP			
7.	STANDARD	NEPAL	SCBLNPKA	15139008256

	CHARTERED BANK			
8	BANK OF CEYLON	LONDON	BCEYGB2L	01510-600241-00
C. EURO				
9	AMERICAN EXPRESS BANK	FRANKFURT	AEIBDEFX	018030505
10	BANK OF CEYLON	LONDON	BCEYGB2L	08510-600241-00
D. JPY				
11	STANDARD CHARTERED BANK	TOKYO	SCBLJPJT	2036951110JPY
12	UNION DE BANQUES ARABES ET FRANCAISES	TOKYO	UBAFJPJX	281931-001-00-0
E. INR				
13	AMERICAN EXPRESS BANK	KOLKATA (CALCUTTA)	AEIBINDXCAL	411401563
14	STANDARD CHARTERED BANK	KOLKATA (CALCUTTA)	SCBLINBBCAL	
15	BANK OF CEYLON	CHENNAI (MADRAS)	BCEYIN5M	32205097425 3206
16	ICICI BANK	MUMBAI	ICICINBB	000405075246INR

F. NPR
NEPAL RASTRA
17
BANK
THAPATHALI,
KATHMANDU
511401
NEPAL RASTRA
18
BANK
BIRGUNJ
NEPAL RASTRA
511497
19
BANK
SIDDHARTHA
NAGAR
NEPAL RASTRA
511416
20
BANK
BIRATNAGAR
STANDARD
21 CHARTERED
511440
BANK
NEPAL 15139008201
Source:www.nccbank.com.np

4.5 Limitation of Existing System

The Branch is using the PUMORI PLUS banking software, the most commonly used software in banking sector in Nepal. Though the system is satisfactory and many Nepalese banking institutions are using it but the main problem of mercantile is after sales service, which is often comes in media.

The banks, using the Pumori software, often complaint about lack of maintenance support from the supplier. Although the system is old and is in testing period, researcher draws out some limitation from personal observation and with the help of interview with various concerned personnel.

- In comparison to paper based system, the new system performs better but it still has long procedures. User get bored with this long procedure and working performance may also decrease.

- Security is the vital element of the bank, there is no doubt on that. But the system doesn’t provide full and unbreakable security for the bank’s data and information.

- Lack of regular support from vendor.

- Pumori Plus does not give ready to use report so it has to be checked and prepared by the reporting section, which is the waste of time.

- Pumori Plus is for only banking transaction it doesn't provide any solution for pension and human resource system so the bank is using different system for pension and human resources.

- There was no cost and benefit analysis done to implement the Pumori Plus, it was introduced to the bank because World Bank finance the project.

4.6 Feasibility Analysis of Existing System

Management Information System department needs coordination of every department to develop the complete and up-to-date database. Feasibility is considered in the following aspects.

Feasibility study uses three major yardsticks to measure, or predict a system's success: the economic feasibility, technological feasibility, and operational feasibility. The current information system consist simple information systems for capturing, storing, analyzing, and reporting each and every information related to management with an integration with every departments of bank.

Operational Feasibility:

The manpower and other support required are available. The technology is locally developed. Thus the cost of maintenance is very less and also the information exchange is too fast for the staff working inside which proves to be operationally feasible.

Technical Feasibility:

CBIS is the best solution to proliferate the speed of the work and to obtain precise information, which is needed for both current and future use. As the system is already computerized and there is MIS department it is technically feasible.

Economic Feasibility:
The system is economically feasible as per the importance in such development of the organization.

4.7 Analysis of Primary Data

4.7.1 Public Opinion Survey Data Analysis

The data table below is the primary data collected from the public to survey how they perceive the computer based management information system in NCC Bank. Respondent who often visit the Bag Bazaar branch for different purpose is chosen as per judgmental sampling. The respondents are from different profession like businessman, students, social workers, office employees, housewives etc. Detail of question and the multiple choices of question are given in Appendix IV at the end of this research study. At least 30 individuals were interviewed to take their opinion on different five questions. The summarized data table is given below.

I. Respondent Distribution by Profession

Number of respondent is selected from each group to make the opinion representation from all classes of persons and is tabulated as per below:

Table 4.10: Respondents Distribution by Profession

Respondent Type	No of Respondent
Businessman	5
Students	6
Social workers	5
Others	14
Total 30	

Source: Field Visit

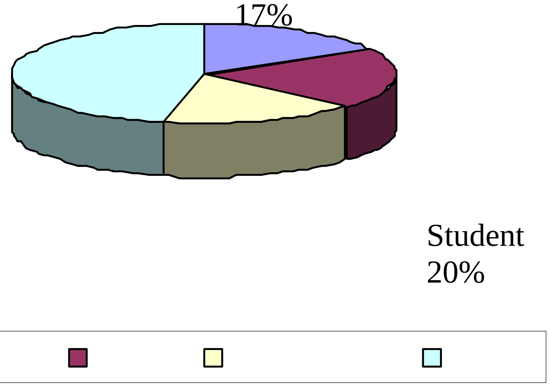


Figure 4.14: Respondents Distribution by Profession

Purpose of Visit

II.

The following table shows customer's purpose of visit to the bank.

Table 4.11: Purpose of Visit

Option Details	No. of Respondents
For Loan	6
To Deposit/Withdraw	17
To pay interest	3
For other purpose	4

Source: Field Visit

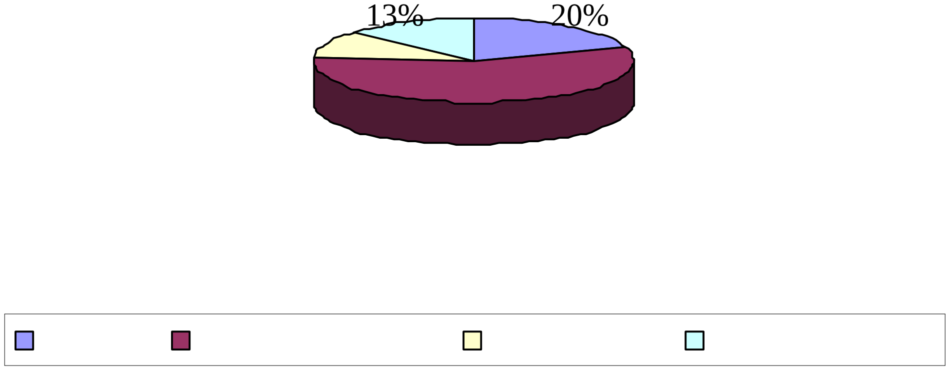


Figure 4.15: Purpose of Visit

The purpose of visit is crucial things to be considered while developing any management information system and maintaining that. The above result shows that most of the customer visits the bank to deposit and withdraw cash followed by loan and other purpose.

III. Customer Rate of Bank Visit

Table 4.12: Customer Rate of Bank Visit

Option Details	No. of Respondents
Regularly	4
Repeatedly	5
Normally	12
Rarely	9

Source: Field Visit

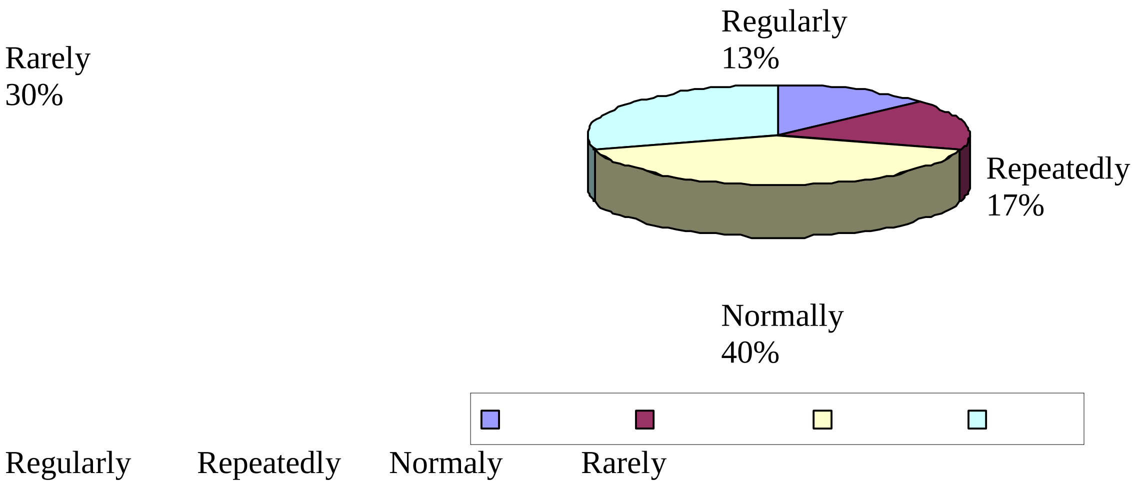


Figure 4.16: Customer Rate of Bank Visit

The above table and chart shows how often customers visit the bank. 40% respondent says that they visit the bank normally while 30% visit the bank rarely and 17% visit repeatedly and 13% visit regularly.

IV. Perception of Customer Regarding Introduction of Computer

Table 4.13: Perception of the Customer Regarding Computer

Option Details	No. of Respondents
Fast Service	12
Quality Service	1
Fast and Quality service	8
No difference at all	9

Source: Field Visit

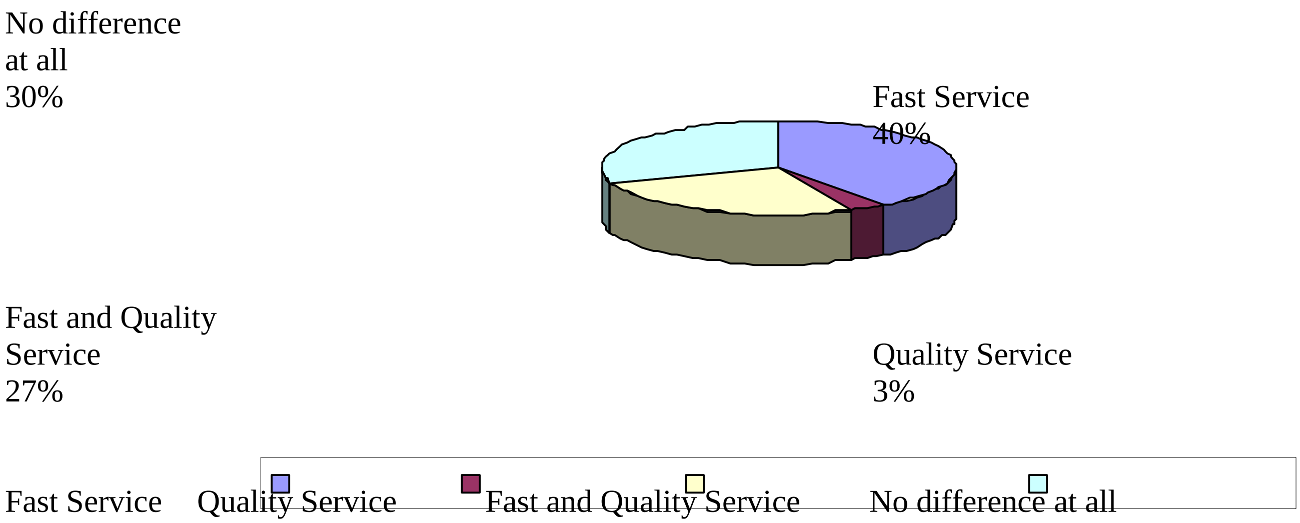


Figure 4.17: Perception of the Customer Regarding Computer

The above table and pie chart shows that 40% respondents believe that introduction of computer in the bank relates to fast service while only 3% relates it to quality service. And 27% respondent says that introduction of computer will result fast and quality service.

V. Satisfaction Rate of the Customer

Table 4.14: Satisfaction Rate of the Customer

Option Details	No. of Respondents
Strongly satisfied	6
Highly satisfied	14
Moderately satisfied	6
Not satisfied	4

Source: Field Visit

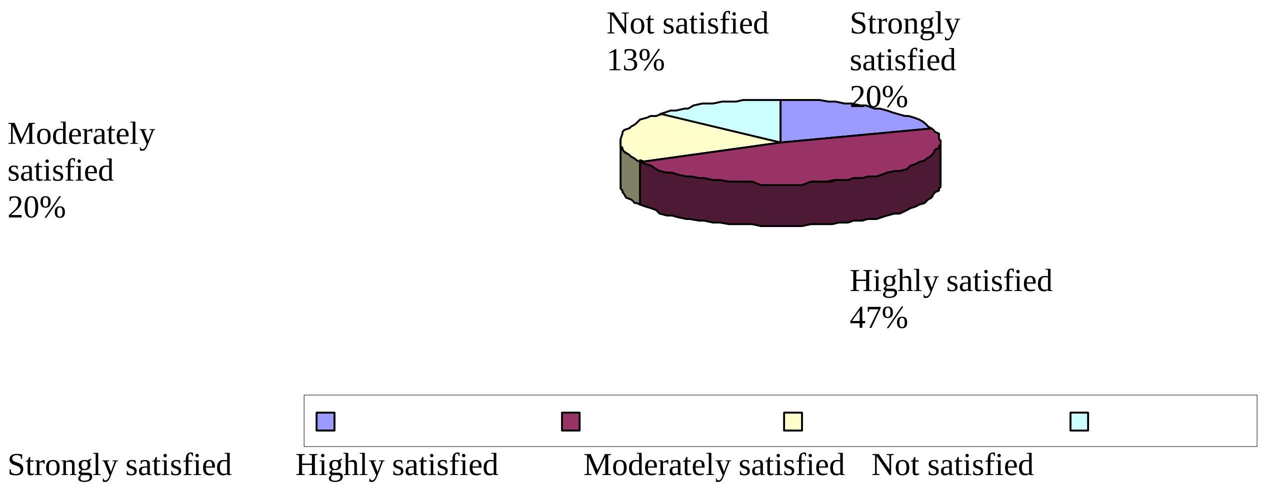


Figure 4.18: Satisfaction Rate of the Customer Computer

Data presented above clearly shows that most of the customer visited the bank for day to day transaction and they are aware that bank is changing in terms of information technology.

The result clearly shows that, there are still many customers who feel that the service provided by the bank is slow even after the implementation of computerized information system in the bank. As banks is at first stage towards providing service using information technology and other commercial banks providing this sort of service since 5/6 years so the customers has mix reaction to the service provide by the bank. Most of the customer still feels that the service provided by the bank is moderate and slow. Likewise, most of the customers are still not fully satisfied. Among the customer whose view are observed, only 47% said that they are highly satisfied by the service provided by the bank.

4.7.2 Staff Opinion Survey Data Analysis

The main source of data for this research study is primary data. The questionnaires as appear on the Appendix V of this research work were designed to survey the opinion of concerned personnel at corporate office. Questionnaire method is used for data collection from different individuals. Moreover, objective of this survey is to find how the concerned personnel perceive the current and proposed management information system as well. Total of 40 staffs of the Bag Bazaar branch were taken from different level of management as respondents and were interviewed to take their opinion on different ten questions. The summarized data is given below:

I. Respondent Distribution by Management Level

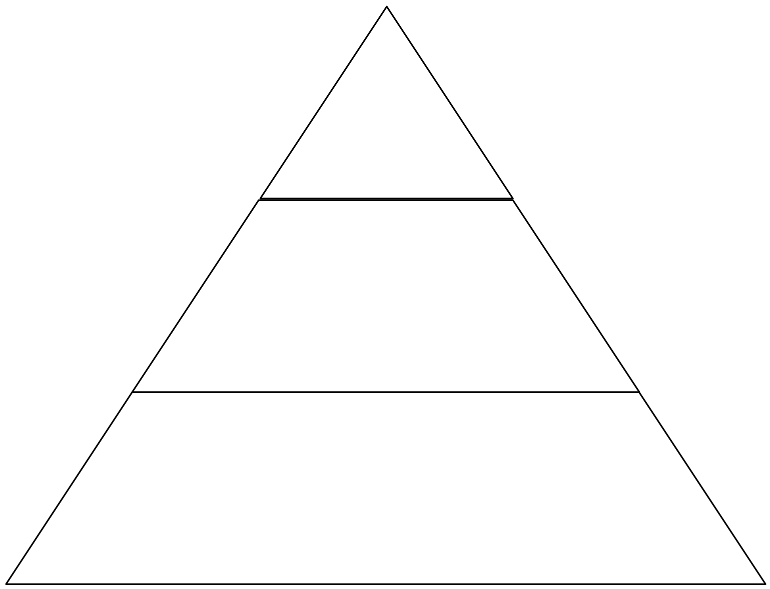


Figure 4.19: Distribution of Respondents by Management Level

Total of 40 employees working on Bag Bazaar Branch are taken as respondent. 10 employees working on top-level management, 15 employees working on middle level management, and 15 employees working on lower level management were taken as respondent.

II. Understanding of the MIS among the Staff

Table 4.15 Understanding of MIS among the Staff

Option Details	No. of Respondents
Good understanding	11
Average understanding	16
Low understanding	5

No understanding		8

Source: Field Visit

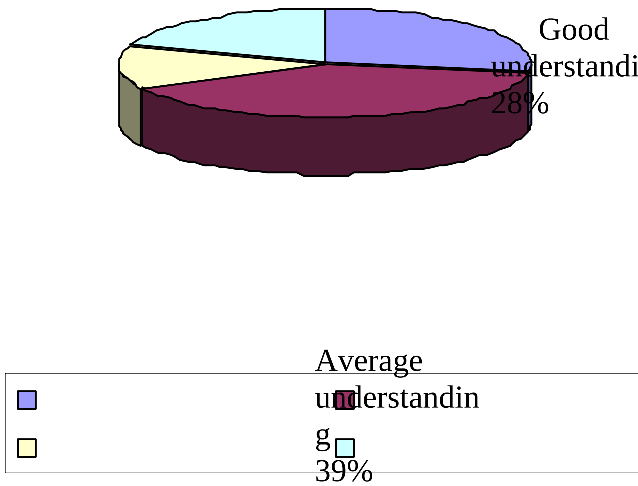


Figure 4.20: Understanding of MIS among the Staff

From the above table and pie chart, it can be observed that understanding of MIS Varies. Only 28% staff responded that they had a good understanding of MIS while, 39% staff had average understanding. 13% and 20% staff had low understanding and no understanding of MIS respectively.

III. Access to the Computer in the Working Activities

Table 4.16: Access to the Computer in the Working Activities

Level	Regularly	Often	Rarely	No
Top Level	10	0	0	0
Middle level	9	6	0	0
Lower Level	6	2	2	5

Source: Field Visit

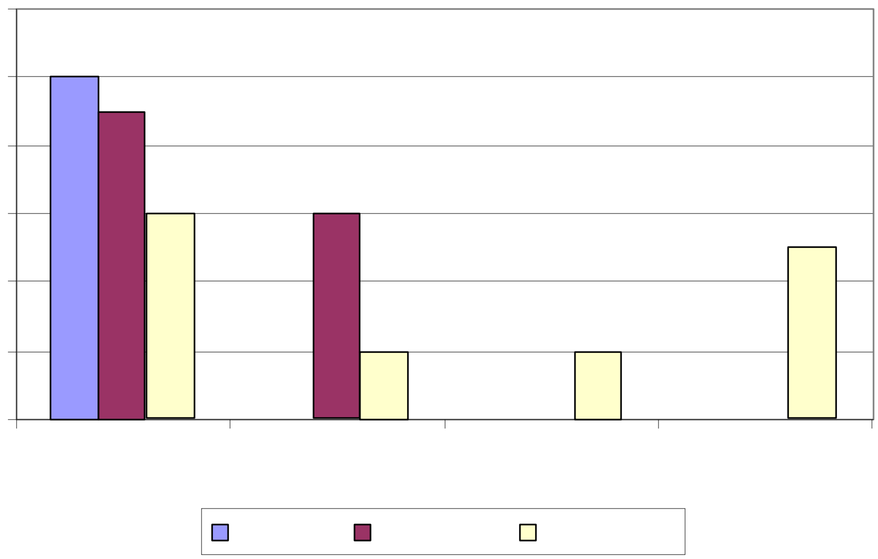


Figure 4.21: Access to the Computer in the Working Activities

The result shows that top level employee have most access to the computer in regular basis where as middle level and low level employee have use the computer more rarely.

IV. Use of Computer

The table shows that the most of the employees use computer to get current information. And only small numbers of employees use the computer to analyze past data and to project the future situation.

Table 4.17: Use of Computer

Option Details	No. of respondents
To analyze past data (1)	7
To get the current information (2)	23
For projection of future situation (3)	-
All of Above (1,2,3)	6
(1) and (2)	4

Source: Field Visit

Importance of MIS in the Organization

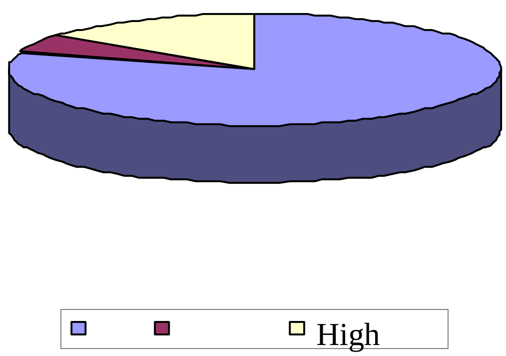
V.

Table 4.18: Importance of MIS in the Organization

Option Details	No. of Respondents
High	32
Moderate	2
Low	0
Don't Know	6

Source: Field Visit

Don't Know
15%
Moderate
5%



High
80%

High Moderate Don't Know

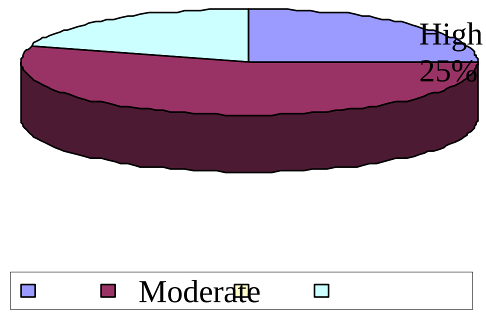
Figure 4.22: Importance of MIS in the Organization

VI. Use of MIS in Decision Making

Table 4.19: Use of MIS in Decision Making

Option Details	No. of Respondents
High	10
Moderate	22
Low	0
Don't Know	8

Source: Field Visit



The above table shows the opinion about the use of MIS in decision making.The result shows that most of the employees believes that MIS being moderately use in decision making and some employees have no idea whether MIS is being used in decision making or not. The response from the staff of the bank clearly signifies that MIS is being used moderately in the bank, thus the management should focus on how MIS can be used more properly in their decision making procedure.

VII. Problem in Your Department

Table 4.20: Problem in Your Department

Options	No. of Respondents
Lack of powerful tools	24
Lack of Information	10
others	6

Source: Field Visit

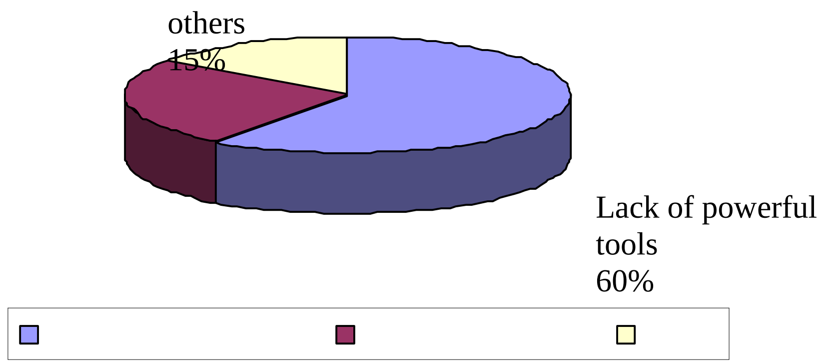


Figure 4.24: Problem in Your Department

VIII. Satisfaction from Current Information System

Table 4.21: Satisfaction from Current Information System

Option Details	No. of Respondents
Highly satisfied	22
Moderately satisfied	28
Not satisfied	0

Source: Field Visit

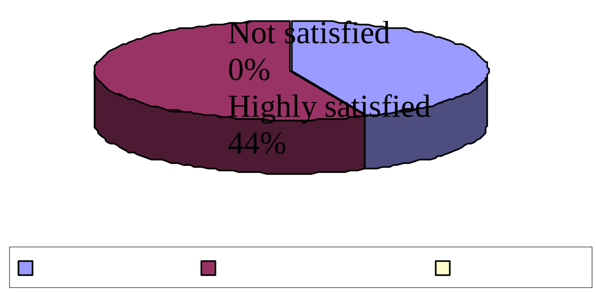


Figure 4.25: Satisfaction from Current Information System

The above table and pie chart shows the opinion about the satisfaction from current information system.

The result shows that 56 percentage of employee are moderately satisfied from the system, 44 percentage of employee are highly satisfied and zero percentage of employees is dissatisfied with the system.

IX. Opinion about the statement “For an MIS to be effective, the software personnel need to be properly trained”.

Table 4.22: Need of Training Program for Effective Use of MIS

Option Details	No. of Respondents
Strongly agreed	30
Highly agreed	10
Partly agreed	0
Disagreed	0

Source: Field Visit

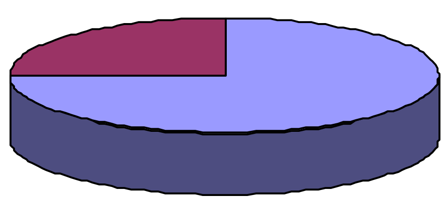


Figure 4.26: Need of Training Program for Effective Use of MIS

Above table and pie chart clearly shows that all the staff strongly believes that software personnel should be trained to make existing system more efficient and effective. 75% staff strongly agreed and remaining 25% staff highly agreed with the statement.

X. Management Efficiency Increase with Utilization of CBIS

Table 4.23: Management Efficiency Increase with Utilization of CBIS

Option Details	No. of Respondents
Strongly agreed	24
Highly agreed	10
Partly agreed	6
Disagreed	0

Source: Field Visit

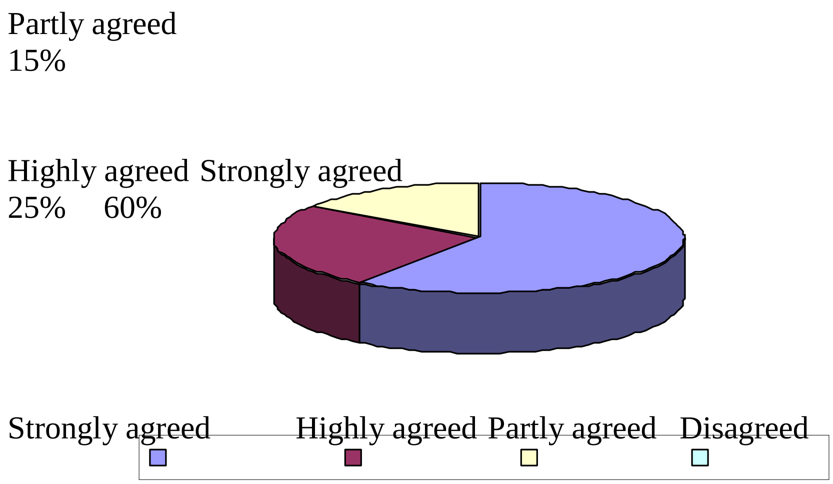


Figure 4.27: Management Efficiency Increase with Utilization of CBIS

4.8 Major Findings

The research findings regarding the role of MIS in Nepal Credit and Commerce Bank Limited are descriptive in nature. Due to the nature of the study, it could not be shown in quantitative value that the management information system is widely useful and highly appreciable in Nepal Credit and Commerce Bank, regarding its safety and smooth operation, however opinion survey of general public and staff have been made to reveal necessity, importance and usefulness of the management information system in the bank.

The findings are based on the review of the literatures, researcher own experiences, researcher visit and observation and interaction with concerned personnel of Bag Bazaar branch. Further, the researcher made opinion survey of staff of the bank and general public who often visits the bank.

Here findings are summarized in two topics viz.:

a. Findings based on the review of literatures and experience of author
b. Findings based on the surveyed opinions , visit and observations

a. Findings based on the review of literatures and experience of author

Banks are among the most important financial institutions in the economy and essential business in thousands of local towns and cities. Thus, the banking sector is one of the most significant service industries. It plays a vital role in the economic development and financial health of any country. An effective banking system leads to the effective mobilization of source like saving and investment, which in turn leads to the sound economy health of the country. Bank offers various types of services to its customer to facilitate the economic transaction.

Therefore, customer satisfaction highly depends upon the quantity and quality of services offered by the bank.

Regarding the use of computer based information system, NCC Bank has already introduced a computer based information system (CBIS) and is providing its services through fully computerized branches and 260 well trained personnel. After the restoration of democracy, the Government of Nepal launched an economical liberalization policy. This has led to an increasing number of commercial banks in the country, due to such increment of commercial banks, competition also increased among them, which have resulted in enhanced services to the customers getting more competitive advantage. This is only possible through proper information technology.

Among all the commercial bank, Nepal Credit and Commerce Bank Limited (NCCB) was the first private sector bank with largest authorized capital of NRS. 1,000 million that provides banking facilities and services to rural and urban areas of the Kingdom through its 17 branches. Nepal-Bank of Ceylon Limited was changed to NCCB on due to the transfer of shares and management from Sri Lankan co-venture to Nepalese Promoters. The Bank strives to enhance shareholders' wealth acting as a catalyst to facilitate rapid economic growth and socio economic development of the nation by identifying strength, weakness, opportunity and threats (SWOT analysis), providing excellent customer oriented services. The Bank has developed corresponding agency relationship with more than 150 International Banks having worldwide network.

NCC Bank is managed by a professional management team. The members of the management have proven track record in the banking sector. NCC Bank has been trying to enhance the personal competencies of the officials of the Bank on the one hand and to improve the capabilities of the Bank on the other. In this process, the publication of the newsletter named NCC Buzz is trying to accommodate pertinent information on Current Economic Affairs, update of Nepalese Economy, Branch Information, Product Information and Financial Sector Review etc. with a view to arouse interest among staff members and existing and potential customers and corporate so that they will be able to update their knowledge about the financial sector and NCC Bank.

At present, the Branch is using the PUMORI PLUS banking software, the most commonly used software in banking sector of Nepal and offers Any Branch Banking Services (ABBS) within Kathmandu. Telex and SWIFT are other modes of communication for efficient and effective transmission of information. Although the computerization process is in high speed but it does not cover all the necessary area banking process, many branches using current information system to perform limited activities like for transaction task only.

b. Findings based on the surveyed opinions, interview, visit and observations

Survey result shows that most of the public, who visits the bank, is positive towards the current management information system in the bank. And the result also shows that need of the computerized information system in the bank are high. Respondents also agree that computerized information system ultimately enhance the performance of the bank.

NCC Bank was using two banking software, Bank 2000 and the Pumori Plus. Bank 2000 is more advanced than the currently used software but due to its high cost and less knowledge to upper level it was totally replaced by the Pumori Plus in all the branch of the Bank. Therefore, NCCB realizes that it is always easy to start with simple information system before applying a vast and multi module information system in the bank.

Pumori Plus is the Nepal made banking software to suit the commercial banking activities. As Pumori Plus is updated version of Pumori software, it includes almost all the modules that required for the commercial bank. However, there are few constraints regarding the Pumori Plus despite being the old version. The features of the Pumori Plus do not totally suit the NCCB need.

However, the main problem lies as there is a limited support from the software vendor and the lack of training among the staff to operate the new system. Every organization faces problems while introducing a computerized information system in their organization and NCCB is not the exception. In addition, there are many problems regarding the implementation of information system in NCCB, for instance, training of the staff, acceptation of new system, motivation towards new working process, software and hardware maintenance, lack of trained technician within the bank etc.

On top of that, in this modern era of Fast Growing Information Technology there has been various Advance Banking technologies introduced and are being implemented in Banks all over the Globe, to satisfy their Customers. “Internet Banking”, “Mobile Banking”, “Credit /Debit Card” are some of the Most Demanding facilities that the customers seek from their bank. With these technologies in hand, banks can benefit in various aspects like worldwide network of its own, worldwide customers, Better

Management, on top of that Customer Satisfaction. Implementation of these Technologies will help and lead the Bank to be Worldwide competitive.

CHAPTER V

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary

Management information system has been emerged as a new concept in the field of management to solve the problems generated by complex organizational structure and increased complexities of management due to industrial and technological revolution. MIS is defined as a computer-based information system, which provides information support of decision-making in the organization. MIS gives information through data analysis.

After the restoration of democracy, the Government of Nepal launched an economical liberalization policy. This has led to an increasing number of commercial banks in the country, due to such increment of commercial banks, competition also increased among them, which have resulted in enhanced services to the customers getting more advantage that is competitive. This is only possible through proper information technology.

Management Information System is the backbone on which logical business decisions are made in all types of business organizations. Applying this same logic to a bank, we can safely say that a bank must have good Management Information System as a minimum to survive and prosper in this exceedingly competitive world.

There are altogether 19 commercial banks in Nepal. Nepal Credit and Commerce Bank (NCCB) Limited is a Joint Venture Commercial Bank between Bank of Ceylon, Sri Lanka, the Pioneer Bank in Sri Lanka and Nepalese Promoters, NB Group (Nepal) Pvt. Ltd. and Nepal Insurance Company Ltd. It was the first private sector Bank with largest authorized capital of NRS. 1,000 Million. The name of the Bank was changed to NCC Bank due to transfer of shares and management of the Bank from Bank of Ceylon, an undertaking of Government of Sri Lanka to Nepalese Promoters. The Kathmandu Main Branch is a full-fledged Branch of the Bank and is providing full array of Banking Services.

NCC Bank has already introduced a computer based information system (CBIS) and is providing its services through fully computerized branches and 260 well trained personnel. The Bag Bazaar Branch is using the PUMORI PLUS banking software, the most commonly used software in banking sector of Nepal and offers Any Branch Banking Services (ABBS) within Kathmandu. Telex and SWIFT are other modes of communication for efficient and effective transmission of information. In Bag Bazaar branch, MIS and Compliance Department is under the Account Division purely for the purpose of collecting, storing, processing and disseminating of overall banks information.

Moreover, there is no even a separate department like IT or similar, to handle the Information System. MIS and compliance department in NCCB lies under the Account Division purely for collecting, storing, processing, and disseminating of overall banks information. Besides the IT department, there is another separate Computer System department that handles all the hardware and software need of the bank.

The MIS plays the vital role in the organization as heart plays in body. The system ensures that an appropriate data is collected from the various sources, processed, and sent further to all the needy destinations. The system is expected to fulfill the information needs of an individual, a group of individuals, the managers and the top management. The MIS satisfies the diverse needs through a variety of systems such as Query Systems, Analysis Systems, Modeling Systems, and DSS and also helps in Strategic Planning, Management Control, Operational Control, and Transaction Processing.

MIS is viewed and used at many levels by management. Because MIS supplies decision makers with facts, it supports and enhances the overall decision making process. MIS also enhances job performance throughout an institution. In NCC Bank at the most senior levels, it provides the data and information to help the board and management make strategic decisions. At other levels, MIS provides the means through which the institution's activities are monitored and information is distributed to management, employees, and customers.

5.2 Conclusion

The continually changing business dynamics in the new age economy requires banks to respond with a high degree of agility. Today technology has emerged as both the key enabler and driver of change. Therefore, bank need system that are not only functionally rich and technically robust and scalable, but they also need a new generation architecture based on the web paradigm, true 24x7 solution and straight-through-processing infrastructure which provide market advantage and business agility to gain and retain competitive leadership in the consumer banking space.

Need of computerized information system with ease of handling and unbreakable security is the must for any baking institution. NCC Bank was the first private sector bank with largest authorized capital of NRS. 1,000 Million. NCCB extended its branch network almost every part of the country. The Bank has developed corresponding agency relationship with more than 150 International Banks having worldwide network. The banking software currently used in the bank is Pumori Plus, has limited function and not suitable for internet and mobile banking but it is a very useful system to start computerized information system in manual working branch. To enter this globally expanded market and to provide 365 days of banking with 24 hours service to its customer, bank needs to install the better advance new system like Pumori Plus III, Bank2000 (B2K).

NCC Bank had already tested the Bank2000 system, but due to the lack of training and supervision this system was replaced by less advance Pumori Plus. Hence, the bank has to go for the better training rather than to implement the less advance system. There is no doubt that, implementation of Latest Advanced Banking System in the bank will enhance the overall performance of the bank. It is sure that the system will reduce the long queue in front of teller and staffs do not have to search in pile of files to make a single report. The NCC Bank faced the difficult challenge of maintaining profitability in an unpredictable global economy. It needed to increase profits through better management of resources and by cutting costs. To realize operational savings, it has to manage core business processes in finance, payroll, human resources, and procurement by choosing the software, which provides all the solutions and services with ease of use. And the result will have to be: reduced costs, integrated information, and standardized processes across the organization.

5.3 Recommendation

Although NCC Bank is performing serious activities in the field of implementing information technology in current days, but there are number of thing that has to be consider seriously while implementing new system and number of thing that has to be done to implement the new system successfully. There is also need to make some changes in systems that NCC Bank is using currently.

With the researcher perspective view, following recommendation are purposed:

- The main objective of the project should not be only installing hardware and software in various branches but also to attain measurable and well controlled IT department through IT service management and process, people and technology integration.
- There is no doubt that implementation of MIS is mere beginning rather than end, so continuous study should be done to improve the overall use of information system in the organization.
- In the regard of training of technical personnel of bank, fully rely on vendor company is not appropriate so contract should be made with vendor company for a certain time and after that bank should form a group of trained software personnel within the bank.
- Providing training only with no supervision is waste of time and money, so effective supervision should be done while training and implementation of the system.
- Support of all staff is necessary to implement new computerized information system successfully in the bank. So, bank need to motivate all staff toward information technology through staff awareness, general meeting, basic training program etc.

- As NCC Bank is going to provide mobile and internet services, card services towards its customer, NCC Bank should design and conduct some program in rural side of the country about advantages and procedure of using new facilities provided by the bank.
- There are some big as well as small problems existed in existing information system, so they have to be fixed.
- Though Pumori Plus is the well acceptable system for the banking process, users have to perform a lengthy process to perform a small activity in the system.
- Reporting module is the most important module of any management information system, but Pumori Plus dose not provide ready to use and ready to submit report to Nepal Rastra Bank. Therefore, reporting module should be reorganized.
- In the context of security, Pumori Plus system provided satisfactory security, but bank itself believe that the system does not provide unbreakable security, so core step should be taken in the concern of security.
- In current period the bank's IT organization consisted of silos of functionally separated groups of technologies. There were no common standards, no cross-functional cooperation, which IT staff could follow to complete tasks. The paradox of the situation was in a huge gap dividing the excellent technical skills of IT staff and the inability to leverage them in the absence of effective IT management. Along with the reorganization of IT, it was necessary to revise IT's role in the bank's business as a whole. IT department, being one of the bank's business units, had to provide the required level of support for the bank's business strategy.

Further research should be made in this area to see the effectiveness of the Pumori Plus in the Nepal Credit & Commerce Bank Limited (NCCB).

ACKNOWLEDGEMENT

I am extremely grateful to my thesis supervisors of Shanker Dev Campus Dr. Geeta Pradhan, Associate Professor and Mr. Shankar Adhikari, Teacher. I would like to express my gratitude for their invaluable suggestions, time, and effort paid to me for the completion of this thesis.

I am also indebted to Mr. Ramesh Raj Aryal, Mr. Gauri Lal Shrestha and Mr. Saroj Chettri (Junior Officer of MIS and Compliance Department) and Mr. Uresh Man Kayastha (Senior Executive Officer of the System In-Charge) for their kind help in my research work. I would also like to thank Mr. Rajendra Shrestha (Managing Director of SharpMinds Pvt. Ltd.), my colleague Mr. Bishal Shrestha and my uncle Mr. J. B. Shrestha (Chairman of Nepal Bangladesh Bank Limited) for their kind support and inspiration in preparing this thesis. Further, I am also thankful to all the teachers and staffs of Shanker Dev Campus for their praiseworthy help.

Last but not the least I would like to thank my family members for their constant encouragement and co-operation in my academic pursuit.

Please kindly accept my apology for any occurrence of errors in my research work.

Padma Maharjan
June, 2007

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

	Any Branch Banking System
	Automated Teller Machine
ABBS	Basic Input Output System
ATM	Board of Director
BIOS	Bal Suraksha Khata
BOD	Computer Based Information System
BSK	Chief Executive Officer
CBIS	Confidentiality, Integrity, and Availability
CEO	Central Vigilance Commissioner
CIA	System
CVC	Data Flow Diagram
DBS Database	Disk Operating System
DFD	Decision Support System
DOS	Electronic Clearing Services
DSS	Entity Relationship Diagram
ECS	Floating Rate Fixed Deposit
ERD	Human Resource Department
FRFD	International Business Machines
HRD	Industrial Credit and Investment Corporation of India
IBM	Information and Communication Technology
ICICI	Information Retrieval System
ICT	Integrated Services Digital Network
IRS	Information Technology
ISDN	Jestha Nagarik Suraksha Khata
IT	
JNSK	
LAN Local Area Network	
MIS	Management Information System
MSK	Mahila Suraksha Khata
MTCN	Money Transfer Control Number

NB Nepal Bangladesh	
NBOC	
NCC	Nepal-Bank of Ceylon Limited
NCC	Nepal Credit and Commerce
NCCB	National Computer Center
OLE	Nepal Credit and Commerce Bank
RNAC	Object Linking Embedded
RONAST	Royal Nepal Airlines Corporation
SCT	Royal Nepal Academy for Science and Technology
SMS	Smart Choice Technology
SWIFT	Short Messaging Service
SWOT	Social Welfare Interbank Fund Transfer
	Strength, Weakness, Opportunity and Threats
TU Tribhuvan University	
USA	United States of America
UK United Kingdom	
VSAT Virtual Satellite	
WAN Wide Area Network	

BIBLIOGRAPHY

Acharya, Ishwar (2002). Implementation of MIS in RNAC. Unpublished Master Degree Thesis. Shanker Dev Campus. TU.

Adeoti-Adekeye, W.B. (1997). Importance of MIS. Library Review. Vol. 46. No.5: 318-327.

Adhikari, Bimal P. (2003). Information Technology in Security Management. Unpublished Master Degree Thesis. Shanker Dev Campus. TU.

Adhikari, Shankar (2005). Introduction to Management Information System. Kathmandu: Buddha Academic Publishers and Distributors.

Bhattarai, Ajit P. (2003). Performance of Management Information System in Kumari Bank. Unpublished Master Degree Thesis. Shanker Dev Campus. TU.

Jawadekar, W.S. (2003). Management Information Systems. New Delhi: Tata McGraw-Hill.

Joshi, P.R. (2003). Research Methodology. Kathmandu: Buddha Academic Publishers and Distributors.

O’Brien, James A. (2004). Management Information Systems. New Delhi: McGraw-Hill.

Shrestha, Aniva (2003). Essence of MIS in Banking Sector. Unpublished Master Degree Thesis. Tribhuvan University. TU.

Stoner, James A.F., Freeman, Edward R., & Gilbert, Danial R. (2000). Management
2000. New Delhi: Prentice Hall of India.

Thapa, Devinder (2003). Future Prospective of Online Banking in Nepal. Unpublished
Master Degree Thesis. Shanker Dev Campus. TU.

Thierauf, Robert J. (1978). Decision Support System for Effective Planning and Control. Englewood Cliffs: Prentice-Hall.

Timilsina, Jagat (2004). Consumer Satisfaction in Joint Venture Commercial Bank. The
Nepalese Management Review. Vol. XII. No.1:96-97.

Turban, Efraim, & Aronson, Jay E. (2004). Decision Support Systems and Intelligent
Systems. Singapore: Pearson Education.

Wolff, Howard K., & Pant, Prem R. (2002). Social Science Research and Thesis Writing. Kathmandu: Buddha Academic Publishers and Distributors.

Yadhav, Pradhan (1986). A Study on Micro Computer and Computerization in Nepal.
Unpublished Master DegreeThesis. Shanker Dev Campus. TU.

Referred Websites

www.answers.com
www.acct.tamu.edu
www.agilemodeling.com
www.dictionary.com
www.itpfnepal.org
www.nccbank.com.np
www.nrb.org.np
www.occ.treas.gov
www.pumoriplus.com.np
www.umsl.edu

www.webopedia.com
www.wikipedia.org

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.

Laxmi Prasad Timsina

Nepal Commerce Campus
Campus Roll No: 1600/064
T.U. Reg.: 7-1-22-743-2002
Exam Roll No.: 250907/064

Questionnaire

Name Of Respondent ;

Position ;

Department ;

Please help the researcher by giving correct information of the questions listed in this questionnaire. The 1st 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
2061/62	561.281	1050	52.572	50	2760.66	2500	262710
2062/63	620.592	1100	111.853	100	12511.09	10000	11185.3
2063/64	417.690	1000	-91.049		8289.92		-
2064/65	508.739	1000	-	-	-		-
2065/66	366.576	800	-142.163	(200)	20210.31	40000	28492.6
2066/67	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:

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

For Budgeted Sales:

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

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-2064/65	XY	X2
2061/62	12133	(3)	(36399)	9

2062/63	13000	(2)	(26000)	4
2063/64	7125	(1)	(7125)	1
2064/65	9132	0	0	0
2065/66	6452	1	6452	1
2066/67	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-2064/65	XY	X2
2061/62	20120	(3)	(60360)	9
2062/63	20800	(2)	(41600)	4
2063/64	12120	(1)	(12120)	1
2064/65	14120	0	0	0
2065/66	10232	1	10232	1

2066/67	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-2064/65	XY	X2
2061/62	50431	(3)	(151293)	9
2062/63	55133	(2)	(110250)	4
2063/64	41232	(1)	(41232)	1
2064/65	50313	0	0	0
2065/66	37123	1	37123	1
2066/67	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)

$\Sigma XY = a\Sigma X + b\Sigma X2$ …………………..... (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-2064/65	XY	X2
2061/62	4943.4238	(3)	(14830.2714)	9
2062/63	4955.0941	(2)	(9910.1882)	4
2063/64	4953.8958	(1)	(4953.8958)	1
2064/65	3377.6958	0	0	0
2065/66	3186.1679	1	3186.1679	1
2066/67	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-2064/65	XY	X2
2061/62	6345232	(3)	(19035696)	9
2062/63	6224800	(2)	(12449600)	4
2063/64	4900547	(1)	(4900547)	1
2064/65	3519356	0	0	0
2065/66	3101697	1	3101697	1
2066/67	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-2064/65	XY	X2
2061/62	11691256	(3)	(35073768)	9
2062/63	10945351	(2)	(21890702)	4
2063/64	8946031	(1)	(8946031)	1
2064/65	5856564	0	0	0
2065/66	5361915	1	5361915	1
2066/67	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-2064/65	XY	X2
2061/62	26373900	(3)	(79121700)	9
2062/63	32380790	(2)	(64761580)	4
2063/64	35692381	(1)	(35692381)	1
2064/65	24400680	0	0	0
2065/66	23398067	1	23398067	1
2066/67	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)

$\Sigma XY = a\Sigma X + b\Sigma X2$ …………………..... (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-2064/65	XY	X2
2061/62	501515525	(3)	(1504546575)	9
2062/63	558285799	(2)	(111657158)	4
2063/64	380780350	(1)	(380780350)	1
2064/65	462495995	0	0	0
2065/66	335691194	1	335691194	1
2066/67	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
2061/62	909975	(3)	(2729925)	9
2062/63	975000	(2)	(1950000)	4
2063/64	534375	(1)	(534375)	1
2064/65	684900	0	0	0
2065/66	483900	1	483900	1
2066/67	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-2064/65	XY	X2
2061/62	120720	(3)	(362160)	9
2062/63	124800	(2)	(249600)	4
2063/64	72720	(1)	(72720)	1
2064/65	84720	0	0	0
2065/66	61392	1	61392	1
2066/67	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.

$\Sigma Y = na + b\Sigma X$ ……………………………. (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-2064/65	XY	X2
2061/62	2269395	(3)	(6808185)	9
2062/63	2480625	(2)	(4961250)	4
2063/64	1855440	(1)	(1855440)	1
2064/65	2264085	0	0	0
2065/66	1670535	1	1670535	1
2066/67	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)

$\Sigma XY = a\Sigma X + b\Sigma X2$ …………………..... (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) × 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-2064/65	XY	X2
2061/62	1960	(3)	(5880)	9
2062/63	2026	(2)	(4052)	4
2063/64	2223	(1)	(2223)	1
2064/65	2456	0	0	0
2065/66	2596	1	2596	1
2066/67	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   b = 263.857

We know,

Y = a + bx

Y= 2427.26 + 263.857 × 3

= 3218.83(000)

APPENDIX -VII

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

Years	Total BEP (Y)(Rs)	X-2064/65	XY	X2
2061/62	464171249	(3)	(1392513747)	9
2062/63	493535269	(2)	(987070538)	4
2063/64	562942704	(1)	(562942704)	1
2064/65	371583696	0	0	0
2065/66	366367806	1	366367806	1
2066/67	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-2064/65	XY	X2
2061/62	25380	(3)	(76140)	4
2062/63	24899.16	(2)	(99798.32)	1
2063/64	19602	(1)	(19062)	0
2064/65	14077.427	0	0	1
2065/66	12406.756	1	12406.756	4
2066/67	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-2064/65	XY	X2

2061/62	29228.13	(3)	(87684.39)	9
2062/63	27363.36	(2)	(54726.72)	4
2063/64	22365.09	(1)	(22365.09)	1
2064/65	4641.410	0	0	0
2065/66	13404.706	1	13404.706	1
2066/67	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
2061/62	46837366	(3)	(140512.10)	9
2062/63	58874138	(2)	(117748.76)	4
2063/64	64895199	(1)	(64895.199)	1
2064/65	4436488	0	0	0

2065/66	42541200	1	42541.200	1
2066/67	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-2064/65	XY	X2
2061/62	465713827	(3)	(1397141481)	4
2062/63	495417765	(2)	(990835530)	1
2063/64	1033455608	(1)	(1033455608)	0
2064/65	642685450	0	0	1
2065/66	61723580	1	61723580	4
2066/67	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-IX

Calculation of overall BEP sales of PCI

For the fiscal year2066\67

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-X

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.	Account Officer

		Poudel	
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-XI

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