

CHAPTER-I

INTRODUCTION

1.1 Background of the Study

Recording transactions in the set of books of account and preparation of financial statements require certain fundamental theories/principles. Such principles are described as broad rules which are accepted and adopted by accounting profession as a guide in recognizing, recording, measuring and reporting the financial affairs and activities of an enterprise. These principles are called “Generally Accepted Accountancy Principles (GAAP).” These are the rules which are universally adopted by. The rules consist of number of concepts and procedures of accounting.

These rules cannot be rigid like those of physical sciences. Accounting rules have to be used with responsible degree of flexibility in response to circumstances of an enterprise depending on the economic environment, social needs, legal requirements and technological development (ASB/Nepal, 2003). Accounting rules have been evolved from thinking and experience of members of accounting profession, business companies, government agencies and other concerned persons. They are, thus, man made rules, which are generally accepted and followed by accounting profession i.e. recording transactions in the book of account and reporting about financial affairs of any institutions.

The historical development of accounting practice has been closely related to the economic development of the country. In the earlier stages of the economy, business enterprise was very often managed by its owner, and the accounting record and reports were used mainly by the owner manager in conducting the business. Banker and other lenders often relied on their personal relationship with the owner rather than on financial statements as the basis for making loans for business purposes.

As business organization grew in size and complexity, “resource manager” and “resource providers” became more clearly differentiated. The existence of group which includes owners, creditors, government, labor union, customers and the general public, required for accurate financial information for use in judging the performance of management and safeguard of their resources. In addition, as the nature, size and complexity of business unit increased, the accounting and reporting of financial statements became more and more complex. With these developments came an awareness of the need and generally accepted accounting principles as guides for the preparation and reporting of the basic financial statements (Fees & Warren, 1987:557).

Accounting system as a ‘language of business’ communicates the financial performance and position of an enterprise to various interested parties by means of financial statements, which exhibit a true and fair view of financial results and it states of affairs. Like any other language, accounting has its own set of rules. The basic assumptions or rules used in preparing financial statements had evolved over many years as a product of the collective experience of practicing accountants. As a result, different companies used a wide variety of accounting methods. It was then felt that there should be some standardized set of rules and accounting principles to reduce or eliminate unfaithful representation of the financial information and confusing variations in the accounting methods or polices used to prepare financial statements. In order to suggest rules and criteria of accounting measurements, several accounting methods were felt to be developed.

Financial statements are prepared and presented for external users by many types of enterprises. Although such statements may appear similar from enterprise to enterprise, there are differences, which have been caused by the absence of a clear conceptual framework to guide the accounting principles by accountants and auditors. These differences have led to the use of variety of definitions of the elements of financial statements; that is, for an example,

assets, liabilities, equity, income and expenses. They have resulted in the use of different criteria for the recognition of items in the financial statements and in a preference for different bases of measurement. The scopes of the financial statements and the disclosures made in them have also been affected.

The accounting systems are rules specifying the accounting methods and disclosures to be employed by entities in the preparation of financial reports. Accounting systems are the fundamental guidelines that determine whether a specific accounting method is acceptable. These include the set of generally accepted accounting principles that have stood the test of time over many years. Suitable accounting system and methods place restrictions on behavior of its users and therefore affected parties must accept them.

The lack of proper and suitable accounting model makes the regulating agencies difficult to establish their effectiveness. Different regulating agencies including the tax authorities seek information in different ways. The companies have to furnish the information in accordance with the respective regulations but unfortunately, the shareholders and investors do not have access to such additional information. All these inconsistencies and the practices of exhibiting less information on financial performance makes the investors further discourage. The lack of standards in accounting methods and policies also make the confusions to the partners, owners shareholders etc.

The concept of good corporate governance has a direct relation with disclosure culture. Unless the financial transactions are transparent, the reliability of the financial statements will be questionable. The performance of management will be not enhancing especially in the context of country like Nepal. The only way to enhance this is to lay down certain standards with legal authority. The high quality accounting systems result in greater investors' confidence, improving liquidity, making fair market prices possible and reduced capital cost. It results in transparency, comparability and full disclosures. So, government and private

enterprises of Nepal seem to get benefit from the adaptation of Standard Accounting Systems.

1.2 Statement of the Problem

Nepal is an independent, landlocked and developing country of the world. It has been developing its different aspects such as communication, health and education slowly and gradually. Generally Nepal is still known as country of illiterate because there are still more people uneducated. In the sector of education, Nepal has been developing with a greater speed within the past ten years. Banking and financial sector are backbone of whole economy. The contributions of financial institution are appreciable to the economic upliftment of the country. Two types of commercial banks are operated in Nepal like Public and Private. The public sector commercial banks including Nepal Bank Ltd and Rastrirya Banijaya Bank have been managed by foreign professional management team due to allegedly inefficient management, where as private sector commercial banks, including Commercial Banks are seen as operating well from their establishment. Among the private sector commercial banks, most of the Commercial Banks are running their operations smoothly. Their experiences in international banking prompt and computerized services, professional attitude are the factors for their rapid progress. They have been growing from weakness and inefficiency of domestic public sector commercial banks. The private sectors commercial banks, especially the commercial banks have succeeded to capture a remarkable market share of Nepalese banking sector or financial sector in relatively short period of time.

Success is not a matter of chance. Profit does not just happen. It is to be planned and managed. Management Accounting provides various tools and techniques to aid management function in an efficient manner. Poor performance is the outcome of poor planning, controlling and decision making. Yet a question is arise do the Commercial Banks of Nepal practice management accounting tools and techniques to carry out planning, controlling

and decision making functions? If they do, what kinds of tools are used? To find the correct answer of this question hereby it is necessitated to conduct a research.

1.3 Research Questions

The study tries to arise the following research questions:

- How far commercial banks are practicing management accounting tools?
- Which accounting tools are mostly practiced and which are not practiced till now?
- What are the Main difficulties in the application and implementation of management accounting tools?
- In which areas of Commercial Banks can management accounting tools be applied to improve the competitiveness?

1.4 Objectives of the Study

The main objective of this study is to examine and study the practice of management accounting tools in the commercial banks of Nepal. The specific objectives are:

- To study and analyze the present practice of management accounting tools in the Commercial Banks of Nepal.
- To identify the areas where management accounting tools can be extensively applied to strengthen the bank in commercial activities.
- To recognize the problems faced by Commercial Banks in Nepal in practicing management accounting tools.
- To provide appropriate suggestions on the basis study result.

1.5 Significance of the Study

Since very few systematic studies of management accounting practice in banking sectors in Nepal have been conducted, it of hoped that the proposed

study would prove to be a great landmark in studying practice of management accounting tools and problem's in the application of such tools. This research study focuses on the study of the practice of management accounting tools in Commercial Banks of Nepal. This study is significant in the following ways;

- It analyzes the management accounting tools used in banking sector of Nepal.
- It provides information on the application of the tools under different circumstances and encourages the use of management accounting tools in decision making.
- It explores the problems and potentialities of Commercial Banks as well as commercial banks. It will be useful to the potential investors, lenders, policy makers, managers and stakeholders of the banks.
- Last but not least, it provides literature to the researches who want to carry on further research in this field.

1.6 Limitations of the Study

This study has completed within a certain period. So the study would not be a regular or long time study. The main limitations of the study are as follows:

- The study focuses on management accounting practice and does not
- Consider the other aspects of the banks.
- The study pay attention to the practice of selected management accounting tools only.
- This study focuses on the Commercial Banks of Nepal. Thus the findings might not be used to other sectors, banks and financial companies of Nepal

1.7 Organization of the Study

Each chapter concentrates to some aspect of the study of practice, problems and issues of accounting system of schools. The rational behind this kind of

organization is to follow a simple research methodology approach. The research contains the following five chapters:

Chapter I : Introduction

Chapter II : Conceptual Framework and Review of Literature

Chapter III : Research Methodology

Chapter IV : Presentation and Analysis of Data

Chapter V : Summary, Conclusions and Recommendations

Chapter I

This chapter entitles “Introduction chapter.” This chapter covers the general background of the study, focus of the study, importance of the study, statement of the problem, objectives of the study, limitations of the study, significance of the study and organization of the study.

Chapter II

The second chapter focuses on the review of literature. It consists the conceptual framework, past related research to the accounting practice and research gap.

Chapter III

This chapter covers the detail research methods that are planned for conducting this study. The chapter deals with the research design, the population and sample, sampling procedure, sources of data, data collection procedure, method of analysis and presentation, tools and techniques of analysis and research variables.

Chapter IV

This chapter deals with presentation, analysis and interpretation of data. The observed information has been analytically studied and presented. The data has

been presented in table and charts, quantitative tools have been used, and generated quantitative result has been interpreted in this chapter. It consists of testing of hypothesis, analysis of questionnaire, and analysis of open –end opinions and Main findings of the research.

Chapter V

This chapter covers the summary and conclusions of the analysis. A brief conclusions from the analysis have been drawn and necessary recommendations have been made through this.

CHAPTER-II

CONCEPTUAL FRAMEWORK AND REVIEW OF LITERATURE

This chapter aims to establish a conceptual framework and make a review of the relevant studies that have already been done on the research topic so that some new contributions could be given to the established body of knowledge. This chapter has been divided three main sections first section will encompass the conceptual framework. The second section will present the review of previous study on the topic. The final section will explain the research gap.

2.1 Background

The period from 1900 to 1950 was the high time in the development of management accounting because sample resources were conducted to evolve e new techniques in this discipline during that time. The wide use of management accounting has come in to practice recently. Precisely speaking, it has been developed between 1930's and 1960's. A new school of management accounting thinking that has come to be known as the information economic approach. This new approach extended the user decision model approach. This new approach viewed management accounting system as representatives for new information. Recent development in the theory of the firm and of economic equilibrium with private information have led to new insights in to the control role of accounting information when designing contracts between owners and managers and between senior managers and subordinate managers. The traditional tools of management like product costing, budgeting and performance evaluation have been augmented and updated with contemporary approaches such as activity based costing, customer profitability analysis, value chain analysis, target costing and strategies cost management (Kaplan & Atkinson, 1998:4-10).

There is no such commonly accepted father and the data assigned to the beginning of management accounting discipline unlike the double entry system which is said to be introduced by the Venice merchant Luca Pacioli in 1494. Management accounting covers the area of revenues and expenditures which need to be planned and controlled for the optimization of resources available on the business. Management of revenue and expenditures has become a prime concern since the early stages of human civilization. But in business sector, the origin of modern cost management system goes back to the nineteenth century. The application of management system goes back to the nineteenth century. The application of management accounting idea for cost minimization and revenue maximization is a recent development which can be attributed to the time only after the 1900's industrial revolution, factory system, mass production, competition and consumerism compelled to think about some new ideas for cost reduction, quality conformation and consumer satisfaction for survival in cutthroat competition in business. Management accounting was thought of as a sure shot to help in this regard.

2.2 Conceptual framework

2.2.1 Concept of Management Accounting

Accounting refers to the process of identifying, recording, classifying, summarizing, analysis and interpretation and communication of the financial transaction in terms of money. Primarily the main objective of accounting was to ascertain the result and financial position of business activities of particular period. But nowadays the scope of accounting has been increased with increase in the competition and business companies. So that accounting is also important to meet the needs of parties like government, creditors, suppliers, customers etc.

Generally, accounting can be used for both purposes. To take internal decision, employees, departmental managers and workers can use accounting information. Likewise external stakeholders like government, suppliers, creditors, financial institutions etc use accounting information. Management

accounting is the presentation of accounting information to formulate the policies to be adopted by the management and assists its day to day activities. It helps the management to perform all its functions including planning and, staffing, directing and controlling.

Management accounting is concerned with supplying relevant information to managers at appropriate time; enable them to make decision in organization. It is the process of accounting which generates accounting information form financial accounting and cost accounting and provides essential accounting g information to all the concerned departments. Some of the important definitions related to management accounting are as follows:

Management accounting is used to describe the modern concept of account as a tool of management in contrast to the conventional manual or half yearly account prepared mainly for information as to shed light on all phases of the activities of organization.

Management accounting is concerned with the accounting information that is useful to management "management accounting information for planning and controlling the operations of business" (*Anthony,2004:120*).

From above mentioned definitions, it can be concluded that management accounting is the process of identifying, measuring, analyzing, interpreting, and communicating accounting information to concerned department to meet organizational goals.

2.2.2 Function of management accounting

The concept of management accounting may be described as follows:

- **Information and Data collection:** Management accounting information system is used to produce and store data relating the internal operation of a company and external environment.
- **Data analysis and interpretation:** Management accounting is more concerned with the analysis and interpretation of data which has opened

up new direction for its use by management. It is concerned with record of past achievement, maintenance, of values, fixation of responsibilities and basis for assessing the future development.

- **Identification and modification of relevant information:** Management accounting supplies the accounting data required for the decision making and planning process which enables us to retain only the relevant information.
- **Providing information for planning and decision making:** Planning is the creative aspect of management job. It is carried out by management accounting through the processing of budgeting Management accounting provides relevant information for decision-making.
- **Facilitation management control:** Management accounting enables all accounting effort to be directed towards control of an enterprise. This is made possible through budgetary and standard costing, which are integral part of management accounting.
- **Satisfaction of informational needs:** Management accounting has system of processing data in a way that yields information for the top level management.
- **Use of qualitative information:** Management accounting does not restrict itself merely to financial data for helping management in the decision making process and frequently draws up on sources, other than accounting for such information as it capable of being readily convertible in to monetary terms.

2.2.3 Objectives of Management Accounting

- **Providing information for planning and decision making:** It provides information to the manager for the decision making and planning in revenue and cost projection of organization. This information includes financial and non financial data to help managers with strategic planning and decision making.
- **Motivating manager and employees:** To motivate managers and employees is also an important purpose of management accounting. This motivates managers to achieve the organizational goal by communicating the plan, providing a measurement of how well the plan was achieved and prompting an explanation of deviations from the plan.
- **Monitoring:** It is also an important objective of management accounting. This allows the firm to evaluate its financial and internal performance, customer satisfaction and innovation compared to its goals, its own past records and that of other similar firms.
- **Assessing the organization's Competitive position:** Management accounting continually assess how an organization compares with the competitive position and work with the other managers to ensure organization's long term competitiveness.
- **Controlling:** The next objective of management accounting is to assist managers in directing and controlling operation through its attention in their function.

2.2.4 Management Accounting in Nepalese perspective

Management accounting is a new thing and it is still in a developing stage in the context of Nepal. The decisions that take place are usually based on the intuition of the strategic manager. It can be said that there role of management accounting is yet to be recognized by Nepalese corporations.

Nepal is a landlocked country situated between two largest countries with a huge rapid growth in business, industrial sectors, and the country has been trying to develop its economy. Due to serious political instability for a long

time, security problem has emerged, multinational companies are hesitating to come and establish their subsidiaries here. Nepalese investors are also not very interested to invest within the country. The existing companies are running in traditional approach with autocratic leadership as the Majority of the people are illiterate and in poverty and the rapid change in technology and the globalization of the market have become the real challenges today. Even then as the people and the investors have been able to understand the opportunity and the huge market availability in the neighboring countries and throughout the globe after the country's entry in the WTO, the functions and importance of management accounting has been realized by the business people and companies. Thus there is still plenty of scope for management accounting to be practiced by the Nepalese companies.

2.3 Brief Profiles of commercial Banks of Nepal

Commercial is the joining of forces of carrying out two or more parties for the purpose of carrying out of a special operation i.e. industrial and commercial investment, productive and trade. By this definition any agreement between two or more than two parties for special purpose is called commercial. Before establishment of Commercial Banks, there were few banks operating in Nepal. Bank in true sense started with the establishment of Nepal bank limited (1994 B.S.) which is also known as the first commercial bank of Nepal. The first commercial bank of Nepal is Nepal Arab bank limited (NABIL Banks).

2.3.1 NABIL Bank

NABIL Bank, the first joint venture bank in Nepal was incorporated on 11th May 1984 as a Nepal Arab Bank Limited under the company Act 1964 This bank established by the commercial investment of Dubai Bank Limited and Nepalese promoters But later, the ownership of Dubai Bank Limited was transferred to emirate Bank International Limited which is currently managing NABL. It has 100 million rupees authorized capital, 50 million rupees issued capital and paid up capital has been 30 million rupees.

2.3.2 Standard Chartered Bank

The second bank established in joint investment was the Standard Chartered Bank Nepal Limited. This bank was established on 19th December 1964. Its head office is in Katmandu and has been incorporated since 30th January 1987. On 31st July 2000, Standard Chartered Bank Limited concluded the acquisition of ANZ Grindlays Bank Limited by the Australia and New Zealand Banking Group Limited with this acquisition, 50% share of Nepal Grindlays Bank limited previously owned by ANZ Grindlays are now owned by Standard Chartered Grindlays Bank limited leading to the name change of the bank to Standard Chartered Bank Nepal Limited with effect from July 16, 2001.

2.3.3 Himalayan Bank Limited

Himalayan Bank Limited was established in 1992 under company Act 1964. It has been financed by founder shareholders (A class) sharing 51%, Habib bank of Pakistan 20%, Karmachari sanchaya kosh 14% and public of 15%. The bank has Rs. 120 millions authorized and Rs 60 millions issued capital. It is the first JV having domestic ownership more than 50%.

2.3.4 Nepal Bangladesh Bank

Nepal Bangladesh Bank, a Commercial Bank with International Finance and Commercial Bank LTD of Bangladesh was established in 1993 under the company Act 1964. The Bank is managed by IFIC Bank Limited. It has been financed by IFIC to the 50% of total 20% by Nepalese promoters and 30% by public. The bank started its operation on 6th June 1994. The bank's authorized capital and paid up capital are Rs 240 million and 60 million respectively.

2.3.5 Nepal SBI Bank Limited

Nepal SBI Bank Limited was registered under the company Act 1994. This is the commercial of State Bank of India and Nepalese promoters. This bank is managed by State Bank of India under the commercial and technical service agreement signed with Nepalese promoters viz, employment provident fund and Agriculture Development Bank Nepal. Shareholding pattern of the bank is

50% share owned by State Bank of India and Nepalese promoters, 20% by government organization and 30% by general public. The bank started its banking operation on 8th July 1993.

2.3.6 Everest Bank Limited (EBL)

EBL was established in 1992 under the company Act 1964. It is also a commercial bank with foreign partner United Bank of India Ltd. Later on, it is managed by Panjab National Bank Ltd India. They hold 20% equity shares of this bank, 50% shares are held by the promoters and 30% shares by the general public.

2.4 A short review of management account tools

Management accounting as a quantitative approach helps to discharge functions like planning, organizing, staffing, directing and controlling properly and efficiently (Paul, 1994:5).

Tools and techniques provided by management accounting to discharge management functions can be defined as follows;

2.4.1 Cost allocation and apportionment methods

There are three methods of allocating the cost of service department they are:

- Direct allocating

The direct method is the most widely used method allocating support department cost. This method is very simple. There is no need to predict the usage of support department services by other support departments.

- Step down allocation

This method requires the support the support department to be ranked (sequenced) in the order the step down allocation is to proceed. Difference sequences will result in difference allocations support department cost to operating departments. A popular step-down sequence begins with the support department costs to operating departments.

- Reciprocal allocation method

The reciprocal allocation procedure is however more complicated, where many service cost centers service each other. This method allocated costs by explicit including the mutual services provided among all support departments. Conceptually the direct method and step down method are less accurate than the reciprocal method when support department provide services to another reciprocally.

2.4.2 Cost-Volume-Profit Analysis (CVP Analysis)

CVP analysis is the process of studying the relationship between costs, volume and profit with a given change in cost or volume. It is used to determine the profit planning process of the firm. "CVP analysis is based on an explicit model of the relationship between three factors costs-revenues and profit and how they change in a predictable way as the volume of activity changes" (Lynch & Williamson, 2005:255).

Cost volume profit analysis is a systematic method of examining the relationship between the changes in activity (i.e. output) and changes in total sales revenue, expenses and net profit. As a model of these relationships CVP analysis simplifies the real word 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 tool for decision making in certain situations.

Cost Volume profit Analysis examines the behavior of total revenue, total costs, and operating income as changes occur in the output level, the selling price, the variable cost per unit, and/or the fixed cost of product.

2.4.3 Product/Service Costing Method

Two popular methods drawn for product costing are full costing (Absorption costing) and variable costing (Direct costing). Variable costing and absorption costing are not the systems of costing like process, operation batch or job costing rather they are the tools or techniques of product costing (Khan and Jain, 199:345).

- Direct costing/Variable costing:

This is a method of separating costs between variable and fixed costs for product costing. Under this method only variable manufacturing costs are charged on the product. Variable costing is that method of inventory costing in which all variable manufacturing costs are included as inventorial costs. They are instead treated as costs of period in which they are incurred.

- Absorption costing

Contrast to variable costing, absorption costing assumes fixed along with variable cost constitutes to the product costs. It absorbs all costs necessary to production. It considers fixed manufacturing overhead as a part of production costs (Horngren, 1991:539).

2.4.4 Budgeting for planning control

A budget is the quantitative expression of a proposed plan of action by management for a future time period and is aid to the coordination and implementation of the plan.

The various activities within a company should be coordinated by the preparation of plans of actions for future period. These detailed plan are usually referred to as budgets

A budget is a quantitative expression of a plan of action and an aid to coordination and control. A budget may be formulated for an organization as a whole or for its sub units. Budget basically is forecasted financial statement the formal expression of managerial plan.

Planning is the cornerstone of effective management and a vital part of good planning is budgeting. Planning is the first essence of management and all other functions are performed within the framework of planning. Planning means deciding in advance that is to be done in future. Planning involves the specification of the basic objectives that the organization will pursue and the fundamental polices that will guide it. Planning should include qualitative narratives of goals and objectives and means of accomplishments. it includes:

- Setting enterprise objectives
- Developing and analysis of the environment
- Selecting a course of action
- Re-planning to correct current deficiencies

2.4.5 The Budgeting Process

The main objective of a business firm is to maximize profit. But it is not a matter of dream or chance. There is no magic formula of boosting the figure of overnight. Budgeting if followed properly can increase the chance of making profit within the given environment. A systematic budgeting should encompass the following procedures.

- Evaluating the business environment
- Setting objective
- Setting specific
- Identify potential strategies
- Communicating the planning guidelines
- Developing the long term and short term plans
- Implementation of budgets
- Periodic performance reporting and follow up

2.4.6 Element of budget

The essential elements of budgeting are:

- **Plan:** The first ingredient of a budget is its plan. A plan is an expression partly of what the management expect to happen and partly of what the management intends to happen (Fregmen, 1976:157).
- **Financial Terms:** Budget are prepared in financial terms i.e. in term of monetary value such as rupee , dollars and so on , it is because monetary units is a common denominator (Welsch, 1992:84).

- **Specific Future period:** A budget relates to a specified period of time, usually one year, If is not related to time horizon, it will be meaningless. Planning merely for a given amount will not constitute a budget unless a time dimension is added.
- **Operation and Resources:** A budget is a mechanism to plan for the firm's operation and resources. The operations are reflected in revenue and expenses. The planning of the various assets is the sources of capital to finance these assets (Khan & Jain, 1993:57).
- **Co-ordination:** Budgets are prepared for the different components segments, division, facts and activities of an organization so as to take care of the situation and problem of each component (Copeland, et al., 1978:35)
- **Comprehensiveness:** A budget is comprehensive. It includes all the activities and operations of an organization. It covers the organization as a whole and not only some segment and there are integrated in to an overall budget for the entire organization (Garrison,1985:303).

2.4.7 The Master Budget

Budget is a comprehensive and coordinated plan for operations and resources of enterprises expressed in the financial terms for achieving organizational objectives. It is a mechanism to plan future activities to realize the expectations of the firm. The master budget consists of many functional budgets including a sales budget, a production budget, a purchase budget, an expenses budget, equipment budget and a cash budget. Once all these budgets are completed the master budget for the entire firm is prepared. The types of budget or profit plan depend up on the nature of the business entity. The master budget is a net working consisting of many separate budgets that are independent. A master budget normally covers three areas i.e. operational sector budget, cash budget and financial statement.

- **Operating budget:**

Operating budgets are concerned with the process of preparing the budgets of each operation/activity like production, sales, purchase etc of organization. It includes:

- Sales Budget:
- Production Budget
- Direct Material Budget
- Raw Material Budget
- Direct Labor Budget
- Manufacturing Overhead Budget
- Cost of Goods sold Budget
- Selling and Distribution Expenses Budget
- Cash Budget
- Administration Expenses Budget

- **Selling and Distribution Budget**

Fundamentally, the top marketing executive has a direct responsibility for planning the optimum economic balance between sales budget , the advertising budget and the distribution expenses budget. Therefore profit planning and control views sales, advertising and distribution expenses as one basic problem rather than as three separate problems. All these expenses must be systematically planned by the responsibility center.

Selling and distribution expenses includes all cost related to selling, distribution and delivery of product to customers. In many companies this cost is a significant percentage of the total expenses.

- **Administration expenses budget**

Administration expenses include those expenses other than manufacturing and administration. They are incurred in the responsibility. They are incurred in the responsibility center that provide supervision of and service to all functions of the enterprise, rather than in the performance of any one function. Because large portion of administration expenses are fixed rather than variable, the notion persists that they cannot be controlled. Besides from certain top managers salaries, most administrative expenses are determined by management decisions.

- **Cash budget**

Cash budgeting focuses on cash outflow and related financing. Cash budgeting is an attractive way to plan and control the cash flow, assess cash needs and effective uses of excess cash. Therefore it is very important in all types of enterprises. A cash budget is developed after the all operational budget and capital expenditure outlays have been accomplished. A cash budget shows the planned cash inflows, outflows and ending position by interim period for a specific time span. Most companies should develop both long term and short term plans about their cash flows. A cash budget basically includes two parts- the planned cash receipts and the planned cash disbursements. Planning cash inflows and outflows gives the planned beginning and ending cash position for the budget period.

Planning of cash inflows and outflows gives beginning and ending cash position for the period. It will also indicate (1) need for financing probable cash deficits (2) need for investment planning to put excess cash to profitable use.

The main objectives of cash budget are as follows

- Give the probable cash position at the end of each period
- Providing target useful in evaluating department performance
- Providing warning of potential cash shortages by time period

- Establish the need of for financing and the availability of idle cash for investment
- Preserve liquidity
- Indicate the availability of cash discounts
- **Budgeted income statement**

The final step in master budgeting is the development of budgeted financial statement for the period. These statements reflect the results that will be achieved if the estimates and assumptions used for all previous budgets actually occur. The planned income statement is concerned with determining the total of the planned period. it is to be prepared under accrual basic rather than cash basis of other preceding budgets. The income statement will be complete after addition of the interest expenses, which is computed after the cash budget, has been prepared.

- **Budgeted balance sheet**

Beginning with the current and adjusting it for the date contained in the other budget develop the budgeted balance sheet (Garrison, 2000:276). Budgeted balance sheet is concern with forecasting total assets and properties and capital and liabilities of the company by time period. The balance sheet shows the final or ending balance of all the account titles.

2.4.8 Activity based budgeting (ABB)

Activity Based Budgeting (ABB) completes activity based costing (ABC) by focusing on the costs of activities required for production and sales. Activity cost is the ratio of resources consumed by an activity to the output obtained from the activity. ABC attempts to trace costs to product/service instead of arbitrarily allocating them. In this approach costs are separated in to homogeneous costs pools and cost drivers. ABB budget finds the cost of doing certain activities.

Activity Based budgeting forecasts workload bases on customer's requirements. The aim of ABB is to authorize the supply of only these resources there were needed to perform activities required to meet the budgeted production and sales volume.

The steps involved in activity based budgeting are follows

- Determine the budgeted costs of performing each unit of activity at each activity area.
- Determination of the demand for each individual activity based on the budgeted production.
- Computation of the costs of performing each activity.
- Describing that budget as the costs of performing various activities.

2.4.9 Zero Based Budgeting (ZBB)

For the preparation of the budget based must be established. Generally suitable chances for the next budget period for the changes in the activity level and costs are incorporated in the current year's budget. This is called incremental budget. It has many deficiencies. So that the alternatives is to use zero based budgeting (ZBB) system. The Chartered Institution of Management Accounting, London (CIMA) has defined "the ZBB as a method of budgeting whereby all the activities are reevaluated each time , a budget is set discrete levels of each activity are evaluated and combination to match funds available....." ZBB is prepared assuming the budget is being initiated for the first time (ignoring the budget of previous year.) The budget makes a personal for allocation of funds.

Zero based budgeting is also known as priority-based budgeting and emerged in the late 1960's as an attempt to overcome the limitations of incremental budgets. This approach requires that all activities are justified and prioritized before decisions are taken relating to the amount of resources allocated to each activity. Besides, adopting a zero based approach, zero based budgeting (ZBB)

also focuses on program or activities instead of functional department based on line items, which a feature of traditional is budgeting.

The three stages of ZBB are

- A description of each organizational activity in a decision package
- The evaluation of these packages and ranking them.
- The allocation of the available resources.

2.4.10 Standard Costing: control of direct material and direct labor

Standard costs are pre determined costs, It is an estimation of cost for future reference. It is based on technical estimate for materials, labor and overhead for a selected period of time and nature of work. Standard cost helps to control the actual cost of materials, labor and overheads. A standard is always futuristic. Standard costing is the process of the preparation and the use of standard costs, their comparison with actual costs and the analysis of variance to their causes and point of incidence.

Control of cost is one of the most important objectives of costs and management accounting and cannot be achieved without some standard against which the actual one can be compared. The use of standard costs increases costs consciousness among management and employees and can improve business profit by providing base for performance evaluation.

The technique for application of standard cost is known as standard costing. It is the preparation of standard cost and applying them to measure the variation between standard cost and actual cost. Standard cost for the given job is the predetermined cost to complete the job as per specifications. Standard costing is a system before starting the production and then comparing this with the actual cost of job after completing the production. The difference between the predetermined or standard cost and the actual costs is termed the "variance".

2.4.11 Application of standard costing

A standard cost is measure of acceptable performance, established by management as a guide to certain economic decisions. It is, in short, a reflection of what management thinks a cost ought to be. Establishment of standard cost is most urgent for the purpose of decision making in the realm of product costing, pricing, cost estimation, and cost control. Standard costs are definitely superior for judging the quality of performance of the purchasing department, for establishing the selling prices of the products it, and for planning the cost of a future period.

In the absence of standard data, the following management functions would be quite tough or just subjective.

- **Pricing decision:** Pricing in a competitive market is a choice between the pressure of covering the each outlay of the products to be supplied and competitors' price for the product. The price should be less than or at least equal to the competitors price at the same time and must cover the cash the cash outlay for the product.
- **Budgeting:** Budget is an account of what will happen in future. Budgets are the numerical plans of action for specific period. While developing direct material, direct labor and manufacturing expenses budgets we need the quality of each king of input per unit of output.
- **Economic decisions:** Comparing the cost of alternatives like whether to accept or reject a special order, to further process or to introduce a new product line, make or to but etc. need the cost estimation under each alternatives.
- **Cost control:** Cost control has the objective of the production of the required quality at the lowest cost attainable under existing conditions. Effective control requires detailed standards to show how much of each material should be used, how much labor is required for each operation. Standard enables the management to make periodic comparison of

actual costs with standard costs in order to measure performance and to take action to maintain control over costs.

1.4.12 Standard costing process

Standard costing process is a very effective tool for controlling element of cost like direct material; direct labor etc. controlling is the process of comparing actual results with the planned objectives and determining where judgment should be made. The management control process encompasses the given steps:

- Setting standards
- Actual performance measurement
- Variance analysis
- Compute variances for each reason
- Point out the reason of variance
- Corrective action

2.4.13 Management Accounting Control System and responsibility accounting

- **Management accounting control system**

Management is the process of planning, decision making and control. Control is the management function that ensures the proper implementation of plans and policies. Management control system focus on motivating manager for the sake of enhancing total profitability of the organization. Control involves the process of establishing results and performances targets measuring performances and providing reward or punishment based on employees' ability to achieve the performance target. Control procedures are implemented for reasons of effectiveness, efficiency, and utilization.

A well-designed management control system aids and coordinates the process of making decisions and motivates individuals throughout the organization to act in accordance with the decisions. It also facilitates forecasting revenue and

cost-driver level, budgeting and measuring and evaluating performance (Horngren, et al., 2002:197).

Management accounting system plays a dominant role in cost control, profit making and the nonprofit making organizations. It is because the monetary measure meets the requirements of wide range of dissimilar activities using a common measure. The objectives of management control system are:

- To communicate results of actions across the organization
- To ensure that the management control system adjust to change in the environment
- To clearly communicate the organization's goal
- To ensure that manager and employees understand the specific actions required of them to achieve organizational goals
- **Responsibility Accounting**

Responsibility accounting to the various concepts and tools used by managerial accountants to measure the performance of people and department in order to ensure the achievement of the goals set by the top management. It is a system of dividing an organization in to smaller units, each of which is to be assigned particular responsibilities. These units may be set up in the form of divisions, segment, departments, branches, product line, etc. Each department comprises individual who are responsible for particulars task or managerial functions.

Responsibility accounting is a concept of that views the organization in parts or sub-systems rather that to view it in total or as a single system. It refers to an accounting system that provides information to top management about the performances of organization sub-units.

Process of Responsibility Accounting

- Identifying the responsibility centers
- Delegation of authority and responsibility or decentralization
- Controllability of the object

- Establishing performance evaluation criteria

Responsibility accounting collects data and reports planned and actual accounting information about the inputs and outputs of responsibility centers.

Responsibility accounting involves:

- Determining how challenging the financial targets should be
- Determining how much influence managers should have in the setting of financial targets
- Distinguishing between those items which managers can control and for which they should be held accountable and those item over which they have no control and for which they are not held accountable.
- **Pricing decision**

The determination of selling prices is an important decision in most of the companies and one to which accounts normally make a significant contribution. Pricing is a difficult and complex subject. Price has a determined role in market success and the success of any business firm mainly depends on the market success. Once the product gets success or failure in the market, it establishes a corner stone for the firm's future. In this regard, one of the most important long terms strategic decisions management and services. This decision has a direct impact on financial position, profitability, and cash flow of the company and is often difficult and costly to change after it is put in to effect.

Pricing decisions are the decision that managers make about what to charge for the products and service deliver. The pricing of a product is not just a marketing decision or a financial decision, rather it is a decision touching on all aspects of a firm's activities and as such it affects the entire enterprise. As the price charged on product largely determine the quantities that customers are willing to purchase, the setting of both low and high prices dictates the inflow of revenues consistently failing to cover all the costs of the firm and then in the long run, the firm cannot survive.

The pricing decisions arise in virtually all types of organization. Manufactures set prices for the products they manufacture, merchandising companies set prices for their goods, service firm set price for such service as insurance policies, train tickets, theme park, admissions and bank loans. Also nonprofit organization often set prices, for example government unit price vehicle registrations, park user fees and utility service (Hilton, 2000:211).

For pricing decisions, economists have their own view while accountants have their own perspective. Economic theory indicates that companies acting optimally should produce and sell units, until the marginal revenue is equal marginal costs. The market price is the prices that create a demand for these optimal numbers of units.

- **Full cost (Absorption cost pricing)**

Under this system of pricing, selling price is determined by adding certain percentage of marks up on total production cost of goods and services. The total cost includes all manufacturing cost as well as fixed manufacturing cost for determination of selling price. In long run price must cover all cost and normal profit margin. Full cost pricing covers all variable costs, fixed as well as required level of mark up. It provides a justifiable price that tends to be perceived equitable by all parties.

- **Variable cost pricing**

Some firms use variable cost pricing for determination of selling price of the products. It is also known as marginal cost pricing or contribution margin pricing. Using variable pricing the firm sets its price to maximization contribution to cover fixed cost and profit margin.

In this system mark up is added either on total variable manufacturing costs or total variable costs.

- **Strategic pricing for new products**

Strategic pricing of new product is an especially challenging problem for management. Pricing a new product is harder than pricing a mature product because of the magnitude of the uncertainties involved. New products entail many uncertainties. There are two widely differing strategies that a manufacturer of a product can adopt.

- Penetration pricing
- Skimming pricing

The decision between skimming and penetration pricing depends on the types of product and involves trade-off price versus volume. Skimming pricing results in much slower acceptance of a new product, but higher unit profits. Penetration pricing results in greater initial sales volume, but lower unit profits (Bajracharya, et al., 2004:727).

- **Cost-Plus Pricing**

One of the common approaches to the pricing of standard product is to employ some types of cost plus pricing formula. Cost plus pricing formula add a mark up to some version of cost, typically either total variable cost or total absorption cost. The cost plus pricing formula establish a starting point in setting prices. Then the price setter must weight market conditions, likely actions of competitors and general business conditions. Thus effective price setting requires a constant interplay of market consideration and cost awareness.

CPP sets the price of a product or service at an amount equal to its standard manufacturing cost plus a "normal" mark up. This mark up is intended to cover marketing and administration costs and net profit before tax. Such a pricing approach often is called cost plus pricing, because the price is equal to cost plus a mark up. Depending on how cost is defined, the mark up percentages may differ. Several different definitions of cost, each combined with different mark up percentages can result in the same price for a product or service.

$$\text{Selling price per unit} = \text{Cost per unit of the cost base} + \text{Cost unit of the cost} \times \text{Mark up percentage}$$

Costs have different meaning for different purposes. Cost per unit can be seen in many facts. Costs may stand for,

- Total costs
- Total variable costs
- Total manufacturing costs
- Variable manufacturing costs

Determination of mark up

One of the crucial elements in cost plus pricing is "mark up percentage". This mark up should be enough to recover the hidden cost and desired profit. To determine the desired mark up percentages, manager can use the return on investment (ROI) approach as a base. Under absorption approach of cost plus pricing, the mark up percentages is computed as such (Garrison, 1985:321).

The mark up percentage can be ascertained applying the following general formula,

$$\text{Mark up percentage} = \frac{\text{Cost uncovered by the cost base} + \text{Desired profit}}{\text{Cost per unit of the cost base} \times \text{Normal volume}}$$

$$\text{Desired Profit} = \text{Total Invested Capital} \times \text{Required Return on Investment}$$

- **Activity Based costing (ABC)**

It is a technique of allocating manufacturing overheads to product using multiple application rates and a wide variety of cost driver in multi-products firm. An activity-based costing (ABC) system does measures the extent to which each product line driver's costs in the key production support activities.

An activity based costing (ABC) system can be particularly helpful as a product design engineers try to achieve a product's target cost. ABC enables designers to break down the production cost improvement in particular activities to bring a new product's projected cost in line with its target cost.

The following steps are taken for making pricing decision under ABC pricing.

- Identifying the Mains activities in the organization
 - Determine the cost driver for each Main activity
 - Determine the cost driver rate
 - Calculate total cost based on cost driver
 - Add mark up on total cost and determine selling price
-
- **Transfer Pricing**

When one division of an organization provides goods and services to another division it charges prices to the division. Transfer prices are the amounts charged by one division of an organization for goods and services that is supplied to another division of the same organization. The transfer pricing is a revenue to one division on the return of providing goods and services where as it is a cost to another division for acquiring of goods and services.

A transfer pricing is the price one subunit of an organization charges for products or services supplied to another subunit of the same organization. The transfer price creates revenue for the selling subunits and a purchase cost for the buying subunit, affecting operating income numbers for both subunits. The operating income can be used to evaluate the performance of each subunit and to motivate managers (Horngren, et al., 1999:287).

It can be pointed out that the segment managers are most likely to be highly motivated and thus perform best when they are held responsible only for those factors over which they have controlled. If some of their costs or revenues are arbitrarily assigned to them, they are likely to regard the return on capital used

as an unfair evaluator. In a decentralized company which has substantial interdivisional sales, the appropriate price for such sales, is thus of great concern to the division managers and to the top management. The price of interdivisional sales will affect the selling division's sales and the buying division's costs. The sales itself, of course, will not have any direct effect on company profit, because its effects on one division's costs is exactly offset by its effect on another division's revenue. The transfer price policy, however can greatly affect company profits indirectly by influencing the decisions of the division managers (Lynch & Williamson, 1983:232).

Decentralization: The first essence in transfer pricing

The downward delegation of the decision making authority to subunits managers is called decentralization. The degree to which a company is decentralized depends on top management philosophy and the unit managers abilities to perform independently. Decentralization provides the opportunity for the managers to develop leadership qualities, creative problem solving abilities and decision making skills.

Goal congruence in transfer pricing

To exercise the divisional autonomy, the managers must maintain the goal congruence. Goal congruence means to be benefited unanimously doing an action. In case of a decentralization business organization, the divisional managers are free to decide whether to buy inputs from inside the organization or from outside and in order business matters like accepting or rejecting orders. In setting the transfer price, goal congruence must be maintained. The transfer price should be in the best interest of the whole organization as well.

Methods of transfer pricing

General transfer pricing rule.

$$\text{Transfer Price} = \text{Outlay Cost} + \text{Opportunity cost}$$

Outlay costs will include the direct variable costs of the product or service and any other outlay costs that are incurred only as result of the transfer. The second component in the general transfer pricing rule is the opportunity cost incurred by the organization as a whole because of the transfer (Hilton, 1999:209).

Negotiated transfer price: To bargain or to discuss with a view to reach an agreement is negotiation. The negotiated transfer price is the outcome of a bargaining process between the selling and the buying divisions. Under this approach the division managers make a critical discussion to set a reasonable transfer price in the best interest of the division and the company as a whole. They may start with external market price first. Then they may try to explore the economies or cost savings under intercompany transfers. A negotiation is made to split the benefit from cost savings between the transfer and buying divisions.

Transfer pricing in the service industry: Besides manufacturing business organizations service industry firms and nonprofit organization also use transfer pricing when service are transferred between responsibility centers. In banks, for examples, the interest rate at which depositors funds are transferred to the loan department is a form of a transfer price. At Tribhuvan University, if a student in the institute of engineering takes a course in the faculty management, a transfer price can be set to be charge to the institute of engineering for the credit hours of instruction provided to the student by the faculty of management (Bajrachraya, et al., 2004:736).

Cost based transfer pricing: The transfer price can be determined on the basis of the cost of product in producing department. The cost used in cost based transfer price can be actual costs or budgeted costs. As the definition of product cost goes to variable cost or full cost (Absorption cost). It applies to the determination of transfer price as well.

- Variable cost based transfer price: In this method only the variable costs i.e. direct material, direct labor and variable factory overhead are taken in to consideration as the transfer price.
- Full cost based transfer pricing: Generally most of the popular transfer price method is full cost transfer pricing scheme. Under this method, cost is taken as recovery of full cost.

Market based transfer pricing: Transfer pricing based on market value of the product or service is known as market based transfer pricing. Market based transfer pricing is appropriate when both buying and selling divisions are operating at full capacity. Both the buying and selling divisions can buy and sell at market price.

- **Target cost pricing**

Most of the companies set the price of new product to earn sufficient revenue to cover all costs and desired profit. Target price is based on target costing. Target costing is a method of determining the cost of product based on target price that customers are willing to pay. It is based on an underwriting of customers perceived value for a product and competitors' response. A target operating income per unit is the operating income that a company wants to earn on each unit of product sold. Under this method product cost is calculated by deduction anticipated profit from anticipated selling price.

- **The time and material pricing**

Under the time and material pricing approach, the company determines one charge for the labor used on a job and another charge for the materials. The labor typically includes the direct cost of the employee's time and charge to cover various overhead costs. The material charge generally includes the direct cost of the materials used in the job plus a charge for material handling and storage (Hilton, 2000:209).

- **Pricing for competitive bidding and special orders**

The two or more companies submit scaled bids (prices) for a product, service or project or a potential buyer. The buyers select one of the companies for the job on the basis of the bid price and the design specification for the job. Competition bidding complicates a manager's pricing problem, because now the manager is in direct competition with one or more competitors. If all the company submit bid offer for the roughly equivalent product or service, the bid price becomes sole criterion for selecting the contractor. The higher the price (bids), the greater will be the profit on the job if the firm gets the contract. However the higher price also lowers the probability of obtaining the contract to perform the job (Bajrachrya, et al., 2004:723).

- **Managerial use of Financial Statement Analysis**

First of all we need to discuss about financial statement and report before discussing financial analysis. Financial statement represents the overall economic personality of business firm in hand to date. Financial and operating information is available from many sources, including daily newspaper. Various regulations of in different countries required the issuance of annual reports and govern their content. Financial information is provided to add investors in assessing the risk and return of the potential investment. The financial report of a company is prepared periodically, generally annually. This gives a complete account of the financial health of the company.

The Main parts of a financial statement may,

- The income statement
- The balance sheet
- The statement of cash flow
- The statement of retained earning

The income statement tells us about the operating results of a particular accounting period, say a month or a year. The balance sheet reflects the

company's solvency. It shows the position of all assets, liabilities and equities to date. The statement of cash flow tells us from what kinds of activities were the cash and cash equivalents received and where those were applied. The statement shows the cash inflows and cash outflows of a company over a period of time. The statement of retained earnings shows how the net income of period were appropriated or distributed. The statement shows the change in retained earnings between the beginning and the end of the period.

The above mentioned statement and report are required for different purposes. According to statement, it is necessary to analyze the statement and report to know the positive and negative strength or weakness of business. So that financial analysis indicates the analysis of financial statement and reports to know the financial reality and work performance of business in short the financial analysis tries to analyze the question like,

- Do the investors realize the profit of the firm?
- Do they want to purchase the share of the firm?
- Is the earnings of the firm enough?
- Does the firm utilize its assets fully effectively?
- Is the firm in the paying condition for current liabilities?
- What are the sources for long term financial investment in firm or what is the capital structure of the firms?

- **Ratio Analysis**

An analysis of financial statement with the help of ratio may be termed as ratio analysis. It is a numerical relationship between two variables of financial statement, which should be served some meaningful purpose. When this definition of ratio is explained with reference to the items shown in financial statements then it is called accounting ratio. So the ratio is the measurement of quantitative relationship between two or more items of financial statement

connected with each others. A ratio can show a relationship between two items on the same financial statement or between two items on different financial statement (e.g. balance sheet and income statement). Ratio analysis is a tool of scanning the financial statements of the firm. Through this, one comes to know in which area of the operation the organization is strong and in which areas it is weak.

Categories of accounting ratios:

Liquidity analysis: Liquidity analysis measures the short term solvency position of the firm. Suppliers and creditors use liquidity analysis to assess the risk level and ability of a firm to meet its current obligations. Satisfying these, obligation requires the use of the cash resources available as of the balance sheet date and the cash to be generated through the operating cycle of the firm. The concept of liquidity relies on the classification of assets and liabilities in two current and non-current categories. The traditional definition of current assets and liabilities is based on a maturity period of less than one year or (if longer) the operating cycle of the company. Liquid assets include:

- Cash and cash equivalents
- Marketable securities
- Account receivable
- Inventories
- Prepaid expenses

The three categories of current liabilities are

- Short-term debt
- Account payable
- Accrued liabilities

The first three ratios to be described compare different measures of the present level of each resource with the present level of obligations.

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

The Quick/Acid test ratio defined as:

$$\text{Current Expense Ratio} = \frac{(\text{Current Assets}-\text{Inventory}-\text{Prepaid})}{\text{Current Liabilities}}$$

Similarly,

$$\text{Cash Ratio} = \frac{\text{Cash} + \text{Marketable Securities}}{\text{Current Liabilities}}$$

The current and quick ratio assumes that the current assets will eventually be converted in to cash. Realistically, however, it is not anticipated that firm will actually liquidate their current assets to pay down their current liabilities. Certain level of inventories and receivable as well as payables and accruals (which finance inventories and receivable) are always needed to maintain operations. If all the current assets and liabilities are liquidated then, in effect, the firm has ceased operations. Rather it is assumed that the process of generating inventories, Collecting, and receivables and so on is ongoing. These ratios therefore measure the "margin of safely" provided by the cash resources relative to obligations.

Asset Management/Activity Analysis: Activity ratios describe the relationship between the firm's level of operations (usually defined as sales) and the assets needed to sustain the activity. This can also be used to forecast a firm's capital requirements (both operating and long term). Increase in sales will require investment in additional assets. Activity ratio enables the analyst to forecast these requirements and to assess the firm's ability to acquire the assets needed to sustain the forecasted growth.

Operating assets management

Inventory turnover: Inventory turnover ratio indicates whether the investment in inventory is efficiently used or not. It checks the efficiency of inventory management.

$$\text{Inventory} = \frac{\text{Cost of goods sold}}{\text{Average Inventory}}$$

Receivable turnover and average number of days outstanding: When computing receivable turnover, care should be taken to include only trade receivable, excluding the receivable related to financing and investment activities. Adjustment may also be necessary if the firm has sold receivable during the period.

Long term assets management: The ratio measures the efficiency of utilizing fixed assets, total assets and capital employed towards contribution of sales. Analysis of these ratios must consider changes in its level over time that can be a function of a number of subtle factors.

Profitability Analysis: Profitability is an indicator of efficiency of the business organization profitability ratio measures the management overall efficiency as shown by the return generated from sales and investment. There are two areas for judging profitability;(1) Relationship in the income statement that indicate a company's ability to recover costs and expenses,(2) Relationship of income to various balance sheet measures that indicates the company's relative ability to earn income from the assets employed. The first measure is the profit margin and second one is the return on investment. The stakeholders' primary concern is the profitability measure of the firm. The market strength analysis is especially important for investors while analyzing information about a company. These ratios are also known as stock market ratios, investment ratios or market test ratios. The ratios under this category are as follows:

Profitability in relation to sales

$$\text{Gross Profit margin} = \frac{\text{Gross Profit}}{\text{Net Sales}} \times 100$$

$$\text{Net Profit margin} = \frac{\text{Net Profit}}{\text{Net Sales}} \times 100$$

$$\text{Operating cash flow margin} = \frac{\text{Cash from operating activities}}{\text{Net Sales}} \times 100$$

$$\text{Return on assets or ROI} = \frac{\text{Net income} + \text{Interest expenses}}{\text{Average total assets}} \times 100$$

Profitability in relation to Investment

Profitability in relation to Common Shareholders:

$$\text{Return on common shareholders equity} = \frac{\text{NI-Preferred stock dividend}}{\text{Average common equity}}$$

$$\text{Earnings per share} = \frac{\text{Earnings after tax-Preferred dividend}}{\text{No. of ordinary share}}$$

Dividend payout ratio:

Dividend payout ratio measures the proportion of earning per share which is paid out as dividends.

$$\text{Dividend Per Share} = \frac{\text{Ordinary dividend paid to Ordinary Shareholders}}{\text{No. of ordinary share}}$$

$$\text{Price earning ratio(P/E Ratio)} = \frac{\text{Price per Ordinary}}{\text{Earning per share}} \times 100$$

$$\text{Dividend payout ratio} = \frac{\text{Net dividend per share}}{\text{Net earnings per share}} \times 100$$

Net worth per share is the value of net tangible assets attributable to one ordinary share.

$$\text{Cash flow per share} = \frac{\text{Cash from operations after taxes}}{\text{Ordinary shares outstanding balance sheet date}}$$

$$\text{Net worth per share} = \frac{\text{Ordinary share capital} + \text{Reserve-Intangible assets}}{\text{No of ordinary share outstanding at balance sheet date}}$$

$$\text{Dividend yield} = \frac{\text{Gross dividend per share}}{\text{Ordinary share price}}$$

Financial statement analysis is a purposeful and systematic presentation of information in the financial statements by developing relationship between one figure with other in order to measure the profitability, liquidity, solvency, operational efficiency and growth potentiality of the business organization. In financial statement analysis, remember that standards for comparison vary by industry and financial analysis must be carried out with full knowledge of specific industry characteristics. Analysis must be sure that their companies are valid especially when the comparisons are of items for different periods of different companies.

Long-Term Solvency Analysis: Long term solvency analysis helps to test long term solvency position of the firm. It shows the relationship between debt and equity financing in a company. This ratio includes long term debt to equity ratio, total debt to total assets ratio and interest coverage ratio.

Good financial performance requires an appropriate balance of debt and equity financing. In addition to deciding how much debt is appropriate, a firm must choose how much to borrow in the short term, e.g. account payable and some bank debt, and how much to borrow by issuing bonds or other long term debt. Short term debt must be repaid refinanced. Lenders prefer healthy, profitable borrowers, not troubles ones.

- **Trading on the equity**

Long term investments are usually financed by long term financing, long term debt and stockholder's equity. The long term financing is often called capital structure of corporations.

Trading on the equity (also referred to as using financial leverage, leveraging or in the United Kingdom, gearing) means using money borrowed at fixed interest rate to try to enlarge the rate of return on common shareholders from

trading on the equity. The costs are interest payments and benefits are the larger to the common shareholders.

- **Debt Ratio**

Debt ratio is a of long term solvency of a firm. A high debt ratio is a symbol of more volatile incomes in relation to the charges in general economy. Two important factors should be noted (1) the trend over time in the proportion of debt to equity and (2) the relative debt levels themselves.

- **Debt Contract Restrictions**

Long term creditors often impose restrictions on the borrowing company's ability to incur additional debt as well as on dividend payment to protect themselves. The debt covenants that control these activities are often expressed in term of working capital, cumulative profitability and net worth. It is, therefore important to monitor the maintenance of various ratios to ensure that their levels are in compliance with the debt covenant specifications.

- **The statement of cash flows:**

Cash is a life blood of any organization. Without cash no business activities can be taken place. Cash flow statement provides relevant information about the cash receipts and cash payments of an enterprise during a period. Cash flow information is widely used by investors, analysts, creditors, managers and others.

The statement of cash flows is now a standard feature of financial reporting in a number of countries and is required in addition to the balance sheet and profit and loss statement. From 1988, companies in United States have been required to present statement of cash flows. Beginning of 1992, British companies are required to publish cash flow information. Nepal company act 2053 also made mandatory to present cash flows statement along with balance sheet and income statement.

The statement of cash flows is an important financial statement in term of providing information for investor and creditors. It shows how the accrual accounting information is converted in to cash based information and arranges the information so that investors and creditors better understand the cash effects of a company's operating, investing and financing activities. The cash flow statement information helps to assess the solvency of a business and to evaluate its ability to generate positive cash flows in future periods, pay dividends and finance growth.

- **Uses of the Cash Flow Statement:**

Cash flow statement is an important tool which provides information to its users about the ability of the enterprises to generate cash and its utilization. The main objectives of cash flow statement.

Management use: Management is the first to see the information contained in the statement of cash flows. Management would like to see that the amount of net cash provided by operations should be adequate to support the currently planned business operation and capital expenditures. With the study of the statement of cash flows management can see the effects of it are its past Main policy decision in financial terms.

Creditor's use: Creditors might be interested to know whether the firm would be able to pay its due obligations from the cash obtained from operating activities. Creditors can see the liquidity position in this regard.

Stockholder's use :They can see whether net cash provided by operations comfortably covers the dividend payments cash flow from normal operations should continue to increase. The company should be able to invest in its future by making capital expenditure to modernize its productive facilities.

- **Presentation of cash flow statement:**

An enterprise present its cash flows from operating, investing and financing activities in a manner, which is most appropriate users to assess the impact of these activities on the financial position of the enterprises and the amount o fits

cash and cash equivalents. This information may also be used to evaluate the relation among those activities.

Operating activities: Cash from operating activities represents the transactions entering in to the determination of net income. Cash from operating activities involve producing and delivering goods and providing services. Cash flows from operating activities includes receipts from customers for sales of goods and services (collection from debtors). Cash outflows from operating activities include payments to purchase of materials and for services, payment to employees for services and payment made to government for taxes.

Examples of cash flows arising from operating activities are:

- Cash receipts from the sales of goods and rendering of services
- Cash receipts from royalties, fees, commission and others revenues
- Cash payment to suppliers for goods and services
- Cash payment to and on behalf of employees
- Cash payment and refunds of income taxes unless they can be specially identified financing and investing activities
- Cash receipts and payments from contracts held for dealing or trading purposes
- Cash receipts and cash payment of an insurance enterprises for premiums and claims, annuities and others policy benefits

Investing activities: Investing activities involves making and collecting loans and acquiring and disposing of fixed assets. Cash inflows from investing activities are receipts from of shares, debenture or similar instruments of other enterprises. Cash outflows under investing activities are purchase of share and debenture of other enterprise, purchase of fixed assets etc. Examples of cash flows arising from investing activities are:

- Cash payment to acquire property, plant and equipment, intangibles and other long term assets. These payment include those relating to capitalized development costs and self-constructed property plants equipment
- Cash receipts from sales of property, plants and equipment, intangibles and others long term assets
- Cash payments to acquire equity or debt instruments of other enterprises and invest in commercial (other than payment for these instruments considered to be cash equivalents or these held for dealing or trading purposes)

Financing activities: Cash from financing activities represents the transactions such as borrowing, repaying borrowed amounts, equity capital, or making distribution to owners. Examples of cash flows arising from financing activities are:

- Cash proceeds from issuing shares or other equity instruments
- Cash payment to owners to acquire or redeem the enterprise's shares
- Cash proceeds from issuing debenture, loans, notes, bonds, mortgage and others short or long term borrowings
- Cash repayments of amounts borrowed and
- Cash payments by a lessee for the reduction of the outstanding liability relating to a finance lease.

- **Long term investment decisions:**

Investing decisions regarding long term assets for increasing the revenue of the organization is known as capital budgeting. It is the process of planning future net cash flows over the life of the project and selecting the best course of action that yields positive net present values. The capital expenditure decision which involve current outlays but are likely to produce benefits over a period of time longer than one year. The benefits may be either in the firm increased revenue or reduction in costs.

Capital budgeting is the process of making those long terms planning decision for investments that focuses primarily on projects or programs whose effects span multiple time periods.

Capital budgeting is the process of planning and controlling the strategic (long term) and tactical (short term) expenditure for expansion and contraction of investment in operating fixed assets.

Capital budgeting is defined as the planning for the promotion campaign and development of available capital for the purpose of maximizing the long term profitability of the firm. It may also be defined as the firm's decision to invest its current funds most effectively in long term activities in anticipation on an expected flow of future benefits over a series of years:

The features of capital budgeting is as follows:

- A relatively high degree of risk and uncertainty
- A long term investment
- Potentiality of large anticipated benefits
- Effect of time value of money
- Bulk amount of investment

Steps of capital Budgeting

While, the cash flow of the invested project is evaluated the following steps should be implemented in the process of capital budgeting.

- Estimating the project's net cash flows
- Measurement of benefit of the investment
- Evaluation of risks associated with the investment

- **Estimating the project's net cash flows:**

Cash flow generally indicates cash outflow. The key point in investment analysis is to focus exclusively on the differences in expected future cash flows those results from implementing a project. All cash flows are treated as the

same whether they arise from operation, purchase of sale of equipment or investment in or recovery of working capital. The opportunity cost and the time value of money are tied to the cash flow in or out of the organization and not to the sources of the cash.

Estimating of the net cash flows in an investment project should cover;

- The initial investment (start-ups) costs
- The cash flows over the running life of the project
- Terminal cash flows at the end of the project

- **Relevant information for investment decisions:**

Capital budgeting decisions requires information relating to annual revenues, terminal cash flows, annual operating expenses, tax rates and initial investment costs. Due to the project in consideration, all these cash flows should be the incremental. The cash flows which do not affect the present cash flows either in term of outlays or benefits are irrelevant.

- Don't forget the incidental effect
- Take care of the overhead costs
- Don't count interest expenses twice
- Take cash flow not net income
- Depreciation expenses is relevant
- Working capital is relevant
- Cash flows in replacement cases
- Only the differential cash flows are relevant

- **Investment project evaluation techniques:**

Investment projects evaluation techniques is not step involved in capital budgeting process. More proposes for projects are at the threshold of business firm comparing to its ability and willingness to finance some proposals are good, other are different and yet others poor. A screening process has to be

devised for finding out the real content of such proposals. Methods of differentiating them should be developed.

Capital budgeting evaluation techniques can be classified in to two categories.

- Traditional (Non-discounted) technique
- Modern (Discounted) technique

Non-discounted technique includes:

- Accounting Rate of Return (ARR)
- Payback period(PBP)

Discounted technique includes:

- Net Present Value (NPV)
- Internal Rate of Return (IRR)
- Profitability Index (PI)

Accounting Rate of Return (ARR)

Accounting rate of return is the ratio of net income (net profit after tax) to the average investment or investment only, it is also known as average rate of return. It is simple to calculate and understand data are readily available and consider entire stream of income in calculating profitability.

The accounting rate of return can be calculated as follows:

$$\text{Accounting rate of return (ARR)} = \frac{\text{Average annual net profit after tax}}{\text{Average investment}}$$

ARR decision rule: With the help of ARR, financial decision maker can decide whether to accept or reject an investment proposal. According to the ARR as an accept-reject criterion, the actual ARR will be compared with a predetermined or minimum required rate of return or cut off rate. A project will qualify to be accepted if the actual ARR is higher than the minimum desired ARR, otherwise it is liable to be rejected.)

Payback period (PBP):

The number of years required for the proposals cumulative cash flows to be equal to its cash outflows is known as payback period. It can also be defined as the year required covering its costs by its income. The project which provides its return in the smallest period of time is considered as the highest ranking project. One of most commonly used methods of capital budgeting is the payback techniques. This method poses the question, "how long will it take to recover the investment?"

$$\text{Payback period} = \frac{\text{Investment}}{\text{Constant annual cash flow}}$$

PBP decision rule: The payback period can be used as a decision criterion to accept or reject investment proposal. Application of these techniques is to compare the annual payback with a predetermined payback i.e. the payback set up by the management in term of the maximum period during which initial investment must be recovered. If the actual payback period is more than the predetermined payback, the project will be rejected.

The project having the shortest pay back may be assigned rank one, and the project with the longest payback would be ranked the last. The term 'mutually exclusive' refers to proposals, out of which only one can be accepted with the exclusion of others. Obviously, project with a shorter payback period will be selected.

Rational of Payback Period

The payback period is important to a company experiencing liquidity problem. A long payback period usually means a low rate of return. Payback is a measure of risk because the longer it takes to get your money back, the greater the risk that you may not get the money.

Net Present value (NPV)

Net present value is the net benefit at present value of an investment. It is the net differences between present value of cash outflows and present value of cash inflows. NPV is discounted cash flows approach to capital budgeting that discounts all expected future cash flows to the present using a minimal desired rate of return. To apply the net present value (NPV) method to a proposed investment proposal a manager first determines some minimum desired rate of return. The minimum rate is called the required rate of return, hurdle rate, discount rate or cost of capital. Then all expected cash flows from the projects are discounted to the present, using this minimum desired rate. If the sum of the present values of the cash flows is zero, or positive, the projects are discounted to the present, using this minimum desired rate. If the sum of the present values of the cash flows is zero, or positive, the project is desirable and if negative it is undesirable. When choosing from among several investments, the one with the largest net present value is the most desirable.

NPV method requires that all cash flows associated with new investment proposals be discounted at a predetermined weighted average cost of capital.

$$\text{Net present value} = \text{Total present value} - \text{Net cash outlay}$$

NPV decision rule: NPV is to accept the project if the NPV is positive and reject if it is negative. Zero NPV implies that the firm is in a dilemma as to accepting or rejecting the project. As decision criterion, this method can also be used to make a choice between mutually exclusive projects. The project with the highest NPV will be assigned the first rank, followed by other in the descending order (Khan and Jain, 1996:117).

Discounted Payback (DPB)

Payback period does not consider the time value of money which is its limitations. To overcome this limitation discounted payback period can be

used. DPB is defined as the number of years required to recover the investment outlay on the present value basis. It considers the time value of money.

Internal Rate of Return (IRR)

IRR is defined as the interest rate (discount rate) that equates the present value of expected future cash flows or receipts, to the initial cash outlay. IRR is also called the discounted cash flow rate of return, and so on. Like the present value method, this method also considers time value of money by discounting the cash streams. The basis of discount factor however is different in both cases. In the case of present value method, the discount rate, usually, the cost of capital, and its determinants are external to the proposal under consideration. The IRR on the other hand, is based on facts which are internal to the proposals. Internal rate of return is usually the rate of return that a project earns. It is that rate which gives the project NPV zero.

IRR decision rule: The projects with an IRR greater than or equal to some predetermined 'cut off' rate should be accepted. This 'cut off' rate also called the cost of capital is usually the market rate of return on similar risky projects. The project will qualify to be accepted if the IRR exceeds the 'cut off' rate (k). If the IRR and required rate of return are equal the firm is indifferent as to whether to accept or reject the project. If the projects are independent, NPVs are positive and IRRs of the projects are greater than the 'cut off' rate, all projects may be accepted depending on the fund availability. All projects with a negative NPV and smaller than cut off' rate, IRRs are rejected. In case of mutually exclusive projects, where a project must be accepted and only one can be accepted, only the projects will the highest NPV and IRR is desirable.

Profitability Index (PI)

PI is the ratio of the project value of expected net cash flows over the life of the projects to the new investment. Moreover, profitability index is the gross present value per rupee of investment outlay. Profitability index may be

defined as a ratio, which is obtained by dividing the present value of future cash inflows by the present value of cash outlays.

Mathematically,

$$PI = \frac{\text{Present value of cash inflows}}{\text{Present value of cash outflow}}$$

Profitability is the discounted cash flow benefits cost ratio. It is similar to the NPV approach. This method is also known as the benefit cost ratio because the numerator measures benefits and denominator costs.

PI decision Rule: PI index greater than one is accepted and less than one is rejected. When profitability index equals one (I), the firm is indifferent to the projects. NPV will be positive, when the PI index is greater than one and will be negative when the profitability index is less than one. Thus the NPV and profitability index approaches give the same results regarding the investments proposals. The selection of the projects with the profitability index method can be made on the basis of ranking too. The highest rank will be given to the project with the highest PI followed by others in the same order.

Capital Budgeting under Risk and Uncertainties

Risk is one condition a decision maker may face. Uncertainty and risk describes the conditions most financial managers face. Generally the management does not prefer higher risky project. If other things being equal, a firm would be well advised to accept a project which is less risky and reject those project which involve more risk.

The capital budgeting decision is based on the benefits derived from the project. These benefits are measured in term of cash flows. The estimation of future returns is done on the basis of various assumptions. The actual return in term of cash inflows depends on a verity of factors such as price, sales volume, effectiveness of the advertising campaign, competition, cost of raw materials,

manufacturing costs and so on, each of these in turn depends another variables like the state of the economy, the rate of return, inflation etc. The accuracy of the estimates of the future return and therefore the reliability of the investment decision would largely depend up on the precision with which these factors are forecasted. Whatever techniques are followed for forecasting precisely actual returns can never tally to the estimation. As a result actual result vary from the estimation. This variation is technically referred to as a risk. The term risk with an investment can therefore be defined as the variability in the actual returns emanating from a project in future over its working life in relation to the estimated return as forecast at the time of initial capital budgeting decision.

The decision situation with reference to risk analysis in capital budgeting decision can be divided in to:

- Uncertainty
- Risk
- Certainty

In conclusion, risk with reference to capital budgeting results from the variation between the estimated and actual returns. The greater the variability between two is considered as highly risky project and lower the variability between the two is considered as lower risky project.

Various techniques for risk analysis

- **Traditional techniques**
 - Payback period
 - Risk adjusted discount rate
 - Certainty equivalent co-efficient
 - Sensitivity analysis
- **Statistical techniques**
 - Assignment of probabilities

- Standard deviation
- Co-efficient of variance
- Decision tree

- **Decision regarding alternatives in Business Operation**

Decision making is that function under which the management is involved in selecting a best alternative from among the several courses of action available. Decision making is a logical approach to solving problems. In business, when evaluating alternative courses of action, manager should select the alternative that provides the highest incremental benefit to the company.. In some instances, all the alternatives results in incremental losses, and the managers must choose the one that causes the smallest incremental loss.

Decision making is more of an art and less of a science. Not only is the world growing more complex and uncertain at a faster and faster pace, but the old decision making models are also failing, and we expect their failure to accelerate as well. Accounting information can improve, but can be perfect, an management's understanding of the consequences of various resources allocation decisions. To the extent that accounting information can reduce the management's uncertainty about the economic facts, outcomes and relationship involved in various courses of action, such information is valuable for decision making purposes and necessary for conducting business (Bajaracharya, et al., 2004:619).

While making decisions in business, managers should be economically rational. Long-term profit maximization is the core of business decisions. Therefore, financial feasibility is the prime determinant in selecting in the best alternative. The course of action, which maximizes profits by increasing revenues and minimizing costs, is considered as the most economic one. Opportunity costs which are the benefits foregone in the next best alternative, must be countered in the alternative to be undertaken.

- **Steps of Decision Making.**

Decision making is the art of selecting the best alternative among the various alternatives available to solve a given problem. In case of business the best alternative is one which likely to provide maximum profits and involve a minimum cost without violating the social responsibilities. The following are the steps involves in the process of rational decision making.

- Define the problem
- Identify the problems
- Collect relevant information
- Make differential revenue/cost analysis
- Consider the opportunity costs
- Qualitative factors
- Management report (Bajaracharya, et al., 2004:623).

- **Types of Decisions**

There are various types of decisions which are as follows:

- Decision to drop or continue a product line
- Decision to accept a special order/offer
- Decision to make or buy
- Replacement of assets decision
- Decision of leasing vs. buying
- Decision to further process joint product

- **Practicing of Management Accounting Tools around the world Different pricing practice and cost management methods in various countries**

Survey of financial officer of the largest industrial companies in several countries indicates similarities and differences in pricing practices across the globe. The use of cost base pricing appears to be more prevalent in the United States than in Ireland, United Kingdom and Japan.

Some Japanese survey data indicates that market based target pricing practices vary considerable among industries. While a Mainity of Japanese companies in assemble-type operation use target costing for pricing. It is for less prevalent in Japanese process-type industries. Japanese companies use value engineering more frequently and involve designers more often when estimating cost (Hongren, et al, 1999:455).

Dashes indicates information was not in survey (Hongren, et al., 1999:841).

	United States	Australia	Canada	United Kingdom	Taiwan	Poland
Sensitivity analysis	29%	57%	59%	63%	-	10%
Increase the required rate of return	18%		31%	42%	61%	13%
Shorten payback period	17%	-	24%	34%	72%	25%
Estimate probability distribution of future cash flows	12%	11%	18%	15%		13%
Compare optimistic and pessimistic forecasts		63%				
Make subjective non quantitative assessment	54%	37%	29%	22%	69%	4%
Make no adjustments	37%		10%		-	-

(Source: Adapted from Sullivan and Smith, "Capital Investment justification")

The surveys indicates that the specific methods managers use vary among countries. A common feature, however, is that managers appear to favor simpler methods (for example, sensitivity analysis, shortening, the payback

period, increasing the required rate of return, and subjective, no quantitative assessment) rather than more sophisticated techniques (for example, estimating the probability of future cash flows (Hongren, et al., 1999:841).

2.5 Previous Research Works

In Nepal, very few independent studies have been undertaken related to accounting system especially to school's Accounting System of Bhaktapur District. However, some independent studies and some university theses related to this topic have been reviewed under this study.

Acharya (2005), has conducted a research topic on “*A study on Accounting being practiced by small scale industries in Nepal*” was submitted in 2005 by Bhim Prasad Acharya. He has concluded in his thesis is that account keeping system depends of academic background of the entrepreneurs. He had concluded that the system maintained by the trainee is better than the non trainee.

Main Objectives:

- To examine the existing accounting system used by small –scale industries.
- To identify the Main accounting problems faced by them in practice.
- To evaluate the efficiency and sufficiency of accounting system to present or display their transactions and able to provide the necessary information to the management for decision-making.
- To identify, how the supporting institutions have been providing the accounting training to the small scale industries and also examine the effectiveness of such training.
- To identify of business, appropriateness model of accounting system which can display the transactions of business, appropriateness in term of cost simplicity and applicably and in generating sufficient information to the management for decision-making.

Major Findings:

- Many small businesses however not always use the complete book keeping system and use a single entry book keeping system instead of the double entry system of journals and ledgers.
- They use a cash register because most of their transactions are recorded on cash basis, this means, they don't record the income and expensed until the cash is actually received or paid respectively.
- Many small businesses don't prepare profit and loss account and balance sheet because the records are incomplete and contain less detailed information.
- Most of the small firms lack basic concept of accounting.
- Government has not launched an extensive training program for improving accounting system in small firms.
- Training and education are the fundamental to the success of maintaining accounts.
- Most of the small firms have been facing the accounting problems. So, it is necessary to provide the detail accounts training to them.
- Mainity of firms are interested to undergo account training program and are interested to change their existing accounting system into a systematic records with usage of accounting information on decision making process.

Major Recommendations:

From the studies he has found that most of the small firms are prepared non-detailed accounts due to the lack of knowledge to maintain account. The government should launch special program about the accounting principle and methods. They should try to create the account base market economy.

- The reasons not to; maintain accounts are lack of accounting knowledge lack of specific rules lack of time, cost involvement and lack of

prescribed act. Government and the responsible authority should emphasis about the accounting principles and try to provide sufficient knowledge, prescribed act to maintain the accounts.

Sharma (2006) has conducted a research in the topic "*Management Accounting Practices in the Listed Companies of Nepal.*"

Main Objectives:

- To evaluate the possibility in the uniformity in accounting or the integrated accounting system for the projects particularly related to the following propositions:
- To point out the possible ways of amendment in lacking in the systems and toll used for accounting.
- To find possible solution on the accounting problems of concerned organizations.
- To provide possible suggestion for the development of a general guidelines for the uniform type of accounting as like in other countries.

Major Findings

- Conflicting and complicated issues related with accounting and finance.
- It is a survey study concentrated on examining the present practice of management accounting tools in the listed companies of Nepal and identifying the area where management accounting tools could be applied to strengthen the company.
- To The research was concerned with management accounting.
- It did not consider the overall accounting practice of enterprise. All the data of research were obtained through primary sources.

Major Recommendations:

- Lack of information, extra cost burden and cognizances about management accounting tools were the main factors causing problems in the application of such tools.

- In his recommendation, he suggested to use accounting tools in order to strengthen the competitiveness of Nepalese listed companies.

Malla (2007) has conducted a research entitled on “*Accounting Problem in Social Development Projects*” submitted to Tribhuvan University.

Main Objectives:

- To evaluate the possibility in the uniformity in accounting or the integrated accounting system for the projects particularly related to the following propositions:
- To find possible solution on the accounting problems of social Development projects.
- Conflicting and complicated issues related with accounting and finance.
- To provide possible suggestion for the development of a general guidelines for the uniform type of accounting as like in other countries.
- To point out the possible ways of amendment in lacking in the systems and toll used for accounting.
- The NGOs have limited resources for developing the accounting and Financial manuals.
- To simplify the accounts so that it may be accessible to non accounting professionals to the extent possible.

Major Findings:

- The Main contents of the research are also made to bring up pertinent issues that are being widely talked about especially with in the accounting issues of project and NGO’s.
- The size of human resources available and used also has some impact upon it. Hence there is some more similarity in the system and process of accounting.
- There has been very less efforts been made on been made on the development or improvement of the accounting system of INGOs.

Major Recommendations:

- Due to the different interest and nature, geographical condition, time period, country, government policy, international and nation political scenario etc the projects are carrying their activities on one their way.
- Even the fund received within the country is unknown. One gate system was expected few years before but still it is in process.
- There are many more problems in the execution level of the project. Government has not been able to provide clear vision of development. All the developing agencies, UN Agencies and other development sectors should have a greater coordination for not to repeat the same programme and duplication of the activities.
- Projects have recognized as the effective instrument to deliver the services at the grass root level. During the process of providing the services NGOs are facing different challenges.

Pokhrel (2008) has conducted a research on the topic of “*A study on HMG/N Project Accounting Information System*” submitted to FOM, Tribhuvan University.

Main Objectives:

- To find out the types of financial information needed by the planners of the development projects in Nepal
- To analyze the weaknesses and strengths of PAIS and collect recommendations for improvement in PAIS.
- To provide the necessary recommendations according to major findings

Major Findings:

- The improved PAIS can be made more effective and applicable by making it mandatory through enforcement of law, by unanimous recognition and acceptance by both government organizations and donors, by providing proper training to project accounting and other

associated people and by conduction propaganda and demonstration program in favor of the system.

- Most of the district level offices and central level government organizations believe that the improved PAIS would be more effective in better fulfilling the financial information needs of planners and donors.

Malla (2009) has conducted a research on the topic of “*A study on Programme Budgeting and it's application in the accounting system*” with special reference to the CTEVT submitted to FOM, Tribhuvan University.

Main Objectives:

- Identify the general budgetary process of CTEVT
- Identify the gap between the budgetary concept and practice
- Find out the Main problems of budgeting and accounting and
- Recommend for various improvements in the financial management system of CTEVT with special emphasis on the accounting system.

Major Findings:

- All the systems of accounts is expected to alleviate the anomalies involving the practices such as" rush by the end of the year", non-exhibition of functions or activities performed, and non-integration of annual accounts.
- The systems will also make a significant contribution to the enhancement of the completeness, actuality and promptitude of financial reporting systems involving accrual accounting, functional accounting, Project monitoring and project appraisal etc.

Major Recommendations

- The incorporation of all these systems of accounts is expected to alleviate the anomalies involving the practices such as" rush by the end

of the year", non-exhibition of functions or activities performed, and non-integration of annual accounts.

- These systems will also make a significant contribution to the enhancement of the completeness, actuality and promptitude of financial reporting systems involving accrual accounting, functional accounting, Project monitoring and project appraisal etc.

Karna (2010) has conducted a research entitled on “*A Case Study on Management information System of Plan Nepal*” submitted to FOM, Tribhuvan University.

Main Objectives:

- To analyze the existing management information system of PLAN Nepal.
- To examine the flow of information between different level of management and different divisions, branches, program units of PLAN Nepal.
- To find the gap in existing information system and provide recommendations for the betterment if it is needed.

Major Findings:

- The PLAN Nepal has brought changes in its system from time to time on sectoral basis in order to cope with problems encountered during the process of program implementation in different disadvantageous areas communities.
- Researcher also found that there are different program units working at eight districts of our country to facilitate children, their families and community.
- The MIS implemented in it regulates the employees to collect information from these different areas where its programs reached. The Main strength of MIS in PLAN Nepal implies the collection, compilation and analysis of data in a regular basis to monitor its

program performance and the way to formulate short-term strategies. The total activities of MIS are limited with the reporting of internal financial indicator.

- There is no any other provision except manual system to collect and investigate the information from external environment that influences the sustainability of MIS.

2.6 Research Gap

In this study, some previous researches are selected for review. Most of the selected researches have been conducted on profit planning and control by covering only budgeting practice in different companies. So there exists a gap between current research and previous research. Only few previous researches are related to Management accounting practice. Hence this research is concerned with the practice of Management accounting tools in whole Nepalese commercial banks. However, it does not give specific picture tools in Nepalese commercial Banks. Besides these researches, this current research is especially related to the application of Management accounting tools and techniques in Nepalese commercial Banks. This research study includes 6 commercial Banks of Nepal and mostly based on primary data. So that, outcome given by this study is nearly cent percent valid. It has disclosed the reason about the tools and techniques, which are not in practice in the Nepalese commercial Banks and has been suggested to apply those tools and techniques for better planning, controlling and decision making.

CHAPTER-III

RESEARCH METHODOLOGY

Research is scientific or critical investigation aimed at discovering and interpreting facts.(wikipedia.org/wiki/Research) Research is any original and systematic investigation undertaken in order to increase knowledge and understanding and to establish facts and principles. It comprises the creation of ideas and generation of knowledge that lead to new and substantial improved insights and/or the development of new materials, devices, products and processes. It should have the potential to produce results that are sufficiently relevant to increase knowledge. Good reflective inquiry produces theories and hypotheses and benefits any intellectual attempt to analyze facts and phenomena.(www.nipissingu.ca/research/downloads/DefnofResearchforwebsite.doc)

Research methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically. Research methodology refers to the overall research processes, which a researcher conducts during his study. This chapter describes about the research design, population and sample, sources of data, data collection techniques, data analysis tools and limitations of the methodology.

The basic objective of the study is to identify the accounting problems faced by schools and to give appropriate accounting model for them. The research methodology used for this study is as follows:

3.1 Research Design

A research design is an overall framework or plan for the collection and analysis of data. It is the overall operational pattern of framework if the project that stipulates what information is to be collected, from which sources by what procedure. Specifically speaking, research design describes the general plan for collecting, analyzing and evaluating data after identifying. It has been ensure

that the information obtained is relevant to the research questions and that it has been collected by objective and economical procedures.

The main purpose of the research design is to provide answers to research questions and to control variance.

There are many types of search design, but here the historical and descriptive research design has been followed.

3.2 Population and Sample

All the commercial banks of Nepal are considered as the total population. Out of them six Commercial Banks which are in existence till now represents the target population for research study.

3.3 Sources of Data

According to the nature of this study, only the primary source of information has been used. Primary data are collected through a schedule of self-structured questionnaires, informal and formal dialogues, discussions, and interviews with concerned persons and observations.

One set of questionnaire had been prepared and distributed to the respondents of schools so as to collect true information. Close observation of the firms and interview to the concerned persons were also made while visiting them.

3.4 Tools and Techniques of Data Analysis

The Main management accounting tools included in this research are Budgeting, Standard Costing, Ratio Analysis, Cost-Volume-Profit Analysis, Capital Budgeting, Activity Bases Budgeting, Zero Base Budgeting, Responsibility Accounting, Cash Flow Statement and Pricing Techniques.

3.4.1 Statistical procedure

Simple percentage is used as an arithmetic tool to analyze the data. Chi-square (χ^2) test and t-test are applied as statistical tools to test the hypothesis. For the test of hypothesis, commercial banks were categorized into two groups.

- Public Sector Commercial Bank
- Private Sector Commercial Banks

Standard Chartered, NABIL Bank, Himalayan Bank, Nepal SBI Bank, Everest Bank and Nepal Bangladesh Bank have been put under commercial Bank whereas Rastriya Banijaya Bank and Nepal Bank Limited have been put under public sector commercial Banks.

CHAPTER-IV

PRESENTATION AND ANALYSIS OF DATA

This Chapter presents the analysis and interpretation of the data. The first part describes basic characteristics of respondents. During the course of research study, different questionnaires have been designed as per the requirements of research study. The list of questionnaires and their types are attached in the research study. The list of questionnaires has been distributed to the selected respondents. These discussions are based on the practical experience of the researcher. After all, the better management accounting system depend upon the knowledge of the accounting professional involved the commercial banking sector.

Various tables and diagrams have been used for the clear presentation and analysis of the data. Its help to find out the issues and problem related with management accounting system of commercial banks.

Mainly this research is based on primary sources of information and required data had been collected from the respective Commercial Banks preparing a questionnaire schedule. For this study all the Commercial Banks with head office in Katmandu valley are taken as a target population. Fourteen tick marks and two open -end questions were included in the questionnaire.

Collected raw data have been properly processed, tabulated and analyzed. To complete this study necessary tables are prepared according to subject matter of questions. The Main findings of the research study are based on analysis and interpretation of data. The information collected through open-end questions is arranged in this chapter in a descriptive way. The statistical tool chi-square (χ^2) and t-test are used to test the hypothesis. Three different hypotheses have been tested.

4.1 Analysis of management accounting tools in practice

Table: 4.1

Practice of Management Accounting Tools in Commercial Banks

S. N.	Management Accounting Tools	No. of Sample Banks	No. of Practicing Banks	Percentage (%)
1	Cost Segregation in to fixed and variable	6	2	33
2	Responsibility Accounting	6	2	33
3	Standard Costing	6	0	-
4	Cash flow Statement	6	4	67
5	Break Even Analysis	6	4	67
6	Pricing decision	6	2	33
7	Activity based budgeting	6	4	67
8	Zero base budgeting	6	1	17
9	Capital budgeting	6	4	67
10	Ratio analysis	6	6	100

(Sources: Appendix1)

From the above table 4.1, we come to know that 33% of Nepalese Commercial Banks segregate cost in to fixed and variable, 100% Commercial Banks of Nepal Practice Ratio Analysis, 33% use Responsibility accounting, 67% cash flow statement and 67% use Break even analysis. Similarly, 33% of them use Pricing decision and 67% use capital budgeting. Likewise, 67% of Nepalese

Commercial Banks practice Activity Based Budgeting and 17% are practicing Zero base budgeting. None of them is practicing standard costing.

4.2 Base for Budget preparation in Commercial Banks of Nepal

Table: 4.2

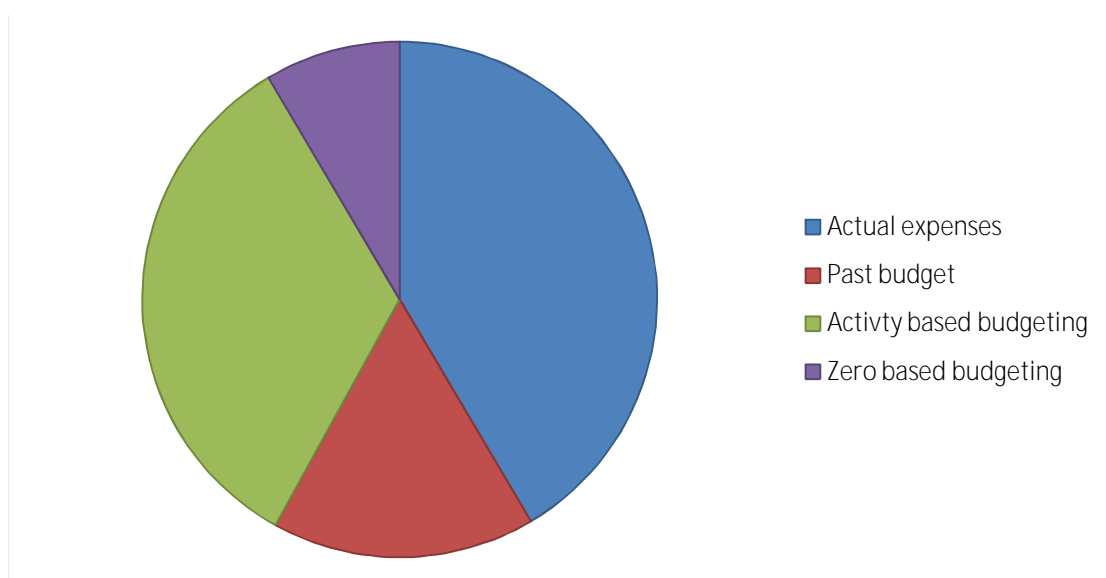
Base for Budget preparation in Commercial Banks of Nepal

S.N.	Base for Budget	No. of sample Banks	No. of practicing Bank	Percentage
1.	Actual expenses of previous year	6	5	83
2.	Past budget	6	2	33
3.	Activity based budgeting	6	4	67
4.	Zero base budgeting	6	1	17
5.	Other (if any)	6	-	-

(Source: Appendix 1)

Figure: 4.1

Base for Budget preparation in Commercial Banks of Nepal



The above table and figure represent base for budget preparation in Commercial Banks of Nepal. From this table, we come to know that 83% of Commercial Banks of Nepal prepare their budget on the basis of actual expenses of previous year, 33% Commercial Banks prepares budget taking a base to the activity base budgeting and 17% Commercial Banks prepares budget on the basis of zero base budgeting. We also come to know that some Commercial Banks of Nepal follow the market trend for preparing budget.

4.3 Types of budget practiced by the Commercial Banks of Nepal

Table: 4.3

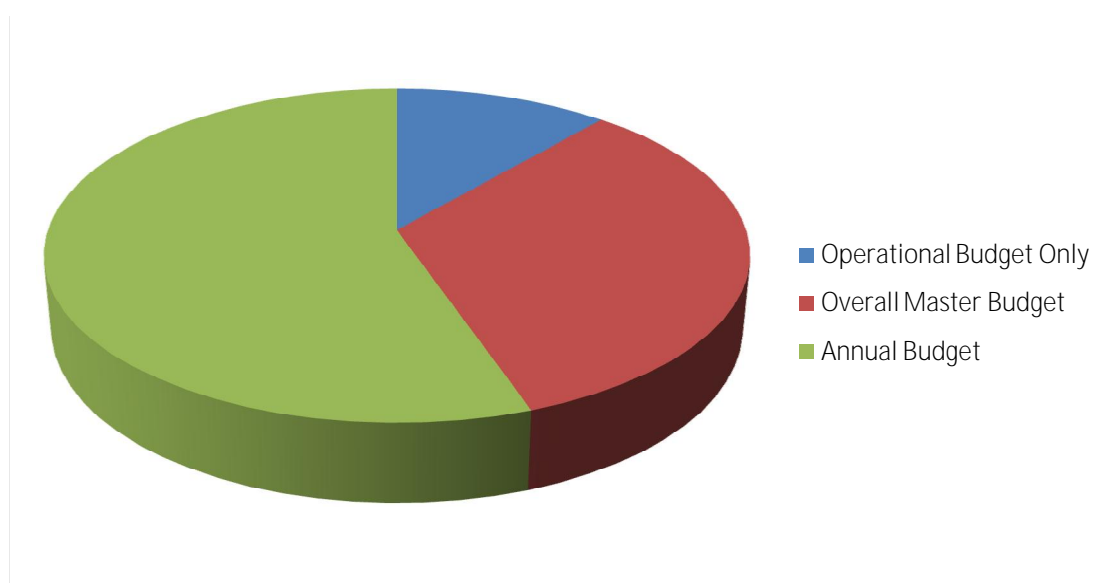
Types of budget practiced by the Commercial Banks of Nepal

S.N.	Types of budget	No. of practicing banks	Percentage (%)
1.	Cash budget	-	-
2.	Operational budget only	1	17
3.	Overall master budget	3	50
4.	Long term budget	-	-
5.	Annual budget	5	83
6.	Others	-	-

(Source: Appendix 1)

Figure: 4.2

Types of Budget Practiced by the Commercial Bank of Nepal



Above table 4.3 and figure 4.2 shows the types of budget practiced by the Commercial Banks of Nepal. From this table it is found that 17% of Commercial Banks practice operational budget, nearly 83% of Commercial banks practice annual budget and 50% of them practice overall master budget.

4.4 Nepalese Commercial Banks and their budget preparing system

Table: 4.4

Nepalese Commercial Banks and their budget preparing system

S.N	Budget preparing system	No. of sample banks	No. of practicing banks	Percentage
1.	Budget committee	6	-	-
2.	Planning department	6	1	17
3.	Chief of finance department	6	3	50
4.	Outside experts	6	-	-
5.	Others (Chief executive Officer)	6	2	33

(Source: Appendix1)

Above presented table 4.4 represents Nepalese Commercial Banks budget preparing system. In the above table, it can be seen that in 50% of the bank the chief of finance department prepare the budget in 17% banks, planning department prepare the budget and in 33% banks, other methods are used for preparing budget. None of Commercial Banks hire the outsiders experts for preparing the budget. Similarly, budget committee is not formed in any of the commercial bank in Nepal.

4.5 Methods of segregating mixed cost in fixed and variable in the commercial banks of Nepal

Table: 4.5
Methods of segregating mixed cost in fixed and variable in the commercial banks of Nepal

S.N.	Methods	No. of sample banks	No. of practicing banks	Percentage (%)
1.	Average method	6	1	17
2.	High low point method	6	-	-
3.	Analysis method	6	2	33
4.	Regression method	6	-	-
5.	Graphical presentation method	6	-	-

(Source: Appendix 1)

Above presented table 4.5 represents methods of segregating mixed cost in fixed and variable in the Commercial Banks of Nepal. In the above table, it can be seen that in 50%, 1 (17%) bank has implement average method and 2 bank

(33%) bank has implement analysis method of segregating mixed cost in fixed and variable in the commercial bank.

4.6 The period covered in budget of Commercial Banks of Nepal

Table: 4.6
The period covered in budget of Commercial Banks of Nepal

S.N.	Time Period	No. of sample banks	No. of practicing banks	Percentage
1.	Short term budget (1 year or less)	6	6	100
2.	Medium term (3 years)	6	-	-
3.	Long term budget (5 year or more)	6	1	17

(Source: Appendix 1)

Above table 4.6 represents the period covered in budget of Commercial Banks of Nepal. From this table, we come to know that, 100% or all Commercial Banks are practicing short term budget. Only 17% banks use long term budget as well. Medium term budget practicing Commercial Banks are nil.

4.7 Methods of allocating joint costs

Table: 4.7

Methods of allocating joint costs

S.N.	Method of allocating Joint	No. of sample banks	No. of practicing banks	Percentage %
1.	Transaction base	6	5	83
2.	Others	6	-	-

(Source: Appendix 1)

In the above table 4.7, the method practiced for segregating mixed cost into fixed and variable cost in the Commercial Banks is presented. This table clarified that 33% of the Commercial Banks use analysis method for segregating mixed cost into fixed and variable and 17% of them use average method for this purpose. It is also found that none of Commercial Banks are practicing high low point method, regression method and graphical presentation method. The reason for not practicing such methods in banking sectors is normally not necessary like the trading business and manufacturing industry.

4.8 Cost and revenue estimation techniques

Table: 4.8

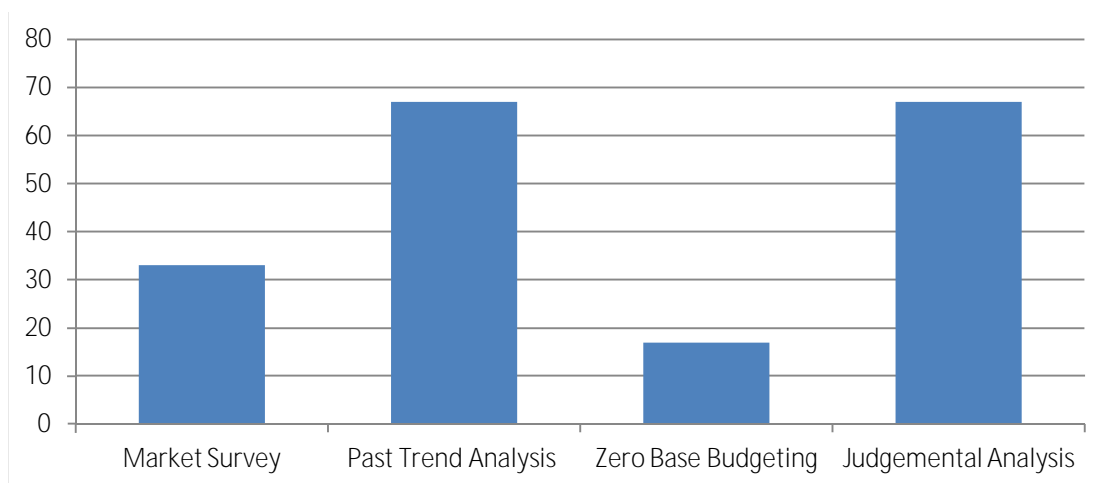
Cost and revenue estimation techniques

S.N.	Cost and revenue estimation techniques	No. of population banks	No. of sample banks	No. of practicing banks	Percentage %
1.	Market survey	6	6	2	33
2.	Past trend analysis	6	6	4	67
3.	Zero base budgeting	6	6	1	17
4.	Judgmental analysis	6	6	4	67
5.	Others	6	6	-	-

(Sources: Appendix-4)

Figure: 4.3

Cost and revenue estimation techniques



Cost and revenue estimation technique by Commercial Banks has been presented in above table 4.8 and figure 4.3. From the table it comes to know that nearly 67% of Nepalese Commercial Banks are practicing past trend analysis for their cost and revenue estimation. Similarly the same percent (i.e.67%) of them are practiced judgmental analysis and 33% and 17% of Commercial Banks in Nepal are practicing market survey and zero base budgeting respectively to estimate their cost and revenue.

4.9 Pricing/interest rate fixing techniques

Table: 4.9

Pricing/interest rate fixing techniques

S.N.	Pricing techniques	No. of sample banks	No. of practicing banks	Percentage (%)
1.	Full cost base pricing	6	3	50
2.	Going rate pricing	6	2	33
3.	Variable cost base pricing		-	-
4.	Target return on investment policy	6	1	17
5	Activity base costing	6	2	33

(Source: Appendix 1)

Above table 4.9 reflects the pricing/interest rate fixing techniques practiced by Commercial Banks in Nepal. The table shows that 50% of Nepalese Commercial Banks practice full cost base pricing and 33% of them practice Going rate pricing. Similarly 33% of them practice activity based costing and

17% Commercial Banks practice target return on investment policy. Likewise, none of them use variable cost based pricing.

Probability distribution for future cash flow while evaluating capital investment. Likewise higher internal rate of return and shorten payback period are not in use in the Commercial Banks of Nepal for this purpose.

4.10 Methods of inventory valuation practiced under periodic system

Table: 4.10
Methods of inventory valuation practiced under periodic system

S.N.	Inventory valuation method	No. of sample banks	No. of practicing banks	Percentage %
1.	LIFO	6	-	-
2.	FIFO		2	33
3.	Weighted average	6	-	-
4.	Others	6	-	-

(Source: Appendix 1)

Above table 4.10 represents the methods of inventory valuation practiced by Commercial Banks in Nepal under periodic basis. This table reflects that nearly 33% of Commercial Banks in Nepal use FIFO method of inventory valuation under periodic basis. None of them use LIFO, weighted average method for inventory valuation.

Table: 4.11**Methods of inventory valuation under perpetual system**

S.N.	Inventory valuation method	No. of sample banks	No. of practicing banks	Percentage %
1.	LIFO	6	2	33
2.	FIFO	6	1	17
3.	Weighted average	6	-	-
4.	Others	6	-	-

(Source: Appendix 1)

Above table 4.11 shows the Methods of inventory valuation under perpetual system of sample commercial banks in Nepal. Among the sample bank 2 banks followed LIFO and only one bank has followed FIFO systems.

Table: 4.12**Methods of Risk adjustment techniques while evaluating capital**

S.N.	Risk adjustment methods	No. of sample banks	No. of practicing banks	Percentage %
1.	Increase the rate of return	6	1	17
2.	Higher internal rate of return	6	-	-
3.	Sensibility analysis	6	4	67
4.	Estimation for probability distribution for future cash flow	6	1	17
5	Short payback period	6	-	-
6	Others	6	-	-

(Source: Appendix 1)

In the 4.12, risk adjustment methods practiced by Commercial Banks of Nepal have been presented. This table shows nearly 67% of Commercial Banks in Nepal practice sensitivity analysis, 17% of them use increase the rate of return and 17% of them use estimation of probability distribution for future cash flow.

Table: 4.13

Capital budgeting techniques practiced by Commercial Banks in Nepal

S.N.	Capital budgeting techniques	No. of sample banks	No. of practicing banks	Percentage %
1.	Payback period(PBP)	6	2	33
2.	Average rate of return (ARR)	6	-	-
3.	Net present value (NPV)	6	4	67
4.	Internal rate of return (IRR)	6	1	17
5	Profitability index(PI)	6	-	-
6	Modified internal rate of return	6	-	-
7	Others	6	1	17

(Sources: Appendix-7)

The capital budgeting techniques practiced by Commercial Banks of Nepal is presented in the above table 4.13. It is found from the table that 67% of Nepalese Commercial Banks practice Net present value (NPV) method for capital budgeting purpose. The percentages of Banks using payback period (PBP) for the purpose is 33% Similarly both internal rate of return and others

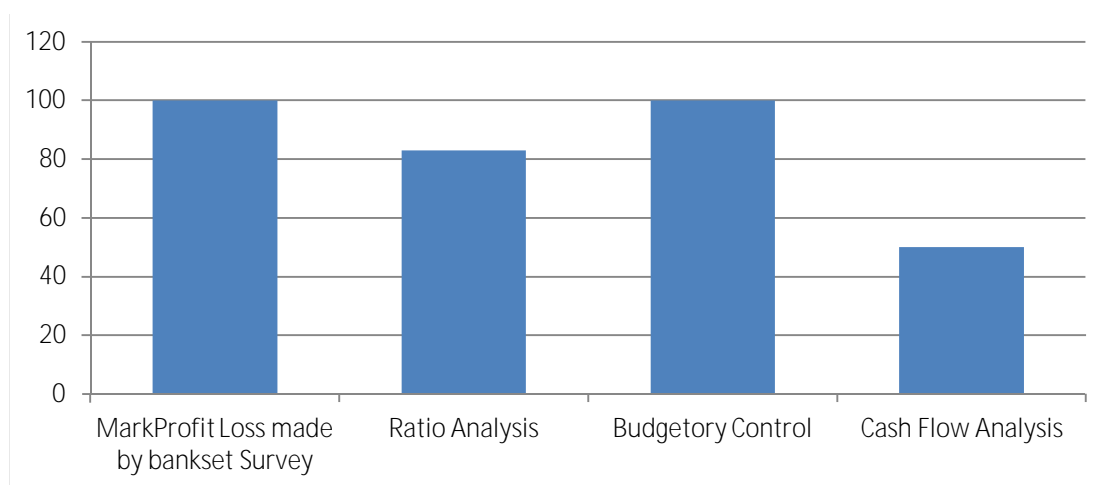
techniques are used by 17% Commercial Banks of Nepal for capital budgeting analysis purpose. But none of them are practicing Average rate of return (ARR), Profitability index (PI) and Modified internal rate of return (MIRR) as a capital budgeting techniques.

Table: 4.14
Year ending overall performance measuring and controlling techniques practiced

S.N .	Performance measuring and controlling techniques	No. of sample banks	No. of practicing banks	Percentage %
1.	Standard costing	6	-	-
2.	Profit/loss made by banks	6	6	100
3.	Ratio analysis	6	5	83
4.	Activity base costing	6	-	-
5	Budgetary control	6	6	100
6	Cash flow analysis	6	3	50
7	Others	6	-	-

(Sources:Appendix-5)

Figure: 4.4
Year ending overall performance measuring and controlling techniques practiced



The table 4.14 and figure 4.4 represent the year ending overall performance measuring and controlling techniques practiced by Commercial Banks in Nepal. This table clarifies that 100% of Commercial Banks in Nepal measure and control overall performance of their banks on the basis of profit or loss made by banks and budgetary control. Similarly 83% and 50% of them respectively practice ratio analysis and cash flow analysis techniques to measure and control the overall performance of their banks at the end of the year. From the table, it is found that none of the Commercial Banks in Nepal use standard costing and activity base costing to measure and control the overall performance of the banks.

4.11 What benefits can be achieved if management accounting tools and techniques are applied effectively in every Commercial Banks in Nepal?

The open-end question was asked relating to the application of management accounting tools and techniques and achieving benefits from it to the respondent banks. In this context some discussions were made with the respondent banks managers, financial controllers and / or account managers to seek their opinions. They agreed upon the fact that management accounting tools are to be effectively applied in every Commercial Banks as well as other kinds of banks for effective management information system, cost control of banks and accurate and timely decision making. On the basis of their opinions, the following benefits can be achieved by application of management accounting tools in Commercial Banks in Nepal,

- Accurate accounting
- Better risk management
- Proper analysis of the position of the banks
- Rational decision making
- Higher profitability
- Consistent financial information

- Helpful in cost, benefit analysis
- Control or eliminates wastages of resources
- Perfect financial status to the stakeholders
- Useful for trend analysis
- Quality services to the customers
- Regulate the banking activities
- Provides premises for the future planning

4.12 Are there any problems in the applications of management accounting tools in commercial Banks in Nepal? If so what are they?

The respondents were in favor of benefits in the application of management accounting tools in Commercial Banks in Nepal. They also viewed that there are various causes which are creating difficulties in the application of management accounting in Nepalese Commercial Banks. They raised the main causes like this, lack of sufficient knowledge, lack of management accounting experts, lack of management's commitments. Besides these, some others causes of the basis of their (respondents') opinions are,

- Lack of knowledge about accounting tools
- Lack of proper human resources management
- Not availability of accurate information
- The application of some management accounting tools are difficult because it increase the costs and banks are not in a position to meet such kinds of extra costs
- There is no willingness of bank management
- Economic environment is not suitable
- Due to external forces decision making could not be made on the basis of management accounting principles

4.13 Hypothesis Test

Hypothesis: 1

Null Hypothesis (H_0): $\mu = \mu_0$ There is no significant different between whole commercial banking industry and Commercial Bank in term of practicing average number of management accounting tools and techniques. (In other words in whole commercial banking industry and that practiced in Commercial Banks are equal)

Alternative Hypothesis (H_1): $\mu > \mu_0$ (Right tailed test) i.e. average no of management accounting tool practiced in Nepalese sample Commercial Banks is greater than the average no of accounting tools practiced in Nepalese commercial banking industry as a whole.

The tabulated value of t for 5 d. f. at 5% level of significant of right tailed test is 2.015 (This is the value of t for 5d.f. at 10% level of significant for two tailed test)

Since the calculated value of t (i.e.1.258) is less than the tabulated value of (i.e. 2.015), it is significant and H_0 is accepted. Which means that the average no of management accounting tools practiced in whole commercial banking industry and that practiced in Commercial Banks are equal.

4.14 Major Findings

From the presentation and analysis of information and data, the Main findings are as follows.

- One the basis of analysis, the application of management accounting tools in Commercial Banks in Nepal for planning, controlling and decision making. it is found that Ratio Analysis, capital budgeting, Activity Base Budgeting, Break Even Analysis and Cash Flow Statement are widely practiced representing 100%, 67%,67%,67%,67% of 6 sample Commercial Banks respectively.

- Cost Segregation, Responsibility Accounting, Pricing Decision and Zero Base Budgeting are also used in Nepalese Commercial Bank in Nepal representing 33%, 33%, and 17% respectively. But the management accounting tools i.e. standard costing is not practiced.
- An average 5 management tools are practiced in Nepalese Commercial Banks. Out of total sample number of Commercial Banks, 50% banks has been not meet the average no of tools, while nearly 17% has met exactly average no of management accounting tools and remaining 33% banks are practicing more than average no of management accounting tools.
- For preparing Budget, actual expenses of previous year and Activity Base Budgeting are widely used as the base in the Commercial Banks, representing 83% and 63% respectively. Past Budget and Zero Base Budget are also used somewhere as a base for preparing budget representing 33% and 17% respectively. It is focused that some Commercial Banks see the market trend for preparing budget.
- On an average, two bases are taken for preparing budget in Commercial Banks in Nepal. Out of 6 sample banks, nearly 34% banks take more than average no of base for preparing their budget.
- Similarly nearly 33% banks meet exactly average no of bases. And the same percentages of banks (i.e.33%) use less than average no of bases for preparing their budget.
- With regard to the types of budget practiced by the Commercial Banks, 83% Nepalese Commercial Banks prepare annual budget, 50% of them prepare overall master budget and only 17% CB prepare operational budget. It is found that long term budget is not prepared in Commercial Banks in Nepal.
- In the context of budgeting preparing system of Commercial Banks in Nepal, it is found that in 50% of Nepalese Commercial Banks, chief of finance department prepares budget. In 33% Commercial Banks, chief executive officer as well as strategy and planning department is involved in preparing budget.

- To segregate the mixed cost in to fixed and variable, analysis method is used in 33% Commercial Banks in Nepal and Average Method is used in 17% Nepalese Commercial Banks. Similarly some respondents viewed that normally no segregation of fixed and variable is required in banking sectors.
- In the context of time period covered in budget, cent percent Nepalese Commercial Banks prepare short term budget (1 year or less) and 17% Nepalese Commercial Banks prepare long term budget (5 years or more). It is found that medium term budget is not applied in the commercial Banks in Nepal.
- With respect to allocation of Joint cost, 83% of Nepal Commercial Banks allocate their joint cost on the basis of the volume of transactions. And 17% banks do not have any practice of allocating joint cost. The respondent banks managers, finance officers argued that as no joint cost occurred in the banking sector so that no question arises of allocating joint cost among the department.
- For department price/Interest rate, 50% Commercial Banks in Nepal adopt Full Costing Based Pricing technique, 33% commercial Banks adopt going rate Pricing and Activity Based Costing and only 17% Commercial Banks use Target Return on Investment Policy.
- While analyzing cost and revenue estimation techniques practiced by Nepalese Commercial Banks, it found that 67% banks estimate their cost and revenue on the basis of Past Trend Analysis, 67% banks estimate on the basis of judgmental analysis. Similarly 17% Commercial Banks in Nepal estimate their cost and revenue on the basis of Zero Base Budgeting.
- Nepalese Commercial Banks applied two techniques of cost and revenue estimation on an average. Out of 6 Commercial Banks, 50% Judgmental Analysis Practice more than the average no of cost and revenue estimation techniques, while 17% Zero based budgeting practice less than an average number of cost and revenue estimation techniques.
- While analyzing, methods of inventory Valuation, 33% Nepalese Commercial Banks applied periodic method and 50% Commercial Banks

applied perpetual method. In periodic method nearly 33% banks adopt FIFO method and none of the banks adopt LIFO and weighted average method.

- In perpetual method 33% Commercial Banks applied FIFO method and 17% banks applied FIFO method. Similarly, none of them applied weighted method.
- For adjusting risk while evaluating capital investment, 67% Nepalese Commercial Banks practice sensitivity analysis, and 17% of them practice increase in the rate of return and 12% of them practice distribution for the future cash flow. Similarly none of them practice shorten payback period, estimation of probability and higher internal rate of return.
- Only one method is practiced to adjust risk while evaluating capital investment in Nepalese Commercial Banks on an average. While evaluating capital investment, the Nepalese Commercial Banks practicing exactly average no of risk adjustment method, less than average no and more than average no of risk adjustment methods were 33%, 33% and nearly 34% respectively.
- While analyzing capital budgeting techniques practice in Commercial Banks in Nepal for purchasing fixed assets or making long term investment decision, it is found 67% banks adopt Net present value (NPV), 33% banks use payback period (PBP) and 17% banks use internal rate of return ((IRR).
- It also found that none of the Commercial Banks adopt profitability index (PI) and modified internal rate of return (MIRR) while making long term investment decision.
- On an average, only one capital budgeting technique is practiced in Nepalese Commercial Banks to make long term investment decision. Out of six sample Commercial Banks, 17% banks do not apply any of the capital budgeting techniques where as 33% banks apply exactly average no of such techniques and 50% Nepalese Commercial Banks apply more than the average number of capital budgeting techniques while making long term investment decision.

- For measuring and controlling overall performance of the bank at the end of the year, 100% Nepalese Commercial Banks practice profit/loss made by bank, 100% banks practice budgetary control. Similarly 83% of Nepalese Commercial Banks practice ratio analysis and 50% banks use cash flow analysis. Till now none of the banks apply standard costing and activity base costing to measure and control the overall performance of the banks at the end of year.
- In average 3 techniques are practiced to measure and control the overall performance of banks at the end of the year.
- The Mainity of the banks managers, financial controllers/or account managers agreed upon the fact that management accounting tools are to be effectively applied in every Nepalese Commercial Banks for effective management information system, Cost control, higher profitability, accurate and timely decision making, better and consistent financial information and so on.
- While analyzing the problems in the application of management accounting tools in Nepalese Commercial Banks, various drawbacks identified are as lack of expertise, lack of information about tools, high cost, lack of top management's commitment, NRB's accounting provisions, tax law compliances and so on.
- While testing hypotheses 3, it is found that there is no significant different between whole commercial banking industry and Commercial Banks in terms of practicing average no of management accounting tools and techniques. It means the average no of management accounting tools practiced in whole commercial banking industry and that practiced in Commercial Banks are equal.

CHAPTER-V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

A business enterprise today operates in a dynamic environment which involves many forms of management problems. The old techniques of management by institution are no longer considered dependable in a situation in which the modern management has realized that even a slight error in policy decision may mean either losing a lot of business opportunities or going out of competition. A second chance may not come or even if it does, it may be costly or risky. Management constantly strives to reduce the risk of making mistakes by looking for and analyzing relevant information by means of which it hopes to take judicious decisions and direct the administration in a better manner. Managerial skills and competencies are keys for organizational success. Managers play a significant role in facilitating organizational effectiveness. Management principles can be applied at all organizations and at all levels of an organization. It is equally important for the organizations such as commercial, non-commercial and private or public.

The modern complex economic system cannot function without banks. It carries out the economic activities. It has made it easier to develop agriculture, industry and trade. The banks help in mobilization and allocation of scarce resources, which are essential for economic development. For better mobilization of resources, different tools and techniques have been developed. Among them management accounting tools have proved beneficial in different aspects of managerial activities.

One of the important parts of management is management accounting. Management accounting is the branch of accounting which helps the management to perform all its functions including planning, organizing, staffing, directing and

controlling. Management accounting is the integral part of management process and acts as the strategic business partner in support of managerial role in rational decision making.

Whether Nepalese Commercial banks are applying managerial accounting tools and techniques or not? Cost segregation, classification, CVP analysis, overall budgeting, pricing, standard costing, activity base costing, responsibility accounting, financial performance analysis, cash flow analysis are the Main management accounting tools. Whether Commercial Banks in Nepal are applying these tools and getting advantages from the managerial accounting or not? To familiar these facts, this study has been conducted.

To study and examine the present practices of management accounting in Nepalese Commercial Banks is the main objectives of this research for non-practicing management accounting tools and difficulties for the proper application of such tools in Nepalese Commercial Banks. As per the nature and demand of the study, this research design was followed with descriptive and analytical approach. The research is mostly based on primary data and information. Secondary sources of information have also used as per need. The data had been collected from respective Commercial Banks by distributing the scheduled questionnaire. Cent percent of total population has been used as a sample. The collected raw data has been properly processed, tabulated and analyzed. Percentage has been applied to analyze and interpret the findings. The statistical tools chi-square(x^2) and t-test has been used to test the assumptions.

5.2. Conclusions

One the basis of study result, the application of management accounting tools in Commercial Banks in Nepal for planning, controlling and decision making, it is found that Ratio Analysis, capital budgeting, Activity Base Budgeting, Break Even Analysis and Cash Flow Statement are widely practiced.

An average 5 management tools are practiced in Nepalese Commercial Banks. Out of total sample number of Commercial Banks, 50% banks did not meet the average no of tools, while nearly 17% met exactly average no of management accounting tools and remaining 33% banks are practicing more than average no of management accounting tools.

- On an average, two bases are taken for preparing budget in Commercial Banks in Nepal. Out of 6 sample banks, nearly 34% banks take more than average no of base for preparing their budget.
- With regard to the types of budget practiced by the Commercial Banks, 83% Nepalese Commercial Banks prepare annual budget, 50% of them prepare overall master budget and only 17% CB prepare operational budget. It is found that long term budget is not prepared in Commercial Banks in Nepal.
- In the context of time period covered in budget, cent percent Nepalese Commercial Banks prepare short term budget (1 year or less) and 17% Nepalese Commercial Banks prepare long term budget (5 years or more). It is found that medium term budget is not applied in the commercial Banks in Nepal.
- With respect to allocation of Joint cost, 83% of Nepal Commercial Banks allocate their joint cost on the basis of the volume of transactions. And 17% banks do not have any practice of allocating joint cost. The respondent banks managers, finance officers argued that as no joint cost occurred in the banking sector so that no question arises of allocating joint cost among the department.
- While analyzing cost and revenue estimation techniques practiced by Nepalese Commercial Banks, it found that 67% banks estimate their cost and revenue on the basis of Past Trend Analysis, 67% banks estimate on the basis of judgmental analysis. Similarly 17% Commercial Banks in Nepal estimate their cost and revenue on the basis of Zero Base Budgeting.

- Nepalese Commercial Banks applied two techniques of cost and revenue estimation on an average. Out of 6 Commercial Banks, 50% JBV practice more than the average no of cost and revenue estimation techniques, while 17% practice less than an average number of cost and revenue estimation techniques.
- While analyzing, methods of inventory Valuation, 33% Nepalese Commercial Banks applied periodic method and 50% Commercial Banks applied perpetual method. In periodic method nearly 33% banks adopt FIFO method and none of the banks adopt LIFO and weighted average method.
- Only one method is practiced to adjust risk while evaluating capital investment in Nepalese Commercial Banks on an average. While evaluating capital investment, the Nepalese Commercial Banks practicing exactly average no of risk adjustment method, less than average no and more than average no of risk adjustment methods were 33%, 33% and nearly 34% respectively.
- While analyzing capital budgeting techniques practice in Commercial Banks in Nepal for purchasing fixed assets or making long term investment decision, it is found 67% banks adopt Net present value (NPV), 33% banks use payback period (PBP) and 17% banks use internal rate of return ((IRR).
- On an average, only one capital budgeting technique is practiced in Nepalese Commercial Banks to make long term investment decision. Out of six sample Commercial Banks, 17% banks do not apply any of the capital budgeting techniques where as 33% banks apply exactly average no of such techniques and 50% Nepalese Commercial Banks apply more than the average number of capital budgeting techniques while making long term investment decision.
- Various drawbacks identified are as lack of expertise, lack of information about tools, high cost, lack of top management's

commitment, NRB's accounting provisions, tax law compliances and so on.

The ownership of banks and practice of NPV; it is found that there is no relationship between the ownership of banks and practice of NPV as a management accounting tools. It means the ownership of bank and the practice of NPV as a management accounting tools are independent. In other words the commercial bank which is private (here, Commercial Banks) or public, each bank is independent in the context of practicing of NPV. Ownership of the bank and practice of ABB; it is found that there is no significant relationship between the ownership of bank and practice of ABB as a management accounting tool. It means the ownership of banks and practice of ABB as a management tools are independent. In other words, the commercial bank which is Commercial or public, each bank is independent in the context of practicing of ABB. There is no significant different between whole commercial banking industry and Commercial Banks in terms of practicing average no of management accounting tools and techniques. It means the average no of management accounting tools practiced in whole commercial banking industry and that practiced in Commercial Banks are equal.

5.3. Recommendations

In the light of findings of the present study, the following specific suggestions have been recommended for the sound and effective accounting system of commercial banks.

- For improvement of competitive strength of Nepalese commercial bank and carryout management activities effectively and efficiently the application of management accounting tools and techniques are recommended. Budgeting, cost estimation, classification and allocation, cost volume profit analysis, should be applied for the planning activities. Similarly variance analysis, standard costing, responsibility accounting, budgeting control, cash flow statement, flexible budgeting should be

used for controlling activities. Likewise marginal analysis, differential analysis and environmental analysis should be applied in rational decision-making. The management accounting tools and techniques should be properly implemented by analyzing cost and benefit of such tools.

- A separate management accounting department should be established within the organization for better implementation of management accounting tools effectively. If it is impossible for them, it should be managed under the existing finance, accounting or planning department. Outsider management accounting expert should be hired for better performance of the organization. Employees training programs should be operated for increasing their efficiency. Consultancy services should be also taken if needed.
- For Commercial Banks, cost segregation and allocation is necessary and it helps management from better planning to control. So it is also recommended to apply cost allocation, segregation and estimation technique properly.
- Banks are recommended to prepare overall master budget because it is an important management accounting tool for effective implementation. While preparing budget and planning activities, there must be a better co-ordination among various department such as finance department, planning department and company board. If so, budget and planning activities become effective.
- Budget preparing system followed by only past actual expenses and past budget estimation may not effective because what happen in the past might not be occurred in the future. So along with these, zero base budget, activity base budget and environmental analysis should also be taken in to consideration. Nepalese Commercial Banks should be prepared not only short term budget but also prepare the mid-term and long term budget with especial vision, missions goals and objectives for better performances.

- For long-term investment decision, Nepalese Commercial Banks are recommended to practice discounted payback period, net present value, and internal rate of return and Profitability index techniques.
- Most of the banks are found practicing only past trend analysis to forecast the cost and revenue of the future. However what happened in the past might not occur in the future. So zero base budgeting, Judgmental analysis, engineering analysis and market survey should also be taken in to consideration for estimating cost and revenue of the Banks.
- A small portion of the profit earned by the banks should be allocated for the research and development programs so that new management accounting tools and techniques should be developed and adopted in the banks.
- Nepalese Commercial Banks should be updated and upgraded with new modern management tools and techniques which are practiced in well operating and best performing banks around the globe. For cost reduction, target costing, value engineering, Kiezen costing, just in time inventory management, total quality management should be practiced. Traditional management accounting tools which the banks are practicing till now are helpful but not sufficient in present competitive market. New methods and techniques of management accounting should be developed and applied. As a result cost should be minimized and better quality as well as reliable services should be provide to the customers.
- By conducting research and development programs, the difficulties and challenges faced by banks in practicing management accounting tools should be identified and solved. So the banks are recommended to recognize the present and future challenges of the banks and should solve the problems through the strong effort of concerned parties.
- Nepalese Commercial Banks should use academician's Knowledge by interacting with them and should conduct mass meeting and seminars as well as discussion programs which are beneficial to understand about

the new management accounting tools and techniques. To keep their personnel updated they should conduct different types of training programs tools and techniques. It is recommended that Commercial Banks should create such kinds of environment. Similarly top level management should also pay the attention for the implementation of management accounting tools and techniques in their banks effectively.

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Appendix -1

Research Questionnaire

You are requested to tick (✓) on the alternatives provided for each question concerning management accounting tools used in your bank.

Your help for academic purpose will be highly appreciated.

Q. No. 1. What kinds of management accounting tools are used in your Bank among the given alternatives for planning controlling and decision making process?

- a. Standard Costing []
- b. Ratio Analysis []
- c. Break-Even Analysis []
- d. Cash Flow Analysis []
- e. Pricing Decision []
- f. Cost segregation in to fixed and variable []
- g. Responsibility Accounting []
- h. Capital budgeting []
- i. Activity based budgeting []
- j. Zero based budgeting []

Q. No. 2. What might be the reason, if your bank has not practiced any of above-mentioned tools?

- a. Lack of expertise []
- b. Quite expensive []
- c. No information about such tools []
- d. Other, if any (Please specify).....

Q. No. 3. What techniques does your bank practice for cost and revenue estimation?

- a. Judgment analysis []
- b. Market survey []
- c. Past trend analysis []

- d. Zero based budgeting []
- e. Other, if any (Please specify).....

Q. No. 4. Which method is followed for pricing the issue of inventory (store) in your bank?

- a. LIFO []
- b. FIFO []
- c. Weighted Average []
- d. Other, if any (Please specify).....

Q. No. 5. What techniques does your bank practice for pricing service?

- a. Activity based costing pricing []
- b. Going rate pricing []
- c. Variable cost-base pricing []
- d. Target Return on investment policy []
- e. Full cost base pricing []

Q. No. 6. What purchasing fixed assets or making long term investment decision which of the following capital budgeting tool is practiced?

- a. Profitability index []
- b. Net present value []
- c. Payback period []
- d. Modified internal rate of return []
- e. Internal rate of return []
- f. Average rate of return
- g. Other, if any (Please specify).....

Q. No. 7. How does your bank adjust for risk while evaluating capital investment?

- a. Higher IRR []
- b. Increase the rate of return []

- c. Sensitivity analysis []
- d. Estimation of probability distribution for
future Cash flow []
- e. Shorten payback period []

Q. No. 8. How your Bank measures and controls the overall performance at the end of the accounting year?

- a. Budgetary control []
- b. Activity based costing []
- c. Ratio analysis []
- d. Profit/loss made by bank []
- e. Cash flow statement []
- f. Standard costing []
- g. Other, if any (Please specify).....

Q.No.9.What technique does your bank follow to allocate joint cost?

- a. Transition based
- b. Other , If any (please specify.....)

Q. No. 10. What technique does your bank practice to segregate the mixed cost in to variable and fixed?

- a. Average method []
- b. Regression method []
- c. Analysis method []
- d. High-low point method []
- e. Graphical presentation method []
- f. Other, if any (Please specify).....

Q. No. 11. What is the period covered by the budget used in your bank?

- a. Long-term budget (5 years or more) []

- b. Medium-term budget (3 years) []
- c. Short-term budget (1years or less) []

Q. No. 12. On what basis, does your bank prepare budget?

- a. Activity base budgeting []
- b. Past budget []
- c. Zero based budget []
- d. Based on actual expenses of last year []
- e. Other, if any(Please specify).....

Q. No. 13. What types of budget does your bank prepare?

- a. Annual Budget only []
- b. Operational budget only []
- c. Cash budget []
- d. Long-term budget []
- e. Overall master budget []
- f. Other, if any(Please specify).....

Q. No. 14. Who does prepare the budget in your book?

- a. Outside expert []
- b. Budget committee []
- c. Chief of finance department []
- d. Planning department []
- e. Other, if any(Please specify).....

Q. No. 15. What benefits can be achieved if management accounting tools and techniques are applied effectively in every Commercial Banks in Nepal?

- 1.).....
- 2.).....
- 3.).....

Q. No. 16. Are there any problems in the application of management accounting tools in Commercial Banks in Nepal? If so, what they are?

- 1.).....

2.).....

3.).....

Name of the Bank:.....

Address of the Bank:.....

Designation of the Respondent.....

Appendix-2

Practice of Management Accounting Tolls in Commercial Banks in Nepal

PSCB = Public Sector Commercial Bank

		Commercial Banks							PSCB		
S. N .	Management Accounting Tools	HB L	NAB IL	SC B	NB B	E B	S BI	Tot al	NB L	RB B	Total
1.	Cost Segregation into fixed and variable	1	1	-	-	-	-	2	1	-	1
2.	Responsibility Accounting	-	-	-	-	1	1	2	1	-	1
3.	Standard costing	-	-	-	-	-	-	0	-	-	-
4.	Cash flow statement	1	1	-	1	-	1	4	1	1	2
5.	BEP Analysis (No profit no loss)	1	1	1	1	-	-	4	1	1	2
6.	Pricing decision	-	1	-	1	-	-	2	1	-	1
7.	Activity base Budgeting	-	1	1	1	1	-	4	-	1	1
8.	Zero base budgeting	-	1	-	-	-	-	1	-	-	-
9.	Capital Budgeting	1	1	1	1	-	-	4	1	1	2
10.	Ratio analysis	1	1	1	1	1	1	6	1	1	2
	Total	5	8	4	6	3	3	29	7	5	12

-Not practiced

1 Practiced

Appendix-3

Basis for preparation of Budget in CB in Nepal

		Commercial Banks							PSCB	
S.N.	Base for Budget Preparation	HB L	NABI L	SC B	NB B	E B	S BI	Tota l	NB L	RB B
1.	Actual expenses of previous year	1	1	1	1	1	-	5	1	1
2.	Past Budget	-	-	-	-	1	1	2	1	-
3.	Activity base Budgeting	-	1	1	1	1	-	4	-	1
4.	Zero base Budgeting	-	1	-	-	-	-	1	-	-
5.	Others (if any)	-	-	-	-	-	-	-	-	-
	Total	1	3	2	2	3	1	12	2	2

PSCB = Public Sector Commercial Bank

1 Practiced

- Not Practiced

Appendix-4

Cost and revenue estimation techniques applied by Commercial Bank of Nepal.

		Commercial Banks							PSCB		
S. N	Techniques	HB L	NAB IL	SC B	NB B	E B	S BI	Total	NB L	RB B	Total
1.	Past trend analysis	1	-	1	-	1	1	4	1	1	2
2.	Market Survey	-	-	-	-	1	1	2	1	-	1
3.	Judgmental Analysis	-	1	1	1	1	-	4	1	1	2
4.	Zero base Budgeting	-	1	-	-	-	-	1	-	-	-
5.	Others(if any)	-	-	-	-	-	-	-	-	-	-
	Total	1	2	2	1	3	2	11	3	2	5

-Not practiced

1 Practiced

Appendix-5

Budget preparing system in CB in Nepal

		Commercial Banks							PSCB		
S. N .	System of Preparation Budget	HB L	NAB IL	SC B	NB B	E B	S BI	Tot al	NB L	RB B	Tota l
1.	Budget Committee	-	-	-	-	-	-	-	-	1	1
2.	Planning Department	-	1	-	-	-	-	1	1	-	1
3.	Chief of Finance	1	-	-	1	1	-	3	-	-	-
4.	Outside Experts	-	-	-	-	-	-	-	-	-	-
5.	Others(if any)	-	-	1	-	-	1	2	-	-	-
	Total	1	1	1	1	1	1	6	1	1	2

*All the Department does if the Finance Department compiles it.

**Chief executive officers

Appendix-6

Methods used to measure and control overall performance at the end of the year in the Commercial Bank in Nepal

		Commercial Banks							PSCB		
S. N	Tools	HB L	NAB IL	SC B	NB B	E B	S BI	Total	NB L	RB B	Total
1.	Profit and Loss	1	1	1	1	1	1	6	1	1	2
2.	Budgetary Control	1	1	1	1	1	1	6	1	1	2
3.	Standard Costing	-	-	-	-	-	-	-	-	-	-
4.	Ratio Analysis	1	1	1	1	-	1	5	1	1	2
5.	Cash Flow Statement	1	1	-	1	-	-	3	1	-	1
6.	ABC Costing	-	-	-	-	-	-	-	-	-	-
7.	Others(if any)	-	-	1	-	-	-	-	-	-	-
	Total	4	4	3	4	2	3	20	4	3	7

- Not practiced

1 Practiced

Appendix-7

Risk adjustment techniques while evaluating Capital Budgeting practice
in Commercial Bank in Nepal

		Commercial Banks							PSCB		
S. N.	Tools	HB L	NA BIL	SC B	N BB	E B	S BI	Total	NB L	RBB	Total
1.	Increase RR	-	-	-	1	-	-	1	-	-	-
2.	Higher IRR	-	-	-	-	-	-	-	-	-	-
3.	Sensitivity Analysis	1	1	1	1	-	-	4	1	-	1
4.	Estimation of prob. distribution	-	1	-	-	-	-	1	1	1	2
5.	Shorten PBP	-	-	-	-	-	-	-	-	-	-
6.	Others(if any)	-	-	-	-	-	-	-	-	-	-
	Total	1	2	1	2	-	-	6	2	1	3

- Not practiced

1 Practiced

Appendix-8

Capital Budgeting/Long-term investment decision techniques practice in
Commercial Bank in Nepal

		Commercial Banks							PSCB		
S. N.	Tools	HB L	NAB IL	SC B	NB B	E B	SB I	Tot al	NB L	RB B	Tot al
1.	PBP	1	-	1	-	-	-	2	-	1	1
2.	ARR	-	-	-	-	-	-	-	1	-	1
3.	NPV	1	1	1	1	-	-	4	-	-	-
4.	IRR	-	1	-	-	-	-	1	-	-	-
5.	PI	-	-	-	-	-	-	-	-	-	-
6.	MIRR	-	-	-	-	-	-	-	-	-	-
7.	Others(if any)	-	-	-	-	-	1	1	-	-	-
	Total	2	2	2	1	-	1	8	1	1	2

- Not practiced

1 Practiced

Appendix 9

Average No. of management accounting tools:

$$\begin{aligned}\text{Per bank} &= \frac{\sum fx}{N} \\ &= \frac{29}{6} \\ &= 4.83 \text{ i.e. } 5(\text{Approx})\end{aligned}$$

Average no of base for budget preparation per bank(x)

$$\begin{aligned}&= \frac{\sum fx}{N} \\ &= 12/6 \\ &= 2\end{aligned}$$

Appendix 10

Hypothesis 1

Test Statistics: under (H_0)

For 2x2 contingency table,

$$\chi^2 = \frac{N(ad-bc)^2}{(a+b)(c+d)(a+c)(b+d)}$$

Where, N= Total no. of observation

2×2 Contingency Table

Ownership of Banks	Practice of NPV		Row Total
	Yes	No	
Public	a 0	b 2	2
Commercial	c 4	d 2	6
Column total	4	4	8

Since, first cell frequency is zero which is less than 5; we should apply Yates correction for calculating χ^2 . For this, add 0.5 to cell frequency a (i.e.0) and adjusting the remaining frequencies by fixing row total and column total. Thus adjusted 2x2 contingency is presented in the following table.

Ownership of Banks	Practice of NPV		Row Total
	Yes	No	
Public	a 0.5	b 1.5	2
Commercial	c 3.5	d 2.5	6
Column total	4	4	8

$$\begin{aligned} \text{Now } \chi^2 &= \frac{8(0.5 \times 2.5 - 1.5 \times 3.5)^2}{(0.5+1.5)(3.5+2.5)(0.5+3.5)(1.5+2.5)} \\ &= \frac{128}{192} = 0.667 \end{aligned}$$

$$x^2 = 0.667$$

Degree of freedom (d.f.)=(r-1) (c-1)=(2-1) (2-1) =1

Tabulated value of x^2 at 5% level of significant for 1 d. f is 3.841

Hypothesis 2

Test Statistics: under (H_0)

For 2x2 contingency table,

$$\text{Now } \chi^2 = x^2 = \frac{N(ad-bc)^2}{(a+b)(c+d)(a+c)(b+d)}$$

Where: N = Total no. of observation

2x2 Contingency Table

Ownership of Banks	Practice of ABB		Row Total
	Yes	No	
Public	a 1	b 1	2
Commercial	c 4	d 2	6
Column total	5	3	8

Since, first cell frequency is one which is less than 5; we should apply Yates correction for calculating x^2 . For this, add 0.5 to cell frequency a (i.e.) and adjusting the remaining frequencies by fixing row total and column total. Thus adjusted 2x2 contingency table is presented in the following table.

Ownership of Banks	Practice of ABB		Row Total
	Yes	No	
Public	a 1.5	b 0.5	2
Commercial	c 3.5	d 2.5	6
Column total	5	3	8

Now
$$\chi^2 = \frac{8(1.5 \times 2.5 - 0.5 \times 3.5)^2}{(1.5+0.5)(3.5+2.5)(1.5+3.5)(0.5+2.5)}$$

$$= \frac{32}{180} = 0.178$$

$$\chi^2 = 0.178$$

Degree of freedom (d.f.) = (r-1)(c-1) = (2-1)(2-1) = 1

Tabulated value of χ^2 at 5% level of significant for 1 d. f is 3.84

Hypothesis 3

Test Statistics: under H_0 ,

$$\mu = 4, \text{ e-79}$$

Sample size (n) = 6

$$\sum fx^2 = 159 \text{ and } \sum fx = 29$$

$$t = \frac{\bar{X} - \mu}{\sqrt{\frac{s^2}{n}}}$$

where,

$$= \frac{5-4}{\sqrt{\frac{3.8}{6}}}$$

sample variation (s^2)

$$= \frac{1}{0.795}$$

$$= \frac{1}{n-1} \left[\sum fx^2 - \frac{(\sum fx)^2}{n} \right] / 30 = 15.43 / 4 = 3.86$$

$$= 1.258$$

$$= \frac{1}{6-1} \left[159 - \frac{(29)^2}{6} \right] / 30 = 16.21 / 4 = 4.05$$

$$= 3.8$$

Degree of freedom (d.f.) = n-1 = 5

$$\alpha = 5\% = 0.05$$

The tabulated value of t for 5 d. f. at 5% level of significant of right tailed test is 2.015 (This is the value of t for 5d.f. at 10% level of significant for two tailed test)