

**MANAGEMENT ACCOUNTING PRACTICES IN  
CIVIL AVIATION AUTHORITY OF NEPAL**

**Submitted by:**

**RAMKRISHNA BHUSAL**

**Balkumari College**

**TU Registration No: 6-1-019-613-98**

**Roll No. 44 (2061- 063)**

**A Thesis Submitted to:**

**Office of the Dean**

**Faculty of Management**

**Tribhuvan University**

**In the partial fulfillment of the requirements for the degree of  
Master's in Business Studies (MBS)**

**Narayangarh, Chitwan**

**May, 2011**

## **RECOMMENDATION**

This is to certify that the thesis

Submitted by

**Ramkrishna Bhusal**

**Entitled**

**Management Accounting Practices in Civil Aviation Authority of Nepal**

has been prepared as approved by this department in the prescribed format of faculty of management. This thesis is forwarded for evaluation.

.....  
Bhim Narayan Upadhyaya  
Thesis Advisor

.....  
Mr. Baburam Panthi  
Chairperson, Research Committee

.....  
Mr. Bharat Khanal  
Programme Incharge

.....  
Prof. Chiranjibi Shrestha  
Principal

Date:

# **VIVA-VOCE SHEET**

We have conducted the Viva-Voce examination of the  
Thesis presented by

**Ramkrishna Bhusal**

**Entitled**

**Management Accounting Practices in Civil Aviation Authority of Nepal**

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

**Master Degree in Business Studies (MBS)**

## **VIVA-VOCE COMMITTEE**

Chairperson, Research Committee: .....

Member (Thesis Advisor): .....

Member (External Expert): .....

Date:

## **DECLARATION**

I hereby declare that the work done in thesis entitled "**Management Accounting Practices in Civil Aviation Authority of Nepal**" Submitted to Balkumari College, Faculty of Management, Tribhuvan University is my original work. It is done in the form of partial fulfillments of the requirement of the degree of Master of Business studies (MBS) under the supervision and guidance of Mr. Bhim Narayan Upadhyaya, Lecturer of Balkumari College.

May, 2011

**Ramkrishna Bhusal**

Researcher

T.U. Reg. No: 6-1-019-613-98

Balkumari College

## **ACKNOWLEDGEMENT**

This entitled "Management Accounting Practices in Civil Aviation Authority of Nepal" has been prepared for the partial fulfillment of the requirement of Master of Business Studies (MBS) under the Faculty of Management, Tribhuvan University, is based on research models involving the use of every aspect.

Special thanks go to my thesis supervisor Mr. Bhim Narayan Upadhyaya lecturer of Balkumari College for cordial support, advice, guidance and co-operation in completing the thesis.

I also would like to show my inclinations towards Mr. Baburam Panthi, Mr. Bharat Khanal, Mr. Shiv Prasad Poudel & Mr. Bijay Lal Pradhan lecturer of Balkumari College who supported me with countless valuable tips and hints during my complications and data collection period. They also inspired me to complete the thesis on time and keep on urging till the end.

Mostly, I also owe indebtedness to the top-level management, financial and accounting personnel and the staffs of CAAN for their positive co-operation and help. I must not forget to thank my friends and colleagues for the regular inspiration and support. Many many thanks to my friends Mr. Nirajan Dallkoti & special thanks to Bharatpur Civil Aviation Office Bharatpur Chitwan Family. Similarly I would like to express my hearty thanks to my family members for their kind help, continuous contributions & bold support for completion in my effort. They always inspired me to complete my higher study and provided all the necessary logistic supports.

Last but not least, I am also appreciating to Mr. C. M. Adhikari of Classic Computer for their expert work in designing this into print.

Any constructive comments, recommendations and suggestions are heartily appreciated.

**Ramkrishna Bhusal**  
**Chitwan, Nepal**

# TABLE OF CONTENTS

<b>Recommendation</b>	<b>i</b>
<b>Viva-Voce Sheet</b>	<b>ii</b>
<b>Declaration</b>	<b>iii</b>
<b>Acknowledgment</b>	<b>iv</b>
<b>Table of Contents</b>	<b>v-vii</b>
<b>List of Tables</b>	<b>viii</b>
<b>List of Figures</b>	<b>ix</b>
<b>List of Abbreviations</b>	<b>x</b>
<b>CHAPTER ONE</b>	<b>Page No.</b>
<b>INTRODUCTION</b>	<b>1-7</b>
1.1 Background of the Study	1
1.2 Role of Management Accounting	3
1.3 Statement of the Problems	4
1.4 Objectives of Study	5
1.5 Research Questions	6
1.6 Significance of Study	6
1.7 Limitations of the Study	6
1.8 Organization of the Study	7
<b>CHAPTER TWO</b>	
<b>REVIEW OF LITERATURE</b>	<b>8-81</b>
2.1 Introduction	8
2.2 Meaning & Definition of Management Accounting	8
2.2.1 Financial Accounting	10
2.2.2 Cost Accounting	11
2.3 Evolution of Management Accounting	12
2.4 Functions of Management Accounting	13
2.5 Objectives of Management Accounting	15
2.6 Advantages of Management Accounting	17
2.7 Limitations of Management Accounting	17
2.8 History of Management Accounting in Nepal	19
2.9 Review of Management Accounting Tools	20
2.9.1 Cost Concept	20
2.9.2 Tax Effect Analysis	30

2.9.3 Product Costing	31
2.9.4 Standard Costing	32
2.9.5 Budgeting	36
2.9.6 Master Budget	37
2.9.7 Zero Base Budgeting	45
2.9.8 Activity Based Budgeting	46
2.9.9 Flexible Budget	47
2.9.10 Capital Budgeting	48
2.9.11 Analysis of Risk and Uncertainty under Capital Budgeting	56
2.9.12 Financial Statement Analysis	60
2.9.13 Cash Flow Analysis	63
2.9.14 Cost Volume Profit Analysis/Break even Analysis	65
2.9.15 Decision Making	67
2.9.16 Price of the Product and Service	69
2.10 Review of the Previous Research Work	75
2.11 Research Gap	80
<b>CHAPTER THREE</b>	
<b>RESEARCH METHODOLOGY</b>	<b>82-86</b>
3.1 Introduction	82
3.2 Research Design	82
3.3 Nature and Sources of Data	82
3.4 Population and Sample	82
3.5 Data Collecting and Processing Procedure	83
3.6 Tools Used	83
3.7 Research Variable	84
<b>CHAPTER FOUR</b>	
<b>PRESENTATION AND ANALYSIS OF DATA</b>	<b>87-103</b>
4.1 Introduction	87
4.2 Tabulation and Graphical Presentation of Practices of Management Accounting Tools	87
4.2.1 Percentage Analysis of Management Accounting Practices	88
4.2.2 Methods of Segregating Mixed Cost into Fixed and Variable	89
4.2.3 Budget Practices in CAAN	90
4.2.4 Basis for Budget Preparation in CAAN	91
4.2.5 Types of Budget Based on Period Practiced in CAAN	92
4.2.6 Budget Preparation System in CAAN	93
4.2.7 Practice of Capital Budgeting Tools in Purchasing Fixed Assets or Making Long Term Investment	94

4.2.8 Adjustment of Risk while Evaluating Capital Investment in CAAN	96
4.2.9 Tools Practiced for the Overall Performance	97
4.2.10 Practices for Pricing of Products and Services in CAAN	98
4.2.11 Cost and Revenue Estimation Practices in CAAN	99
4.2.12 Practices of Transfer Pricing	100
4.2.13 Decision Making Practices	100
4.2.14 Inventory Valuation Method	100
4.2.15 Accounting System	100
4.2.16 Management and Management Accounting	101
4.3 Major Findings	102
<b>CHAPTER FIVE</b>	
<b>SUMMARY, CONCLUSION AND RECOMMENDATION</b>	<b>104-111</b>
5.1 Summary	104
5.2 Conclusion	106
5.3 Recommendation	107
<b>Bibliography</b>	<b>112-115</b>
<b>Appendix</b>	<b>116-121</b>

## **LIST OF TABLES**

<b>Table No.</b>	<b>Titles</b>	<b>Page No.</b>
4.1	Percentage Analysis of Management Accounting Practices	88
4.2	Budget Practices in CAAN	90
4.3	Basis for Budget Preparation in CAAN	91
4.4	Types of Budget Based on Period Practiced in CAAN	92
4.5	Budget Preparation System in CAAN	93
4.6	Practice of Capital Budgeting	94
4.7	Adjustment of Risk while Evaluating Capital Investment in CAAN	96
4.8	Tools Practiced for the Overall Performance	97
4.9	Practices for Pricing of Products and Services in CAAN	98
4.10	Cost & Revenue Estimation Practices in CAAN	99

## **LIST OF FIGURES**

<b>Figure No.</b>	<b>Titles</b>	<b>Page No.</b>
2.1	Users of Accounting Information	9
2.2	Internal Environment	9
2.3	Management Accounting	13
2.4	Variable Cost	22
2.5	Fixed Cost	23
2.6	Step Variable Cost	24
2.7	Semi Variable Cost Curve	25
2.8	Graphical Method	29
2.9	Direct Material Variance	35
2.10	Direct Labour Variance	36
2.11	Master Budgeting	38
2.12	EOQ	41
2.13	Capital Budgeting Techniques	49
2.14	Cash Flow Statement	64
2.15	BEP Analysis	66
4.1	Percentage Analysis of Management Accounting Practices	88
4.2	Budget Practices in CAAN	90
4.3	Basis for Budget Preparation in CAAN	91
4.4	Types of Budget Based on Period Practiced in CAAN	92
4.5	Budget Preparation System in CAAN	93
4.6	Practice of Capital Budgeting	95
4.7	Adjustment of Risk while Evaluating Capital Investment in CAAN	96
4.8	Tools Practiced for the Overall Performance	97
4.9	Practices for Pricing of Products and Services in CAAN	98
4.10	Cost & Revenue Estimation Practices in CAAN	99

## **LIST OF ABBREVIATIONS**

AMSL	:	Average Mean Sea Level
AOC	:	Air Operator Certificate
ARR	:	Average Rate of Return
BEP	:	Break Even Point
BOD	:	Board of Directors
CAAN	:	Civil Aviation Authority of Nepal
CFA	:	Cash Flow Analysis
CFAT	:	Cash Flow after Tax
CVP	:	Cost Volume Profit
DCA	:	Department of Civil Aviation
DG	:	Director General
FIFO	:	First In First Out
FY	:	Fiscal Year
GON	:	Government of Nepal
ICAO	:	International Civil Aviation Organization
IRR	:	Internal Rate of Return
KTM	:	Kathmandu
LIFO	:	Last In First Out
NAC	:	Nepal Airlines Corporation
NAS	:	Nepal Accounting Standard
NPV	:	Net Present Value
PBP	:	Payback Period
PICAO	:	Provisional International Civil Aviation Organization
RADAR	:	Radio Detection and Ranging
SARPS	:	Standards and Recommended Practices
STOL	:	Short Take Off and Landing
TIA	:	Tribhuvan International Airport
WTO	:	World Trade Organization

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

The economic activities of Nepal are mostly agriculture related. Most of the industries are based on agriculture. Where as tourism has also vital role on national economy. Nepal is a country that has a tremendous tourism potentiality. Nepal offers an incomparable scope to conciseness of arts and culture to see and study the different aspect of the fine arts in its painting, sculpture, woodcarving, and architecture. The three main historic cities Kathmandu, Patan and Bhaktapur with numerous historical monuments, old places and palaces, squares, shrines and temples, ageless traditions and legends make it veritable living museum. The Kathmandu valley boasts seven world cultural heritage sites with in a radius of 20 km i.e. Swayambhu, Buddha, Pasupatinath, Chagunarayan, Bhaktapur Durbar Square, Kathmandu Durbar Square and Patan Durbar Square. Lumbini, birth palace of Lord Buddha in southern Nepal is 8<sup>th</sup> cultural heritage where as Everest National Park and Chitwan National Park is registered as world natural heritage sites.

Thus, Nepal being potential in eco-tourism, cultural tourism and social tourism and being diversity in nature, it has to protect the bio diversity and also has to manage these resources to check any adverse impact which can distract tourists.

The modes of transportation for the People in Nepal are road and air. Nepal has no access to sea being a landlocked country so it has no water transportation. For overseas the only one alternative is through air transportation. Because of its geographical structure the road transportation through out the area is not possible. In most parts of Himalayan and hilly region air transportation is only the option. Even in other areas having road transportation, now a days people like to travel by air due to its comfort ness, time saving nature and security. Almost of foreign tourists mainly do come to this beautiful country for sight

seeing, trekking and mountaineering expedition. Data reveal that in an average of 85% of foreign tourists do come by air. Tribhuvan International Airport is the only one airport as a gateway to the country. Data shows that the average duration of stay of tourists in the country is about 10 days. With in this short duration of stay, tourists do visit not only the Kathmandu valley but also go for trekking, visiting national parks, conservation areas, religious places out side the valley. To visit all this places within short duration of stay the efficient mode of transportation is by the air. So, domestic air transportation also plays a vital role for efficient mode of transportation.

Different organizations are established to promote Nepalese national economy, culture, identity, heritage etc. by either government, private or public. Among various organizations Civil Aviation Authority of Nepal (CAAN), a governmental organization as a full autonomous body established to promote civil aviation and to provide air transportation service in affordable manner. Basically establishment of CAAN is for the development and expansions of civil aviation and for safe, regular, standard and efficient conduct of air transportation. CAAN is established on 31<sup>st</sup> December 1998 with a vision of "making air service efficient vehicle of high economic growth through wide scale tourism promotion and accessibility". Ensuring safe, secured, efficient, standard and quality service in civil aviation and airport operation is the mission of CAAN.

Organizations are social units, which carry out economic activities and are establish for the certain objectives and to achieve certain goal. For these objectives and goal, they require a system. Here the system may be defined in term of input, process and output. Input consists of structural and other (Human resources, materials, capital etc) requirements, process is management of input and output can be defined as a result. With the proper management of input the organization can get better results. To get through from cutthroat challenges only reliable option is good management. It protects organizations from unexpected and painful happenings.

For good management, management tools are powerful weapons. It helps the management to utilize resources in the systematic and scientific way. These tools are helpful from planning to decision making. Various tools and techniques of management have proved beneficial in every aspect of managerial activities. "Management Accounting" is a term among various tools and techniques. The main objective of management accounting is to help managers in overall managerial activities by providing information and helping them in planning, controlling and decision making.

## **1.2 Role of Management Accounting**

A business enterprise today operates in dynamic environment which includes many new issues of management problem. Quality production, research and development, product diversification, market enhancement and cutthroat competition forces the narrow margin of profit for any organization. Due to complex environment, management has to carry out its basic function of cost minimizations and maximization of profit in an atmosphere of uncertainty. The old technique of management is no longer considered dependable on the situation in which the modern management has realized that a slight error in the policy management may mean either losing a business opportunities or going out of competition. A second chance may not come or if it does, it may be costly or risky. Management can achieve this by using management accounting. Any accounting, which renders valuable information to help management, may be called management accounting. It is the form of accounting, which enables a business to be conducted more efficiently. It is mainly emphasizing to present the accounting information in proper way before the management and such accounting information being placed in a way as to assists management in its operations and functions.

"Management Accounting is the presentations 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, organizing, staffing, directing and controlling. It presents to

management accounting information in the form of processed data, which it collects from financial accounting." (Paul, 1994:1)

"Management accounting is the process of identifying, measuring, analyzing, interpreting and communicating information for searching the goals of the company. Managerial accounting is the part of the management process and Management accounting are the strategic partner in company management team." (Hilton, 2002: 5-6)

Management accounting concepts emerged because of the complexity that exists in today's business decision making process. Its main theme is to simplify the planning and decision making process and provide support to achieve better organizational outcomes.

Thus, management accounting is helpful not only to commercial institution, business and corporate houses but also to the civil services in term of controlling cost, forecasting expenses and helping to increase the overall productivity.

### **1.3 Statement of the Problems**

CAAN being an organization of both regulatory and service provider has different organizational segments for defined objectives. CAAN Head Office is responsible for the regulatory and other administrative functions where as the Civil Aviation Academy of CAAN is for the production of trained manpower. The airports are for the service provider.

The airports are the main sources of income of CAAN. Almost all of its income is generated from the airports. The airports are situated at different geographical locations covering convenient to remote areas. The facilities available on the convenient airports are higher than the remote. Here the existing facility to its employee also determines the level of service. Latest developments and technologies first used to be applies on those convenient offices. Similarly, huge amount of budget, the computerized system, trained and skilled manpower are concentrating to convenient establishments where as

in case of the remote areas it is just opposite. For the similarity and simplicity to its accounting personnel, CAAN it-self developed the accounting manuals covering on eight different faculties. There is still the question mark concerning how many of them following the proper system.

CAAN is in the process of recovering cost since the fiscal year 2066/067. Before that, it was operating at huge loss since the establishment of FY 2059/60. Success is not a matter of chance; it is a matter of implementing plan systematically. Profit can be achieved through well planning and management. Management accounting provides techniques to aid management functions. CAAN it-self is not performing well. It is due to poor planning, controlling and decision making processes. The practices of management accounting tools ensure to overcome the difficulties in improving the performance of the organization. The present study tries to find out the relationship between performance and the practices of management accounting tools in the organization.

#### **1.4 Objectives of Study**

Every research has been conducted to achieve some specific objectives. The main objectives of this research are to examine and study the practices of management accounting tools and techniques in CAAN. The specific objectives are as follows:

- i. To study and examine the management accounting tools practiced in CAAN.
- ii. To identify the management accounting tools not in use.
- iii. To identify the difficulties in applying management accounting tools in CAAN.
- iv. To identify the areas where management accounting tools can be applied to strengthen the organization.

## **1.5 Research Questions**

This research study was aimed to find out the answers of the following research questions relating to CAAN operations.

- i. Is CAAN practicing management accounting tools?
- ii. Which management accounting tools were mostly practiced?
- iii. What were the major difficulties in the application of management accounting tools?
- iv. In which areas of CAAN, management accounting tools should be applied to strengthen the CAAN activities?
- v. Are there any difficulties in the application of management accounting tools & techniques?

## **1.6 Significance of Study**

The present research work is the study of the practice of the management accounting tools in CAAN. This might be useful to all those organizations intend to implement this system. This study will be significant in the following matters.

- i. It examines the application of management accounting tools.
- ii. It explores the problems and potentialities and useful to overcome from the existing problems.
- iii. It provides information on the application of the tools under different circumstances which will encourage the use of management accounting tools and techniques in decision making.
- iv. It will help to know about the financial activities of CAAN in brief.
- v. Last but not least, it provides literature to the researchers who want to carry on further research in this field.

## **1.7 Limitations of the Study**

Research itself is a difficult task due to its own natural characteristics. Every research and study needs sufficient time, effort, investment and data. These

characteristics can be termed as limitations. The present research has the following limitations.

- i. This research is mainly based on primary data.
- ii. The study is concerned with management accounting tools only. It does not consider the other economic aspects in detail.
- iii. The study is focused only on "CAAN". Thus findings might not be applicable to other organization which does have different objectives and goals.
- iv. The study based on the data provided by official of the CAAN.

### **1.8 Organization of the Study**

The study is divided into the following five chapters:

#### **Chapter One:**

The introduction chapter covered background of the study, role of management accounting, statement of the problems, objective of study, research questions, significance of study and limitations of study.

#### **Chapter Two:**

The second chapter focused as review of literature. It contained the conceptual framework and past research literature on profit planning and control and the practices of management accounting.

#### **Chapter Three:**

The third chapter consists of the research methodology to be adopted for the study & includes research design, sources of data, data gathering procedure, data processing procedure, population and sample and research variables.

#### **Chapter Four:**

The fourth chapter dealt with presentation, analysis and interpretation of data. It consist analysis of questionnaires, analysis of open-end opinions and major finding of the research.

#### **Chapter Five:**

Finally, this chapter is concerned with the output of the study in the form of summary, conclusion and recommendations.

## **CHAPTER TWO**

### **REVIEW OF LITERATURE**

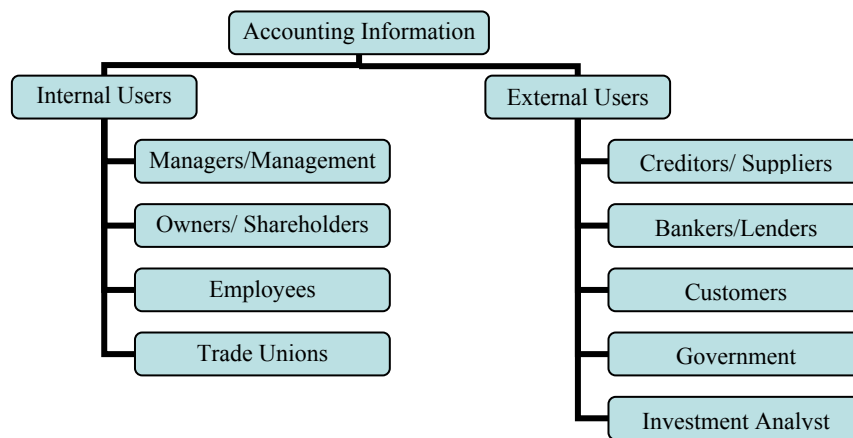
#### **2.1 Introduction**

Review of literature includes consulting books and reports of previous studies in the related field, such as study reports, text books, articles, journals, thesis and dissertation etc. The main objective of the view of literatures is to gain more knowledge about the subject matter being studied. This helps to find out why research study has been conducted in one's choice field to study, and what remains to be done. It provides the foundation for developing a comprehensive theoretical framework from which hypothesis can be developed for testing. The literature review links the present studies.

#### **2.2 Meaning & Definition of Management Accounting**

Accounting means the process of analyzing financial transactions and recording them in the book of account to show the financial results of operations. It is the eye of the business which shows a path to go ahead. It has rightly been termed as the language of the business. It communicates the result of business operations to the various parties who have some stake on the business. The objective of accounting is to provide sufficient information to meet the need of various users at the lowest possible cost. As such, the accounts/accounting should aim to provide the right information to the right user/people in the right quality at the right time and at minimum cost. The user of accounting information can be grouped into following two categories.

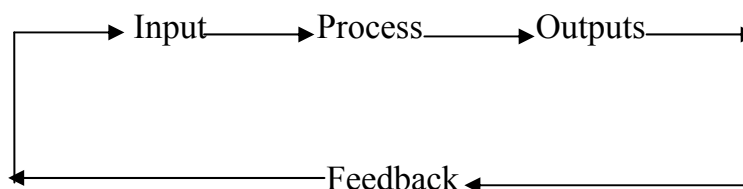
**Figure No. 2.1**  
**Users of Accounting Information**



*Source: G. R. Agarwal, 2009, P-68*

The term system refers to "An assembly of methods; procedures or techniques that are united by regulated interaction to form an organized whole." In fact, system means a collection of things interacting and inter- dependent to form a complex whole.

**Figure No. 2.2**  
**Internal Environment**



*Sources: G. R. Agrawal, 2009, P-87*

A system receives inputs as men, materials, money and machines and so on. Processes them, and generates such outputs as finished products or services. The system model of an entity is drawn in the above figure. Management accounting system is a "resource of management that supplies financial information at all levels to be used in planning and administrating the business." Accounting system has expanded from its traditional confines of

historical transaction data to the analysis of present situation and forecasting the future prospects.

Accounting information system does two tasks plan, co-ordinate and controls various activities of organization supply information to the required parties. Historically, Accounting is concerned with recording, classifying, summarizing, analyzing and interpreting the past transactions for an accounting period of a business enterprise. In modern time it has historical as well as managerial function. In managerial function it is concerned with planning the future activities of an organization and controlling the operations of the business. This helps the management in looking forward. The actual results are compared with the predetermined targets with the objectives of promoting maximum operational efficiency. Accounting information can be gathered and provided through various branches of account that includes.

a. Financial Accounting

b. Cost Accounting

### **2.2.1 Financial Accounting**

Financial account is concerned with the recording of financial transactions of the business and it provides information in financial terms to parties or people, wanting information about the state of business. Financial accounting is useful to management as well as to external users such as potential owners, creditors, government etc. It provides information regarding the status of business and results of its operation. The functions of Financial Accounting are:

- Recording of information, i.e. financial transactions.
- Classification of data
- Preparation of financial statements
- Interpreting financial information
- Communicating results

- Making information more reliable by using Generally Accepted Accounting System

Management needs information for planning, controlling and coordinating business activities. But information provided by financial account isn't sufficient in meeting informational needs of the management because of some limitations those are:

- Historical nature
- Not helpful in price fixation
- Cost control is not possible
- Recording of actual costs
- Appraisal of policies is not possible
- Not helpful in strategic decision
- Provide quantitative information not qualitative one

### **2.2.2 Cost Accounting**

Cost Accounting is concerned with the classifying, recording and appropriate allocation of expenditure for the determination of the cost of products or services and presentation of data for the purposes of control and guidance to management. The main objective of cost accounting is to find out cost per unit of production or service or for a process. Cost accounting is the process of accounting for cost. It records income and expenditure relating to production of goods and services. It is concerned with cost ascertainment and cost control. It involves the preparation of right information to right person at right time so that it may be helpful to the management for planning, controlling and decision making. Cost accounting helps management to

- Ascertain selling price to the product and services
- Provide reliable cost data
- Formulate business policies

- Analyze and classifying the cost
- Make decision regarding make or buy and drop or continue
- Help in cost reduction and cost control

**Cost accounting has the following limitations:**

- It is not a independent system of accounts
- Cost varies with purpose. Difficult to determine for service sector
- It presents base for taking the best decision but not give solution of the problem
- Techniques are based on same presumed notions
- Different views are hold by different accountants about the items to be including in cost

**2.3 Evolution of Management Accounting**

The last three decades have witnessed an almost startling change in the development of accounting from a mere device of recording and compiling of income and expenditure relating to past business of economic activity, starting with systematic recording of transaction and costs. Subsequently supplemented by integration of financial and cost records the basic structure of traditional accounting has been enlaced by financial and cost control, enriched by budgetary control, embellished by production planning and control and engrafted by a system of reporting on performance.

In short, it has led to the emergence of what in technical language is known as management accounting. The term management accounting is of recent origin even in USA where though a lot was about controllership function, financial control, operational control, management services, system work, methods and procedures production planning and other methods connected with management till recently very few people looked upon "management accounting" as a subject distinct from accounting. This subject was discussed under the title "Budgetary Control" and corresponding modernization of

accounts at the international accounting congress held at Amsterdam. So far as evidence goes, the term management accounting was first coined and used by the British team of accountants that visited the United States in 1950 under the auspices of Anglo-American productivity council. Since then the term has become quite familiar in USA as well as in other countries. (Goyal and Singh, 1997:6-7)

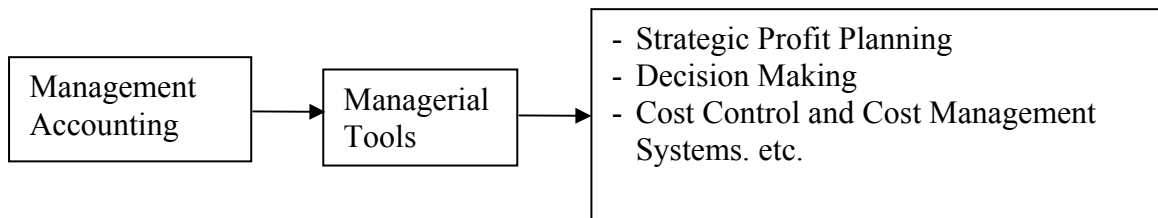
Managerial accounting activities include collecting, classifying, processing, analyzing and reporting information to manager for effective management and long term planning. It emphasized these aspects;

- Presenting the accounting information in proper way before the management.
- Such accounting information being placed in such way as to assist management in its operation and functions.

(Bajaracharya, 2004:31)

**Figure No. 2.3**

**Management Accounting**



*Source: B. C. Bajracharya, 2004, P-34*

So, the management accounting is a tool in the hand of management to lead their organization in this multi faceted and dynamic world.

**2.4 Functions of Management Accounting**

The manner in which Management Accounting satisfies the various needs of management for arriving at appropriate business decisions may be described as follows:

- a) **Modification of Data:** Accounting data required for decision making purposes is supplied by management accounting through resort to a process of classification and combination which enables to retain similarities of details without eliminating the dissimilarities, e.g., combination of purchases for different months and their break-up according to class of product, type of suppliers, days of purchase, territories, etc.
- b) **Analysis and Interpretation of Data:** Though management accounting is concerned with records of past achievements, maintenance of values, fixation of responsibilities and basis for assessing the future development, it is more concerned with the analysis and interpretation of such data which has opened up new directions for its use by management .The data becomes more meaningful and is placed in proper perspective when it is provided by means of measurement, its relationship with other data is established and it is ranked in terms of its relative significance.
- c) **Facilitating Management Control:** Management Accounting enables all accounting efforts to be directed towards control of the destiny of an enterprise. Standards for performance and measure of deviation there from are essential elements of any system control. Then, control has an organizational aspect also in as much as lines of communication are required for the collection and transmission of control information. This is made possible through budgetary control and standard costing which are in integral part Management Accounting.
- d) **Formation of Business Budgets:** Planning, which is the creative aspect of management job, is done by management accounting through the process of budgeting. Planning involves the setting up of objectives, a search for optional strategies for accomplishing the objectives, and the selection of the most appropriate strategies by comparing them with reference to some discriminating criteria. For this purpose a wide array of techniques of probability, forecasting, trends, correlation and even downright guessing are used.

- e) **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 upon sources, other than accounting, for such information as is not capable of being readily convertible into monetary terms. Sources of such information include statistical compilations, engineering records, case studies, and minutes of meetings, reports of productivity, special surveys and many other business documents.
- f) **Satisfaction of Information Needs of Levels of Management:** Management Accounting has a system of processing accounting data in a way that yields concise information covering the entire field of business activities at relatively long intervals for the top management, technical data for specialized personnel's regularly and detailed figures relating to a particular sphere of activity at short intervals for those at the lower rungs of organizational ladder. This is the function of controller's establishment, which is concomitant of Management Accounting.

## **2.5 Objectives of Management Accounting**

The principal objectives of management accounting are to assist the management for achieving the goals of an organization, i.e. maximization of profit. Management accounting supplies accounting information to the management for planning, formulating policies, controlling business operations, and making decisions. The major objectives/purposes of management accounting can be summarized as follows:

### **a. Planning and Policy Formulation**

Planning is one of the primary functions of management. It involves forecasting, setting goals, framing policies, determination of alternative courses of actions and deciding on the programs of activities to be undertaken. It helps management greatly in these processes.

**b. Help in Controlling Performances**

Management accounting devices like standard costing and budgetary control are helpful in controlling performance. The actual results are compared with predetermined objectives. It is able to find out the deviations and take necessary corrective measures.

**c. Help in Organizing**

Organizing is related to the establishment of relationship among different individuals in the concerns. It also includes the delegation of authority and mixing the responsibility. It is connected with the establishment cost center, preparation of budget, preparation of cost control account and fixing of responsibility for different functional departments.

**d. Helpful in Interpreting Financial Information**

It presents the financial information to management. It helps the management analyzing and interpreting different accounting information for selecting the most profitable course of action.

**e. Motivating Employees**

Targets are laid down for the employees. They feel motivated in achieving their targets and further incentives may be given for improving performance.

**f. Reporting to Management**

The performance of various departments is necessary to communicate regularly to the management. One of the primary functions of management accounting is to keep the management fully informed about the performance of organization. It helps management in taking proper and timely decision and action.

**g. Helps in Decision Making**

Decision-making is an important and prime function of management. Management Accounting can make the decision making process more modern and scientific by providing significant information relating to various alternatives in the terms of cost and revenue. It prepares a report on the

feasibility of various alternatives and makes an assessment of their financial implications. It also deals with a number of techniques, which could be used, in judging the profitability and feasibility of the alternative selected on the basis of cost and revenue data.

## **2.6 Advantages of Management Accounting**

The following are the advantages of the management accounting system:

- a. Management Accounting analyzes and interprets systematically the information collected from within and outside the business and communicates the result to the management. This will help in implementing managerial policy decision effectively.
- b. Management Accounting helps in comparing actual performance with the budgeted standard and reporting management any deviation for corrections.
- c. All the business activities are planned well ahead based on the accounting information applying budgeting and forecasting techniques.
- d. Management accounting techniques help in the business control its activities efficiently. It helps in utilizing its capital in an optimal way.
- e. It helps to get rid of the seasonal and cyclical fluctuations.
- f. It facilitates coordination between different departments and helps in attaining objectives of the business as a whole.
- g. It often compares the actual performance with the standard and analyzes the reason for any deviation there has and offers suggestions to take corrective measures.

## **2.7 Limitations of Management Accounting**

Though Management Accounting is a helpful tool to the management as it provides information for planning, controlling and decision making, still its effectiveness is limited by a number of reasons. Some of the limitations of its are listed as follows:

**i. Based on Accounting Information:**

Management Accounting is based on data and information provided to supply by financial and cost accounts. As such the correctness of managerial decisions will depend upon the quality of data provided by financial and cost accounts.

**ii. Lack of Knowledge:**

The use of management accounting requires the knowledge of a number of related subjects like accounting principles, statistics, economics, & principle of management.

**iii. Intensive Decision:**

Decision taking based on management accounting that provides scientific analysis of various situations will be time consuming one. Management may arrive at decision using intuitive. And intuitive decisions limit the usefulness of it.

**iv. Management Accounting is only a Tool:**

The tools and techniques of management accounting provide only information and not decision. Decisions are to be taken by the management and implementations of decisions are also done by management.

**v. Evolutionary Stage:**

Management accounting is still in developmental stage and has not yet reached a final stage. The techniques and tools used by this system give varying and differing results.

**vi. Personal Prejudices and Bias:**

The interpretation of financial information may differ from person to person depending up on the capability of the interpreter. As such the objectivity of decision may be affected by personal prejudices and bias.

### **vii. Psychological Resistance:**

Changes in traditional accounting practices and organizational set up are required to install the management accounting system. It calls for a rearrangement of personnel and their activities and framing of new rules and regulations which generally may not be liked by the people involved.

### **2.8 History of Management Accounting in Nepal**

The first king of Nepal in Lichhavi period circulated the first coin called “Manaka” during the period 464-491 A.D. Then King Mahendra Malla had circulated the coin named “Mahendra Mally” in Malla period. From that time, it can be said that transaction begins in proper way. It is also said that small number of transactions used to be performed in lichhavi and Malla periods. Some written records of accounting have been traced to the 18<sup>th</sup> century. After the unification of Nepal by the king Prithvi Narayan Shah the great in 1825 B.S., the chief of the district level soldiers used to keep the accounts of the government offices. In 1814 a book called “Laldhadda” was created for recording matters about land management and another book called “Mothdhadda” was also used for keeping accounts. These two records were important steps in the history of accounting in Nepal. “Kitab khana” was established for recording the salaries paid to government personnel. In the process of development of accounting in 1879 (1936 B S), Kharidar Gunawanta a senior official that time propounded "Syaha Shresta Pranali" which was an advanced form of an accounting and used up to 1965-66 fiscal year. A "Faram Shresta Pranali" was introduced in 1911 (1968 B S) especially to use in Terai Region. After the overthrow of Rana Regime, the first budget was started in Nepal in 1951 A.D. The auditor general's office was established in 1959. In 2017 B.S. “Bhuktani Shreshta Pranali” was adopted which was little bit based on the double entry book keeping system. After detailed study of 288 days committee made a report to introduce a new accounting system.

New accounting system based on double-entry bookkeeping is in practice for recording transactions in government ministries, departments and offices.

Management accounting protects business properties. Management accounting is possible because accounts supply the following information to the manager or the owner.

1. How much the business has to pay to the others?
2. How much the business has to recover from others?
3. How much the business has the (a) fixed assets, (b) cash in hand, (c) cash at bank, (d) stock of materials.

In order to enable the users of financial information to draw important conclusions regarding the working of a company over a number of years, it is essential that the accounting practices and methods remain unchanged from one accounting period to another. But some companies in Nepal lack consistency.

## **2.9 Review of Management Accounting Tools**

Management accounting is such techniques, which help to discharge functions like planning, organizing, staffing, directing and controlling properly and efficiently. (Paul, 1994:5)

### **2.9.1 Cost Concept**

The term cost has a wide variety of meanings. In common use, the word cost means price. But in management terminology the term cost refers to expenditure and not the price.

Cost is the amount of resources given up in exchange of some goods and services. It is the price of economic resources used as a result of producing or doing something. It is the amount of expenditure incurred on a given items which could be material, labour, machine or product.

Managers require cost information for planning, controlling and decision making. The monetary units that must be paid for goods and services are the costs. Managers want to know the cost for decision making. This is called cost objective/object. It is defined as any activity or resources for which a separate

measurement of cost is desired. Here cost allocation and cost accumulation are important factors for cost objective.

### **A) Cost Accumulation**

Cost accumulation refers to the collection of cost data through an accounting system. Usually the costs are collected under ledger accounts heading materials, labour etc. Costs are related to products and services that generate the resources of an entity. These costs can be separated into three cost components:

- i. Direct material
- ii) Direct labour
- iii) Overhead cost

Materials refer to the commodities supplied to an undertaking for the purpose of consumption in the process of manufacture or rendering service or transformation into products.

Labours refer to labour charges to activities, jobs, products or services. Labour cost includes wages, allowances, bonus, gratuity, pension, provident fund, insurance policy, medical etc.

Cost indirectly related to materials, labour and expenses are known as overhead. Such cost cannot be traced to any unit of production it represents common to several cost units or cost centers. It is aggregate of all indirect material, labour and expenses.

### **B) Cost Classification and Behavior**

Cost classification is the process of grouping cost on the basis of their common features. Costs are to be classified suitably to identify with cost centers or cost units. Classification of cost is either by on the basis of relationship or cost objectives. Some of the types of cost are as follows: variable, fixed, mixed, prime, relevant, direct, indirect, avoidable, unavoidable, opportunity, controllable or uncontrollable etc.

The cost structure consist the relative proportion of variable, fixed and missed cost. Management of any organization wants to know how costs will be affected by changes in the organizational activity. The relationship between

cost and activity is known as cost behavior which affects the managerial functions of planning, controlling and decision making. On the basis of behavior cost can be categorized into the three categories, they are:

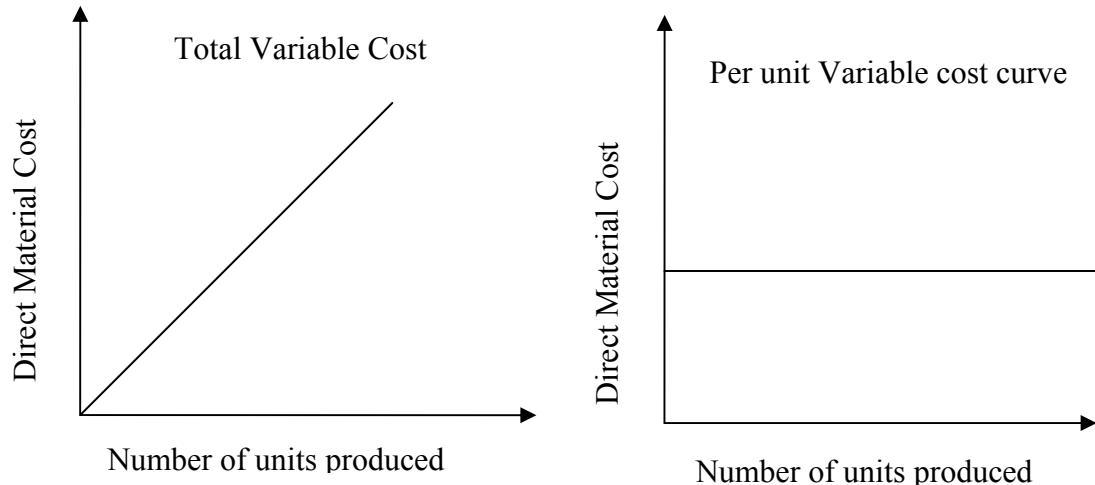
1. Variable Cost
2. Fixed Cost
3. Step Variable Cost
4. Semi Variable Cost

### 1. Variable Cost

Variable cost varies in direct proportion to changes in the activity level. Variable cost in total increase or decrease if the activity level increases or decreases but it remains constant if expressed on a per unit basis.

**Figure No. 2.4**

#### **Variable Cost**



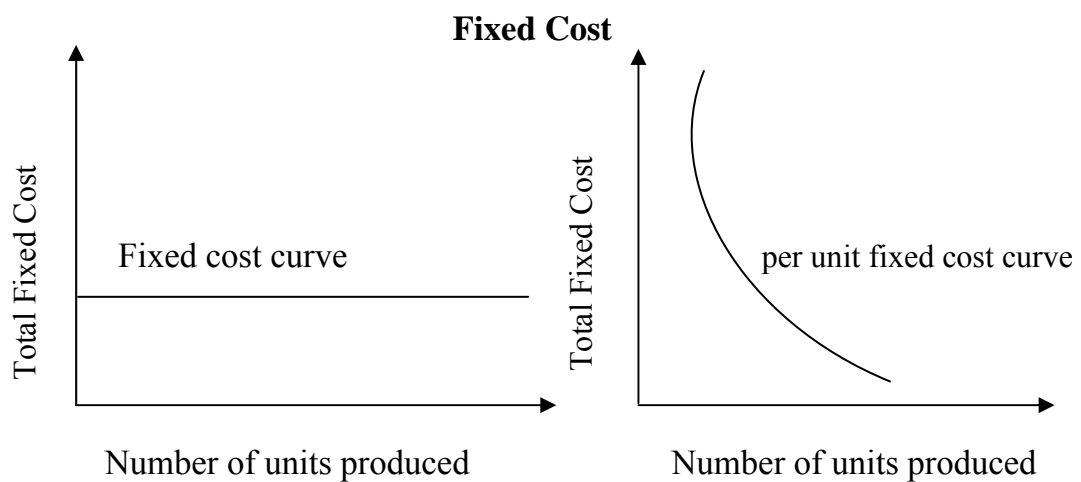
*Source: Fago, Subedi & Gyawali, 2004, P-2.3*

Such type of cost increase as the production/activity increase and decreases when production/activity volume is decreased in same proportion and direction. But per unit cost will be fixed as shown in the figure.

## 2) Fixed Cost:

If any cost remains constant in total at any activity level of activity within the relevant range, it is called fixed cost. Fixed costs remain constant in total amount despite the changes in the level of activity fixed costs per unit does changes as activity varies. Fixed cost per unit basis decreases as the level of activity increases and vice-versa. Like administrative expenses, salary, interest etc, whatever is the sales volume it would be constant.

**Figure No. 2.5**



*Source: Fago, Subedi & Gyawali, 2004, P-2.4*

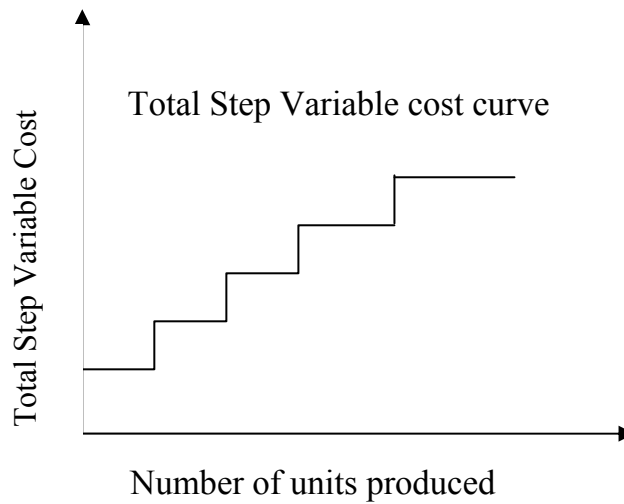
Above figure shows that the total fixed cost will be constant irrespective of activity level and fixed cost per unit will decrease with increase in level of activities.

## 3) Step Variable Cost:

Step variable cost is a cost that increases or decreases only for response to fairly wide changes in activity level. And step fixed cost remain fixed over a wide range of activity but jump to a different amount for activity levels outside that range.

**Figure No. 2.6**

**Step Variable Cost**



*Source: S. P. Munakarmi, 2003, P-2.22*

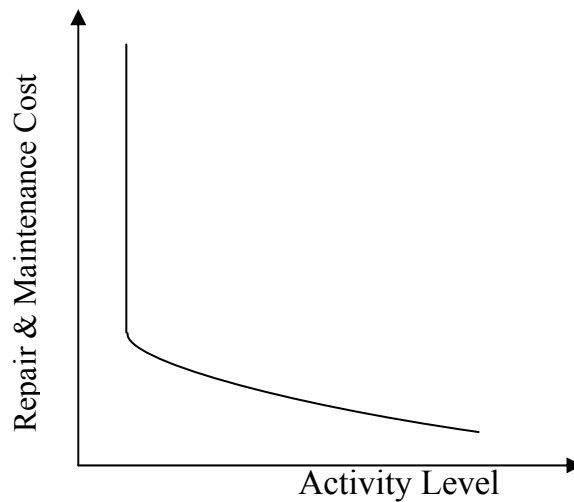
It will be constant to certain level of activity then will changed and again will be constant and so on as shown in figure. Indirect labour cost can be taken as the example of step fixed cost. It is also called moving fixed cost.

**4) Semi Variable Cost:**

Semi-variable cost is the cost or expenditures that cannot be categorized on purely fixed or variable. It is also known as mixed cost as it is hybrid cost consisting of both variables nor absolutely fixed with respects to volume of activities. It is not fixed in both total and per unit, like repair and maintenance cost.

**Figure No. 2.7**

**Semi Variable Cost Curve**



*Source: S. P. Munakarmi, 2003, P-2.23*

Following equation can be used to express the relationship between mixed cost and the level of activity.

$$y = a + bx$$

Where,

y = total mixed cost

a = total fixed cost

b = variable cost per unit activity

x = level of activity

Such type of cost should be separated into variable and fixed cost for various decision making purpose. It helps in pricing, flexible budget making, cost – volume profit (CVP) analysis, alternative decision making. Cost estimation and segregation plays important role in planning and decision making. The term ‘cost’ plays vital role not only in cost accounting rather it is equally important in planning and decision making. It has wide application, of them some are:

- ⇒ Product cost determination
- ⇒ Cost volume profit analysis

- ⇒ Budgeting
- ⇒ Cost control
- ⇒ Price determination
- ⇒ Bidding for contracts and special offer
- ⇒ Make of buy decision
- ⇒ Further processing decision

### **C) Cost Allocation**

Cost allocation is tracing and reassigning costs to one or more cost objectives such as activities, departments, customers or product. The major problem in cost allocation is whether and how indirect cost / overhead are allocated to products or services. The term cost allocation cost assignment, cost apportionment and cost distribution all describe the process of taking a given common cost and dividing it between various cost objects. Cost allocation requires the following steps are:

- Defining the cost objects
- Accumulating the common costs to be assigned to the cost objects
- Choosing a method for distributing the accumulated common costs to the cost objects.

The allocation process should be rational and systematic so that allocations are useful in product or services costing and to managers for planning, controlling and decision making.

### **D) Methods of Mixed Cost Segregations**

#### **I) High Low Method**

As the name suggested by, this method consider two level of activity cost. It considers the output at different levels. For separating semi-variable cost into fixed and variable cost, two level of activity high and low are taken with their corresponding cost. Therefore, the difference in cost and difference in activity level are ascertained. The difference in cost between highest and lowest level

of activities are divided by the difference in activity or output. The result of division is variable cost per unit. This method assumes that fixed cost trends remain constant and if there is any changes are only in variable cost. (Dangol, 2005:25)

$$\text{Variable cost per unit (VCPU)} = \frac{\text{High cost} - \text{Low cost}}{\text{High unit} - \text{Low unit}}$$

$$\text{Fixed cost per period} = \text{Total Cost} - (\text{VCPU} \times \text{Output})$$

$$Y = FC + \text{VCPU} \times \text{Units}$$

Where,

$$Y = \text{Mixed cost}$$

$$FC = \text{Fixed Cost, and}$$

$$\text{VCPU} = \text{Variable cost per unit}$$

This method is simple to use. However as it considers only two points, it may lead wrong conclusion. Only two points are not enough to define the complete cost behavior.

## **II) Least Square Method / Regression Analysis**

Least square method is a statistical method. It follows regression equation to segregate mixed cost into variable. It is an accurate and trusted method of segregation fixed and variable cost from mixed cost. In this method, first of all, variable cost per unit is calculated. Then fixed cost is calculated. (Dangol, 2005:27).

This method assumes linear relationship between dependent and independent variables. Cost depends on level of activities. As level of activities increases cost also increases. It determines regression by minimizing the sum of the squares of the veridical distances between the actual Y values and the predicted values of Y.

$$Y = a + bX$$

$$b = \frac{N\sum XY - \sum X\sum Y}{N\sum X^2 - (\sum X)^2}$$

$$a = \frac{\sum X^2 \sum X - \sum X\sum Y}{N\sum X^2 - (\sum X)^2}$$

Where,

b = variable cost per unit i.e. slope of the regression line

a = fixed cost per unit

X is a value of the independent variable

Y is a value of the dependent variable

N is the number of items in the sample

$\sum X$  is the X variable summed

$\sum Y$  is the Y variable summed

$\sum X^2$  is the X variable squared and the squares summed

$(\sum X)^2$  is the X variable summed and the sum squared

$\sum Y^2$  is the Y variable squared and the squares summed

$(\sum Y)^2$  is the Y variable summed and the sum squared

$\sum XY$  is the sum of the products of X and Y

It is more accurate than high low point method. It reduces the error. But it is complicated and time consuming. The reliability depends on the degree to which the independent variable (Activity Measure) can explain the change in the dependent variable.

### III) Analytical Method

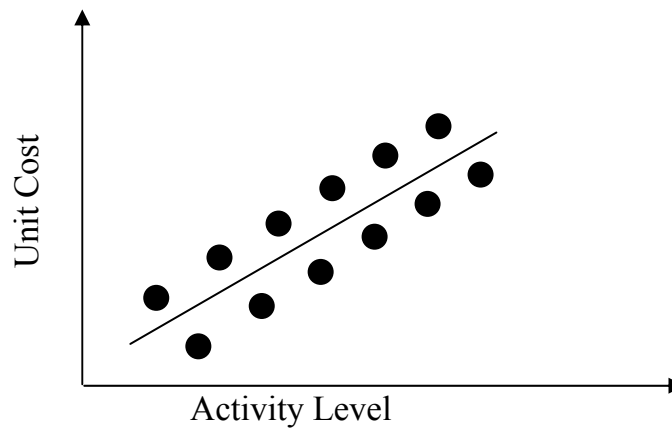
This method also known as "Degree of variability" techniques because the genesis of this method lies in measuring the extent of variability of costs on a careful analysis of each item to determine how far the cost varies with volume, variable overheads under this method computed as follows:

Variable overhead = Budgeted mixed overhead x Degree of variability

(Brown and Howard, 1964:249)

#### IV) Graphical Method / Visual fit Method

**Figure No. 2.8**  
**Graphical Method**



*Source: R. M. Dangol, 2005, P-28*

The figure shows graphical method of cost segregation. This is a simple method which uses scatter diagram. Costs of different activities are plotted then line is drawn in judgmental basis. It's subjective and results may be different with different people and estimates.

#### V) Average Method

In this method, simple average is done to segregate variable and fixed cost. Although it is quite simple method, it does not give accurate results. So, it is rarely used.

#### VI) Accounting Estimate Method

It is also a kind of judgmental method. Department manager and accounting personnel analyze each item of cost ledger and segregate them into variable and fixed cost. To segregate the mix cost, they will arrive at certain agree percentage, which will best describe the cost behavior judgmentally.

#### VII) Engineering Method

It is the new and sophisticated method, detailed analysis of work methods are done. Standard input and standard costs are determined, time and motion study is carried out them cost behavior is found out. With detailed study cost pattern

for various activity level are determined. It is highly accurate method but time consuming and expensive.

### **2.9.2 Tax Effect Analysis**

Tax is a liability to pay an amount to the state. This tax is unavoidable contribution to government. Tax plays crucial role in planning and decision making. So, it should be planned and managed properly. Tax planning is done to minimize tax burden and maximize the profit. Managers have to consider tax factor while planning business activity.

For the purpose of enhancing the investment environment in a country, the government provides different types of facilities to the business organizations. Such facilities include reduction in tax rate, providing tax holiday, investment allowance, depreciation facility etc, and tax planning means the use of all these facilities given by the government to reduce the tax liability. (Kandel, 2003:151)

Tax planning is scientific, economic, legal and ethical planning activity to use various incentives concessions allowance, rebate etc. It has wide scope, the relevant aspects are:

#### **Long term**

- ⇒ Selection of business
- ⇒ Selection of product
- ⇒ Selection of location
- ⇒ Selection of sources of capital
- ⇒ Size of business

#### **Short term**

- ⇒ Acquisition of fix assets
- ⇒ Repair and maintenance
- ⇒ Pollution control cost (PCC)
- ⇒ Research and development (R&D)
- ⇒ Stock valuation
- ⇒ Lease or buy

Analysis of tax effect provides various benefits for organization they can be summarized as follows:

- ⇒ Saves tax and increases profitability
- ⇒ Avoids unnecessary worries, tensions and administrative hassles
- ⇒ Helps in analysis of risk
- ⇒ Enhance competitive abilities etc.

### **2.9.3 Product Costing**

Product costs can be identified with goods produced or purchases for resale. Two popular methods drawn for product costing are variable costing (Direct / marginal costing) and Absorption costing (Fixed costing). The cost of product and profit there on can be ascertained using these two techniques. (Horngren, 1991:128)

#### **A) Variable / Direct Costing**

A direct costing method that includes only variable manufacturing costs. It is more accurately perceived as direct or marginal costing as it applies only the variable production costs to the product. This costing approach that fixed manufacturing overheads is regarded as an expired cost to be immediately changed against sales not as an unexpired cost to be held back as inventory of changed against sales later as a part of cost of goods sold. Further more the direct costing approach to the inventorying of costs is not confined to only direct material and labour. It also includes on indirect cost the variable manufacturing overheads as a part of product cost. (Horngren, 1991: 539)

The only thing that can affect net income under direct costing is a change in sales a change in production has no impact when direct costing method is in use.

#### **Under Variable Costing:**

Product Costs = Direct material + direct labour + variable manufacturing costs.

Product Costs = Fixed manufacturing cost + general administrative costs  
+ selling and distribution costs.

## **B) Absorption Costing**

Absorption costing includes both variable and fixed manufacturing overheads in the product costs that flow through the manufacturing accounts. It absorbs all cost necessary to production. It considers fixed manufacturing overhead as a part of product cost. On this each unit of product has to bear its total share of cost; i.e. each unit of product must bear an equitable portion of all manufacturing cost. Net income is affected by changes in production when absorption costing is in use.

### **Under Absorption Costing:**

Product costs = Direct material + direct labour + variable manufacturing costs  
+ Fixed manufacturing costs.

Product Costs = General and administration costs + selling and distribution costs.

(Bajracharya, Ojha, Goet & Sharma, 2005:144)

## **2.9.4 Standard Costing**

The word standard "means" a norm or a criterion. Standard cost is thus criterion cost, which may be used as a yardstick to measure the efficiency with the actual cost has been incurred. The difference between actual costs and pre-determined costs provides management with necessary information for controlling costs. In standard costing techniques, in order to control cost, an attempt is made to ascertain before hand what the costs should be and further attempt is made to ensure that actual costs do not exceed these pre-determined costs.

Historical costing is not an effective method of exercising cost control because it does not provide yardstick with actual performance may be compared. Historical costing is not preceded by planned costs which are a must for effective cost control. Planned cost or standard cost is a pre-determined cost based on a technical estimate for material, labour, and overhead for a selected period of time and for a prescribed set of working conditions. It is determined in advance of production of what should be cost, when standard costs are used

for the purpose of cost control, the technique is known as "standard costing". Therefore standard costing is preparation of standard costs and applying them to measure the variations from standard costs and analyzing the causes of variations with a view to maintain maximum efficiency in production.

(Jain and Narang, 1992: 5.230-5.231)

### **i) Application of Standard Costing**

#### **⇒ Budgeting**

Budgeting is numerical expression of action. The budget is prepared with detailed analysis of every activity. Direct labour, direct material and manufacturing expenses are the main components of budget. To set budget standard costing provides bases.

#### **⇒ Economic Decision**

Standard costing provides appropriate standard for each activity, which helps in making decision regarding special offer, further processing etc.

#### **⇒ Pricing Decision**

CAAN has to set price for their services. Actual outcomes are compared with estimated so it helps in fixing pricing for their services.

#### **⇒ Cost Control**

To control is compare the actual output with standard one, find deviation and take corrective action promptly. Standard costing measures the deviation, search the reasons and take corrective action to keep the outcome within acceptable limit.

### **ii) Most Widely Used Standard**

Basically, standard falls into two categories they are ideal / perfection standard and practical / attainable standard. Even though other types of standards are also in practice which is classified as current standard, basic standard and normal standard, the main two are described as follows:

### **A) Ideal (Perfection) Standard:**

Ideal standard is the expression of the absolute minimum costs possible under the best, conceivable conditions, using specification and equipment. No provision is made for wastage, spoilage, machine breakdowns and the like. This approach maintains that the resulting unfavorable variances will constantly remind managers of the perpetual need for improvement in all phases of operations. These standards might have an adverse effect on employee's motivation and they tend to ignore unreasonable goals.

(Jain and Narang, 1992: 5.234)

### **B) Practical (Current Attainable) Standard**

Currently attainable standards are cost that can be achieved by a specified level of effort. Allowances are made for normal spoilage, waste and non-productive time. The level of effort specified for the standards varies from company to company. There are two interpretations of practical standards. The first interpretation has standard set just tightly enough so that employees regard their fulfillment as highly probable if normal effort and diligence are exercised.

(Horngren, 1991: 217)

### **iii) Variance Analysis**

The deviation of actual from the standard is known as variance. Here, the deviation of the actual cost or profit or sales from the standard cost or profit or sales is known as variance. Variance analysis is helpful in controlling the performance and achieving the profits that have been planned.

When actual cost is less than standard cost or actual profit is better than standard profit, it is known as favorable variances and such a variance is usually a sign of efficiency of the organization. On the other hand when actual cost is more than standard profit is called unfavourable variance and it is indicator of inefficiency of the organization.

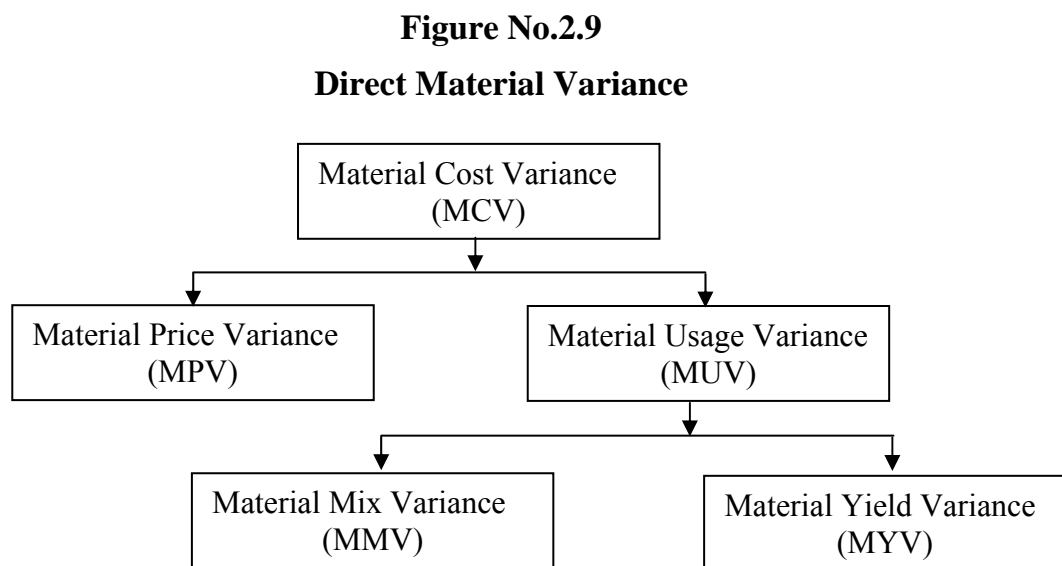
Variances can be classified into controllable and uncontrollable variances. If a variances due to inefficiency of cost center, it is said to be controllable

variances. Such variances can be corrected by taking a suitable action. On the other hand uncontrollable variance does not relate to an individual or department but arises due to external reason like increases in prices of materials. (Jain and Narang, 1992: 5.239)

A variance is the different between standers cost and actual cost. There are a number of causes which leads to a difference between the actual and standard costs. The variance caused by a change in price of materials will be described as materials price variance. A variance which increases profit is called favorable and the variance which reduces profit is unfavorable or adverse. The variance may be broadly classified as under. (Fago, Gyawali & Subedi, 2006:6.2-6.3)

#### **a) Direct Material Variance**

Direct material variances are related with the variance in cost of actual material with cost of standard materials. This variance is created due to change into rate of materials or change into consumption units of materials. Material consumption unit variance is created due to change into the ratio of two or more than two materials and change into output of final product. The material variance can be shown on the following figure.

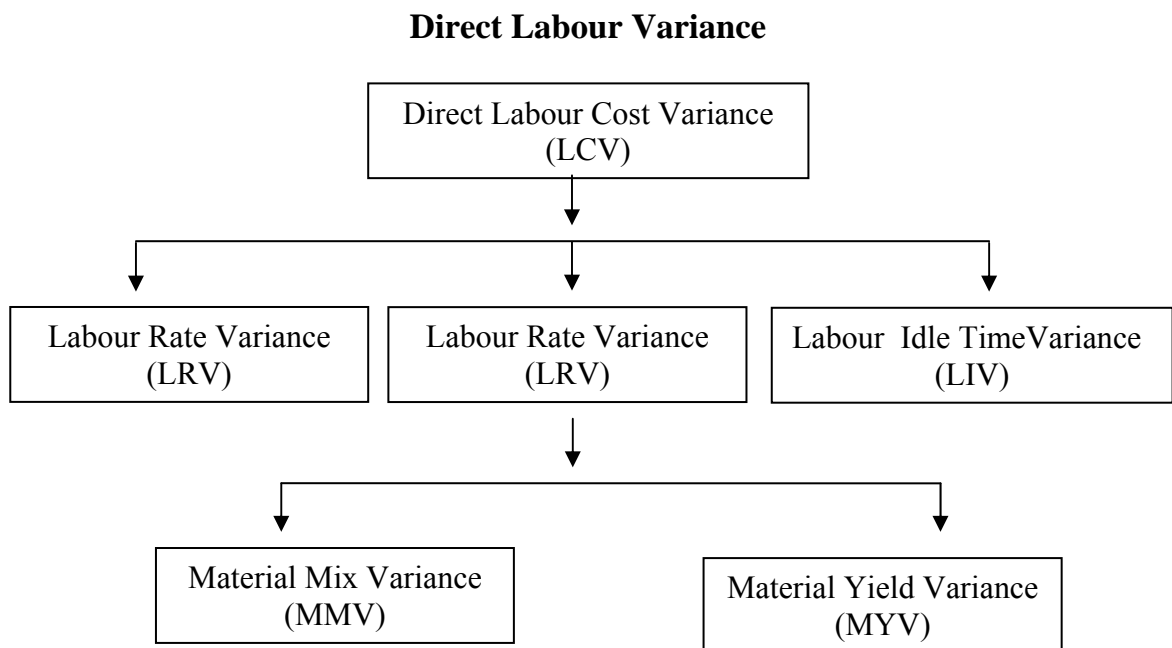


*Source: Jain and Narang, 1992, P-5.240*

## b) Direct Labour Variances

Direct labour variances are related with the variance in the cost of actual labour with cost of standard labour. This variance is creating due to change into rate of labour of change into consumption time of labour. Due cost on time of labour the cost of labour also is high. Labour efficiency variance is concerned with the variance of labour mix and labour yield variance. Labour variance can be shown the following figure.

**Figure No. 2.10**



*Source: Jain and Narang, 1992, P-5.241*

## 2.9.5 Budgeting

A budget is a detailed plan outlining the acquisition and use of financial and other resources over some given time period. It represents a plan for the future expressed in formal quantitative terms. The act of preparing a budget is called budgeting.

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 expectation

of the firm. It is one of the comprehensive approaches that have been developed to facilitate effective performance of the overall management process. It is a systematic and formalized approach for performing significant phases of management planning and control function. (Fago et.al., 2004: 5.1)

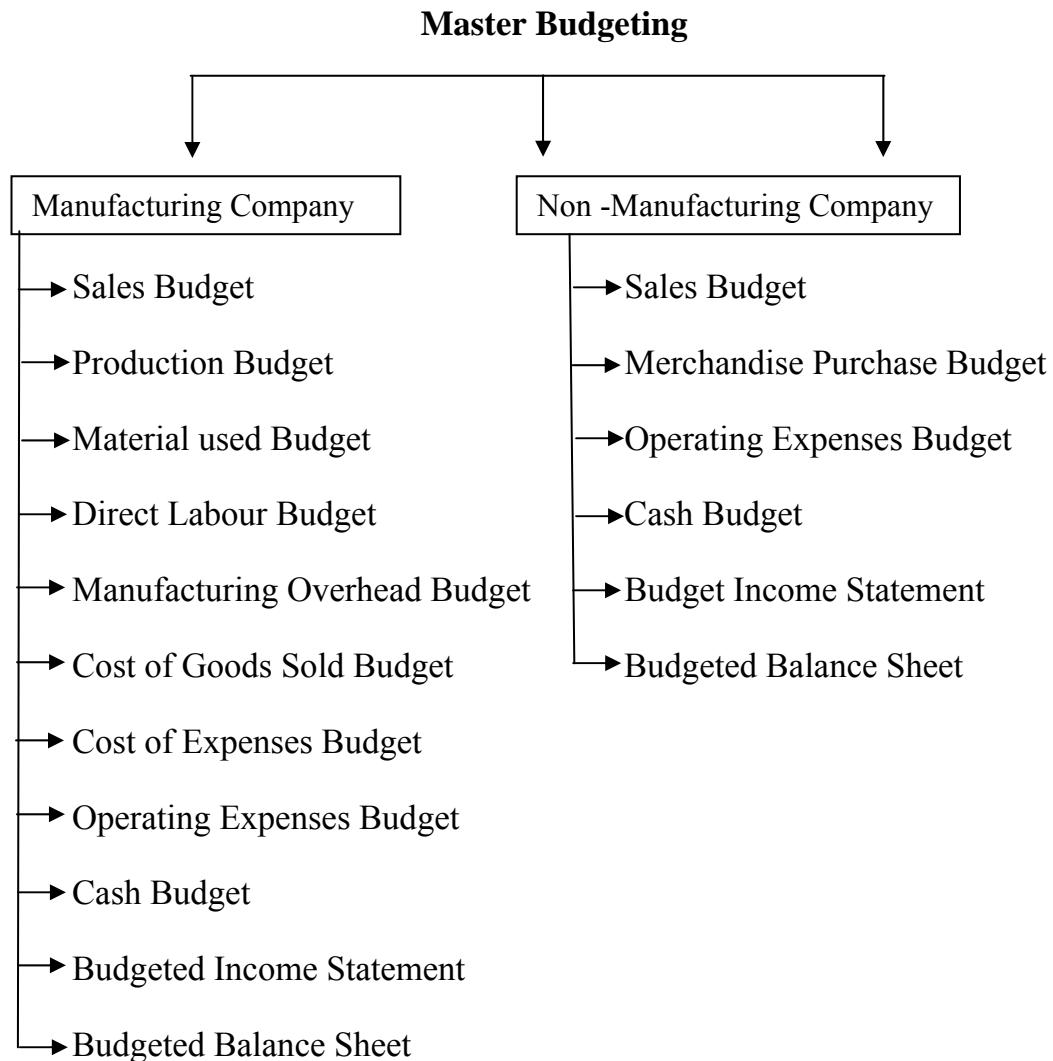
Budget is a formal statement of future plans usually expressed in monetary terms. A budget is: Essentially a plan in monetary terms to attain a given objectives.

- Prepared and approved
- Prior to defined period of time
- Usually showing planned income to be generated
- Expenditure to be incurred and
- Capital to be employed during that period

### **2.9.6 Master Budget**

Master budget is the organization's formal plan of action for forth coming budget period expressed in financial term. It is static rather than flexible. The master budget embraces an operational decisions and financial decisions. Operational (functional) budget are based for master budget where as financial budgets are also very useful and part of Master Budget.

**Figure No.2.11  
Master Budgeting**



*Source: Horngren, 1991, P-325*

However, a master budget can be dividing into two part/groups. That is operational budget and financial budget.

### **I) Operational Budget**

Operational budget are concerned with the process of preparing the budget of each physical activities/operation of a firm such a production, sales, purchasing, debtor collection and creditors payment schedule etc. In specific term and operating budget has the following term.

### **A) Sales Budget**

Sales budget is the budget, which forecasts future sales of each product in each region in each units of time. A sales budget should be prepared to shown the detail like product wise, region wise, and time sales to meet overall objectives of the organization. Sales budget is the foundation of all other budgets. Therefore, a sales plan should be realistic. A realistic sales plan incorporates such management decision as objectives, goals and strategies and translates than into planning as volume of gods, price and amount by region, product and time. Sales budget is prepared from sales forecast. A sales forecast encompasses potential sales for the entire industries as well as potential sales for the firm preparing forecast.

### **B) The Production Budget**

After sales budget has been prepared, the second step is production budget. Production budget is concern with determining the quality of the production to be produced each units of time. Production budget is prepared to coordinate the sales budget and inventory policy of organization. The production requirement for the forth coming budget period can be determined and organized in the form of a production budget sufficient goods will have to be available to meet sales needs and proved for the desired ending inventory. A portion of these goods will already exist in the form of beginning inventory. The remainder will have to produce. Thus, production can be determined by adding budgeted sales units to the desired ending inventory from the total. (Horngreen, Foster and Datar, 1999:182)

Production units = Planned sales + Closing stock – Opening stock

### **C) Purchase Budget**

In case of merchandising firm, instead of preparing production budget it would prepare merchandise purchase budget showing the amount of goods to be purchased from its suppliers during the period. The merchandise purchase

budget is in the same basic format as the production budget, except that it shows goods to be purchased rather than goods to be produced.

$$\text{Purchase} = \text{Material usage (Sales)} + \text{closing stock of raw material} \\ - \text{opening stock of raw material}$$

Purchase policy should be set for effective management and control of material. Various things should be considered while purchasing is as follows:

### **Carrying Cost**

It includes cost of storage, rent, lighting, store staffing, handling, auditing, recording etc.

### **Ordering Cost**

It includes all clerical and administrative cost of purchasing, accounting, transporting and receiving.

### **Lead Time**

It is the time period to arrive at ordered material.

### **Reorder Level**

It is the reordering level, calculated considering minimum stock level, consumption rate etc.

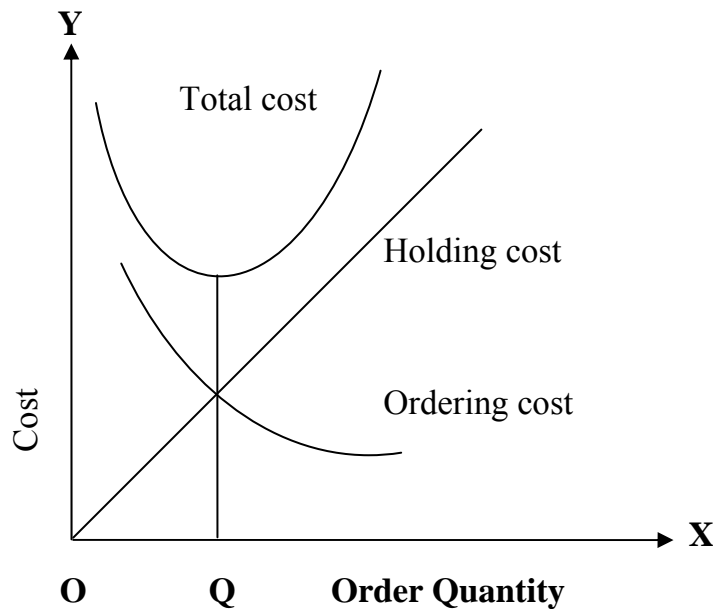
$$\text{Reorder level} = \text{Minimum level} + \text{Consumption during lead time} \\ = \text{Safety stock} + (\text{lead time} \times \text{daily consumption})$$

### **i) Economic Order Quantity (EOQ)**

How much to purchase, when to purchase is the main problem in procurement. Economic order quantity can help on this regard. It equates cost of acquisition and cost of possession. In other words, it minimizes the total inventory cost.

**Figure No. 2.12**

**EOQ**



Source: S. P. Munakarmi, 2003, P-2.11

$$EOQ = \sqrt{\frac{2AO}{C}}$$

Where,

A= Annual Requirement

O= Average cost of placing an order

C= Annual carrying cost of carrying one unit in inventory

Total Inventory Cost = Ordering Cost + Total carrying cost – Discount

$$= (O \times A / \text{Order size}) + (C \times \text{Order size} / 2) - \text{Discount}$$

**ii) Just in Time (JIT) System**

It is new emerging concept, to avoid loss and perfect control. In this philosophy purchase is made just when need. It is demand pull, Japanese philosophy of purchasing in small lots with frequent deliveries. In this method purchase is entirely customer's demand driven. Thus, it minimizes minimizing the wastage (like waste of waiting, transportation, stocks, motion, processing itself, making

defective etc) and inventory holding cost. But perfect anticipation of need and reliable sources of supply is must. Reliable and geographically near supplier should able to supply on time with uniform quality. JIT, system works with perfect employee participation, industrial engineering, continuing, improvement, total quality control and small lot size. The main advantages and Limitation of JIT systems are as follows:

**Advantages of JIT system:**

- ⇒ Reduces the amount of money tied up in inventories
- ⇒ Reduces inventory holding cost
- ⇒ Saves space as not required to maintain large inventories
- ⇒ Makes possible to dictate quality problems timely
- ⇒ Increases labours efficiency
- ⇒ Minimizes the wastage

**Limitation of JIT system:**

- ⇒ Wrong estimation may lead the to misdirection
- ⇒ Risk of not supplying on time
- ⇒ Risk of not supplying quality materials
- ⇒ Efficient inspection of supplies is needed

**D) Direct Material Budget**

After production budget direct material budget should be prepared to show the materials that will be required in the production process. Sufficient raw materials will have to be available to meet production needs and to provide for the budget period part of this raw materials requirement will already exist in the form of a beginning raw material inventory. The remainder will have to be purchased from supplier.

Material usage budget = Production budget × Standard raw material usage rate per unit

Cost of material used = Planned production units × Standard material usage per unit  
× Price per unit of raw material.

### **E) Direct Labour Budget**

The direct labour budget is also developed from the production budget. Direct labour requirements must be computed so that the company will know whether sufficient labour time is available to meet production needs. Just knowing in advance, the company can develop plan to adjust the labour forces as the situation may required. Direct labour requirement can be computed by multiplying product to be produced by each period by the number of direct labour hours required to produce a single unit. Many different types of labour may be involved. If so, then computation should be type of labour needed. The hour of direct labour time resulting from these computations can then be multiplied by the direct labour cost per hour to obtain budgeted total direct labour cost.

Direct Labour Cost = Production × standard usage rate × wages rate

### **F) The Manufacturing Overhead Budget**

The manufacturing overhead budget provides a schedule of all costs of production other than direct material and direct labour. It is an aggregate of indirect expenses which includes both variable, fixed and semi variable overhead. i.e rent and rates, power, fuel, stationary, printing, canteen, medical, repair, entertainment etc. These costs should be broken by cost behaviour for budgeting purposes and a predetermined overhead rate developed. This rate will be used to apply manufacturing overhead to units of products throughout the budget period.

### **G) The Selling and Administrative Overhead**

The selling and administrative expenses overhead budget contains a listing of anticipated expenses for the budget period that will be incurred in areas other than manufacturing. The budget will be made up of many smaller individuals submitted by various persons having responsibility for cost control on selling and administrative matters. If the number of expenses items is very large, separate budgets may be needed for the selling and administrative functions.

## **II) Financial Budgets**

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

### **A) The Budgeted Income Statement**

The budgeted income statement is one of the key schedules in the budget process. It is concern with forecasting total assets and properties and capital and liabilities of the company by time period. It is the document that tells how profitable operations are anticipated to be in the forth coming period. After it has been prepared, it stands as a benchmark against which subsequent company performance can be measured. (Garrison, 1985: 313)

### **B) The Cash Budget:**

Cash budget is the details showing cash receipt, cash disbursement and the balance cash. The cash budget is composed four major sections.

- The receipt sections
- The disbursement sections
- The cash excess or deficiency sections
- The financing sections

The receipt section consists of the opening balance of cash added to whatever is expected in the way of cash receipts during the budget period. The major sources of receipts will be from sales. The disbursement sections consist of cash payments that are planned for the budget period. Those payments will include raw material purchase, direct labor payments, manufacturing overhead cost and so on. Other cash disbursements are income, tax, capital, equipment, purchase, dividend payment and so on.

The cash excess or deficiency sections consist of the difference between the cash receipts section totals and the cash disbursement section totals. If a deficiency exists the company will need to arrange for the borrowed finds from

its bank. If excess exists, funds borrowed in previous period can be repaid for the idle funds can be placed in short term investment.

The financing sections provide a detailed account of the borrowing and repayments projected to take place during the budget period. It also includes a detail of interest payment that will due on money borrowed.

The cash budget is to ensure that sufficient cash is available at all time to meet the level of operations that are outlined in the various budget. Cash budget can help a firm to avoid cash balances that are surplus to its requirement by enabling management to take steps in advance to invest the surplus cash in short term investments.

### **C) Budgeted Balance Sheet:**

The budgeted balance sheet is developed by beginning with the current balance sheet an adjusting it for the data contained in the other budgets. (Garrison, 1985: 315)

The balance sheet is the final document in the master budget and even in financial record keeping. The balance sheet shows the final balance of all the account titles. So it can be said list of the ending balance of all assets, liabilities and equities.

### **2.9.7 Zero Base Budgeting**

Zero base budgeting is a method of budgeting in which managers are required to start from zero level every year and justify all costs as if the programs involves were being initiated for the first time. By this means, no costs are viewed as being on going in nature. The manager must start at the ground level and present justification for all costs in the proposed budget, regardless of the type of cost involved.

Zero base budgeting differs from traditional budgeting, in which budgets are generally initiated on an incremental basis, that is, manager starts with last year's budget and simply adds to it (or subtract from it) according to anticipated needs. The manager does not have to start at the ground each year and justify

on going costs (such as salaries) for existing programs. (Gautam & Bhattarai, 2004: 317)

Zero base budgeting though is not really new concept, only the review of the departmental costs. Manger's are in ad-vocation since long time in depth review of departmental cost. This review should be done annually, zero base budgeting lays down where as critics of zero base budgeting says it should done every five years. The only difference is the frequency of review of departmental cost.

(Garrison, 1985: 317)

### **2.9.8 Activity Based Budgeting**

Activity Based Budgeting is a technique of allocating manufacturing overheads to products using multiple application rates and a wide variety of costs drivers in multi-product firm. It maintains the relationship between overheads costs and the activities that cause them. The manufacturing costs are based up on certain cost driver and the increasing and decreasing ratio of costs depends upon the quantity of cost driver. (Horngren, Foster & Datar, 1999: 190)

Activity Based Budgeting applies the principles of activity based costing. It focuses budgeted cost of necessary activities needed for products and services. Activity Based Budgeting is a process of developing master budget using information obtained from activity based costing. Following procedure is taken for Activity Based Budgeting.

- Determination of goods and services to be produce for customers in the future.
- Determination of necessary activities needed to produce predetermined quantities of goods and services.
- Determination of resources and cost required.
- Estimation of each resources quantity.
- Take action to adjust the capacity of resources.

### **Advantages of Activity Based Budgeting:**

- More realistic budget
- More useful budget due to its clear nature of expenses and cost change with change in activity level
- Activity Based Budgeting explain the reasons of budgeting because it uses the activity based costing information which explains the relationship between cost drive, cost and resources consumed. (Fago, 2004: 366)

### **2.9.9 Flexible Budget**

A budget prepared at different level of activity is a flexible budget. Flexible budget will furnish the budgeted figure for any level of activity, which a company may actually attain. It reflects costs, revenues and profits at the various level budgeted activities. It is also called a variable budget, step budget, sliding scale budget, expenses formula budget, dynamic budget, expenses control budget and so on. It is a budget permits revision of estimates of operating cost and profit, which changes in sales or production volume. This budget is prepared on the basis of time, demand of product, and cost of product. In static budget it is prepared at a single level of activity with prospect of modification in the light of the changed circumstances is fixed / static budget. Flexible budget is not based on only one level of activity rather it shows wide range of estimates. Within relevant range of activity, it helps in control of overheads setting bases for control.

$$\begin{aligned}\text{Overheads (Y)} &= \text{Fixed cost} + \text{Variable cost (per activity)} \times \text{activity} \\ &= \text{FC} + \text{UVC} \times \text{activity}\end{aligned}$$

In above formula after ascertaining the fix cost and unit variable cost (UVC), it can be calculated overheads for different activities. So it is automatically geared to changes in volume.

It is difficult to forecast the future activity accurately, which demands some degree of changes to cope within the business environment. In the case a

flexible budget can be used comfortably to reduce the margin of deviation between estimation and actual performance. A flexible budget enables an organization to estimate the expenditure at different level activity. It is used as a yardstick to measure the efficiency at the level of performance achieved and tools for controlling the cost. The flexible budget approach says "Give me any activity level you choose, and I will provide a budget tailored to that particular level". Under flexible budgeting, budgets are drawn for a series of possible sales and production volumes including the actual. In the beginning of the period, budgets are constructed for a no. of alternative production volume to take case of the changing market conditions and government policies. Usually flexible budgets are prepared for minimum of three activity levels.

- The most optimistic
- The most pessimistic
- The most likely

(Fago, Subedi & Gyawali, 2004:7.1-7.2)

### **2.9.10 Capital Budgeting**

Capital budgeting is the process of investment evaluating, planning and financing major investment projects of an organization. The capital budgeting decision involves a current outlays or services of outlays of cash resources in return for an anticipated flow of future benefits. In other word, the capital budgeting is an evaluation system of capital expenditure decision which involve current outlays but are likely to produce benefits over period of time longer than one year. These benefits may be either in the form of increased revenue or reduction in costs. So, it includes addition, disposition, modification and replacement of fixed assets.

Capital budgeting is the process of planning and controlling the strategic (long term) and tactical (short term) expenditure for expansion and contraction of investments in operation (fixed) assets. It is the use of funds to obtain operational assets that will (a) help to earn future revenues or (b) reduce future cost. (Welsch, Hilton & Gordon, 1993: 394)

Capital budgeting is investment decision – making as to whether a project is worth undertaking or not. Capital budgeting is basically concerned with the justification of capital expenditures. It may be decision regarding replacement, expansion diversification etc. Characteristics of capital budgeting is as follows:

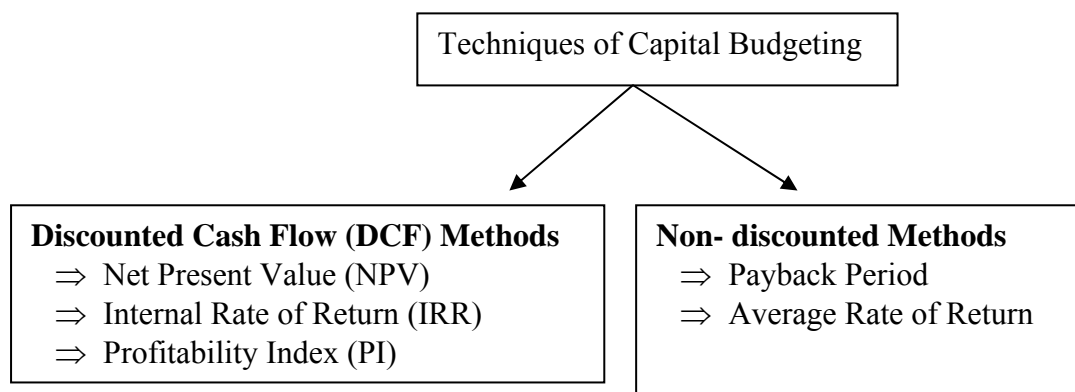
- ⇒ Long term investment
- ⇒ Bulk amount of investment
- ⇒ Effect of time value of money
- ⇒ Risk and uncertainty

**Procedure of Capital budgeting are:**

- ⇒ Estimating the project’s net cash flows
- ⇒ Measurement of benefit of the investment
- ⇒ Evaluation of risk associated with the investment

For this purpose numerous methods of measuring the economic value (investment worth) of an investment can be found in management accounting and financing. The methods of appraising capital expenditure proposal can be classified into two broad categories.

**Figure No. 2.13**  
**Capital Budgeting Techniques**



*Source: Welsch, Hilton & Gordon, 1993, P-395*

**I) Discounted Cash Flow (DCF) Methods**

The discounted cash flow methods explicitly recognize the effects of the time value of money and in that way measure economic value or investment worth as a true interest rate. The basic concept is that investment cost is cash out flow

at a present value, and the related cash inflows necessarily are future values. These future cash inflows must be discounted to their present values so that they can be appropriately subtracted, added and compared with investment cost. The true rate of interest for any investment is the rate that will discount the future net cash inflows to a sum that exactly equals the investment cost. Discounting cash flows covered following methods:

#### **A) Net Present Value Method (NPV)**

Net present value is the method of evaluating capital investment proposals by finding the present value of the net cash flows, discounted at the rate of return required by firm. NPV method is important because it gives a direct measure of the amount benefit to the firm's shareholder. 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, target rate, hurdle rate, discount rate, cut-off rate or cost of capital. Then all expected cash flows from the project are discounted to the present, using this minimum desired rate. If the sum of the present values of the cash inflow is zero, or positive, the project is desirable and if negative it is undesirable. When choosing among several investments, the one with largest net present value is the most desirable. (Horngren, 1991: 392)

This method requires determination of three items for a project;

- Initial cash outflows
- Future net cash inflows
- Target rate of return (Minimum required rate of return)

#### ***Decision Criterion***

Thus NPV rules are

- Accept if  $NPV > 0$
- Reject if  $NPV < 0$
- May accept if  $NPV = 0$

Using the NPV methods, project would be ranked in order of net present values; that is first rank will be given to the first priority with highest positive net present value and so on.

**Advantages:**

- ⇒ Use of cash flow
- ⇒ Considers the time value of money
- ⇒ Considers with goal of shareholder wealth maximization

**Disadvantages:**

- ⇒ Sensitive to discount rates
- ⇒ Complicated

**B) Internal Rate of Return (IRR) Method**

The internal rate of return is defined as that discount rate which forces the present value of a projects expected cash inflows to equal to zero, and that value of IRR is the internal rate of return.

IRR techniques is also known as yield on investment marginal efficiency of capital, marginal productivity of capital, marginal efficiency of capital rate of return, time adjustment of return and so...on. Like the present value method this method also considers the time value of money by discounting the cash streams. The internal rate of return is usually the rate of return that a project earns. It is defined as the discount rate, which equates the aggregate Present Value (PV) of the net cash in flows (CFAT) with aggregate Present Value of the cash out flows of a project. In other words, it is that rate which gives the project net present value zero. It is determined on the basis or trial and error. (i.e. inflows = PV investment costs) IRR has following advantages & disadvantages:

**Advantages of Internal Rate of Return:**

- ⇒ Use of cash flow
- ⇒ Recognized the time value
- ⇒ Consistent with the firm's goal of shareholder wealth maximization

- ⇒ It avoids the necessity of selecting a target or minimum rate of return for discounting
- ⇒ The true rate of return on an investment is computed
- ⇒ It bases preferences on the true rate of return (rather than on a amount difference called net present value) and
- ⇒ It does not have the reinvestment burden.

**Disadvantages of Internal Rate of Return:**

- ⇒ Possibility of multiple IRR
- ⇒ Can involve tedious calculations

***Decision criterion:***

Thus the IRR decision rules are:

- Accept if  $r > k$  i.e. the project having IRR greater than required rate of return is preferable. In case of mutually exclusive projects the project with higher IRR should be accepted.
- Reject if  $r < k$
- May accept if  $r = k$

Note:  $k$  is known as the required rate of return, cutoff or hurdle rate.

**C) Profitability Index**

Yet another time adjustment capital budgeting is profitability index. The profitability index is similar to net present value approach. Profitability index measures present value of return per rupee invested. While the NPV shows the present value of return in lump sum. A ratio of total present value of cash flow and initial cash outlays is called profitability index. It is also called benefit – cost ratio. The profitability index is calculated under;

$$\text{Profitability index} = \frac{\text{Total present value (TPV)}}{\text{Net cash outlays (NCO)}}$$

***Decision criterion:***

Thus the NPV and PI approaches give the same result regarding the investment proposals.

- Accept if  $PI > 1$
- Reject if  $PI < 1$
- May accept if  $PI = 1$

**Disadvantages of Profitability Index:**

- ⇒ Not easy to determine discount rate
- ⇒ Ranking may be different with different discount rate

**II) Short-Cut and Simple Methods/Non Discounted Cash Flow Method**

This is the traditional method of measuring investment worth. This method does not consider the time value of money. This method does not evaluate the future money with present value. The following techniques are applied under this method.

**A) Payback Period (PBP):**

The Payback Period is very simple and traditional method of measuring investment worth. The Payback Period defined as the expected number of years required to recover the original investment. This method answer the questions; how many year will take for the cash benefit to pay the original cost of an investment, normally disregarding salvage value cash benefit here represents, CFAT, ignoring interest payment. Thus PBP measures the no. of requires for CFAT to pay back the original outlays required in investment proposal.

There are two way of calculating PBP. The first method can be applied when the cash flow of the project is equal during the period of project's life i.e. CFAT are uniform. In such situation the initial cost of the investment is divided by the constant annual cash flow.

### **In case of even cash flows**

$$\text{Payback Period (PBP)} = \frac{\text{Investment}}{\text{Constant annual cash flow}}$$

### **In case of uneven cash flows:**

$$\text{Payback Period (PBP)} = \text{Minimum Year} + \frac{\text{Amount to be recovered}}{\text{Cash flow During the Year}}$$

Where,

Amount to be recovered = Investment i.e. Initial Outlay – Minimum year's cumulative cash flow

The second method is used when the annual CFAT are unequal. In such situation, PBP is calculated by the process of cumulating cash inflows till the time when cumulative cash flows become equal to the original investment outlays.

### ***Decision criterion:***

The PBP can be used as a decision criterion to accept or reject investment proposal. If the annual pay back is less than the pre determined payback, project would be rejected. Alternatively the payback can be used as a ranking method. When mutually exclusive projects are under consideration, they may be ranked according to the length of the Payback Period.

### **Advantages of Payback Period:**

- ⇒ Use of Cash flow
- ⇒ Easy to calculate and understand
- ⇒ Emphasizes liquidity

### **Disadvantages of Payback Period:**

- ⇒ Ignore the time value of money
- ⇒ Ignore cash flows occurring after the payback period
- ⇒ Not a measure of profitability

## **B) Average Rate of Return:**

The average rate of return (ARR) method of evaluating proposed capital expenditure is known as the accounting rate of return. It is based upon accounting information rather than cash flows. There is no unanimity regarding the definition of the rate of return. There are number of alternatives methods for calculating the ARR. The most common usage of the average rate of return (ARR) expresses it as follows:

$$\text{ARR} = \frac{\text{Average annual profits after taxes}}{\text{Average investment over the life of the project}}$$

The average profit after taxes are determined by adding up the after tax profits expected for each year of the projects life and dividing the result by the number of year. In case of annuity, the average after tax profits is equal to any year's profits.

### ***Decision criterion:***

With the help of the ARR, the financial decision maker can decide whether to accept or reject the investment proposal. As an accept reject criterion, the actual ARR would be compared with a pre-determined of a minimum required rate of return or cut-off rate. A project would qualify to be accepted if the actual ARR is higher than the minimum desired ARR, other wise; it is liable to be rejected.

### **Advantages of Average Rate of Return:**

- ⇒ It is simple to understand and use
- ⇒ It cans be easily calculated with the help of accounting data
- ⇒ It uses the entire streams of cash flows

### **Disadvantages of Average Rate of Return:**

- ⇒ It uses only accounting profit
- ⇒ It ignore the time value of money
- ⇒ It ignores the length of projects lives
- ⇒ It ignores reinvestment of the profit

### **2.9.11 Analysis of Risk and Uncertainty under Capital Budgeting**

Risk is a factor, which is created due to inability of decision maker to make actual forecast. Generally, management does not prefer higher risky projects. The analysis of risk and uncertainty is an important element in the capital budgeting decision. The risk is the variability of the actual returns from expected returns in terms of cash flows. The capital budgeting decision is based on the benefits derived from the project and those benefits are measured in terms cash flow. The estimation of future return is done on the basis of various assumptions. The return of project in terms of cash inflows depends upon the factor like price, sales, volume, effectiveness of the advertisement campaign, competition, cost of raw materials, manufacturing costs and so ... on. Those factors depend upon the variable like the status of the economy, rate of inflation etc. The actual return in term of cash inflow may be different than the estimated cash flow. This is technically referred as a risk. The term risk in the investment decision may be defined as the differences in the actual return from the project in the future over its working life in relation to the estimated return as forecast at the time of the initial capital budgeting decision.

The decision situation with reference to risk analysis in capital budgeting decision can be divided into (1) uncertainty (2) risk (3) certainty.

The main distinction between risk and uncertainty is that risk involves the situation in which the probabilities of the particular event for future activities are already know but under uncertainties those probabilities are not already known. The term risk and uncertainty will be used interchangeably to refer to an uncertain decision making situation.

In the conclusion, risk with reference to capital budgeting results from the variation between the estimated and actual returns. The greater the variability between the two considers as a highly risky projects and lower the variability between the two is considered as lower risky project. (Fago, Subedi, & Gyawali, 2004:12.26)

For analysis of risk and to make the reliable decision regarding capital budgeting, the following techniques are used:

**I) Traditional Techniques for Risk Analysis:**

***A) Risk Adjusted Discount Rate (RAD):***

The risk adjusted discount rate (RAD) approach is one of the simplest and the most widely used methods for incorporating risk into capital budgeting decision. Under this method, the amount of risk inherent in a project would have relatively high discount rates and relatively safer projects would have relatively lower discount rates. The risk-adjusted discount rates presumably represent the differential risk in different classes of investment. The rationale for using different RAD's for different project is as follows. The cost of capital (k) is the minimum acceptable required rate of return.

***Decision criterion:***

This approach can be used with both the NPV and IRR

- i. If NPV is possible by using the risk adjustment rates proposal would be qualified for acceptance.
- ii. If NPV were negative by using the risk adjusted rates proposal would qualified for reject.

***B) Certainty Equivalent Co-efficient:***

Under this method, the risky ness of the project is taken into consideration by adjusting the expected cash flows and not the discount rate. This method does not consider risk premium in discounting process. For analysis of risk under the certainty equivalent co-efficient method, two types of cash flow of a project is estimated, which are risky cash flow and risk less cash flow.

$$\text{Certainty equivalent coefficient of variance} = \frac{\text{Risk less cash flow}}{\text{Risky cash flow}}$$

(Fago, Subedi & Gyawali, 2004:12.29)

***Decision criterion:***

The decision criterion here can either be the NPV methods or the IRR method. Using the NPV method, the proposal would be accepted if the NPV of the certainty equivalent cash inflow is positive, otherwise it would be rejected. If the IRR method is employed, the internal rate of return ( $r$ ), that equates the present value of certainty equivalent cash inflows with the present value of the cash inflows, would be compared with the risk free discount rate. As the practice with this method, if  $r$  exceeds the risk free rate, the investment project would be accepted. If not, would be rejected.

**C) Sensitivity Analysis:**

The reliability of the NPV and IRR of the project depends upon the reliability of the forecasts of variable on estimated cash inflows. It involves a number of possible outcomes in evaluating a project for providing to the decision makers on different outcomes. The sensitivity analysis provides different cash flow estimate under three assumptions.

- The worst (the pessimistic / conservative)
- The expected (the most like / moderate)
- The best (the most optimistic / aggressive)

The large in the difference between the pessimistic and optimistic cash flow is considered as riskier project and vice-versa. The accepting or rejecting the projects depends upon the attitude of decision maker toward the risk.

Sensitivity analysis enables managers to assess how responsive the NPV is to changes in the variable, which are used to calculate it. The application of sensitivity analysis can indicate those variables to which the NPV is most sensitive, and the extent to which these variables may change before the investment result in a negative NPV. Sensitivity analysis indicates why a project might fail. Management should review any critical variables and also pay particular attention to controlling those variables to which NPV is

particularly sensitive, once the decision has been taken to accept the investment.

## **II) Statistical Techniques for Risk Analysis.**

### **A) Assignment of Probabilities:**

The concept of probability is for incorporating risk to evaluate capital budgeting proposals. The probability distribution of cash flows over time provides information about the expected value of return and the dispersion of the probability distribution of possible returns. On the basis of the information an accept-reject decision can be taken.

The application of this theory in analyzing risk in capital budgeting depends upon the behaviour of the cash flows, from the point of view of behavioural cash being independent or dependent. The assumption that cash flows are independent over time signifies that future cash flows are not affected by the cash flows in the preceding or following year.

### **Decision Criterion**

1. NPV must be positive to accept the project
2. IRR must be greater than cost of capital to accept projects

### **B) Standard Deviation**

Standard deviation measures the tightness, or variability of a set of outcomes. Standard deviation is defined as the square roots of the mean of the squared deviation where is the difference between an outcomes and the expected value of all outcomes.

Greater the standard deviation is said the higher degree of risk and lower the standard deviation is said the lower degree of risk. The project, which has higher degree of standard deviation is not generally accepted and vice-versa.

## **C) Variance Analysis**

### **i. Co-efficient of Variance:**

Co-efficient of variance (C.V.) standardized measure of the risk per unit of return, calculated as the standard deviation divided by the expected return.

$$C.V. = \frac{\text{Standard deviation}}{\text{Expected cash flow}}$$

Higher the co-efficient of variation is considered as the higher degree of risk and lower the co-efficient of variation is considered as the lowest degree of risk. (Weston, 1996:190)

### **ii. Decision Tree:**

The decision tree (DT) approach is another useful alternative for evaluating risky investment proposals. The outstanding feature of this method is that it takes into account the impact of all probabilistic estimates of potential outcomes. In other words, every possible outcome is weighted in probabilistic terms and then evaluated. The DT approach is especially useful for situations in which decisions at one point of time also affect the decisions of the firm at some later date. Another useful application of the DT approach is for projects which require decisions to be made in sequential parts.

A decision tree is a pictorial representation in tree form which indicates the magnitude, probability and inter-relationship of possible outcomes. The format of the exercise of the investment decision has an appearance of a tree with branches and, therefore, this method is referred to as the decision tree method. A decision tree shows the sequential cash flows and the NPV of the proposed project under different circumstances.

## **2.9.12 Financial Statement Analysis**

Financial statements are annual documents prepared by the organization. They are prepared for periodical review on the progress made and results achieved during the period under review. They generally refer to income statement and balance sheet drawn by business at the end of each financial year. The analysis

of financial statements is done to obtain a better insight into a firm's position and performance. Generally the creditors, investors, management regulating authorities are interested in analysis of the financial statements. (Munankarmi, 2002: 462)

Financial statement analysis is important not only for the firm's managers but also for the firm's investors and creditors. Internally; financial manager use the information provided by financial analysis to make financing and investment decision to maximize the firm's value. Externally, creditors and stockholders use financial statement analysis to evaluate the attractiveness of the firm as an investment by examining its ability to meet its current and expected financial obligation. (Weston and Brigham, 1996: 78)

Basically Ratio Analysis is the technique used in financial statement analysis.

#### **I) Ratio Analysis**

The ratios are designed to show relationships between financial statement accounts within firms and between firms. Translating accounting numbers into relative value, or ratio, allows comparing the financial position of one firm to another firm, even if their sizes are significantly different. It is used for measuring liquidity, solvency, profitability and management efficiency of a firm equally useful to the internal management, prospective investors, creditors and outsider.

Ratio analysis is a tool of scanning financial statement of the firm. Through this, one comes to know that in which areas of the operation the organization is strong and in which areas it is weak. Ratio analysis of the business enterprises centers of measuring or guide concerning the expected capacity of the firm to meet its future financial obligations or expectations. It is a mathematical relationship between two related item expressed in quantitative forms. The relationship can be expressed as percentage, fraction and proportions of number.

It is a powerful tool of financial analysis. For the purpose of ratio analyses following two types of tools are used:

i. Trend Analysis

It is comparison of present ratio with past and future ratio of the company

ii. Comparison with Others

It is comparison of ratio of firm with those of similar firms' average at the same point in time.

**The main objectives of ratios analysis are as follows:**

1. The main objective of ratio analysis is to analyze the firm's relative strength and weakness.
2. It evaluates the financial condition and performance of the firm.
3. It paves way for useful interpretation of financial statements.
4. It helps in suggesting corrective measures for the betterment of the firm.

Generally, ratios are calculated from the financial statements by the parties' such as creditors, investors, financial institutions and management of the firm to know their field of interest. Several ratios calculated from the accounting data can be grouped into various classes according to financial activities or functions to be evaluated. Mainly the ratio can be classified for the purpose of exposition into four board groups.

**A) Liquidity Ratio**

Liquidity ratio is the pre-requisite for the survival of a firm. It shows the relationship of a firm's cash and other current assets to its current liabilities. It measures the short-term solvency position of the firm. The importance of adequate liquidity in the sense of the ability of a firm to meet current or short term obligations, when they become due for payment to the short-term creditors of a firm.

### **B) Leverage Ratio:**

Leverage ratio can be said as financial leverage which shows long term solvency position of the firm in its ability to assure the long term creditors with regard to periodic payment if investors during the period of the loan and payment of principal on maturity or in pre-determined installments at due dates. It helps to know the relationship of long-term debt with shareholders fund or total capital.

### **C) Profitability Ratio:**

Profitability ratio is an indicator of efficiency of the business organization. Profitability ratio measures the managements overall efficiency as shown by the return generates from sales and investment. Higher profitability shows the efficiency of the management.

### **D) Activity Ratio:**

Funds of creditors and owners are invested in various assets to generate sales and profit. It is said that “the better the management of assets, the larger the amount of sales”. Activity ratios are employed to evaluate the efficiency with which the firm manages the utilization its assets. These ratios are called turnover ratios, because they indicate the speed with which assets are being converted or turned over into sales. Activity ratio, thus involves a relationship between sales and assets. A proper balance between sales and assets generally reflects that assets are managed well several activity ratios can be calculated to judge the effectiveness of assets utilization. (Pandey, 1997: 119-123)

### **2.9.13 Cash Flow Analysis**

All business activities are carried with cash and all profitable activities must result in net inflows of cash. It is therefore useful to establish activities must result in a net inflow of cash. The quantum of the flows of cash into business is as a result of operations and other transactions. It should be remembered that cash inflow and profit are often different. It is possible that in a business

suffering a loss, there may be still an increase in cash because of trading operation. (Gupta, 1997:30.2)

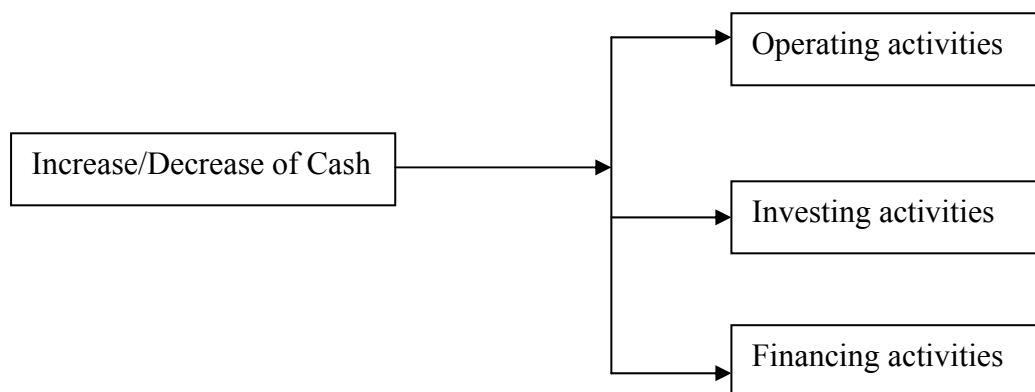
Cash flow analysis is done through preparing cash budget. Cash as important current asset should be managed carefully. Though it is zero earning assets, it is held by the firm with different purposes such as:

- Transaction motive
- Precautionary motive
- Speculative motive

A cash flow basically includes two parts cash inflows and cash outflows. Cash inflows arise from transactions such as cash sales, collection of accounts and notes receivable, interest received on investment, sales of capital assets and miscellaneous income sources. While cash outflow arises from payment of material, direct labour, expenses, capital additions, retirements of debt and dividend paid. The cash flow analysis while planning cash inflows and outflow ignore the non-cash items such as depreciations, amortization etc.

**Figure No. 2.14**

**Cash Flow Statement**



*Source: Gupta, 1997, P- 30.3*

Cash flow statement analysis reflects financial health of the organization like ability to give positive cash flow in future and ability to meet short term and long term obligation. In this statement accrual based accounting information is converted into cash based information and rearranged under the group of

operating, investing activities and financing activities. Hence cash flow statement provides vivid description about the solvency and financial position of business.

**Importance of cash flow statement:**

It provides following information:

- ⇒ Ability to generate positive future cash flows
- ⇒ Ability to meet financial obligation
- ⇒ Assess the reasons for differences between income and cash receipt and payment
- ⇒ Information about both cash and non cash aspects of investment and financial activities
- ⇒ Correlation of income with cash flows
- ⇒ Liquidity, solvency and financial flexibility

**2.9.14 Cost Volume Profit Analysis/Break even Analysis:**

The analysis of relationship between cost, volume and profit is CVP analysis. It is an important tool for managerial decision making. Through this cost control and profit planning is possible. Generally it provides the answer to the following questions:

- What sales volume is needed to avoid losses?
- What sales volume is needed to earn desired profit?
- What will be the effects of change in price? etc

**Management can take information regarding:**

- Break even point (No gain no loss)
- Profitable and least profitable products
- Continue or discontinue the production or operation of plants.
- Margin of safety etc.

CVP analysis determines the Break Even Point and Margin of safety for an organization. The aim of CVP analysis is to have fair estimation of total cost, total revenue and profit at various sales volumes. Here Break Even Point is the condition of “no profit and no loss”. If sales or production volume is higher than the BEP volume there will be profit and if sales volume is less than BEP

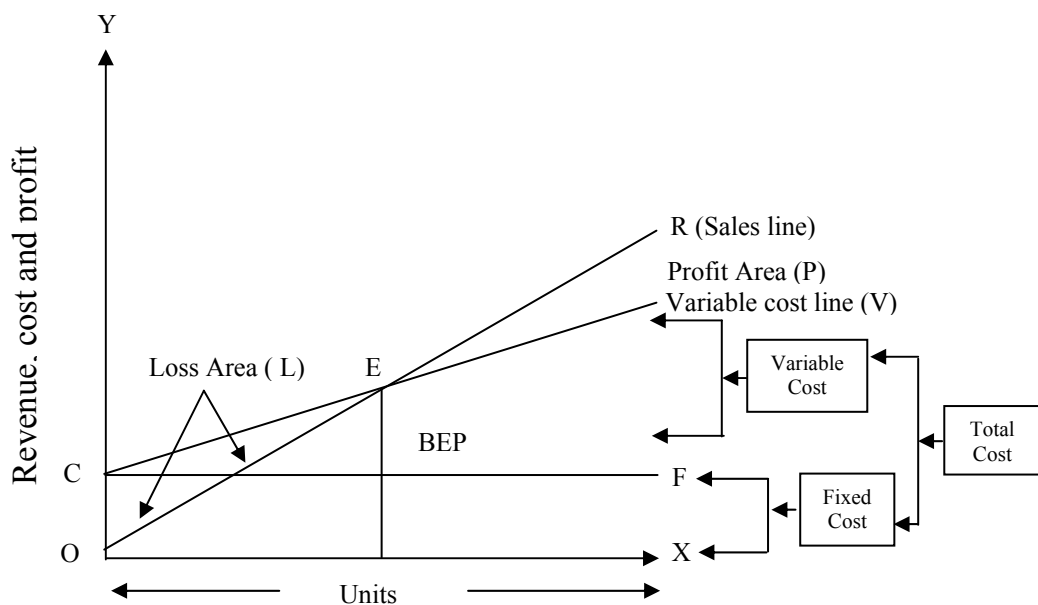
sales there will be loss. Similarly Margin of Safety is a position above the BEP i.e., the excess of budgeted (actual) sales over the break- even sales volume. It gives management a feel for how close projected operation is to be organizations Break Even Point. Thus managers can have better idea using CVP analysis on organizational decision making process.

In this figure 'OX' axis measures the units where as 'OY' axis measures revenue cost and profit. Here,

CF is the total fixed cost curve  
 CV is the total variable cost curve  
 and OR is the total revenue curve

**Figure No. 2.15**

**BEP Analysis**



*Source: Bhattarai & Gautam, 2005, P-12.2*

Here, the revenue curve intersects the total cost curve point E. this point is called break even point. At this point, the total revenue equals the total cost. The graph states that if the company can reach the point of the BEP it can generate sufficient revenues to cover all of its operating expenses.

### **2.9.15 Decision Making**

Decision making is an important tool of management accounting. It is the process of choosing the best alternative among available alternatives. Manager's have to take decisions like where to invest, what to do about an employee, who is not performing well, where should the firm's new warehouse be built, what subject should receive top priority at the departmental meeting, which product should be accepted or not, make or buy the component, what to produce, what to sell, what types of advertisement is launched, where, when and how about production and distribution etc. It is one of the ways through which managers influence the efficient and effective accomplishment for goals. In decision making, cost is always a key factor. The cost of one alternative must be compared against the cost of other alternatives as one step in the decision-making process. To be successful in decision making, managers must have tools at their disposal to assist them in distinguishing between relevant and irrelevant cost so that latter can be eliminated from the decision frameworks.

Management is the practice of consciously and continuously shaping of formal organization. It is the art of decision making central to doing that. Decision making is the process of identifying and selecting course of action to some a specific problem. (Stronger, Freeman & Gilbert, 2000:239)

As cost is the key factor for decision, the cost can be classified as relevant and irrelevant from decision perspective. The cost, which is avoidable or change with the change in alternatives is relevant and vice-versa. Variable cost, Opportunity cost, Avoidable cost, Differential cost are the relevant cost where as Sunk cost and Committed costs are irrelevant from decision making perspective. (Khan & Jain, 1993: 830)

Various sorts of decision situation, which managers have to make, are:

### **I) Special Order Decision:**

For the decision of special order, focuses given to relevant cost and benefits. When excess capacity exists the only relevant cost usually will be the variable costs associated with the special order otherwise the opportunity cost of using the firm facilities for the special order are also relevant to the decision. The decision depends upon the short term financial result. Profit will increase if the special order exceeds the relevant cost. If the total revenue is longer than the relevant cost the order should not be accepted. (Munakarmi, 2002: 350)

### **II) Sell Now or Further Process Decision:**

When an item of production passes through various processes, it is saleable at different stage/ point. In deciding at what stage to sell the product, the two critical variables are important as the identification of sunk costs and calculations of incremental returns at various sales alternatives. All costs whether fixed or variable, incurred before the sell or process further point, should be treated as sunk and therefore irrelevant costs. The incremental returns relevant to the decision point at the revenues idle as a result of not processing the product further and if they could be diverted to some other use, opportunity cost would be also become relevant to the decision analysis. (Garrison, 1985: 557)

### **III) Make or Buy Decision:**

Many firms have to choose between manufacturing certain components themselves and acquiring them from outside supplier. Incremental analysis provides solution to this kind of decision problem. The relevant information is the committed / avoidable costs if the firm wouldn't be required to incur fixed costs to produce the components. If, however, there is need to enlarge the capacity of existing plant or the existing capacity of the plant is diverted for the production of the components, opportunity costs in terms of lost contribution will be relevant to the decision analysis. (Horngren, 1991: 136)

#### **IV) Equipment Replacement**

Management has to decide whether the machine or equipment be returned or replaced for short range. Replacement involves additional fixed cost. Here book value or written down value and loss on sales of old machine is irrelevant for decision. Sales proceeds of old equipments are relevant for the decision and should be considered for this analysis. Replacement of machinery may bring down the cost per unit but it may involve capital outlay. Here firm may have to decide at what point replacement will be justified. Profit and loss on sales of assets replaced may affect tax payment and this taxation should be included in analysis. (Munakarmi, 2002: 357)

#### **V) Lease or Purchase:**

Leasing is a contract between the owner (lessor) and the hirer (lessee) for the hiring a specific assets i.e. plant and machinery office equipment, vehicles etc. Instead of acquiring these assets for itself, the company enters into an agreement with the leasing company. No initial funds are required but there is a regular charge for lease payment. Leasing as assets from the lessor on purchase of assets by burrowing the full purchase price of asset should be compared as financing alternatives based on capital budgeting process mostly NPV method. Thus a firm has to evaluate whether it will purchase an asset or acquire it on lease basis.

#### **2.9.16 Price of the Product and Service**

Many firms who produces substitute product like the competitors have no pricing problem at all. For their product, market prices already exist. They can't change more than the market price. No need of calculated of pricing for the products as they simply charge the price that the market direct it to accept but there are the firms, facing the problem of pricing decision.

For pricing decision, economists have their own view while accountant has their own perspective. An economic theory indicates that companies acting optimally should produce and sells units until the marginal revenue equal

marginal cost. The market price is the price that creates a demand for these optimal numbers of units. But economic theory of pricing based on marginal cost and revenue approach is subject to criticism on the ground that this model of pricing is applicable only in monopoly and monopolistic competition market. This model of pricing on marginal revenue and cost is not applicable to oligopolistic situations. Thus management accountant has different perspective regarding pricing decisions. They consider cost as the key factor to pricing decisions of the standard product. (Horngren, Foster & Datar, 1999: 430-431)

The ways of pricing for the products and services are given below:

- Cost plus pricing
- Target cost pricing
- Variable cost pricing
- Full cost pricing

#### **D) Cost plus Pricing:**

Cost plus pricing method is simple and easy method to use. Cost plus pricing policies provides stability to pricing decision and a defensible rationale for the price increase. Cost plus pricing is widely used in practice to establish a starting point in the process of determining a price. Cost plus formulas are simply; they can be applied in mechanically without taking the time of management. They make possible for a company with hundreds of product or services to cope with the tasks of updating prices for existing products and setting initial prices for new product.

Cost plus pricing formulas can be used effectively with a variety of cost definitions, but the mark-up percentage must be appropriate for the type of cost used. It is imperative that price-setting managers understand that ultimately the price must cover all costs and a normal profit margin. Generally cost plus pricing is computed as

$$\text{Price} = \text{cost} + (\text{mark up percentage} \times \text{cost})$$

There are two approach of computing cost in cost plus pricing

- Absorption approach
- Contribution approach

Under absorption approach in cost plus pricing while computing the cost both variable and fixed manufacturing overhead are taken into consideration. Then add some mark up to the cost and thus arrive at target selling price.

Under contribution approach in cost plus pricing to compute the cost, only the variable manufacturing overhead is taken into the consideration and then to add some mark-up percentage to cover fixed manufacturing overhead, selling and administrative overhead target selling price. (Horngren, Foster & Datar, 1999:133-436)

### **Determination of Mark-up Percentage:**

One of the crucial elements in cost plus pricing is mark-up percentage. This mark up should be enough to recover the buried cost and desired profit. To determine the desired mark up percentage, manager can use the return on investment (ROI) approach as a base. Under absorption approach of cost plus pricing, the mark up percentage is computed as such. (Garrison, 1985:506-509)

$$\text{Mark-up}\% = \frac{\text{Desired return on assets employed} + \text{selling \& administrative exp}}{\text{Volume in units} \times \text{units costs of manufacture}}$$

Under contribution approach, mark up % is computed as such

$$\text{Mark-up } \% = \frac{\text{Desired return on assets employed} + \text{fixed cost}}{\text{Volume in units} \times \text{unit variable expenses}}$$

### **II) Target Cost Pricing:**

Most of the companies set the price of new product to earn sufficient revenue to cover all costs and desired profit. Peter Ducker said "this is true but irrelevant; customers do not ensure manufacture a profit. The only sound way to price is to start out with what the market is willing to pay".

Target pricing is based on the target costing. Target costing is a method of determining the cost of product based on target price that customers are willing to pay. The marketing department determines a target price before designing and introducing a new product.

Target cost = Anticipated selling price – Desired profit

Generally, the target price is determined at level, which helps the company to achieve a desired market share and sales volume. Under this method, product cost is calculated by deducting anticipated profit from anticipated selling price. If the product cost is above the target cost, then the product designer focuses on modification of design of the product so that it reduces the cost of product to target cost. (Fago, Subedi & Gyawali, 2004:9.21)

Developing target price and target cost requires the following;

- Developing a product that satisfies the needs of potential customer
- Chose a "target price" base on customers' perceived value for the product and prices completions charge and a target operating
- Income per unit
- Drive a target cost per units by subtracting the target operating
- Income per unit from the target price
- Perform value engineering to achieve target cost

### **III) Full Cost Pricing:**

Under this method of pricing, selling price is determined by adding certain percentage of mark up on total production cost of goods and services. The total cost includes all variable manufacturing costs 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 system covers all variable costs, fixed cost as well as required level of mark up. It provides a justifiable price those trends to be perceived as equitable by all parties. Consumers generally understand that a company must make a

profit on its product or services in order to remain in business. Justifiable a price as total cost of production, sales and administrative activities plus a reasonable profit margin seems reasonable to buyers. (Fago et.al., 2004:9.2)

#### **IV) Transfer Pricing:**

When one division of an organization provides goods and services to another division it charges price to the division. Transfer prices are the amount charged by one division of an organization for the goods and services that is supplied to another division of the same organization. Transfer prices represent the value of goods or services transfer to other division. When one division supplied goods and services to another division, they have to be expressed in monetary value; such monetary value expression is known as transfer pricing. Transfer pricing is also known as Intra Company pricing. 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. Transfer pricing is necessary where out put of one division becomes input on other division. (Fago, et.al, 2004:9.30)

#### **V) Method of Transfer Pricing:**

Transfer pricing is set to meet objectives of organization as a whole considering goal congruence. Like wise motivation of department manager is also important.

- A) Market based transfer pricing
- B) Cost based transfer pricing
- C) Negotiated transfer pricing
- D) General formula approach to transfer pricing
- E) Target returns transfer pricing

#### **A) Market Based Transfer Pricing:**

Transfer price based on market value of the product or services is known as market based transfer pricing. Generally, market pricing is used for

determination of transfer pricing of the product. 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. The internal transfer pricing may be then external market price less marketing cost.

Transfer pricing = Market price – selling and distribution expenses

### **B) Cost Based Transfer Pricing:**

Subunit may choose a transfer price based on the cost of producing the product. Examples include variable manufacturing costs, manufacturing (Absorption) costs and full product cost. Full product costs include all production costs, as well as costs from other business functions such as research and development design, marketing distribution and consumer service. The cost used in cost-based transfer price can be actual costs or budgeted costs.

### **C) Negotiated Transfer Pricing:**

Under this method, the transfer price is negotiated between the transferor and transferee by considering the factors like demand and supply, quality of product, time of delivery etc. selling price is negotiated between buying and selling division. When the goods are not sold into market the manager of the organizations makes a negotiation for determining selling price, which is known as negotiated transfer pricing.

### **D) General Formula Approach to Transfer Pricing:**

There is no hard and fast rule for transfer pricing which would lead to optimal decision for an organization as a whole. According to general rule, the transfer price is set in that point which helps to recover the variable costs plus opportunity costs.

Transfer price = Additional outlay cost per unit incurred because goods are transferred + Opportunity cost per unit to the organization because of the transfer

This transfer price is based on opportunity cost. Opportunity cost (if the goods/services sold else where) is added to variable cost to determine transfer price.

#### **E) Target Return Transfer Pricing:**

In this method pricing is set as per required rate return on investment (ROI). To set price the department determine its required rate of return and set transfer price.

$$\text{ROI} = \frac{\text{Income}}{\text{Capital Investment}}$$

### **2.10 Review of the Previous Research Work**

Researches on the area of management accounting practices in Nepalese context are not made in remarkable number. Many researches were in the area of profit planning and control in Nepalese context. As profit planning and control covers some of the aspects of management accounting, researches made on these areas are taken into consideration for the sake of review to examine the position of profit planning and control practice in Nepalese company. Many of the researches were done on manufacturing concerns. An attempt is made here to review some of the researches, which have been submitted in profit planning and control in the context of Nepal.

**Mr. Sagar Sharma (2002)**, he had conducted a research on "Management Accounting Practice in the Listed Company of Nepal". For this study Mr. Sharma classified the different companies listed in Nepal Stock Exchange to the different groups according to their nature of service ie manufacturing, trading, service, financial etc. He collected the data required for the study from primary sources. Questioners and discussion with the stakeholders was the base of study.

**The prime objectives of the study were:**

- i. To find out how far the Nepalese companies practice the management accounting tools and techniques.
- ii. The management accounting tools not in use and the difficulties on application.
- iii. To recommend the areas and measures for the application of management accounting tools and techniques.

In his study, he pointed out various findings and recommendations.

**Major findings of the research works were:**

- i. Different types of management accounting tools, which are taught in the colleges, were not found applied by the listed companies.
- ii. Nepalese listed companies were infant stage in practicing the management accounting tools such as Zero Base Budgeting, Activity based costing, target costing, capital budgeting, ratio analysis etc.
- iii. While preparing budgets most of the companies based on actual expenses, 26% of companies used past estimates to prepare budgets. There is no practice of Zero Base Budgeting due lack of information and cognizance about the format and the way of developing it.
- iv. On budget preparation, there is no practice of taking consultancy services.

**Some remarkable recommendations of the study were:**

- i. A separate management accounting dept should be established and furnished with the experts.
- ii. Companies can be improved by allowing greater autonomy and more accountability.

- iii. It should hire the professional experts for the budget preparation and other planning activities.
- iv. Enterprises should be motivated for the application of new advanced and modern management accounting tools.

**Mr. Phanindra Raj Kharel (2006)**, he had submitted a research entitled "Budgeting Practices in Public Manufacturing Enterprises: A Case Study of Dairy Development Corporation". The time period covered for this study was five years from the Fiscal Year 2056/57 to 2060/61. The required data was collected through secondary as well as primary sources.

**Basic objectives of the research works were:**

- i. Application of profit planning tools in the DDC.
- ii. The budgeting practices by the company.
- iii. Long term and tactical short term planning system in DDC.
- iv. Methods used by company to forecast production and sales.
- v. Methods used to determine pricing by the company.

**The major findings of the research works were:**

- i. DDC had not strategic planning of milk collection, practicing only tactical planning.
- ii. The corporation had not proper practice of segregating cost into fixed and variable.
- iii. There was not separate planning department and expert planner so; planning was based on traditional ad-hoc basis.
- iv. The top level executive are only involved in planning and decision making and lower level participation was not encouraged.

- v. There were no proper forecasting techniques, the budgeted sales of milk and diary products were higher than the actual sales.

**Some remarkable recommendations of the research study were:**

- i. DDC should try to forecast and prepare long range forecasting of profit planning.
- ii. The collecting and processing cost can be reduced according to profit plan by classifying the costs into fixed and variable.
- iii. Budget should be prepared on the realistic ground i.e. sales budget, production budget, purchase budget, labour budget etc and overall profit planning.
- iv. DDC must hire trained and highly qualified manpower for budgeting and planning.
- v. DDC must take fair and profitable price for its product.

**Mr. Raj Kumar Duwadi (2007)**, he had submitted a thesis on the topic "A Study on Management Accounting Practices in Joint Venture Banks". For this study Mr. Duwadi collected the data from six joint venture banks with the head office located in Kathmandu valley. Data required for the study was based on primary data. Information was collected through schedule questionnaire and discussion.

**The main objectives of the study were:**

- i. To study and analysis the practices of management accounting tools being used in joint venture banks.
- ii. To identify the areas where management accounting tools can be applied.
- iii. To study the method used in evaluation of investment proposals and the types of securities accepted in providing loan.

- iv. To make recommendations to overcome from the difficulties in applying management accounting tools.

**The major findings of the research work were:**

- i. Capital budgeting, cash flow analysis, ratio analysis and annual budgeting practiced by almost 100% of banks. Break even analysis and responsibility accounting were practiced about 83% and 33% respectively where as the tools like activity base costing, standard costing, long term and zero based budgeting were unusual in joint venture banks.
- ii. While preparing the budget there was no practice of taking consultancy service. The committee and the chief of finance division prepared the budget.
- iii. While evaluating loan proposal all the JVB focused on valuation of assets, purpose of loan, analysis of customer back ground with customer social status and the chances of loan recovery.
- iv. JVBs mostly accepted the securities like land and building, government bonds, treasury bills, shares and debentures, gold and other valuable assets.

**Some remarkable recommendations of the research work were:**

- i. Techniques like high- low point method, average method and analysis method should be used to segregate costs.
- ii. Joint venture needs to use responsibility accounting for the cost control and performance evaluation.
- iii. Use of outside expert should be used by JVBs for the budget preparation.
- iv. JVBs were not found practicing cash budget. So, they should practice cash budget which gives all details about sources and uses of cash.

**Mr. Balram Gupta, (2009)**, he has submitted a thesis on the topic of “A Comparative Study on Profit Planning in Manufacturing and Non-Manufacturing Public Enterprises of Nepal.” He had focused his study to examine the practice of Management Accounting Tools in public enterprises. He had pointed out various objective and findings.

**Some remarkable objectives were as follow:**

- To identify the base to make decision on profit planning.
- To evaluate the disbursement financial budget related with PPC.
- To identify the participatory approach is used for PPC.
- To evaluate the major problems faced by the enterprises in developing and implementing profit plans.

**Some major findings were as follows:**

- The firms studied have not been able to generate work efficiency and financial capability. They are still dependent upon government protection and subsidy.
- There is no adequate & clear cut co-ordination among various units in the organizations.
- Objective of the firms are controversial there is conflict between profit and social goals.

## **2.11 Research Gap**

Most of the previous research works conducted on accounting was on Profit Planning and Control. The study on profit planning and control covered the budgeting practices, performance of the companies and their exiting problems. They were like a case study. The findings of the previous researchers were mostly based on secondary data. These types of research works did not disclose

which management accounting tools were in practice, which were not and why?

Similarly, very few research works were done in the sector of management accounting practices. The study focused on the management accounting practices in different Nepalese companies and the public enterprises of Nepal. The main objective of the study was to find out how far the Nepalese companies or the public enterprises practices the management accounting tools and techniques to their business for better performance and results. They covered the listed companies and public enterprises through by classifying them to different groups as their nature of services. The findings of these studies were based on primary data.

Thus almost all the previous research work was either in budgeting practices or in profit planning and control or the study on management accounting practices of listed companies and public enterprises in Nepal as a whole. There was no depth study in a single organization regarding the application of management accounting tools and techniques to their business and services. Thus to fill up this gap the current research work was conducted concentrating on a single organization i.e. CAAN an autonomous body of the Government of Nepal. This kind of research work helps to know very much about the organization in depth for the organization itself and the stakeholders as well. This research work focused on the current practices of management accounting tools and techniques in the CAAN and also trying to provide the information about the civil aviation around the world and in Nepal. It has disclosed the reasons about the tools which were not practiced by CAAN and suggested how the authority can apply those in practice to make organization successful.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

Research Methodology is a way to solve the research problem systematically research methodology helps to analyze examine and interpret various aspects of research work. It is followed to achieve the basic objectives and goal of the research work.

#### **3.2 Research Design**

Research Design is the plan, structure and strategy of investigation conceived to obtain answers to research questions. Generally, research design refers to definite procedure and techniques, which guide to study and propounds ways for research viability.

Both analytical as well as descriptive approach has been applied for this study to analyze the present practice of management accounting tools and techniques by CAAN.

#### **3.3 Nature and Sources of Data**

The information and data were collected mostly through primary sources. Questionnaires, discussion and interview with directors, managers, account personals and other stakeholders of the CAAN were the sources of primary data.

#### **3.4 Population and Sample**

This research aims to study the management accounting practices on CAAN, a single organization. In fact, this research work was concentrated to the organization CAAN as a whole. This research is a case study of implementation of management accounting tools in CAAN.

### **3.5 Data Collecting and Processing Procedure**

The study was mainly based on the primary data, information were collected by developing a scheduled questionnaire. The questionnaires were distributed to the finance chief and the accounting personnel of those offices. All of them responded well. Twenty-two multiple choice questions were included in the questionnaire. To get more and reliable information fruitful discussion were also made concentrating on management accounting practices, organizational status and the performance. Information collected in the way was noted down to use during data analysis and presentation.

Data collected from the sources were in raw form. They were classified in chronological order and tabulated in a required form. Accounting tools were used for analysis of data if required. Thus, formats, tables and tools were used to explain wherever necessary.

### **3.6 Tools Used**

Simple percentages were used to interpret data. Similarly for the analysis of data the major management tools discussed in this research is as follows:

For the analysis of the data bar diagram & percentage were used.

#### **i) Bar Diagram**

After collecting the numerical data for statistical enquiry the next step is to classify and tabulate them. We have discussed the rules of Classification and tabulations. Figures (numbers) are not always interesting. When their sizes increase, they become confusing and uninteresting such that no one would care to study them. To avoid this difficulty, the next method of presenting numerical data is the use of diagrams.

Diagrams are nothing but the presentation of statistical data in the form of geometrical figures like points, lines, bars, rectangles, circles etc. A clear picture of the variation in the values of a variable is much more easily obtained by diagrams than the values given at the table. So, an attempt has been made to present some major types of diagrams which render used in presenting the

statistical data. There are various types of diagrams that are used in practice to represent the numerical data. Such as, one – dimensional diagram e.g. Bar diagrams; Two dimensional diagram e.g. Squares, circles; Three – dimensional diagram e.g. Cubes. But some of them which are commonly used are as:

**a) Simple Bar Diagram**

Simple bar diagram is a diagram for only one variable. It is the simplest and frequently used for the comparative study of two or more “values of a single variable. It consists of a set of equidistant rectangles of equal width. The heights or lengths of the rectangles are represented by the given values of the variable. The number of rectangles is equal to the number of values of the single variable.

**3.7 Research Variable**

Following research variable were used in this dissertation.

**i) Capital Budgeting**

Investment in long term assets for increasing the revenue of the firm is called Capital Budgeting. It is a decision to invest funds in long term activities for future benefits that increase the wealth of the firm and thereby increase the value of share of the firm.

**ii) Standard Costing**

Standard costs are pre determined costs; they are target costs that should be incurred under efficient operating conditions. That is, standard costs are predetermined costs based on a technical estimate for materials, labour and overhead for a selected period of time and for a prescribed set of working conditions.

**iii) Cost Volume Profit Analysis**

Cost volume profit analysis applies the variable costing approach to analyze the built-in relationship between cost, volume (revenues) and profit. It involves a study of the interrelationship between the Prices of products, volume or level of activity, per unit variable cost, total fixed cost and mix of products.

#### **iv) Financial Statement Analysis**

Financial statements are annual documents prepared by the organization. They are prepared for periodical review on the progress made the results achieved during the period under review. It provides the following information's: whether earning is adequate or not to attract the potential investors to invest; whether the sales are profitable or not and Liquidity position of the business.

#### **v) Master Budgeting**

The master budget is prepared for a specific period and is static rather than flexible. It is a comprehensive plan, a coordinated set of detailed financial statement of the operating plans and schedule for a short period, usually for a year. It is the organization's formal plan of action for forth coming budget period. It is a complete financial presentation of the operating plans of the entire company for the budgeted period.

#### **vi) Flexible Budget**

A flexible budget is one which is designed to provide information as to sales, expenses and profit for different levels of activity which may be attained. A budget prepared in a manner so as to give the budgeted cost for any level of activity is known as a flexible budget. It is a budget which by recognize the difference between fixed cost, semi – fixed cost and variable cost, is designed to furnish budgeted cost at any level of activity attained.

#### **vii) Activity Based Budgeting**

Activity based budgeting or activity cost management means budgeting related to activities rather than conventional departments. ABB recognize that it is activities which cause costs and is a more focused method of budgeting. To manage costs more effectively, organizations that have implemented activity – based costing (ABC) have also adopted ABB.

#### **viii) Cash Flow Statement**

Cash flows analysis is done through statement of cash flows. A cash flows statement is a statement of company's ability to generate cash from various

activities such as operating, investing, and financing and their need of cash. It is a statement which shows the inflows and outflows of cash and cash equivalents during the year.

**ix) Zero Base Budgeting**

Under zero – based budgeting, every budget is constructed on the premise that every activity in the budget must be justified. It starts with the basic premise that the budget for next year is zero and that every expenditure, old and new, must be justified on the basis of its costs benefit. As the ZBB system requires that the expenditure of the ongoing project as well as new project have to be justified, so this system can be made applicable in both development and non – development budget. It is also applicable in any activities, functions or operations of any organization where a cost – benefit relation can be established.

**x) Variance**

The deviation of actual from the standard is known as “variance”. Normally variance can take two forms, namely; favourable variances and unfavourable variances. When actual results are better than expected, a favourable (F) variance arises; where they are not up to standard an adverse variance arises.

**xi) Lease or Buy**

Leasing is a contract between the owner (lessor) and the hirer (lessee) for the hiring of specific assets. Leasing can apply to any fixed assets and is quite commonly used for plant and machinery, office equipment and motor vehicles. Instead of acquiring these assets for itself, the company enters into an agreement with a leasing company whereby the latter purchase the assets in question and then leases them (i.e. rents or hires them) on a long – term basis to the former.

## **CHAPTER FOUR**

### **PRESENTATION AND ANALYSIS OF DATA**

#### **4.1 Introduction**

The basic objective of the study was to examine the present practice of management accounting tools in Civil Aviation Authority of Nepal and to identify and recommend the areas where management accounting tools could be applied to strengthen the organization. This chapter covered the analysis and interpretation of the data focusing on CAAN in detail.

To meet the objectives of research work the structured questionnaires were given to accounting personnel of six different airports (Bharatpur, Biratnagar, Chandragadhi, Janakpur, Pokhara and Simara), Civil Aviation Academy and Head Office of CAAN. All of them have given positive response. Beside questionnaires necessary direct discussion was made with the chief of finance division, managers, accountants and senior person of the organization to get more information. They cooperated very well. The view of managers, accountants and the finance chief were also included in this chapter. Thus collected data and information were properly processed, tabulated and analyzed.

#### **4.2 Tabulation and Graphical Presentation of Practices of Management Accounting Tools:**

Management accounting tools practiced by CAAN are presented in tabular and graphical form in the following tables and figures:

#### 4.2.1 Percentage Analysis of Management Accounting Practices:

**Table No. 4.1**

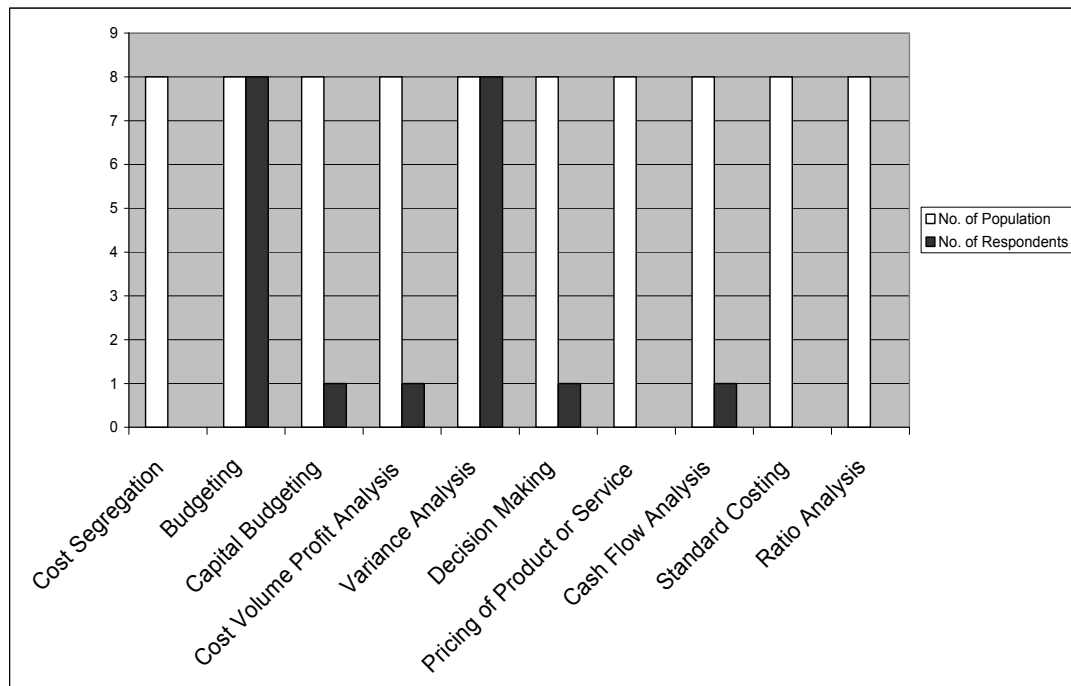
**Percentage Analysis of Management Accounting Practices**

S. N.	Tools	No. of Population	No. of Respondents	%
1	Cost Segregation	8	0	0
2	Budgeting	8	8	100
3	Capital Budgeting	8	1	13
4	Cost Volume Profit Analysis	8	1	13
5	Variance Analysis	8	8	100
6	Decision Making	8	1	13
7	Pricing of Product or Service	8	0	0
8	Cash Flow Analysis	8	1	13
9	Standard Costing	8	0	0
10	Ratio Analysis	8	0	0

Source: Field Survey, 2010

**Figure No. 4.1**

**Percentage Analysis of Management Accounting Practices**



Source: Table No. 4.1

The above table & figure shows the scenarios of the practice of management accounting tools in CAAN. CAAN practiced the tools like Budgeting and Variance Analysis on budget by 100% of its official units. The tools like, Cost Volume Profit Analysis, Capital Budgeting, Decision Making and Cash Flow Analysis were found practicing by 13% that was from the finance division of CAAN head office. These tools were not practiced by the other units (airports) of CAAN. Similarly, the practice of Cost Segregation, Pricing of Product or Service, Standard Costing and Ratio Analysis were not adopted at all in CAAN.

Thus the practice of Budgeting and its Variance Analysis were common where as the tools like CVP Analysis, Capital Budgeting, Decision Making and Cash Flow Analysis were only practiced by head office. The tools not in practice were Cost Segregation, Pricing, Standard Costing and Ratio Analysis.

The main reasons of not practicing these tools were

- Lack of knowledge about the tools.
- No information about the tools
- Lack of resources, experts and trained manpower.
- High cost / quite expensive nature

#### **4.2.2 Methods of Segregating Mixed Cost into Fixed and Variable:**

Segregating mixed cost into fixed and variable cost in CAAN was not practicing, any methods of Cost Segregation. In fact there was no practice of Cost Segregation. It seems CAAN is not aware of cost management. It has happened due to the ignorance of the value of cost segregation by the organization and also the lack of knowledge and expert manpower.

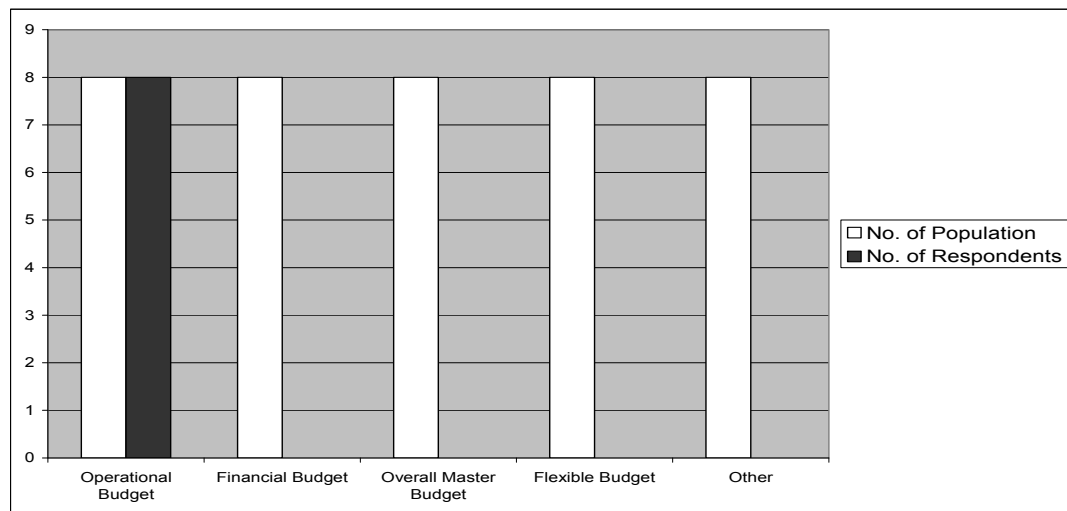
### 4.2.3 Budget Practices in CAAN:

**Table No. 4.2**  
**Budget Practices in CAAN**

S. N.	Types of Budget	No. of Population	No. of Respondents	%
1	Operational Budget	8	8	100
2	Financial Budget	8	0	0
3	Overall Master Budget	8	0	0
4	Flexible Budget	8	0	0
5	Other	8	0	0

*Source: Field Survey, 2010*

**Figure No. 4.2**  
**Budget Practices in CAAN**



*Source: Table No. 4.2*

The above table & figure shows the types of budget prepared in CAAN. From the table it is clear that CAAN practiced only the Operational Budget to carry out its regular operational activities. All the official units of CAAN practiced the Operational Budget. Thus the percentage is 100 for operational budget. Other budgets like Master Budget, Flexible Budget and Cash Budget were not in practice in CAAN.

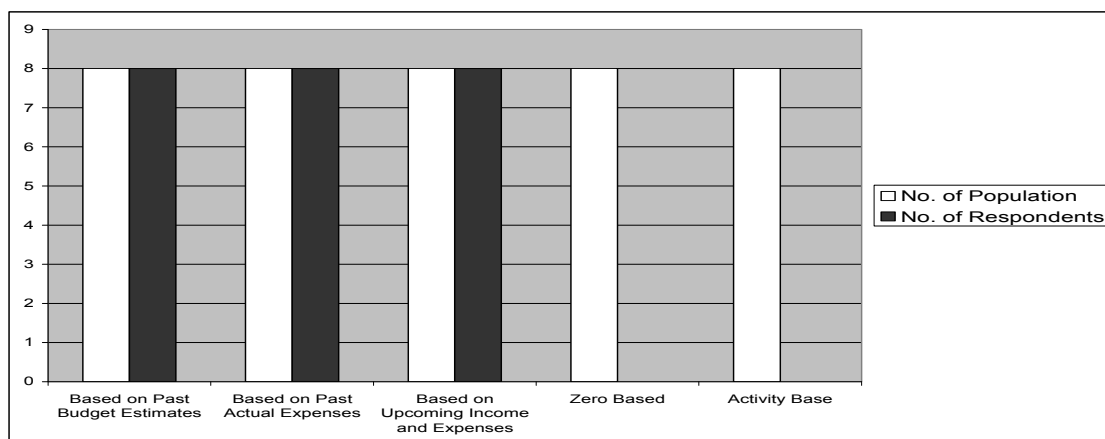
#### 4.2.4 Basis for Budget Preparation in CAAN:

**Table No. 4.3**  
**Basis for Budget Preparation in CAAN**

S. N.	Base	No. of Population	No. of Respondents	%
1	Past Budget Estimates	8	8	100
2	Past Actual Expenses	8	8	100
3	Future Income and Expenses	8	8	100
4	Zero Base	8	0	0
5	Activity Based	8	0	0

*Source: Field Survey, 2010*

**Figure No. 4.3**  
**Basis for Budget Preparation in CAAN**



*Source: Table No. 4.3*

The above table & figure shows the basis on which Budget Preparation in CAAN is made. From the above table it is clear that CAAN use to prepare the budget based on Past Budget Estimates, Past Actual Expenses and future Income and Expenses. The practice of these tools in all the units was found 100%. Where as there was no practice of modern useful tools like Zero Base and Activity Based Budgeting. It is due to the lack of expertise and willing to pay more for it. Thus budgets were prepared on traditional concept.

#### 4.2.5 Types of Budget Based on Period Practiced in CAAN:

**Table No. 4.4**

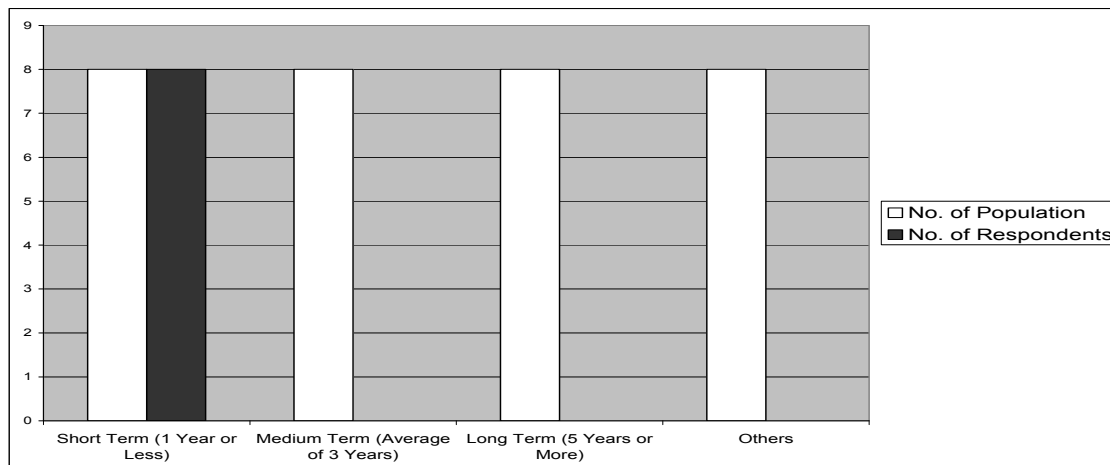
**Types of Budget Based on Period Practiced in CAAN**

S. N.	Types of Budget	No. of Population	No. of Respondents	%
1	Short Term (1 Year or Less)	8	8	100
2	Medium Term (Average of 3 Years)	8	0	0
3	Long Term (5 Years or More)	8	0	0
4	Others	8	0	0

*Source: Field Survey, 2010*

**Figure No. 4.4**

**Types of Budget Based on Period Practiced in CAAN**



*Source: Table No. 4.4*

The above table & figure shows the types of budget practiced in CAAN. From the table it seems that CAAN use to practice only the Short Term Budget also termed as Annual Budget. All of its units followed the Annual Budget thus the practice is 100%. Other kinds of budgets like Medium and Long Term Budget were not in practice. CAAN has no practice in preparing Long Term Budget, it

takes long time, need lot of exercise and cost. Similarly, it is quite difficult to predict expenses for the future for long period.

#### 4.2.6 Budget Preparation System in CAAN:

**Table No. 4.5**

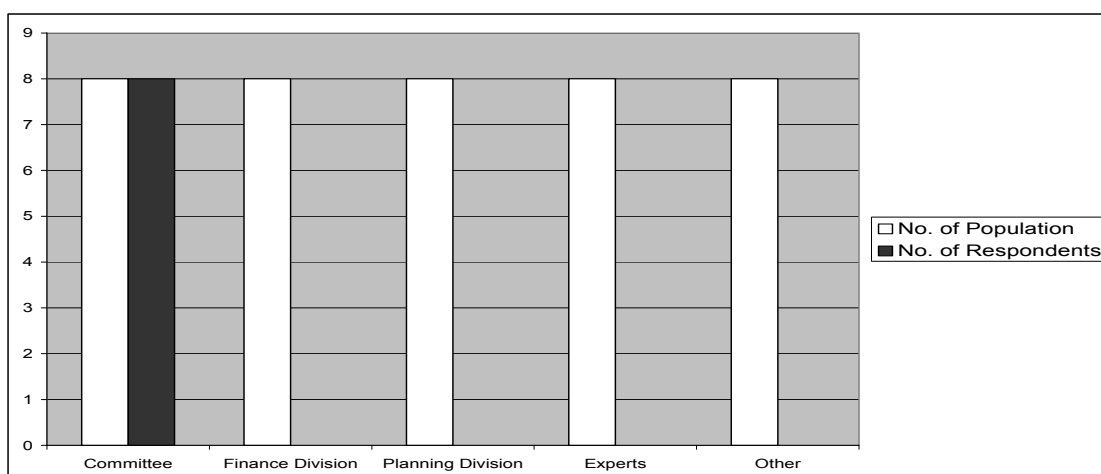
#### **Budget Preparation System in CAAN**

S. N.	Methods	No. of Population	No. of Respondents	%
1	Committee	8	8	100
2	Finance Division	8	0	0
3	Planning Division	8	0	0
4	Experts	8	0	0
5	Other	8	0	0

*Source: Field Survey, 2010*

**Figure No. 4.5**

#### **Budget Preparation System in CAAN**



*Source: Table No. 4.5*

The above table & figure shows that the scenario of budget preparation system in CAAN. From the table it is cleared that budget was prepared by the committee in CAAN. 100% of its units followed the committee system for the

budget preparation. Members from different departments including from finance, corporate, planning and development departments, in house experts and senior management form the committee. At first, the committee collects the necessary data and information from different units and finalize in the form of budget after necessary discussion, consultation, field visit etc. The consultation with out side expert was nil for the budget preparation. The main reason is hiring them are expensive and the authority does not have separate funds to hire them.

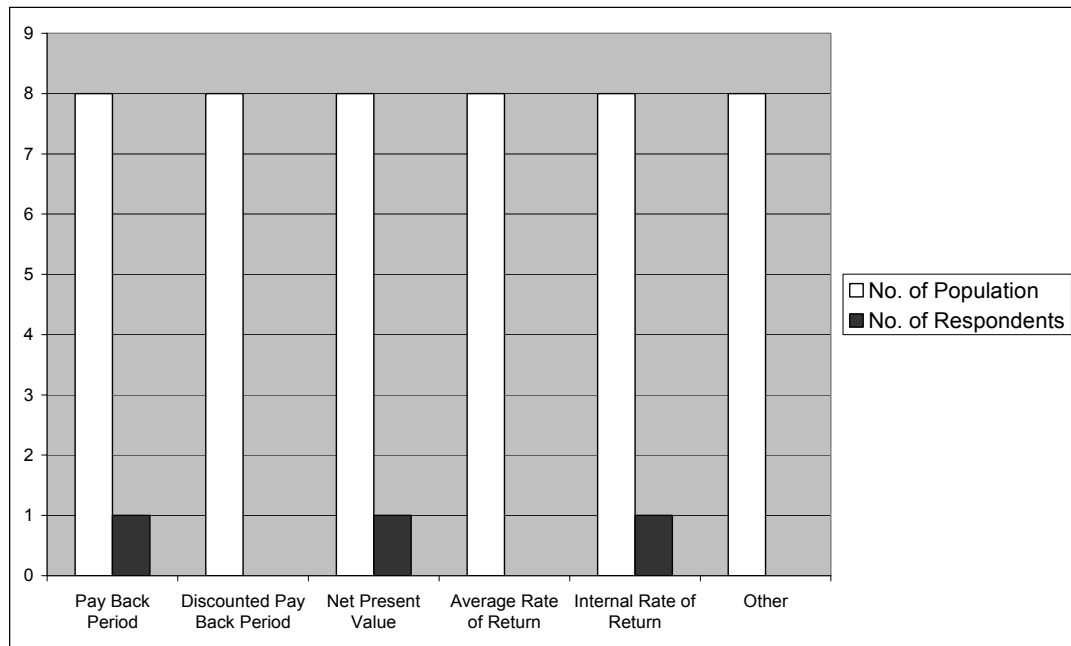
#### **4.2.7 Practice of Capital Budgeting Tools in Purchasing Fixed Assets or Making Long Term Investment:**

**Table No. 4.6**  
**Practice of Capital Budgeting**

<b>S. N.</b>	<b>Tools</b>	<b>No. of Population</b>	<b>No. of Respondents</b>	<b>%</b>
1	Payback Period	8	1	13
2	Discounted Payback Period	8	0	0
3	Net Present Value	8	1	13
4	Average Rate of Return	8	0	0
5	Internal Rate of Return	8	1	13
6	Other	8	0	0

*Source: Field Survey, 2010*

**Figure No. 4.6**  
**Practice of Capital Budgeting**



*Source: Table No. 4.6*

The above table & figure shows the practice of application of Capital Budgeting Tools in purchasing Fixed Assets or Making Long Term Investment Decision in CAAN. From the table it is clear that CAAN use to practice the tools like Payback Period, Net Present Value and Internal Rate of Return for the purchase of fixed assets or the long term investment. These tools were used only by the head office thus the using percentage is just about 13%. Other official units of CAAN did not use the tools to analyze. It was due to the lack of knowledge and use ness about the tools. If necessary, it was analyzed from the finance division of head office to its units.

#### 4.2.8 Adjustment of Risk while Evaluating Capital Investment in CAAN:

**Table No. 4.7**

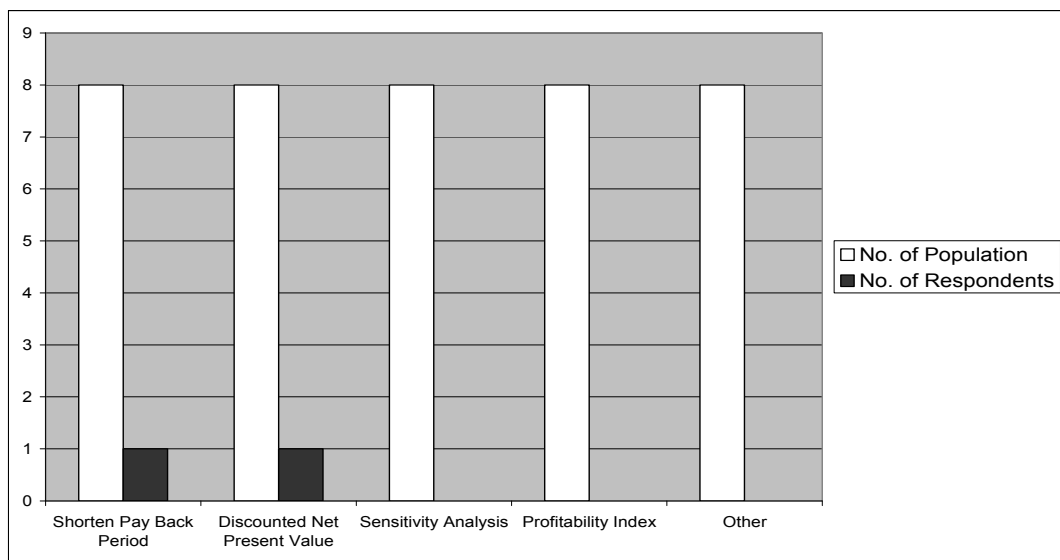
#### Adjustment of Risk while Evaluating Capital Investment in CAAN

S. N.	Tools	No. of Population	No. of Respondents	%
1	Shorten Payback Period	8	1	13
2	Discounted Net Present Value	8	1	13
3	Sensitivity Analysis	8	0	0
4	Profitability Index	8	0	0
5	Other	8	0	0

Source: Field Survey, 2010

**Figure No. 4.7**

#### Adjustment of Risk while Evaluating Capital Investment in CAAN



Source: Table No. 4.7

The above table & figure shows the practice of Risk Adjustment while Evaluating Capital Investment in CAAN. From the table it seems that 13% of CAAN official unit used the tools like Shorten Payback Period and Discounted

Net Present Value. In fact the risk evaluation on capital investment was done only by the head office. The other units were not practicing the Risk Adjustment tools as they were not involve in the practice of other Capital Budgeting tools for the purchase of fixed assets or the long term investment. The practice of the useful tools like Sensitivity Analysis and Profitability Index was nil.

#### 4.2.9 Tools Practiced for the Overall Performance:

**Table No. 4.8**

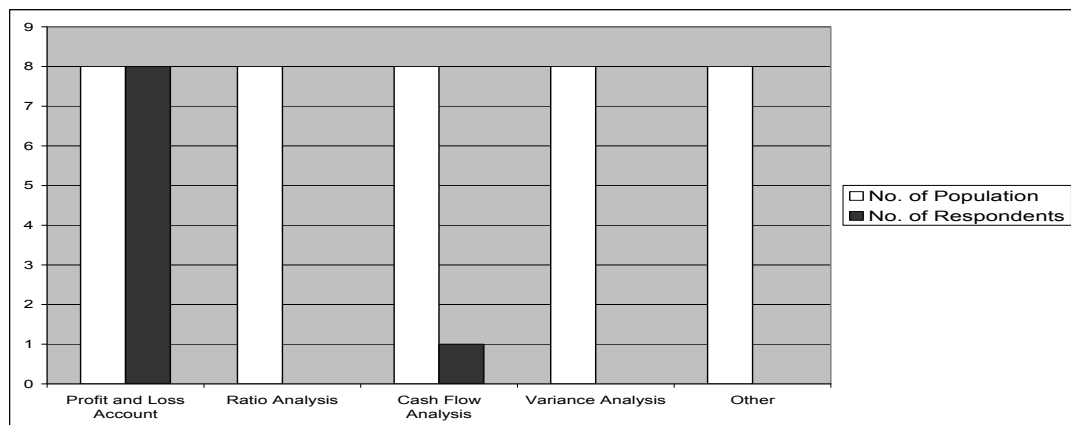
**Tools Practiced for the Overall Performance**

S. N.	Tools	No. of Population	No. of Respondents	%
1	Profit and Loss Account	8	8	100
2	Ratio Analysis	8	0	0
3	Cash Flow Analysis	8	1	13
4	Variance Analysis	8	0	0
5	Other	8	0	0

*Source: Field Survey, 2010*

**Figure No. 4.8**

**Tools Practiced for the Overall Performance**



*Source: Table No. 4.8*

The above table & figure shows the tools practiced for the Overall Performance Evaluation in CAAN. From the table it is clear that the use of Profit and Loss Account for the Overall Performance Evaluation was 100%. The main base of evaluation was P/L Account for CAAN. Where as the Cash Flow Analysis was used only by 13%, which was from the head office of CAAN. Central Cash Flow Analysis was practice in the organization. The uses of other tools like Ratio Analysis, Variance Analysis and Cost Volume Profit Analysis were found nil due to lack of expert manpower.

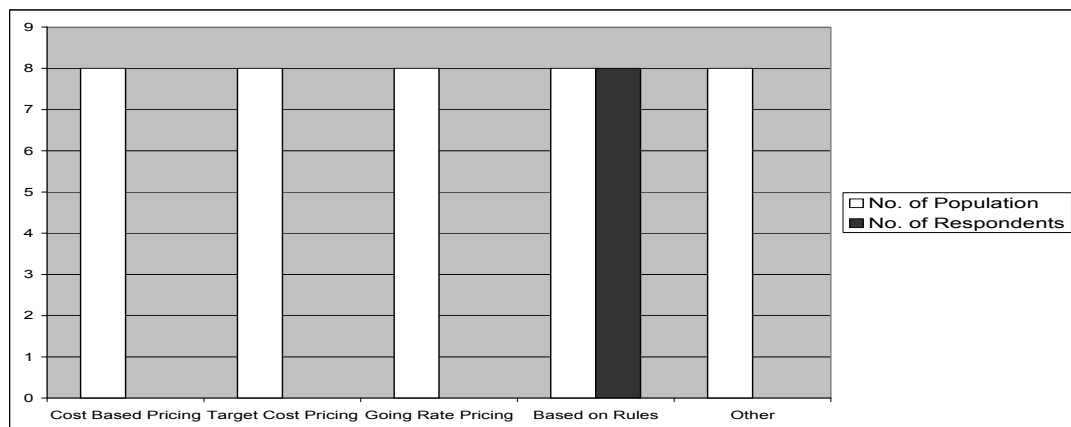
#### 4.2.10 Practices for Pricing of Products and Services in CAAN:

**Table No. 4.9**  
**Practices for Pricing of Products and Services in CAAN**

S. N.	Pricing Techniques	No. of Population	No. of Respondents	%
1	Cost Based Pricing	8	0	0
2	Target Cost Pricing	8	0	0
3	Going Rate Pricing	8	0	0
4	Based on Rules	8	8	100
5	Other	8	0	0

*Source: Field Survey, 2010*

**Figure No. 4.9**  
**Practices for Pricing of Products and Services in CAAN**



*Sources: Table No. 4.9*

The above table & figure shows the Practices for Pricing of Products and Services in CAAN. From the table it is clear that being an autonomous and a service providing organization CAAN practices the pricing of its service based on rules and regulations. The charges either aeronautical or non-aeronautical were based on regulations approved by government. The more reliable tools like Cost Based Pricing, Target Cost Pricing and Going Rate Pricing practices were nil in CAAN.

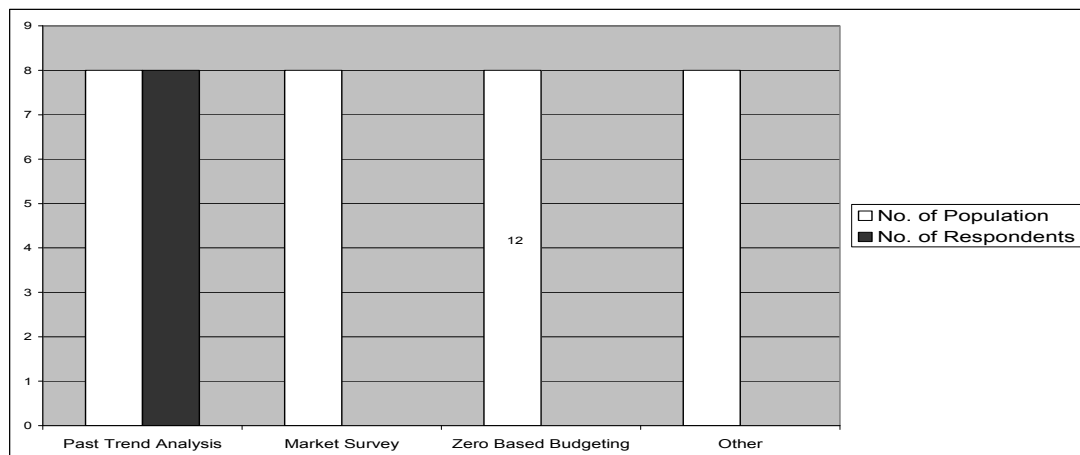
#### 4.2.11 Cost and Revenue Estimation Practices in CAAN:

**Table No. 4.10**  
**Cost & Revenue Estimation Practices in CAAN**

S. N.	Tools	No. of Population	No. of Respondents	%
1	Past Trend Analysis	8	8	100
2	Market Survey	8	0	0
3	Zero Base Budgeting	8	0	0
4	Other	8	0	0

Source: Field Survey, 2010

**Figure No. 4.10**  
**Cost & Revenue Estimation Practices in CAAN**



Sources: Table No. 4.10

The above table & figure shows the Cost and Revenue Estimation Practices in CAAN. From the table it is clear that the practice of Past Trend Analysis was 100% for the Cost and Revenue estimation in CAAN. All of the official units of CAAN practiced the past trend analysis for the estimation. Other useful methods like Zero Base Budgeting and Market Survey were not used by CAAN.

#### **4.2.12 Practices of Transfer Pricing:**

The transfer pricing method is very useful for those business houses, which rendered services to the customers through department to department. While transferring the products from one department to another department, the department it self fixes the price for its output. As CAAN directly rendered its services to the customer rather than department-to-department, there was no place for transfer pricing.

#### **4.2.13 Decision Making Practices:**

CAAN practiced the Decision Making tool as required. It mostly used the decision methods like Lease or Buy and Drop or Continue to render the service. Where as the Special Order and Make or Buy was not practiced by CAAN.

#### **4.2.14 Inventory Valuation Method:**

Regarding Inventory Valuation, CAAN does not have asset department so the fixed assets and stocks were not valuated since long. Where as on the official units the operational stocks were valuated on the basis of Weighted Average Method rather than other methods such as LIFO and FIFO.

#### **4.2.15 Accounting System:**

For the proper accounting system, CAAN itself developed eight different accounting manuals based on NAS (Nepal Accounting Standard) to its organizational accounting obligation. The manuals are the basic guidelines for the accounting personnel. It gives entire vision and idea about the financial activities from the beginning. The manuals are classified into eight different headings such as Budgeting and Budgeting Control, Payroll Accounting

Procedure, General Accounting Procedure, Cash and Bank Accounting Procedure, Accounting of Advances, Procurement and Store Accounting Procedure, Accounting of Fixed Assets and Accounting Procedure for Revenue Account.

All the accounting and financial personnel were known about the manuals developed by CAAN. It had been in practice through different training and workshops. The accounting personnel themselves were also qualified on the field. The authority was satisfied with the performance of accounting personnel. Trainings, seminars and workshops were provided to the persons on periodic as well as when required.

The accounting procedure starts from the beginning of financial activities. Preparation of voucher, ledger posting, subsidiary books account, trial balance are the basic accounting activities where as the income statement, profit and loss account, balance sheet and cash flow statements are financial statements, provides the organizational financial performance. CAAN was practicing all of these procedures. Regarding the audit system, CAAN had two kinds of audit system in practice first one the internal audit from the in house experts and the second final audit from the authorized government office. (Mahalekha Parichhak)

#### **4.2.16 Management and Management Accounting:**

Management accounting is helpful to management for the planning, controlling and decision making activities. Management can get the valuable and important information from management accounting. CAAN management body had the practice of getting the information from accounting and finance division as necessary. Management themselves were also interested on this field to get the required information and to fulfill their duties and responsibilities. This process was highly helpful to them to make good decision for the organizational development. But, in some cases due to different factors, management was compelled to make decision even though not favourable for the organization from financial perspective.

### 4.3 Major Findings

From the comprehensive analysis of available data, the following findings can be drawn for CAAN

- While examining the tools practiced by CAAN it was found that there was 100% application of "Annual Budgeting" and "Variance Analysis" where as the application of "Capital Budgeting", "Cost Volume Profit Analysis", "Decision Making", "Cash Flow Analysis" were only 13% for planning, controlling and decision-making.
- Some of very important and useful management tools such as Cost Segregation, Long Term Budgeting, Pricing of Product, Standard Costing and Ratio Analysis were not in practice in CAAN for its managerial decision.
- The authority was not practicing the Segregation of cost into fixed and variable. Authority was thus unable to find out the nature of cost, which seems that CAAN was not taking opportunity of cost control and management.
- CAAN practiced only the Operational Budget. It was prepared by budget committee on the basis of past actual expenses and future income and expenses. All the time Short term Budget (1 year or less) was in practice rather than Medium and Long Term Budget.
- The reason of not practicing tools like "Cash Budget", "Zero Base Budgeting", "Medium and Long Term Budget" were due to lack of information, knowledge, experts and willingness.
- While preparing budget, there was no practice of taking consultancy services. The practice of hiring outside expert was nill. The reason behind this was hiring them were too expensive.
- CAAN mostly used the tools like Net Present Value, Payback Period and Internal Rate of Return while purchasing the fixed assets and making long term investments. Similarly, to adjust risk on evaluating

- For the measurement of overall performance, the authority used Profit and Loss Account and Cash Flow Analysis. The practice of Variance Analysis, Standard Costing and Ratio Analysis were found nil. Variance Analysis was done only for budgetary purpose.
- For the cost and revenue estimation, the authority practiced only Past Trend Analysis. The practice of Market Survey and Zero Base Budgeting were found nil to forecast the future cost and revenue.
- On central level, the Inventory Valuation was not in practice as the asset department was not established in CAAN. The operational inventory was valued on Weighted Average Method on other official units.
- Due to the nature of business of CAAN, It practiced the methods like Lease or Buy and Drop or Continue as the Decision Making tool. But in some cases (regarding operation of airport even in huge loss) decision making could not made based on management accounting principle.
- The accounting procedure of CAAN found satisfactory as the authority itself developed accounting manuals for this purpose. The personnel were also qualified and provided training as required. The authority had its own internal audit system.
- Management Information System on the authority found satisfactory. It means the relationship between management and finance division was good.

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATION

#### 5.1 Summary

Nepal, a sovereign independent country is a unique combination of natural beauty, biodiversity, geographical structure, unique heritage, different cultures, supreme spirituality and brotherhood between people and political changes. The political changes happen rapidly on the country since the great Peoples Movement–II at 2006 (Jana Andolan-2, 2062/63). The Andolan was happened for the establishment of peace and full democracy and got it after 19 days long and historic Peoples Movement. Poll for the Constitutional Assembly was held on Chaitra 28, 2064. From this assembly on 15<sup>th</sup> Jestha, 2065 Nepal is declared the "Federal Democratic Republic of Nepal". Now Nepal is looking for the new constitution and restructuring of the state for the bright future.

Due to complex geographical structure of Nepal, regarding the mode of transportation, the road transportation is not possible through out the country. In most parts of Himalayan and Hilly region air transportation is only the alternative. Thus air transportation is very popular and important in Nepal due to this fact and its comfort ness, time saving nature and security. There are at present just more than 50 airports in Nepal. Civil Aviation Authority of Nepal (CAAN) operates all the airports and regulates the aviation. CAAN is established as an autonomous organization on 31<sup>st</sup> Dec 1998 to promote and regulate the civil aviation and to operate the airports of Nepal.

There are unbelievable developments in the sector of science and technology from the ancient age to 21<sup>st</sup> century now. Human dream of flying like a bird is not only possible but the flying is now highly sophisticated and easy. From the historic moment of Wright Brother to the present moment of Airbus 380, the aviation sector is in top of development.

The development of latest technologies, the geographical structure, unstable political status, high risk and the high performance requirement makes the smooth operation of any organization tough in Nepal. To overcome from this challenges and opportunities Management is such tool / weapon which lead the organization towards achieving the goals through optimum usage of scarce resources in a dynamic environment. External and internal environments are the factors, which makes both the trouble and easiness for the organizational activities. Mostly it creates challenges uncertainty and risk rather than opportunities. To minimize the existing risk and create the certainty in the organization, management is very suitable one. So, for the good management of any organization the proper utilization of management tools and techniques are helpful to achieve their objectives. Various tools and techniques of management have proved beneficiary in every aspect of managerial activities. Management Accounting is a term among various tools and techniques. The objective of management accounting is to help managers in overall managerial activities by providing information and helping them in planning, controlling and decision making. It acts as a strategic business partner in support of management for organizational decision. The main objectives of the present research were to examine the present practice of management accounting tools, to identify the difficulties on the application and to recommend for the practices of management accounting tools in Civil Aviation Authority of Nepal to strengthen the organizational performance.

As per the nature of the study, research design is followed with descriptive and analytical approach. The major data regarding the practices of management accounting were collected from primary source. Questionnaires were distributed and table talks were also made as necessary to gather information. The details about the management accounting and the aviation were grabbed from different books, journals, articles, websites, previous thesis etc. Information was presented as per the requirement of the study.

From the analysis, it was found that management accounting tools such as "Annual Budgeting", "Capital Budgeting", "Cost Volume Profit Analysis", "Variance Analysis", "Decision Making", "Cash Flow Analysis" were practiced by the CAAN for planning, controlling and decision-making. Where as, the tools like Cost Segregation, Long Term Budgeting, Pricing of services, Standard Costing, Ratio Analysis, Zero Base Budgeting etc was not practiced by the authority. Lack of information, knowledge, skilled manpower, extra cost burden, nature of service, political instability and interference were the main reasons behind not practicing such tools.

## **5.2 Conclusion**

From the research, it has been found that there is big gap between the theory and practical because most of the accounting tools are not applied in the authority which is taught in the academic institutions. Tools like "Annual Budgeting", "Capital Budgeting", "Cost Volume Profit Analysis", "Variance Analysis", "Decision Making", "Cash Flow Analysis" are in practice but the tools like Cost Segregation, Long Term Budgeting, Pricing of Services, Standard Costing, Ratio Analysis, Zero Base Budgeting, Activity Based Budgeting, Activity Based Costing are not in practice.

In CAAN, practices of hiring outside expert and sending own staffs for training to carry out innovative activities in the field of management accounting are almost nil. But it is practiced on other faculty like air traffic services, aviation security etc. It can be said that authority is still on infant stage in practicing management accounting tools although it is operating since long.

For the detail practice of management accounting tools, hiring of outside expert, training to staffs and recruitment of skilled manpower will be good idea but no provision of these things on authority because of huge and extra cost burden. It seems that authority is with the concept that management accounting is similar to financial accounting. But financial accounting is just concern with recording of financial transactions and presents information in financial term. It is only a useful factor for management accounting. Management accounting

has great role on good planning, controlling and decision making procedure. New tools and techniques such as Zero Base Budgeting, Activity Based Budgeting, Activity Based Costing and Target Costing have been developed around the world but practice of these tools in CAAN is nil. Lack of information, knowledge and willingness about management accounting tools are the main factors causing problem in the application of such tools.

The future of CAAN seems bright if it can grab the upcoming opportunities in the sector of aviation and equally necessary to make strategy for the weaknesses. The monopoly market on airport operation, CAAN's autonomous character, fast growing trend of aviation and Nepal as an attractive destination around the world are the backbone for its bright future.

### **5.3 Recommendations:**

Civil Aviation today, around the globe is the combination of both challenges and opportunities. The high demand and rapid growth in the sector of aviation is the bright sign of opportunity where as the management of this high demand and rapid growth with the safe and secure flight is the main challenges. Similarly, from any kind of incident, accident and activities regarding security threats are other challenges.

Nepal being a mountainous country, it is facing some extra opportunities and challenges including above. The physical structure of Nepalese airports like terminal facility, runway structure and other essential technical facilities are poor due to its rural ness, terrains and financial capabilities.

Being an autonomous enterprise, it is the responsibility of CAAN to cope with the existing and upcoming challenges and opportunities. The authority should fit with global and internal environment. Management should think in global perspective not only national. Information should be updated for better utilization of limited resources and achievement of goals. For the good and effective management the application of management accounting makes management more strong on the field of planning, controlling and decision making. It also helps to cope with the opportunities and challenges created by

the industrial globalization through WTO. Nepal is also a member country of WTO since 23<sup>rd</sup> April 2004.

It is already discussed in detail about the status on the application of management accounting procedure and its problems for the application of management accounting in CAAN. Here are the recommendations to CAAN based on this research study for the well application of management accounting and other managerial perspective presented below:

- To strengthen the CAAN and to carryout managerial activities, the uses of management accounting tools and techniques are recommended.
- The management accounting department should be responsible for the detail study of present practices and modern developments. All the developments, information and knowledge should be gained and analyzed its useful ness, importance and cost benefits.
- It is recommended that the authority should create an environment of interaction between the academicians and the authority. It can be benefited for the knowledge about the new tools and techniques of management accounting.
- Academicians should put effort to bring management accounting tools into the light by the help of books, journals, articles and campaigns such as seminar, workshop and training. It is helpful to get more information about the tools and techniques. Long term as well as short term training packages should be offered for the managers about the techniques of management accounting and to update the knowledge and skill.
- The authority should not depend only on the practices of traditional system. It should be motivated for the new and modern system through the research and development programs. For this authority should spend certain percentage of their earnings.
- The authority is recommended to practice the cost segregation tool for the segregation of mixed cost into fixed and variable which is very helpful to find out the nature of cost.

- Budgeting and planning activities should be conducted by hiring the professional experts. It helps to prepare budget by the maximum utilization of its limited resources on systematic way.
- The Budget should not be only Operational; authority should practice the "Cash Budget" also. Develop airport wise and CAANs comprehensive annual budgeting system. Similarly, the practice of Medium and Long term budget is equally necessary for the authority like CAAN.
- Budget preparation should not be based only on "Actual Past and upcoming income and expenses". Along with this environmental factor should also be taken into consideration. It is because what happened in the past might not occur in the future. The advance tools like Zero Based Budgeting and Activity Based Budgeting are recommended to practice for the preparation of more realistic budget.
- It is recommended to CAAN, for the risk adjustment while purchasing fixed assets or making long-term investment through the tools like Shorten Payback Period and Sensitivity Analysis.
- Authority mostly depends on "Profit and Loss Account and Cash Flow Analysis" for the measurement of overall performance. It is suggested to CAAN not only depend on these techniques. Along this, the tools such as Ratio Analysis, Variance Analysis and Standard Costing should be used. Beside these, present performance should be compared with past performance of the authority.
- While estimating cost and revenue for future period, authority should not be based on "Past Trend" only. What happened in the past might not happen in future. So for the estimation, tools like "Zero Base Budgeting", "Market Survey" and "Statistical Tools" should be practiced. This helps the enterprises to reach to correct estimation.
- For the Pricing of the service delivered by the CAAN, It is recommended that the exiting rules and regulations should be amended as per the business principle. The rules and the regulations must have the

- The Decision Making procedure should be applied properly on the sector like operation of plants and machinery and the airports. The decision making is poor in the sector of airport operation due to the public responsibility of the authority and the interference from the agencies like government, politicians and locals. It should be revised for the well sake of the authority.
- CAAN must establish the Asset Department for the well management of its property. All the properties should be registered and revalued on the fixed period. The Inventory Valuation system should also be applied on the basis of tools like LIFO, FIFO or Weighted Average Method.
- Management Information System (MIS) should make more effective and interactive. The system it self should be more informative and interactive. The frequent interactive programs should be held in between management and the staffs.
- The accounting system of CAAN should be developed fully on computer-based system. Necessary infrastructural development and training to the accounting personnel is needed for the better organizational performance.
- The authority should be updated with new tools and techniques that are practiced around the globe to cope with the changing environment, cost minimization and better service quality.
- Performance of Authority can be improved by allowing greater autonomy and more accountability. Similarly, the authority must be out of unnecessary governmental, political and other kind of interference. The political stability is equally necessary for the smooth operation of authority.

- Morality concept should be developed in the authority for the fair, regular, responsible and accountable environment.
- Various programs should be launched for the motivation of staffs. The performance monitoring and evaluation system must be fair and effective for their contribution. Performance based incentive system should be launched for this.
- The authority should able to analyze its "Strength, Weaknesses, Opportunities and Threats" (SWOT Analysis). It helps to know about the actual condition of organization and its challenges, which is helpful for the strategic management over the challenges, weaknesses and threats.
- CAAN is overcapitalized due to the over valuation of DCA assets. Out of total assets, about 50% is land value. The present land value is calculated based on the commercial value, which is high for CAAN. The land value should be calculated in the accounting principle of "Cost Price or Market Price, which ever is lower".
- CAAN as an airport operator quality service, customer satisfaction, demand based facilities, regular operation of airports and recovery of at least operational expenses should be the prime target for its better organizational developments.
- It is necessary to CAAN for the review of its legal status, which are not suitable for the present environment. Immediate amendment is required for the status like CAAN Act 2053, CAAN Financial Administration Rules 2057, Bimansthal Dastur Niyamawali 2038 (revised 2062) etc. The rules and regulations must be clear, concise and understandable, no double standard.

## BIBLIOGRAPHY

### BOOKS:

- Agrawal, Dr. G. R., (2005), "*Dynamics of Business Environment in Nepal*" M. K Publishers and Distributors, Kathmandu.
- Bajracharya, P. R., Ojha, K., Goet, J. and Sharma, S. (2004), "*Managerial Accounting*" Asmita Books Publication and Distribution, Kathmandu.
- Batty, F. J. (1982), "*Management Accounting*" The English Language Book Society and Macdonald and Evans Ltd., Plymouth.
- Dangol, R. M. and Prajapati, K (2005), "*Accounting for Financial Analysis and Planning*" Taleju Prakashan, Kathmandu.
- Fago, G., Subedi, D. P. and Gyawali, A. (2004), "*Management Accounting*" Buddha Academic Publishers and Distributors Pvt. Ltd., Kathmandu.
- Freeman, M. H., Hanna, J. M., Jain, G., (2000), "*Book Keeping and Accounting*" Gregy Publishing Division, USA.
- Garrison, R. H. (1985), "*Managerial Accounting. Texas*" Business Publication Inc. Plan
- Gautam, A. and Bhattarai, I., (2004), "*Budgeting Profit Planning and Control*" Buddha Academic Publisers and Distributors Ltd., Kathamandu.
- Goyal, S. N. and Mohan, M. (1997), "*Management Accounting*" Sahitya Bhawan Publication, Agra.
- Gupta, S. P. (1997), "*Management Accounting*" Prentice Hall of India Pvt. Ltd., New Delhi.
- Hilton, R. W. (1997), "*Managerial Accounting*" Mc-Graw Hill Inc., USA.

- Horngren, C. T. (1991), *"Introduction to Management Accounting"* Prentice Hall of India, New Delhi.
- Horngren, Foster and Datar, (1999), *"Cost Accounting A Managerial Approach"*, Prentice Hall of India, New Delhi.
- Jain, S. P. and Narang, K. L (1992), *"Cost Accounting Principles and Practices"* Kalyani Publisher, New Delhi.
- Kandel, P. R. (2003), *"Tax Laws & Tax Planning in Nepal"* Buddha Academic Enterprises Pvt. Ltd., Kathmandu.
- Khan, M. Y. and Jain, P. K. (1993), *"Management Accounting"* Tata McGraw Hill Publishing Company, New Delhi.
- Pandey, I. M. (1997), *"Financial Management"* Vikas Publishing House Pvt. Ltd., New Delhi.
- Paul, S. K. (1994), *"Management Accounting"* New Central Book Agency Pvt. Ltd., Calcutta.
- Welsch, G. A, Hilton, R.W., and Gordon, P. N. (1992), *"Budgeting Profit Planning and Control"* Prentice Hall of India, New Delhi.
- Weston, J. F. and Copeland, J. E. (1992), *"Managerial Finance"* The Dryden Press, Chicago.

**Unpublished Master Degree Thesis:**

- Duwadi, Raj Kumar, (2007), *"A Study on Management Accounting Practices in Joint Venture Banks of Nepal"* An Unpublished Master Degree Thesis Submitted to Shanker Dev Campus, T.U., Kathmandu.
- Gupta, Balaram, (2009), *"A Comparative Study on Profit Planning in Manufacturing and Non-Manufacturing Public Enterprise of Nepal"* An Unpublished Master Degree Thesis Submitted to T.U., Kathmandu.

- Kharel, Phanindra Raj, (2006), *"Budgeting Practices in Public Manufacturing Enterprises" (A Case Study of Dairy Development Corporation)* An Unpublished Master Degree Thesis Submitted to Shanker Dev Campus, T.U., Kathmandu.
- Sharma, Sagar, (2002), *"Management Accounting Practice in the Listed Company of Nepal"* An Unpublished Master Degree Thesis Submitted to Shanker Dev Campus, T.U., Kathmandu.

**Magazines , Journals and Other Articles:**

- CAAN (2007). 9<sup>th</sup> Anniversary of CAAN Souvenir 31st Dec 2007. Babarmahal, Kathmandu.
- CAAN (2007). Civil Aviation Report. 2006. Babarmahal, Kathmandu.
- CAAN (2009). CAAN Souvenir 2009. Babarmahal, Kathmandu.
- Central Bureau of Statistics (CBS). (2005). Statistical Pocket Book. 2005. Kathmandu.
- Govt of Nepal Auditor General Office. (1962). Manuals of Accounting. Kathmandu
- NATCA (2006). Horizon NATCA Official Magazine 2006, TIA, Kathmandu.
- NATCA (2007). Horizon NATCA Official Magazine Dec 2007, TIA, Kathmandu.
- Nepal Rastra Bank (2063), Current Macro Economic Situation, Research Department, Statistical Division.Spotlight, Weekly (Nov. 23-29, 2001), A Multitude Models as Market Grows, Vol. 21:

### **Acts and Regulations**

- Bimansthal Dastur Niyamawali, 2038 (4th Amendment, 2061).
- CAAN Employee's Facility, Service and Condition Regulations, 2056 (Amendment 2063)
- CAAN Financial Administration Rules, 2057.
- Civil Aviation Act, 2015 (Amendment, 2053).
- Civil Aviation Authority of Nepal Act, 2053.
- The Aviation Policy, 2063.

### **Websites:**

- [www.caannepal.org.np](http://www.caannepal.org.np)
- [www.fncci.org.np](http://www.fncci.org.np)
- [www.nada.org.np](http://www.nada.org.np)
- [www.nepalnews.com](http://www.nepalnews.com)
- [www.nrb.org.np](http://www.nrb.org.np)
- [www.worldbank.org](http://www.worldbank.org)

## APPENDIX- I

### Questionnaire

**Dear Sir/Madam,**

I would be grateful if you supply correct information, desired below. This information will be used only for academic purpose. Your help will be highly appreciated please ticks (√) or fill the blanks as per requirement.

**Name of the firm:** .....

**Address of the firm:**.....

**Date of Establishment:**.....

**Name of Proprietor/Manager:**.....

**1. Which of the following Management Accounting tools are using in CAAN?**

Management Accounting Tools	Yes	No
Segregation of Cost		
Long Term Budgeting		
Annual Budgeting		
Cost Volume profit Analysis		
Capital Budgeting		
Variance Analysis (Budget or other)		
Decision Making		
Pricing of Service or Product		
Cash Flow Analysis		

**2. If you aren't using Management Accounting tools, what may be the reasons?**

- i. Lack of knowledge [    ]
- ii. Lack of information [    ]
- iii. Not necessary till now [    ]
- iv. Lack of Policy [    ]

**3. Which technique does the authority use to segregate the Mixed Cost into Variable and Fixed.**

- i. High Low Method [    ]
- ii. Least Square Method [    ]
- iii. Average Method [    ]
- iv. Other (if any) .....

**4. What type of Budgeting is in use?**

- i. Operational Budget [    ]
- ii. Financial Budget [    ]
- iii. Master Budget [    ]
- iv. Flexible Budget [    ]
- v. All of the above [    ]
- vi. Other (if any) .....

**5. Who prepares the Budget?**

- i. Committee [    ]
- ii. Finance Division [    ]
- iii. Account Division [    ]
- iv. Experts [    ]
- v. Planning and Development Division [    ]
- vi. Other (if any) .....

**6. What type of Budget does the authority use?**

- i. Annual Budget [    ]
- ii. Medium Term Budget [    ]
- iii. Long Term Budget [    ]
- iv. Other (if any) .....

**7. On what basis does the authority prepare Budget?**

- i. Based on past budget estimates [    ]
- ii. Based on past actual expenses [    ]
- iii. Based on Future income and expenses [    ]
- iv. Activity Base [    ]
- v. Zero Base [    ]
- vi. Other (if any) .....

**8. What technique does the authority use for Cost and Revenue Estimation?**

- i. Past Trend Analysis [     ]
- ii. Market Survey [     ]
- iii. Zero Base Budgeting [     ]
- iv. Other (if any) .....

**9. While purchasing Fixed Assets which of Capital Budgeting tools are used?**

- i. Payback Period [     ]
- ii. Discounted Payback Period [     ]
- iii. Accounting Rate of Return (ARR) [     ]
- iv. Net Present Value (NPV) [     ]
- v. Internal Rate of Return (IRR) [     ]
- vi. Other (if any) .....

**10. How far the authority adjusts for Risk while evaluating Capital Investment?**

- i. Payback Period [     ]
- ii. Discounted Payback Period [     ]
- iii. Net Present Value (NPV) [     ]
- iv. Sensitivity Analysis [     ]
- v. Profitability Index (PI) [     ]
- vi. Cost Volume profit Analysis [     ]
- vii. Other (if any) .....

**11. Which method is used for Inventory (Stock) Valuation?**

- i. LIFO [     ]
- ii. FIFO [     ]
- iii. Weighted Average Method [     ]
- iv. Simple Average Method [     ]
- v. Other (if any) .....

**12. What technique does the office practice for Pricing of Product or Services?**

- i. Cost Based Pricing [     ]
- ii. Target Cost Pricing [     ]
- iii. Going Rate Pricing [     ]
- iv. Based on Rules [     ]
- v. If any .....

**13. Does the authority properly manage the accounting procedure and financial statements?**

Details	Yes	No
Voucher		
Ledger Posting		
Trail Balance		
Subsidiary Books A/C		
Income Statements		
Profit and Loss A/C		
Balance Sheet		
Cash Flow Statements		

**14. How does the authority measure the Overall Performance at the end of the year?**

- i. Shown by P/L A/C [     ]
- ii. Cash Flow Analysis [     ]
- iii. Ratio Analysis [     ]
- iv. Variance Analysis [     ]
- v. Other (if any) .....

**15. What is the status of the accounting personnel presently working in authority?**

- i. Skilled [     ]
- ii. Qualified [     ]
- iii. Semi Skilled [     ]
- iv. Unqualified [     ]
- v. Unskilled [     ]
- vi. Other (if any) .....

**16. Are the accountings personnel follow the accounting manual developed by CAAN?**

- i. Yes [     ]
- ii. No [     ]

**If not why**

- a. Lack of knowledge [     ]
- b. Lack of information [     ]
- c. Do not need [     ]

**17. Does the finance division satisfy with the performance of the accounting personnel?**

- i. Yes [     ]
- ii. No [     ]
- iii. Other (if any) .....

**18. What is necessary to make effective accounting?**

- i. Training, workshop, seminars etc [     ]
- ii. Skilled manpower [     ]
- iii. Qualified manpower [     ]
- iv. All of the above [     ]
- v. Other (if any) .....

**19. How far the top management is interested on accounting?**

- i. Highly interested [     ]
- ii. Moderate [     ]
- iii. Uninterested [     ]
- iv. Other (if any) .....

**20. Does the top management receive information from finance division?**

- i. Yes [     ]
- ii. No [     ]
- iii. Do not need [     ]
- iv. Other (if any) .....

**21. What kind of information or knowledge does the top management wants to know?**

- i. Proper financial (Accounting) System [    ]
- ii. On decision making procedures [    ]
- iii. Regarding income and expenses [    ]
- iv. Regarding purchase and sales [    ]
- v. Other (if any) .....

**22. Which procedure is used for preparation of budget?**

- i. Participative approach [    ]
- ii. Top level of management prepare the budget and forwarded junior level for implementation [    ]
- iii. Junior level prepares the budget and submitted to higher authority for approval. [    ]
- iv. Other (if any) [    ]

*Thanking You for Your Kind Co- operation*