

CASH MANAGEMENT PRACTICES IN NEPAL
(A Case Study of Nepal Telecom)

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

In partial fulfilment of the requirement of the degree of
Master's of Business Studies (MBS)

Kathmandu, Nepal
August 2011

RECOMMENDATION

This is to certify that the thesis

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Entitled

CASH MANAGEMENT PRACTICES IN NEPAL (A Case study of Nepal Telecom)

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

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DECLARATION

I hereby declare that the work reported in this thesis entitled “*CASH MANAGEMENT PRACTICES IN NEPAL (A Case Study of Nepal Telecom)*”, submitted to Central department of management, Tribhuvan University, is my original work done in the form of partial fulfilment of the requirement for the Master in Business Studies (MBS) under the Supervision of Supervisor *Achyut Gyawali* of Central Department of Management.

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Date: August 2011

ACKNOWLEDGEMENT

This study has been made with a view to examine “**Cash Management Practices In Nepal (A Case Study of Nepal Telecom)**”. The main contribution of this study lies in explaining and exploring some sector of the cash management practices of Nepal Telecom. In addition, this study will enhance the managerial skills of the management for planning and controlling of cash.

I would like to express my deep gratitude towards respected supervisor *Achyut Gyawali* for his constant guidance. It would not have been possible for me to complete this research work without his persistent supervision, advice and direction.

I extend my special regards to my husband Dinesh Poudyal for providing necessary information and support to conduct this thesis. I am also thankful to the staff of Central Department of Management and Central Library for their kind co-operation.

Kalpana Bhattarai

August, 2011

TABLE OF CONTENTS

Recommendation	i
Viva-voce Sheet	ii
Declaration	iii
Acknowledgements	iv
Table of Contents	v
List of Tables	viii
List of Figures	ix
Abbreviation	x
CHAPTER ONE: INTRODUCTION	1-9
1.1 Background of Study	1
1.2 Introduction of Nepal Telecommunication	3
1.3 Statement of the problem	4
1.4 Objective of the Study	7
1.5 Significance of the Study	7
1.6 Limitations of the Study	8
1.7 Organisation of the Study	8
CHAPTER TWO: REVIEW OF LITERATURE	10-41
2.1 Conceptual framework	10
2.1.1 Meaning of Cash Management	10
2.1.2 Principles of Cash Management	11
2.1.3 Techniques/processes of Cash Management	12
2.1.4 Factors determining cash needs	14
2.1.5 Motives of holding cash	17
2.1.6 Objectives of Cash Management	19
2.1.7 Determining the optimum cash balance	20

2.1.8 Cash Management Models	22
2.2 Review of related study	29
2.3 Review of Previous Thesis	34
2.4 Research Gap	41
CHAPTER THREE: RESEARCH METHODOLOGY	42-50
3.1 Research Design	42
3.2 Nature and Source of Data	43
3.3 Method of data analysis	43
3.3.1 Financial tools and techniques	43
3.3.2 Statistical tools	48
CHAPTER FOUR: PRESENTATION AND ANALYSIS	
 OF DATA	51-83
4.1 Analysis of data by Financial Tools	51
4.1.1 Liquidity Analysis	51
4.1.2 Cash position Analysis	56
4.1.3 Cash turnover ratio	59
4.1.4 Actual cash flow analysis	60
4.1.5 Cash budget	64
4.1.5.1 Approved Cash Budget and Actual Cash from fiscal year 2002/03 to 2009/10	65
4.1.5.2 Revised Cash Budget and Actual Cash from fiscal year 2002/03 to 2009/10	66
4.2 Analysis of data by Statistical tools	67
4.2.1 Trend Analysis	67
4.2.2 Corrélation Coefficient & Régression analysis	72
4.2.2.1 Between Cash and Revenue of NTC	73
4.2.2.2 Between Cash and Account Receivable of NTC	75
4.3 Presentation and Analysis of Primary Data	78

4.4	Major Findings of the Study	80
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**CHAPTER FIVE: SUMMARY, CONCLUSION AND
RECOMMENDATION**

84-87

5.1	Summary	84
-----	---------	----

5.2	Conclusion	85
-----	------------	----

5.3	Recommendation	86
-----	----------------	----

BIBLIOGRAPHY	88-90
---------------------	--------------

APPENDIX	91-99
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LIST OF TABLES

Table No.	Name of the Tables	Page No.
4.1	Analysis of Current Ratio	52
4.2	Analysis of Quick Ratio	54
4.3	Analysis of Absolute Cash Ratio	56
4.4	Analysis of Cash to Current Assets	57
4.5	Statement showing Cash Turnover Ratio	59
4.6	Calculation of Actual Cash Flow from various activities for the year ended 2002/03 to 2009/10	62
4.7	Statement Showing Approved Cash Budget and Actual Cash	65
4.8	Statement Showing Revised Cash Budget and Actual Cash	66
4.9	Future Trend Analysis of Cash and Bank Balance	68
4.10	Forecasted Cash and Bank Balance	71
4.11	Correlation between Cash Balance and Revenue	73
4.12	Correlation between Cash Balance and Account Receivable	75

LIST OF FIGURES

Figure No.	Name of the Figures	Page No.
2.1	Baumol's Cash Management	23
2.2	Optimum Cash Balance	24
2.3	Miller Orr Model of Cash Management	26
4.1	Figure showing Current Ratio	53
4.2	Figure showing Quick Ratio	55
4.3	Figure showing Absolute Cash Ratio	58
4.4	Figure showing Cash to Current Assets Ratio	50
4.5	Figure showing Cash Turnover Ratio	60
4.6	Trend showing Cash flow position from various Activities	63
4.7	Trend line showing percentage change in approved and actual cash budget	65
4.8	Trend line showing percentage change in revised and actual cash budget	67
4.9	Future Trend Analysis of Cash and bank Balance	69
4.10	Forecasted Cash an Bank Balance	72

ABBREVIATION

%	= Percentage
&	= And
F/Y	= Fiscal Year
NTC	= Nepal Telecommunication Corporation
CFOA	= Cash Flow from Operating Activities
CFFA	= Cash Flow from Financing Activities
CFIA	= Cash Flow from Investing Activities
CWIP	= Capital Work-in-progress
A/R	= Account Receivable
Rs.	= Nepalese Rupees
Rs.'000'	= Nepalese Rupees in Thousands
T.U.	= Tribhuvan University

CHAPTER I

INTRODUCTION

1.1 Background of Study

Cash management refers to the efficient management of cash in a business in order to put the cash to work more quickly and to keep the cash in application that produce income such as the use of lock boxes for payments. Cash management is a broad term that refers to the collection, concentration, and disbursement of cash. It encompasses a company's level of liquidity, its management of cash balance, and its short-term investment strategies. In some ways, managing cash flow is the most important job of business managers. If at any time a company fails to pay an obligation when it is due because of the lack of cash, the company is insolvent. Insolvency is the primary reason firms go bankrupt. Obviously, the prospect of such a dire consequence should compel companies to manage their cash with care. Moreover, efficient cash management means more than just preventing bankruptcy. It improves the profitability and reduces the risk to which the firm is exposed. Infrastructure is a key for economic development and improving quality of life. The speed of technological development and convergence of information and communications sector have led to a high investment requirement for the infrastructure development. New types of telecommunications Services and network are appearing and the sociological requirement relating to information flows have assumed greater importance. This has led to a need for sector reform. Convergence of technology, access to information and reliable infrastructure not only improve the quality of life and economic activities of people but also strengthens democracy. The information available in the network will fill the gap between haves and

haves not provided it could be used by common people at affordable price. The policy of each government must be oriented towards this end. Governments have taken steps in reforming published objectives, policies, laws, creating independent regulatory body but lacking willingness and commitments in implementation. It may widen the gap between poor and rich in wealth and knowledge leading to a society which democratic country does not wish to have.

The history of telecommunication in Nepal is rather very young as compared to the history and culture of Nepalese people. Telecommunication was introduced with the installation of open wire trunk telephone line between Kathmandu and Birgunj (a boarder town in southern Nepal) for the first time in Nepal around 1914 beginning of the First World War (Pandey, 1997: 839).

Telecommunication assumes great importance in Nepal where most of the land is covered with high mountains and transport facilities are inadequate. But due to some factors like financial constrains, total dependence on imports for supply of equipment, lack of infrastructure and lack of good management of available resource etc, telecommunication service is accessible only to a few percentage of our entire population.

As said earlier, one of the main reasons for poor performance on telecommunication sector is due to poor and inefficient management of available resource. For the efficient and effective utilization of resources, there must be proper plan, strategy and control system. Management is concerned with the efficient use of important resources for the productive result. It is a process of planning, controlling and giving feedback for proper implementation. Among various types of management, cash

management plays an important role in efficient and effective utilization of resources because "Cash is the important current asset for the operations of the any business organisation. Holding cash more than necessary for the intended purpose is as much expensive as running business with inadequate cash. Too much cash balance will result in higher opportunity cost, and too little will create crisis of cash shortage and force to borrow at higher interest rate. Therefore, it is important that firm maintain cash balance at optimal level in order to meet regular cash expenses and short term financial obligations" (Pradhan, 2004: 152).

1.2 Introduction of Nepal Telecommunication Corporation

Nepal Telecom Board established in October 1969 was converted to Nepal Telecommunications Corporation (NTC), a fully government owned statutory organisation in June 1975. It was established under communication corporation act 2028 BS. The objective of corporation is to provide telecommunication services according to national communication service plan, make service easily accessible at simple and reasonable price, enhance the economic position and living standard of the people and encourage public participation in the various activities of NTC. That was the time when the first telecom project funded by World Bank was nearing to completion and the second telecom project was in the state of starting.

After dissolving Nepal Telecommunications Corporation (NTC), Nepal Doorsanchar Company limited (Nepal Telecom) was registered on 2060-10-11 under company act 2053 and the notice to this effect was published in Nepal Gazette dated 26th Chaitra 2060. However, the company name was

officially effective from 1st Baisakh 2061 (13th April 2004) and is also known to general public by the name NEPAL TELECOM as registered trademark (http://www.ntc.net.np/utilities/nt_brief.php).

The Mission statement

Nepal Telecom, as a progressive, customer spirited and consumer responsive entity, is committed to provide nation-wide reliable telecommunication services to serve as an impetus to the social, political and economic development of the country.

The vision

NEPAL TELECOM's vision is to remain as a dominant player in the telecommunication sector of the country while extending reliable and affordable telecommunications services to all regions including the remotest area of the kingdom and at the same time retaining its present sound financial health event in the coming competitive environment.

1.3 Statement of the Problem

The earlier studies on the demand of cash did not report unanimous findings. A lot of controversies exist with respect to the presence of economies of scale in cash holdings and the effects of capital costs on the demand for cash. Cash management is concerned with all decisions and acts that influence the determination of the appropriate level of cash and their efficient use as well as choice of the financing method, keeping in view of liquidity.

The cash and bank balance of an enterprise is that portion of its total current assets which is put to variable operative purpose and has the

characteristics of greater divisibility, liquidity and rapidity of turnover which influence the types and terms of financing.

Beginning of the work of Bajracharya, 1990 examined the cash management practices in public enterprises. Their view about the cash management indicates the existence of poor cash management in various enterprises. However, the question exists as to what insight over the problem of cash management. Cash management refers to the proper management of firm cash position. It is concerned with all decisions and acts that influence the determination of the appropriate level of cash and their efficient use as well as choice of the financing method, keeping in view of liquidity. Hence, cash management is in itself a decision-making area within the framework of the overall current assets management. There is no unanimous finding as regards to the effect of interest rate on demand for cash.

Shrestha (1980: 241-247) showed the statistically significant negative relationship between interest rates and demand for cash while (Friedman, 1959: 327) did not find the same. It all shows that there is no unanimous finding with respect to the economies of scale in cash holdings, and the interest cost effect on demand for cash. In order to validate one view or the other, little study has so far been conducted in the context of Nepal.

So, the research has attempts to test this model in Nepalese public utility enterprises, Nepal Telecom. Cash management has been the most intricate and challenging area if modern corporate finance as much as the management always face a trade-off between the liquidity and profitability of the firm. Though most of the enterprises in Nepal have been well recognized the importance of proper cash management, they are still facing the problem of cash management (Bajracharya, 1990: 23).

Most enterprises had periodic accumulation of surplus cash and corresponding cash shortage from time to time. Most of the Nepalese public enterprises never thought of the source of current assets i.e. cash and usually depends on GN (then called HMG) for it. Thus, the existing problems are there- in the area of finance is mostly directed towards the management of cash rather than in any other area.

Nepal Telecom is role institution in the telecom sector in the country with high capital investment. It has been financed by government of Nepal and many donor agencies. Although it has enjoyed almost full monopoly in the industry, now it is facing market competition with same service provider in some areas. So, now it must prepare and strengthen existing competency to achieve productive output in by optimum utilization of resources. The management must focus in implementation of effective and appropriate action plan, strategies, and control mechanism.

Cash management refers to the proper management of firm's cash position. It is concerned with all decisions and acts that influence the determination of the appropriate level of cash and their efficient use. It also includes the choice of the financing method, keeping in view of liquidity.

Cash management has been the most indicated and challenging area of modern corporate finance. This study has tried to answer following research questions.

- a. What is the liquidity and cash position of NTC?
- b. What is the position of cash inflow and outflow of NTC?
- c. What is the relationship between liquidity and total revenue and liquidity and profitability?

1.4 Objective of the Study

The major objective of this study is to examine the management of cash in Nepal Telecom. The specific objectives are as follows.

- a. To identify the liquidity position of NTC.
- b. To assess the cash management practices in NTC.
- c. To study the relationship of cash with total revenue and account receivable.
- d. To forecast cash and bank balance of NTC for next five years (From 2010/11 to 2014/15).
- e. To provide NTC suggestions and recommendations in terms of cash management.

1.5 Significance of the Study

Resources are very scarce in every organization. Out of these available resources, organisation has to accomplish its objective. The financial performance of the organisation prominently depends upon the use of these scarce resources. Therefore cash management is one of the important tool which tells us how to optimally use these scarce resource i.e. cash.

The idea behind cash management is maintaining adequate liquid assets whenever and wherever required by the firm. Maintaining the corporate liquidity therefore consists of determining the volume and timing of cash required by the firm.

The study of cash management of NTC provides crucial information about the cash management system. Management of NTC can be benefited by this study by determining the strength and the weakness of the particular part of the cash management on which the objective of the

study is based. This study not only helps management of NTC Limited but also helps other managerial person to have reference about the better cash management potential and practices.

1.6 Limitations of the Study

The study has very limited area of investigation. It is only partial analysis of cash management of NTC. Comprehensive study of cash management is not possible in this thesis due to its deadline of completion and availability of data and information. So the limitations of the study are as follows:

- a. The study covers the analysis of recent eight years. (From 2002 to 2010).
- b. The accuracy of this study is based on the data available from NTC and various published document of the organisation.
- c. Only financial and statistical tools are used for analysis of data.
- d. Very few primary data are used by the researcher and the thesis is mostly based on secondary data collected from NTC.

1.7 Organisation of the Study

This study has been organised in five chapters.

The first chapter is the introduction chapter which deals with the background of the study, introduction of NTC, statement of the problem, objective of the study, significance of the study and limitation of the study.

Review of literature deals with the literature review relating to cash management i.e. books, journals and thesis.

In third chapter, the research methodology employed for the study has been described. It includes introduction, research design, data collection and sources, data processing procedure and tabulation of financial tools and techniques.

Then the acquire data are presented and analyzed through the way given in methodology in the fourth chapter.

At last, the summary, major findings, issue, constraints and some recommendation have been presented in the fifth chapter.

A bibliography and appendix have also been included in the last part of the study.

CHAPTER II

REVIEW OF LITERATURE

2.1 Conceptual Framework

2.1.1 Meaning of Cash Management

“Cash is the most important form of current assets. It is the basic input and ultimate output. The term ‘cash’ refers to all money items and sources that are immediately available to help pay a firm’s bills.

Cash includes coins, currencies, cheques held by a firm and balances in its bank accounts. This money is immediately usable to pay bills. Sometimes, near cash items are also included in cash e. g. marketable securities. If the firm has excess cash, it may decide to convert it to short-term investments” (Pradhan, 2004: 365). So how a financial manager keeps track of all these money and how these cash are invested to near cash item so that it can be converted back to cash without delay. It is only the cash management with help the financial manager to keep record of all the cash and near cash items.

The term ‘cash management’ is concerned with the management of current assets and current liabilities of the business, which is necessary for day –to-day operation.”Cash management is concerned with the decision regarding the short-term funds influencing overall profitability and risk involving in the firm. The management of cash has been regarded as one of the conditioning factors in the decision-making issues”(Saksena, 1974: 6).

2.1.2 Principles of Cash Management

Selection of cash management strategies entirely depend upon the individual firm. As each firm is unique in its nature, management should select strategies depending upon its own financial strength and objective. "In the matter of cash management, financial managers are mainly concerned with the (a) management of cash receipts, (b) management of disbursement, (c) minimization of cash balance, (d) use of most inexpensive sources of financing for cash balance, and (d) investment of excess balance of cash. The standard principles of cash management are as follows.

- a. To collect accounts receivable as soon as possible without annoying and losing potential customers by establishing a system of lock boxes, electronic funds transfer, pre-authorized checks, and deposit concentration.
- b. To delay payments as long as permitted without damaging the firm's credit rating by establishing controlled disbursement system.
- c. To minimize cash balance without adversely affecting the business operation by following the techniques of cash balance management such as Baumol and Miller-Orr Models.
- d. To manage most inexpensive sources of financing for meeting short term cash deficiency by optimally balancing between cost and risk.
- e. To invest short term excess cash in most efficient market portfolios of securities such as in money market instruments" (Pradhan, 2000: 154).

2.1.3 Techniques/Processes of Cash Management

The strategy by which a company administers and invests its cash is known as cash management. The efficiency of cash management of a firm can be appreciated by understanding the firm's procedures for cash collection and cash disbursement. Both the collection and disbursement management offer opportunities for profit improvement; collection, however, offer more of them. "The general idea is that the firm will benefit by "speeding up" cash receipts and "slowing down" cash payouts. The firm wants to speed up the collection of accounts receivable so that it can have the use of money sooner. Conversely, it wants to pay accounts payable as late as is consistent with maintaining the firm's credit standing with suppliers so that it can make the most use of the money it already has"(James, 2003: 227). Following techniques are considered to be useful to accelerate the collection and slow down disbursement.

a. Managing Collection

Cash collection systems aim to reduce the time it takes to collect the cash that is owed to a firm. Some of the sources of time delays are mail float, processing float, and bank float which are explained in detail below. Obviously, an envelope mailed by a customer containing payment to a supplier firm does not arrive at its destination instantly. Likewise, the payment is not processed and deposited into a bank account the moment it is received by the supplier firm. And finally, when the payment is deposited in the bank account oftentimes the bank does not give immediate availability to the funds. These three "floats" are time delays that add up quickly, and they can force struggling or new firms to find other sources of cash to pay their bills. Cash management attempts,

among other things, to decrease the length and impact of these "float" periods.

- **Float**

"The float, composed of several elements, is the time lost between two actions that is 1. The customer mails the payment and 2. the firm obtains the use of funds. The acceleration of cash receipts or equivalently the reduction of the float is an important cash management technique. The float has typically four elements.

- i. Mail float
- ii. Processing float
- iii. Transit float
- iv. Disbursement float

- **Concentration Banking**

A concentration bank is one where a firm maintains a major disbursement account. In order to accelerate cash collections, many firms establish multiple lock-boxes or collection points. Even without lock boxes, firms may have many regional sales offices where cash sales and accounts receivable may be collected. Instead of having moneys in multiple bank accounts in different regions, most firms will regularly transfer the surplus balances to one or more concentration banks, thus centralizing the cash pool.

- **Lock Box System**

The lock box arrangement, available through commercial banks speeds up the collection of funds by reducing both mail and processing floats. Float reductions of two to four days are not unusual for firms receiving cheques from all parts of the country.

In a typical lock-box arrangement, customers are instructed to mail their remittances to a numbered post office box. The bank, providing the lock-box system is authorized to operate the post office box the banks opens the box, collects the mail, processes the cheques and deposits the cheques directly into the firm's bank account. Typically, a large bank will collect payments from the post office box at once-to two-hour intervals, all business days of the year-all 365 days is also possible. The day the deposits are made, the bank will inform the firm through some type of telecommunication as to the amounts of the deposits. At the end of the day, all cheques photocopies, invoices, deposit slips and any other documents included with the remittances are mailed to the firm. Note that firms receiving cheques from a large area will use several lock boxes, located in different regions and services by branches of the bank providing the lock-box arrangement, to the full advantage of a reduction in the float.

b. Control of Disbursement

The effective control of disbursement can also help the firm in conserving cash and reducing the financial requirements. Apart from speedy collection of accounts receivable, the operating cash requirement can be reduced by slow disbursement of accounts payable. Disbursements arise due to trade credit, which is a source of funds. The firm should make payments using credit terms to the fullest extent. There is no advantage in paying sooner than agreed. By delaying payment as much as possible, the firm makes maximum use of trade credit as source of funds-a source which is interest free.

2.1.4 Factors Determining Cash Needs

The factors that determine cash needs are described below:

2.1.4.1 Synchronization of Cash Flows

The cash management problem originates from the lack of synchronization between cash inflows and out flows which raises two interrelated issues: 1) How to finance cash requirements when cash outflows exceed inflows, and 2) How to invest a cash surplus when net cash flows are positive. The basic financing-investment issue is indirectly affected by various factors which determine net cash flows and is directly influenced by minimal cash requirements and other financial policies of the corporation. The interrelated complex of these issues, to the extent that they are controlled by a financial officer, creates the cash management problem.

It is mentioned that business can control cash by synchronizing cash flows through the use of a cash budget. It can use the time such as the time from the writing of the check until it clears the bank, accelerate collections with low credit terms and high interest rates on unpaid balances, and control disbursements by making use of discounts and good purchasing practices.

2.1.4.2 Short Costs

Another general factor to be considered in determining cash need is the cost associated with a short fall in the cash needs. The cash forecast presented in the cash budget would reveal period of cash shortages. In addition, there may be some unexpected short fall. Every shortage of cash, whether expected or unexpected involved a cost depending upon the severity, duration and frequency of the shortfall and how the shortage is covered. Expenses incurred as a result of shortfall are called short costs. Included in the short cost are the following.

- Transaction cost associated with raising cash to tide over the shortage, this is usually the brokerage incurred in relation to the sale of some short term near cash assets such as marketable securities.
- Borrowing cost associated with borrowing to cover the shortage these include items such as interest on loan, commitment charge and other expenses relating to the loan.
- Loss of cash discount, that is, a substantial loss because of temporary shortage of cash.
- Cost associated with deterioration of the credit rating which is reflected a higher bank charges on loans, stoppages of supplies, demand for cash payments, refusal to sale, loss of image and the attendant decline in sales and profits.
- Penalty rates by bank to shortfall in compensating balances (Khan and Jain, 2003: 668).

2.1.4.3 Excess Cash Balance Costs

Theoretically there should be optimum balance of cash in any firm's accounts i.e. there should not be excess/idle cash. But if firm holds excess cash then the cost which firm has to bear in having excessively large cash balance is known as excess cash balance cost. If large funds are idle, that implies, firm has missed opportunities to invest those funds and has thereby lost interest which it would otherwise have earned. This loss of interest is primarily the excess cost.

2.1.4.4 Procurement and Management

“These are the costs associated with establishing and operating cash management staff and activities. They are generally fixed and are mainly accounted for by salary, storage, handling of securities, etc” (Khan and Jain, 2003: 669).

2.1.4.5 Uncertainty and Cash Management

Finally, the impact of uncertainty of cash management strategy is also relevant as cash flows can not be predicted with complete accuracy. The first requirement is a precautionary cushion to cope with irregularities in cash flows, unexpected delays in collections and disbursements, defaults and unexpected cash needs.

The impact of uncertainty on cash management can, however, be mitigate through (1) improved forecasting of tax payments, capital expenditure dividend, and do on: and (2) increased ability to borrow though over draft facility (Khan and Jain, 2003).

2.1.5 Motives of Holding Cash

Different firms may hold cash with different motives, which can explain as follows:

2.1.5.1 Transactions Motive

Firms are in existence to create products or provide services. The providing of services and creating of products results in the need for cash. Firms hold cash in order to satisfy the cash inflow and cash outflow needs that they have. In firm, there is regular inflow of cash in the form of sales, return from investments etc. Similarly, there is regular outflow of cash like operating expenses, taxes, interest and wages and so on. But this inflow and outflow do not perfectly synchronize with each other. So

ensure that there is always synchronization of inflow and outflow of cash, firm needs to hold cash. So the requirement of cash balances to meet routine cash needs is known as transactional motive.

2.1.5.2 Precautionary Motive

Besides anticipated cash needs, sometimes firm gets unexpected cash needs at short notice like strikes, failure of important customers, unexpected slow down in collection of accounts receivable, sharp increase in cost of raw materials and many more. So cash held to meet such unexpected obligations is known as precautionary motive. Holding cash for precautionary motive large depends upon ability to predict future. Also another factor that strongly influences the precautionary motive is the ability to borrow additional cash on short notice.

2.1.5.3 Speculative Motive

“Economist Keynes described this reason for holding cash as creating the ability for a firm to take advantage of special opportunities that if acted upon quickly will favour the firm.” An example of this would be purchasing extra inventory at a discount that is greater than the carrying costs of holding the inventory. Precautionary motive is defensive in nature as firm makes provision to meet unexpected contingencies while speculative motive represents a positive and aggressive approach. Firms aim to exploit profitable opportunities and keep cash in reserve to do so.

2.1.5.4 Compensation Motive

Commercial banks perform many functions for business firms. In return it ask business firm to maintain minimum level of balance at the bank which is known as compensating balances. These balances are used by

firms in the form of loan to other and earn interest which is an indirect fee to bank.

Of the four primary motives of holding cash balances, the two most important are the transactions motive and the compensation motive. Business firms normally do not speculate and need not have speculative balances. The requirement of precautionary balances can be met out of short-term borrowings (Thapa, 2059: 102).

2.1.6 Objectives of Cash Management

The main objectives of cash management are to determine the optimal cash balance which is neither excessive nor inadequate and also to ensure that the optimal cash balance is maintained all through. Cash should not remain idle unnecessarily and simultaneously it should not fall short of the requirements also. For this, the collections and the disbursements of cash are to be managed properly. In case the flow of cash is not even, the cash is to be arranged by raising short-term loans for meeting the payment bills or if cash collections have been made but there is no immediate outlet for payment, the idle funds are invested in temporary securities so as to yield some return. Thus, the problem is to manage the cash affairs in such a manner that gives the least possible cost of maintaining cash. The main objective of financial management-maximizing profitability without sacrificing liquidity-should be borne in mind while attempting to manage cash and bank balances. Optimal cash balance does not mean minimum cash balance since minimum cash may lead to shortage of cash and the day-to-day operations of the business may suffer. The level of cash which meets the requirements appropriately and which gives the minimum cost is known as the optimum level of cash.

Cash management covers the management of not only cash but near-cash assets also, e.g., marketable securities and time deposits with banks, because these are readily convertible into cash, As a matter of fact, 'near-cash assets' are to be included under 'cash' for the purpose of cash management since surplus cash is required to be invested in near-cash assets for the time being.

The objectives of cash management are straightforward – maximise liquidity and control cash flows and maximise the value of funds while minimising the cost of funds. The strategies for meeting such objectives include varying degrees of long-term planning requirements. Everywhere in the world, much treasury activity is concentrated on cash management. This includes financing the corporation, administration of debts (loans, bonds, commercial papers, etc.), good relationships with the banks, payments to suppliers and collections from customers, control of foreign currency and interest positions according to the company's needs for finance, and finally the reporting and technical support of all these functions” (Agrawal, 2003: 124).

2.1.7 Determining the Optimum Cash Balance

Financial manager responsibilities are to maintain a sound liquidity position of the firm. There are a number of methods that try to determine the magical cash balance, which should be targeted so that costs are minimized and yet adequate liquidity exists to ensure bills are paid on time. One of the first steps in managing the cash balance is measuring liquidity. There are numerous ways to measure this, including: cash to total assets ratio, current ratio (current assets divided by current liabilities), quick ratio (current assets less inventory, divided by current liabilities), and the net liquid balance (cash plus marketable securities less

short-term notes payable, divided by total assets). The higher the number generated by the liquidity measure, the greater the liquidity and vice versa. There is a trade off, however, between liquidity and profitability that discourages firms from having excessive liquidity.

The financial manager should determine the appropriate amounts of cash balance. A trade off between risk and return influences such a decision. If the firm maintains a small cash balance, its liquidity position become weak and suffers from a capacity of cash to make payment. But investing released funds in high level of cash balance it will have a sound liquidity position but forego the opportunity to earn interests. Thus the firm should maintain an optimum cash balance to find out the optimum cash balance the transaction costs and risk of too small a balance should be matched with the opportunity costs of too large a balance.

There are a number of methods that try to determine the magical cash balance, which should be targeted so that costs are minimized and yet adequate liquidity exists to ensure bills are paid on time (hopefully with something left over for emergency purposes). One of the first steps in managing the cash balance is measuring liquidity. There are numerous ways to measure this, including: cash to total assets ratio, current ratio (current assets divided by current liabilities), quick ratio (current assets less inventory, divided by current liabilities), and the net liquid balance (cash plus marketable securities less short-term notes payable, divided by total assets). The higher the number generated by the liquidity measure, the greater the liquidity and vice versa. There is a trade off, however, between liquidity and profitability that discourages firms from having excessive liquidity” (Betty, 1972: 123).

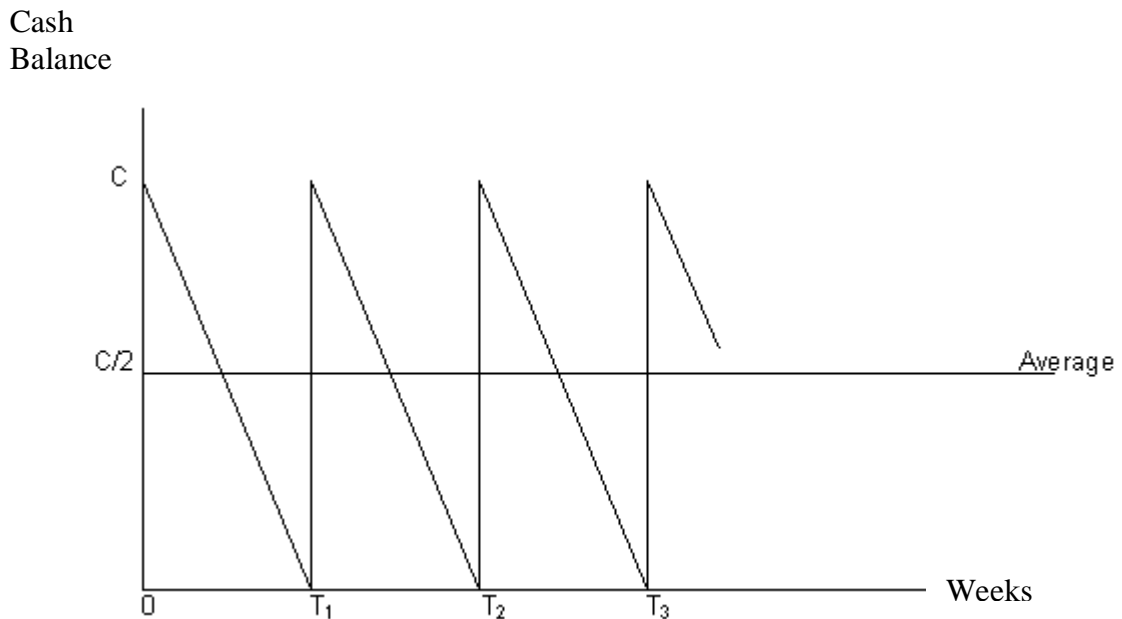
2.1.8 Cash Management Models

1. Baumol Model

In view of minimizing the opportunity cost of holding cash and maximizing the return on the available funds, the cash balance should be maintained at a minimum level, and the funds not required for immediate use be invested in the marketable securities. What is the minimum size of cash to hold and how do we determine it? The minimum size is the amount of cash that is enough to start with at the beginning of a period to meet the cash need of that period's transaction. In order to make sure that every period begins with the right amount of cash, a method is needed that prescribes the optimal size of cash transfer from the security account, or the optimal amount to be borrowed whenever the balance reaches to zero level. Baumol model is one of the methods that can be used for this purpose.

Baumol identifies the cash maintenance as analogous to inventory maintenance, and demonstrates that the model of economic order quantity that is applicable to inventory management is perfectly applicable in cash management too. Baumol model is based on the assumption that (i) the cash is used at a constant rate; (ii) the periodic cash requirement is more or less same; and (iii) there are some costs such as the opportunity costs that increase and other costs such as transaction costs that decrease as cash balance increase. Because of the assumptions (i) and (ii), the graphical representation of cash position looks like as follows:

Figure No. 2.1 Baumol's Model of Cash Management



Unlike the case of inventory purchases, the cash transfer does not take time. Therefore, it is normally not required to maintain safety stock of cash.

Under the stated assumption, the model prescribes an optimal size of cash balance and the optimal size of cash transfer from marketable securities to cash account or borrowing. What matters for a firm is the total of opportunity cost and the transaction cost. Therefore, the objective of this model is to minimize the total cost. The figure below shows the relationship between the average size of cash balance (the size of cash transfer or borrowing) and various costs associated with the cash maintenance.

Figure No. 2.2 Optimum Cash Balance

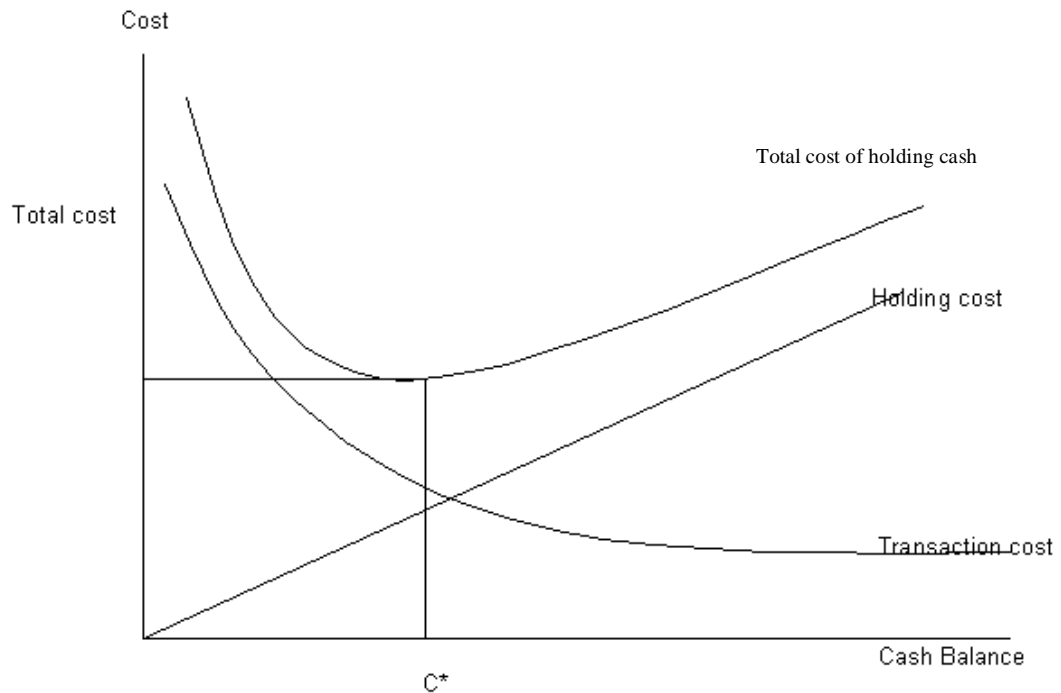


Chart: Optimum Liquid Balance of Cash, (Maheshwari and Mittal, 2003)

Mathematically, the optimal size of cash transfer from investment accounts or line of credit (borrowing), c^* is determined as follows:

$$C^* = \sqrt{2FR/K}$$

Where

F = Fixed transaction cost per transaction

R = Requirement of cash per period

K = Opportunity cost of holding cash or the interest rate on borrowing.

The Baumol model can be appropriately applied in case of predictable uniform net cash flows, but not in the situations characterized by irregular and uncertain cash flows.

The average cash balance (C) is calculated as follows:

$$C = \frac{C^*}{2} + M$$

Where,

M = minimum balance of cash for precautionary purpose.

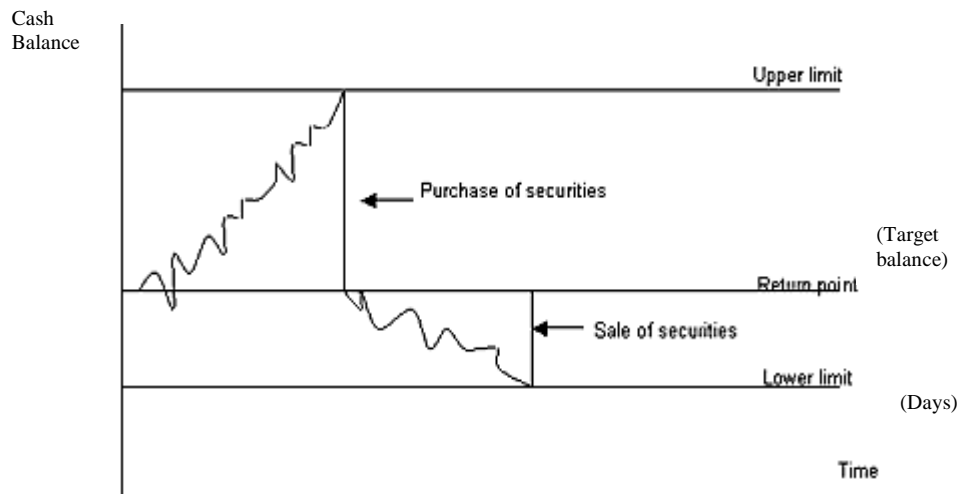
2. Miller-Orr Model

The size of cash requirement depends on the pattern and degree of irregularity of inflows and outflows. The Baumol model does not consider the possible irregularity and uncertainty of receipts and payments. Merton Miller and Daniel Orr have developed a model, known as Miller- Orr model that takes into account the realistic pattern of cash flows and prescribes when and how much cash should be transferred from cash to investment account and from investment account to cash.

The model is based on the assumption that the daily net cash flows (receipts minus payments) are random in size as well as in the matter of negative or positive flows, and are normally distributed in the long run. The model sets a range of high and low limits within which the cash balance is allowed to fluctuate and sets the target cash balance (Z) in between these two limits. The model suggests bringing the cash balance to target balance whenever it drifts away to the limits in either direction. The rule is to transfer the amount of cash that is necessary to bring the cash position to its target balance from the investment account whenever the balance slides down to the lower limit (L); and to transfer the cash in excess of target balance to the investment account whenever it reaches to the upper limit (U). The lower limit in the model is set by either managerial decision to meet emergency need or as required by bank to

maintain compensating balance in the account. The graphical representation of this model is as follows.

Figure No. 2.3 Miller-Orr Model of Cash Management



Mathematically, the model is set as follows

$$Z = \left[\frac{3Fs^2}{4i} \right]^{1/3} + L$$

The lower limit L is given; the model calculated the Z and U .

$$U = \left[\frac{3Fs^2}{4i} \right]^{1/3} + L$$

The average cash balance (C) is obtained as follows:

$$C = \frac{4Z - L}{3}$$

Where

Z = target cash balance

F = Fixed transaction cost per transaction

I = daily rate of opportunity cost or daily interest rate

S^2 = variance of net daily cash flows

U = Upper limit

L = Lower limit

3. Orgler's Model

According to this model, an optimal cash management strategy can be determined through the use of multiple linear programming model. The construction of the model comprises three sections: (1) selection of the appropriate planning horizon (2) selection of the appropriate decision variables and (3) formulation of the cash management strategy itself. The advantage of linear programming model is that it enables coordination of the optimal cash management strategy with the other operations of the firm such as production and with less restriction on working capital balances.

The model basically uses one year planning horizon with twelve monthly periods because of its simplicity. It has four basic sets of decision variables which influence cash management of a firm and which must be incorporated into the linear programming model of the firm. These are: i) payment schedule, ii) short-term financing, iii) purchase and sale of marketable securities and iv) cash balance itself.

The formulation of the model requires that the financial managers first specify an objective function and then specify a set of constraints.

Orgler's objective function is to 'minimize the horizon value of the net revenue from the cash budget over the entire planning period.' Using the assumption that all revenues generated are immediately reinvested and that any cost is immediately financed, the objective function represents the value of the net income from the cash budget at the horizon 'by adding the net returns over the planning period.' Thus, the objective function recognises each operation of the firm that generates cash inflows or cash outflows as adding or subtracting profit opportunities for the firm from its cash management operations. In the objective function, decision variables which cause inflows, such as payments on receivables, have positive co-efficient, while the sale of those securities would incur conversion costs and have a negative co-efficient.

The constraints of the model could be i) institutional or ii) policy-constraints. The institutional constraints are those imposed by external factors, that is, bank-required compensating balance. Policy constraints are imposed on cash management by the firm itself. For instance, the financial manager may be prohibited from selling securities before maturity. Either constraint can occur in the model during one monthly period or over several or all the months in the more year planning horizon.

An example of the linear programming model is as follows:

Maximise profit = $a_1x_1 + a_2x_2$

Subject to

$$b_1x_1 \leq \text{production}$$

$$b_2x_2 \leq \text{constraints}$$

$$C_1x_1 + C_2x_2 \leq \text{Cash available constraint}$$

$$8_1x_1 + 8_2x_2 > \text{Currents assets requirement constraint}$$

$$X_i \geq 0, i = 1, n \text{ non-negativity constraint}$$

A very important feature of the model is that it allows the financial managers to integrate cash management with production and other aspects of the firm.

2.2 Review of Related Study

Cash management is regarded as a important part of working capital management, the thrust for a separate theory in this area was attempted by many economist, since 1950's. Some of them enunciated cash management theories whereas others extended the common run approaches with new techniques.

2.2.1 Review of Journals

Baumol (1952) introduced a deterministic approach to determine the level of cash balances based on Economic Order Quantity of early inventory model. He assumed that the firm faces fixed cash inflow and outflow patterns and sought to minimize the cost of holding cash necessary for its transaction. Baumol concluded that cash will be demanded by rational individuals in proportion to the square root of the value of transactions, given the price level. Tobin (1956) interposed interest elasticity of transaction demand for cash with a view to maximizing individual's interest earnings net of transaction cost. This is different from Baumol's propositions but the results are quite similar with Baumol's equations.

Friedman (1959) introduced the behaviour of aggregate cash balance and its velocity. According to him, "business holds cash as a productive resource." Friedman explored the question of whether money is like an inventory holding, or is comparable with fixed capital. He concluded with the finding that "cash balances are analogous to fixed capital rather than

to inventories and that some other assets or liabilities serve as shock absorbers for business as for consumers.” Seldon (1961) extended the study and determined the relationship between velocity of money and its inverse relationship with the assets size of the firm. According to Seldon, the velocity is defined as the ratio of total outlays including tax, and dividend payments but excluded capital expenditures debt retirement and securities purchases from year end cash holdings. According to him, the cost of holding money is much less for large firms than for small firms.

The journal of finance, published bimonthly by American Finance Association for many decades is taken into account. In its volume XV of September 1960, Joseph C Schabacker, at his article, “A study of cash planning in small manufacturing companies” is reviewed here, which is as follows

A Study of Cash Planning in small manufacturing companies by Joseph C Schabacker (1960) University of Wisconsin. Several significant investigations have been conducted to explain the causes of failure among small businesses. The most widely accepted theory forthcoming from such studies is that poor internal management is the predominant factor in failure. Business do not fail merely because they are small.

The purpose of this study is to explore one specific phase of the managerial job in small companies, namely the forward planning of cash requirement. Many small business owners allow themselves to be pressured into ad hoc decisions as a result of no advance planning. The research was designed to test the hypothesis that “the financial health of a small manufacturing firm is directly related to the amount of formal cash planning which is done” (Schabacker, 1960)

According to Whalen (1965) “A cross section study of business demand for cash” on Journal of finance, (September, 1965) has found the speculative demand for money may be considered as a function of wealth. Assets and sales are the explanatory variables to determine the cash balance of the firm. Since Whalen attempted to incorporate assets as well as transactions into the demand function, the analysis presented by him in order to determine the cash holding of the firm is not only for transaction purpose but also an investment. Miller-Orr (1966) assumed that firm’s cash flows could be analyzed by a stochastic process. He followed Baumol’s model without question and deducted that the firm’s pattern of payment and receipts is fixed and that the cost of non-payment is infinite. He added that the firm or the individual is presumed to hold that amount of money which minimise the interest cost. He further advised holding money rather than bonds, since there is transaction cost associated with the conversion of bonds into money. This reduces the cost of transaction and maximizes profits by an equivalent amount.

“Cash management is a broad term that refers to the collection, concentration and disbursement of cash. It encompasses a company's level of liquidity, its management of cash balance, and its short-term investment strategies. In some ways, managing cash flow is the most important job of business managers. If at any time a company fails to pay an obligation when it is due because of the lack of cash, the company is insolvent. Insolvency is the primary reason firms go bankrupt. Obviously, the prospect of such a dire consequence should compel companies to manage their cash with care. Moreover, efficient cash management means more than just preventing bankruptcy. It improves the profitability and reduces the risk to which the firm is exposed.

Cash management is particularly important for new and growing businesses. Cash flow can be a problem even when a small business has numerous clients, offers a superior product to its customers, and enjoys a sterling reputation in its industry. Companies suffering from cash flow problems have no margin of safety in case of unanticipated expenses. They also may experience trouble in finding the funds for innovation or expansion. Finally, poor cash flow makes it difficult to hire and retain good employees”.

“Cash flow management is the process of monitoring, analyzing, and adjusting firms’ cash flows. For small businesses, the most important aspect of cash flow management is avoiding extended cash shortages, caused by having too great a gap between cash inflows and outflows. It won't be able to stay in business if it can't pay its bills for any extended length of time. Therefore, firm need to perform a cash flow analysis on a regular basis, and use cash flow forecasting so that it can take the steps necessary to head off cash flow problems. Many software accounting programs have built-in reporting features that make cash flow analysis easy. This is the first step of cash flow management.”

“Cash management forecasts cash flows (inflows or outflows of cash) as part of working capital cycle, prepares cash and financial budgets and fund-flow statements, and manages the cash or funds flowing through the company. The basic aim of cash management is to ensure that cash in exceeds cash out. In other words, the purpose of cash or funds management is to ensure that the company has the cash and working capital for its expanding or fluctuating needs without either trying up funds which could be more profitably invested or used elsewhere, or relying too heavily on bank overdrafts or other short-term loans.“

“Cash management is ultimately about cash flow and very few small businesses are awash in cash. Even successful, growing companies are vulnerable to cash flow problems because they tend to add employees and inventory rapidly. This may quickly reduce the company funds and lead to cash shortages. Because having cash at the right time is so important, entrepreneurs must pay close attention to cash management” (Chorafas, 1990:325).

Before knowing about ‘Cash Management’ it is better to know about ‘Cash’. Cash is the money, which the firm can disburse immediately without any restriction. The term cash includes coins currency and cheques held by the firm and balance in its bank accounts. Sometimes near cash items, such as marketable securities is also included in cash. Cash is the important current asset for the operations of the business organization and public organization. Cash is the basic input needed to keep the business running on a countries basis, it is also the ultimate output expected to be realized by selling the service or product manufactured by the firm. The firm should keep sufficient cash, neither more nor less. Cash shortages are disrupting the firm's manufacturing operations while excessive cash is simply remaining idle, without contributing anything towards the firm's profitability. Thus, a major function of the financial manager is to maintain a sound cash position. The term "Cash Management" is concerned with the management of current assets and current liabilities of the business, which is necessary for day-to-day operation.

"Cash management is concerned with the decision regarding the short-term funds influencing overall profitability add risk involving in the firm. The management of cash has been regarded ‘condition factor’ in the decision making issues" (Saksena 1990:164). It is no doubt, very difficult

to point out as to how cash is needed by a particular company, but it is very essential to analyze and fine out the solution to make an efficient use of funds for minimizing the risk of loss to attain profit objectives. Good cash management means:

- Knowing when, where, and how your cash needs will occur,
- Knowing what the best sources are for meeting additional cash needs and
- Being prepared to meet these needs when they occur, by keeping good relationships with bankers and other creditors. Cash flow management is the process of monitoring, analyzing, and adjusting business' cash flows. For businesses, the most important aspect of cash flow management is avoiding extended cash shortages, caused by having too great a gap between cash inflows and outflows. We won't be able to stay in business if we can't pay our bills for any extended length of time. Therefore, we need to perform a cash flow analysis on a regular basis, and use cash flow forecasting so you can take the steps necessary to head off cash flow problems. Many software accounting programs have built in reporting features that make cash flow analysis easy. One of the most useful strategies for business is to shorten cash flow conversion period so that business can bring in money faster.

“Nepal Telecom is going to prepare better strategic plan for proper cash management of NTC”(News letter, 2010).

2.3 Review of Previous Thesis

Bajracharya (1990) has studies the cash management practices in Nepalese Public Enterprises. The study has taken 18 enterprises as a sample and used data from 1977 to 1987. The study concluded,

- i. Cash management in the public enterprises of Nepal is primarily based on the traditional practices, lacking in a scientific approach. A more serious aspect of cash management has been the absence of any formalised system of cash planning and cash budgeting in many of the enterprises, although the executives of some enterprises do have the practice of forecasting cash requirements on a formal basis.
- ii. Modern practices with respect to debt collection monitoring the payment behaviour of customers and relevant banking arrangements in connection with collection of receivables have been virtually ignored in many enterprises.
- iii. Our survey revealed that majority of the enterprises didn't face any serious liquidity problem. However, this was not because of the effectiveness of cash planning and budgeting. The problem of liquidity actually didn't arise due to the coincidence of delay in receivables collection being matched by delayed payment to creditors.
- iv. By and large most enterprises had periodic accumulation of surplus cash and corresponding cash shortage from time to time. However, none of the enterprises considered the implications of holding idle cash balance and few took into account the potential benefit of investing surplus in marketable securities. Those which did failed to consider the cost of administering such investments.
- v. There has been wide variations overtime in the state of financial health of the enterprises in terms of the composition

of current assets and current liabilities as revealed by the relevant financial ratios.

- vi. Regression analysis revealed that there was little effect of the opportunity cost of holding cash on the cash balances held by the enterprises. Neither interest rate nor the rate of inflation had any effect on the cash balance. Further there was very little evidence of the effect of economy of scale on cash balance holding in most cases.

Further he recommended for developing appropriate strategies for cash management. He stressed on cash planning and budgeting to cash project cash surplus and cash deficit. Firm can accelerate the inflows as far as possible to decelerate outflow. He also stressed to maintain optimum level of cash and at last, it can be better to invest idle fund in marketable securities.

Chalise (2006) conducted the study on Cash management of NTC by using five years of data from 2056/57 to 2060/61. The objective of his study was as follows:

“To observe devices of planning and control of cash in NTC, to examine the existing internal control policy in NTC regarding cash control practices, to identify the shortage or excess of cash in the company and the procedures of financing for the shortage and investment of excess cash and to study the liquidity position of the company.”

Major findings of Chalise’s study is as follows

- i. Actual position of cash at the end of F/Y2056 / 2057 to F/Y 2059 / 2060 was higher than approved budget cash balance.

The deviation was insignificantly decreasing which shows favourable trend although it is not satisfactory.

- ii. The result of revision showed surplus position of cash. This shows that company was not able to meet the target of budget. Moreover, when comparison is made in between actual cash source and actual cash uses, there was big deviation resulting ample surplus. So, it shows that budget was not implemented properly and surplus was not used in productive investment. It could have done even keeping required level of closing cash balance in hand.
- iii. When the closing balance cash is considered as source of budget, there was huge amount of surplus in approved budget, revised budget and in actual performance of budget. The degree of surplus was more in revised budget and actual performance of budget than in approved budget. But the management of those surpluses was lacking in the company.
- iv. The analysis of variances in sources of cash depicts that the total actual sources of cash in the years 2056/57 and 2058/59 was less than the approved budget sources of cash.
- v. There are strict provisions regarding cash handling in the company. The decision making process will be lengthy due to compliance of time consuming rules and procedure as prescribed. The Policy study shows that the company is still suffering from centralization problem of management.

Similarly, Bhatta (2006) did another study on NTC where objectives were “to analyze the gap between budgeted and actual revenue and its trend, to examine cash collection and disbursement, to review cash flow from operating, financing and investing activities and to have information, control and security over cash balances and payment system.

Major findings of his study are as follows:

- i. The lack of accurate and proper sales forecast is one of the important factors that affect the financial performance of the company.
- ii. Sales budget shows ISD sector's sales revenue is main revenue sources of Nepal Telecom, which contributes more than 40% in average.
- iii. Correlation and coefficient value shows that there are positive correlation between budgeted and actual sales units and Rs. By the regression line, it is clear that future revenue will increase with compare to budgeted if other things remaining same.
- iv. The collection of receivable from the customers in the company is very small decreasing year by year. It denotes efficiency of Nepal Telecom to collect its revenue in time. But A/R is low increasing in F/Y 2059/60. The decreasing trend of average collection period has shown the improvement of credit management and strict credit policy of the company.

Rayamajhi, (2006) did study of cash management of Nepalese Commercial Banks. She has studied cash management of 5 commercial banks i.e. Nabil Bank, Himalayan Bank Ltd, Standard Chartered Bank Nepal Limited, Everest Bank Limited and Nepal SBI bank Ltd. Her study

mainly focused on over all cash management of selected bank with the examination of their demand for cash. She also tried to focus and analyse the cash disbursement needs, minimize funds committed to cash balance and access the credit policy adopted in Nepalese commercial bank and their impact and relationship to each other.

Her finding mainly revealed following things:

- Banks under study have the practice of preparing cash budget annually, monthly and weekly with the help of ratio analysis, cash budget method, projected balance sheet method and adjusted net income method. However, very few banks treated it as formal document.
- The study showed that there has been no uniformity among the banks with regard to cash balance, cash turnover, current ratio, account receivable, average collection period, A/R to cash/bank balance, investment in cash/bank balance on current assets and total assets, c cash/bank balance to current liabilities.
- Cash management in the banking sector of Nepal is primarily based on the traditional practices, which lack in a scientific approach.

To the end, she had made some suggestion for the improvement of cash management of selected commercial banks. She suggested to do cash planning and cash budgeting in a formal basis so as to project cash surplus or cash deficit for a period not exceeding one year and broken up into shorter intervals. Also she has suggested appointing cash planning manager or experts to upgrade the current financial management skills. She has also emphasised on paying much attention towards collection of

account receivable and decrease average collection period for effective cash management

Chataut (2008) has recently done research on NTC's cash management. He has mainly done research on shortage or excess of cash in the NTC. Also he tried to analyze the gap between budgeted and actual sources of cash.

His major findings are as follows:

- The actual cash balances were higher than approved budgeted amounts. It shows that there was no effective implication of budgeted amount.
- Nepal Telecom prepared and approved deficit budget each year from 2056/2057 to 2061/2062. When opening balance was not included in source side of budget total budgeted cash uses was always higher.

Bhandari(2010) "Cash Management In Nepal Telecom" describe about cash management of Nepal Telecom. The major objective of the study is to examine the management of cash in NTC.

The basic objective are as follows:

- To identify the shortage or excess of cash in the company and the procedures of financing for the shortage and investment of excess cash.
- To observe devices of planning and control of cash in NTC.
- To study the liquidity position of the company.

The findings of the study are as follows:

- To meet operating expenses, 25% of actual annual expenses can be provided as advance budget in case the budget is not approved.
- In regards to account operation, transaction should be done with Nepal Rastra Bank or other commercial banks as recommended by committee.
- Telecom offices should transfer the income amount from office fund account to central fund account keeping minimum balance amount in their offices.
- Deposits from customer of other parties received time to time should be deposited in deposit account.

2.4 Research Gap

Most of the dissertation related to cash management has been reviewed. The previous researchers had conducted their research on NTC only using financial tools. But the researcher has tried to analyse the effectiveness of Cash management of NTC using both financial as well as statistical tools. The researcher has collected some primary data and forecasted the cash and bank balance for coming five years but the previous researcher's research was based only on secondary data and has not forecasted.

So, this study will be fruitful to those people, scholar, student, teacher, businessman and Government who have invested in NTC or who are interested to invest in NTC in future to know about cash position and cash management of it.

CHAPTER III

RESEARCH METHODOLOGY

From data collection to till data interpretation, researcher needs a proper path to solve the research problem. This is guided by research methodology. This chapter tries to focus on different research methods, frameworks, tools and conditions that will be used while conducting the study.

3.1 Research Design

Research design is a broad plan for collecting and analysing data. It includes methods that are used while collecting data, instruments that are used for doing research and the sampling plan that are used for follow up.

A well settled research design is necessary to fulfil the objective of this study. It means definite procedures and techniques are required that guide to study and advocate for research viability. This study aims to evaluate managerial efficiency and performance regarding cash management of NTC. Hence, descriptive as well as analytical research designs have been used.

Descriptive research is essentially a fact finding approach relative largely to present and abstracting generalization by the cross section study of the current situation.

Analytical approach is followed to parametric and non parametric test of data. It is process of micro-analysis and appraisal to the data.

3.2 Nature and Sources of Data

For any research work, information and data plays vital role. Thus it is one of the major tasks of research work. This study is based upon the secondary data. Data have been mainly collected from following sources.

- a. Published and unpublished document and annual reports of the company.
- b. Journals, Government and non government publication
- c. Supportive books of related topic.
- d. Websites of related topic.

3.3 Method of Data Analysis

To find out the true picture of cash management of NTC, different financial and statistical tools are used. Some generalisation and assumption might also be made in the course of preparation of report as demanded by the situation. The procedures of analyzing data are described as follows.

3.3.1 Financial Tools and Techniques

Financial analysis is the process of identifying the financial strength and weaknesses of the firm by properly establishing the relationship between the financial figures. A widely used tool in financial analysis is ratio analysis however there are other tools also.

3.3.1.1 Ratio Analysis

A tool used by individuals to conduct a quantitative analysis of information in a company's financial statements. Ratios are calculated from current year numbers and are then compared to previous years, other companies, the industry, or even the economy to judge the performance

of the company. Ratio analysis is predominately used to proponents of fundamental analysis.

a. **Liquidity Ratio**

Liquidity ratio is used to find out firm's ability to meet short term obligation. In other words it helps to measure short term or current solvency of the firm. Under this, there are two types of ratio.

- i. **Current ratio** may be defined as the ratio of current assets to current liabilities. It is also known as working capital ratio or 2:1 ratio. It shows the relationship between the total current assets and total current liabilities, expressed as formula given below.

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

Current assets mean cash or those assets convertible or expected to be converted into cash within the accounting year and current liabilities are those liabilities to be paid within the same time. Current assets normally include items like cash in hand and at bank, marketable securities or readily realizable investments, Bills receivable, book debts (excluding bad debts and provision), inventories and prepaid expenses. Current liabilities include items such as Outstanding or Accrued Expenses, Sundry Creditors, Bills Payable, Bank Overdraft, Provision for taxation, etc.

- ii. **Liquid Ratio** may be defined as the ratio of liquid assets to liquid liabilities or current liabilities. It is concerned with the relationship between liquid assets and liquid or current liabilities. The other terms used for liquid ratio are 'Quick ratio' and 'Acid test ratio'. For the purpose of computation, the current assets and current liabilities could be classified as follows:

Current assets: (a) Liquid Assets and (b) Deferred Assets

Current Liabilities (a) Liquid Liabilities and (b) Deferred Liabilities

Establishing a simple rule that all assets and liabilities are liquid if they are expected to be realized or paid within a month could make this classification, otherwise they belong to 'Deferred' category. However, the criterion for such classification depends upon the purpose for which the liquid ratio is used.

Liquid assets normally include cash, bank, sundry debtors, bills receivable and short-term investments or marketable securities. In other words, they are current assets minus inventories and prepaid expenses. In the same manner, liquid liabilities are current liabilities minus bank overdraft and income received in advance.

$$\text{Liquid ratio} = \frac{\text{Liquid Assets}}{\text{Liquid Liabilities}}$$

b. Cash Position Analysis

Business needs cash for meeting its daily operating expenses and other cash obligations. Therefore cash position should be looked into separately to highlight this crucial business aspect. Cash means actual cash and bank balance extracted from balance sheet of annual report.

Current liabilities consist of account payable, current portion of long term loan, other provision, pension fund and other short term liabilities. Total assets include net fixed assets, investments and current assets except deferred charges.

- **Absolute Cash Ratio** is represented by cash and near cash items. Hence, in the computation of this ratio, only absolute liquid assets are compared with liquid liabilities. These assets normally include cash, bank and marketable securities. It is to be observed that receivables are excluded from the list of liquid assets.

$$\text{Absolute Liquidity Ratio} = \frac{\text{Cash} + \text{Bank} + \text{Marketable securities}}{\text{Current Liabilities}}$$

The Cash Ratio should be at least 1.0 for any company, showing they can at least pay their liabilities if they had to. An increasing Cash Ratio is a positive sign, showing that the company is better able to cover its obligations to creditors.

- **Cash to Current Assets Ratio** measures the portion of a company's assets held in cash or marketable securities. Although a high ratio may indicate some degree of safety from a creditor's viewpoint, excess amounts of cash may be viewed as inefficient.

$$\text{Cash to current assets ratio} = \frac{\text{Cash} + \text{Marketable securities}}{\text{Current assets}}$$

High or increasing Cash to Current Assets ratio is generally a positive sign, showing the company's liquid assets represent a larger portion of its Total Current Assets. It also indicates the company may be better able to convert its non-liquid assets, such as inventory, into cash.

c. **Cash Turnover Ratio**

The ratio of cash in hand and at the bank to net sales is termed as cash turnover ratio or cash velocity. The ratio indicates the efficient use of cash to generate sales. Cash balance should be kept within reasonable

limits just as debtor and stock. In theory, the ideal ratio is said to be around 20.

$$\text{Cash turnover ratio} = \frac{\text{Sales}}{\text{Cash} + \text{Bank Balances}}$$

A high ratio means relatively small amount of cash which is good because cash involves holding cost. But if overdraft is there, it may not be advisable since interest burden may wipe off the resources in due course of time. A lower ratio indicates greater availability of cash which may remain idle in the business. However, too high ratio is also dangerous, as it may be an index of overtrading i.e. doing business with too little cash.

In the case of NTC, sales indicate total revenue of the year which is categorized as total revenue from local telephone, domestic trunk telephone, international telephone, domestic telegraph, international telegraph, international telex, leased circuits, telefax, mobile & internet, interconnection, PCC card and others.

3.3.1.2 Actual Cash Flow Analysis

“Cash flow statement provides relevant information about the cash receipts and cash payments of an enterprise during a period. Information about enterprise’s cash flows is useful in assessing its liquidity, financial flexibility, profitability and risk” (**Fago, Subedi, Gyawali, 2003:11.1**).

In simplified term, cash flow statement shows the movement of cash in and out of business. It also finds the reason for changes in balances of cash in hand and at bank as on date to a next date, usually the accounting period. The main source of cash receipts and channels of payment are found out and recorded in the cash flow statement.

3.3.2 Statistical Tools

Statistics starts with a problem, continues with the collection of data, proceeds with the data analysis and finishes with conclusion. For data analysis and to get that analysis in conclusion, here in this topic, five different statistical tools are used which are mentioned below:

a. Trend Analysis

Trend analysis is useful in predicting the future events on the basis of past tendencies. Trend analysis is based on assumption that the past tendency continues in future. The future trend of any variable is forecasted by using following equation.

$$Y_c = a + bx$$

Where,

Y_c = the dependent variable

a . = Y intercept

b = slope of the tendencies

x = year (with regard to data used in the study)

b. Correlation (r)

Correlation is a statistical technique which can show whether and how strongly pairs of variables are related e.g. height and weight. ‘In other words correlation may be defined as degree of linear relationship existing between two or more variables’**(Sthapit, Gautam, Joshi, Dongol, 2003: 362).**

It does not tell us anything about cause and effect relationship but it only helps in determining the degree of relationship between two or more variables. ‘In business, correlation analysis enables the executive to

estimate costs, sales price and other variables. On the basis of some other series with which their costs, sales or prices may be functionally related. Some of the guess work can be removed from decisions when the relationship, between variables to be estimated and the one or more other variable on which it depends are closed and reasonably in variant''(Gupta, 1983:103) For the purpose of analysis of cash management of NTC, the correlation analysis is used. In this topics it can be seen the correlation between dependent variable and independent variable of cash management. The formula applied on the correlation is as follows.

$$r. = \frac{\Sigma uv}{\sqrt{\Sigma u^2} \times \sqrt{\Sigma v^2}} \quad \text{Where } \begin{array}{l} \text{---} \\ \mathbf{u} = \mathbf{X} - \bar{\mathbf{X}} \\ \mathbf{v} = \mathbf{Y} - \bar{\mathbf{Y}} \end{array}$$

c. Standard Deviation

It is a measure of the mean distance of the data values from their mean. If the data points are all close to the mean, then the standard deviation is low (closer to zero). If many data points are very different from the mean, then the standard deviation is high (further from zero). If all the data values are equal, then the standard deviation will be zero. The standard deviation has no maximum value although it is limited for most data sets.

$$SD = \sqrt{\frac{\Sigma u^2}{N}} \quad SD = \sqrt{\frac{\Sigma v^2}{N}}$$

The standard deviation is also defined as the square root of the variance. This means it is the root mean square (RMS) deviation from the arithmetic mean. The standard deviation is always a positive number (or zero) and is always measured in the same units as the original data. For

example, if the data are distance measurements in meters, the standard deviation will also be measured in meters.'

$$d. \text{ P.E.r.} = \frac{0.6745(1-r^2)}{\sqrt{n}}$$

Where

r = the value of correlation coefficient
n = number of pairs of observations

If 'r' is less than its PE, it is not all significant which means that there is no evidence of correlation

If 'r' is more than its PE, it is significant which means that there is correlation.

If $PE < r < 6PE$ then nothing can be concluded.

e. Regression Analysis

'Regression analysis is used for explaining or modelling the relationship between a single variable Y, called the response, output or dependent variable, and one or more predictor, input, independent or explanatory variable i.e. X. In simple regression, there will be only two variables. The main objective of regression analysis is to predict or estimate the value of dependent variable corresponding to a given value of independent variables.

For the analysis of cash management of NTC, simple regression analysis is used to locate the relationship between total revenue on cash balance and net profit on cash balance.

$$(X - \bar{x}) \frac{\sigma_x}{\sigma_y} (Y - \bar{y})$$

CHAPTER IV

ANALYSIS AND PRESENTATION OF DATA

The basic objective of this study as stated in chapter one is to have true insight into cash management of NTC. For this purpose, most recent published financial statements and annual budget reports has been used. The data that are collected are tabulated and then analyzed using different accounting and financial tools.

4.1 Analysis of data by Financial Tools

4.1.1 Liquidity Analysis

Liquidity ratios attempt to measure a firm's ability to pay off its short-term debt obligations. This is done by comparing a company's most liquid assets (or, those that can be easily converted to cash), its short-term liabilities.

In general, the greater the coverage of liquid assets to short-term liabilities the better as it is a clear signal that company can pay its debts that are coming due in the near future and still fund its ongoing operations. On the other hand, a firm with a low coverage rate should raise a red flag for investors as it may be a sign that the company will have difficulty meeting running its operations, as well as meeting its obligations.

The ratios that we'll look at here are the current, quick and cash ratios.

A. Current Ratio

The current ratio is a popular financial ratio used to test a firm's liquidity by deriving the proportion of current assets available to cover current liabilities. The concept behind this ratio is to ascertain whether a firm's

short term assets are readily available to pay off its short-term liabilities. In theory, the higher the current ratio, the better.

Stores & spare, sundry debtors, interest accrued, prepaid Exp/ Loans/ Adv. LC, Advances/ Loans to Employees, Inter-branch Balance, Bank Balance & Cash is included in current assets

Sundry creditors, interest accrued & due, others liabilities, deposit & advances and provisions is included in current liability.

Formula:

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

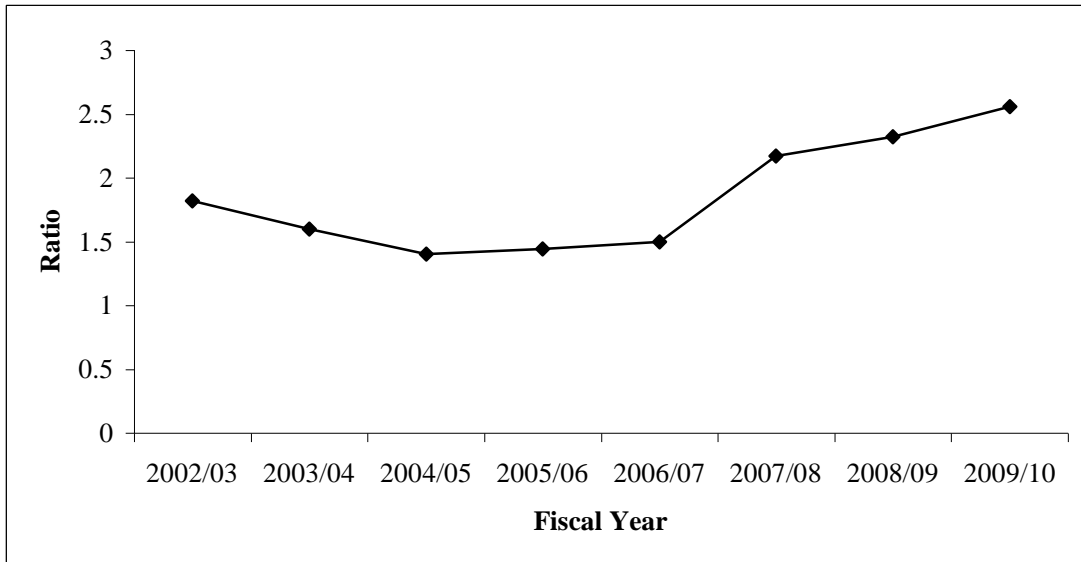
Table No: 4.1

Analysis of Current Ratio of NTC

			Rs. ('000')
Fiscal Year	Total Current Assets	Total Current Liabilities	Ratio CA/CL
2002/03	18424147	10137347	1.82
2003/04	20213763	12640965	1.60
2004/05	20598353	14722678	1.40
2005/06	22526522	15665379	1.44
2006/07	23519754	15675154	1.50
2007/08	25000474	11518713	2.17
2008/09	28837295	12406063	2.32
2009/10	35015364	13661063	2.56
Average			1.83

Source: NTC Annual Report 2011

Figure No. 4.1
Figure Showing Current Ratio



The rule of thumb says that the current ratio should be at least 2, that is the current assets should meet current liabilities at least twice. Let's see what does the calculated ratio in table 1 tells us. In 2002/03, the NTC had 1.82 rupees worth of current assets for every rupee of liabilities. The ratio was decrease to 1.60:1, Similarly in the year 2004/05, this ratio was decreased and available current asset was 1.40 rupee for ever rupee of liability. Decreasing trend was shown on liquidity in this study period with slight increment in ratio in the year 2005/06, which is 1.44. The ratio further decreased and became 1.5 in the year 2006/07. From the year 2007/08 to the year 2009/10, the current ratio was increased from 2.17 to 2.56. Up to the year 2006/07, looking after theoretical aspect, NTC could not fully support its short-term debt from its currents assets as rule says that the current ratio should be at least 2. But it was more than 2 in the final three years of the study period. The average current ratio of study period is 1.83. Whether or not, a specific ratio is satisfactory depends on the nature of the business and the characteristics of its current assets and

liabilities. The minimum acceptable current ratio is obviously 1:1, but that relationship is usually playing it too close for comfort. It can be concluded that company will not be fully meet its short term obligation.

B. Quick Ratio

The quick ratio or the acid-test ratio is a liquidity indicator that further refines the current ratio by measuring the amount of the most liquid assets there are to cover current liabilities. The quick ratio is more conservative than the current ratio because it excludes inventory and other current assets, which are more difficult to turn into cash. Therefore, a higher ratio means a more liquid current position.

Stores & Spares and prepaid Expenses Loans/Advance are deducted from current assets that is written in table No. 4.2

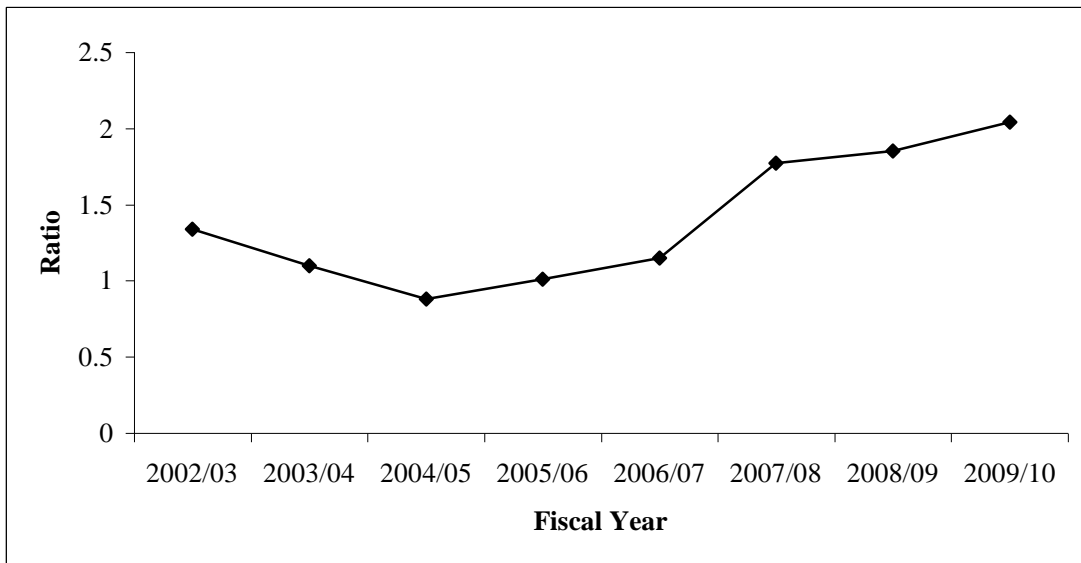
$$\text{Quick Ratio} = \frac{\text{Current Assets} - \text{Inventory}}{\text{Current Liabilities}}$$

Table No: 4.2
Analysis of Quick Ratio of NTC

			Rs. ('000')
Fiscal Year	Total Quick Assets	Total Current Liabilities	Ratio QA/CL
2002/03	13571008	10137347	1.34
2003/04	13946011	12640965	1.10
2004/05	12958166	14722678	0.88
2005/06	15768952	15665379	1.01
2006/07	18103357	15675154	1.15
2007/08	20440093	11518713	1.77
2008/09	22957999	12406063	1.85
2009/10	27883250	13661063	2.04
		Average	1.39

Source: NTC Annual Report 2011

Figure No. 4.2
Figure showing Quick Ratio



The table 4.2 shows the position of highly liquid assets to meet the current liabilities of the NTC. This ratio will be lower than the current ratio, but the difference between the two will indicate the extent to which current assets consist of stock. In the year 2002/03, current ratio was 1.34 which slowly decreased to 1.10 in the year 2003/04. Decrease in trend still continued and in the year 2004/05 quick ratio become 0.88. Although ratio was in decreasing trend but quick assets were enough to meet its current liabilities until 2003/04. Till this period NTC was maintaining minimum generally acceptable ratio i.e. 1:1. But in the year 2004/05, ratio drastically decreased to 0.88 meaning that NTC got weaker liquidity position than it had before. But from the year 2005/06 it showed good performance in liquidity maintenance, increasing quick ratio up to 2.04. Analysis of quick ratio showed NTC is able to maintain minimum acceptable liquidity ratio i.e. 1.1. It can be concluded that company has enough cash to pay current obligation of the firm.

4.1.2 Cash Position Analysis

a) Absolute Cash Ratio

$$\text{Absolute cash ratio} = \frac{\text{Cash \& equivalent} + \text{Marketable Securities}}{\text{Current Liabilities}}$$

Table No: 4.3: Analysis of Absolute Cash Ratio of NTC

Rs. ('000')

Fiscal Year	Cash + Bank Balances + Treasury Bill	Current Liabilities	Ratio
2002/03	11008439	10137347	1.09
2003/04	11755643	12640965	0.93
2004/05	9574501	14722678	0.65
2005/06	12021625	15665379	0.77
2006/07	14746338	15675154	0.94
2007/08	16225492	11518713	1.41
2008/09	19251608	12406063	1.55
2009/10	23494861	13661063	1.72
		Average	1.13

Source: NTC Annual Report 2011

Figure No. 4.3

Figure Showing Absolute Cash Ratio

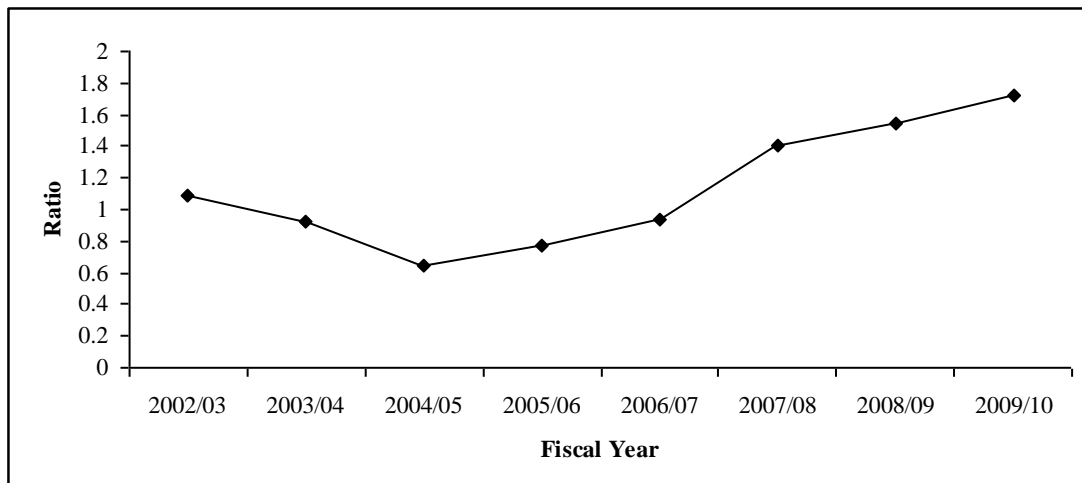


Table No 4.3 shows the absolute cash ratio of NTC over the study period. In the year 2002/03 absolute cash ratio of NTC was 1.09 which shows that company was better able to cover its obligation to creditors. This ratio has decreased in the year 2003/04 by 16%. There is to be noted that in the study period NTC did not held any marketable securities. In the year after 2003/04, absolute cash ratio started to decrease and became 0.65 in the year 2004/05. After 2004/05 ratio slightly increase and became 0.77 and 0.94 in the year 2005/06 and 2006/07 respectively. The ratio increase gradually in the final three years of the study period i.e. 1.41, 1.55, 1.72 in the year 2007/08, 2008/09 and 2009/2010 respectively. We cannot say the ratio which NTC maintained in the study period was good or bad or enough as there is no industry standard and no rule of thumb.

b) Cash to Current Assets Ratio

Table No: 4.4
Analysis of Cash to Current Assets Ratio of NTC

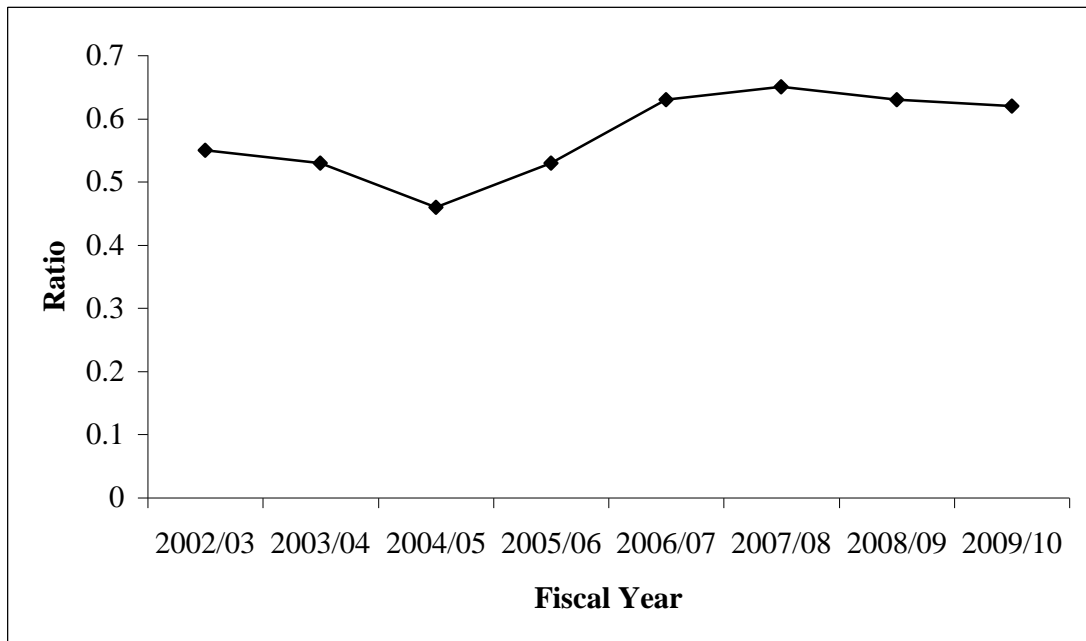
Rs.
(‘000’)

Fiscal Year	(Cash + Bank) Balance	Current Assets	Ratio
2002/03	10097738	18424147	0.55
2003/04	10780669	20213763	0.53
2004/05	9574501	20598353	0.46
2005/06	12021625	22526522	0.53
2006/07	14746338	23519754	0.63
2007/08	16134517	25000474	0.65
2008/09	18191058	28837295	0.63
2009/10	21611536	35015364	0.62
Average			0.58

Source: NTC Annual Report 2011

Figure No. 4.4

Figure Showing Cash to Current Assets Ratio



During 1st year of study period cash portion of current assets was more than 50% i.e. cash to current assets ratio was 0.55. The ratio decreased in the year 2003/04 and became 0.53. It further decreased in the year 2004/05 and cash portion of current assets became less than 50% i.e. ratio became 0.46 in the year 2004/05. After this year, this ratio gradually increased and became 0.53 in the year 2005/06 and 0.63 in the year 2006/07. The ratio slightly increase in the year 2007/08 i.e. the portion of cash is 65% but is gradually decrease in the final two years by very little percentage. In this type of company, there is continues cash inflow and out flow because of which cash to current assets ratio keeps on fluctuating. But it makes no difference to company.

Above analysis showed that average ratio of NTC is 0.58. We can concluded that 58% current assets consists of cash which indicate the greater safety of the funds of short term creditors.

4.1.3 Cash Turnover Ratio

Cash turnover ratio indicates a firm's efficiency in its use of cash . Optimum balance should maintain by the company to meet its current obligation in course of daily business transaction. The cash turnover ratio explains how quickly cash is received from the sales. A high cash turnover ratio represents sound liquidity and vice-versa. However, too high ratio indicates excess cash balance being held idle.

Table No: 4.5
Statement showing Cash Turnover Ratio

Rs. ('000')

Fiscal Year	Total Revenue	Cash + Bank Balances	Cash Turnover
2002/03	7208087	10097738	0.71
2003/04	8312244	10780669	0.77
2004/05	8584144	9574501	0.90
2005/06	10413655	12021625	0.87
2006/07	13524367	14746338	0.92
2007/08	16624213	16134517	1.03
2008/09	20646629	18191058	1.13
2009/10	25058304	21611536	1.16
Average			0.94

Source: NTC Annual Report 2011

Figure No. 4.5

Figure Showing Cash Trunover Ratio

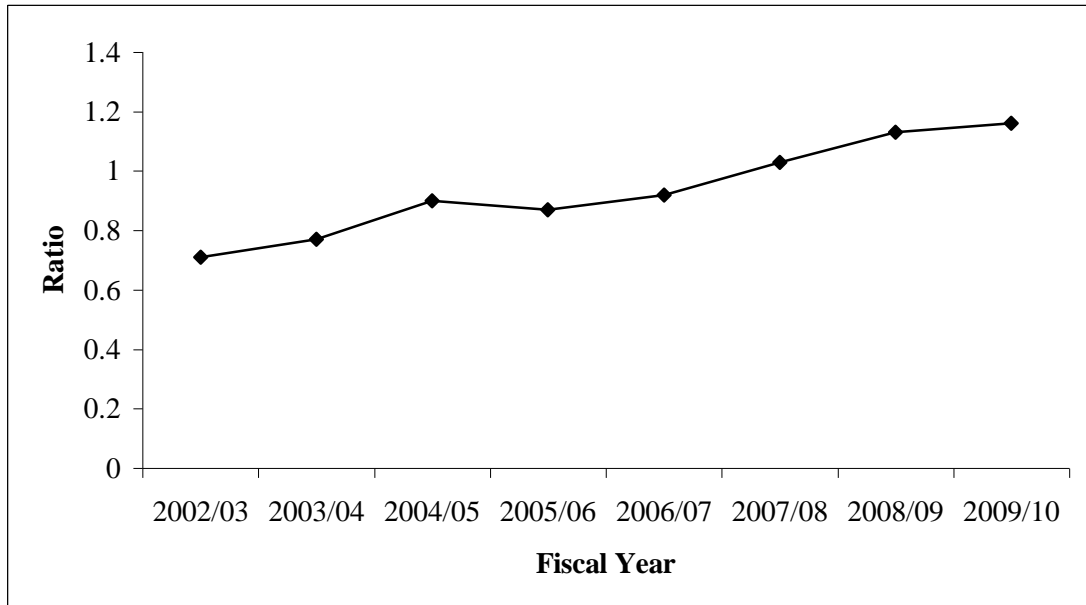


Table No 4.5 shows cash turnover ratio of NTC for the period between 2002/03 to 2009/10. It is found that cash turn over ratio was in increasing trend starting from 0.71 in year 2002/03, 0.87 and 0.92 in the year 2005/06 and 2006/07 respectively. The ratio increase each year from F/Y 2007/08 to 2009/10.

From above analysis it is concluded that NTC is unable to utilize its cash in generating revenue.

4.1.4 Actual Cash flow Analysis

“Cash flow statement provides information about the cash receipts and payments of a firm for a given period. It provides important information that compliments the profit and loss account and balance sheet. The information about the cash-flows of a firm is useful in providing users or financial statements with a basis to assess the ability of the enterprise to generate cash and cash equivalents and the needs of the enterprise to

utilise these cash flows. The economic decisions that are taken by users require an evaluation of the ability of an enterprise to generate cash and cash equivalents and the timing and certainty of their generation. The statement deals with the provision of information about the historical changes in cash equivalents of an enterprise by means of a cash flow statement which classifies cash flows during the period from operating, investing and financing activities” (Kishore, 2003).

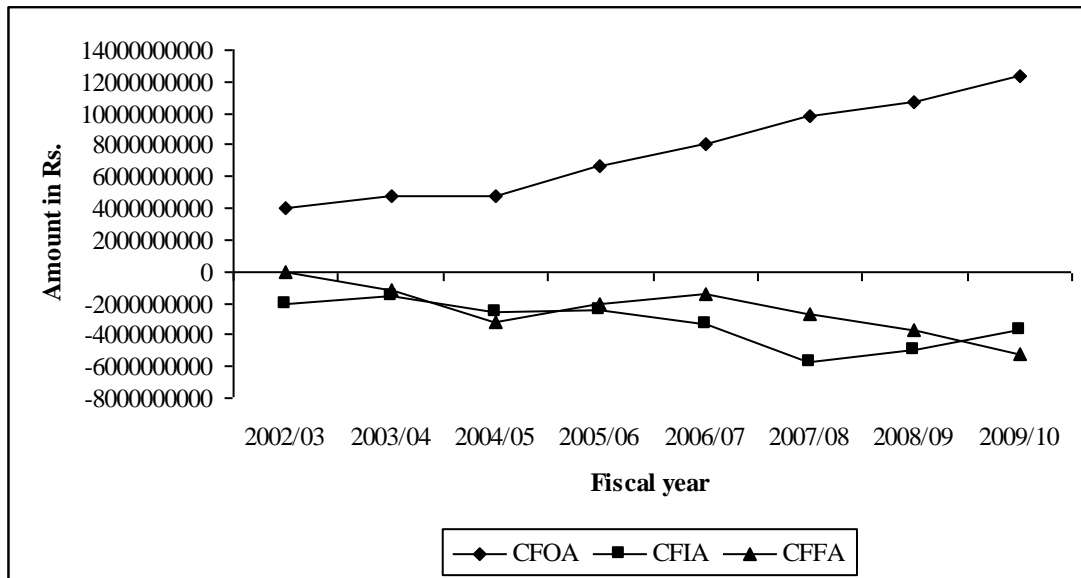
Table No. 4.6
Calculation of actual cash flow from various activities for the Year ended
2002/03 to 2009/10

Particulars	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
CFOA	4070933619	4774587088	4827497506	6722360621	8052325466	9799160046	107168508 13	123614980 89
CFIA	- 2,043,123,00 9	- 1,489,490,13 5	- 2,595,531,13 4	- 2,483,522,527	- - 3326419166	-5709497306	- 495536415 1	- 371505888 2
CFFA	-66210126	- 1,109,541,89 5	- 3187010931	-2071719115	-1475161719	-2701483949	- 370494532 9	- 522596084 6
Net increment in cash (a) + (b) + ©	1961600484	2175555058	-955044559	7134164033	3250744581	1388178791	205654133 3	342047836 1
Cash at the beginning of the year	8242138736	10548112205	1078066971 1	9574500796	14746337952	1474633795 2	161345167 43	181910580 76
Foreign Exchange Adjustment Gain/(Loss)	-162000231	222979457	-251124356	280005092	86939175	-	-	-

Cash at the end of the year (I + ii + iii)	10,097,737,5 90	10,780,669,7 11	9,574,500,79 6	12,021,624,86 7	16,165,919,76 9	1613451674 3	181910580 76	216115364 37
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Source: Annual Report of NTC (2002-2011)

Figure No. 4.6
Trend line Showing Cash Flow from Various Activities



The table 4.6 indicates that net cash flow from operating activities is in increasing trend. This is due to increase in net profit before tax each year in increasing trend.

Similarly cash flow from financing activities is also in increasing trend. The main cause to increase in cash flow from financing activities in the beginning years of study period is due to repayment of loan to Nepal Government and increase in payment of dividend in the final three years of the study period.

There is erratic fluctuation in the CFIA. CFIA was negative throughout the study period which shows that company has purchased more assets and invested in fixed assets up to the F/Y 2007/08, but investment decreases from the year onwards which reduce the cash flow from investing activities.

By adding operating, investing and financing cash we can get net increment in cash. After adjustment of beginning cash and foreign exchange gain or loss with net increment in cash, we can reach on the closing cash balance, which is the cash position of Nepal Telecom. Cash at the end of each study year is fluctuating. The closing cash balance indicates whether Nepal Telecom has sufficient cash or not.

The analysis shows that Nepal Telecom has sufficient cash for its operation but it did not perfectly followed cash flow management to avoid extended cash shortage.

4.1.5 Cash Budget

Cash Budget is a detailed budget of cash inflows and outflows incorporating both revenue and capital items.

A cash budget is thus a statement in which estimated future cash receipts and payments are tabulated in such a way as to show the forecasted cash balance of a business at defined intervals.

The cash budget is one of the most important planning tools that an organization can use. It shows the cash effect of all plans made within the budgetary process and hence its preparation can lead to a modification of budgets if it shows that there are insufficient cash resources to finance the planned operations.

It can also give management an indication of the potential problems that could arise and allows them the opportunity to take action to avoid such problems. The cash budget typically consists of four major sections: (1) receipts section, which is the beginning cash balance, cash collections from customers, and other receipts; (2) disbursement section comprised of all cash payments made by purpose; (3) cash surplus or deficit section

showing the difference between cash receipts and cash payments; and (4) financing section providing a detailed account of the borrowings and repayments expected during the period.

4.1.5.1 Approved Cash Budget and Actual Cash

Table No. 4.7
Statement Showing Approved Cash Budget and Actual Cash

Rs. ('000')				
Fiscal Year	Approved cash Budget	Actual cash	Deviation	% Change
2002/03	5176317	10097737	4921420	48.74
2003/04	7375201	12417486	5042285	40.61
2004/05	5936374	9574500	3638126	38.00
2005/06	3399304	12021625	8622321	71.72
2006/07	6590307	14746338	8156031	55.31
2007/08	7753465	16134517	8381052	51.94
2008/09	9281435	18191058	8909623	48.98
2009/10	11274436	21611536	1033710 0	47.83

Source: Budget and Policy Program (2002-2011)

Figure No. 4.7
Trend Line Showing Percentage Change in Approved Cash Budget and Actual Cash

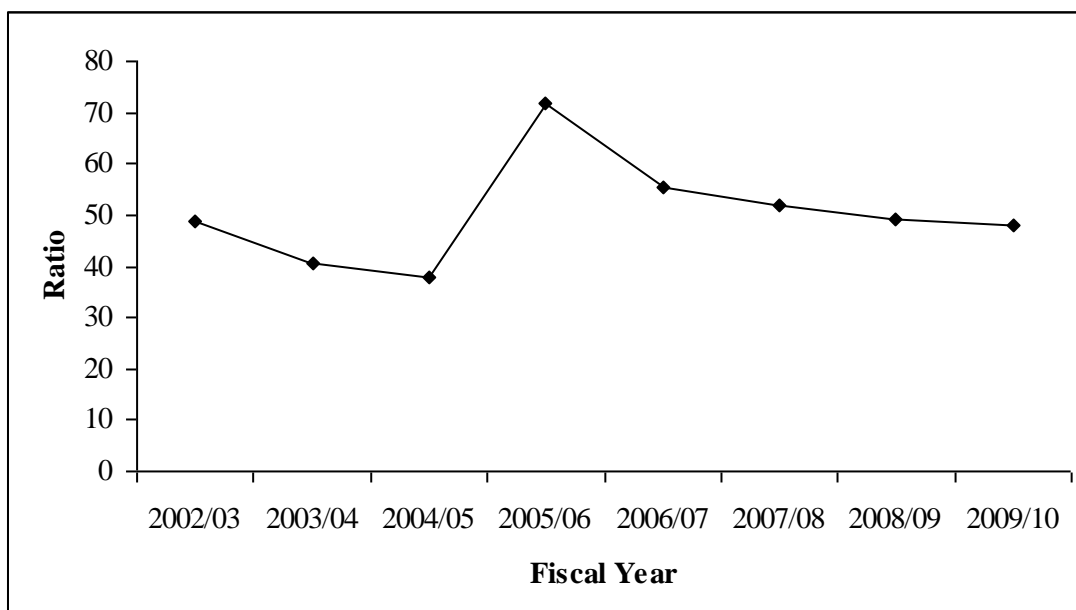


Table 4.7 shows the approved cash budget and actual cash of NTC over the study period. Analysis showed that actual cash balance is higher than approved budget which means that budget has not been properly implemented. Highest deviation is found in the year 2005/06 which was due to improper planning. Cash balance of NTC fluctuated a lot in the beginning of the study period and slightly change from the year 2007/08 to 2009/10 .

The above analysis of cash budget showed that there is high deviation in actual and approved cash budget. It shows improper planning of cash.

4.1.5.2 Revised Cash Budget and Actual Cash

Table No. 4.8
Statement Showing Revised Cash Budget and Actual Cash

Rs. ('000')

Fiscal Year	Revised Budget	Actual	Deviation	% Change
2002/03	9392113	10097737	705624	6.99
2003/04	10829362	12417486	1588124	12.79

2004/05	10655130	9574500	-1080630	-11.29
2005/06	8195242	12021625	3826383	31.83
2006/07	11030579	14746338	3715759	25.20
2007/08	12417124	16134517	3717393	23.04
2008/09	14301810	18191058	3889248	21.38
2009/10	17185494	21611536	4426042	20.48

Source: Budget and Policy Program (2002-2011)

Figure No 4.8

Trend Line Showing Percentage Change in Revised Cash Budget and Actual Cash

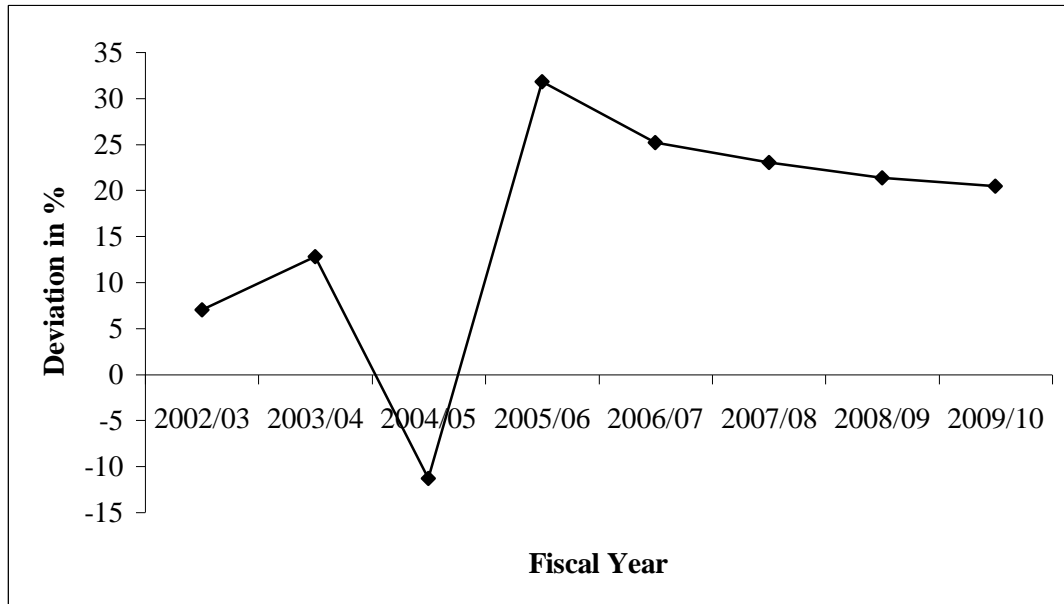


Table 4.8 shows revised and actual cash budget of NTC for the period 2002-2010. Like approved budget, this budget also has deviation but deviation is smaller. NTC revise its budget in its last quarter. In the study period actual cash balance is higher than revised budget except for the year 2004/05. Percentage of deviation is being decreased from F/Y 2005/06 to 2009/10, but even it is more than 20% in the year 2009/10. It shows that NTC has not planned properly in preparing the budget.

4.2 Analysis of data by Statistical tools

4.2.1 Trend Analysis

Trend Analysis is a study of a company's financial performance over an extended period of time. It helps to understand overall financial performance over a period of time. The analysis involves searching for a right [trend equation](#) that will suitably describe trend of the data series.

The trend may be linear, or it may not. A linear trend can be obtained by using a [least-squares method](#) .

Table No. 4.9

Future Trend Analysis of cash and bank balance of NTC by Least Square Method

Let, 1 to 8 be the year 2002/03 to 2009/10

Rs. '000000000'

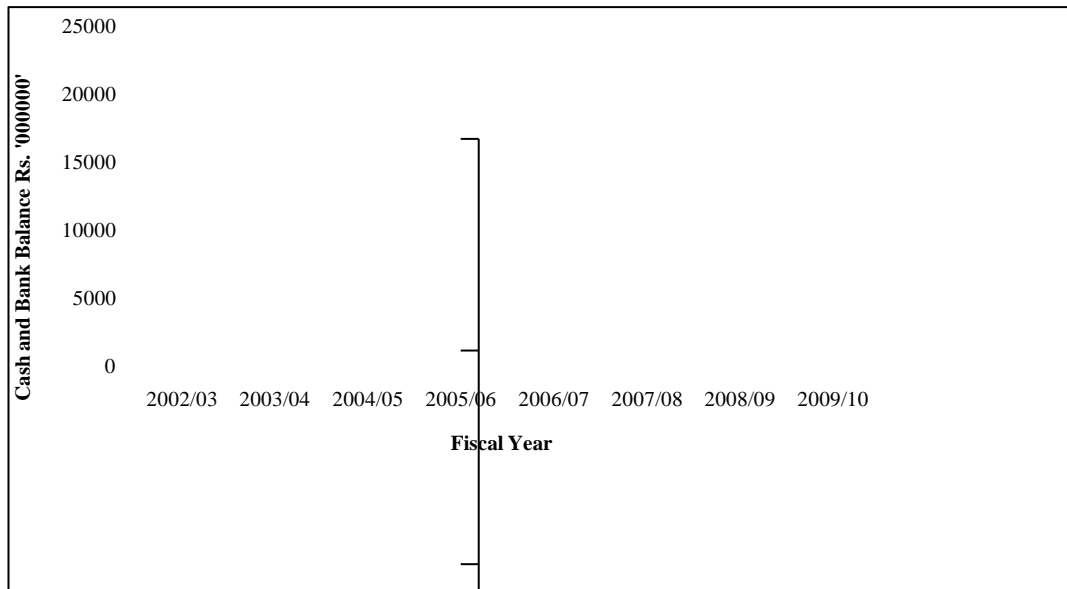
Year (X)	Cash (Y)	XY	X²
1	10	10	1
2	10	20	4
3	9	27	9
4	12	48	16
5	14	70	25
6	16	96	36
7	18	126	49
8	21	168	64
ΣX = 36	ΣY = 110	ΣXY = 565	ΣX² = 204

Source: Audited Balance Sheet of NTC, 2002 to 2011.

Figure No. 4.9

Future Trend Analysis of Cash and Bank Balance of NTC

Rs. '000000'



Here, Number of years (n) = 8

The least square equation are:

$$y = a + bx \dots\dots\dots (i)$$

$$\Sigma Y = na + b\Sigma X \dots\dots\dots (ii)$$

$$\Sigma XY = a\Sigma X + b\Sigma X^2 \dots\dots\dots (iii)$$

Now, Substituting the values in equation(ii) and (iii)

we get,

$$110 = 8a + 36b \dots\dots\dots (iv) \times 36$$

$$565 = 36a + 204 b \dots\dots\dots (v) \times 8$$

Multiplying equation (iv) by 36 and subtracting the equation (v) after multiplying by 8

We get,

$$3690 = 288a + 1296b$$

$$- 4520 = 288a + 1632b$$

$$- 830 = - 336b$$

$$b = 2.47$$

Now, putting the value of 'b' in eq. (iv) we get,

$$110 = 8a + 36 b$$

$$110 = 8a + 36 \times 2.47$$

$$a = 2.64$$

Thus, the required regression equation be :

$$y = 2.64 + 2.47x$$

Let 9 to 13 be the year 2010/11 to 2014/15

$$y = 2.64 + 2.47x$$

Forecasted cash and bank balance:-

$$\text{for 2010/11} = 2.64 + 2.47 \times 9$$

$$y = 24.87 \times 1000000000$$

$$= \text{Rs. } 24870000000$$

$$\text{for 2011/12} = y = 2.64 + 2.47 \times 10$$

$$y = 27.34 \times 1000000000$$

$$= \text{Rs. } 27340000000$$

$$\text{for 2012/13 or } y = 2.64 + 2.47 \times 11$$

$$y = 29.81 \times 1000000000$$

$$= \text{Rs. } 29810000000$$

for 2013/14 or $y = 2.64 + 2.47 \times 12$

$$y = 32.28 \times 1000000000$$

$$= \text{Rs. } 3280000000$$

for 2014/15 or $y = 2.64 + 2.47 \times 13$

$$y = 2.64 \times 2.47 \times 13$$

$$= \text{Rs. } 34745000000$$

Table No. 4.10

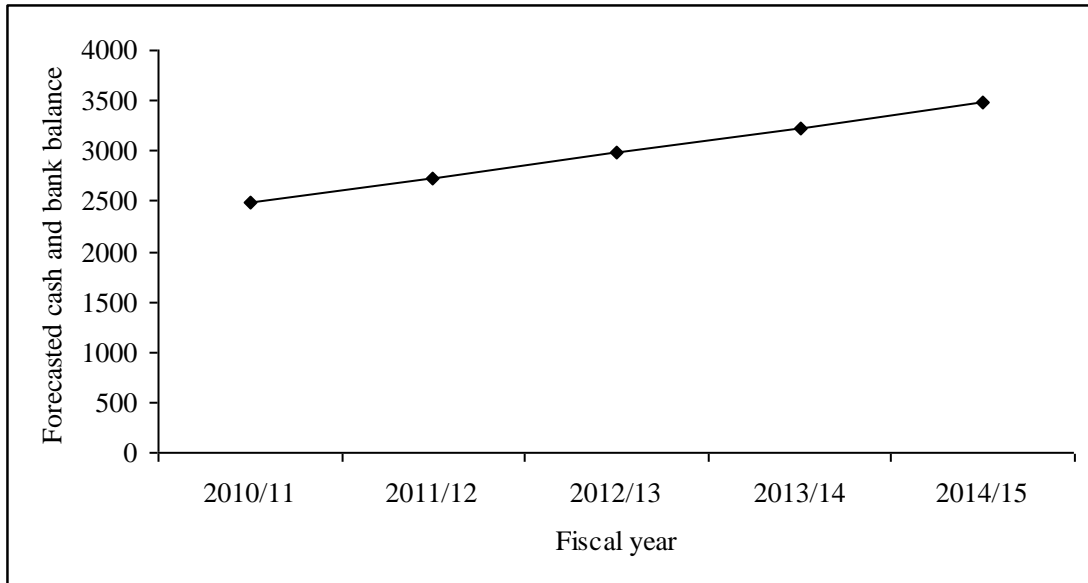
Forecasted cash and bank balance of NTC

Rs. '0000000'

Fiscal Year	Cash and bank balance
2010/11	2487
2011/12	2734
2012/13	2981
2013/14	3228
2014/15	3475

Figure No. 4.10

Figure showing Forecasted cash and bank balance



The forecasted cash and bank balance of NTC for 2010/11 to 2014/15 will be 24870000000, 27340000000, 29810000000, 32280000000, 34750000000 respectively. It shows that the amount of cash and bank balance will be in increasing trend.

4.2.2 Correlation Coefficient & Regression Analysis

A [correlation coefficient](#) is a numerical, descriptive measure of the strength of the linear relationship between two variables. Values for the [correlation coefficient](#) range between -1 and +1, with a [correlation coefficient](#) of +1 indicating that the two variables have a perfect, upward-sloping (+) linear relationship and a [correlation coefficient](#) of -1 showing that the two variables are perfectly related in a downward-sloping, (-) linear sense. A [correlation coefficient](#) of 0 demonstrates that the variables have no relationship, and are independent. A [correlation coefficient](#) is determined through statistical analysis of sample data as it is fitted to a modelled linear equation.

Regression Analysis is a statistical [technique](#) used to find [relationships](#) between [variables](#) for the purpose of predicting [future values](#). In other words regression analysis is a collective name for techniques for the modelling and analysis of numerical data consisting of values of a [dependent variable](#) and of one or more.

4.2.2.1 Correlation between Cash and Revenue of Nepal Telecom

Table No. 4.11
Correlation (r) Between Cash Balance and Revenue

Rs.(⁰⁰⁰⁰⁰⁰)

Year	Cash Balance (x)	Revenue (y)	u=x-14144.25	v=y-13796.375	U ²	V ²	uv
2002/03	10097	7208	-4047.25	-6588.375	16380232.56	43406685.14	26664800.72
2003/04	10780	8312	-3364.25	-5484.375	11318178.06	30078369.14	18450808.59
2004/05	9574	8584	-4570.25	-5212.375	20887185.06	27168853.14	23821856.84
2005/06	12021	10414	-2123.25	-3382.375	4508190.56	11440460.64	7181627.719
2006/07	14746	13524	601.75	-272.375	362103.0625	74188.141	-163901.6563
2007/08	16134	16624	1989.75	2827.625	3959105.0625	7995463.141	5626266.844
2008/09	18191	20647	4046.75	6850.625	16376185.0625	46931062.89	27722766.72
2009/10	21611	5058	7466.75	11261.625	55752355.0625	126824197.6	84087738.47

	$\Sigma x=11$	$\Sigma y=110$			$\Sigma U^2=1295$	$\Sigma V^2=2939$	$\Sigma uv=1933$
	3154	371			43536	19280	91965

Source: Audited balance sheet of NTC 2002-2011.

$$\bar{x} = \frac{\sum x}{N} = 113154/8 = 14144.25$$

$$\bar{y} = \frac{\sum y}{N} = 110371/8 = 13796.375$$

$$u = x - \bar{x} \quad v = y - \bar{y}$$

$$\sigma_x = \sqrt{\frac{\sum u^2}{N}} = \sqrt{\frac{129543536}{8}} = 4024$$

$$\sigma_y = \sqrt{\frac{\sum v^2}{N}} = \sqrt{\frac{293919280}{8}} = 6061$$

Since,

	x	y
Mean	14144.25	13796.375
SD	4024	6061

To find out the correlation between revenue and cash balance Karl Pearson's Coefficient of Correlation (r) is determined. By calculating 'r' we can examine, whether or not cash balance will be changed in the same direction of the change in revenue. For this purpose revenue (y) are assumed to be independent variables and cash balance (x) are assumed to be dependent variables. It is assumed that revenue will increase as cash increases or vice-versa. It means there should be positive correlation between cash balance and actual sales.

$$r_{xy} = \frac{\sum uv}{\sqrt{\sum u^2 \sum v^2}} = 193391965/\sqrt{(129543536*293919280)} = 0.99$$

Correlation coefficient between cash balance and revenue (r_{xy}) = 0.99

The value of 'r' shows that there are highly positive correlation between cash and revenue. It means the test of significance of the value of r shows that there is highly significant relationship between cash and revenue. The significance of r can be tested by the probable error of r.

$$P.E (r) = \frac{0.6745(1-r^2)}{\sqrt{N}} = \frac{0.6745(1-0.99*0.99)}{\sqrt{8}} = 0.00474$$

From we have probable error of 'r' = 0.99. Since $r > 6P.E. (r)$ the value of r is significant i.e. there is evidence of correlation between sales and revenue.

A regression line can also be fitted to show the degree of relationship between the cash balance and revenue. Cash balance can be forecasted by the value of sales revenue. For this purpose cash and bank balance and revenue has been assumed interrelated economic variables. So, the regression line of revenue (x) on cash balance (y) is

$$x - \bar{x} = r \frac{\sigma X}{\sigma Y} (y - \bar{y})$$

Since,	x	y
Mean	14144.25	13796.375
SD	4024	6061

$$r_{xy} = 0.99$$

$$X - 14144.25 = 0.99 \frac{4024}{6061} (Y - 13796.375)$$

$$X - 14144.25 = 0.657y - 9064.22$$

$$X = 5080 + 0.657y$$

This equation shows that revenue will be increased by 0.657, per unit increase in cash balance.

4.2.2.1 Cash and Account Receivable of Nepal Telecomm

Table No. 4.12

**Correlation (r) between Cash balance and Account Receivable of
NTC for the study period**

Rs. ('000000')

Year	Account Receivable (x)	Cash Balance (y)	u=x-3615.125	v=y-14144.25	U ²	v ²	Uv
2002/03	3030	10097	-585.125	-4048.25	342371.266	16380232.56	2368147.16
2003/04	5279	10780	1663.875	-3364.25	2768480.02	11318178.06	597691.47
2004/05	2825	9574	-790.125	-4570.25	624297.516	20887185.06	3611068.78
2005/06	3099	12021	-516.125	-2123.25	266385.016	4508190.56	1095862.41
2006/07	3482	14746	-133.125	601.75	17722.266	362103.063	-80107.97
2007/08	3318	16134	-297.125	1989.75	88283.266	3959105.063	-591204.47
2008/09	3593	18191	-22.125	4046.75	489.516	16376185.56	-89534.344
2009/10	4295	21611	679.875	7466.75	462230.016	55752355.56	5076456.66
Total	28921	113154			4570259	129543536	5792996.75

Source: Audited balance sheet of NTC 2002-2011

$$\bar{x} = \frac{\sum x}{N} = \frac{50714}{5} = 10142.8$$

$$\bar{y} = \frac{\sum y}{N} = \frac{58637}{5} = 11727.4$$

$$u = x - \bar{x} \quad v = y - \bar{y}$$

$$\sigma_x = \sqrt{\frac{\sum u^2}{N}} = \sqrt{(4570259/8)} = 756$$

$$\sigma_y = \sqrt{\frac{\sum v^2}{N}} = \sqrt{(129543536/8)} = 4024$$

Since,

	x	y
Mean	3615.124	14144.25
SD	756	4024

Again, Karl Pearson's Coefficient of Correlation (r) is used to determined value of r. By calculating 'r' we can examine, whether or not cash

balance will be changed in the same direction of the change in account receivable. For this purpose A/R (y) are assumed to be dependent variables and cash balance (x) are assumed to be independent variables. It is assumed that A/R will increase as cash increases or vice-versa. It means there should be positive correlation between cash balance and account receivable.

$$r_{xy} = \frac{\sum uv}{\sqrt{\sum v^2 \sum u^2}} = 5792996.75 / \sqrt{(4570259 * 129543536)}$$

$$= 0.24$$

Correlation coefficient between cash balance and revenue (r_{xy}) = 0.24. The value of r shows that there is low degree of positive correlation between the cash and account receivable. We may therefore, conclude that the actual cash will change in the same direction as account receivable changes. The significance of r can be tested by the probable error of r.

$$P.E (r) = \frac{0.6745(1-r^2)}{\sqrt{N}} = 0.6745(1-0.24*0.24)/\sqrt{8} = 0.22$$

We have probable error of 'r' = 0.22 Since $r < 6 P.E. (r)$, the value of r is not significant.

A regression line can also be fitted to show the degree of relationship between the cash balance and A/R. Cash balance can be forecasted by the value of A/R. For this purpose cash and bank balance and A/R has been assumed interrelated economic variables. So, the regression line of A/R (x) on cash balance (y) is

$$x - \bar{x} = r \frac{\sigma_X}{\sigma_Y} (y - \bar{y})$$

Since,

	x	y
Mean	3615.125	14144.25
SD	756	4024

$$r_{xy} = 0.24$$

$$X - 3615.125 = 0.24 (756/4024)(Y - 14144.25)$$

$$X - 3615.125 = 0.045(Y - 14144.25)$$

$$X = 0.045y + 2977$$

Thus, for unit increase in cash, A/R increases by 0.045 per unit.

4.3 Presentation and Analysis of Primary Data

For primary data, a set of questionnaire were distributed to 25 respondents, out of only 15 returned back the filled questionnaires.

S.N.	Particulars	Answer in %
1	Customers satisfied in NTC's cash management	100
2	Customers not satisfied in NTC's cash management	-
3	HRM effects the cash collection	100
4	HRM doesn't effect the cash collection	-
5	Motivating employee to collect money by - increasing salary - providing fringe benefit - providing promotion	53.33 26.67 20
6	NTC collect money from different part of country by - lock box system - banks - other sources	26.67 73.33 -
7	NTC liquidity position is sufficient to fulfil the short term obligation	73.33
8	NTC liquidity position is not sufficient to fulfil the short term obligation	26.67
9	NTC has inverted in other institution	100
10	NTC has not inverted in other institution	-
11	NTC has invested in Hydropower	20
12	NTC has invested in Banking	66.67
13	NTC has invested in Housing	13.33
14	NTC has taken loan	100

15	NTC has not taken loan	-
16	NTC has taken loan from bank	46.67
17	NTC has taken loan from foreign country	6.67
18	NTC has taken loan from finance company	20
19	NTC has taken loan from issuing debenture	20
20	NTC prepares cash budget	100
21	NTC doesn't prepares cash budget	-
22	NTC prepares monthly budget	26.67
23	NTC prepares weekly budget	73.33
24	NTC prepares biannual budget	-
25	NTC prepares yearly budget	-
26	NTC's cash budget indicates cash inflow	-
27	NTC's cash budget indicates cash outflow	-
28	NTC's cash budget indicates cash inflow and outflow both	100
29	Miller-Orr Model is used in NTC for determining optimal cash balance and marketable securities	46.67
30	Boumal Model or Inventory Model	26.67
31	Both of them	26.67
32	NTC is concerned with banking transaction	100
33	NTC is not concerned with banking transaction	0

All transactions were carried on with banking activities NTC has sufficient cash and 73.33% of respondent focused NTC's liquidity position is sufficient to fulfil short term obligation, 26.67% focused it is not sufficient

NTC has invested in different sector. 66.67% respondents focused that it has invested cash in banking sector, 20% focused in hydro power and 13.33% focused in housing sector.

73.33% of the respondents focused that NTC has collected money from customer by the help of bank. Only 26.67% of respondents focused that NTC has collected money through lock box system.

NTC takes loan from different sectors to fulfil their task, 46.67% respondents focused that it takes loan from bank, 20% from finance company, 20% from issuing debenture and 6.67% from foreign country.

46.67% respondents focused that NTC used Miller Orr Model for determining optimal cash balance. 26.67% focus in Baumal Model or Inventory Model and other 26.67% in both.

53.33% respondents focused it has motivated its employees to collect cash by increasing salary, 26.67% by fringe benefit and 20% by promotion.

73.33% of the respondents focused that NTC prepares its cash budget weekly and 26.67% focused in monthly budget. Cash budget indicates both aspects of the firm, cash inflow and cash outflow.

4.4 Major Findings of the study

Following are the major findings of the study:

- Current Ratio of NTC through out the study period was in decreasing trend for first four years and in increasing trend in the final four years with the average ratio of 1.83. In the 1st five years of study period, current ratio was below average ratio and the last three year of study period it was above the average ratio. The data reveal that NTC have

current ratio less than two in the study period indicating that there is cash shortage and poor management of cash. This was especially critical in the year 2004/2005.

- Quick ratio of NTC was 1.39 on an average for the study period. The ratio was in decreasing trend. Although ratio was in decreasing trend but was not below 1 except for year 2004/05. The ratio is more than 2 in the final year of study period.
- It is not uncommon for a quick ratio to be under 1, with number between 0.8 and 1.0 most common. Ratio lower than 0.8 might indicate that company is running short on its available cash, which could create problem soon after the purchase.
- The Absolute cash ratio for the five years was 1.13 on an average. The ratio was in decreasing trend. It was found that cash position of company was bit weak over the study period but was worst in the year 2004/05. In the 1st two year of study, cash was almost sufficient to pay its current liabilities but in the middle two years it was not. But it was sufficient in the final three .years of the study period.
- Average cash to current assets ratio is 0.58. This indicated that 58% of current assets comprises of cash which shows good liquidity position of NTC.
- The above analysis of cash turnover of NTC revealed that there is no any fixed trend of cash turnover over the study period. Cash turnover ratio was 0.94 on an average. This indicates that NTC is unable to utilize its idle cash in generating revenue. The company's position of liquid cash that remained idle was too high. So there was lack of

proper management of idle cash in the company towards profitable sector which could have yield more revenue.

- Table 4.9 has shown the summary of cash flow from operating, financing and investment activities. Cash at the end of each year of study period is in increasing trend which shows good position of cash in NTC
- Cash budget of the study period showed that there is high deviation in budgeted and actual cash budget. It shows that there was no effective implication of budgeted amount and also shows improper planning of cash. Had there been a proper planning of cash, deviation would have been minimum and cash available would have been utilised in effective and productive way. NTC always revise its budget in last quarter of its fiscal year. There is still deviation in revised and actual cash balance which is shown by table no 4.12. Actual cash balances were higher than revised budgeted cash however deviation of revised and cash budget was insignificant.
- Correlation coefficient between cash balance and revenue of NTC found to be highly positive. This means when revenue increases cash balance will increase or vice versa.
- There is low degree of correlation between cash and A/R receivable.
- The forecasted cash and bank balance will be in increasing trend.
- NTC used Boumal model or inventory model and Miller-Orr model or Stockastic model for determining optimal cash balance and marketable securities

- NTC has other sources of cash collection in the market. It has also limited concerned with banking transaction customers are satisfied in NTC's cash management. NTC motivates most of their employees by providing more salary and according to their qualification. Employees of NTC are strongly dedicated to perform their task. Human Resource management effects the cash collection of NTC.

- It is concluded that NTC has mostly taken loan from banks and also has invested mostly in the banking sector.

CHAPTER V

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary

Since the establishment of Nepal Telecommunication Corporation, it is providing reliable and affordable telecommunication services to the Nation. Nepal Telecommunication Corporation was dissolved and converted to Nepal Telecom from 1st Baisakh 2061. It was registered under company act 2053; the privatization of Nepal Telecom should be beneficial to company. Nepal Telecom's vast telecommunications networks play a key role in supporting the growth of business in the information technology field. It has been enjoying monopoly in telecommunication sector since last three decades but this monopoly has broken down with the establishment of UTL and Spice Nepal.

Now to compete with market, NTC has to do best in every aspect of its transaction. One of its aspects of NTC's transaction is cash management. The study focuses on the specific aspects of the cash management practices of Nepal Telecom Company. Cash management involves planning to controlling activities of the cash and near cash items. As stated in the introduction chapter, the objective of the study are to observe the liquidity position of NTC, review cash flow from operating, financing and investing activities and to analyse the cash collection and disbursement of NTC.

Review to related literature and previous studies have been done in the second chapter. Tools and techniques, which was implemented in fourth chapter has been described in chapter three. Fourth chapter includes presentation and analysis of data. Hence an effort has been made in this

chapter to present major finding on specific aspect of cash management practices of Nepal Telecom.

5.2 Conclusion

Analysis of current ratio showed that average ratio of NTC is 1.83 which is below standard current ratio i.e. 2. This means that company will not be fully meet its short term obligation. However being service industry it is not necessary for NTC to have current ratio equals to 2.

Analysis of quick ratio showed that NTC is able to maintain minimum acceptable liquidity ratio i.e. 1:1. This means that NTC has enough cash to pay current obligation of the firm.

Cash and bank balance with respect to current assets has been in fluctuating trend. On an average, 58% of current assets consist of cash which shows the greater safety of funds of short-term creditors.

Cash flow statement of NTC showed that company was able to collect more cash from different sources. It shows good position of actual cash collection of the company. On the other hand, company did not spend cash as it targeted. Due to these facts, there was enough surplus cash in hand every year. If company could have managed these surpluses in the productive sector then it could have yield more returns to company.

Cash Budget of NTC showed that there is high deviation in Budgeted and actual cash balance. This shows the improper planning of Budget. Also it showed that only total internal sources are not enough for NTC to meet its operating and non operating expenditure. So NTC took loan from external source in the previous years of the study period but it didn't take loan from external sources in the final years of study period because there is always surplus cash held by NTC.

The future trend line shows the positive figure of cash and bank balance for the future.

5.3 Recommendation

Cash management is one of the important elements of overall management area which is interrelated and integrated with economic planning and controlling of management. Financial efficiency is important for achieving the goal of any business enterprises.

On the basis of the study considering target objective, following recommendations are given for healthy financial performance and better cash management of the company.

- Company's liquidity is satisfactory. However, it is important for the company to estimate how much fund is necessary to maintain liquidity position and to invest the surplus cash funds in marketable securities or profitable opportunities to generate some income.
- NTC should have proper cash planning to estimate the cash receipts and payments which helps to control the efficient management of cash. Similarly, Nepal Telecom should analyze various cash management techniques and models so that it can predict the optimal cash balance.
- Appropriate investment policy for surplus cash: On the basis of study, there seems enough cash surplus than it was required. So there must be appropriate policy and strategies to use that surplus cash in profitable sector.
- Preparation of realistic budget: while preparing budget company should analyze the actual past data and present needs of the

programs applying systematic and scientific method of data analysis. Actual total uses of budget amount were not matching with budgeted target for expenses purpose. There must not be such vast deviation between actual and budgeted figure.

- Use internal source in full capacity: Internal source is sufficient to finance whole budgeted expenses of the company. It should not borrow loan from foreign institution because it involves cost.
- Cash turnover ratio of NTC is too high it indicates that there is more idle cash. The cash should be utilize properly to provide quality services to its customers to generate revenue.

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APPENDIX
Questionnaire

Date:

Dear Respondent,

This Research study titled “*Cash Management Practices In Nepal (A Case Study of Nepal Telecom)*” is undertaken to meet the requirement of MBS degree of Central Department of Management (TU). I therefore kindly request you to spare a few minutes of your valuable time to fill in this Questionnaire.

The information that you furnished will be used for Academic purpose only. Your identity will not be disclosed as the data will appear in the report in the aggregate form. I assure you that the given information will be used only for research purpose and will be kept strictly confidential.

Name:

Address:

Post:

Academic Qualification:

Gender:

Date:

Appendix-I
Questionnaire:

1. What do you feel are your customers satisfied in your cash management ?
(a) Yes (b) No
2. How do you motivate your employee to collect money ?
(a) Provided more salary
(b) Provided pension
(c) Provided job according to their qualification
3. Is HRM effect the cash collection ?
(a) Yes (b) No
4. If yes, what type of facilities have you provided to employee ?
(a) Increasing salary
(b) Promotion
(c) Fringe benefits
5. Employees are dedicated to perform their tasks ?
(a) Strongly agree
(b) Agree
(c) Rarely agree
(d) Strongly disagree
6. How do you collect the money from different parts of the country ?
(a) Lockbox system
(b) Banks
(c) Other sources
7. Is Nepal Telecom concerned with banking transaction ?
(a) Yes (b) No
8. Is NTC have sufficient cash ?
(a) Yes (b) No

9. Is NTC invested cash in another institution ?
(a) Yes (b) No
10. If NTC invest another institution which sector is it invests ?
(a) Hydropower
(b) Banking
(c) Housing
(d) Others
11. Is any other sources of cash collection in the market of NTC ?
(a) Yes (b) No
12. Is NTC limited concentrated with banking transaction ?
(a) Yes (b) No
13. Is NTC take loan ?
(a) Yes (b) No
14. If yes, from which institution ?
(a) Bank
(b) Foreign country
(c) Finance company
(d) Issuing debenture
(e) Government
15. Is NTC used electronic fund transfer system ?
(a) Yes (b) No
16. Do you prepare a cash budget ?
(a) Yes (b) No
17. If yes, how do you prepare ?
(a) Monthly

- (b) Weekly
 - (c) Bi-annual
 - (d) Yearly
18. Which aspect of the firm indicate by cash budget ?
- (a) Cash inflow
 - (b) Cash outflow
 - (c) Both of them
19. Which models are used in NTC for determining optimal cash balance and marketable securities ?
- (a) Miller-Orr model or stockastic model
 - (b) Boumal model or inventory model
 - (c) Both of them

Appendix-II

Calculation of Cash Flow from Operating Activities for the

Year Ended 2002/03 to 2006/07

	2002/03	2003/04	2004/05	2005/06	2006/07
Particulars	Amt. in Rs.	Amt. in Rs.	Amt. in Rs.	Amt. in Rs.	Amt. in Rs.
Cash Flow from Operating Activities					
<i>Net Operating profit before tax</i>	40931183 53	45506677 34	4921528988	68437268 17	798332192 3
Adjustment:					
Depreciation	94022452 6	10279225 73	1050485813	11961363 19	136650446 1
Deferred Expenses	34435417	32770817	40817764	40029002	58374511
Foreign Exchange Gain/loss	16200023 1	28442774	251124356	- 28000509 2	526031496
Provision for staff bonus and incentive	30163889 9	30921160 5	281711261	32204067 3	484410505
Provision for Pension	62526226	23499391 7	312606943	24138969 3	286083269
Interest on loan		3291470	696200	1107992	
Bad debts	662011				200365023
Provision for Bad debts	21072345	22597992 7			
Fixed asset written off	2972544	33932265	1224800		
Income from investment & bank deposit	- 41954635 0	- 49027020 7	-463827650	- 59683768 2	- 701827193
Special charge	12437153 4	7004544			37269943
Expenses on loss of goods	42084932	16348917 9		8530000	122922321

Royalty	40526660 0	12657437 6	491301830	59180715 5	811462056
Provision for earned leave		37602296	24236908	65980439	71726050
Operating profit before working capital change	57708272 68	62916132 70	6911907213	84339053 16	112466443 65
Adjustment for working capital change					
Increase in account receivable	- 56219734 6	13535480 8	-157001491	- 27355230 3	- 556380754
Increase/Decrease in stock	82447002	50620115	-54606668	-34258671	655293
Increase/Decrease in interest accrued	-7126509	-18066728	5457834	2463849	4299996
Increase/Decrease in Advance	- 73260858 2	- 24706338 6	221484011	38251056 4	- 272590616
Increase in Advance-Tax		- 13156981 27	-1602051292	- 16846033 93	- 270468361 4
Branch Account (Ad)	-12437486	12182199	-4041036	2798001	-13388009
Increase in payables	68484770 4	33254428 5	226452780	61849624 6	120375367 7
Increase in Provision	21932697 6				
Payment of interest/Adjustment				-2335181	
Payment of Royalty				- 37064121 9	- 563687484

Payment of Earned leave				-22011777	-21694456
Payment of Pension				-30048819	-35997668
Gratuity Received				8251	899
Paymnt of last year dividend, bonus, incentive tax etc	- 13721454 08	- 41856006 5	-878193785	- 30163889 9	- 248788172
Last year adjustment		-48339283	158089940	1268656	72974138
Working Capital Changes	- 16998936 49	- 15170261 82	-2084409707	- 17115446 95	- 319431889 9
(1+2)Net cash flow from Operating Activities (a)	40709336 19	47745870 88	4,827,497,50 6	67223606 21	805232546 6

Source: Annual Report of NTC (2002-2008)

**Calculation of Cash Flow from Operating Activities for the Year
Ended 2007/08 to 2009/10**

Particulars	2007/08	2008/09	2009/10
	Amt. in Rs.	Amt. in Rs.	Amt. in Rs.
Cash Flow from Operating Activities			
<i>Net Operating profit before tax</i>	10871456130	13633989872	14411095208
Adjustment:			

Depreciation	1486129221	1681293477	4406420635
Licence fees & Deferred Expenses w/o	71161567	41079113	54637484
Additional Licence		-189000000	-270000
Payment for staff bonus and incentive	-352364534	-839893255	-590061737
Payment for Pension	-47308900	-64368869	-84964731
Provision for earned leave	-28156853	-38643025	-48673168
Provision for liability	1183534673	2250589306	1645697272
Income from investment & bank deposit	-903773320	-1375736070	-2014558836
Change in Working capital	-2491821887	-4382459736	-5447824038
Adjustment	-1072296084	-2917139059	-2079597119
Net cash flow from operating activity	9799160046	10716850813	12361498089

Source: Annual Report of NTC (2008-2011)

Appendix-III

Calculation of cash flow from investing activities for the Year ended 2002/06 to 2009/10

	2002/0	2003/0	2004/0	2005/0	2006/0	2007/0	2008/0	2009/1
	3	4	5	6	7	8	9	0
Particulars	Amt. in Rs.	Amt. in Rs.	Amt. in Rs.	Amt. in Rs.	Amt. in Rs.	Amt. in Rs.	Amt. in Rs.	Amt. in Rs.
Cash Flow from Investing Activities								
Purchase of Fixed Assets	- 176864 1894	- 154912 2679	- 199774 5812	- 224364 5653	- 166771 1724	- 30471 76047	- 41508 41568	- 32070 58347
Purchase of Investment (Decrease in CWIP)	- 976527 465	- 415000 06	- 107533 9893	- 157872 72	- 144344 9678	- 76639 761	- 61380 4585	- 65571 7388
Increase in deferred expenses		- 532076 7	- 420971 04	- 342871 06	- 190177 657			
Increase		-	558240	-	-	-	-	-

se in Invest ment		383816 890	25	818214 722	726907 300	34863 26383	27940 63238	18668 41983
Sale of Invest ment	282500 000							
Incom e from invest ment & bank deposi t	419546 350	490270 207	463827 650	596837 682	701827 193	90377 3320	13757 36070	20145 58836
Net cash flow from Invest ing Activi ties (b)	- 204312 3009	- 148949 0135	- 259553 1134	- 248352 2527	- 332641 9166	- 57094 97306	- 49553 64151	- 37150 58882

Source: Annual Report of NTC (2002-20011)

Appendix-IV
Calculation of cash flow from financing Activities
for the Year ended 2002/03 to 2009/10

	2002/03	2003/04	2004/05	2005/06	2006/07
Particulars	Amt. in Rs.	Amt. in Rs.	Amt. in Rs.	Amt. in Rs.	Amt. in Rs.
.Cash Flow from Financing Activities					
Increase in Equity Share Capital					
Long term Borrowing	233906064				
Repayment of long term loan	-300116190				
Receipt in long term debt		11249585	24238654		-664157229
Pymt of long term debt		-233780333	-11249585	-24238654	
Pymt of dividend		-496814035	-300000000	-433510216	-811004490
Pymt of last year dividend		-92395927			
Repayment of retained earning to Nepal Govt		-1000000000	- 2,900,000,000	-1611651503	
Receipt of Share Capital		5000000			
Capital Reserve Adjusted to retained earnings				-2318742	
Net cash flow from Financing Activities					
©	(66,210,126)	(1,109,541,895)	(3,187,010,931)	(2,071,719,115)	(1475161719)

Source: Annual Report of NTC (2002-2011)

