CHAPTER- 1
INTRODUCTION

1.1 Background

Nepal is a small land-locked Himalayan country located in south Asia that lies between two huge economies china and India. Nepal is a developing country with a small economy. Nepal has been striving hard to boost its economy which is greatly dominated by agriculture. Nepal adopted mixed economic model in order to help the state and private sector economy that complement each other. The main aim and objective of developing country like Nepal is to develop its economy at a rapid pace. Nepal is relatively slow to grasp the advantages of the different policies associated with trade.

Every enterprise has to arrange for adequate funds for meeting day to day expenditure apart from investments in fixed assets. Working capital is the flow of ready funds necessary for working of the enterprise. It consists of funds invested in current assets or those assets which in the ordinary course of business can be turned into cash within a brief period without undergoing diminution and without disruption of the organization. Current liabilities are those intended to be paid in the ordinary course of business within a short time. Thus net working capital= current assets-current liabilities. (Theory and Practice: Brigham and Gapenski: 204)

There is difference of opinion among different authors about the definition of working capital. Considering the objectives and scope of working capital, it can be defined in two ways:

(i) Gross Concept: - According to the gross concept, working capital means total of all the current assets of a business. It is also called gross working capital.

Gross Working Capital= Total Current Assets

Some definitions that define gross working capital are:

Mead, Malott, and Field "Working Capital means current assets."

J.S. Mill "The sum of the current assets is the working capital of business."

(ii) Net Concept: - According to the net concept of working capital, net working capital means the excess of current assets over current liabilities. If current assets are equal to current liabilities then according to this concept working capital will be zero and in case current liabilities are more than current assets, the working capital will be called negative working capital.

Net Working Capital= Current Assets-Current Liabilities

Some of the definitions of working capital

Prof. k. v. smith "Working Capital Management is concerned with the problems that arise in attempting to manage the current assets, the current liabilities and the inter-relationship that exists between them."

Weston and Brigham "working capital management refers to all aspects of the administration of both current assets and current liabilities."

James C. Van Horne "current assets by definition are assets normally converted into cash within one year. Working capital management is concerned with the administration of these assets – namely cash and marketable securities, receivable and inventories."

1.1.1 Brief Introduction of Nepal Telecom

In Nepal, operating any form of telecommunication service dates back to 94 years in B.S. 1970. But formally telecom service was provided mainly after the establishment of MOHAN AKASHWANI in B.S. 2005.Later as per the plan formulated in First National Five year plan (2012-2017); Telecommunication Department was established in B.S.2016. To modernize the telecommunications services and to expand the services, during third five-year plan (2023-2028), Telecommunication Department was converted into Telecommunications Development Board in B.S.2026. After the enactment of Communications Corporation Act 2028, it was formally established as fully owned Government Corporation called Nepal Telecommunications Corporation in B.S. 2032 for the

purpose of providing telecommunications services to Nepalese People. After serving the nation for 29 years with great pride and a sense of accomplishment, Nepal Telecommunication Corporation was transformed into Nepal Doorsanchar Company Limited from Baisakh 1, 2061. Nepal Doorsanchar company Limited is a company registered under the companies Act 2053. However the company is known to the general public by the brand name Nepal Telecom as registered trademark (www.ntc.net.np).

The Central Office of Nepal Telecom is located at Bhadrakali, Kathmandu, the capital of Nepal. Nepal telecom is the leading and the largest telecommunication company of Nepal with authorized capital of Rs. 25000000000 (250000000 ordinary shares with par value of Rs. 100 each) and issued capital or paid-up capital of Rs.15000000000 (150000000 ordinary shares with par value of Rs.100 each). (Annual report- Nepal telecom, 2008:21)

1.2 Statement of the problem

The working capital of an organization is very important for the day to day operations. Working capital is of an enterprise is the portion of its total capital which is used for various purpose. Working capital has the characteristics of greater divisibility and liquidity.

The management of working capital is a tough job and the management of working capital of NTC is also not very satisfactory. Various studies show that NTC has not been able to manage its working capital effectively and appropriately. The balance sheet shows a huge amount lying idle in the form of cash and bank balance. The liquidity position of the firm is also very high. The

estimation of appropriate amount of working capital is very difficult but then the effort will be towards assessing the size and liquidity of working capital. In such situation the following problems have been raised to address in this study.

- What are the significant factors determining working capital?
- What are the factors affecting the working capital of NTC?
- How can the additional working capital be utilized productively?
- What is the working capital policy followed by NTC?
- What is the liquidity position of NTC?
- How much has NTC invested in the different types of current assets?
- What is credit policy adopted by NTC?
- What is the relationship between liquidity and profitability?
- Has the working capital been utilized properly?
- Is the overall profitability of NTC satisfactory?
- Is there need to collect the outstanding bills immediately and how can this be helpful to the firm?

1.3 Objectives of the study

The main objective of this study is to know about the working capital management of NTC which is a leading telecommunication organization of Nepal. And also to know that how can effective management of working capital benefits an organization. The objectives put forward are:

- To analyze the composition of working capital of Nepal telecom.
- To evaluate the credit policy of NTC.
- To analyze the relationship between sales and variables of working capital i.e. cash and bank balances, marketable securities, receivables and inventories etc.
- To analyze the sources and mobilization of funds in NTC?
- To evaluate the relationship between profitability and liquidity of NTC?
- To present the working capital scenario of NTC?

1.4 Importance of the study

The study is concerned with the day to day management of a firm's operation which is termed as working capital management. This study has attempted to explain about the working capital management. The study will help NTC to know about its working capital management and to manage it more efficiently and effectively in future. This study will help to know about the existing sources and application of funds in NTC. Thus this study will assess whether the size, liquidity, efficiency, profitability of working capital in NTC is adequate or not and provide suggestions to improve in future.

1.5 Limitations of the study

There are several factors that will play role in determining the scope and range of this research study. Following are the limitations:

) The data used is mostly from the annual report of NTC which is assumed to be correct.

) The data and other information in the study are secondary i.e. from annual reports and websites of NTC.

) The study is limited to only the past five years from FY 2003/04 to 2007/08.

) The analysis of data in many cases may not be very deep on account of limited data.

1.6 Organization of the study

Chapter 1: Introduction

Chapter one contains the introduction of the subject matter, introduction of the firm researched, focus of the study, statement of the problem, objectives of the study, importance of the study , limitations of the study and organization of the study.

Chapter 2: Review of Literature

Chapter two includes the relevant writings of this field previously done by other scholars. The past thesis and other materials such as journals, books has been reviewed to know what has been contributed and what new can be done.

Chapter 3: Research Methodology

Chapter three contains the methods used in this study. This chapter explains about the research methodology used in the study. It contains research design, population and sample, sources of data.

Chapter 4: Data Presentation and Analysis

Chapter four contains presentation and analysis of data through the way of designed methodology and interpreted by the help of various tools and techniques.

This chapter also includes the major findings of the study.

Chapter 5: Summary, Conclusion and Recommendations

Chapter five includes the summary, conclusion and recommendation of the study.

CHAPTER -2
REVIEW OF LITERATURE

This chapter reviews the available literature on the subject concerned. It is subdivided into two parts. The first part deals with the conceptual framework of working capital. The second part reviews the related books and reports as well as relevant thesis submitted for the university degree of master in business studies.

2.1. Conceptual framework

2.1.1. Historical Development of Telecommunication in Nepal

The history of telecommunication in Nepal is very young as compared to the world history of telecommunications. The history of telecom in Nepal started with the establishment of first telephone line in Kathmandu in 1913A.D. followed by the establishment of open wire trunk line from Kathmandu to Raxaul (India) in 1914A.D. In 1935A.D. 25 lines of automatic exchange were installed in Royal palace and again open wire trunk line was installed from Kathmandu to Dhankuta in 1936A.D. then after other trunk service was installed from Kathmandu to Palpa in 1951A.D.

Similarly, other services such as telegram service and high frequency radio system (A.M) were introduced after 14 years in 1950A.D. In 1951A.D, CB telephone exchange was established in Kathmandu and 100 lines were distributed within the city to private sector.

In 1955A.D, the telephone lines were for the first time distributed to the general public and they were able to keep the phone personally at their homes. After seven years in 1962A.D, the first public telephone exchange in Kathmandu was established with the capacity of 300 lines CB. In 1964A.D. first international telecommunications service using HF radio to India and Pakistan was commenced. After this in the year 1971A.D. telex service was introduced. In 1983A.D, first digital telephone exchange was established followed by the commencement of Subscriber Trunk Dialing (STD) in 1984A.D.and in the same year, Reliable Rural Telecom Service was also started with the support of JICA.

In 1987A.D, International Subscriber Dialing System (ISD) was established which helped to enhance the communication with foreign countries. In 1995A.D. Optical Fiber Network was installed with an aim of obtaining fastest, cheapest and more reliable way of communication and a year later conversion of all transmission link to digital transmission link was done, automation of the entire telephone network was performed, independent international gateway exchange was established and VSAT services were introduced. In 1998A.D. direct link with Bangladesh was started and GSM mobile service was launched in 1999A.D. and in the same year SDH microwave radio was implemented. Similarly internet service was launched in 2000A.D. and payphone service in 2001A.D. The east west highway optical fiber project commenced in 2001 which helped Nepalese people to communicate within the country and outside with much cheaper rate than before. And GSM prepaid service was launched in the year 2003A.D.

Nepal Telecom or **Nepal Telecommunications Corporation** (NT/NTC) is the leading and the largest telecommunication company of Nepal. It is also known as Nepal Doorsanchar Company Limited (NDCL). A former government monopoly, it was converted into a

Public Limited Company on <u>April 14</u>, <u>2004</u>. However, as of January 2007, no share has been issued to the public yet. Nepal Telecom was the only provider of basic telephony services in Nepal until *United Telecom Limited* started providing services in 2003.

The Central Office of Nepal Telecom is located at Bhadrakali, <u>Kathmandu.</u> It has branches, exchanges and other offices in 184 locations within the country.

It is the sole provider of <u>PSTN</u>, <u>ISDN</u> and Leased-Line services in <u>Nepal</u>. Following the entry of <u>Spice Nepal</u> into Nepal's telecommunications industry, it is no longer the only provider of <u>GSM</u> service. With 4828 employees, it is one of the largest corporations of Nepal. It has a total of 243 telephone exchanges in various part of the country serving 559,380 <u>PSTN</u> lines, more than 2.7 million GSM cellular phones and 716,000 CDMA phone line as of May 2009.

2.1.2. Meaning and Concept of Working Capital

Every enterprise has to arrange for adequate funds for meeting day to day expenditure apart from investments in fixed assets. Working capital is the flow of ready funds necessary for working of the enterprise. It consists of funds invested in current assets or those assets which in the ordinary course of business can be turned into cash within a brief period without undergoing diminution in value and without disruption of the organization. Current liabilities are those intended to be paid in the ordinary course of business within a short time. Thus net working capital= current assets – current liabilities.

Working capital measures how much a company has available to build its business. The number can be positive or negative, depending on how much debt the company is carrying. In general, companies that have a lot of working capital will be more successful since they can expand and improve their operations. Companies with negative working capital may lack the funds necessary for growth also called net current assets or current capital.

Working capital includes any changes in short term balance sheet items such as increases in inventories, accounts receivable and accounts payable that are expected to result from undertaking a project. The investment fore the working capital may be transferred into cash within a short period, generally a year. So it is also called circulating capital or revolving capital or floating capital. Generally, the capital required for running day to day operation of a business is called working capital. It is concerned with current assets and current liabilities. Asset of an essentially short term nature is known as current assets. It is a short term investment.

The word 'working' means work at present. So, working capital is capital at present. Technically, working capital management is an integral part of overall financial management (Khan and Jain; 1999:15.2). It represents that part of fund that circulates from one form of current assets to another form in ordinary course of business. For example: cash is used to purchase raw material which creates stock of finished goods which, in turn, is sold for cash. Therefore, working capital management is concerned with problems that arise within attempting to manage the current assets, current liabilities and the interrelationship that exists between them (Kulkarni, 1990:374).

Working capital is the life blood of an organization. Investment in current assets is a must for the purchase of raw materials, for meeting the day to day expenses on salaries, wages, rents, advertising etc; and for maintaining the fixed assets. Working capital is the heart an organization and if this is weak then the organization cannot prosper and survive in spite of the large investment of fixed assets. Inadequate and redundant both the situations of working capital are unwanted in a business.

The purpose of working capital

） To meet the cost of inventories, raw materials purchases, work-in-process, finished goods, etc.

） To pay wages and salaries.

） To meet overhead cost, factory cost, office and administration cost, taxes, etc.

） To meet selling and distribution expenses, advertisement, packing, etc.

There are two concepts of working capital i.e. Gross Concept and Net Concept:

A.   Gross Working Capital

The gross working capital concept focuses attention on two aspects of current assets management.

a. Optimum investment in current assets and

b. Financing in current assets

B.   Net Working Capital

The net working capital indicates

    a.   the liquidity position of the firm and

    b.   permanent sources of funds

Net working capital may be of following types:

Positive or qualitative net working capital: it arises when current assets exceeds current liabilities.

Negative or quantitative working capital: it occurs when current liabilities are in excess of current assets.

2.1.3. Classification of working capital

Working capital may be classified on the following two bases:

1)   On the basis of concept

a. Gross working capital and b. net working capital

2)   On the basis of periodicity of requirements:

A. Fixed or permanent working capital: it represents the part of capital permanently locked up in the current assets to carry out the business smoothly. The investment in current assets increases as the size of business expands. Examples of such investments are those required to maintain the minimum stock of raw materials, work-in-progress, finished products, loose tools and equipments. This

arrangement requires minimum cash balance to be kept in reserve for the payment of wages, salaries and all other current expenditure throughout the year. The permanent fixed working capital may again be subdivided in the following:

a. Regular Working Capital: it is the minimum amount of liquid capital required to keep up the circulation of the capital from cash to inventories; to receivables and again to cash. This includes sufficient minimum bank balance to discount all bills and to maintain adequate supply of raw materials etc.

b. Reserve margin or cushion working capital: it is the capital kept over the regular working capital as a reserve which may be used at any time when required. These times can be raising prices, business depression, strikes, special operations such as experiments with new products etc.

B. Variable working capital: it changes with the increase or decrease in the volume of business. It may be sub-divided into the following:

a. Seasonal variable working capital: the working capital required to meet the seasonal liquidity of the business is seasonal variable working capital.

b. Special variable working capital: it is that part of the variable working capital which is required for financing special operations such as extensive marketing campaigns, experiments with products or methods of production, carrying of special jobs etc.

2.1.4. Factors Governing Working Capital

a. Cost of raw materials

The working capital will be comparatively larger if the cost of raw materials used in production is large in proportion to its total cost. For example: in a textile mill or a sugar mill large amounts are needed to meet the working capital. Working capital requirements will be larger in those cases where costly raw materials are used.

b. Nature of the business:

The working capital requirements of a firm basically depend upon the nature of the business. There are certain business undertakings where adequate working capital is required to manage the daily affairs of the business. Undertakings like electricity, railways, water supply etc. are supplying services and not products. They are providing services on the basis of payment and they need very little working capital. On the other hand, trading concerns requires heavy investments in working capital mostly in current assets like inventories, receivables, cash, etc.

c. Quantity and value of stocks:

Where there is a need for keeping large stocks of raw materials and finished products, the amount required for stock piling will be more. Where production is not for stocks but is carried out against a definite order from a customer and the moment goods are produced, they are delivered to the customer, requirements of working capital will be proportionally low.

d. Duration of manufacturing period

The time taken between commencement and end of a manufacturing process as an important determinant of the amount of working capital required. Longer the manufacturing period more the working capital required and shorter the manufacturing period lesser the working capital required.

e. Payment of wages

Labor intensive companies need more amount for wages as compared to capital intensive companies with a great degree of mechanization.

f. Sales Turnover

Sales turnover is the speed with which the working capital is recovered by the sale of goods. The faster the sales are made, the larger is the sales turnover. If turnover is rapid, the amount of working required will be comparatively small.

g. Credit or cash sales and purchases

If a company purchases on cash and sells on credit it will require larger funds for working company. It needs cash to give its creditors and it does not immediately receive from its debtors. Working capital needed is low where goods are purchased on credit and sold on cash.

h. Seasonal variations

Industries with seasonal production require more working assets during a certain period.

i. Type of business

A trading company requires large working capital. An industrial concern may require lower working capital. Banking company requires maximum working capital.

2.1.5. Need and Importance of working capital

From a company's point of view, excess working capital means operating inefficiencies. Money that is tied up in inventory or money that customers still owe to the company cannot be used to pay off any of the company's obligations. So, if a company is not operating in the most efficient manner (slow collection), it will show up as an increase in the working capital. This can be seen by comparing the working capital from one period to another; slow collection may signal an underlying problem in the company's operations.

Following are the main advantages of maintaining adequate amount of working capital in the business:

I.   Solvency

A business needs adequate working capital for the smooth operation of its day to day activities. Uninterrupted flow of production is possible only in the presence of adequate working capital. In this situation, the short term liability can be paid within a short period. Thus it helps to strengthen the solvency position of a business.

II. Goodwill

A firm with sufficient working capital can provide the payment within time to employees, workers and creditors. In such a case, there is no complaint against the firm. As a result, it helps in creating and maintaining goodwill.

III. Easy Loans

A firm with sound working capital need not face any problem to get loan. It can arrange the loan easily from the banks and financial institutions for the funds which are necessary to operate a business.

IV. Cash discount

A business firm having adequate capital can easily manage the cash for purchases of the goods. Immediate payment of cash enables a concern to receive huge discount on purchases and hence it reduces the cost.

V. Regular supply of raw materials

Adequate working capital helps in the interrupted supply of raw materials whenever the business demands without disturbing the production process. And the regular production of goods helps to deliver the production timely in the market.

VI. Morale of management

The overall efficiency of the business increases with the help of adequate working capital. This creates an environment of security, confidence and high morale of management.

VII. Smooth operation of business

Adequate working capital helps to meet the day to day requirements of a business such as regular payment of salaries, wages, etc. this in turn increases the efficiency and morale of employees which results in smooth operation of business.

VIII. Ability to face crisis

A business concern has to come across various problems during the daily course of business such as economic depression, strike, natural disaster etc. Availability of working capital in sufficient volume gives the business the ability to face any crisis situation or minimize it.

IX. Regular return

The management of ample working capital helps a firm to pay quick and regular dividends to its investors. Adequate working capital helps to maintain goodwill in the market as it provides the return to its investors in time which provides confidence to its investors.

2.1.6. Techniques of forecasting working capital

1. Cash forecasting method

Under it the position of cash at the end of the period is shown after considering the receipts and payments to make during this period. It is more or less a summary of cash book. It shows the deficiency or surplus of the cash at the definite point of time.

2. Balance sheet method

Under it forecast is made of the various assets and liabilities of the business. The difference between assets and liabilities indicates either cash surplus or cash deficiency.

3. Adjusted profit and loss account method

Under it the forecasted profits are adjusted after adding the cash inflows and deducting the cash outflows in order to adjust the estimated profit on cash basis.

4. Percentage of sales method

It assumes that certain balance sheet items vary directly with sales. Thus the ratio of a given balance sheet item to sales remains constant. The firm's needs in terms of the percentage of annual sales envisaged in each individual balance sheet items are expressed. This relationship between sales and working capital may be expressed in the following three ways:

a. as number of days of sales;

b. as turnover and

c. as percentage of sales

5. Operating cycle method

Operating cycle is a period that a business enterprise takes in converting cash back into cash. It has the following four stages:

a. The raw material and stores inventory stage;

b. The semi-finished goods or work-in-progress stage;

c. The finished goods inventory stage and

d. The accounts receivable or book debts stage.

6. Regression analysis method

This is a very useful statistical technique of working capital forecasting which helps in making projection after establishing the average relationship in the past years between sales and working capital (current assets) and its various components. This analysis may be carried out through the graphic portrayals (scatter diagrams) or through mathematical formula.

2.1.7. Working Capital Policy

Every firm has its own policy as per the financial manager's attitude towards risk-return trade off. Lenders make short-term loans to allow a firm to finance seasonal build ups of account receivables or inventory. They generally do not lend short-term money for long term uses. So, in working capital management, firm has to determine how much funds should be invested in working capital. The goal of working capital management is to support the long term operational and financial goals of the business. Working capital management involves making decisions upon the amount and compositions of current assets and how to finance these assets. These decisions involve trade off between risk and profitability. The greater the relative proportion of liquid assets, the lesser the risk of running out of cash all other things being equal and lesser the profitability will be.

One of the most important decisions of finance manager is how much current liabilities should be used to finance current assets. The firm's current assets are financed from a combination of short term and long term sources of financing. Any firm has to find out the different sources of funds for working capital.

"working capital policy refers to the firm's basic policies regarding level of each category of current assets and how current assets will be financed"(Weston, Besley and Brigham, 1996:333). To have a clear insight on the working capital policy, we have to know about two basic policies: current assets investment policy and current assets financing policy.

1. Current assets investment policy

Current assets investment policy refers to the policy regarding the total amount of current assets to be carried to support the given level of sales. There are three alternative current assets investment policies which are as follows:

a. Relaxed current assets investment policy

This is the policy "where relative large amount of cash, marketable securities and inventories are carried and where sales are stimulated by the use of credit policy that provides liberal financing to customers and a corresponding high level of receivables" (Weston, Besley and Brigham, 1996:344). This policy is also known as fat cat policy. It creates longer inventory and cash conversion cycles and longer receivable collection period due to the liberal credit policy. Thus, this policy provides the lowest expected return on investment with lower risk.

b. Restricted current assets investment policy

The policy under which a firm holds minimum amount of cash, marketable securities, inventory and receivable to support a given level of sales is known as restricted current assets investment policy or lean and mean policy. In this policy, the firm follows a tight credit policy and bears the risk of losing sales.

c. Moderate policy

This is the policy that lies between relaxed and restricted policies. In this policy, a firm holds the amount of current assets in between the relaxed and restricted policies. Both risk and return are moderate in this policy.

2. Current assets financing policy

Current assets are financed through different sources. However, each and every source entails certain level of cost and risk. Therefore, a careful study is required before making decision as to the financial sources of current assets. The manner in which the permanent and temporary current assets are financed is called the firm's current assets financing policy.

A firm can adopt one of the following policies regarding raising funds for current assets.

a. Aggressive Policy

Degree of aggressiveness in financing the current assets depends upon how the current assets have been financed. A firm is generally regarded aggressive if it finances all of its fixed assets and part of the permanent current assets with long term debt plus equity plus spontaneous current liabilities and all of the temporary current assets with short term, non-spontaneous liabilities. If part of the fixed assets is also financed with current debt or short term credit, then the firm will be regarded more aggressive.

b. Conservative Policy

This is the policy in which all of the fixed assets, all of the permanent current assets and some of the temporary current assets of a firm are financed with long-term capital (Weston, Besley and Brigham, 1996:348). This is a very safe financing policy and therefore not very appropriate from the standpoint of profit.

c. Maturity Matching Policy

Maturity matching policy, also known as self liquidating policy calls for matching assets and liability maturities. This strategy minimizes the risk that the firm will be unable to pay off it its maturing obligations if the liquidations of the assets can be controlled to occur on or before the maturities of the obligations.

2.1.8. WORKING CAPITAL FINANCING

After determining the level of Working Capital, a firm has to decide how it is to be financed. The need for Financing arises mainly because the Investment in Working Capital/Current Assets, that is Raw Material, Work/Stock-in-progress, finished goods and receivables typically fluctuates during the year. The main sources of Financing are:-
1.   Trade Credit
2.   Bank Credit
3.   Commercial Paper
4.   Factoring

1. TRADE CREDIT

Trade Credit refers to the credit extended by the supplier of goods and services in the normal course of transaction. According to Trade practices, cash is not paid immediately for purchases but after an agreed period of time. Thus, deferral of payment (Trade Credit) represents a source of finance for Credit Purchases.

There is however, no formal/specific negotiation for Trade Credit. It is an Informal agreement between the buyer and the seller. There are legal instruments/acknowledgements of debt which are granted on open account basis. Such Credit appears in the records of the buyer of goods as **Sundry Creditors/Accounts Payable.**

A variant of Accounts Payable is **Notes Payable**. Unlike the open account nature of Accounts Payable, Bills/Notes Payable represent documentary evidence of Credit Purchases and a formal acknowledgement of obligation to pay for Credit purchases on a specified(maturity) date failing which legal/penal action for the seller does not necessarily have to hold it till maturity whereas the accounts payable have more flexible payment obligations.

2. Bank Credit

Bank Credit is the primary institutional source of finance for any organization. In fact, it represents the most important source for financing of Current Assets. The Working Capital is provided by the banks in 5 ways:-

1. Cash Credits/Overdrafts

2. Loans

3. Purchase/Discount Bills

4. Letter of Credit and

5. Working Capital Term Loans

3. Commercial Paper

Commercial Paper (CP) is a short-term unsecured negotiable instrument, consisting of promissory notes with maturity. It is issued on a discount on face value basis but it can also be issued in Interest-bearing form. A Commercial Paper (CP) when issued by a company directly to the investor is called a direct paper. The companies announce current rates of CP's of various maturities, and Investors can select those maturities which closely approximate their closing period. When securities are issued by security dealers on behalf of their corporate customers, they are called **Dealer paper**. They buy at a price less than commission and sell at the highest possible level. The maturities of Commercial Papers (CPs) can be tailored within the range to specific investments.

4. Factoring

Factoring can be broadly defined as an agreement in which the receivables arising out of sale of goods/services are sold by a firm(client) to the factor (a financial intermediary) as a result of which the title of the goods/services represented by the said

receivables passes on to the factor. Henceforth, the factor becomes responsible for all credit control, sales accounting and debt collection from the buyer(s). In a full service factoring concept (without recourse facility), if any of the debtors fails to pay the dues as a result of his financial inability/insolvency/bankruptcy, the factor has to absorb the losses.

2.2. Review of previous studies

This section deals with the views of different scholars about working capital management. This lays down conceptual foundation for this study.

2.2.1. Review of working capital as per different scholars

Working capital management is recognized as an important concern of the financial manager due to many reasons. For one thing, a typical manufacturing firm's current assets account for over half of its total assets. For a distribution company, they account for even more. The maintenance of excessive levels of current assets can easily result in a substandard return on a firm's investment. However, firms with inadequate levels of current assets may incur shortages and have difficulties in smoothly maintaining day-to-day operations (Horne and Wachowicz, 2000). Efficient working capital management involves planning and controlling current assets and current liabilities in a manner that eliminates the risk of inability to meet due short term obligations on one hand and avoids excessive investment in these assets on the other hand (Eljelly, 2004). Many exiting research papers have found that managers spend a considerable time on day-today working of capital decisions since current assets are short-lived investments that are continually being

converted into other asset types (Rao, 1989). In the case of current liabilities, the firm is responsible for paying obligations mentioned under current liabilities on a timely basis. Liquidity for the on-going firm is reliant, rather, on the operating cash flows generated by the firm's assets (Soenen, 1993). As a result, working capital management of a company is a very sensitive area in the field of financial management (Joshi, 1994). It involves the decisions about the amount and composition of current assets and the financing of these assets.

The chief financial officers of most companies spend most of their time and effort on day-today working capital management. Still, due to the inability of financial managers to properly plan and control the current assets and current liabilities of their companies, the failure of a large number of businesses can be attributed to the inefficient working capital management (Smith, 1973).

Smith (1973) has identified eight major theoretical approaches taken towards the management of the working capital. He stresses the need for the development of a viable model with the dual finance goals of profitability and liquidity, and argues that only such models will assist practicing financial managers in their day-to-day decision-making. Over the years, many researchers have focused on determining the optimal level of each component working capital.

Gentry (1979) found that the working capital literature is rather limited and that the management of short term resources is not understood too well by academicians. Thus, the consensus in academia seems to recognize the paucity of theory concerning the

management of financial resources due to the inherent difficulties in the development of a working capital decision model, while accepting the normative needs for a more critical examination.

2.2.2. Review of relevant dissertations

This part of the study deals with the different researches carried out in different organizations and Nepal telecom by students on working capital management.

Aryal (2002) undertook a research on "working capital management in Nepal Telecommunication Corporation". Ratio analysis, trend analysis, funds flow analysis, arithmetic mean, coefficient of correlation, regression, hypothesis testing (t-test) etc. have been used as tools of analysis of data for five years from 1995/96 to 1990/00. the objectives of the study were to appraise working capital on NTC with respect to cash, receivables and inventory management; to evaluate credit policy of NTC; to study the relationship between sales and different variables of working capital; to shed light on the creation and mobilization of funds etc. the major findings of the study are as follows:

The corporation is following conservative current assets policy with huge investment in working capital leading to less utilization of working capital; it is facing serious problem of outstanding debt collection; there is more than required liquidity; it has its large amount of internal fund lying idle on one hand and a significant portion of total fund is provided by high interest bearing loan on the other; overall financial management of NTC, however, is satisfactory during the study period.

Aryal has suggested NTC to optimize liquidity position maintaining current ratio near to 1:1; make appropriate decisions regarding credit terms, credit standard and credit policy for collecting the outstanding bills, assess exactly how much cash is required and then invest excess cash in marketable securities; introduce concentration banking system and mobile collection centre; pay off long- term loans by using internal fund; assess financial performance timely through experts. He has also recommended giving more autonomy and establishing business culture in the corporation.

Shrestha (2002) has carried out research on "An Analysis of Working Capital Management of Dairy Development Corporation". The main objective of the study was to appraise the working capital management of DDC and to study the relationship between sales and different variables of working capital. To achieve these objectives, he has taken five years study period and applied the secondary data. The major findings of his study are as follows:

Company's investment on working capital has been increasing. The average investment in current assets is lower with respect to net fixed assets during the study period and DDC has no clear vision about the investment in current assets and fixed assets. Liquidity position of the company is poor; collection period is very long which is not favorable to the company. Overall, earning position of the company is poor because of the inefficient utilization of current assets, total assets and shareholders' wealth.

The study has suggested that DDC should minimize its current assets by adjusting on inventory and cash balance. It should increase production capacity by investing on capital goods and reduce operating cost by avoiding unnecessary manpower and expenses.

Shrestha (2003) has conducted a research on "A Study of Working Capital Management with respect to National Trading Limited and Salt Trading Corporation Limited." The main objective of her study was to present overall picture of National Trading Limited and Salt Trading Limited. The major findings of her study are as follows:

There is operating inefficiency in both the companies and overall return position of the companies is also not in favorable condition because of inefficient utilization of current assets, total assets and shareholders' wealth. The outcome of cash conversion cycle of sample companies are not in satisfactory condition. Liquidity position of Salt Trading Corporation Ltd. shows satisfactory and favorable position by being successful in maintaining the standards but NTL been unable to meet standard. Both are following aggressive financing policy.

The study has suggested the companies to follow the mix-financing policy between moderate and aggressive policy to reduce the risk and earn some profits. According to the researcher, the companies should introduce effective inventory control techniques to decrease huge blockage of inventory and credit policy techniques for collecting receivables. The researcher recommended that the companies should allocate some money for trainings of financial employees to produce skilled and experienced manpower. She suggested NTL to maintain the standard level of both current ratio and quick ratio to get the optimum solvency position.

Lamichhane (2004) has done a research on "an Analysis of Working Capital Management of Nepal Insurance Company." He was concerned with working capital management of Nepal Insurance Company by analyzing various ratios of the period of five years (1997/98-2001/02). The specific objectives of his study is to analyze the size and structure of working capital and relation between non-life insurance company with reference to NIC, to analyze the relationship between operating income and different variables of working capital, to check the efficiency of working capital of NIC and to analyze the working capital cash flow cycle or cash conversion cycle of NIC. He has used ratio analysis, trend analysis, standard deviation, coefficient of variation, correlation coefficient etc. as the tools of analysis. The major findings of his study are as follows:

The higher percentage of current assets in total assets of Nepal Insurance Company denotes liquidity position of the company and lower risk of technical insolvency. The company has adopted the conservative current assets policy. The size of net working capital is also in increasing trend. The ratio of net working capital to operating income indicates less utilization of working capital where operating income is incomparably smaller than the net working capital. The company has eliminated its external financing using internal fund. Nepal insurance company kept excess amount of working capital in comparison to net sales, which cannot be considered as the sign of efficient management of working capital in the organization. The profitability position of being unsatisfactory every year. The corporation has so far greater current assets than current liabilities in all years of observation that clarifies the better liquidity position. Cash is piling up lying unproductively.

The researcher has suggested the company to make a regular check to identify both excess and short current assets, to make a working capital policy, to increase the investment in fixed assets, to study the reason behind the great decrease in profit in the third year of the study period, to reduce the long-term financing in working capital, to search for the better use of funds, to give attention towards deceasing receivable turnover and increasing average collection period, decreasing cash and current assets turnover ratio and decreasing net working capital turnover ratio.

Pandey (2005) has carried out a study entitled "Comparative Study of Working Capital Management In A Manufacturing And A Blending Company." The main objectives of his study is to present overall picture of working capital of Nepal Lever Ltd. and Nepal Lube Oil Ltd., to examine the influence of working capital on profitability, to study the position of working capital in Nepal Lube Oil and Nepal Lever Ltd. and to study the relationship of working capital pattern between manufacturing and blending company. The major findings of his study are summarized below:

The average percentage of investors, cash and bank balance and miscellaneous current assets are higher in NL Ltd. in comparison to that of NLO Ltd. The average of sundry debtors is higher in NLO than that of NL Ltd. according to the trend analysis, the rate of change in inventory percentage in both companies are negative which imply the decreasing rate of inventory percentage to total assets in both companies. Liquidity position of NL Ltd. is found to be better than that of NLO Ltd. All turnover ratios of NL Ltd. are higher than that of NLO Ltd. NL Ltd. is following more aggressive policy in financing its current assets in comparison to NLO Ltd. during the study period. There is inverse relationship between net working capital and net sales in NL Ltd. during the study period whereas

there is no evidence of the relationship between net working capital and net sales in NLO Ltd. Both of the companies are not implying any inventory policy to manage optimum level of inventory that reduces the cost and leads to the smooth operation of the company. Both of the companies are not implying any credit standard policy and credit collection policy. The analysis of different financial ratios shows that NL Ltd. has better liquidity turnover and profitability position than that of NLO Ltd. during the study period.

The study has recommended NL Ltd. to implement proper inventory policy that reduces unnecessary cost, to have clear vision and proper plan to set standard for various ratios and to make the proper financing policy to avoid the risk related to liquidity of the company. He suggested that NLO Ltd. should set proper standard and credit collection policy. He has further suggested both of the companies to give emphasis to proper working capital policy to uplift the financial performance of the companies.

Acharya (2006) has carried out research on "Working Capital Management of Manufacturing Companies Listed in NEPSE": with the objectives of finding out the working capital financing policy adopted by listed Nepalese manufacturing companies, analyzing the current assets and current liabilities policies, examining the effects of working capital on profitability and pointing out valuable recommendations and suggestions based on the research. He examined five year data from 2001 to 2005. He has used ratio analysis, correlation coefficient, regression, probable error etc. as the tools of analysis.

From the research, what he found out that the companies are accompanied with various hindrances like lower turnover, lower return, lower net working capital or poor liquidity position, lack of proper working capital policy, deteriorating financing situation, lack of appropriate credit and collection policy, improper inventory management, high operating cost of production etc.

As per the recommendations forwarded by the researcher, the companies should formulate appropriate working capital policies as per their need, invest idle fund in marketable securities, adopt definite credit and collection policies, and adopt good store keeping, material handling and timely inspection system. The researcher suggests the companies to initiate steps towards minimizing administrative and operating expenses, maintain proper relation and interaction among production, marketing and sales departments and develop appropriate information system in determining exact need of working capital. Not only that, there should be training, participation in the management conferences, foreign enterprises tour etc. for employees in order to increase their efficiency.

Joshi (2007) has conducted a research entitled "A Study of Working Capital Management of Nepalese Manufacturing Companies" for six year period covering 2000 to 2005 A.D. The objectives of her study was to examine the working capital management of manufacturing companies with respect to cash, credit and inventory management and study the relationship between sales and these variables of working capital, assets utilization and profitability position and to make overall comparison of working capital management managed by various manufacturing companies. The major findings of the study are as follows:

Most of the Nepalese manufacturing companies have high level of current assets and their cash conversion cycle is long. Operating expenses is high and their earning is low. Risk return trade-off is not matched in Nepalese manufacturing companies. Net working

capital turnover is also very low. Inventory holds the highest proportion in current assets portfolio followed by receivables and cash in sequential order. The companies have lower level of net working capital and their liquidity position is also not good. Majority of the companies are suffering from loss. There is no significant correlation between net working capital and net profit.

The study suggests the companies to follow appropriate working capital policy and financing policy, to follow a system of forecasting the production and market situations, give attention towards reducing expenses by following cost control mechanism and giving training to staffs of production department and adopt new technologies in the production process, adopt appropriate current assets policy, reduce ICP by processing and selling goods more quickly, reduce RCP by speeding collecting up and make effort to lengthen PDF.

2.3 Research Gap

The review of relevant literature is supposed to contribute to enhance the fundamental understanding and knowledge, which is required to make the study meaningful and positive. There has been very few research work done on the working capital management of Nepal Telecom. Most of them have used old or outdated data and therefore these research works has a very little applicability in real life. Further, importance of graphical analysis has been hugely neglected. The objective of this study is not only to analyze the relationship between sales and different variables of working capital but also to evaluate the credit policy of Nepal Telecom and its effectiveness. This thesis has covered the period of study till 2008 A.D. whereas the previous thesis work covered only up to 2006. Effort has been made to employ the latest data as far as possible giving more importance on graphical presentation. It is found that the previous studies used only five years' data whereas in this research work, five years' data have been used.

CHAPTER – 3
RESEARCH METHODOLOGY

This chapter describes the methodology employed in this study. Research methodology is a sequential procedure and method to achieve the objectives of the study. A sound research study needs to follow a proper methodology in order to achieve predetermined objectives. It describes the method and process applied in the entire aspect of the study. This chapter deals with research design, population and sample, nature and sources of data and the tools that will be used to analyze the data.

3.1 Research Design

A plan for collecting and utilizing data so that desired information can be obtained with sufficient precision so that a hypothesis can be tested properly. The plan is the overall scheme or program of the research. It includes an outline of what an investigator will do from writing the hypotheses and their operational implications to the final analysis of data (Kerlinger: 1986). The study aims to evaluate managerial effectiveness and performance regarding working capital management of Nepal Telecom. This study tries to make comparison and to establish relationship between two or more variables. So, the research design applied here is analytical and descriptive. So as to facilitate the assessment, five years' data (2003/04 to 2007/8) have been collected and tabulated. Different statistical as well as financial tools are used to find out the needed result. The balance sheets, profit and loss account, cash flow statement for the study period have been compared to analyze the working capital management of the company.

3.2 Population and Sample

An opinion with respect to the performance of working capital management of Nepal Telecom can be obtained. But due to the time constraint a very large sample size cannot be taken. So, the sample size taken here is of the last five years (2003/04 to 2007/08). All the annual reports and other related data of the last five years have taken as sample for the study.

3.3 Nature and Sources of Data

The data collected and presented in the study is mostly secondary. The secondary sources of data are the annual reports, news letters and bulletins of Nepal telecom. Most of the information has been gathered from the website. The necessary data on working capital and other related variables has been obtained from the annual reports. Primary data is gathered through direct interview in some cases. Financial statements such as balance sheet, profit and loss account, cash flow statement, etc are the main sources of this five year's study.

3.4 Data Analysis Tools

In this study, two types of analytical tools are used to analyze data collection from various sources. They are financial tools and statistical tools.

3.4.1 Financial Tools

Financial tools offers a simple yet powerful suite of financial analysis and risk management that promotes smart decision making and positively impacts long-term growth and profitability to the firm. A widely used tool for the financial analysis is ratio analysis. This helps to know about the strengths and weaknesses of the firm as well as historical performance and current financial condition. The financial tools used for the study of secondary data are as follows:

3.4.1.1 Liquidity Ratios

Liquidity ratios provide information about a firm's ability to meet its short-term financial obligations. They are of particular interest to those extending short-term credit to the firm. Two frequently-used liquidity ratios are the current ratio (or working capital ratio) and the quick ratio.

a. Current Ratio

The current ratio is the ratio of current assets to current liabilities. Short-term creditors prefer a high current ratio since it reduces their risk. Shareholders may prefer a lower current ratio so that more of the firm's assets are working to grow the business. Typical values for the current ratio vary by firm and industry. The ideal current ratio is 2:1 and for any company the ratio should be above 1:1, as the company might face difficulty in meeting its short term obligations.

The current ratio is computed as follows:

Current ratio $= \dfrac{Current\ Assets}{current\ liabilities}$

Current assets includes inventories, cash in hand, cash at bank, bills receivable, accounts receivable, marketable securities, prepaid expenses, loan and advances etc. whereas, current liabilities includes bills payable, cash credit, outstanding expenses, bank overdraft, income received in advance etc.

b. Quick Ratio

Quick ratio also known as Liquidity Ratio or Acid Test, it measures the ability of a company to pay off its short-term obligations from current assets, excluding inventories. The reason of excluding inventories is due to it's low liquidity and thus quick ratio provide better measurement of company ability to paid off it current obligations compare to current ratio. Quick ratio does not apply to companies with inventory is easily converted into cash, use current ratio instead. The ideal quick ratio is 1:1.

The formula for computing quick ratio is given by:

Quick Ratio $= \dfrac{Quick\ Assets}{current\ liabilities}$

The current assets used in the quick ratio are cash, accounts receivable, and notes receivable. These assets essentially are current assets less inventory. The quick ratio often is referred to as the acid test.

3.4.1.2 Profitability Ratios

Profitability ratio refers to the ability to generate earnings as compared to its expenses and other relevant costs incurred during a specific period of time. For most of these ratios, having a higher value relative to a competitor's ratio or the same ratio from a previous period is indicative that the company is doing well. Following profitability ratios have been used in the present study:

a. Return on Current Assets

This ratio analyzes the earning power of the current assets of the company. The ratio shows how effectively the current assets of the firm has been utilized in order to earn profit.

The ratio is calculated as follows:

$$\text{Return on Current Assets} = \frac{Net\ Profit}{Current\ Assets}$$

b. Return on Net Working Capital

This ratio measures the profitability of net working capital and also shows the efficiency of working capital.

The ratio is computed as follows:

$$\text{Return on Net Working Capital} = \frac{Net\ Profit}{Net\ Working\ Capital}$$

c. Return on Investment

Return on investment is a key ratio for investors. The return on investment ratio provides a standard return on investor's equity. The higher ROI shows efficient use of long-term fund.

The formula for computing ROI is:

$$\text{Return on Investment} = \frac{Net\ Profit}{Capital\ Employed}$$

Where, capital employed = long-term liabilities + owner's equity or

$$\text{Net working capital + fixed assets}$$

3.4.1.3 Turnover Ratios

The relationship between sales and resources is indicated by turnover ratios. These ratios reflect how efficiently the company is managing its resources. Thus these ratios measure the degree of effectiveness in use of resources or funds by a firm. They reflect how efficiently and rapidly a firm can convert its assets into sales. The greater turnover ratio indicates higher utilization of assets and vice versa. Following turnover ratios will be calculated in the present study:

a. Inventory Turnover Ratio

The inventory turnover ratio measures the number of times a company sells its inventory during the year. A high inventory turnover ratio indicates that the product is selling well. The inventory turnover ratio should be done by inventory categories or by individual product. This ratio is calculated as follows:

$$\text{Inventory Turnover} = \frac{Cost\ of\ Goods\ Sold}{Average\ Inventory}$$

A high inventory turnover shows good inventory management and lower turnover indicates excessive inventory or over investment in inventory or a slow moving inventory.

b. Receivables (Debtors) Turnover Ratio

Receivables turnover is an indication of how quickly the firm collects its accounts receivables and is defined as follows:

$$\text{Receivables Turnover} = \frac{\text{Total Sales}}{\text{Accounts Receivables}}$$

The receivables turnover often is reported in terms of the number of days that credit sales remain in accounts receivable before they are collected. This number is known as the collection period. Shorter collection period refers to good credit management and vice versa.

c. Current Assets Turnover Ratio

This ratio shows relationship between current assets and sales. It analyzes how far company has been able to utilize its current assets. It is calculated as follows:

$$\text{Current Assets Turnover Ratio} = \frac{\text{Sales}}{\text{Current Assets}}$$

A higher ratio is preferable. The higher ratio reflects better utilization of current assets.

d. Cash and Bank Balance Turnover Ratio

The cash and bank balance of the company should be optimum to meet its current obligations in course of daily business operation. The cash and bank balance turnover ratio explains how quickly cash is received from sale. In other words, it measures the speed with which cash moves through an enterprise's operation. Symbolically,

$$\text{Cash Turnover Ratio} = \frac{Sales}{Cash\ and\ Bank\ Balance}$$

3.4.2 Statistical Tools

The statistical analytical tools used for the quantitative analysis of secondary data are as follows:

1. **Karl Pearson's Coefficient of Correlation (r)**

Correlation may be defined as the degree of association between two or more random variables. Two variables are said to be correlated when the change in the value of one variable is accompanied by the change of another variable.

Karl Pearson's correlation coefficient is denoted by 'r' and measures the intensity or magnitude or degree of relationship between two variables, suppose X and Y, and is given by the formula:

$$r = \frac{\Sigma uv}{\sqrt{\Sigma u^2 \Sigma v^2}}$$

Where,

r = Karl Pearson's coefficient of correlation between X and Y.

Correlation is expressed as the correlation coefficient, which ranges between -1 and +1. Perfect positive correlation (a correlation coefficient of +1) means that as one security moves up or down, the other security will move lockstep in the same direction. Perfect negative correlation means that when one security moves in one direction, the other security will move by an equal amount in the opposite direction. If the correlation is 0, the movements of the securities are said to have no correlation; they are completely random. In real life, one rarely finds perfectly correlated securities but rather securities with degrees of correlation.

2. Probable Error (P.E.)

Measure of the error of estimate for a sample from a normal distribution, it is computed by multiplying the standard error with 0.6745. Probable error is the basis for the interpretation of the relationship between the two variables. After computing the value of correlation coefficient, probable error is computed to find the extent to which it is dependable which is given by:

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

Where,

P.E. = Probable error of correlation coefficient.

N = Number of pair of observation.

R = Correlation coefficient

P.E. is used to interpret whether the calculated value of r is significant or not.

When r < P.E., the value of r is not statistically significant at all, i.e. there is no evidence of correlation.

When r > 6 (P.E.), the value of r is statistically significant, i.e. practically the correlation is certain.

But when P.E. < r < 6 (P.E.), nothing can be said with certainty whether there exists significant correlation between the variables or not.

The upper and lower limits within which the correlation coefficient is expected to lie are given by:

Upper Limit = R + P.E. and

Lower Limit = R – P.E.

But, when 'r' is of negative value, i.e. -1 $\leq$ r < 0, 'r modulus' or $|r|$ is calculated in order to compare 'r' with P.E. which is always in positive value. For instance, if the value of r comes out to be -0.6, then r = $|r|$ = $|-0.6|$ = 0.6.

This positive value of 'r' is compared with P.E. and 6(P.E.) to arrive at conclusion of practically significant or insignificant correlation.

3. Standard deviation

Standard deviation is an important and widely used measure of dispersion. It is the positive square root of the arithmetic mean of the squares of the deviations of the given observations from their arithmetic mean. It is usually denoted by the symbol ' σ ' (sigma) and is given by:

Standard Deviation (σ) = $\sqrt{\frac{1}{N}\Sigma x^2}$

Where,

$x = X - \overline{X}$

N = Number of years/ observations/ time periods.

It can also be computed as follows:

S.D. (σ) = $\sqrt{\frac{\Sigma d^2}{N} - \left(\frac{\Sigma d}{N}\right)^2}$

Where,

d = X-A

A = Assumed mean

In this thesis work, however, Microsoft Excel worksheet tool has been employed directly from computer.

4. **Coefficient of variation (C.V.)**

The C.V. is the most commonly used measure of relative variation. It is used in such problems where the researcher wants to compare the variability of more than two years. Greater C.V. denotes less consistency between two variables and lesser C.V. denotes more consistency between two variables. The formula for C.V. is given by:

Coefficient of Variation (C.V.) $= \dfrac{\sigma}{X} * 100\%$

5. **Arithmetic Mean**

This is the most popular and widely used measure of representing the entire data by one value. Laymen call this as 'average' and the statisticians call this as 'arithmetic mean'. The value is calculated by summing up all the individual items and by dividing this total by the number of items, calculated as:

$X = \dfrac{\Sigma X}{N}$

Where, = Arithmetic mean of variable X

X = Total sum of all observation of variable X

N= Number of observations.

6. Simple Regression Analysis

The regression analysis helps to know the amount of change in the dependent variable with a unit change in the independent variable. The simple regression analysis studies only two variables at a time. The mathematical equation of the regression curve, usually called the regression equation, gives the best estimation of the average change in the value of dependent variable for any given value of independent variable.

Regression line of variable 'Y' on variable 'X' is given by:

Where,   X   = Mean of variable X

Y   = Mean of variable Y

x   = Standard deviation of variable X

y   = Standard deviation of variable Y

CHAPTER-4

DATA PRESENTATION AND ANALYSIS

This chapter has the purpose of fulfilling the main objective of the present study. In this chapter, composition of working capital of Nepal Telecom will be analyzed which includes size, structure and utilization of current assets and current liabilities, liquidity and profitability position, turnover position, relation between current assets and total assets as well as fixed assets, sources and application of funds, management of current assets, financing policies etc. of Nepal Telecom. The major variables of this study are current assets, current liabilities, quick assets, sales, long term debt, total assets, shareholders' fund etc. Various financial as well as statistical tools have been employed for the analysis purpose. Necessary financial facts and figures have been gathered from the concerned company.

4.1 Analysis of Composition of Working Capital

According to nature of business and attitude of the management toward risk, different organizations use different types of current assets. The working capital requirements of a firm basically depend upon the nature of the business. There are certain business undertakings where adequate working capital is required to manage the daily affairs of the business. Undertakings like electricity, railways, water supply etc. are supplying services and not products. They are providing services on the basis of payment and they need very little working capital. On the other hand, trading concerns require heavy investment in working capital mostly in current assets like inventories, receivables, cash, etc. Similarly coming to the attitude of the firm; the firm having risk averse policy need to

maintain high liquid assets dominating the current assets portfolio. To provide high return to the investors a firm needs to earn sufficient return from its operation which largely depends upon the volume of sales and to increase the sales level, optimum current assets is required. In fact, the success or failure of any organization depends upon the composition of working capital (size, structure, growth of working capital; financing of current assets etc.) and its effective management.

4.1.1 Size of Working Capital

Working capital or investment in current assets is a must for the purchase of raw materials, for meeting the day to day expenditure on salaries, wages, rents, advertising etc; and for maintaining the fixed assets. The size of working capital of any public enterprise should neither be too high nor low. High working capital means high liquidity position but low profitability and low working capital means poor liquidity but high profitability. Poor liquidity cannot fulfill the current obligations of the firm and cannot maintain the activities which affect the objectives or goal of the firm. Size of working capital basically depends upon the nature of the business. For example, trading and financial enterprises invest large amount of money in working capital. Working capital requirements vary from industry to industry depending upon their assets structure. Adequacy of working capital is the life blood and controlling nerve centre of a business.

1)   Current Assets to Total Assets Ratio

In order to fulfill the daily business requirement, current assets are required. The proportion of current assets to total assets depicts the liquidity, profitability, as well as solvency position of the firm. Higher proportion shows the greater liquidity and lower profitability

position of the firm plus lower risk of being insolvent and vice-versa. The table given below represents the percentage of current assets on total assets.

Table: 4.1

Current Assets as Percentage of Total Assets

(Rs. in million)

| Fiscal Year	Current Assets	Total Assets	Ratio (%)
2003-2004	20213.763	33221.352	60.85
2004/05	20598.353	35572.772	57.90
2005/06	22526.522	39351.406	57.24
2006/07	23519.754	43562.629	53.99
2007/08	24180.638	49371.221	48.98
Mean	22207.806	40215.876	55.793
Std. Dev	1752.24	6446.90	4.52
C.V	7.89	16.03	8.11

(Source: Appendix-1)

It can be seen from the above table that both current assets and total assets have increased every year. Current assets have increased by 19.62% in 2007/08 as compared to the base year 2003/04 whereas total assets have increased by 48.61% during the same period. The rate of increase in total assets is higher than that of current assets in every year as a result of which the proportion of current assets to total assets have decreased every year in a constant pace. In the fiscal year 2003/04 the percentage of current assets to total assets was 60.85 which have decreased every year thereafter at a marginal rate with 48.98% for the last year. The average current asset for the period is Rs.22207.81 millions with standard deviation of Rs.1752.24 millions and 7.89% of coefficient of variance. An average total asset for the period is Rs. 40215.876 million with standard deviation of Rs. 6446.90 million and C.V of 16.03%.

Therefore, consistency level is much higher in current assets as compared to total assets. Average ratio of current assets to total assets is 55.793% with only 8.11% variability.

The following figure will be helpful in understanding the relationship between current assets and total assets of Nepal Telecom during the study period.

Figure: 4.1
Percentage of Current Assets to Total Assets
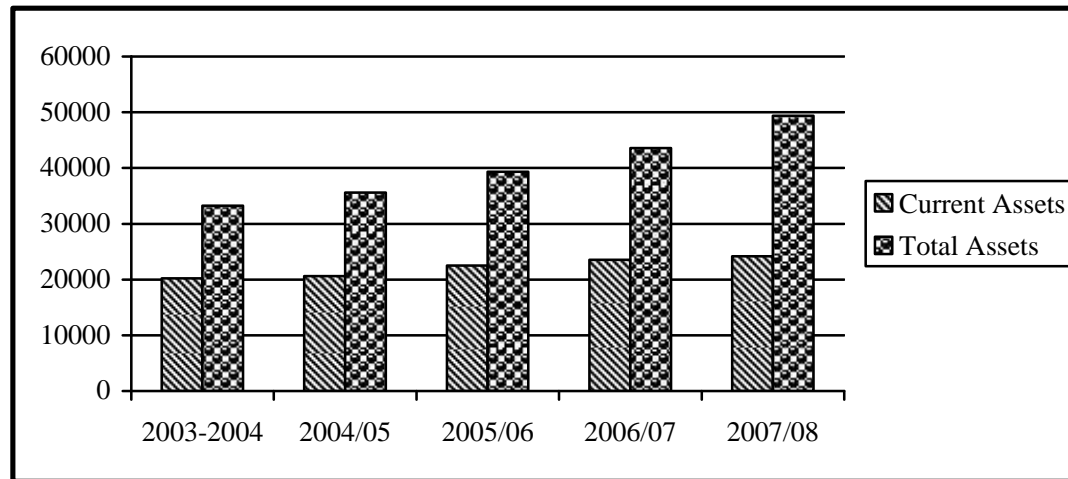
2) Current Assets to Fixed Assets Ratio

In order to support a particular level of business activities, a firm should invest both on current assets and fixed assets. So, the firm should determine the proper proportion of current assets with fixed and total assets. The level of current assets can be measured by the relationship between current assets to fixed assets which can help to understand the current assets financing policy of the firm. Assuming a constant level of fixed assets, higher current assets to fixed assets ratio indicates an aggressive current assets policy. The two goals of the financial management viz. profitability and liquidity are directly linked with the management of current assets. With a decrease in the level of current assets, profitability increases but the liquidity declines and vice-versa.

Table: 4.2

**Current Assets as Percentage of Fixed Assets**

(Rs. In million)

Fiscal Year	Current Assets	Fixed Assets	Ratio (%)
2003/04	20213.763	8094.882	249.71
2004/05	20598.353	9040.917	227.83
2005/06	22526.522	10088.427	223.29
2006/07	23519.754	11361.043	207.02
2007/08	24180.638	12897.703	187.48
Mean	22207.806	10296.5944	215.68
Std. Dev.	1752.241421	1695.076026	103.37
C.V	7.89	16.46	47.93

(Source: Appendix-1)

From the above table, both current assets and fixed assets are found to be in increasing trend but the rate of increase in fixed assets is greater than that of current assets in the second year as well as in the in the fifth year. Moreover, the level of investment in current assets is twice the investment in fixed assets

except for the last year i.e. in 2007/08. Average current assets for the period is Rs. 22207.806 millions with standard deviation of Rs. 1752.24 millions and 7.89% C.V. and average fixed assets for the period is Rs. 10296.59 millions with standard deviation of Rs.1695.076 millions and 16.46% C.V. The average ratio of current assets to fixed assets is 215.68% with 47.93% variation.

Figure: 4.2
Current Assets as Percentage of Fixed Assets
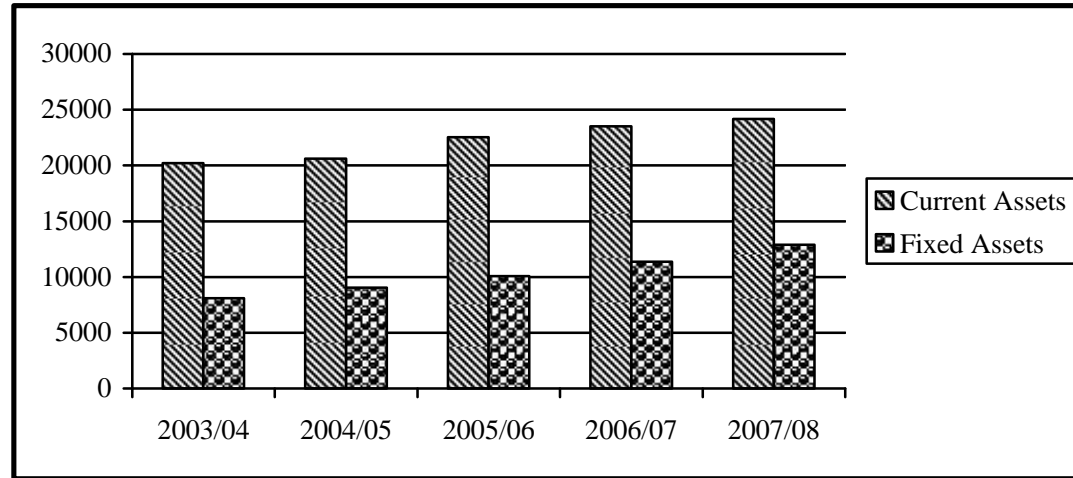
The above figure shows the state of current assets and fixed assets in total investment on assets. From the above figure, it can be seen that the company has invested hugely on current assets every year. The investment on current assets increased at a slow pace and the investment on fixed assets is also increasing but its much lesser as compared to current assets. The company has invested its considerable amount on current assets by increasing the investment on it.

3. Current Assets to Sales Ratio

It is none other than sale of goods and services that keep any organization alive. The company's sales policy depends upon the available resources, market demand and production policy of the firm. In order to support the given level of sales, a company has to invest some amount in current assets which depends upon the current assets investment policy and attitude of the management. When

a firm holds relatively large amount of current assets to support a given level of sales, it is called fat and cat policy. Similarly, when a firm holds relatively small amount of current assets to support the given level of sales, it is called lean and thin policy and between these two policies is the moderate policy. For the purpose of analyzing the current assets investment policy of Nepal Telecom, current assets to sales ratio are calculated here:

Table: 4.3

Current Assets as Percentage of Sales

(Rs. In million)

Fiscal Year	Current Assets	Net Sales	Ratio (%)
2003/04	20213.763	8312.24	243.18
2004/05	20598.353	8584.14	239.96
2005/06	22526.522	10413.65	216.32
2006/07	23519.754	13967.32	168.39
2007/08	24180.638	16788.36	144.03
Mean	22207.806	11613.142	191.23
Std. Dev.	1752.24	3668.60	47.76
C.V	7.89	31.59	24.98

(Source: Appendix-1&2)

Both current assets and sales (operating income) are in increasing trend as shown by the above table. However, the rate of increase in current assets is higher than net sales from FY 2003/04 to FY 2005/06 and for the rest of the two years, sales increased more rapidly

than current assets. The average level of sales is Rs. 11613.142 million with 31.59% of C.V. Sales increased by 101.97% during the study period. The average percentage of current assets to sales is 191.23% with standard deviation of 47.76 and 24.98% variability (C.V.). The company has been generating a generous amount of sales in the last three years of the study period by deploying relatively less amount of current assets successively and it gives the impression that the company is following the lean and thin policy to invest in current assets.

Figure: 4.3
Current Assets as Percentage of Sales
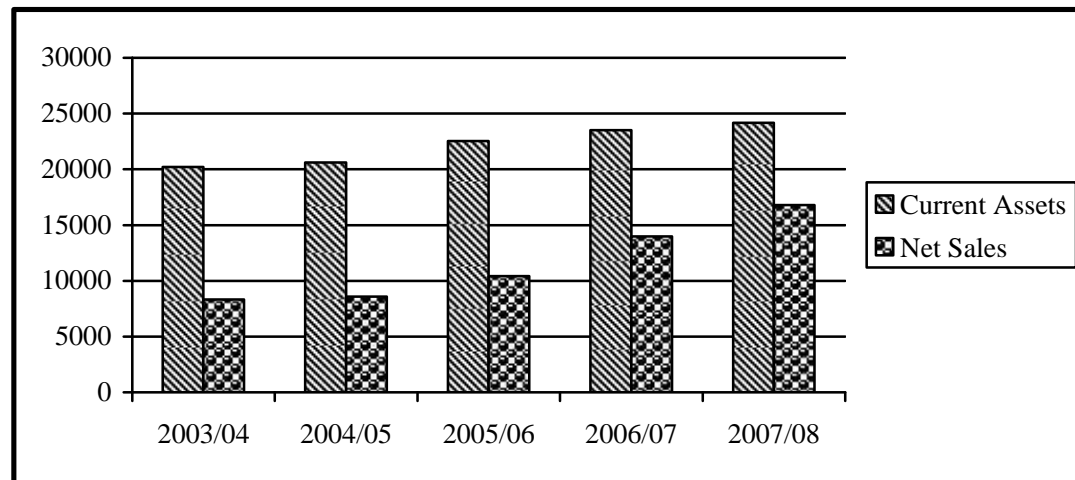
From the above figure, the percentage of current assets deployed for every hundred percent of sales each year during the period observed can be seen.

4. Net Working Capital to Current Assets Ratio

Net working capital is the excess of current assets over current liabilities. If current liabilities are in excess than current assets, the difference is called working capital deficit. It is the general rule of finance that working capital in a business should be sufficient when compared to current liabilities. If a business has low working capital or working capital deficit, a time will come, when it has to find out some new sources for further funds to increase the working capital. Otherwise, current assets have to be liquidated to pay off the current obligations.

Table: 4.4

Net Working Capital as Percentage of Current Assets

(Rs. In million)

Fiscal Year	Net Working Capital	Current Assets	Ratio (%)
2003/04	7584.05	20213.763	37.52
2004/05	5875.68	20598.353	28.52
2005/06	6861.14	22526.522	30.46
2006/07	7844.6	23519.754	33.35
2007/08	9166.2	24180.638	37.91
Mean	7466.33	22207.81	33.55
Std. Dev.	1218.91	1752.24	4.17
C.V	16.33	7.89	12.43

(Source: Appendix-1)

The relationship between net working capital and current assets during the five year study period can be seen from the above table. Although the current asset has shown the increasing trend, level of net working capital depicted fluctuating trend over years. It decreased in the second year and thereafter increased every year in the study period. The average net working capital is Rs. 7466.33 million with standard deviation of Rs.1218.91 and 16.33% of C.V. The ratio of net working capital to current assets in the FY 2003/04 is 37.52% which decreased to 28.52% in the FY 2004/05 and thereafter increased at a constant pace of 30.46%, 33.35% and 37.91% in FY 2005/06, 2006/07 and 2007/08 respectively. The average ratio of net working capital to current assets is 33.55% with 12.43% variability. The company has sufficient amount of working capital and large volume of current assets.

Graphical Presentation of the above table has been presented below:

Net Working Capital as Percentage of Current Assets
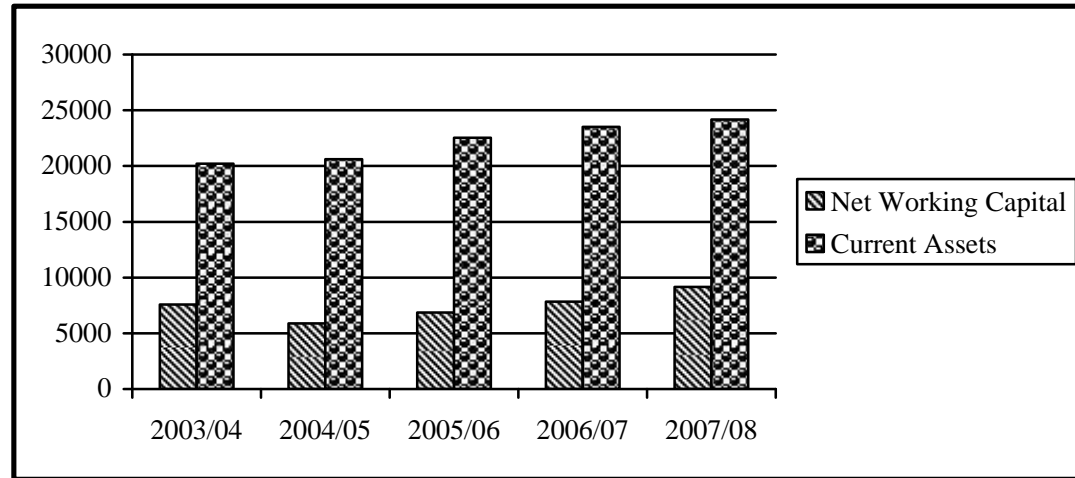
5. Working Capital to Sales Ratio

Working capital is required in each and every moment of a business concern. Sales is not possible without the presence of working capital. A company is supposed to be more effective in sales management which can generate sales with relatively less amount of working capital for a given level of sales than the company which requires more working capital for the same level of sales. A company should make its sales policy as per the resources availability, market demand and production policy. In the following table and figure, attempt has been made to show the relationship between net working capital and sales.

Table: 4.5

Net Working Capital as Percentage of Sales

(Rs. In million)

Fiscal Year	Net Working Capital	Net Sales	Ratio (%)
2003/04	7584.05	8312.24	91.24
2004/05	5875.68	8584.14	68.45
2005/06	6861.14	10413.65	65.89
2006/07	7844.6	13967.32	56.16
2007/08	9166.2	16788.36	54.60
Mean	7466.33	11613.14	67.27
Std. Dev.	1218.91	3668.60	14.68
C.V	16.33	31.59	21.82

(Source: Appendix- 1&2)

Figure: 4.5
Net Working Capital as Percentage of Sales
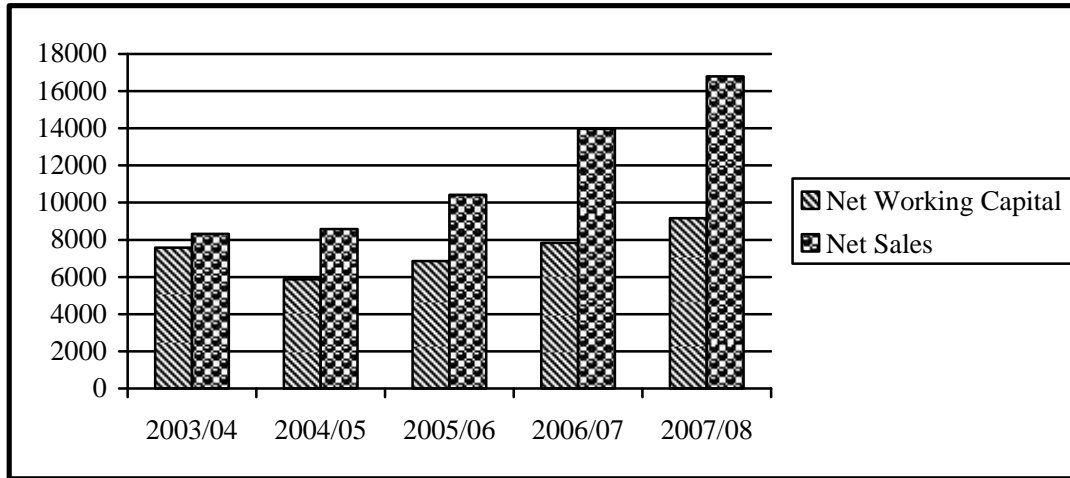
From the above table and figure, it can be seen that net working capital of Nepal Telecom decreased in 2004/05 from Rs. 7584.05 million to Rs. 5875.68 million and there after has increased constantly whereas net sales has increased every year in the same period. Net working capital to sales ratio was 91.24% in FY 2003/04 after this the ratio decreased constantly to 54.60% in the FY 2007/08. The average ratio of net working capital to net sales is 67.27% with standard deviation of 14.68% and 21.82% coefficient of variation. Net sales has been greater than net working capital throughout the study period which signifies that the company has been able to generate sales with relatively less amount of working capital.

4.1.2 Structure of Working Capital

A company should determine the optimum level of each and every component of working capital that would be in the best interest of the company guided by the previous experience and historical ratios. Here, the objective is to analyze the structure of working capital

of Nepal Telecom. This section deals with the structure or composition of working capital and approximate ratio of cash, inventory and receivables to current assets of Nepal Telecom.

1. Cash and Bank to Current Assets Ratio

Cash is the most liquid asset for any kind of business. Holding more cash and bank balance means the company is in a position to pay off its current obligation easily but it has another aspect as well. The company might have been enjoying the liquidity at the cost of profitability for the cash might be lying idle without any productive purpose. The basic objective of cash management is to keep the investment in cash as low as possible while still operating the firm's activities efficiently and effectively. Cash is necessary to pay bill, to purchase raw materials and to pay debts. The company must hold cash to meet these requirements. Generally, an increase in long-term debt and equity leads to an increase in cash. Similarly, payment of debts, purchase of fixed assets and materials leads to a decrease in cash. The following table and figure shows the proportion of cash and bank balance to current assets:

Table: 4.6

Cash and Bank Balance as Percentage of Current Assets

(Rs. In million)

Fiscal Year	Cash and Bank Balance	Current Assets	Ratio (%)
2003/04	10780.67	20213.763	53.33
2004/05	9574.5	20598.353	46.48
2005/06	12021.624	22526.522	53.37
2006/07	14746.337	23519.754	62.70

2007/08	16134.516	24180.638	66.72
Mean	12651.5294	22207.806	56.52
Std. Dev.	2444.767	1567.252	7.255
C.V	19.32	7.06	12.84

(Source: Appendix-1&3)

The cash and bank balance and current assets of Nepal Telecom has been presented in the following figure:

Figure: 4.6
Cash and Bank Balance as Percentage of Current Assets
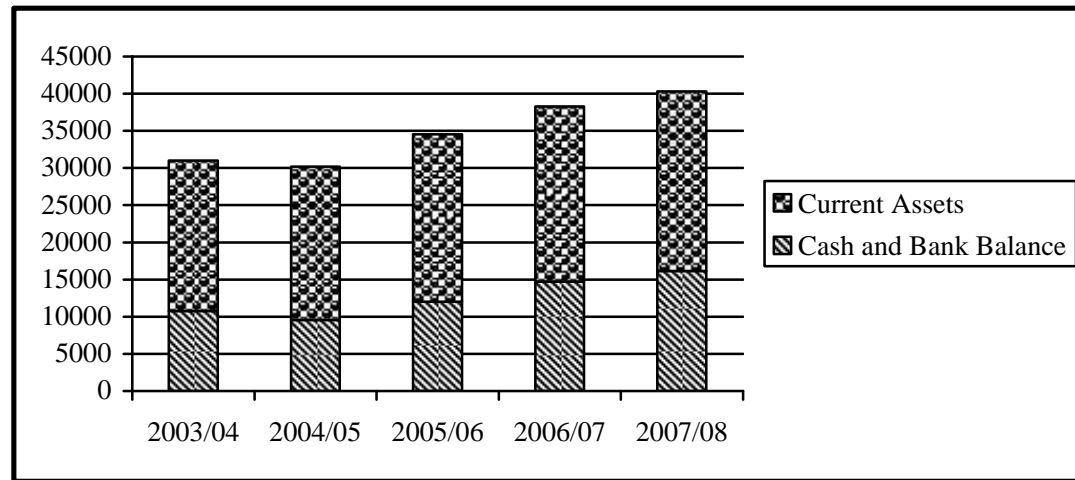
It can be seen from the above table and figure that cash and bank balance showed increasing trend except for the fiscal year 2004/05. The lowest level of cash held was Rs.9574.50 million in the fiscal year 2004/05 and the highest level was Rs. 16134.516 million in the fiscal year 2007/08. Average cash and bank balance was Rs. 12651.52 million with standard deviation of Rs.2444.76 and 19.32% of C.V. The proportion of cash and bank to current assets ranges from 53.33% to 46.48% in the fiscal year 2003/04 and 2004/05 respectively. The average ratio was 56.52% with standard deviation of 7.25% and 12.84% coefficient of variance. It means cash and bank balance occupies almost half of the current assets portfolio of Nepal Telecom. This indicates the inefficiency of managing its current assets where a large portion of the current assets is lying idle in absolute liquid form.

2. Cash and Bank to Current Liabilities Ratio

Cash and bank to current liabilities ratio indicates the positions of the company to pay off its current liabilities. Although cash is required to pay the short term obligations, it doesn't mean that the company should hold cash that is at least equal to its current liabilities since a company need not clear all the short-term debts at once. Further, marketable securities can be liquidated, if required, to pay the dues. In this context, a moderate ratio is considered to be satisfactory, too high ratio indicates excess cash balance held idle and too low ratio is indicative of company being unable to meet its payment of current liabilities in time.

Table: 4.7

Cash and Bank Balance as Percentage of Current Liabilities

(Rs. In Million)

Fiscal Year	Cash and Bank Balance	Current Liabilities	Ratio (%)
2003/04	10780.67	12629.72	85.36
2004/05	9574.5	14722.68	65.03
2005/06	12021.624	15665.38	76.74
2006/07	14746.337	15675.15	94.07
2007/08	16134.516	15014.44	107.46
Mean	12651.5294	14741.474	85.73
Std. Dev.	2444.767	1118.903	14.499
C.V	19.32	7.59	16.91

(Source: Appendix1)

It can be seen from the above table that current liabilities of Nepal Telecom have increased for four years of the study period and have decreased in the fifth year. Cash and bank balance has also increased every year except for the second year of the study period i.e. FY 2004/05. The ratio of cash and bank to current liabilities is the lowest in the year 2004/05 and the highest in the year 2007/08 i.e. 65.03% and 107.46% respectively. The ratio of cash and bank to   current liabilities decreased in FY 2004/05 as compared to FY 2003/04 and after this it showed a increasing trend every year. The average ratio is 85.73% with 14.49% standard deviation and 16.91% coefficient of variation. Since the ratio is too high, it can be said that the company is facing the situation of excess cash and bank balance held idle. This is unfavorable for the company since the idle cash and bank has no productive use. The above figures of ratio give the impression that the company might have realized this fact in the FY 2004/05 but again after that the ratio increased continuously.

Graphical presentation of the state of cash and bank and current liabilities of the company is shown below:

Figure: 4.7
Cash and Bank Balance as Percentage of Current Liabilities
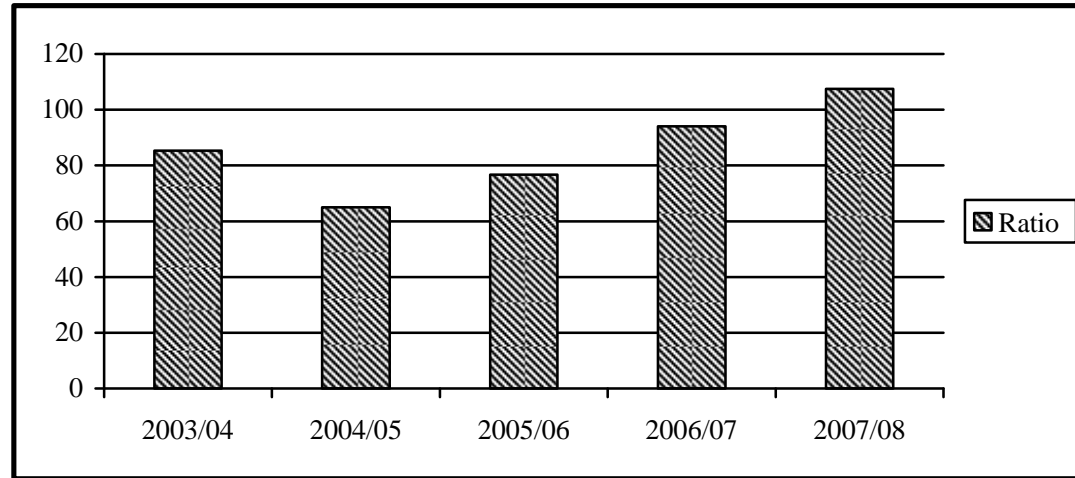
3. Inventory to Current Assets Ratio

Inventory is the stock of raw materials, work-in-progress and finished goods. Inventory occupies huge place in the current assets portfolio, especially in case of manufacturing companies. As Nepal Telecom is a service provider, it does not possess inventories as the manufacturing companies do. So, by inventory, we mean stores and spares only.

The ratio of inventory to current assets indicates the proportion of current assets in current assets. Higher ratio indicates considerable amount tied up in inventory and vice-versa.

Table: 4.8

Inventory as Percentage of Current Assets

(Rs. In million)

Fiscal Year	Inventory	Current Assets	Ratio (in %)
2003/04	255.25	20213.76	1.26
2004/05	309.85	20598.35	1.50
2005/06	329.31	22526.52	1.46
2006/07	327.68	23519.75	1.39
2007/08	416.42	24180.63	1.72
Mean	327.702	22207.802	1.469
Std. Dev	51.85	1567.25	0.15
C.V.	15.82	7.06	10.26

(Source: Appendix-1)

Figure: 4.8
Inventory as Percentage of Current Assets
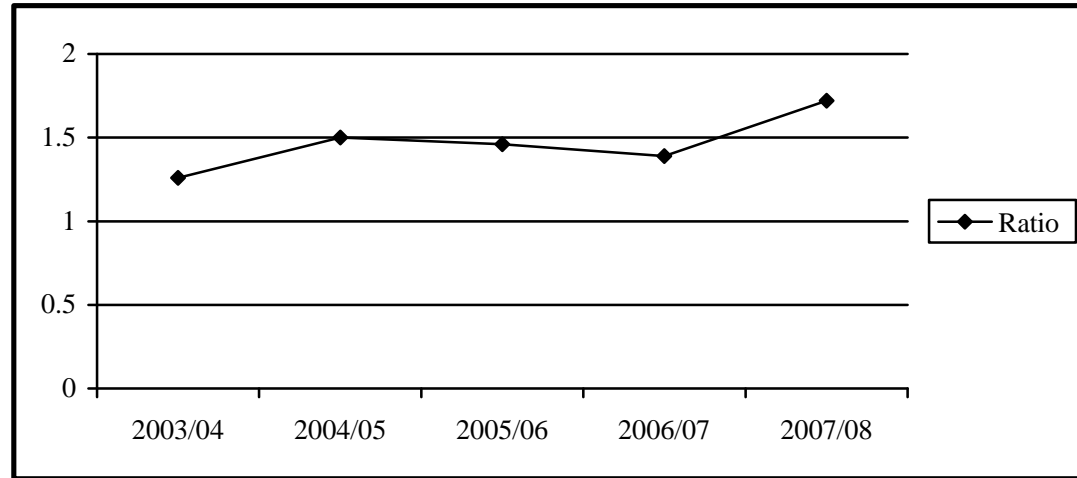
From the above table and figure, it becomes clear that a very nominal share of current assets comes from inventory in Nepal Telecom. The level of inventory showed a growing trend except for 2006/07 which showed a decrease as compared to the previous year. The ratio of inventory to current assets showed a fluctuating trend with the highest being 1.72 in the FY 2007/08. Average ratio of inventory to current assets was 1.47% with 0.15% standard deviation and 10.26% C.V. average level of inventory was Rs. 327.70 million with 51.85% standard deviation and 15.82% C.V. From the above analysis, it can be said that there is no considerable amount tied up in inventory in Nepal Telecom i.e. stores and spares which gives quite satisfactory result in working capital management of Nepal Telecom.

4. Receivables to Current Assets Ratio

Receivable is current asset which, until and unless collected, cannot be used or spent. There should be optimum level of receivables in a business concern. Too high level of receivables means huge amount tied up in unproductive purpose. Hence, a proper attention should be paid by the management towards credit and collection policy. By relating the receivables to current assets, we can have some knowledge about the efficiency of the management in handling the receivables. So, the relationship of receivables to current assets is analyzed as follows:

Table: 4.9

Receivables as Percentage of Current Assets

(Rs. In million)

Fiscal Year	Receivables	Current Assets	Ratio (in %)
2003/04	2716.49	20213.76	13.44
2004/05	2868.03	20598.35	13.92
2005/06	3139.12	22526.52	13.94
2006/07	3490.84	23519.75	14.84
2007/08	3555.53	24180.63	14.70
Mean	3154.00	22207.80	14.17
Std. Dev	331.09	1567.25	0.53
C.V.	10.50	7.06	3.72

(Source: Appendix- 1&4)

(Note: Receivables = Sundry debtors + Interest Accrued on Investment.)

The level of receivables is in increasing trend for the study period of five years. Average volume of receivables of Nepal Telecom was Rs. 3154.00 million with 10.50% C.V. the ratio of receivables to current assets also showed the increasing trend in the first four

years of study period with a very less decrement in the fifth year of 0.14%. Average ratio was 14.17% with 0.53% standard deviation and 3.72% variability. The pattern of the receivables to current assets shows that Nepal Telecom has adopted effective credit and collection policy in the five years' study period.

The diagrammatical presentation of the above table is as follows:

Figure: 4.9
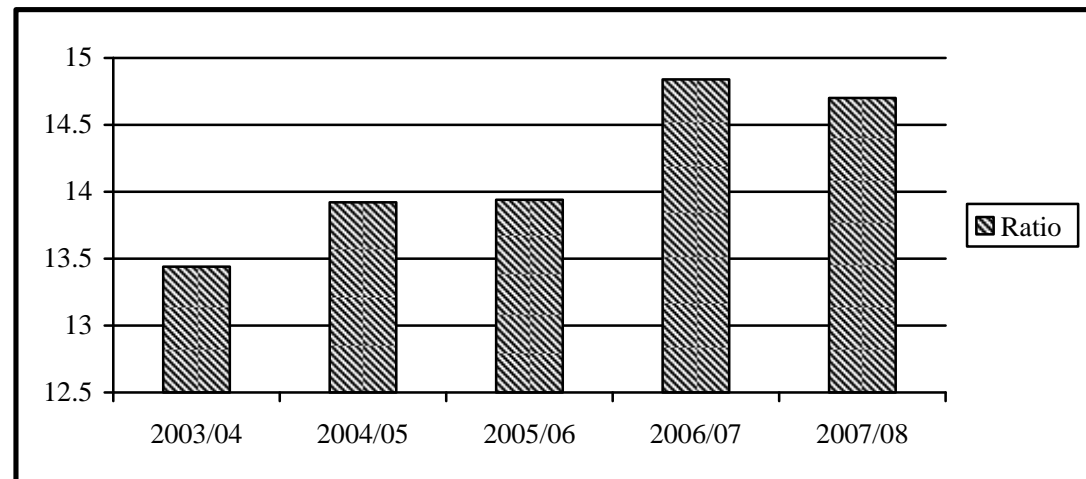
Receivables as Percentage of Current Assets

5. Miscellaneous Current Assets to Total Current Assets Ratio

Miscellaneous current assets are another component of current assets in Nepal Telecom. It includes advances and loans to employees and advances and prepaid expenses.

Table: 4.10

Miscellaneous Current Assets as Percentage of Current Assets

(Rs. In million)

Fiscal Year	Misc. Current Assets	Current Assets	Ratio (in %)
2003/04	6455.42	20213.76	31.94
2004/05	7835.99	20598.35	38.04
2005/06	7029.28	22526.52	31.20
2006/07	4934.33	23519.75	20.98
2007/08	4071.03	24180.63	16.84
Mean	6065.21	22207.80	27.80
Std. Dev	1376.44	1567.25	7.75
C.V.	22.69	7.06	27.88

(Source: Appendix- 1&5)

The above table shows that miscellaneous current assets show a fluctuating trend with the highest in FY 2004/05 (Rs. 7835.99) and the lowest in FY 2007/08 (Rs. 4071.03) during the study period. Nepal Telecom held miscellaneous current assets worth Rs. 6065.21 on average throughout the study period and C.V. was 22.69%. The ratio of miscellaneous current assets to current assets lie between 16.84% in FY 2007/08 to 38.04% in FY 2004/05 having average ratio of 27.70% with 7.75% standard deviation and 27.88% C.V. Since the ratio is relatively lower in last two years of the observed period, Nepal Telecom has been attentive towards providing loans and advances and prepaid expenses.

The above facts can be understood with the help of following diagram.

Figure: 4.10
Miscellaneous Current Assets as Percentage of Current Assets
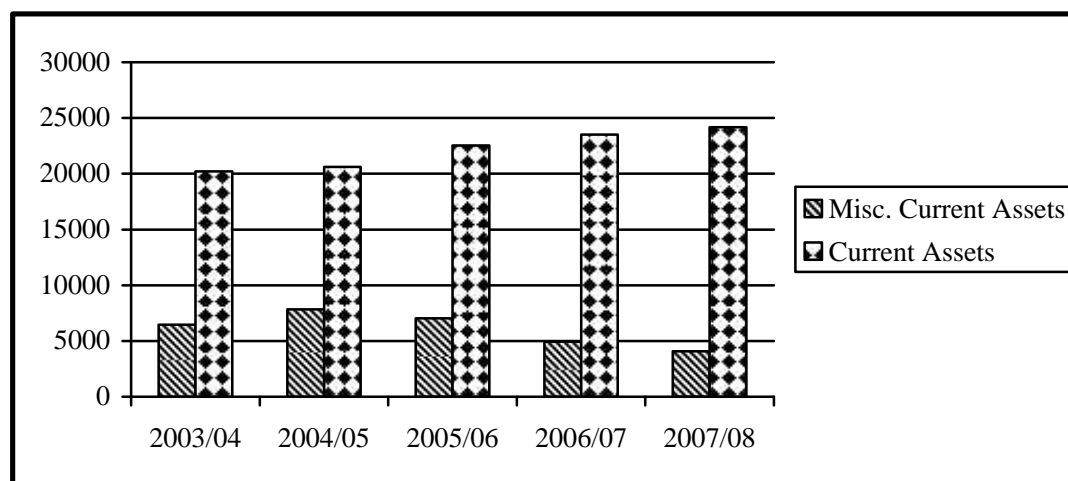
6. Investment to Current Assets Ratio

Keeping huge sum of cash and bank balance is not fruitful for a business concern. It has to invest in profit making opportunities. Generally, investment in marketable securities is considered reasonably better in the sense that it gives return in one hand and also serves the purpose of liquid assets. The financial statements of Nepal Telecom show some amount invested in government securities, pension fund, Intelsat and fixed deposit at bank.

Table: 4.11

Investment to Current Assets Ratio

(Rs. In million)

Fiscal Year	Investments	Current Assets	Ratio (in %)
2003/04	3394.55	20213.76	16.79
2004/05	3338.73	20598.35	16.21
2005/06	4156.95	22526.52	18.45
2006/07	4883.86	23519.75	20.76
2007/08	8370.18	24180.63	34.62
Mean	4828.85	22207.80	21.37
Std. Dev	1858.66	1567.25	6.81
C.V.	38.49	7.06	31.87

(Source: Appendix- 1)

From the above table, it can be seen that investment of Nepal Telecom is in fluctuating trend during the observed period. Total investment was Rs. 3394.55 million in the FY 2003/04 which increased to Rs. 8370.18 million in the FY 2007/08. Average investment was Rs. 4828.85 million with 38.49% C.V. The ratio of investment to current assets of Nepal Telecom also fluctuated over the same period ranging from 16.21% in the fiscal year 2004/05 to 34.62% in the fiscal year 2007/08 having average ratio of 21.37% with 6.81% deviation and 31.87% variability (C.V.). The proportion of investment in current assets is relatively higher in the last year of observed period as compared to the previous period. From the analysis, we can see that with the increase in current assets, investment of Nepal Telecom has also increased correspondingly which will have positive impact on the profitability of the company.

Diagrammatical presentation of table 4.11 is as follows:

Figure: 4.11
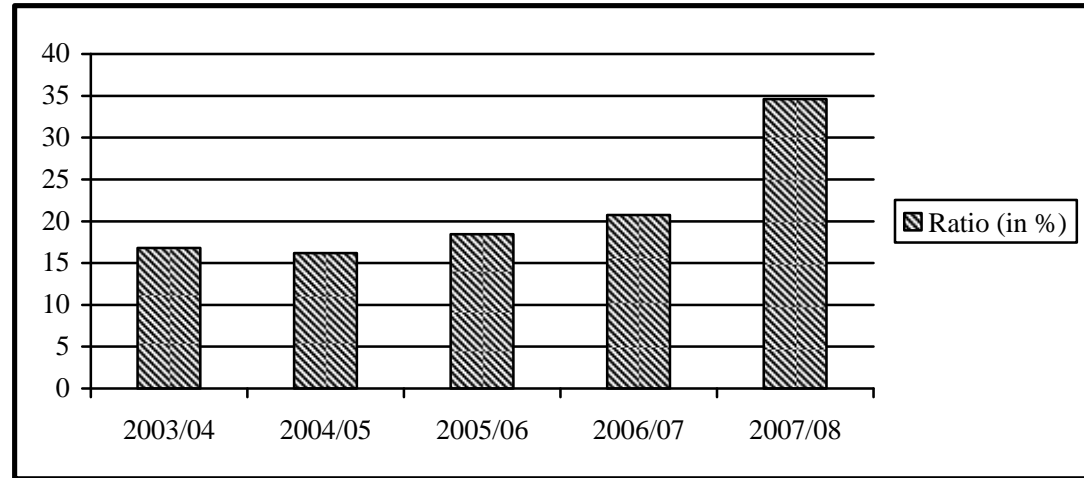
Investment as Percentage of Current Assets

The figure below shows the structure of current assets of Nepal Telecom for the fiscal year 2007/08:

4.12 Structure Of Current Assets Of Nepal Telecome

Legend:
- Inventory
- Receivables
- Cash And Bank Balance
- Miscellaneous Current Assets
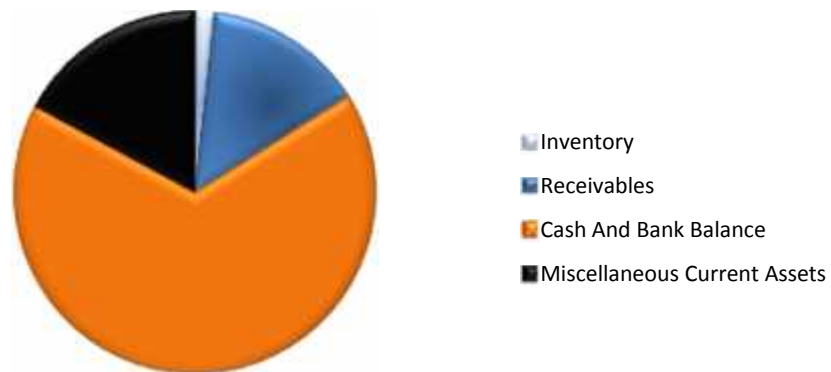
(Source: Appendix-1)

As per the above figure, the largest portion of the current assets is held cash and bank balance in Nepal Telecom with 66.72% share followed by miscellaneous current assets, receivables and inventory with 17.15%, 14.40% and 1.73% share respectively. As the figure depicts, huge amount of current assets of Nepal Telecom is lying idle in the form of cash and bank balance because it can generate no return.

4.1.3. Financing of Current Assets

The manner in which the permanent and temporary current assets are financed constitutes the firm's working capital financing policy. Current assets play a crucial role in any concern. Hence working capital financing policy should clearly outline the different sources of financing in current assets. A company may follow either conservative or aggressive approach in the mix of short term and long term sources in financing its current assets. Generally, the fixed and permanent assets of a firm are financed with long-term funds and temporary current assets are financed with short term fund. It means the firm matches the maturity of financing sources with an asset's useful life. But, the expected lives of assets and future need of variable assets are uncertain and hence such matching is not possible. A firm should decide its sort of financing by the risk return trade off.

The following table shows the financing mix showing risk return trade off of Nepal Telecom.

Table: 4.12
Financing Mix Showing Risk Return Trade-off

(Rs. In million)

Fiscal Year	Total Financing	Long-term Financing	Fixed Assets
2003/04	33221.35	20591.64	8094.88
2004/05	35572.77	20850.09	9040.92
2005/06	39351.41	23686.03	10088.43
2006/07	43661.12	27985.96	11361.04
2007/08	49371.22	35343.89	12897.7

(Source: Appendix-1)

We can assess magnitude of trade off achieved by the corporation by using the formula given below:

$$\text{Risk (Rk)} = \frac{(\phi Ej + \phi Lj) - \phi Aj}{\phi aj}$$

Ej = total equity including reserve and surplus

Lj = total long-term debt

Aj = total fixed assets

aj = total current assets

This indicates how much of the current assets has been financed with the long-term fund after financing the whole of fixed assets. If Rk is less than or equal to 'zero', the company is said to have aggressive approach and conversely, if Rk is equal to or close to 'one', it is regarded as conservative working capital financing policy.

Table: 4.13

Calculation of Risk

(Rs. In million)

Fiscal Year	Ej	Lj	Aj	aj	Rk
2003/04	20580.39	11.25	9472.12	20213.76	0.55
2004/05	20825.85	24.24	11493.5	20598.35	0.45
2005/06	23686.03	Nil	12531.49	22526.52	0.5
2006/07	26794.28	1191.68	15125.69	23519.75	0.55
2007/08	35343.89	Nil	16820.4	24180.63	0.77

(Source: Appendix-1)

4.13 Graphical Presentation Of Trade Off Between Risk Return
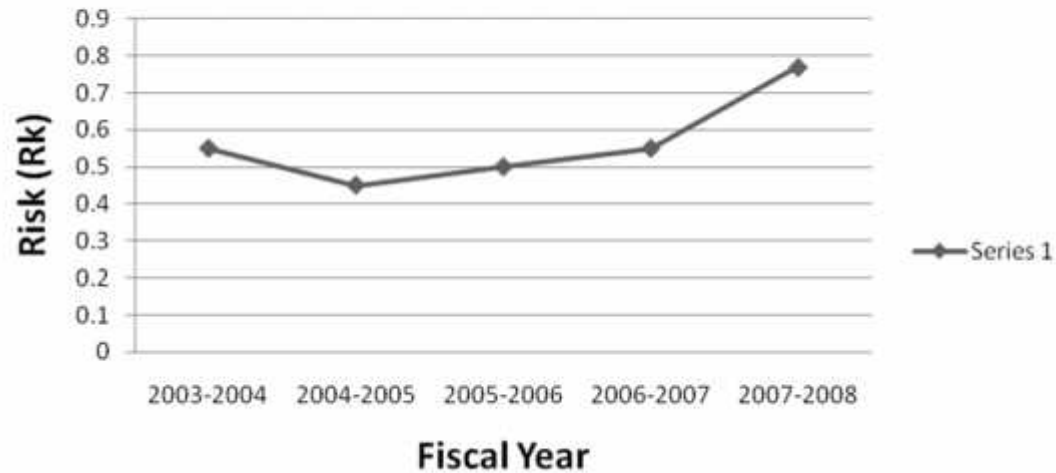
The above table and figure precisely shows the magnitude of the risk-return trade-off achieved by Nepal Telecom with regard to financing the current assets. The value of risk has fluctuated over the observed period. It was 0.55 in the first year of the study period which decreased to 0.45 in the second year and again rose to 0.50 in the third year and then increased to 0.55 in the fourth year and again rose to 0.77 in the fifth year of the study period. Since, the value of risk is higher than 0.50 in most of the cases, it can be said that the company is adopting the conservative working capital financing policy. Long term sources of financing of Nepal Telecom consists of share capital, reserve and surplus and loan fund. Portions of these items in the fiscal year 2007/08 are as under:

Share Capital	42%
Reserve and Surplus	58%
Loan Fund	Nil
Total	100%

Share capital provides 42% of long term financing in Nepal Telecom and the major source of long term financing comes from reserve and surplus i.e. 58%. Remarkably, there is no long-term loan outstanding anymore in Nepal Telecom. It had loan of Rs. 1191.68 million taken from Government of Nepal in the fiscal year 2006/07 which has been cleared by the company. It seems that Nepal Telecom management has determined to resort to internal financing instead of interest bearing loan.

4.1.4 Growth of Working Capital

Growth of working capital has a positive impact on the prosperity and development of any organization. This part of the study helps to analyze the growth of working capital in Nepal Telecom.

With the increase in production and sales volume, the demand for working capital also increases. Here, a relationship between working capital and sales and total assets have been attempted to establish to analyze the growth of working capital in Nepal Telecom.

Table: 4.14

Growth Trend of Current Assets, Total Assets and Sales

(Rs. In million)

Fiscal Year	Current Assets	Indices	total assets	Indices	Net Sales	Indices
2003/04	20213.76	100.00	33221.35	100.00	8312.24	100.00
2004/05	20598.35	101.90	35572.77	107.08	8584.14	103.27
2005/06	22526.52	111.44	39351.41	118.45	10413.65	125.28
2006/07	23519.75	116.36	43562.63	131.13	13967.32	168.03
2007/08	24180.64	119.62	49371.22	148.61	16788.36	201.97

(Source: Appendix-1&2)

Growth indices presented in the above table shows that all three variables viz. current assets, total assets and net sales are in increasing trend. Among them, net sales have the highest growth rate i.e. 101.97% over the five years period. Similarly current assets and total assets have increased by 19.62% and 48.61% respectively over the same period. It seems that Nepal Telecom has been able to utilize current assets effectively since the growth of net sales is higher than the growth of current assets. The growth of these items will be well described by trend analysis in the later section of this chapter.

4.1.5 Efficiency of Working Capital Management

In evaluating the efficiency in the management of working capital in Nepal Telecom, turnover ratios will be employed in our present study. These ratios measure the efficiency or effectiveness with which a firm manages its resources or assets. The ratios studied in

this context are: (a) Receivable Turnover Ratio, (b) Cash Turnover Ratio, (c) Current Assets Turnover Ratio and (d) Net Working Capital Turnover Ratio

a. Analysis of Receivable Turnover Ratio

This ratio gives picture of how well the debtors are handled by a firm. It shows how quickly the debtors or receivables are converted into cash. In other words, it tests the credit and collection policy of the firm. In other words, it shows the speed of receivables collected. In this connection, average collection period will also be calculated. Higher ratio and shorter average collection period indicates better trade credit management and better liquidity of the enterprise. Likewise, lower ratio and longer collection period mean delayed payment by the debtors.

Table: 4.15

Calculation of Receivable/Debtor Turnover and Average Collection Period

Fiscal Year	Net Sales	Total Receivables	Turnover	Days in a Year	ACP
2003/04	8312.24	2716.49	3.06	365	119.28
2004/05	8584.14	2868.03	2.99	365	121.95
2005/06	10413.65	3139.12	3.32	365	110.03
2006/07	13967.32	3490.84	4.00	365	91.22
2007/08	16788.36	3555.53	4.72	365	77.30
Mean	11613.14	3154.00	3.62	365.00	103.96

Std. Dev	3281.30	331.09	0.66	0.00	17.14
C.V.	28.26	10.50	18.15	0.00	16.48

Table 4.15 shows the receivables turnover of Nepal Telecom during the five years observed period. Net sales has increased throughout the study period and total receivables has also increased throughout the study period. As a result, receivable turnover showed decreasing pattern in the second year and after this it showed increasing pattern in the study period. It ranges from 2.99 times in 2004/05 to 4.72 times in 2007/08. Average turnover is 3.62 times with standard deviation of 0.66 and 18.15% C.V. A conclusion can be drawn that the management has been efficient in collecting the receivables in the study period.

In the above table, average collection period has also been analyzed because it measures the quality of the debtors of the company. Its degree of liquidity plays a vital role in overall liquidity position of the company. It can be seen that the collection period has also increased in 2004/05 as compared to 2003/04 and after this it has shown a decreasing trend. It ranges from 122 days in 2004/05 to 77 days in 2007/08 with average collection period of 103.96 having 16.48% variability. Nepal Telecom has been able to shorten the average collection period to 77 days in 2007/08 which also indicates the efficiency of the management in collecting the receivables.

(b) Analysis of Cash Turnover Ratio

The relationship between net sales and cash balance reflects the efficiency of management in utilization of absolute liquid assets. It explains how quickly cash is received from sale.

Table: 4.16

Analysis of Cash Turnover Ratio

(Rs. In million)

Fiscal Year	Net Sales	Cash and Bank Balance	Ratio (Times)
2003/04	8312.24	10780.67	0.77
2004/05	8584.14	9574.5	0.90
2005/06	10413.65	12021.624	0.87
2006/07	13967.32	14746.337	0.95
2007/08	16788.36	16134.516	1.04
Mean	11613.14	12651.53	0.90
Std. Dev	3281.30	2444.77	0.09
C.V.	28.26	19.32	9.85

(Source: Appendix- 1&2)

As the above table shows, net sales has increased throughout the study period as well as cash and bank balance has also increased except in the second year of the study period where it decreased to Rs.9574.50 million from Rs 10780.67 million in first year. The ratio of sales to cash and bank balance shows a very fluctuating trend with the highest being1.04 times in 2007/08 and the lowest being 0.77 times in 2003/04. Although sales has increased gradually over years, there has been considerable increase in cash and balance lying idle.

(c) Analysis of Current Assets Turnover Ratio

Current assets turnover ratio is used in order to evaluate the overall efficiency of the management in managing the current assets of the company. The ratio is derived by dividing net sales by current assets. Higher ratio indicates better utilization of current assets. Current assets turnover ratio of Nepal Telecom for the five years study period is presented in the following table:

Table: 4.17

Current Assets Turnover Ratio

(Rs. In million)

Fiscal Year	Net Sales	Current Assets	Ratio (in times)
2003/04	8312.24	20213.76	0.41
2004/05	8584.14	20598.35	0.42
2005/06	10413.65	22526.52	0.46
2006/07	13967.32	23519.75	0.59
2007/08	16788.36	24180.63	0.69
Mean	11613.14	22207.80	0.52
Std. Dev	3281.30	1567.25	0.11
C.V.	28.26	7.06	21.52

(Source: Appendix- 1&2)

It can be seen from the table that both net sales and current assets of Nepal Telecom have increased throughout the observed period. The net working capital turnover has increased throughout the study period. The average ratio of net sales to current assets was 0.52 times with standard deviation of 0.11 and coefficient of variation of 21.52%. That means the turnover ratio in the last year exceeds the ratio of all other years. Further, the ratio is in inclining trend from the first year. Sales is also increasing with consistent pattern. These facts imply better utilization of current assets in Nepal Telecom in recent years.

(d) Analysis of Net Working Capital Turnover Ratio

Net working capital turnover ratio measures the efficiency in the utilization of working capital. The ratio is derived by dividing net sales by net working capital. It expresses the number of times working capital is turned over during a year. A table has been presented below to analyze the efficiency in the utilization of current assets in Nepal Telecom through turnover ratios.

Table: 4.18

Net Working Capital Turnover Ratio

(Rs. in million)

Fiscal Year	Net Sales	Net Working Capital	Ratio (in times)
2003/04	8312.24	7584.05	1.10
2004/05	8584.14	5875.68	1.46
2005/06	10413.65	6861.14	1.52
2006/07	13967.32	7844.6	1.78
2007/08	16788.36	9166.2	1.83
Mean	11613.14	7466.33	1.54
Std. Dev	3281.30	1090.22	0.26
C.V.	28.26	14.60	17.13

(Source: Appendix- 1&2)

In the above table, net sales have increased continuously throughout the study period whereas net working capital showed a fluctuating trend over the same period. Net working capital turnover ratio was 1.10 times in the fiscal year 2003/04 which increased throughout the study period with the ratio being 1.83 in the fiscal year 2007/08. The average ratio was 1.54 times with standard deviation of 0.26 and 17.13% C.V. Since the ratio is in increasing trend, it can be said that Nepal Telecom has been able to utilize its net working capital in more efficient way in recent years.

The following figure shows the comparative picture of various turnover ratios calculated in the above tables:

4.14 Turnover Ratios

Legend
■ Receivables Turnover
■ Cash Turnover
☐ Current Assets Turnover
■ Networking Capital Turnover

Chart: Ratio (y-axis, 0 to 5) vs Fiscal Year (x-axis: 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008)
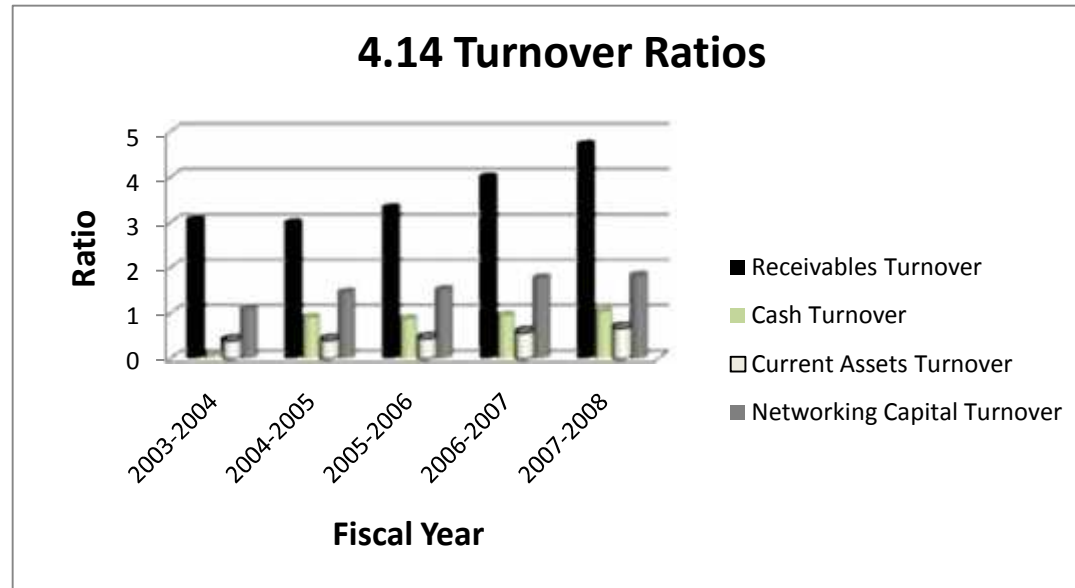
4.1.6 Analysis of Liquidity Position

Liquidity is the ability of the firm to meet the short term obligation when they become due. It reflects the short term financial strength or solvency of the firm. As a general rule, creditors are interested in those firms which possess the capacity of fulfilling the short term dues on time. Short term obligations are met by realizing the amount from current assets. Therefore each and every firm makes effort to make it sure that it is adequately solvent. However, it has another aspect as well. By, concentrating only on the liquidity position, a firm may lose profitability opportunities because assets lying idle in the firm do not provide any return. So, liquidity management is of great importance for a firm. It is for these reasons: we will be focusing on the liquidity position of Nepal Telecom. The ratios that have been calculated to evaluate the short-term financial solvency of Nepal Telecom are: (1) Current Ratio, (2) Quick Ratio

and (3) Absolute Liquidity Ratio.

(1) Analysis of Current Ratio

One of the most widely used ratios to calculate the short term solvency of the firm is current ratio. It is the crude measurement of liquidity position of the firm. It is calculated by dividing current assets by current liabilities. The conventionally accepted current ratio is 2:1, a company should maintain. In general, ratio less than 1:1 is certainly undesirable for any firm. In our study, current assets includes store and spares, sundry debtors, interest accrued on investment, advance and prepaid expenses, loans to employees, cash and bank balance etc. Similarly, current liabilities include sundry creditors, interest accrued and dues, other liabilities, deposits and advances, provisions etc.

Table: 4.19

Calculation of Current Ratio

(Rs. In Million)

Fiscal Year	Current Assets	Current Liabilities	Ratio (in times)
2003/04	20213.76	12629.72	1.6
2004/05	20598.35	14722.68	1.4
2005/06	22526.52	15665.38	1.4
2006/07	23519.75	15675.15	1.5
2007/08	24180.63	15014.44	1.6
Mean	22207.80	14741.47	1.51

Std. Dev	1567.25	1118.90	0.08
C.V.	7.06	7.59	5.61

(Source: Appendix-1)

Liquidity position of Nepal Telecom is displayed in the above table. Current assets and current liabilities of Nepal Telecom have increased throughout the study period but the rate of increase in current assets is higher than that of current liabilities. Average level of current assets is Rs. 22207.80 million with C.V. 7.06% and average level of current liabilities was Rs. 14741.47 million with 7.59% C.V. Current ratio of the company was 1.6:1 in the fiscal year 2003/04 which continuously declined for the subsequent four years of the study period and again maintained a ratio of 1.6:1 in the final year i.e. 2007/08. Average ratio was 1.51:1 with 5.61% C.V. and standard deviation of 0.08.

Since the ratio is less than 2:1, the company does not seem to possess adequate liquidity from the standpoint of conventional approach. As a result, it is possible that it may face some problems regarding retiring short term obligations.

Normally current assets should have positive correlation with current liabilities. When current liabilities are higher, the current assets should also be higher so as to counter the problem of payment in short run. If the company has been able to maintain good liquidity position, the correlation between these two variables should be significantly positive.

Karl Pearson's coefficient of correlation between current assets and current liabilities has been computed in Appendix 8.

Correlation coefficient (r) = 0.7184

This means current assets and current liabilities are positively correlated in a high degree. It means the company's current assets are increasing with increase in current liabilities. However, it should be noted that if such positive correlation is statistically significant, a positive correlation is practically certain. For this purpose, probable error (P.E.) has been calculated as follows

Probable Error (P.E.) = 0.1460

$6 \times$ (P.E.) = 6×0.1460 = 0.876

Now, if r > 6(P.E.), it is indicative of statistically significant positive correlation.

Similarly, if r < 6(P.E.), it is indicative of statistically insignificant positive correlation.

In this case, r < 6(P.E.). Therefore, it can be said that there is insignificant positive correlation between current assets and current liabilities of Nepal Telecom.

The lower and upper limit in which the correlation is expected to lie is given by:

r + P.E. = 0.7184 + 0.1460 = 0.8644

r – P.E. = 0.7184 - 0.1460 = 0.5724

So, the correlation coefficient is expected to lie between 0.5724 and 0.8644.

(2) Analysis of Quick Ratio

Quick ratio also serves the same purpose as current ratio does but in more effective manner. One of the main shortcomings of current ratio is that it includes inventory which is the least current asset. Thus, it does not measure the actual liquidity of the firm. But, while calculating quick ratio, inventory is excluded. Current assets after excluding inventory is called quick asset. Quick ratio is calculated by dividing quick assets by current liabilities. The table below shows the liquidity position of Nepal Telecom from the standpoint of quick.

Table: 4.20

Calculation of Quick Ratio

(Rs. In million)

Fiscal Year	Quick Assets	Current Liabilities	Ratio (in times)
2003/04	19958.51	12629.72	1.58
2004/05	20288.49	14722.68	1.38
2005/06	22197.21	15665.38	1.42
2006/07	23192.07	15675.15	1.48
2007/08	23764.22	15014.44	1.58
Mean	21880.1	14741.47	1.49
Std. Dev	1522.99	1118.90	0.08
C.V.	6.96	7.59	5.60

(Source: Appendix-1)

Note: In the present study, inventory means stores and spares.

The standard quick ratio to be maintained by a firm is 1:1. From the above table, it can be seen that the average quick ratio is 1.49:1. This shows that the company would have been able to meet its all short term obligations and gain its credibility. In all of the observation period, this ratio is higher than the ideal ratio of 1:1. Hence, it can be said that the company is holding more than required liquid assets which is not favorable for the company since excess liquid assets held idle does not give any return it affects its profitability.

(3) Analysis of Absolute Liquidity Ratio

Absolute liquidity measures the capacity of the firm to pay its short-term obligations through absolute liquid asset of the firm i.e. cash. Quick assets include account receivables, which is less liquid form of assets. It cannot be used to pay the short-term obligations as easily as cash. Therefore, absolute ratio is calculated here to find out the short-term solvency of Nepal Telecom in terms of cash. This is found out by dividing cash and bank balance by current liabilities.

Table: 4.21

Calculation of Absolute Liquidity Ratio

(Rs. In million)

Fiscal Year	Cash and Bank Balance	Current Liabilities	Ratio (in times)
2003/04	10780.67	12629.72	0.85
2004/05	9574.5	14722.68	0.65
2005/06	12021.624	15665.38	0.77
2006/07	14746.337	15675.15	0.94
2007/08	16134.516	15014.44	1.07
Mean	12651.53	14741.47	0.86

Std. Dev	2444.77	1118.90	0.14
C.V.	19.32	7.59	16.91

(Source: Appendix-1)

From the above table, the picture of absolute liquidity of Nepal Telecom is visible. Cash and bank balance of the company decreased in the second year of the study period and after this it gradually increased year by year and reached Rs.16134.516 million in FY 2007/08 with average cash and bank balance of Rs.12651.53 million having 19.32% variability. On the other hand, current liabilities of Nepal Telecom has shown increasing trend in the first four years and after this it decreased in the FY 2007/08 to Rs.15014 million. Ratio of cash and bank to current liabilities of Nepal Telecom ranged from 0.65 times in FY 2004/05 to 1.07 times in FY 2007/08.Average ratio is found to be 0.86:1 with standard deviation of 0.14 and 16.91% coefficient of variance. The ratio of cash and bank balance to current liabilities was 0.85 times in the FY 2003/04 which decreased to 0.65 times in FY 2004/05 and again increased to 0.77 times in FY 2005/06 and after this it increased constantly to 1.07 in FY 2007/08. This indicates that the Nepal Telecom has been trying to utilize the idle cash and bank balance in productive activities in recent years.

The following figure will give brief overview of various liquidity ratios as calculated in table 4.19, 4.20 and 4.21.

4.15 Liquidity Ratios
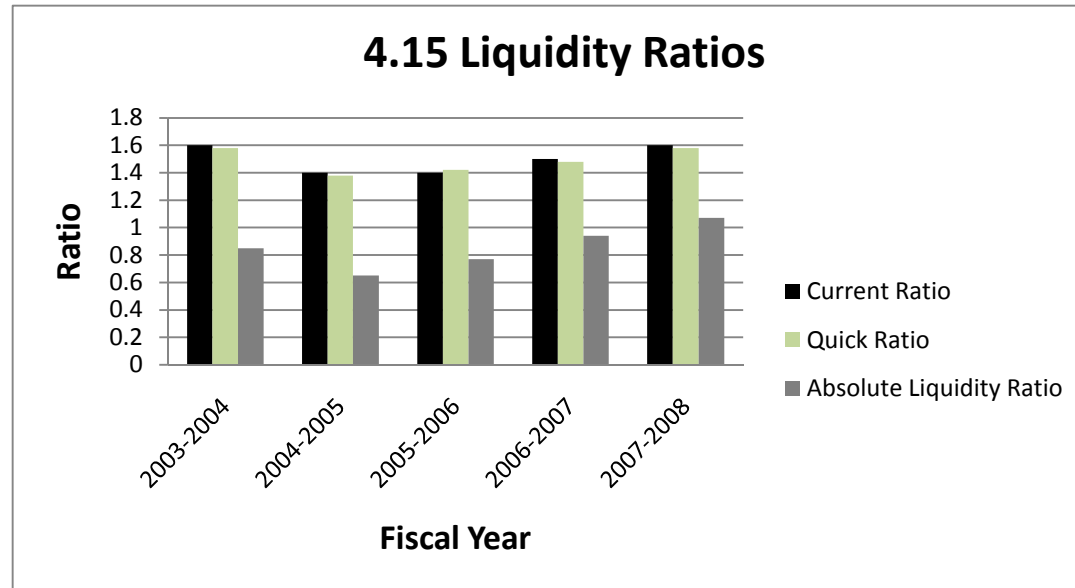
4.1.7. Analysis of Profitability Position

Besides the charitable organizations, the main target of any organization is to gain as much profit as possible. Hence, profit is regarded as the measure to evaluate the operating efficiency of the firm. In certain cases, it is found that a company is running well under profit though the liquidity position is not sound enough whereas there may be some other companies which are suffering from losses despite having adequate liquid assets. Then, such soundness is virtually is of no use. But, worth mentioning here is that, low profitability doesn't always suggest a bad financial position. Conversely, such low profitability may be resulting high sales and thus could be assisting in sales maximizing policy. One important point to be noted here is that relation between liquidity and profitability

is always conflicting. If a firm tends to increase its profitability by investing and reinvesting its cash and near cash assets, the firm could run out of

Cash and become unable to meet its current obligations, thereby its liquidity being adversely affected. On the other hand, if the firm tries to be more liquid thereby making prompt payments for its current obligations, then it could run the risk of depriving of high profitability. However in practice, a firm should be simultaneously maintaining sound liquidity as well as profitability. Thus, while evaluating working capital, its relation with profitability position should be considered and hence the following analysis has been presented here:

1) Return on Current Assets
2) Return on Net Working Capital
3) Return on Investment

1) Return on Current Assets

This ratio helps to analyze the earning power of the current assets of the company. The ratio is calculated by dividing net profit after tax (NPAT) by total current assets. Table 4.22 shows the return on current assets of Nepal Telecom during the study period:

Table: 4.22

Calculation of Return on Current Assets

(Rs. In million)

Fiscal Year	NPAT	Current Assets	Return (in %)
2003/04	3290.12	20213.76	16.28

2004/05	3542.46	20598.35	17.20
2005/06	4936.65	22526.52	21.91
2006/07	5652.69	23519.75	24.03
2007/08	7942.9	24180.63	32.85
Mean	5072.96	22207.80	22.45
Std. Dev	1680.01	1567.25	5.94
C.V.	33.12	7.06	26.47

(Source: Appendix-1&2)

From the above table, return on current assets of Nepal Telecom during the study period can be seen. Return on current assets is positive and increasing every year having the highest return of 32.85% in the last year with average return of 22.45%, standard deviation of 5.94 and C.V. of 26.47%. The volume of net profit after tax increased by 241.42% during the study period having average NPAT of Rs. 5072.96 million, standard deviation of Rs.1680.01 million and C.V. of 33.12%. NPAT and current assets both have increased throughout the study period.

2) Return on Working Capital

This ratio is used to evaluate the overall efficiency in the management of working capital of a company. It shows the earning capacity of working capital and how they are being used. Following table explains the return on working capital of Nepal Telecom for the seven year observed period.

Table: 4.23

Calculation of Return on Working Capital

(Rs. In million)

Fiscal Year	NPAT	Net Working Capital	Return (in %)
2003/04	3290.12	7584.05	43.38
2004/05	3542.46	5875.68	60.29
2005/06	4936.65	6861.14	71.95
2006/07	5652.69	7844.6	72.06
2007/08	7942.9	9166.2	86.65
Mean	5072.96	7466.33	66.87
Std. Dev	1680.01	1090.22	14.42
C.V.	33.12	14.60	21.56

(Source: Appendix- 1&2)

From the above table, it can be concluded that Nepal Telecom has been able to utilize its working capital in a satisfactory manner. There has been fluctuation in net working capital whereas NPAT has increased continuously throughout the study period thereby increasing return quite significantly throughout the study period. Average return on net working capital is 66.87% ranging from 43.38% in the fiscal year 2003/04 to 86.65% in the fiscal year 2007/08 having standard deviation of 14.42 and 21.56% variability.

3) Return on Investment

Table 4.24 shows the return on investment of Nepal Telecom which is derived by dividing net profit after tax (NPAT) by capital employed. It measures the earning capacity of capital invested per rupee.

Table: 4.24
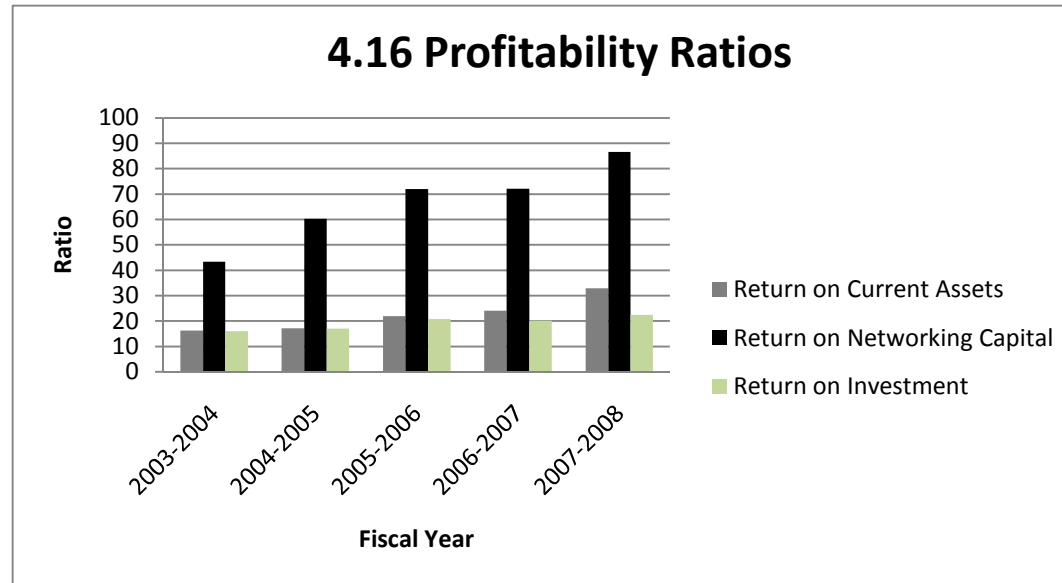
Calculation of Return on Investment

(Rs. In million)

Fiscal Year	NPAT	Capital Employed	Return (in %)
2003/04	3290.12	20591.64	15.98
2004/05	3542.46	20850.09	16.99
2005/06	4936.65	23686.03	20.84
2006/07	5652.69	27985.96	20.20
2007/08	7942.9	35343.89	22.47
Mean	5072.96	25691.52	19.30
Std. Dev	1680.01	5511.86	2.43
C.V.	33.12	21.45	12.61

(Source: Appendix-1)

Note: Capital employed = Equity Capital + Reserve& Surplus + Loans (Long-Term)

The above table shows that capital employed by Nepal Telecom is in increasing trend rising by 71.64% from Rs. 20591.64 million in the fiscal year 2003/04 to Rs.35343.89 million in the fiscal year 2007/08 having average capital employed of Rs. 25691.52, standard deviation of Rs. 5511.86 million and C.V. of 21.45%. Return on capital employed also showed increasing trend except for the fourth year of the observed period with highest return of 22.47% in the fiscal year 2007/08 and lowest return of 15.98% in the fiscal year 2003/04 having average return of 19.30% with 12.61% variability.

The diagrammatical presentation of the various profitability ratios calculated above is given in the following figure:

4.16 Profitability Ratios

Ratio (y-axis): 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100

Fiscal Year (x-axis): 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008

Legend:
- ■ Return on Current Assets
- ■ Return on Networking Capital
- ■ Return on Investment

4.1.8. Relationship between Liquidity and Profitability Position

The management of working capital is directed mainly towards its two aims, viz. profitability and solvency. Solvency refers to the firm's capacity to pay its obligations promptly. Excess amount of investment on current assets will not earn enough return. Hence, a firm must decide about appropriate level of current assets to be carried.

The conflicting nature of these is such that when liquidity is being maintained, profitability tends to fall down and vice-versa. Amidst this very contradictory nature, a firm should however maintain satisfactory liquidity as well as profitability. In other words, liquidity and profitability should be significantly positively correlated.

The table given below tries to establish the relationship between these two variables of Nepal Telecom. Here, liquidity refers to current ratio and profitability refers to return on working capital.

Table: 4.25

Liquidity (Current Ratio) vs. Profitability (Return on Working Capital)

Fiscal Year	Current Ratio (in %)	Return on Working Capital (in %)
2003/04	160.05	43.38
2004/05	139.91	60.29
2005/06	143.80	71.95
2006/07	150.04	72.06
2007/08	161.05	86.65

(Source: Table 4.19 & 4.23)

As stated earlier, one of the most challenging jobs a financial manager has to do is the management of trade-off between liquidity and profitability. From the table, the inverse relationship between liquidity and profitability is visible. Now, focus will be on the evaluation of working capital management of Nepal Telecom deploying trend analysis and correlation of working capital with sales.

In order to assess the relationship between liquidity and profitability, Karl Pearson's coefficient of correlation has been applied in the present study.

Karl Pearson's coefficient of correlation (r) = 0.0288 (Appendix-7)

It means there is positive correlation between liquidity and profitability in Nepal Telecom meaning thereby, increase in liquidity is accompanied by corresponding increase in profitability and vice-versa.

The significance of this correlation is tested by using probable error as follows:

Probable Error (P.E.) = 0.1348 (Appendix-7)

$6 \times$ (P.E.) = 6×0.1348

$\qquad$ = 0.8087

Now, if r > 6(P.E.), it indicates there is statistically significant correlation between the two variables.

If r< P.E., it indicates there is statistically insignificant correlation between the two variables.

In the above analysis, r (0.0288) < P.E. (0.1348). It signifies there is no significant correlation between liquidity and profitability.

Upper and lower limit within which the correlation coefficient is expected to lie is given by:

r + P.E. = 0.0288 + 0.1348 = 0.1636

r – P.E. = 0.0288 - 0.1348 = -0.1060

Hence, the correlation coefficient is expected to lie between 0.1636 to -0.1060. The result of the above calculations has been summarized in the following table:

Table: 4.26

Correlation Coefficient between Liquidity and Profitability

Correlation (r)	Coefficient of Determination (r^2)	Probable Error (P.E.)	Result

| 0.0288 | 0.0008 | 0.1348 | Not Significant |

4.1.9 Trend Analysis

Trend analysis is another method of analyzing financial statements which shows the trend of the variables. With the help of trend analysis, we can forecast the movement (upward or downward) of the variables under study. The information for a number of years is taken up; generally the first year is taken as a base year. This section expresses the trend of some related items, which have effect on working capital of Nepal Telecom.

Fitting the Straight Line Trend

The time series analysis under which future events of a variable(s) are forecasted over a regular interval of time based on the past events of the variable(s) is called straight line trend. The equation of straight line trend is given by $y_c = a + bx$ where 'y' is the dependent variable, 'a' is the constant, and 'b' is the coefficient of independent variable 'x'.

Here, effort has been made to forecast different variables which affect the working capital of Nepal Telecom in future fiscal year, based on the past trend.

4.1.9.1 Trend Analysis of Current Assets

Equation of straight line trend when current assets is taken as dependent variable and year is taken as independent variable is given by,

$Y_c = a + bX$

Or, $Y_c = 21122.43 + 1085.38X$ (Source: Appendix-9.1)

Table: 4.27
Trend Values of Current Assets

(Rs. In Million)

Fiscal Year	Actual Value	Trend Value
2003/04	20213.76	22207.81
2004/05	20598.35	23293.19
2005/06	22526.52	24378.57
2006/07	23519.75	25463.95
2007/08	24180.63	26549.33
2008/09		27634.71
2009/10		28720.09

(Source: Appendix-9.1)

The trend line shows positive figure of current assets in future. The annual rate of increment of current assets has been calculated to be Rs. 1085.3764 million i.e. Rs. 1085376400.

4.17 Chart Showing Trend Values Of Current Assets

After analyzing the data, it can be concluded that current assets of Nepal Telecom has been increasing every year. The above graph shows that the actual and trend values are in increasing trend.

4.1.9.2 Trend Analysis of Current Liabilities

Under this section, trend values for current liabilities have been calculated for five years from 2003/04 to 2007/08 forecasted for next three years up to 2010/11. equation of straight line trend when current liabilities is taken as dependent variable and year is taken as independent variable is given by,

$Y_c = a + bX$
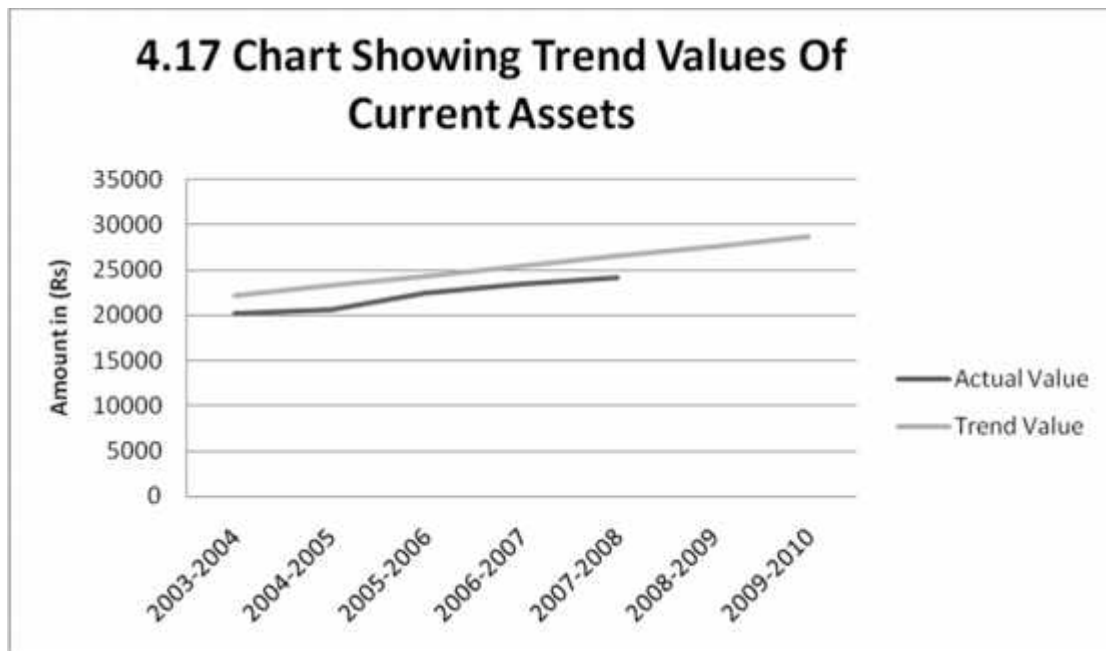
Or, $Y_c = 12754.56 + 662.30X$ (Source: Appendix-9.2)

Table: 4.28

Trend Values of Current Liabilities

(Rs. In Million)

Fiscal Year	Actual Value	Trend Value
2003/04	12629.72	13416.86
2004/05	14722.68	14079.16
2005/06	15665.38	14741.46
2006/07	15675.15	15403.76
2007/08	15014.44	16066.06
2008/09		16728.36
2009/10		17390.66

(Source: Appendix-9.2)

From the above table, expected volume of current liabilities of Nepal Telecom in the fiscal year 2008/09 and FY 2009/10 is Rs. 16728.36 million and Rs. 17390.66 million respectively.

4.18 Chart Showing Trend Values Of Current Liabilities

Hence, current liabilities of Nepal Telecom have increased throughout the study period except for the fifth and the final year of study period and the expected trend is expected to increase for the coming two years as well.

4.1.9.3 Trend Analysis of Cash and Bank Balance

Equation of straight line trend when cash and bank balance is taken as dependent variable and year is taken as independent variable is given by,
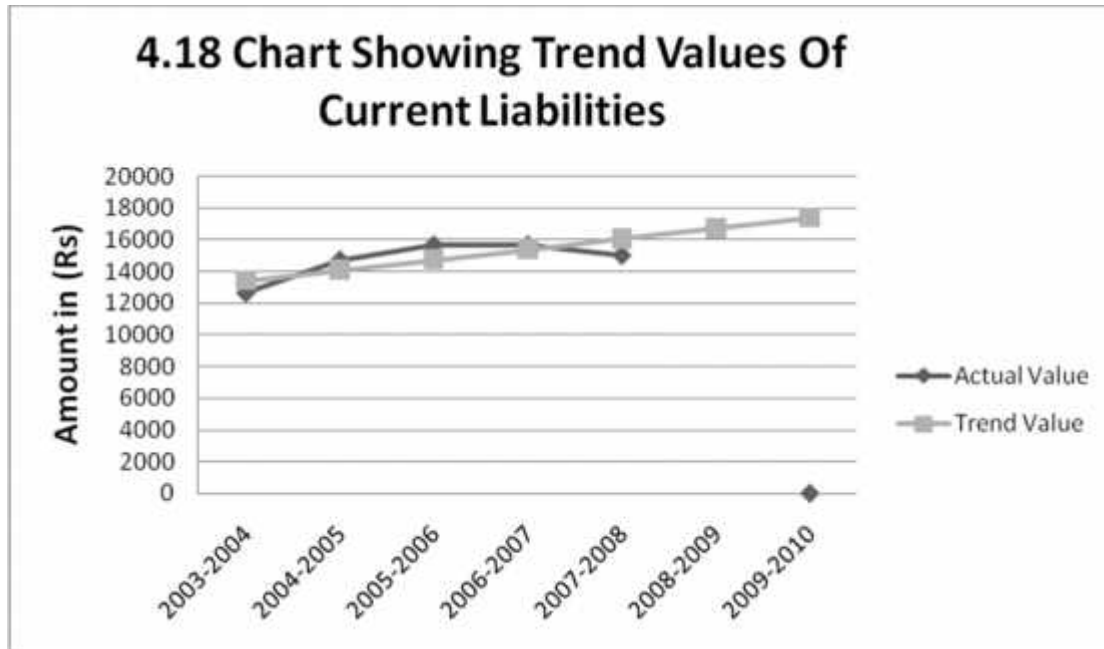
$Y_c = a + bX$

or, $Y_c = 7887.4952 + 1588.01X$ (Source: Appendix-9.3)

Table: 4.29

Trend Values of Cash and Bank Balance

(Rs. In Million)

Fiscal Year	Actual Value	Trend Value
2003/04	10780.67	9475.51
2004/05	9574.5	11063.52
2005/06	12021.624	12651.53
2006/07	14746.337	14239.54
2007/08	16134.516	15827.55
2008/09		17415.56
2009/10		19003.57

(Source: Appendix-9.3)

Therefore expected amount of cash and bank balance of Nepal Telecom for the fiscal years 2008/09 and 2009/10 is Rs. 17415.56 million and Rs. 19003.57 million respectively.

The above calculations are made clear by the following figure:

4.19 Chart Showing Trend Values Of Cash And Bank Balance
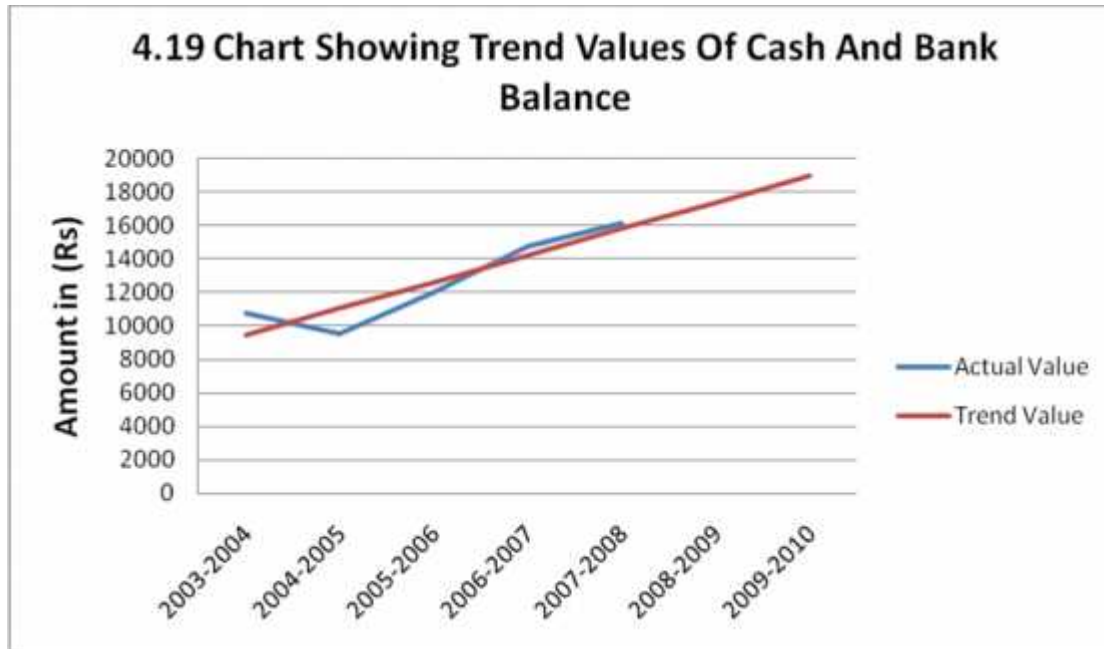
4.1.9.4 Trend Analysis of Receivables

Equation of straight line trend when receivables are taken as dependent variable and year is taken as independent variables is given by,

$Y_c = a + bX$

or, $Y_c = 2734.25 + 139.92X$ (Source: Appendix-9.4)

Table: 4.30

Trend Values of Receivables

(Rs. In Million)

Fiscal Year	Actual Value	Trend Value
2003/04	2716.49	2874.17
2004/05	2868.03	3014.09
2005/06	3139.12	3154.01
2006/07	3490.84	3293.93
2007/08	3555.53	3433.85
2008/09		3573.77
2009/10		3713.69

(Source: Appendix-9.4)

4.20 Chart Showing Trend Value of Receivables

According to the trend analysis, receivables of the company is expected to increase at a slow pace in the future although the actual amount of receivables has been increasing at a slow pace every year.

4.1.9.5 Trend Analysis of Inventory

Equation of straight line trend when inventory is taken as dependent variable and year is taken as independent variable is given by,
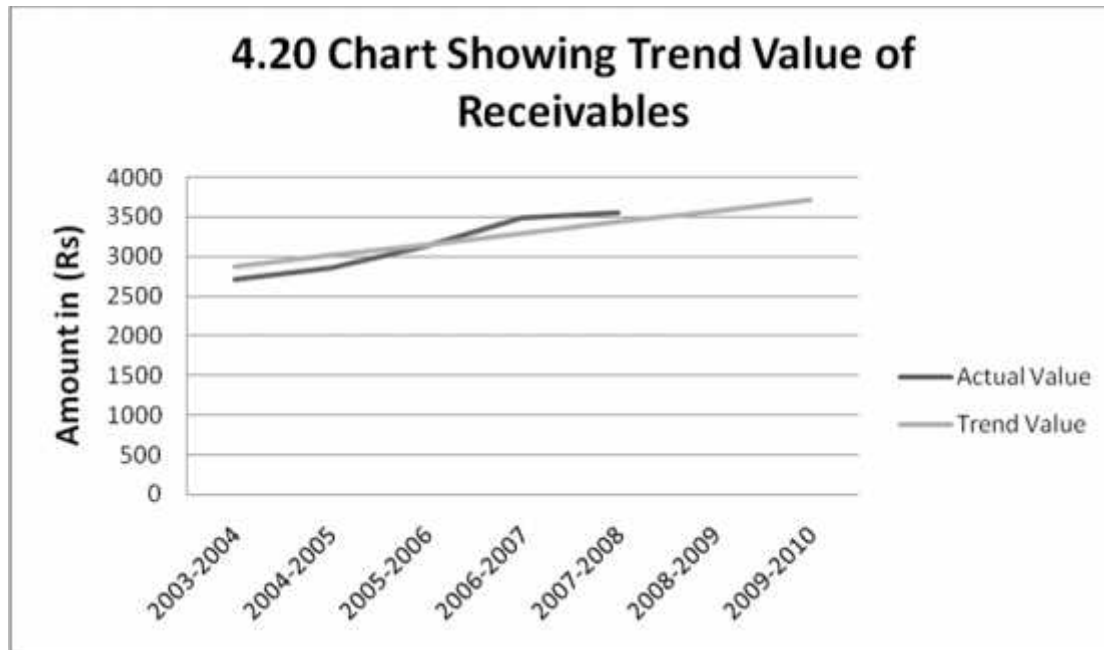
$Y_c = a + bX$

or, $Y_c = 225.67 + 34.01X$ (Source: Appendix-9.5)

Table: 4.31
Trend Values of Inventory

(Rs. In Million)

Fiscal Year	Actual Value	Trend Value
2003/04	255.25	259.68
2004/05	309.85	293.69
2005/06	329.31	327.7
2006/07	327.68	361.71
2007/08	416.42	395.72
2008/09		429.73
2009/10		463.74

(Source: Appendix-9.5)

The trend analysis shows that inventory of Nepal Telecom will increase by Rs. 34.01 million every year. Hence expected volume of inventory of Nepal Telecom for the fiscal year 2008/09 and 2009/10 is Rs. 429.73 million and Rs. 463.74 million respectively.

4.21 Chart Showing Trend Value of Inventory

Thus, more and more amount is expected to tie up in inventory in Nepal Telecom for the coming years.

4.1.9.6 Trend Analysis of Total Assets

Equation of straight line trend when total assets or total liabilities is taken as dependent variable and year is taken as independent variable is given by,

$Y_c = a + bX$

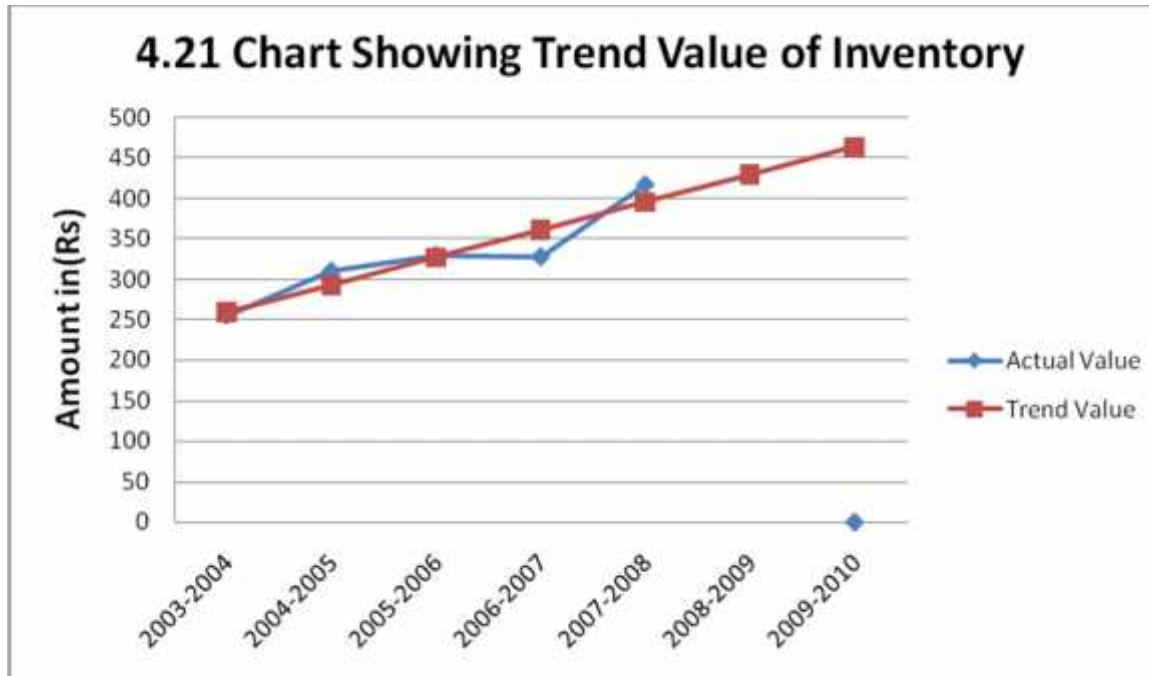or, $Y_c = 28128.76 + 4029.04X$ (Source: Appendix-9.6)

Table: 4.32

Trend Values of Total Assets

(Rs. In Million)

Fiscal Year	Actual Value	Trend Value
2003/04	33221.35	32157.8
2004/05	35572.77	36186.84
2005/06	39351.41	40215.88
2006/07	43562.63	44244.92
2007/08	49371.22	48273.96
2008/09		52303.00
2009/10		56332.04

(Source: Appendix-9.6)

The regression equation shows that total assets of Nepal Telecom will increase by Rs.28128.76 million every year.

4.22 Chart Showing Trend Value Of Total Assets
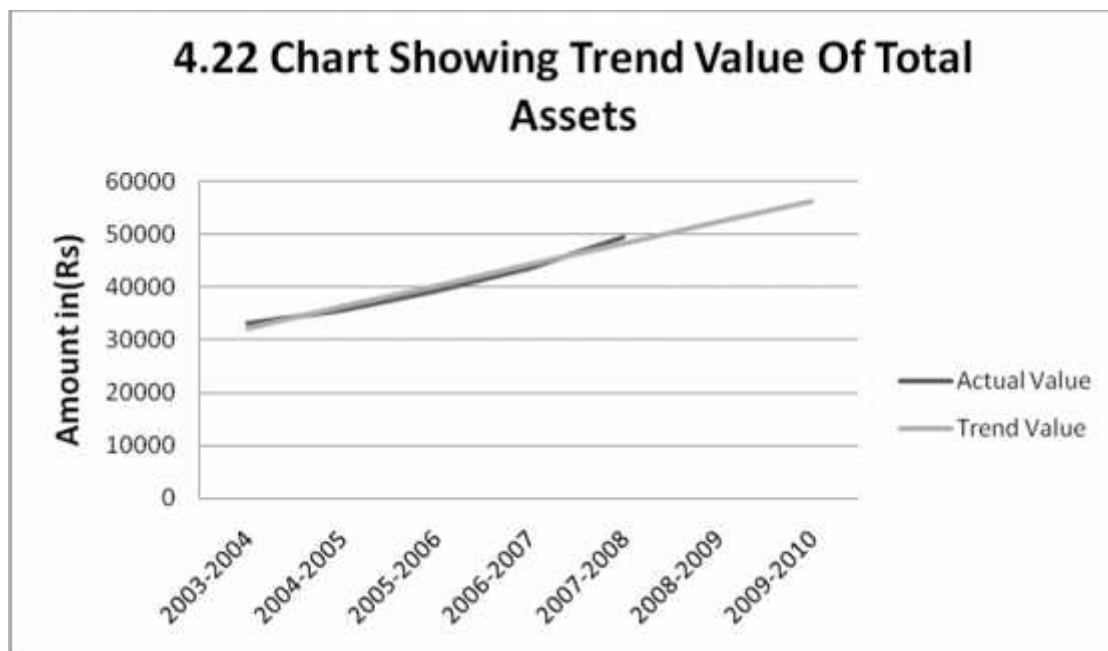
The expected amount of total assets or total liabilities of Nepal Telecom for the fiscal year 2008/09 and 2009/10 is Rs. 52303.00 million and Rs. 56332.04 million respectively.

The above figure shows that the trend line has almost overlapped the actual line of the total assets during the five years' study period. Therefore, it can be said that the expected value of the total assets in future will be very close to actual value of total assets in the coming two years.

4.1.9.7 Trend Analysis of Net Sales

Equation of straight line trend when net sales is treated as dependent variable and year is treated as independent variable is given by,

$Y_c = a + bX$

or, $Y_c = 4912.37 + 2233.59X$ (Source: Appendix-9.8)

Table: 4.33

Trend Values of Net Sales

(Rs. In Million)

Fiscal Year	Actual Value	Trend Value
2003/04	8312.24	7145.96
2004/05	8584.14	9379.55
2005/06	10413.65	11613.14
2006/07	13967.32	13846.73
2007/08	16788.36	16080.32
2008/09		18313.91
2009/10		20547.5

(Source: Appendix-9.8)

As per the above equation and table, net sales of Nepal Telecom will be worth Rs.18313.91 million and Rs.20547.5 million for the fiscal years 2008/09 and 2009/10 respectively. Following figure will help in having better understanding of the trend of net sales of Nepal Telecom.

4.23 Chart Showing Trend Value Of Net Sales
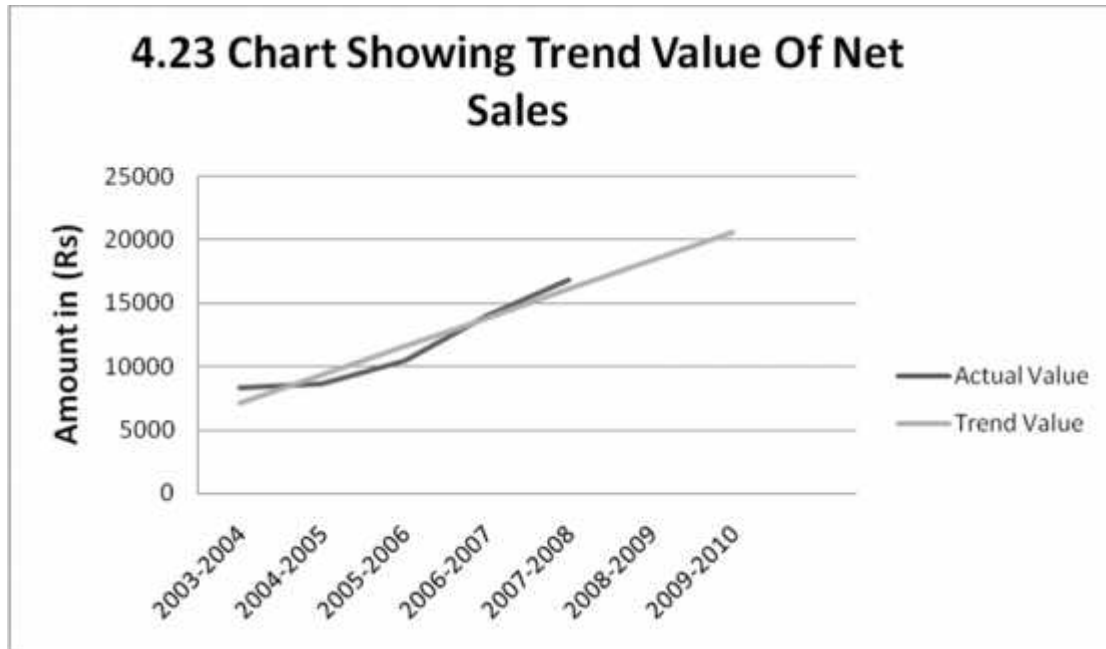
4.1.9.8 Trend Analysis of Net Working Capital

Equation of straight line trend when net working capital is taken as dependent variable and year is taken as independent variable is given by,

$$Y_c = a + bX$$

or, $Y_c = 5926.30 + 513.34X$ (Source: Appendix-9.9)

Hence, net working capital of Nepal Telecom is expected to increase by Rs. 513.34 million every year. This means, net working capital of Nepal Telecom will be worth Rs. 9006.34 million and Rs. 9519.68 million for the fiscal year 2008/09 and fiscal year 2009/10 respectively which has been shown in the following table followed by figure 4.24:

Table: 4.34

Trend Values of Net Working Capital

(Rs. In Million)

Fiscal Year	Actual Value	Trend Value
2003/04	7584.05	6439.64
2004/05	5875.68	6952.98
2005/06	6861.14	7466.32
2006/07	7844.6	7979.66
2007/08	9166.2	8493.00
2008/09		9006.34
2009/10		9519.68

(Source: Appendix-9.9)

4.24 Chart Showing Trend Value Of Net Working Capital
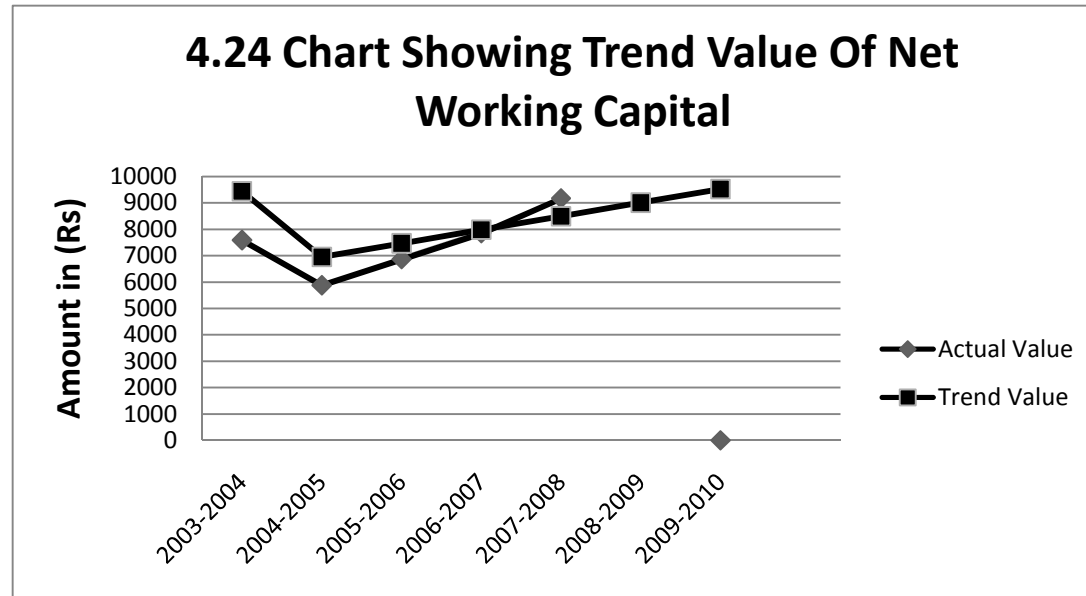
The figure shows that net working capital of Nepal Telecom has been fluctuating over the study period. However, the trend line shows that the net working capital will increase at an average speed for the fiscal years 2008/09 and 2009/10.

4.1.10 Sector-Wise Management of Current Assets

In this section, different items of current assets like investment, receivables, cash etc. of Nepal Telecom will be analyzed. Total amount of investment of Nepal

4.1.10.1 Management of Accounts Receivable

Accounts receivable holds an important place in the financial management. The overall working capital requirement of the firm is largely affected by the kind of account receivable policy it has adopted. If a firm gets more credit on purchase of raw materials and repayment period is long, less working capital will be required by the firm in that case. Similarly, if the firm sells goods on credit and collection period is long; more working capital will be needed. On the other hand, if goods are sold on cash and strict credit policy is adopted with very short collection period, then the firm will require very low level of working capital. In this way, the credit policy adopted by the firm has a huge impact in determining the level of working capital required.

i.   Size and Growth of Accounts Receivable

An increase or decrease in accounts receivables results from growth in sale. Effective credit control checks the growth of receivable. But in case liberal credit terms are offered, the receivables grow faster than sales. However any such disproportional growth of receivables may result in loss rather than gain from the incremental sale due to inferior quality of debtors who are granted credit.

Table: 4.35

Size and Growth of Accounts Receivable

Fiscal Year	Receivables to Current Assets (in %)	ACP	Receivable Turnover	Receivable Index	Sales Index	(R-S)
2003/04	13.44	119.28	3.06	100	100	0
2004/05	13.92	121.95	2.99	105.58	103.27	2.31
2005/06	13.94	110.03	3.32	115.56	125.28	-9.72
2006/07	14.84	91.22	4	128.51	168.03	-39.52
2007/08	14.70	77.3	4.72	130.89	201.97	-71.08
Mean	14.17	103.96	3.62			
Std. Dev	0.53	17.14	0.66			
C.V.	3.72	16.48	18.15			

(Source: Table 4.9, 4.14, 4.15 and 4.27)

The accounts receivable can be evaluated in different ways. It can be related to sales as percentage of sales or turnover of sales or trend report of daily number of sales represented by the total accounts receivable balance or average collection period or it can be analyzed by making comparison between receivables indices and sales indices.

The above table shows that the proportion of receivables in current assets of Nepal Telecom has been increasing over the study period except for the last year of study period which decreased as compared to the previous years. The percentage was 13.44% in the fiscal

year 2003/04 which increased to 13.92%, 13.94%, 14.84% and 14.17% in fiscal year 2004/05, 2005/06, 2006/07 and 2007/08 respectively. Average collection period is also is fluctuating but the collection period in the last three years is quite shorter. It took 119.28 days for Nepal Telecom to collect receivables in FY 2003/04 which increased to 121.95 days in FY 2004/05 and decreased there after to 110.03days, 91.22 days and77.30 days in the fiscal years 2005/06, 2006/07 and 2007/08 respectively. Similarly, receivable turnover of the last two years is higher than that of first three years, even the ratio is fluctuating over the observed period, starting from 3.06 times in FY 2003/04 and ending to 4.72 times in FY 2007/08.

Looking at receivable and sales indices, it can be found out that the growth of sales is higher than that of receivables which is favorable for the company. The company should be attentive for the reason that the size of receivable has increased throughout the study period. The increment in receivables shows that there is no any specific policy to collect receivables in Nepal Telecom although the sales increment is satisfactory.

4.1.11 Analysis of Sources and Uses of Funds

With the help of financial statements i.e. profit and loss account and balance sheet, the basic changes in assets and liabilities may be known but the difficulties may arise in acquiring the real information about reasons for changes. In order to make such statements more meaningful, another statement is prepared to analyze the inflow and outflow of funds which is known as funds flow statement. The main purpose of funds flow analysis is to acquire the clear information about the financial transaction that brings changes in the resources of the company. "Funds flow statement is a statement prepared to indicate the increase in cash resources and the utilization of such resources of a business during an accounting period" (Anthony and Reece, 1995: 427).

In this section, a statement of sources and uses of funds of Nepal Telecom is prepared and analyzed. It is designed to highlight the changes in the financial condition of Nepal Telecom between two points of time. It summarizes the financial activities for a period of time. It is an operating statement in which we can see the sources and uses of funds of Nepal Telecom during the five year study period. It also shows the relative importance of each of the sources of funds.

4.2 Major Findings

The major findings of the study are presented as under:

1. The rate of increase in total assets is higher than that of current assets throughout the study period. Total assets have increased more rapidly than current assets in the study period of five years.

2. The size of current assets is significantly greater than the size of fixed assets every year. The company seems to have adopted aggressive current assets policy during the study period.

3. Both current assets and sales (operating income) are in increasing trend. The company has been able to generate sales by deploying relatively less and less amount of current assets successively and it gives impression that the company is following the lean and thin policy to invest in current assets.

4. Size of net working capital decreased in the second year as compared to the first year and after this it showed a increasing trend. Net sales is more than net working capital throughout the study period which signifies that the company has been able to generate sales with relatively less amount of working capital.

5. Cash is the major part of the current assets of Nepal Telecom which occupies more than half of the current assets portfolio indicating inefficiency of the company in managing its current assets, especially cash. The company is facing the situation of excess cash and bank balance held idle. This is unfavorable for the company since the idle cash and bank balance has no productive use.

6. Inventory is another part of current assets of Nepal Telecom which is only stores and spares parts and held a nominal part of current assets. There is no considerable amount tied up in inventory.

7. There is no comprehensive long/mid term planning or control system of accounts receivable in the company. Nepal Telecom does not have separate department to monitor its receivables and credit is granted for all with no basis for credit granting. Large amount is still due for many years and the amount of doubtful debt covers a significant portion of accounts receivable. Credit terms and credit standards are too much liberal.

8. A significant portion of current assets is held by miscellaneous current assets which include unexpired L/C and advances, prepaid expenses and loans to employees.

9. From the calculation of risk, it is found that the value of risk is more than 50% every year throughout the study period except for the second year of study period in 2004/05 which signifies that Nepal Telecom is adopting conservative working capital financing policy.

10. More than fifty percent of total assets is covered by current assets where as large portion of total assets are financed by long-term source of financing. The largest portion of long term financing is supplied by equity capital for the first four years of study period and reserve and surplus in the fifth of the study period.

11. Loan fund has been fluctuating throughout the study period. In the first two years the loan showed increasing trend whereas in the third year Nepal Telecom retired all its loan but again in the fourth year it took loan of about 4.3% of total long term financing and again in the fifth year the loan amount reached to zero. This signifies that Nepal Telecom is trying to avoid loan as far as possible.

12. Growth indices show that all three variables viz. current assets, total assets and net sales are in increasing trend. Among them, net sales have the highest growth rate. Similarly, current assets and total assets have almost doubled over the study period. It

seems that Nepal Telecom has been able to utilize current assets effectively since the growth of net sales is higher than growth of current assets.

13. There has been insignificant positive correlation between current assets and total assets (0.9770) and current assets and net sales (0.9479). This supports the proposition that working capital is dependent upon the volume of sales and the size of total assets is also dependent upon the size of current assets. As the growth of working capital in any firm increases with the prosperity of the firm is reflected by the increasing sales volume, the growth of in the variables of Nepal Telecom is also in good trend. However, the size of cash has increased in inconsistent manner which is the main cause of rapid increase in current assets.

14. The increasing trend of receivables in Nepal Telecom shows that there is no any specific policy to collect receivables although the sales increment is satisfactory. There is very low level of correlation between

15. Collection period increased in the second year of study period and after this it continuously decreased throughout the study period with average collection period of 103.96 days. The average collection period has decreased from 122 days to 77 days during the study period which indicates a progress in collecting the receivables.

16. The increase in sales volume is more than that of cash and bank balance as a result of which cash turnover ratio has increased during the study period. Current assets turnover ratio has increased during the study period which indicates that there has been marginal progress in the utilization of current assets but still it is not sufficient. The net working capital turnover ratio is in increasing trend. It can be said that the company has been able to utilize its net working capital effectively in recent years.

17. There is high degree of correlation between current assets and current liabilities. 86% of total current liabilities could be paid in cash at any time if circumstances required so. The company has so far maintained more current assets than current liabilities in all years of observation that clarifies better liquidity position of the corporation. The company is holding more than enough quick assets and cash balance.

18. There is direct relationship between liquidity and profitability since there is positive correlation between liquidity and profitability but very negligible. So, there is almost no correlation between liquidity and profitability since r = 0.0288.

19. From trend analysis, it is found that almost all the variables that affect the working capital are in increasing trend during the study period. The trend line shows positive figure of current assets in future. Inventory is also expected to increase. Total assets, liabilities, net sales and net working capital all have shown increasing trend. Nepal Telecom has retired its all long term debt.

20. Nepal Telecom keeps more than enough cash and bank balance. The amount of cash and bank balance exceeded the amount of current liabilities in the fifth year of the study period. This is unfavorable for the company since the cash held idle gives no return. This has clearly indicated that the company has not been following a systematic cash management practice.

CHAPTER- 5
SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The modern financial management and its offshoot working capital management are abundantly used by corporate sector organizations to improve their efficiency. A public sector enterprise also must benefit from its own knowledge and competence by applying these techniques in its own organization for its betterment and effectiveness. Working capital management, a very sensitive area of financial management, was the main concern of this study and it was related to Nepal Telecom. The study mainly aimed at examining working capital position of the company. The specific objectives were to analyze and assess the size and growth, liquidity, profitability and efficiency of working capital and thereby analyzing the overall management policy on working capital of Nepal Telecom. For the purpose of this study, the necessary data on working capital and other related variables were collected from secondary sources. The balance sheet and income statement for the period 2003/04 to 2007/08 were received directly from the library of central office of Nepal Telecom, Bhadrakali. After tabulating the available data in a systematic manner, various important financial and statistical tools and techniques were applied in order to accomplish the objectives of the study.

The size and structure of working capital was analyzed by comparing current assets and its variables with different related variables. Activity and profitability ratios were calculated to evaluate the efficiency of working capital. Liquidity position was assessed by calculating different liquidity ratios, viz. current ratio, quick ratio and absolute liquidity ratio. The growth trend of working capital and its related variables were studied in trend analysis. Different statistical tools like mean, standard deviation, coefficient of variation, correlation coefficient and regression coefficient were calculated for the meaningful interpretation of the data. Lastly, an analysis of sources and application of fund was carried out in order to get better insight into the acquisition and application of fund of Nepal Telecom. More than fifty percent of total assets were held in the form of current assets and more than fifty percent of current assets was being unproductive by lying idle in absolute liquid form i.e. cash and bank balance. About fourteen percent of the current assets were in the form of receivables. Most of the components of current assets were found to be in increasing trend, so was the sales. The company collected fund mainly from its operation. A large portion of the fund was kept in liquid form and some of them were used to purchase fixed assets and increase working capital as well as repayment of long-term loan.

5.2 Conclusion

After a long analysis process, the researcher has reached to conclude that the overall financial management of Nepal Telecom was satisfactory during the five years study period. There was sufficient amount of current assets to meet the current obligations of the company which obviously is a sign of good liquidity position. The company had sound liquidity position and there was no problem of technical insolvency.

As far as composition of working capital is concerned, more than half of the current assets of Nepal Telecom is occupied by current assets while more than half of the current assets is occupied by cash and bank balance. There is no considerable amount tied up in inventory. The receivables to current assets ratio also showed increasing trend during the study period. The proportion of miscellaneous current assets i.e. loan and advances to employees and prepaid expenses is showing fluctuating trend in the first three years but after this it showed decreasing trend which is a good sign. But the company seems to have done efforts in reducing the proportion of current assets to total assets during the study period. The company is following lean and thin policy to invest its current assets.

The size of current assets is significantly greater than the size of fixed assets every year. Most of the variables of working capital as well as volume of sales are in increasing trend and the company was operating with attractive profit. All the profitability ratios are in increasing trend. By analyzing the past data of the company, it can be concluded that the profitability position of the company in the present context is satisfactory.

In comparison to the rate of increase of various elements of the working capital, the rate of increase of sales is higher. There is very low level of relationship between accounts receivables and sales, only about four percent variation in accounts receivables is explained by sales. During the study period the net sales is much more than the net working capital which signifies that the company has been able to generate sales with relatively less amount of working capital which is highly favorable for the company.

Loan fund has shown fluctuating trend except for the fiscal years 2004/05 and 2007/08 in which Nepal Telecom has retired all its long term debt. Growth rate of net sales is higher than the growth rate of current assets and total assets. Collection period has decreased significantly over the study period. The volume of net sales has exceeded the volume of net working capital throughout the study period which is favorable for the company. Besides this, the researcher has indicated some critical aspects of working capital management. For example, cash is the major part of the current assets of the company which alone accounts for more than half of the total assets. Largest portion of current assets was being unproductive by lying idle in absolute liquid form which is the indication of inefficiency of management in using its assets in productive operation. Likewise, a significant amount of current assets was tied up in receivables and miscellaneous current assets. The company has excess liquidity and facing the problem of outstanding debt collection.

The receivable management is not up to the level of perfection though it has its own problems like government offices' attitude towards the telephone bill, delay in bill processing; procedural delay in settlement of account with inter administration parties etc. the fluctuation in receivables shows that there is no any specific policy to collect receivables. Credit is granted for all without any basis for credit granting. Doubtful debts cover a significant portion of accounts receivable.

Funds from operation is the main source of funds of Nepal Telecom. Investment and bank deposit also provided fund throughout the study period. On the other hand, major portion of fund is applied to purchase fixed assets followed by expenditure on working capital. On account of exchange rate fluctuation, the company often had to bear losses in recent years.

There is negative correlation between liquidity and profitability which means, an increase in liquidity is accomplished by corresponding decrease in profitability and vice-versa.

5.3 Recommendations

On the basis of the analysis of the findings of the study, following recommendations can be made:

1. Nepal Telecom is a service- oriented public utility. Hence, it does not require high liquidity position. So, the company is suggested to stabilize its current ratio near 1:1. Rather than tying up large amount of fund in current assets, the company is suggested to invest such excess amount in fixed assets to increase its capacity.

2. It is recommended to determine the optimum level of cash for immediate use and purchase of fixed assets and invest the entire excess amount in short-term investment or marketable securities which would provide regular return on one hand and serve as liquid assets on the other hand.

3. A study revealed that Nepal Telecom is likely to face problems of outstanding debt collection. Nepal Telecom should make appropriate decision regarding credit terms, credit standard and credit policy. The company is recommended to take immediate action against non-paying customers like disconnecting lines; black listing of long-term default and forwarding legal action to them etc. similarly, a separate department should be established in order to deal with receivables and more authority and autonomy should be attributed to middle and lower level employees for collection of outstanding debt.

4. The company should not, however, make the mentality that medium and long-term debt is against the welfare of the company. It should consciously evaluate the cost and benefit of the short-term and long-term loan and internal financing and then only take decision about financing the assets. In other words, loans can be taken in future if situations permit so.

5. Working capital management being management of current assets and current liabilities calls for preparation of trial balance every month or at fifteen days' period so that every movement of the factors of current assets and current liabilities could be monitored in time thereby taking preventive and curative measures. A year's time is quite lengthy and thus it is likely that analysis of yearly financial statements does not properly monitor and remedy the financial situation in time.

6. In order to maximize sales and minimize the operating cost, Nepal Telecom should utilize its full installed capacity of fixed assets which also helps to improve the turnover position.

7. The company is suggested to deeply analyze the quality of services it provides. Networking problems and other service-related problems is likely to damage the goodwill of the company. So, research work should be carried out periodically on market possibility; consumers' capacity and service reliability. Entrances of two big rival companies i.e. Spice Nepal Ltd. and United Telecom Ltd. are likely to pose an intense competition. The movements and strategies followed by these companies should be reviewed on a regular basis.

8. Cash budget is a detailed plan expressed in quantitative terms that specifies how cash resources will be acquired and used during a specified period of time. It helps to forecast whether at any point of time, there is likely to be an excess or shortage of cash. Hence, it is recommended to Nepal Telecom to prepare cash budget regularly (monthly, quarterly or half yearly) and use it as a cash management tool. Further, regression analysis and fitting straight line trend by least square method can be used to forecast the inflow and outflow of funds in future.

9. In order to reduce the loss from exchange rate fluctuating, the company is suggested to think about other currencies for the transactions which are more consistent in their value.

10. Considering the growth of the company in future, some improvements may be needed in the field of revenue collection. Concept of Anywhere Payment will be needed not only in Kathmandu but also throughout the country. Subscribers should be able to make E-payment sitting at home. Expansion of intelligent network based services is always desirable in the years to

come. Extended hours of collection, pleasant atmosphere and establishment of information desk at every counter may be some of the areas which will certainly facilitate the revenue collection process and help in decreasing outstanding debt.

11. If the company has to become preferred and prominent telecom service provider, it has to be costumer focused. Line fault should be reduced as much as possible. Excess manpower, if any, should be curtained. Education level of staff should be increased to meet future competition and growth. Under-educated staffs should be given prior retirement with attractive pre-retirement scheme. 'Best candidate for the post' should be the human resource policy irrespective of old applicant.

12. Nepal Telecom has prepared "Mission 2010" the ultimate goal of which is to achieve the set target of 3 year development program (additional new 3.5 million GSM, attain 2 million CDMA, expansion of PSTN and value-added services) in all sectors of services out of which Nepal Telecom has already achieved the target of 2.7 million GSM, 0.7 million CDMA and expansion of 0.559 million PSTN lines.

This demands not only sincere commitment from the entire workforce of the company but also it is highly desired from the top and mid level management to demonstrate the skill, knowledge and attitude to get the job done in time, to provide stronger, more effective and truly inspiring leadership and follow better management practices and principles to take the organization with better business practices that foster market growth and above to prove to our nation and society that the Nepalese can also be as successful as any country of the world in effectively managing big organizations like Nepal Telecom.

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Appendix – 1
Consolidated Balance Sheet of Nepal Telecom
(In thousand of Nepalese Rupees)

Assets	FY 2003/04	FY 2004/05	FY 2005/06	FY 2006/07	FY 2007/08
Fixed Assets	8094882	9040917	10088427	11361042	12897703
Capital W.I.P	1377238	2452578	2443061	3764646	3922699
Investment	3394558	3338734	4156948	4883855	8370182
Current Assets, Loans and Advances	20213763	20598353	22526522	23519753	24180638
Deferred Expenditure	140911	142190	136448	131815	
Total	33221352	35572772	39351406	43661111	49371222
Capital and Liabilities					
Equity Capital	15000000	15000000	15000000	15000000	15000000
Reserve and Surplus	5580387	5825855	8686027	11794280	20343894
Loans from Govt. of Nepal	11249	24239		1191680	
Current Liabilities	3630863	3858484	4475753	5712295	7915500
Provisions	8998853	10864194	11189626	9962858	7098938

Total	33221352	35572772	39351406	43661111	49371222

Appendix – 2
Profit and Loss Statement of Nepal Telecom
(In thousand of Nepalese Rupees)

Income	FY 2003/04	FY 2004/05	FY 2005/06	FY 2006/07	FY 2007/08
Operating Income	8312244	8584144	10413655	13967319	17889310
Non-Operating Income	542790	610153	645260	784305	
Total Income	8855034	9194297	11058915	14751624	17889310
Expenditure					
Total Operating Expenses	4304367	4272768	4215188	6768302	7017854
Net Profit After Tax	3290117	3542461	4936647	5652688	7942901
Net Profit after Dividend and Sinking Fund	2048379	3230469	3904307		
Retained Earning Transferred to Balance Sheet	23792725	5665407	8602369		

Appendix – 3
Cash and Bank Balance of Nepal Telecom
(In thousand of Nepalese Rupees)

Fiscal Year	FY 2003/04	FY 2004/05	FY 2005/06	FY 2006/07	FY 2007/08
Cash	78905	70162	113546	243026	96455
Bank Balance	10701764	9504339	11908079	14503312	16038062
Total	10780669	9574501	12021625	14746338	16134517

Appendix – 4
Total Receivables of Nepal Telecom
(In thousand of Nepalese Rupees)

Fiscal Year	FY 2003/04	FY 2004/05	FY 2005/06	FY 2006/07	FY 2007/08
Sundry Debtors	2668942	2825943	3099496	3455511	3482611
Interest Accrued on Investment	47556	42098	39634	35334	72929
Total Receivables	2716498	2868041	3139130	3490845	3555540

Appendix – 5
Miscellaneous Current Assets of Nepal Telecom
(In thousand of Nepalese Rupees)

Fiscal Year	FY 2003/04	FY 2004/05	FY 2005/06	FY 2006/07	FY 2007/08
Advances and Prepaid Expenses	6012502	7330330	6428255	4196070	3017799
Advances and Loans to Employee	442917	506656	601027	738259	919234
Total Miscellaneous Current Assets	6455419	7836986	7029282	4934329	3937033

Appendix – 6
Calculation of Capital Employed of Nepal Telecom
(In thousand of Nepalese Rupees)

Fiscal Year	FY 2003/04	FY 2004/05	FY 2005/06	FY 2006/07	FY 2007/08
Equity Capital	15000000	15000000	15000000	15000000	15000000
Reserve and Surplus	5580387	5825855	8686027	11794281	20343894
Loans	11249	24239		1191680	
Total Capital Employed	20591636	20850094	23686027	27985961	35343894

Appendix - 7
Calculation of Correlation between liquidity (Current Ratio) and Profitability
(Return on Working Capital) of Nepal Telecom

Fiscal Year	Return on Working Capital (x)	$U = X - \overline{X}$	U^2	Current Ratio (Y)	$V = Y - \overline{Y}$	UV	V^2
2003/04	43.38	-23.49	551.78	160.05	9.08	-213.29	82.45
2004/05	60.29	-6.58	43.30	139.91	-11.06	72.77	122.32
2005/06	71.95	5.08	25.81	143.80	-7.17	-36.42	51.41
2006/07	72.06	5.19	26.94	150.04	-0.93	-4.83	0.8649
2007/08	86.65	19.78	391.25	161.05	10.08	199.38	101.61
	$\phi x = 334.33|$		$\phi U^2 = 1039.08|$	$\phi Y = 754.85|$		$\phi UV = 17.61|$	$\phi V^2 = 358.65|$

$$\overline{X} = \frac{\phi X}{N} = \frac{334.33}{5} = 66.87$$

$$\overline{Y} = \frac{\phi Y}{N} = \frac{754.85}{5} = 150.97$$

Correlation Coefficient (r) $= \dfrac{\phi UV}{\sqrt{\phi U^2 \ \phi V^2}}$

$$= \frac{17.61}{\sqrt{1039.08 \times 358.65}}$$

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

$$= \frac{0.6745 \{1 - (0.0288)^2\}}{5}$$

$$= 0.1348$$

|
6 (P.E.) $= 6 \times 0.1348$
               $= 0.8067$

Appendix - 8
Calculation of Correlation between Current Assets and Current Liabilities

Fiscal Year	Current Assets (x)	$U = X - \overline{X}$	U^2	Current Liabilities (Y)	$V = Y - \overline{Y}$	V^2	UV
2003/04	20213.763	-1994.043	397620.749	12629.72	-2111.754	4459504.96	4201928.28
2004/05	20598.353	-1609.453	2590338.96	14722.68	-18.794	353.21	30248.06
2005/06	22526.522	318.716	101579.89	15665.38	923.906	853602.30	29446.62
2006/07	23519.754	1311.948	1721207.56	15675.15	933.676	871750.87	1224934.36
2007/08	24180.638	1972.832	3892066.10	15014.44	272.97	74510.44	538523.95
	$\phi x = 111039.03|$		$\phi U^2 = 12281400|$	$\phi Y = 73707.37|$		$\phi V^2 = 6259721.78|$	$\phi UV = 6299098.27|$

$$\overline{X} = \frac{\phi X}{N} = \frac{11039.03}{5} = 22207.806$$

$$\overline{Y} = \frac{\phi Y}{N} = \frac{73707.37}{5} = 14741.474$$

Correlation Coefficient (r)
$$= \frac{\phi UV}{\sqrt{\phi U^2 \; \phi V^2}}$$
$$= \frac{17.61}{\sqrt{12281400 \times 6259721.78}} = 0.7184$$

Probable Error (P.E.)
$$= \frac{0.6745(1-r^2)}{N}$$
$$= \frac{0.6745\{1 - (0.0.7187)^2\}}{5}$$
$$= 0.0653$$

|
6 (P.E.) $= 6 \times 0.0653$
            $= 0.3917$

Appendix - 9.1

Calculation of Regression Equation of Current Assets on Year

Year (x)	Current Assets (Y)	X^2	Y^2	XY
1	20213.763	1	408596215	20213.76
2	20598.353	4	424292146	41196.71
3	22526.522	9	507444193	67579.57
4	23519.754	16	553178828	94079.02
5	24180.638	25	584703254	120903.2
$\phi x = 15$	$\phi y = 11039.03$	$\phi x^2 = 55$	$\phi Y^2 = 2478214637$	$\phi XY = 343972.2$

We have,

$$\overline{X} = \frac{\phi X}{N} = \frac{15}{5} = 3$$

$$\overline{Y} = \frac{\phi Y}{N} = \frac{11039.03}{5} = 22207.81$$

$$\exists x = \sqrt{\frac{\phi X^2}{n} - \frac{\phi x}{n}^2} = \sqrt{\frac{\Xi\Xi}{5} - \frac{K\Xi}{5}^2} = 1.4142$$

$$\exists y = \sqrt{\frac{\phi Y^2}{n} - \frac{\phi Y}{n}^2} = \sqrt{\frac{\Lambda NT P\Lambda KNOMT}{5} - \frac{KKKI\, M\Xi HIM}{5}_2} = 1567.224$$

$$r = \frac{n\phi xy - (\phi x)(\phi y)}{\sqrt{n\phi x^2 - (\phi x)^2} \sqrt{n\phi y^2 - (\phi y)^2}} = \frac{5 \times 343972.2 - 15 \times 111039.03}{\sqrt{5 \times 55 - (15)^2} \sqrt{5 \times 2478214637 - (111039.03)^2}}$$

$$= 0.9794$$

Now, the regression line of Y on X is given by,

$$y - \overline{y} = r.\frac{\exists y}{\exists x} (x - \overline{x})$$

or, Y - 22207.81 = $0.9794 \times \dfrac{1567.2241}{1.4142}$ (X - 3)

or, Y = 21122.4336 + 1085.3764X

When, x = 6 (ie FY 2008/09), Yc = 21122.4336 + 1085.3764 × 6 = 27634.692

Similarly,

When X = 7 (i.e. FY 2009/10), Yc = 21122.4336 + 1085.376 × 7 = 28720.066

When X = 8 (i.e. FY 2010/11), Yc = 21122.4336 + 1085.376 × 8 = 29805.442

Therefore, expected current assets in FY 2008/09 is Rs. 27634.692 million and it is Rs. 28720.066 million and Rs.29805.442 million for FY 2009/10 and FY 2010/11 respectively.

Appendix - 9.2

Calculation of Regression Equation of Current Liabilities on Year

Year (x)	Current Liabilities (Y)	X^2	Y^2	XY
1	12629.72	1	159509827.2	12629.72
2	14722.68	4	216757306.3	29445.36
3	15665.38	9	245404130.5	46996.14
4	15675.15	16	245710327.5	62700.6
5	15014.44	25	225433408.5	75072.2
$\phi x = 15$	$\phi y = 73707.37$	$\phi x^2 = 55$	$\phi Y^2 = 1092815000$	$\phi XY = 226844.02$

We have,

$$\overline{X} = \frac{\phi X}{N} = \frac{15}{5} = 3$$

$$\overline{Y} = \frac{\phi Y}{N} = \frac{73707.37}{5} = 14741.474$$

$$\exists x = \sqrt{\frac{\phi X^2}{n} - \frac{\phi x}{n}^2} = \sqrt{\frac{\Xi\Xi}{5} - \frac{K\Xi}{5}^2} = 1.4142$$

$$\exists y = \sqrt{\frac{\phi Y^2}{n} - \frac{\phi Y}{n}^2} = \sqrt{\frac{KI\Sigma\Lambda PK\exists I I}{5} - \frac{\Gamma M\Pi\Gamma HM\Pi}{5}^2} = 1118.90$$

$$r = \frac{n\phi xy - (\phi x)(\phi y)}{\sqrt{n\phi x^2 - (\phi x)^2}\sqrt{n\phi y^2 - (\phi y)^2}} = \frac{5 \times 226844.02 - (15 \times 73707.37)}{\sqrt{5 \times 55 - (15)^2}\sqrt{5 \times 1092815000 - (73707.37)^2}}$$

$$= 0.8371$$

Now, the regression line of y on x is given by,

$$Y - \overline{Y} = r.\frac{\exists y}{\exists x}(X - \overline{X})$$

or, $Y - 14741.474 = 0.8371 \times \dfrac{1118.90}{1.4142}$ (x- 3)

or, Y = 12754.560 + 662.30 X

When, x = 6 (ie FY 2008/09), Yc = 12694.60 + 662.29 × 6 = 16668.34

Similarly, when X = 7 (i.e. FY 2009/10), Yc = 12694.64 + 662.29 × 7 = 17330.63

And when X = 8 (i.e. 2010/11), Yc = 12694.60 + 662.29 × 8 = 17992.92.

Appendix - 9.3

Calculation of Regression Equation of Cash and Bank Balance on Year

Year (x)	Cash and Bank Balance (Y)	X^2	Y^2	XY
1	10780.670	1	116222845.6	10780.67
2	9574.500	4	91671050.25	19149
3	12021.624	9	144519443.6	36064.87
4	14746.337	16	217454454.9	58985.35
5	16134.516	25	260322626.6	80672.58
$\phi x = 15$|	$\phi y = 63257.647$|	$\phi x^2 = 55$|	$\phi Y^2 = 830190401$|	$\phi XY = 205652.5$|

We have,

$$\overline{X} = \frac{\phi X}{N} = \frac{15}{5} = 3$$

$$\overline{Y} = \frac{\phi Y}{N} = \frac{63257.5}{5} = 12651.5294$$

$$\exists x = \sqrt{\frac{\phi X^2}{n} - \frac{\phi x}{n}^2} = \sqrt{\frac{\Xi\Xi}{5} - \frac{K\Xi}{5}^2} = 1.4142|$$

$$\exists y = \sqrt{\frac{\phi Y^2}{n} - \frac{\phi Y}{n}^2} = \sqrt{\frac{PMK\Sigma INK}{5} - \frac{63257.647}{5}^2} = 2444.77|$$

$$r = \frac{n\phi xy - (\phi x)(\phi y)}{\sqrt{n\phi x^2 - (\phi x)^2}\sqrt{n\phi y^2 - (\phi y)^2}} = \frac{5 \times 205652.5 - (15 \times 63257.647)}{\sqrt{5 \times 55 - (15)^2}\sqrt{5 \times 830190401 - (63257.647)^2}}$$

$$= 0.9186$$

Now, the regression line of y on x is given by,

$$y - \overline{y} = r.\frac{\exists y}{\exists x}(x - \overline{x})$$

or, $Y - 12651.5294 = 0.9186 \times \frac{2444.77}{1.4142}(x - 3)$

or, $Y = 7887.4952 + 1588.01 X$

When, X = 6 (i.e. FY 2008/09), Yc = 7887.4952 + 1588.01 × 6 = 17415.5552

When X = 7 (i.e. FY 2009/10), Yc = 7887.4952 + 1588.01 × 7 = 19003.5652

And when X = 8 (i.e. 2010/11), Yc = 7887.4952 + 1588.01 × 8 = 20591.5752

Appendix - 9.4

Calculation of Regression Equation of Receivables on Year

Year (x)	Cash and Bank Balance (Y)	X^2	Y^2	XY
1	2716.49	1	7379317.92	2716.49
2	2868.03	4	8225596.081	5736.06
3	3139.12	9	9854074.374	9417.36
4	3490.84	16	12185963.91	13963.36
5	3555.53	25	12641793.58	17777.65
$\phi x = 15|$	$\phi y = 1577.53|$	$\phi x^2 = 55|$	$\phi Y^2 = 50286745.9|$	$\phi XY = 187182.4|$

We have,

$$\overline{X} = \frac{\phi X}{N} = \frac{15}{5} = 3$$

$$\overline{Y} = \frac{\phi Y}{N} = \frac{15770.01}{5} = 3154$$

$$\exists x = \sqrt{\frac{\phi X^2}{n} - \frac{\phi x}{n}^2} = \sqrt{\frac{\Xi\Xi}{5} - \frac{K\Xi}{5}^2} = 1.4142|$$

$$\exists y = \sqrt{\frac{\phi Y^2}{n} - \frac{\phi Y}{n}^2} = \sqrt{\frac{\Xi\wedge PC\Pi\Xi B\Xi}{5} - \frac{15770.01}{5}^2} = 331.1090|$$

$$r = \frac{n\phi xy - (\phi x)(\phi y)}{\sqrt{n\phi x^2 - (\phi x)^2}\sqrt{n\phi y^2 - (\phi y)^2}} = \frac{5\times187182.4 - (15 \times 15770.01)}{\sqrt{5\times55 - (15)^2}\sqrt{5\times50286745.9 - (15770.01)^2}}$$

$$= 0.5976$$

Now, the regression line of y on x is given by,

$$y - \overline{y} = r.\frac{\exists y}{\exists x}(x - \overline{x})$$

or, $Y - 3154 = 0.5976 \times \dfrac{331.1090}{1.4142}$ (x- 3)

or, $Y = 2734.25 + 139.92 X$

When, X = 6 (i.e. FY 2008/09), Yc = 2734.25 + 139.92 × 6 = 3573.77

When X = 7 (i.e. FY 2009/10), Yc = 2734.25 + 139.92 × 7 = 3713.69

And when X = 8 (i.e. 2010/11), Yc = 2734.25 + 139.92 × 8 = 3853.61

Appendix - 9.5

Calculation of Regression Equation of Inventory on Year

Year (x)	Inventory (Y)	X²	Y²	XY
1	255.250	1	65152.5625	255.250
2	309.857	4	96011.36	619.714
3	329.315	9	108448.37	987.945
4	327.684	16	107376.80	1310.736
5	416.424	25	173408.95	2082.12
$\phi x = 15$|	$\phi y = 1638.51$|	$\phi x^2 = 55$|	$\phi Y^2 = 550384.46$|	$\phi XY = 5255.7$|

We have,

$$\overline{X} = \frac{\phi X}{N} = \frac{15}{5} = 3$$

$$\overline{Y} = \frac{\phi Y}{N} = \frac{1638.51}{5} = 327.70$$

$$\exists x = \sqrt{\frac{\phi X^2}{n} - \frac{\phi x}{n}^2} = \sqrt{\frac{\Xi\Xi}{5} - \frac{K\Xi}{5}^2} = 1.4142|$$

$$\exists y = \sqrt{\frac{\phi Y^2}{n} - \frac{\phi Y}{n}^2} = \sqrt{\frac{\Xi\Xi\text{IMPNHO}}{5} - \frac{1637.51}{5}^2} = 51.8614|$$

$$r = \frac{n\phi xy - (\phi x)(\phi y)}{\sqrt{n\phi x^2 - (\phi x)^2}\sqrt{n\phi y^2 - (\phi y)^2}} = \frac{5 \times 5255.7 - (15 \times 1638.51)}{\sqrt{5 \times 55 - (15)^2}\sqrt{5 \times 550384.46 - (1638.51)^2}}$$

$$= 0.9278$$

Now, the regression line of y on x is given by,

$$y - \overline{y} = r.\frac{\exists y}{\exists x}(x - \overline{x})$$

or, $Y - 327.70 = 0.9278 \times \dfrac{51.8614}{1.4142}$ (x- 3)

or, $Y = 225.622 + 34.026 X$

When, X = 6 (i.e. FY 2008/09), Yc = 225.622 + 34.062 × 6 = 429.994

When X = 7 (i.e. FY 2009/10), Yc = 225.622 + 34.062 × 7 = 464.056

And when X = 8 (i.e. 2010/11), Yc = 225.622 + 34.062 × 8 = 498.118.

Appendix - 9.6

Calculation of Regression Equitation of Total Assets on Year

Year (x)	Total Assets (Y)	X^2	Y^2	XY
1	33221.352	1	1103658229	33221.352
2	35572.772	4	1265422108	71145.544
3	39351.406	9	1548533154	118054.218
4	43562.629	16	1897702645	174250.516
5	49371.221	25	2437517463	246856.105
$\phi x = 15|$	$\phi y = 201079.38|$	$\phi x^2 = 55|$	$\phi Y^2 = 8252833627|$	$\phi XY = 643527.74|$

We have,

$$\overline{X} = \frac{\phi X}{N} = \frac{15}{5} = 3$$

$$\overline{Y} = \frac{\phi Y}{N} = \frac{201079.38}{5} = 40215.876$$

$$\exists x = \sqrt{\frac{\phi X^2}{n} - \frac{\phi x}{n}^2} = \sqrt{\frac{\Xi\Xi}{5} - \frac{K\Xi}{5}^2} = 1.4142|$$

$$\exists y = \sqrt{\frac{\phi Y^2}{n} - \frac{\phi Y}{n}^2} = \sqrt{\frac{P\Lambda\Xi\Lambda PM M O\Lambda\Pi}{5} - \frac{201079.38}{5}^2} = 5766.2850|$$

$$r = \frac{n\phi xy - (\phi x)(\phi y)}{\sqrt{n\phi x^2 - (\phi x)^2}\sqrt{n\phi y^2 - (\phi y)^2}} = \frac{5 \times 643527.74 - (15 \times 201079.38)}{\sqrt{5 \times 55 - (15)^2}\sqrt{5 \times 8252833627 - (201079.38)^2}}$$

$$= 0.9881$$

Now, the regression line of y on x is given by,

$$y - \overline{y} = r.\frac{\exists y}{\exists x}(x - \overline{x})$$

or, $Y - 40215.876 = 0.987 \times \dfrac{5766.2850}{1.4142}$ (x- 3)

or, Y = 39008.86 + 402.34 X

When, X = 6 (i.e. FY 2008/09), Yc = 39008.86 + 402.34 × 6 = 41422.9

When X = 7 (i.e. FY 2009/10), Yc = 39008.86 + 402.34 × 7 = 41825.24

And when X = 8 (i.e. 2010/11), Yc = 39008.86 + 402.34 × 8 = 42227.58.

Calculation of Regression Equation of Long term Liabilities on Year

Year (x)	Long Term Liabilities (Y)	X^2	Y^2	XY
1	11249	1	126540001	11249
2	24239	4	587529121	48478
3	0	9	0	0
4	1191680	16	142010122240	4766720
5	0	25	0	0
$\phi X = 15|$	$\phi Y = 1227168|$	$\phi x^2 = 55|$	$\phi Y^2 = 142724191362|$	$\phi XY = 4826447|$

We have,

$$\overline{X} = \frac{\phi X}{N} = \frac{15}{5} = 3$$

$$\overline{Y} = \frac{\phi Y}{N} = 245433.6$$

$$\exists x = \sqrt{\frac{\phi X^2}{n} - \frac{\phi x}{n}^2} = \sqrt{\frac{\Xi\Xi}{5} - \frac{K\Xi}{5}^2} = 1.4142|$$

$$\exists y = \sqrt{\frac{\phi Y^2}{n} - \frac{\phi Y}{n}^2} = \sqrt{\frac{\Lambda\Pi P\Lambda KNOM\Pi}{5} - \frac{KKKI M\Xi\Pi IM}{5}_2} = 1567.224|$$

$$r = \frac{n\phi xy - (\phi x)(\phi y)}{\sqrt{n\phi x^2 - (\phi x)^2}\sqrt{n\phi y^2 - (\phi y)^2}} = \frac{5\times343972.2 - 15 \times 111039.03}{\sqrt{5\times55 - (15)^2}\sqrt{5\times2478214637 - (111039.03)^2}}$$

$$= 0.9794$$

Now, the regression line of Y on X is given by,

$$y - \overline{y} = r.\frac{\exists y}{\exists x}(x - \overline{x})$$

or, $Y - 22207.81 = 0.9794 \times \dfrac{1567.2241}{1.4142} (X - 3)$

or, $Y = 21122.4336 + 1085.3764X$

When, x = 6 (ie FY 2008/09), $Yc = 211122.4336 + 1085.3764 \times 6$

$= 27634.692$ and so on.

Appendix - 9.8

Calculation of Regression Equation of Net Sales on Year

Year (x)	Net Sales (Y)	X^2	Y^2	XY
1	8312.24	1	69093334	8312.24
2	8584.14	4	73687460	17168.28
3	10413.65	9	108444106	31240.95
4	13967.318	16	195085972	55869.27
5	16788.359	25	281848998	83941.80
$\phi X = 15$|	$\phi Y = 58065707$|	$\phi x^2 = 55$|	$\phi Y^2 = 728159870$|	$\phi XY = 196532.54$|

We have,

$$\overline{X} = \frac{\phi X}{N} = \frac{15}{5} = 3$$

$$\overline{Y} = \frac{\phi Y}{N} = 11613.14$$

$$\exists x = \sqrt{\frac{\phi X^2}{n} - \frac{\phi x}{n}^2} = \sqrt{\frac{\Xi\Xi}{5} - \frac{K\Xi}{5}^2} = 1.4142|$$

$$\exists y = \sqrt{\frac{\phi Y^2}{n} - \frac{\phi Y}{n}^2} = 3281.31 = |$$

$$r = \frac{n\phi xy - (\phi x)(\phi y)}{\sqrt{n\phi x^2 - (\phi x)^2}\sqrt{n\phi y^2 - (\phi y)^2}} = 0.9626$$

Now, the regression line of Y on X is given by,

$$y - \overline{y} = r.\frac{\exists y}{\exists x}(x - \overline{x})$$

or, $Y = 4912.37 + 2233.59X$

When, x = 6 (ie FY 2008/09), Yc = 4912.37 + 2233.59 × 6

= 18313.91 and so on.