PROFITABILITY OF PUBLIC ENTERPRISES

WITH SPECIAL REFERENCE TO NEPAL ELECTRICITY AUTHORITY (NEA), NEPAL WATER SUPPLY CORPORATION (NWSC) AND NEPAL TELE COMMUNICATION (NTC)

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I, here by, would like to declare that the work of thesis entitled "Profitability of public enterprises with special reference to NEA, NWSC, and NTC" submitted to R.R.M. Campus, Janakpur Dham, Faculty of Management, TU, is my original work done in the form of partial fulfillment of the requirement of Master in Business Studies (MBS) under the supervision of Mr. Binod Sah, Lecturer, Faculty of Management, R.R.M. Campus, Janakpur.

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ABBREVIATION

Fy	:	Fiscal Year
Pvt.	:	Private
Ltd.	:	Limited
PEs'	:	Public Enterprises
Rs	:	Rupees
i.e.	:	That is
ROA	:	Return on Assets
ROSE	:	Return on shareholders equity
UN	:	United Nation
B.S.	:	Bikram Sambat
A.D.	:	Anno Domini
HMG	:	His Majesty Government
KW	:	Kilo Watt
ARR	:	Average Rate of Return
PI	:	Profitability Index

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Introduction

1.1 General Background

Profit is the primary measure of business success in any economy. If a firm can not make profit. It cannot obtain capital for a long period and if it cannot obtain capital it cannot secure and retain other resources such as materials, machines manpower etc. In other words, the more profitable enterprises are more attractive to the holders of available capital. Since, these enterprises can attract capital they have the money need to buy other resources scarce they are allotted to the profit makers in roughly descending order of their profit potential, our economy performs this allocation function through a relatively free an open market system.[1]

Usually, profits do not just happen. Profits are managed. Before we can make intelligent approach to the managerial process of profit planning. It is important that we understand the managerial process of profit planning. It is important that we understand the management concept of profit. There are after all several different interpretations of the term "profit". An economist will say that profit is the reward for entrepreneurship - for risk taking. A labor leader might say that it is a measure of how efficiently labor has produced and that it provides a base for negotiating a wage increase. An inventor will view it as gauge of return on his / her money. An internal revenue agent might regard it as the base for determining income taxes. The accountant will define it simply as the excess of firm's revenue over the expenses of producing revenue in a given fiscal period.[2]

Primary purpose of planning in business then is to increase the chances of making profit. The budget is primary operating planning document for coming performance. Budgets are called profit plan. Managers and subordinates are responsible for the operation within the profit plan. Manager and subordinates have the authority in varying degrees to make decisions which will affect the profit of the firm. They have

1 Glay, Jack and Johnston, Kenneth "Accounting and Management Action". P-3

2 Lynch. R.M and Williunmson. R.W. "Accounting for Management" 3rd Edition P-99

commensurate responsibility for making decisions, resources of which will nearly accomplish for better of budgetary target.

Business managers are continually involved in organizing, planning and controlling the operations of both large and small business organization. Profit planning is one of the important management tools used to plan and control business operations. Budgets or profit plans are financial plans prepared as a guide to control future operations. Part of the financial planning includes in forecasting of future business condition and activities. A financial plan must, then, be designed to serve as a guide roadmap for the activities during the budget period. Best results are obtained when planning period is same as the company's fiscal year. Profit can be viewed in the same context business budgeting, managerial budgeting. Profit is defined as systematic and formalized approach for performing significant phases of management. Specially, it includes:

The development and application of the broad and long range objectives for the enterprises.

The specification of enterprises goals.

1 A long range profit developed in broad terms.

2 A short range profit detailed by assigned responsibilities. [3]

Profit is the first essence of management and others functions are performed within the framework of profitability's deciding in advanced what is to be done in future starts from forecasting and predetermination of future events. Profitability is the process of developing enterprises objectives and selecting future courses of action to accomplish them. It includes:

1 Establishing premier about the environment, in which they are to be accomplished.

2 Developing premier about the environment, in which they are to be accomplished.

3 Selecting a course of action for accomplishing the objectives.

4 Initialing activities necessary to translate plans into action and to correct current deficiencies.

3 Welsh, Glenn A. Hilton, Ronald W & Gorden, Poul N "Budgeting, Profit Planning and Control" 5th Edition P-1

Controlling is the process of assuming efficient performance to attain the enterprise objectives. It includes:

1 Establishing goals and standards.

2 Comparing measured performance against the established goals and standards.

3 Reinforcing successes and correcting short coming.[4]

A budget is a numerical plan of action which, generally, covers the area of revenues and expenditures. The main aim of budgeting is to present the future forecasting, numerically expressed in appropriate format so as to proper control in profit and costs centre could be established.

As the size of organization grows, the importance of profit planning becomes inevitable profit planning is primarily a management tool a means to accomplish an administrative end for a means to get something done over a period of time. A profit plan must be prepared in advance of commencing operations.

1.2 Public Enterprises (PEs)

Public enterprises are autonomous bodies which are owned and managed by the government and which provide goods or service for a price.

The ownership with the Government should be 51% or more or to make an entity PEs. Public enterprises have assumed significant role in almost all countries of the world, yet there has so for been no standard definition of its own. The term public enterprises had been defined differently by different agencies and Government to suit their own respective.

UN has defined PEs' as those organizations namely governmental enterprises and public corporation, which are entirely or mainly owned and / or controlled by the public authority consisting of establishment which by virtue of their kind of activities, technology and mode of operations is classified as industries.

Public enterprises play a major role in achieving the twin objectives of social and economic development of a country and it plays vital role for the future expectation of the national policies.

4. Bedeian, Arthus G" management New Yourk P-7

As a review of public enterprises in Nepal seems to suggest that the desire for more rapid development, the desire for self sufficiency, the heavy aid dependency syndrome of the Government and the theoretical virtuosity of PEs as an instrument of implementing national plans have served as powerful objectives for their establishment.

The significant penetration of public enterprises in manufacturing and trade sector occurred in the third and fourth plans respectively. The inflow of bilateral aid for turn-key projects in manufacturing sector by friendly countries like China an Soviet Russia may have been the driving force behind the establishment of public enterprises Chinese aid motivated the Government of Nepal to undertake such industries as brick and tile, shoes and leather, cotton textile and sugar etc. Similarly the offer of soviet aid explains GN resolution to undertake the establishment of sugar, agricultural tools and cigarette factory etc.

1.3 Evolution of Public Enterprises (PEs) in Nepal

After the introduction of democracy in 1950 A.D., a business environment also emerged in Nepal. Apart form the regular activities; HMG/Nepal has initiated a system of establishment and functioning of public Enterprises and made huge investment with objectives of speeding economic development.

The development of PEs in Nepal in different periodic plan is as follows:

1.3.1 First Five Year Plan (1956-61)

For the development of industrialization in Nepal has adopted the first five year plan. In this period the government adopted the principle of mixed economy. Utilities industries were preserved for the public sector investment that promised greater public welfare and which failed to attract private investment whereas industrial sector was left upon to private sector with government support services if needed.

During the first plan seven PEs were establishment in conformity with nation's objectives. The PEs established in this period was:

1 Asahaya Kalyan Kendra

2 Royal Nepal Airlines Corporation

3 Nepal Industrial Development Corporation

4 Balaju Yantra Shala Ltd.

5 Raghupati Jute Mills Ltd.

6 Timber Corporation of Nepal

1.3.2 Interim Period (1961-62)

This period was marked by the establishment of following PEs:

1 Ratna Recording Sansthan

2 National Trading Limited

3 National Construction company of Nepal

This period marked by the declaration of the HMG/ Nepal industries policy as laid down in the industrial Enterprises act of May 28, 1961, which was adopted the PEs on the same line and basis as per the first plan.

1.3.3 Second Three Year (1962-65)

The plan was started to encourage domestic private capital and foreign capital towards industrial development. The policy is incorporated in the industrial enterprise Act of 28, 1961 which was amended in 1961, 1963, 1966 and 1969 and replaced by Industrial Enterprises Act 1974.

During second three year plan eleventh PEs established, some of them were:

1 Employee Provident Fund

2 Gorkhaptra Sansthan

3 Nepal Electricity Corporation

4 Nepalese Carpet Private Ltd.

5 Rastriya Banijya Bank

6 Birjung Sugar Factory

7 Janakpur Cigarette Factory

The second three year plan stressed for the first time for balance religion development.

1.3.4 Third Five Year Plan (1965-70)

This plan period emphasized the establishment of cement, lime and fertilizer industrial expenditure divided sector. During the plan period 12th PEs were established they were:

1 Bansbari Leather and Shoe factory

2 Cottage and Handicraft Emporium

3 Himal Cement Factory

4 Nepal Tea Development Corporation

5 Rastriya Mina Sasthan

6 Daily Development Corporation

7 Agriculture Development Bank

8 Agriculture Development Bank

9 Agriculture Inputs Corporation

10 Chandeswori Textile Industries

11 Agriculture Tool Factory

12 Bricks and Tile Factory

13 Nepal Telecommunication Corporation

14 Guthi Sansthan

1.3.5 Forth Five Year Plan (1970-75)

This plan adopted the Industrial Policy of 1974 and provisioned for establishment of four industrial estates and four industrial ventures in the public sector projecting a substantial expansion in the private sector.

Enterprises establishment under this plan period were:

1 Balaju Textile Industry Ltd.
2 Nepal Oil Corporation
3 Tobacco Development Corporation
4 Jut Development Corporation
5 Nepal Transit and Warehousing Ltd.
6 Culture Corporation
7 Royal Nepal Film Corporation
8 Royal Nepal Film Corporation
9 Royal Drugs Limited
10 Drinking Water and Sewerage Board
11 Agro Lime Industries Ltd.
12 Nepal Food Corporation
13 Hetauda Textile Industries Ltd.

Rice and Paddy export companies were also established during this plan period, which were as under:

1 Janakpur Rice and Paddy Export Company Ltd.
2 Lumbani Rice and Paddy Export Company Ltd.
3 Sagarmatha Rice and Paddy Export Company Ltd.
4 Koshi Rice and Paddy Export Company Ltd.
5 Far-Western Rice and Paddy Export Company Ltd.

Even though the Industrial Act 1961 has classified industries into five categories. The 1974 act classified all industries into four categories on the basis of the investment as:

1 Cottage industries up to Rs.200,000

2 Small industries Rs.200,000 to Rs.1 Million

3 Medium industries Rs.1 Million to Rs.5 Million

4 Large Scale industries over Rs.5 Million

1.3.6 Fifth Five Year Plan (1975-80)

During the fifth year plan the following PEs were established:

1 Hetauda Cement Industries Ltd.

2 Seurity Marketing Center

3 Dharan Industrial Estate

4 Butwal Industrial Estate

5 Nepalgung Industrial Estate

6 Pokhara Industrial Estate

7 Janak Education and Material Center

8 Agriculture Project Service Center

9 Hetauda Leather Company

1.3.7 Sixth Five Year Plan (1980-85)

The plan come out for the first time in Nepal with the definite policy of PEs considering the poor performance of PEs. The plan promised to provide greater autonomy and less interference on the PEs internal operations.

The policy inputs of plan contains the consolidation of similar PEs, liquidation, fixation of minimum rate of return, allocation of financial subsidies, on the basis of loss incurred because of the government decision of making mere public participation etc. During the plan period few PEs were established and few PEs were consolidated, liquidated and sold to private sector. The enterprises established during the plan period were.

1 Herbs Production and Processing Company
2 Lumbani Sugar Factory
3 Rosin and turpentine Co. Ltd.
4 Nepal Orient and Magnetize
5 Nepal Metal Company
6 Butwal Spinning Factory
7 Nepal Arab Bank Ltd.

During the plan the period Hetuada Leather Factory was disposed to private sector, eight paddy and rice exporting co. ltd. were liquidated in 1982. Other some PEs were consolidated as:

1 Eastern Electricity Corporation with Nepal Electricity Corporation.
2 Ratna Recoding Corporation with Cultural Corporation
3 Ashya Kalyan Kendra with Balaju Textile Industry
4 Fuel Corporation with Timber Corporation of Nepal

1.3.8 Seventh Five Year Plan (1985-90)

The objectives of Seventh Five Year plan were as follows:

1 So long as the private sector is not prepared to produce imports substituting goods and under trace the expansion of the infrastructure government corporation will be developed as a major medium for producing such goods and services to the people.

2 The government corporation will supply the essential goods and basic services to the people.

3 Steps to mobilize sources from the private sector will be unverified and the participation of the sector, through generated will be encouraged in the government corporations.

The policies of Seventh plan regarding public enterprise were as follows:

1 Similar Corporation were amalgamated more efficiently.

2 Liquidation or privatization of Sick Corporation

3 Financially enviable corporation were amalgamated, liquidated transferred to private sectors.

4 Keeping view of general economic condition the autonomy should be provided regarding salary, benefits facilitates price fixing appointment, Promotion of employee etc. to the PEs.

5 Accountability and responsibility of main corporation were defined well and rewarded and punishment system will be used very efficiently.

6 Quality control and interest of national consumer were safeguarded.

7 Ministry of Commerce and Ministry of supply will contact supply plan efficiently on an organized manager.

8 Those industries, which have goal of self-stuffiness, will be given priority.

9 Corporations are compelled to submit balance sheet and profit and loss A/c within following six months.

10 If loss due to government decisions that would be compensated to same extent.

11 A separate Government body would be established to control the activities of PEs.

12 Corporation would be classified on the basis of their objectives.

13 Participation and ownership of private sector would be encouraged.

14 Award system was be effectively utilized. During Seventh Plan following PEs were established:

   - Nepal Television
   - Nepal Coal Limited
   - Udayapur Cement Factory

1.3.9 Eighth Five Year Plan (1992-97)

The main objectives of the eighth five year plan were:

1 Poverty alleviation

2 Sustainable economic growth

3 Rural Development and regional Development and

4 Privatization of PEs

The main working industrial policy and act would be reviewed the above objectives were as follows:

1 The existing industrial policy and act would be reviewed thoroughly and revised as necessary

2 In some critical area in sectors where with foreign excahange liability of HMG/ Nepal is high; licensing requirement to start industries will be completely waived, registration procedures will be made simpler and transparent.

3 A one window policy for providing all government facilities and services under one institution will be implemented for both domestic and foreign investors.

4 Foreign investment as well as joint collaboration will be encouraged in both import and export oriented industries.

5 Raw material based industries will be emphasized.

6 Cottage industries will be encourage both from the point of view of employment and income generation

7 Existing enterprise will be strengthened and will make more productive.

8 PEs not providing goods will be privatized

9 Necessary policy and guidelines will be formulated for privatization

10 Necessary actions will be initiated to strengthen and enhance and meet domestic consumption needs

11 Necessary policy measure will be implemented to strengthen and encourage the alignment of non formal sector into the formal sector.

12 Necessary actions will be taken to boost export oriented ventures.

13 Overseas promotion will be given priority.

During this plan privatization of public enterprises was emphasized similarly, Security Exchange Centre and Birendra International Conference Hall were Established.

1.3.10 Ninth Five Year Plan (1997-2002)

Though the main objective of privatization was to enhance productive uses of resources, in the light of economic, social and political realities of the country there can be various aim of privatization. In our context, though privatization programme encompassed all political, economic, financial, social aspect and geared to achieve a particular objectives, yet its direct and indirect effect have tended to disperse across the sector. Hence, the programmers of privatization have been presented to attain multiple objectives.

In line with this, the Ninth Plan had set the following objectives of privatization.

1 To increase the effectiveness and productivity of government resources through efficient privatization

2 To make the government gradually assume the role of facilitator by encouraging and motivating the private sector for participation

in economic development

3 To help maintain economics stability by enforcing financial discipline and reveling the government progressively firm the burden of financing corporation deficits.

4 To promote the participation of common people in the economic development by means privatization.

1.3.11 Review of the Ninth Plan

The objectives of the ninth plan were to increase business capacity of the public enterprises, to bring about reforms in the quality of goods and services produced to solicit appropriate etc. also the plan had the objectives to make the capacity and the shape of the enterprises market based and market friendly. The goal of the plan was to gradually privatize the state owned enterprises by entrusting the private sector to assume the responsibility of trade and industry development. In reality, the ninth plan could private only one public enterprise. At the last year of the plan period some enterprises were liquidation, some were brought reforms in organizational structure thereby reducing the administrative overheads, making them capable to run at commercial basis. During the plan period, the examples of unsuccessful privatization were noticed due to returning of two enterprises (that were handed over on the basis of management contract and lease) back to government. The private sector was unable to operate the private enterprises due to the need of legal action that was deeded necessary to resolve the issue wihich emanated because of lack of compliance of conditionality agreed upon between the buyer and the seller.

1.3.12 Tenth Five Year Plan (2002-07)

To fulfill the objective of the ninth plan, the plan came into existence since 2002. The main objective, quantitative targets, strategy and policy set by tenth plan in regards of public enterprises are as follows:

a) Objectives

The objective of the tenth plan is make the economy vibrant, dynamic and competitive by promoting the private sector by creating conducive environment and privatizing the public enterprise which need not be retained in state ownership management.

b) Quantitative Targets

At least 15 enterprises will be privatized and handed over to the private sector within the plan period through privatization of a minimum of 3 enterprises period annum inclusive of those which could not be privatized during the ninth plan.

c) Strategy

1. The nature of activity, scope, status of financial transaction, need for additional investment, etc. would be the basis for the privatization of the PEs. In the process extensive participation will be encouraged to make privatization competitive and transparent.

2. Even those enterprises, which have to be maintained under the public sector, will be operated on the commercial principles.

d) Policy

Making the process of privatization competitive and transparent, (related to strategy 1)

1 Priority will be accorded to private the public enterprises on competitive area that could attract the attention of the private sector.

2 Enterprises that are deemed unnecessary to be operated under public sector and even fail to attract the private sector will be liquidated.

3 General public will be informed through regular monitoring of the works in progress and also about the compliance/ non compliance of the conditions of the agreements made while affecting privatization deal of a given public enterprises. Also they will be informed

whether or not the necessary goods and services have been made available appropriately after the privatization of those enterprises.

4 Improvements will be made in the process of privatization by resorting to promoting wider participation of the public as much as possible.

The public enterprises that need to be retained within the ownership and ad management of the government will be run on commercial principles (related to strategy 2)

1 Through condition in the development of competitive environment, which has been initiated in areas like drinking water, electricity, and telecommunication, the necessary regulatory machinery will be developed for the public enterprises in these sector to promote investment from private sectors.

2 Foreign investment will be promoted in those feasible enterprises which come under the area of national priority that can bring in foreign capital as well as modern technology,

3 Public enterprises will be encouraged to operate commercially by providing autonomy to them.

The main action of the Tenth Plan towards PEs is to privatize the fifteen PEs and to develop. The action plan for the efficiency of PEs. Similar reconstruction, amalgamation and liquidation action will be brought as per need of different PEs.

1.4 Public Enterprises and Privatization

Over several years in the past, the tendency remained to establish and operate public enterprises with substantial investment in order to accelerate the economic growth are. Many public enterprises encompassing several economic, services and other sectors especially those which got less attraction from the private sector were set up with government investment and/ or donor supports. However, due to lack of corporation culture and weak operational efficiency, and outward interferences in decision making processes, the performances of the public enterprises remained poor. Consequently, the rates of return on investment remained very low. The financial liabilities the government has to bear in the enterprises went on increase year by year. The economic and financial condition of the enterprises continued to deteriorate. As a result, the public enterprises instead of accomplishing the set objectives turned out to be burdensome to the national economy. Because of those reasons the Nepal government adopted the aim of privatizing PEs. The objectives of privatization are mainly concerned with the development of industry and business sector, increment of productivity and efficiency, the mobilization of saving and increases in public participation in the commercial field

Per capital electricity consumption will be raised to 100 kilowatt/ hour.

As of July 2004 Nepal had 36 public enterprises, only ten public enterprises constitute under industrial sector. By 2004, 24 public enterprises were privatized. There of them have been privatized by selling the assets and business such as Bhrikuti Paper Mills (BPM), Harisidhi Brick and Tile Factory and Bansbari Leather and Shoe Factory. 10 of them were privatized by selling the shares, one privatized by liquidation and one by selling the assets and leasing the building and land.

Recognizing privatization of PEs as an integral part of its economic liberalization policy, beginning from FY1992/ 1993. The Government of Nepal privatized 24 public enterprises in FY 2003/ 2004. The list of privatized public enterprises is given below.

Table 1.1

List of Privatized Public Enterprises

S.No.	PEs	Year Privatized
1.	Bhrikuti Paper Mills	1992
2.	Harishiddhi Brick and Tile Factory	1992
3.	Bansbari Leather and Shoe Factory	1992

4.	Nepal Film Development Company	1993
5.	Balaju Textile Industry	1993
6.	Raw Hide collection and Processing Co. Ltd.	1993
S.No.	**PEs**	**Year Privatized**
7.	Nepal Jute Trade and Development Co.	1993
8.	Nepal Bitumen and Barel Industry Co. Ltd.	1994
9.	Nepal Lube Oil Ltd.	1994
10.	Tobacco Development Company	1994
11.	Nepal Bank Ltd.	1994
12.	Nepal Foundry Industry	1996
13.	Raghupati Jute Mills Ltd.	1996
14.	Nepal Tea Development Corporation	2000
15.	Agriculture Projects Service Centre Ltd.	2001
16.	Biratnagar Jute Mills Co. Ltd.	2002
17.	Cottage and Handicraft Emporium Ltd.	2002
18.	Nepal Coal Ltd.	2002
19.	Hetauda Textile Industry Ltd.	2002
20.	Nepal Transport Corporation	2002
21.	Butwal Power Company	2003
22.	Birgung Sugar Factory	2003
23.	Agriculture Tools Factory Ltd.	2003
24.	Bhaktapur Brick Factory	2004

Source: Ministry of Finance (2005) Economic Survey (2004/2005)

1.5 Public Enterprises in Nepal

Public enterprises in Nepal are considered as the greatest important instruments for social and economic development of the country. They enjoy strategic and crucial position in our mixed economy. They have been established in many sectors for overall development of the country with different goals and objectives.

Since 1956, Nepal has been making a growth and development of public enterprises for the purpose of creating necessary infrastructure and run some of the large manufacturing industries for the people. Thus, it is realized that the creation of number of public enterprises plays as an instrumental for the infrastructural development of a country. We have observed some points which are rationale for the establishment of public enterprises.

1 Acceleration of the rate of economy.
2 Infrastructural development.
3 Employment opportunities.
4 Reducing economic inequalities.
5 Increasing foreign exchange.
6 Provision of essential public goods easily economically and regularly.

The establishment of Nepal Bank Ltd. Initiated the establishment of PE in Nepal. To Provide commercial banking service, it was established at 1994 B.S. The Government owned 51% share then it was automatically converted in the PEs. After second world war, some other enterprises were established. However, they could not make only substantial progress. Nepal started its planned economic development in 1956 with launching of first five years plan. Since then, the number of public enterprises has increased and to keep in the various field of national economy. There were 64 PEs before the privatization programme of Nepal Government and now there are 44 public enterprises which are undergoing in the production or supply of sugar, cement, agricultural tools, financial activities, service activity, public utilities etc. Among 44 existing PEs, there are three public utilities PEs namely.

(1) Nepal Electricity Authority.

(2) Nepal Water Supply Corporation

(3) Nepal Telecom.

1.6 Role of PEs In Nepalese Economy

There is an important role of PEs in Nepal like other developing countries. In Nepal, most of the public enterprises were established with the help of foreign countries. There is no long history of PEs in Nepal. The first public enterprise is Biratnagar Jute Mill. It was established in 1992 B.S. Nepal Bank Ltd. was established in 1994 B.S. It was the first commercial Bank.

Nepal started its planned economic development in 2013 B.S. with the launching of first five year plan. Since then, the number of public enterprises has been increasing substantially in the field of national economy.

The economy of Nepal is basically mixed economy where public and private sectors freely operate in the business environment except in the case of defense which is not open to private sector There is co-existence of both the public and private sectors in Nepal for the overall development of the country.

Though private sector did not show any interest may due to lack of capital, entrepreneurs who take interest in business, possible they did not have adequate capital. Again those with financial capability lacked interest in bearing risks. This general lack in one or other of the features need to start and enterprise among the private investors, made it necessary to initiate any manufacturing concern in public sectors.

PEs play a major role in achieving the twin objectives of social and economic development envisaged in the national policy. The role of PEs is stimulating and augmenting. The pace of economic growth in Nepal can hardly be under estimated.

Industrial development of Nepal is still in crawling stage. So, in Nepal

PEs are not matter of choice, rather, they are matter of necessity. PEs create industrial base in the country, to provide better goods/ services to the people, to generate employment opportunities, to mobilize the domestic resources into best productive uses and to fulfill the plans and objectives of the Government. PEs have helped to increase the standard of living, regional balance of developing and they have contributed through import substitution, export promotion and strengthen the revenue generation of Nepal Government and save foreign currency by reducing import as well as to provide the consumable goods/ services at a fair price.

1.7 Profitability in PEs

Profit can be viewed from several angles. The most acceptable criterion is to look at the percentage of profit before tax to capital employed (net fixed assets plus working capital) which is a measure of return on investment.

Mathur B.P. says "it is a well accepted principle that public enterprises should be run and business principles generate commercial profit which is an accepted accounting practice where by performance results are gauged in terms of net provision of depreciation."

Profit has a tremendous impact of the morale of the commercial PEs. Therefore, profit is an all embracing index should be accepted by PEs. In modern concept of economic liberalization, public enterprises should play their dual role i.e. for supporting Government polices and programs and another for their own survivability and growth, profit plays a vital role for accomplishing the objectives and it provides a surface for expansion.

1.8 Introduction of Electricity

The new pocket oxford dictionary define the word " Electricity as a form of energy resulting from the existence of charge particles, either statistically as a build up of charge or dynamically as a current. The supply of electric current to a building for heating, lighting etc. Energy plays a vital role in the development process of a country. We need energy for any activities right from lighting or cooking food to any high technological processes." Electricity can be developed from cool, gas, petroleum, uranium, sunlight, wind and water.

The development of electricity in Nepal has been basically based on the development of hydropower. The Government has essentially carried the development of hydropower infrastructure. Nepal Electricity Authority (NEA) is responsible for making generation, transmission and distribution of electricity in Nepal. the main objective of establishing NEA is planning, construction, operation and maintenance of electricity projects and stations to make electricity supply more reliable and effective at reasonable price to the Government and people. Water resources are one of the largest resources available in Nepal. Nepal is a second country after Brazil in water resources for producing electricity. Nepal has immensely large hydropower generation capacity through its, more than 600 river and rivulets. The total available capacity is around 83000 MW of which 42000 MW is economically feasible.

1.8.1 Profile of NEA

Prior to the year 1800, electricity was a phenomenon for study out of curiosity for a new intellectual scientists like Volta, Culomt, Galvani and others. But no applications were known. During the years 1800 to 1810, commercially illuminating gas companies were formed for selling natural gas for lighting, which were cheaper than kerosene and more efficient. Additional theories of electrical phenomena were discovered by scientists like Davy, Ampere, Ohm and others at the same time. But the major discover was due to michle Faraday, who discovered the laws electromagnetic induction in the year 1831. Since then, the construction of generators having higher capacities started coming up based on his principle of electromagnetic induction. In 1879, Thomas Alva Edition discovered the famous lamp called “Edition lamp” after his name which encouraged the commercial generation of electricity. In 1882, Edition inaugurated the first power station at pear 1 street station in New York City that started selling electricity for incandescent lighting.

In Nepal, Nepal Electricity Corporation was established on August 16, 1962 under Nepal Electricity Corporation Act 1962 to generate and distribute electricity in secured, efficient, economic increased NEA responsibility to supply power in Narayani zone. Moreover, the electricity supply system of the complete central and western development region were transferred to NEA on

12th February 1978. Bijuli Adda held the monopoly electricity management to distribute the electricity in the Kathmandu valley till 1962.

Nepal Electricity Authority (NEA) was created by Nepal Government through the NEA Act 2041. NEA is concerned with generation and supply of electricity securely efficiently, economically and in an orderly manner at the reasonable price for the overall development of the country. The Government appointed the eight members to the Board of Directors to organize the Authority.

Nepal started its power generation since the year 1911 with the construction of Pharping Hydropower Station generation about 500KW of power. An eight kilometers long 11KW transmission line was constructed to carry the power to the capital city of Kathmandu. The next power station was constructed in 1930 in Sundarijal with installation capacity of about 640KW. After 30 years, the country took next significant step that of building the 2400KW hydropower station at Panauti in the year 1960. The power was brought to Bhaktapur over distance of 20KW. Power station of Nepal are given below.

Table 1.2

Major Power Station (Existing)

S.No.	Name of Power Station	Capacity
1	Trishuli	24000KW
2	Sunkoshi	10050KW
3	Gandak	15000KW
4	Kulekhani No.1	60000KW
5	Devighat	14100KW
6	Kelekhani No.2	32000KW
7	Marsyandi	69000KW
8	Puwa Khola	6200KW
9	Modi Khola	14800KW
10	Kali Gandaki "A"	144000KW

Under Construction (NEA)

S.No.	Name of Power Station	Capacity
1	Middle Marsyandi	7000KW
2	Chamelia	30000KW
3	Kulekhaani-3	14000KW

Planned and proposed

S.No.	Name of Power Station	Capacity
1	Seti (west)	750,000KW
2	Arun (30)	402,000KW
3	Budhi Gandaki	6,000,000KW
4	Kali Gandaki (2)	6,60,000KW
5	Lower Arun	308,000KW
S.No.	Name of Power Station	Capacity
6	Upper Arun	335.000KW
7	Karnali (Chisapani)	10,800,000KW
8	Upper Karnali	300,000KW
9	Pancheswor	6,480,000KW
10	Thulo Dhunga	25,000KW
11	Tamur / Mewa	101,000KW
12	Upper Trishuli	61,000KW
13	Dudh Koshi (storages)	300,000KW
14	Budhi Ganga	20,000KW
15	Rahughat Khola	27,000KW
16	Likhu (4)	40,000KW
17	Kabeli ‘A’	30,000KW

18	Upper Merryangdi ‘A’	121,000KW
19	Upper Trishuli 3 ‘B’	44,000KW
20	Andhi Khola (storages)	180,000KW
21	Khimti (1)	27,000KW
22	Hewa Khola	10,000KW
23	Langtang Khola (storages)	218,000KW
24	Madi Ishaneswar (storages)	86,000KW
25	Upper Seti (storages)	122,000KW
26	Kankai (storages)	60,000KW
27	Upper Tama Koshi	309,000KW
28	Upper Modi ‘A’	42,000KW
	Total	**2,24,58000KW**

Small Hydro power stating (Grid connected)

S.No.	**Name of Power Station**	**Capacity**
1	Pharping	500 KW
2	Panauti	2,400 KW
3	Sundarijal	640 KW
4	Phewa	1,088 KW
5	Seti	1,500 KW
S.No.	**Name of Power Station**	**Capacity**
6	Tinau	1,024 KW
7	Baglurg	200 KW
8	Tatopani	2,000 KW
9	Jomsom	240 KW
10	Chatara	3,200 KW

	Total	**12,792 KW**

Exiting Private Sector Plants

S.No.	Name of Power Station	Capacity
1	Andhi Khola (BPC)	5100 KW
2	Jhimruk (BPC)	12,000 KW
3	Khimfi Khola (HPL)	60,000 KW
4	Bhote Koshi (BKPC)	36,000 KW
5	Sange Khola (SHP)	183 KW
6	Indrawati (NHPC)	7,500 KW
7	Chilime (CPC)	20,000 KW
8	Pilua Khola (APCO)	1,500 KW
9	Sunkoshi Small (SHP)	2,500 KW
10	Rairang (RHPD)	500 KW
	Total	**148,283 KW**

Under Construction

S.No.	Name of Power Station	Capacity
1	Khudi (KHP)	3,450 KW
2	Sisne Khola (GBHP)	750 KW
3	Baramachi (UH)	999 KW
4	Thopal Khola (THP)	1,400 KW
5	Pheme Khola (KHP)	995 KW
6	Lower Nyadi (BHP)	4,500 KW
7	Lower Indrawati (SHP)	4,500 KW
8	Salinadi (KSHPSPL)	232 KW
	Total	**16,826 KW**

Solar Power

S.No.	Name of Power Station	Capacity
1	Simikot	50 KW
2	Gam gadhi	50 KW
	Total	**100 KW**

1.8.2 The objectives of NEA I Tenth Five Year Plan

The following objectives have been set for the electricity sector to reduce poverty in a sustainable manner in the tenth plan.

1 To produce electricity at low cost harnessing the existing water resources

2 To supply reliable and high quality electricity at reasonable price through the kingdom by integrating economic activities

3 To expedite rural electrification so that it could contribute to the rural economy.

4 To develop hydroelectricity as an exportable item.

The following targets have been set for achieving the objectives of the tenth plan.

1 Hydropower projects will be constructed to supply 842 megawatt electricity out of which 70 megawatt could be exported

2 Additional 10 percent people will be supplied electricity through the national grid for which power will be supplied to 2600 village development committee through the national grid and additional 5 percent people will be supplied power through alternatives sources of energy.

3 Per capital electricity consumption will be raised to 100 kilowatt/ hour.

1.8.3 Responsibilities of NEA

NEA Act 2041 places the following responsibilities upon NEA.

1 To recommend short term and long term policies to Government of Nepal on matters relating to electricity supply.

2 To supply electricity by undertaking the generation, transmission and distribution in accordance with the prevailing law.

3 The formulate plans and programs for electricity generation transmission and distribution of other related activities, and construct operate, protect and main electricity generation station sub-station, distribution centers, transmission and distribution lines and related facilities in order to implement its plans and programs.

4 To make arrangements for electricity generation transmission and distribution for industrial and agricultural development as well as for the general public on the basis of techno-economic viability of power generation projects.

5 To fix electricity tariff and other charges relating to electricity generation transmission and distribution.

6 To make arrangements for the development of skilled human resources in the areas of electricity generation transmission and distribution through advanced level training and education programs.

7 To provide technical guidance and consultancy in matters related to electricity generation transmission and distribution.

8 To perform other functions in order to accomplish the objectives of the NEA.

1.9 Introduction to Nepal Water Supply Corporation

Nepal Water Supply Corporation is an organization which came into being in the month of February 1990. Under the NWSC Act 1990 of Nepal

Government. It operates as an important utility in providing its service in the field of drinking water and sewerage amenities in the urban centers of Nepal.

The first drinking water scheme in Nepal was called “Bir Dhara” in 1995 B.S. Pani Adda or Pani Goswara is one of the oldest offices in history of Nepal. It was based in Kathmandu later on, new schemes were also implements in stages to provide drinking water in Patan and Bhaktapur and some augmented in Kathmandu with a new system popularly known as “Tri Bhim Line”.

The department of irrigation and water supply was responsible body for water supply unit in 1972. Then the department of water supply and sewerage was created to carry out more time board programmer in the water supply and sewerage sectors through the country.

The water supply and sewerage board was constituted in July 1973 under the development board Act 1957 to implements the projects financed under the international development Association to provide improved water and sewerage facilities in Kathmandu valley and Pokhara systematically.

Water Supply and Sewerage Corporate was established in 1985 July under the corporation act 1965 with the objective of providing more autonomy in its operation and enabling it to function on a commercial basis by dissolving the “water supply and sewerage board “and since 1990 water supply and sewerage corporation was converted into “Nepal Water Supply Corporation Act 1990. Their main objectives are to provide pure drinking water and proper sewerage system to the areas specified by the Nepal Government.

The general objective of NWSC is to make certain that adequate supplies of water of good quality are maintained. It has come passing through different statutory provision and various hardships to cope with water demand for urban cities of Nepal. The fiscal year 2004/ 2005 has been a year of success and achievements. The corporation has been successful to increase the income as compared to previous year and has been able to reduce accumulated loss by 10.6 million. Many donor agencies under estimated NWSC's technical and managerial capability. Kamaladi modern branch has exhibited good performance by increasing revenue collection by 21% and reducing operation cost by 6% during one year period i.e from to 2004.

NWSC has defined mainly 3 stage of future project to meet the growing demand for water supply in Kathmandu valley.

1. Short term

A. Distribution improvement programmers:

2. Total pipeline length 15.35 Km
3. Pipe size and material 3" - 6"
3. Estimated cost Rs.37300000

B. Production improvement programme

1	Total pipeline length	24.85 KM
2	Pipe size and material	6" - 16"
3	Dugwell	17 nos
4	Tube well	5 nos
5	Reservoir capacity increase	700 M3
6	Construction of treatment plant	1

The short term programmers are expected to increase water production by 30 MLD and distribution service improvement for about 100,000 additional populations. Estimated cost for immediate production improvement programmers is Rs.373,00000. The programmers for dry season has been designed to increase water production by 16 MLD and distribution service improvement for about additional population of 120,000. Thus Kathmandu valley production and distribution improvement programmers has been designed for improvement in distribution system for additional population of 2,20,000. Total estimated cost about Rs.22,64,07,000.

2. Mid term (on going)

Project **Completion period** **Capacity**

1. Shaibhu Reservoir construction and pipe line extension. 2005 10 MLD

2. Sundarijal Rehabilitation others. 2005 10 MLD

3. Long Term

Melamchi Water Supply Project (capacity, 170 MLD completions period 2010 A.D.)

A long term water supply development project for Kathmandu valley was initiated at the late eighties under which pre-feasibility and feasibility studies identified in 1991. The Melamchi river is out side of the valley in the north lying in the neighboring Sindhupalchowk of Indrawati river and the run of river diversion scheme was proposed near Melanchi village near Helambu. The system under proposed is a 26 KM tunnel 12.16 sq.m. cross sectional area carrying 10 cum. Of raw water treatment plant is to be constructed to treat 170 MLD raw water that will be served to five municipal towns including the capital and the adjoining villages in and around the valley. Other works will include construction of 16 big service reservoirs at high points, bulk transmission, urban distribution net work system rehabilitation inside the core areas etc. The full development of the long term water supply project in three stages e.g. Melamchi river (170 MLD) Yangri river (170 MLD) $ Larke river (170 MLD) will bring in a total of 510 MLD water to the capital which will be sufficient till 2030 A.D. However, there are various challenges which are being faced by NWSC. Some of the main challenges are as under mentioned:

1. Shortage of water for rapidly growing population especially in Kathmandu valley urban areas
2. Including the capital.
3. Very old network system in place but still in use, contributing to a high leakage percentage.
4. Demanded immediately up-grading.
5. Financial resource constraints to meet ever growing demand / aspirations of the public.
6. Strengthen institutional capacity to fulfill customers expectation in the new millennium.
7. Need to compete with private utilities in the coming years.

1.10 Introduction to Nepal Telecom

Oxford dictionary defines the telecommunication as the technology concerned with long distance communication by means of cable, telephone, broad casting, satellite etc. Telecommunication is a branch of technology concerned with this. It includes all form of electrical transmission of intelligence as Telegraph, Telephone, Radio cable, Broadcasting, satellite and television listed in their chronological order of development. Telecommunication is one of the basic infrastructures of any country. It helps to make people sensitive active and skillful.

Telecommunication plays very important role to develop the country. It increases business activities by saving time expenses and extension of personal business and Governmental activities cannot function effectively and efficiently without a reliable telecommunication network, Telecom sector plays an important role in changing the economic landscape of a country, Increasing demand of the fact that telecom sector has become one of the vibrant and dominant service industries in the country. The importance of telecommunication is not only limited to rural and urban population but also it keeps a close link with developed and developing world. Therefore, most of the developed as well as developing nations are giving high priority for the development to telecommunication network.

1.10.1 Profile of NTC

Telephone was invented at first by Alexander Gramwel on 14 February 1876 A.D. He spoke by his telephone to his assistant the words “Mr Waston, Please come here, I want you ‘But telecommunication technology started after invention of “Morscord “by Samoal Mors in 1883 A.D. Before it, international Telegraph organization established after Paris Summit on 17 May 1865. Therefore, 17 the May is marked as International Telecommunication Day each year. The name of international telegraph organization was changed to international telecommunication organization at the Madrid (Spain) Summit in 1932 A.D. Telecommunication stated in Nepal 38 years after the invent of ITC (International Telecommunication). In 1970 B.S. magneto Telephone service started at the time prime minister Chandra Samser. At first trunk Telephone started after open wire line established between Kathmandu and Raxaul in 1971 B.S. After that telephone line was developed between different parts of Nepal such as Kathmandu to Dhankuta in 1993 B.S., Birgunj to Raxaul in 1995 B.S. In 2006 B.S. Mohan Aakashvani service started. Telephone service were expanded to different place as along with the various plans.

NTC was established by Gazette notification on Asadh 2032 B.S. under the communication corporation Act 2028 (1971) to provide reliable and affordable telecommunication service all over the country. Nepal Doorsanchar Company Limited (Nepal Telecom) was registered on 2060-10-11 under company Act 2053 and the notice to this effect was published in Nepal Gazette dated 26th Chaitra 2060, after dissolving then Nepal Telecommunication Corporation (NTC). However, the company name was officially effective from Baishakh 2061 (13th April 2004) and also known to general public by the name Nepal telecom has provided various communication service such as baric telephone service, mobile phone service, card phone service easy phone, service, CDMA service, email, internet lease line, intelligence network and so on. The goal of Nepal Telecom is to provide cost effective, reliable and comfortable telecommunication service to every nook and corner of the country. In different time frame, NTC operates various system and facilities in the field of communication. A glimpse of development of NTC can be listed below (in A.D.)

Table 1.3

1913	Establishment of first telephone lines in Kathmandu.
1914	Establishment of open wire trunk link from Kathmandu to Raxaul (India)
1935	Installation of 25 lines automatic exchange in palace.
1936	Installation of open wire Trunk line from Kathmandu to Dhankuta
1950	Establishment of Telegram service.
1950	Introduction to high frequency radio system (A.M.)
1950	Establishment of C.B. Telephone exchange (100 lines) in Kathmandu.
1951	Installation of open wire trunk line from Kathmandu to Palpa.
1955	Distribution of telephone lines to general public.
1957	Registered as an ITU state member on 5th Dec 1957.
1962	First Public Telephone exchange in Kathmandu (300 lines CB)
1964	Beginning of Interrational Telecommunication service using Ltf radio to India and Pakistan.
1965	First Automatic exchange in Nepal (1000 lines in Kathmandu)
1971	Introduction of Telex service.
1974	Micro wave Transmission links establishment for internal trunk.
1982	Establishment of standard “B” Type earth station for internal circuits.

1982	Introduction of SPC telex exchange

1.11 Statement of the Problem

The term profit is defined as a systematic and formalized approach for performing significant phases of the management planning functions. Planning, organizing and controlling are the first emphasis on the management function in which PPC is primarily applicable. Comprehensive profit is viewed as a process designed to help management effectively perform significant phases of the planning functions. The profitability model involves.

1 The Development and application of broad and Long range objectives of the enterprises.

2 Specification of enterprise goals.

3 Development of a strategic long range profit in broad terms.

4 Specification of a tactical short – range profit detailed by assigned responsibilities.

5 Development of follow – up procedures.

For profitability, management needs to devote itself on two major activities:

1 Manipulation of the controllable relevant rariables.

2 Taking benefits of the station of all the non-controllable variables.

Different aspects in applying profits are necessary for the study under the profitability completely overlook the three most relevant aspects of the profitability concepts are:

1 Profitability requires major planning decisions by management.

2 Profitability entails pervasive management control activities.

3 Profitability recognizes many of the critical behavioral. Implications throughout the organization viewed comprehensively.

Profitability is one of the important approaches that have been developed to facilitate effective performance of the management. Profits have wide application in individual, Business enterprises, Government units, charitable organizations and virtually all group endeavors.

They need profit to survive and compete in the market. The success or failure of an enterprise is measured on the basis of profit or productivity improvement. The Government of Nepal has invested huge amount to develop, expand and maintain the public enterprises. But majority of public enterprises are suffering from losses. The main causes of bearing loss are poor performance, inactive management system and low utilizations of resources. The Government of Nepal herself evaluated PEs as very poorly managed following are some pinpoints of poor performance of PEs.

1. Lack of clear cut and result oriented objectives.
2. Inability to make the management fully responsible to fulfill pre-determined objectives.
3. Inability to develop skilled management cadre.
4. Making the board of directors more active and responsible by checking undue interference from the Government.
5. Inability to make the top management fully responsible and countable.

Very few research have been made in the areas of profit planning and budgeting in Nepalese Context, but no research is available focusing the budget used as a tool for profit planning. A few dissertations submitted in the topic of profit planning. Most of the research find that lack of well structured planning as a system of profit planning in Nepal and further states that the corporate planning practice in Nepal suffers from a number of institutional set back emerging both from Government and planning levels which must be paralyzed to make the practice effective.

The success of any business organization is measured by capacity of surplus generation. The financial performances of the public enterprises are not able to contribute toward the generation surplus public enterprises have shown net loss from the last few years.

NEA and NWSC are failure in earning sufficient revenue. The main problems of public utility concerns are lack of measuring economic activities through various functional budgets and corrective action for improving the operating and managing system. The other problems are given below:

a. Ignorance of objectives of the Enterprises even among the managers.
b. Defective objectives setting procedures.
c. Limited participation of lower level management in developing goals and objectives of Enterprises.
d. A big gap between top and lower level employees.
e. Fail to analyze internal and external environment.
f. Excessive interference of the board in major decisions.
g. Leakages of water and electricity.
h. High gap between demand and supply on service sectors.
i. High amount of interest on loan paid to lenders.
j. Inactive management system for utilizing the available resources.

The success of an organization largely depends on suitable planning, effective strategy and measuring performance. Evaluation and corrective action are the basic way for success of business. Thus, it means that profit planning of the public sector enterprises is not better than private sector enterprises. Beside, the present study has also tried to answer the following research questions.

1. What are the major problems faced by the enterprises in developing and implementing profit plans?

2. To what extents are there for the bases prepared for applying profit planning?
3. What is the trend of overall profit?
4. What are the situations of production and rules activities?
5. What steps should be taken to improve the profit planning in public utility concern?

These are some of the questions, which this study tries to answer for the purpose of public enterprises.

1.12 Significance of the Study

All the public enterprises must utilize there available resources optimally for more profit-profits are the outcome of various tools and techniques applied for effective performance. Public enterprises like NTC, NEA and NWSC is taken to concentrate the study regarding profitability and performance. So this study focuses mainly to the profitability condition of NTC, NEA and NWSC. The main significance of this study are:

1. Highlight the board and specific facts of related fields.
2. Highlight about the application of detailed and systematic profit scheme tool of NTC, NEA and NWSC.
3. Highlight and analyze the problems and prospects of NTC, NEA and NWSC.
4. Examine and review the present and historical literature. In respect of their profitability.
5. Helps to overcome regarding profitability.

1.13 Objectives of the Study

The general objectives of this study are to examine the present comprehensive Profitability Analysis of Nepal Electricity Authority, Nepal

Water Supply Corporation and Nepal Telecom. The specific objectives of the study are:

1 To analyze financial performance of respective organizations using different ratios.

2 To compare different ratios of selected organizations

3 To investigate financial position of the selected organizations.

4 To provide necessary recommendation to the concern organization for future betterment.

1.14 Limitations of the Study

Today's world is dynamic. All principles, rules formulae and conditions are applied within the limitations. Like wise, the study cannot escape from limitations. The present study is confined only to profit planning in NEA, NWSC and NTC. The following factors have limited the scope of this study:

1. This study has covered the data of past six fiscal years i.e. Fiscal Year 2001/02 to 2006/07.
2. This study is based on primary and secondary data and information.
3. This study is concentrated only on financing and accounting aspects.
4. This study has covered only public utility concerns. So, the conclusions derived from the study may not be applicable for other public and private enterprises.

1.15 Chapter Scheme

1. Introduction:

This chapter deals with the general meaning of PEs, PEs in Nepal, their evolution, brief view and organization structure of NEA, NWSC and NTC. Statement of the problem, objectives and limitations of the study.

2. Review of Literature:

This chapter is related to conceptual framework review of literature, introduction of ratio analysis and statistical tools. Different books, articles, thesis reports and research reports also.

3. Research Methodology:

This chapter includes research design, data collection, procedure, population, sample, period covered, nature and sources of data, data gathering instruments and statistical tools.

4. Presentation and Analysis of Data:

This chapter presents the presentation and analysis of computed data, profitability ratio, mean, standard deviation, co-efficient of variance, probable errors, correlation and regression. Diagrams of different data are also shown. Major findings are presented at the end of this chapter.

5. Summary, Conclusions and Recommendations:

This chapter is the gist of the study. It includes summary, conclusion and recommendations.

CHAPTER – 2

REVIEW OF LITERATURE

2.1 Concept of Profit:

Profit is the main objective of a business. It is necessary for the success of most enterprises. Profit tends to become a long term objective which measures not only the success of a product but also of the development of the market for it. The “word” profit implies a comparison of the operation of business between two specific dates. The basic financial objective of a company is to maximize profits. No company can survive long without profit. Profit is the ultimate measure of effectiveness of performance. There is no future for a private enterprise which always incurs losses. Profit is a signal for the allocation of resources and a yardstick for judging managerial efficiency. In fact, it is the growth of profit which enables a Company to pay higher dividend to its ordinary shareholders. Profit results from transactions. Profit is the dominant goal in business and profit making should be the main objective in term of which the general effectiveness of an organization is measured. Profit is also defined as a surplus of revenue after the deduction of all the expenses incurred on earning it. Usually, profits do not just happen, they are managed.

Profit is the income received by the organizer. It is reward for the service of an entrepreneur. A firm makes profit when it receives a surplus after it has paid interest on capital and wage on labor. It is equal to the difference between total revenue and total cost of production. Profit earned by the entrepreneur may be broadly divided into two categories viz. Gross profit and net profit. Gross profit of the entrepreneur refers to whole of the income earned by him. It consists of the reward for the factors of production supplied by the organizer himself, reward for management and reward for the organization.

Profit is the excess of income over production cost. The expenses made on raw material, labour, interest, fuel and power are included in cost. There is controversy as to the definition of the term profit itself. Ordinarily, profit is defined in terms of accounting concept. According to accounting definition “Profit is the residual of sales revenue minus explicit cost of doing business. “This profit is the amount available for ownership or equity after payment is made to all other factors used by the firm. J.M. Keynes held the view that profit is resulted from favourable movement of the general price level. Mrs. John Robinson Chamberlin opined that greater the degree of monopoly power, the greater the profit made by the entrepreneur.

Thus, economic theories of profit have been categorized into three broad groups. The first graph looks on profit as the reward for bearing risk and uncertainty. The second view looks on profit as the consequence of friction and imperfection. In the comparatitive adjustment of economy to dynamic changes, the third sees profit as the reward for successful innovation. The word profit has different meanings to business persons, accountants, tax collectors and economists. It is often used in a loose and polemical sense that buries its real significance and destroys the basis for discussion. In apprising a company, we must first understand how profit arises before we can decide improve the company’s profit position. Usually, profit do not just happed, profit are managed. Hence, profit is the amount after deducting cost from revenue. It is determined from cost and revenue. It is the reward of bearing risk. It is a reward for innovation. Every business enterprise invests huge amount and takes a higher degree of risk and they expect higher rate of return. Profit is as important to a firm as water to the fish. Each business firm is primarily established with a view to earn profit. So, profit is necessary for any type of business.

2.2 CONCEPT OF PROFITABILITY :

It is unthinkable to conceive of a social order completely devoid to profit motive. Man has almost always been guided by self-interest and accrual of profit to an individual or to an organization of individuals. The concepts of both profit and profitability have been very baffling and controversial ever since their inception on the economic sense. Profit and profitability are two different concepts but they are closely interrelated and mutually interdependent. In fact, profit is an absolute measure and profitability is a relative concept. In profitability analysis profit making ability of an enterprise or that of an industry is the functional relationship of the profit margin with investment, or with sales volume that is regarded as a reliable measure of profitability. The aim of a business is to earn profit and if we wish to know the efficiency of business we will have to calculate profitability.

Profit is an absolute figure alone does not give an exact idea of the adequacy or otherwise of income or of changes in efficiency as shown by the financial performance of an enterprise. Specially, when problem of historical comparison over a number of years for one company or of horizontal comparison of a number of companies within the one industry group are confronted with the residual profit figures in absolute quantities may be confusing and difficult to interpret due to variations in the size of investments and the volume of sales etc. It, therefore, becomes necessary to relate profit figures either with the volume of sales or with the level of investment and derive quantitative relationship in the form of either ratios or percentages which serves as very important and useful tools in financial analysis. Ratios specially selected to measure the relative profit position of an enterprise are known as profitability.

What is profitability? Profit is the residue of income while profitability is the profit making ability of an enterprise. It devotes either constant or improved or declining state of such ability during a given period. Thus, profit is an absolute connotation, where as profitability is a relative concept. The term ‘Profitability’, is a composite of two words profit and ability and signifies the capacity and power of a business concern to earn profits. In financial circles its precise connotation is ‘earning capacity’ or ‘earning power’ because in interpretation of financial statements of various business concerns today considerable importance and weight age is given to the measurement and evaluation of their current and prospective earning capacities. The keenness with which both the internal and external users generally look at the financial statements of a business corporation reflects their interest in its reliable profits indices because they are regarded as true indicators of its business activity. This implies that while financial analysis is more external than internal, profitability analysis of the internal working and operation of a concern over sufficiency long period with a view to knowing profit trends, so that managements on the basis of these profit trends so analysized, may evaluate their own economic performance and accomplishment at the individual profit contrives within the organization.

Profitability analysis is external as well as internal because it the external users of accounting information via, stockholders, bankers, creditors, numerous government agencies, in measuring its economic health of a concern by its net earnings. Profitability analysis is thus one of the most significant aspects of financial appraisal of individual firms or industries. It provides an answer to a very important and basic question. How is business? Profitability analysis becomes all the more important when within a business there is an earning goal that helps to guide the behavior of managers and other employees. Even though public sector enterprises should work first and foremost of the country’s good, they should not ignore the fact that they are under the necessity of functioning efficiently and earning a monetary return i.e. profit. According to A.H. Taylor and H. Shearing, “The profit motive remains on of the main springs of enterprise and spar to efficiency. It is clearly the desire to make profits which inspires the search for effective methods, reduced unit costs, better organization and greater turnover”.[1] Profitability of a concern indicates its financial stability and tends to enhance the income earning capacity.

In connection with the profitability of a business enterprise a question aries: How can we measure profitability? Measurement of profitability is of vital significance for a business enterprise because the earning of profit by it and its measurement in absolute accounting unit (in Rupees) do not enable its management or owners to ascertain its exact standing vis-à-vis its competitors.

1. A.H. Taylor and H. Shearing, Financial and cost Accounting for Management, (London: Macdonald and Evans Ltd.), 1965, P.170

Profit is a constantly changing phenomenon and is the end product of business activity based on many variables like volume of sales, prices and costs on the one hand and the size of capital investment on the other hand.

The concept of profitability as a relative measure also lays emphasis on the fact that profitability is a function of a number of variables which can be symbolically expressed as:[2]

Profitability = f (I., S., Pr., Cts., T., Cty., Pmn., D….)

Where,

I = Investment and Investment turnover

S = Sales volume

Pr = Prices

Cts = Cost

T = Technology

Cty = Capacity

Pmn = Profit margin

D = Dividend policy

The functional relationship indicated that in order to ascertain the degree of profitability of an enterprise, it is necessary to establish a quantitative relationship between profits on one hand and any of the above mentioned variables on the other hand. The reason for this approach is that profit expressed in terms of absolute units of account by themselves does not given any idea about profitability of a business concern. When profit is shown as a percentage of sales, it is known as profit margin. If profit is expressed as a percentage of investment it is termed as return on investment.

Profitability as a relative measure may be positive or negative. Profitability is position if business operations during a given accounting period result in creating a surplus thus adding to the worth of original investment. As opposed to this, if business operations result in a reduction of the owners original investment, profitability will be negative for which it would be more appropriate to use the word 'unprofitability'. If allowed to persist it would gradually consume the funds originally committed. If the funds originally committed to the business by the owners do not reveal any change during the accounting period (an eventuality which is most unlikely) profitability will be zero, i.e. a state where there would be neither profit nor loss. However, in real business situation

2. M.E. Murphy., Management Accounting, (New York: D.Van Nostrand Co., Indian reprint: New Delhi: Affiliated

East-West press), P.87

the possibility of there being no profit no loss to a going business concern cannot normally be conceived of, because the business operations of the concern would result in either positive profit or negative profit (i.e. loss). Profitability is the best management guide to increase management efficiency. Relative profitability, despite its imperfections, is a pertinent concept for use in analyzing and expressing efficiency in the various fields of business activity of an enterprise.

2.2.1 PURPOSE OF PROFITABILITY ANALYSIS:

The purpose of profitability measurement is to see whether an enterprise has effectively used its resources to achieve its profitability objectives.

A profitability objective in this context measures not the maximum profit the business can produce but the minimum it must produce. The minimum is the rate of profit required for the desired type of investment in a business enterprise. This means that there must not be only enough profit to yield the capital the market rate of return on money which is already sunk in business but also to provide additional capital needed in order to cover the cost of staying in business.

2.2.2 LIMITATION OF PROFITABILITY ANALYSIS:

Profitability analysis is related with profit earning ability of firm which is made to evaluate its financial performance but overall financial performance is not assured only by analyzing profitability. Thus, the main limitation of profitability analysis is that is not capable to present actual financial picture. It does not consider liquidity, solvency and turnover aspect. The major limitation of this analysis can be listed as follows:

1. It is a part of financial analysis, which only evaluates profit ability so that overall financial performance cannot be assured.
2. It does not consider liquidity factor which plays major role in financial evaluation.
3. It does not consider solvency factor which shows the firm debt capital management that ensure financial strength and weakness.
4. It also considers efficiency in consideration of assets management due to which financial efficiency is not liable.

2.2.3 BASIS OF PROFITABILITY ANALYYSIS:

Every analysis require basis for its analysis. Without such basis analysis cannot be performed. So, for profitability analysis also a basis is required. Profitability analysis is performed using financial statements. Financial statements are the basis of profitability analysis.

Financial statements refer that statements which systematically contain summarized information of the firm's financial affairs. These statements provide reliable financial information about economic resources and obligation of business enterprises. Financial statement contains summarized of firms financial affairs organized systematically. They are meant to represent the firm financial situation to user.

The financial statements refer to the two summarized financial reports which the accountant prepared usually at the end of the fiscal year of an enterprise, they are the balance sheet or statement of financial position and the income statement or profit and loss accounts. The term financial statements used by itself without qualification usually refuse three principal statement of balance sheet, income statement, statement of changes in equity and an analyzing changes in the ownership accounts.

Financial statement is an accounting picture of the firms operation and financial position. Hampton viewed, "The financial statement is a financial report prepared for a given period of time. It is an organized collection of data, organized according to logical and consistent accounting procedures."[3]

John N. Myer has more lucidly stated, the financial statements provide a summary of accounts of a business enterprises, the balance-sheet, reflecting the assets, liabilities and capital as of a certain date and the income statement showing the result of operating during a certain period."[4] Evidently, financial statement contains income statement and balance sheet.

Income statement is the statement that shows the result of trading and non-trading operations during a certain period of time, usually a year in condensed form. The income statement reflects the earning capacity and potential of the firm. It present the summary of revenue, expenses and net income or net loss of a firm for a certain period of time which measure the firm's profitability. Myer viewed, "the income statement summarizes the operations of a business during a specific period of time and shows the result of such operations in the firm of net income or net loss.

In this statement, revenue of a certain period are compared with the expenses, the difference being either net profit or net loss for the period. The income statement is an important aspect of the concern as it reflects the efficiency, with which the concerns is utilizing its resources to generate surplus. However, the income statement may not be the true representative of the operational efficiency of the concern as, at times, it may consist the income statement occupies a significant place in portraying the result of business operation. In conclusion, profit and loss account shows the net income or net loss resulting from the operation of business during a specific period of time.

3. John H. Hampton, Financial Decision Making: Concepts and cases, Prentice Hall of India Pvt. Ltd., New Delhi, 1997, P.631

4. John N. Myer, Financial Statement Analysis, Prentice Hall of India Pvt. Ltd., New Delhi, 1974, P.3

Similarly, Balance-sheet presents the position of firm's assets, liabilities and equity at a particular date. In this connection Pandey says, "The balance-sheet contains information about the resources and obligation of a business entity and about its owner's investment in a business at a particular point of time. In accounting language, the balance-sheet communicates information about the assets, liabilities and owner's equity for a business firm as on a specific date. It provides a sandshot of the financial position of the firm's accounting period."[5] A balance-sheet is a statement showing the nature and amounts of all assets owned at the close of fiscal period, the nature and amount of debts owned and the firm amount of the equity of the owner or owner's assets of the business.

Kennedy viewed, "the balance-sheet which reveals the financial position of a business as reflected by the accounting records, contains a list of assets, liabilities and net worth items as on given date."[6]

2.3 TOOLS OF PROFITABILITY ANALYSIS:

Various ratios of profitability are the major tools of profitability analysis. Ratio analysis provides such tools for making various analysis as well as profitability analysis. Ratio analysis stands for the process of determining and presenting the relationship of items and groups of items in the financial statement.

2.3.1 Ratio Analysis

Ratio analysis is powerful tool of financial analysis which helps in identifying financial strengths ad weaknesses of business concerns. It is an important way to state meaningful relationship between components of financial statements. The primary purpose of ratios is to point out areas for further investigation. Ratio analysis has been a major tool used in the interpretation and evaluation of financial statement since late 1800. A widely used tool of financial analysis is ratio analysis. It refers to the numerical or quantitative relationship between two items either from balance sheet or form income statement or from both statements.

5. I.M. Pandey, Financial Management, Sixth Revises Edition, Vikash Publishing House Pvt. Ltd. 1993, P.26

6. Ralph Dale Kennedy, and Stewart Macmillan, Financial Statement for Analysis and Interpretation, Richard. D. Irwin Inc. Chicago, 1947, P.1

A ratio is defined as, "The indicated quotient of two mathematic expression" and as "the relationship between two or more things." A ratio helps to the researcher to make qualitative judgment about the firm's financial position and performance. Ratio analysis is an important way to state meaningful relationships between components of financial statements. Ratio are guides or shortcuts that are useful in operations of a company and in company them to previous year or to other business concerns. The term "Ratio refers to the numerical or quantitative relationship between two variables. The rational of ratio analysis lies in the fact that it makes related information comparable. A ratio is calculated by dividing one item of the relationship with the other."[7]

The ratio analysis involves comparison for a useful interpretation of financial statements. Ratio is the quantitative relationship between items. A ratio is defined as the indicated quotient of two mathematical expressions and is the relationship between two or more things. It is undertake of various parties engaged such as trade creditors, debenture holders, investors and management in the firm according to their specific purposes. It is defined as a systematic use of ratio to interpret financial statement so that the strength and weakness of a firm as well as its historical performance and current financial condition can be determined. The alternative methods of expressing items which are related to each other, which are for the purpose of financial analysis is called ratio analysis.

Financial analysis is used as an index or a yardstick for evaluation of the financial position and performance of firm. Ratio analysis is a yardstick tool to evaluate the financial performance and condition of the firm.

The operational and financial problems of a business concern can be ascertained by examining the behavior of these ratios. Financial ratios help to make qualitative judgment. The objective of such ratio is to give financial performance. Ratio analysis is widely used but no one ratio gives the exact picture. In other hand, ratio by themselves are not conclusion, as they are only means and not an end. Ratio analysis is in conceivable that accounting data can be analysed without transforming it into ratios. Hence, a justification of financial ratios would also be an important justification of financial accounting.

Ratio analysis involves basic standards of comparison for a useful interpretation of the financial statements. A single ratio by itself does not indicate favarable or unfavorable condition of a firm unless it is compared to some appropriate standard. Selection of a proper standard of comparison is a most important element in ratio analysis.

7. M.Y. Khan and P.K. Jain, Financial Management, Tata McGraw Hill Publishing Co.Ltd., New Delhi, Reprint 1990, P.117

Ratio analysis provides guides and clues especially in spotting trends towards better of poor performance, and in finding out significant deviation from any average or relatively applicable standard. [8]

The four most common standard used in ratio analysis in financial management are absolute, historical, horizontal and budgeted.

Different types of ratio are used for financial analysis today.

The major types of ratios that used in this study are ad follows.

i) Gross profit ratio.

ii) Net profit ratio.

iii) Operating expenses ratio.

iv) Return on assets.

v) Return on shareholders equity.

For the calculation of above mentioned ratios the following formula are used:

1. GP ratio $= \dfrac{\text{Gross Profit}}{\text{Sales}} \times 100$

2. NP ratio $= \dfrac{\text{Net Profit after Tax}}{\text{Sales}} \times 100$

3. Operating Ratio $= \dfrac{\text{Operating Expenses}}{\text{Sales}} \times 100$

4. ROA $= \dfrac{\text{NPAT}}{\text{Total Assets}}$

OR

$= \dfrac{\text{N PAT - Preference Dividend}}{\text{Total Assets}}$

OR

$= \dfrac{\text{NPAT + Interest}}{\text{Total Assets}}$

OR

$= \underline{\text{NPAT - Preference Dividend}}$

Total Tangible Assets

8. James C. Harrigon, Some Empirical Bases of financeal Ratio Analysis: Accounting review,Vol., XL, 1965, p.568

5. ROSE = $\frac{\text{Net Profit after tax}}{\text{Shareholders equity}}$

OR

$= \frac{\text{Net Profit after tax + Interest}}{\text{Shareholders equity}}$

2.3.2 Methods of Alternative Evaluation:

1. Non-Discounted Method:
   a) Payback period (PBP)

2. Discounted Cahs Flow Method
   a) Internal rate of return
   b) Profitability Index

1. Discounted Non Method:

The method which does not consider the time value of money is denoted as simple method of measuring capital expenditure decision. There are two major methods of measuring capital expenditure decision. There are two major methods which are as follows:

a) Pay Back Period:

It is the simplest and frequently used method for evaluating capital expenditure. Playback period is the minimum time required to ricover the initial cash outlay from the annual cash inflows. We should accept the capital expenditure decision of lower length of payback period and reject the higher length of payback period. Payback period method emphasizes in the quick cash return. It ignores time value of money.

(i) Even earning case

$$PBP = \frac{I}{EC}$$

Where,

PBP = Pay back period

I = Investment

EC = Economic cash flow

OR

Annual cash flow

(ii) Uneven earning cash

$$PBP = N + \frac{I\text{- Cumulative EC at N}}{\text{EC of (N+1) year}}$$

Where,

M = Minimum no of year when cumulative EC is very near to Investment.

b) Average rate of return / Accounting rate of return (ARR) :

Average rate of return on investment is the percentage of annual net return before adding depreciation and but offer taxes to the initial investment. It represents the ratio of average annual net profit after tax to the average investment of the project we have to select the project having higher ARR and vice-versa. It also completely ignores the time value of money mathematically the ARR can be calculated as follows.

$$ARR = \frac{\text{Average net income}}{\text{Average Investment}} \times 100$$

Where, $\text{Average net income} = \frac{\text{Total Net Income}}{\text{Total number of year}}$

$$\text{Average investment} = \frac{\text{Investment + salvage value}}{2}$$

2. Discounted Cash Flow Method:

It considers the time value of money. Before evaluating any project under this method the future cash inflow must be converted into present value. The following discounted methods can be used in capital expenditure decision.

a) Net Present Value (NPV) :

The process of adjusting face value of future cash flows to their present value by means of anticipated interest rate is known as discounting rate. This rate is used to discount the cash flows. The difference between discounted cash flow and initial cash

Outflows in known as net present value. Mathematically, it is calculated by:

i) Even Earning Case:

$$NPV = CF \times Pn - IoI$$

Where, CF = Annual Cash Flow

Pn = Present value discounting factor for n years

Io = Intial Investment / Zero year investment

ii) Uneven earning Case:

$$NPV = \frac{CFI}{(1+K)^1} + \frac{CF2}{(1+K)^2} + \text{--------------} + \frac{CFn}{(1+K)^n}$$

Where, K = Cost of capital

n = No. of year

Decision:

Positive NPV~ the project is accepted

Negative NPV ~ the project is rejected

Higher NPV ~ the project is accepted

c) Profitability Index (PI) :

It is some time referred as to benefit cost ratio and excess present value index. A ratio of total present value of cash flow and initial cash outlay is called profitability index. The profitability index is calculated as under:

$$PI = \frac{TPV}{Io}$$

Where, TPV = Total Present Value

Decision:

- Accept the project with PI greater than one
- Reject the project with PI lower than one

2.4 Review of Previous Studies:

The main purpose of reviewing the previous studies is to find out what research has been done in the related field. Review of some of the research works relating to NEA, NWSC and NTC are as follows:

1. Mr. Suman Acharya

Mr. Suman Acharya has conducted the study covering the time period from fiscal year 2052/053 to 2056/057 which is based on "NEA and NTC. Some major finding pointed by Mr. Acharya are as follows:

1 Top level executives are only involved in planning and decision making.

2. Both of the enterprises are suffering from the high fixed cost.

3. Goals are not communicated to lower staff so that there is a communication gap between department to department and between staff level.

4. Overheads have not classified into systematically in both cases.

2. Mr. Ashok Kumar Shrestha:

A study by Ashok Kumar Sherestha profit planning and control of public utility sector, A comparative study on Nepal Electricity Authority and Nepal Telecommunication Corporation, August 2004 has tried to find out some major problems of NEA and NTC.

Mr. Sherestha has concluded the study covering the time period of five years. Some major finding pointed by Mr. Shrestha is as follows:

1. NEA and NTC both have no in depth analysis of the companies strenghts and weakness.
2. Eelectricity leakage, theft and wastage is major problems of NEA where as high demand and low supply is problem of NTC.
3. Huge amount of cash and bank balance of NTC indicates some deficiency of organization to utilize its liquid assets.
4. Expenses are not identified as fixed and variable in NEA and NTC.
5. NTC has higher profitability ratio than NEA.

3. Mr. Surya Prasad Gurung:

Mr. Surya Prasad Gurung has submitted his research work entitled A research on profit planning in public utilities of Nepal. A case study of "Nepal Water Supply Corporation." After his research work, Mr. Gurung concludes as follows:

1. NWSC has high amount of fixed cost.
2. NWSC has no proper receivable management policy to collect account receivable in time.
3. The NWSC has ignored the concept of variance analysis.
4. It has not utilized its assets resources effectively.

4. Mr. Suman Kumar Rai:

Mr. Suman Kumar Rai submitted a thesis on profit planning in Nepalese public enterprises, A case study of Nepal Water Supply Corporation 2003. On the basis of the study Mr. Rai pointed the following major finding:

1. NWSC has failed to maintain periodic performance report systematically.

2. The corporation is suffering from high amount of fixed cost.

3. The lower level participation is not encouraged while planning and decision making.

CHAPTER - 3

RESEARCH METHODOLOGY

3.1 Introduction:

Research is a systematic and organized effort to investigate specific problems that need a solution. This process of investigation involves a series of well thought of gathering, recording, analyzing and interpreting the data with a purpose of finding answers to the problems.[14]

So, research is an ongoing and ever growing activity. It is done not only to solve a problem existing in the work setting, but also to add or continue to the general body of knowledge in a particular area of interest. Research methodology is the way to solve systematically about the research problem.[15]

So, research methodology refers to the various sequential steps to be adopted by the researcher in studying a problem with certain objectives in a view. Therefore, this chapter deals with the following aspects of methodology.

1. Research Design

2. Population and sample

3. Hypothesis
4. Sources of data
5. Data collection and procedure
6. Data processing
7. Research variables
8. Analytical tools

3.2 Research Design

Research design is the plan, structure and strategy of investigation conceived so as to obtain answer to research question and to control variance. The plan is the overall scheme or program of the research. It includes an outline of that the investigator will do from writing the hypothesis and their operational implication to final analysis of data. The structure of the research is more specific.

14. Harward, Wolf and Pant, Prem Raj, Hand Book for Science and Thesis Writing, Buddha Academic Publication. 2nd Edition 1999, P-230

15. Kothari, C.R. Research Methodology, Models and Techniques Wiley Eastern Limited 3rd Edition 1990, P-39

It is the outlines, the scheme and the paradigm of the operation of the variables. Strategy as used here is also more specific then plans. In other words, strategy implies how the research objective will be reached and how the problems encountered in the research will be tackled.[16]

Basically, the research design has two purposes; the first is to answer the research question and second is to control variance. The research design asks what approach to the problem should be taken. What method will be used? What strategy will be must effective? Identification may be considered as the planning stage of a research. The remaining activities refer to design operating and competition of the research study.

A research design is the arrangement of condition for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure.[17]

In general, research design means definite procedure and technique, with guideline. Research design is a framework for the researcher in a particular task. The research design of this study is descriptive as well as analytical. The main objective of the study is an evaluation of profitability of NEA, NWSC.

The main objective of financial analysis is to find out profitability of NEA, NWSC and NTC. In order to do so, we need to analyze financial performance. Financial analysis is the process of identifying the financial strengths and weaknesses of the firm by properly establishing relationship between the items of the balance sheet and profit and loss account. Financial analysis gives the real picture of financial performance of any organization. So, it helps to management what kind of polices should be adopted. There are many variables in NEA, NWSC and NTC. This chapter looks into the research design, nature and sources of data, data gathering procedure and tools of analysis. By analyzing only certain aspects, the clear picture of financial position of such big public organizations cannot be understood, So, the study has tried only to have a glance on it. This is the objectives of the present study.

3.3 Sources of Data:

Data and information are the main resources of research. For this study different techniques and procedure have adopted to collect necessary information and data. The study is based on primary and secondary data. They are listed below:

16. Harward, wolf and Pant, Prem Raj, Op Cit, P-50
17. Ibid, P-53

i) Primary Sources of Data:

1 Direct interview with accountants, financial managers and other related staffs.

2 Observations of various Departments of NEA, NWSC and NTC.

3 Unstructured dialogues and discussions with executives.

ii) Secondary Sources of Data:

1 Published and unpublished relevant documents of NEA, NWSC and NTC.

2 Official records and publications of NEA, NWSC and NTC.

3 Magazines and booklets published by NEA, NWSC and NTC on the relevant matters.

4 Similar previous thesis and dissertations.

5 Annual reports published by NEA, NWSC and NTC.

6 Targets and performances of public enterprises published by Ministry of Finance in Nepal.

7 The Tenth Plan (2002-2007) published by National Planning Commission.

3.4 Data Analysis Tools:

Collected data are classified in proper table and formats. The tables and formats are interpreted and explained whatever/ whenever they are necessary. Various financial and statistical tools have been used to analyze and interpreter the data. The following tools are used to analyze and interpret the data public utility concerns regarding profitability.

Financial tools/ Profitability tools:

Capital budgeting, Ratio analysis and Statistical tools (AM, SD. CV., ANOVA

Table and so on).

3.5 Financial Tools:

Financial tools are those which are used for the analysis and interpretation of financial data. These tools can be used to get the precise knowledge of the enterprises which in turn are fruitful in exploring the strength and weakness of the financial policies and strategies. In order to meet the purpose of study, Ratio analysis has been used. Ratio analysis helps us to summarize the large quantities of financial data and to make quantitative judgments about the financial performance of the organizations. The following ratio is used for evaluating the performance of organizations.

vi) Gross profit ratio.

vii) Net profit ratio.

viii) Operating expenses ratio.

ix) Return on assets.

x) Return on shareholders equity.

For the calculation of above mentioned ratios the following formula are used:

1. GP Ratio $= \frac{\text{Gross Profit}}{\text{Sales}} \times 100$

2. NP Ratio $= \frac{\text{Net Profit after Tax}}{\text{Sales}} \times 100$

3. Operating Ratio $= \frac{\text{Operating Expenses}}{\text{Sales}} \times 100$

4. ROA $= \frac{\text{NPAT}}{\text{Total Assets}}$

OR

= <u>NPAT - Preference Dividend</u>

Total Assets

OR

= NPAT + Interest / Total Assets

= NPAT - Preference Dividend / Total Tangible Assets

5. ROSE = Net Profit after tax / Shareholders equity

OR

= Net Profit after tax + Interest / Shareholders equity

3.6 Statistical Tools:

Various statistical tools can be used to analyze the data available to the researcher. These tools are used in research in order to draw there reliable conclusion through the analysis of financial data.

Following tools are used for the purpose:

i) Arithmetic Mean (x)

ii) Standard Deviation (σ)

iii) Co-efficient of variation (C.V.)

iv) Co-efficient of correlation (r)

v) Probable error of correlation co-efficient (PE)

vi) Least square linear trend

vii) One factor ANOVA "F" Test

viii) Diagrams and Graphs.

i) Arithmetic Mean (x) :

An average is a single value selected from a group of values to represent them in same way, which is supported to stand for a whole group of which it is a part, as typical of all the values in the group. Out of various measures of central tendency, arithmetic mean is one of the useful tools applicable here. It is easy to calculate and understand based on all observations.

Arithmetic mean of a given set of observation is their sum dividend by the number of observation. In general, if X1, X2, X3, …………………….., Xn are the given observations and then arithmetic mean usually denoted by X is given. [18]

$$x = \frac{x_1+x_2+x_3+ \ldots\ldots\ldots\ldots+x_n}{N}$$

$$= \frac{\sum x}{N}$$

Where

x = Arithmetic Mean

N = Number of observations

$\sum x$ = Sum of the observations

ii) Standard Deviation (±)

Standard deviation is the best measure of dispersion. It is calculated as:

$$\sigma = \frac{\sum(x - x)}{n}$$

18. Bajracharya, BC, Business Statistics and Mathematics, M.K. Publisher and Distributor, 2057, P-101

Where,

σ = Standard deviation

n = number of observation

iii) Co-efficient of variation (C.V.)

According to prof. Karl Pearson, co-efficient of variation is the percentage variance in the mean, standard deviation being considered as the total variation in the mean, it is one of the relative measures of dispersion that is useful in comparing the amount of variation in data group with different mean.

Co-efficient of variation, denoted by CV is given by:

$$C.V. = \frac{\sigma}{x} \times 100$$

Where, σ = Standard deviation = $\frac{\sum x^2}{n} - \frac{\sum x}{n}^{2}$

For comparing the variability two distributions we compute the co-efficient of variation for each distribution. A distribution with smaller CV is said to be more homogeneous or uniform or less variable than other. Conversely, a series with greater CV is said to be more variable or heterogeneous than other.[19]

iv) Karl Pearson's co-efficient of correlation (r):

Co-efficient of correlation is a statistical tools for measuring the intensity of the magnitude of linear relationship between two series. The co-relation co-efficient between two variable X and Y, usually denoted by r and can be obtained as:

$$r = n \sum xy - \sum x \sum y$$

$$n \sum x2 - \sum x^{2} . \quad n \sum y2 - \sum y^{2}$$

19. Ibid. P-180

Where,

n = Number of observations in series x and y

$\sum xy$ = Sum of observations in series x and y

$\sum x$ = Sum of observations in series x

$\sum y$ = Sum of observations in series y

$\sum x^2$ = Sum of square observations in series x

$\sum y^2$ = sum of square observations in series y

or

$$r = \frac{\sum xy}{\sum x^2 \quad \sum y^2}$$

Where,

x = x - x

y = y - y

Properties of co-relation coefficient:

a) It lies between -1 and +1

b) Correlation Co-efficient is independent of change of origin and scale i.e. r=r

(x;y)

c) Correlation Coefficient is systemic in two variables i.e. ray = r y x

d) Correlation Coefficient is a pure number independent of the unit of measurement.

Interpretation of Correlation Coefficient:

a) It lies between -1 and +1

b) When r = +1, there is perfect positive correlation

c) When r = -1, there is perfect negative correlation.

d) When r = 0 there is no correlation

e) When r lies between 0.7 to 0.999 (-0.7 to -0.999) there is high degree of positive (negative)

f) When r lies between 0.5 to 0.699, there is moderate degree of correlation.

h) When r is less than 0.5 is low degree of correlation.

v) Probable Error of Correlation Coefficient (PE) :

Probable error of correlation co-efficient is an old measure of testing the reliability of an observed value of correlation co-efficient. It is calculated to find the extent to which correlation co-efficient depends upon the condition of random sample probable error of correlation coefficient ; denoted by PE (r) is obtained as:

$$PE = 0.6745 \chi \frac{1 - r2}{N}$$

Where, $\frac{1 - r2}{N}$ Standard error

Reason for taking 0.6745 is that in a normal distribution 50% of observation lies in the range $\mu = \pm 0.6745 \sigma$

Where, μ and σ denote the population mean and standard deviation.

PE is used to test if an observed value of sample correlation coefficient is significant of any correlation in the population. If r <6, PE correlation is not significant and if r>6, PE correlation is significant.

vi) Least Square Linear Trend:

Trend analysis is very useful and commonly applied tool to forecast the future event in quantitative term, on the basis of the tendencies in the dependent variable in the past period.

The straight line trend implies that irrespective of the seasonal and cyclical as well as irregular fluctuation. The trend value is increased by absolute amount per unit of time. The linear trend values from a series in arithmetic progression.[20]

20. Ibid P-276-277

Mathematically: $y = a + bx$

Where, y = Dependent variable

a = y - intercept

b = Slope of the trend line

x = Value of the independent variable

Normal Equations on fitting y = a + bx are

$\sum y = na + b \sum x$ …………………… (i)

$\sum xy = a \sum x + b \sum x^2$ …………………. (ii)

vii) One factor ANOVA "F" Test:

The analysis of variance (ANOVA) is a powerful statistical tool for test of significance to evaluate differences among the parameters of several groups. It provides a technique to make differences about whether all the samples have come from the same normal population having the same mean. One way ANOVA is to analyze the difference among the group means by considering one factor (one variable). Through an analysis of the variation in the data, both among and within the several groups, we are able to draw conclusion about possible difference in group means.

Total Variation = Variation among the groups (sample) + Variation within groups (samples)

There are three methods for carrying ANOVA in one way classification

1) Direct method
2) Short cut method
3) Coding method

viii) Diagrams and graphs are visual aids that give a bird's view of a given set of numerical data. They present the data in simple and readily comprehensive form.

CHAPTER - 4

PRESENTATION AND ANALYSIS OF DATA

Every study depends upon some data presentation and their analysis, without presentation of facts and their analysis, study is incomplete. This chapter presentation and analysis is the heart of study, in the absence of which study is meaningless. It explores about the existing nature and problem of NEA, NWSC and NTC. On the basis of this chapter weakness, strength, opportunity and threats are scrutinized. It helps to convert from opaque to transparent. So, it is scrupulous chapter of the research.

This chapter is incorporated with various analysis tools without using analytical tools, we cannot diagnose about the nature & condition of NEA, NWSC and NTC. Ratio analysis is used under the financial tools. Likewise, under the statistical tools, co-efficient of correlation, the probable error, co-efficient of variation (v), standard deviation (SD) and trend analysis are used. As a consequence, summary and conclusion are presented in last on the basis of which recommendation have been given to improve the condition.

41. Presentation and analysis of profitability tools:

As profit is considered as the measuring rod success, the performance of management in terms of profit is also to be evaluated. The following ratios can be used to meet the vary purpose:

4.1.1.01 Operating Profit Ratio (OP Ratio)

4.1.1.02 Net Profit Ratio (NP Ratio)

4.1.1.03 Operating Expenses Ratio (OE Ratio)

4.1.1.04 Return on Assets (ROA)

4.1.1.05 Return on shareholders Equity (ROSE)

4.1.1.01 Operating Profit Ratio (OP Ratio)

One of the most common ratio in operational analysis is the calculation of operation profit as a percentage of net sales. A firm should have a reasonable coverage for operating expenses of the firm and sufficient return to the owners of the business. The operating profit ratio shows the relationship between operating profit and sales and is usually expressed in percentage. The operating profit ratio should be adequate to cover operating expenses and to provide fixed charge to pay dividend and build up reserve.

It is calculated by dividing operating profit by net sales. It can be expressed as follows.

Operating Profit Ratio = Operating Profit x 100
Sales

Table No.4.1

Operating Profit Ratio of NEA

(fig. in million)

Fiscal Year	***Sales***	***Operating Profit***	***Ratio***
2001/02	8160.80	2440.90	0.30
2002/03	9476.20	2427.30	0.26
2003/04	11012.60	4332.40	0.39
2004/05	11874.70	3915.50	0.33
2005/06	12605.20	3653.70	0.29
2006/07	13331.90	3515.90	0.26

Source: Income statement and Balance sheet of NEA (Appendix-1)

This ratio expresses the relationship between operating profit and sales. The higher ratio indicates the efficient condition of an organization. Above table shows that the operating profit of NEA is not satisfactory. OP ratio must be more than 40% i.e. 0.40 but all ratios were below the standard. There is regular fluctuation in operating profit ratio and in decreasing condition too.

Table No.4.2

Operating profit ratio of NWSC

(fig. in million)

Fiscal Year	***Sales***	***Operating Profit***	***Ratio***
2001/02	382.52	40.92	0.107
2002/03	462.59	(16.23)	(0.035)
2003/04	513.33	(39.03)	(0.076)
2004/05	530.81	49.19	0.093
2005/06	662.41	138.10	0.208
2006/07	683.85	96.65	0.141

Source: Income Statement and Balance sheet of NWSC. (Appendix-2)

Above table shows that the operating profit of NWSC is not satisfactory. There were negative ratios in fiscal year 2002/03 and 2003/04. As we know the operating ratio must be more than 40% i.e. 0.40 per smooth operation. But the operating profit ratio of NWSC was very low which shows it needs to improve management to get satisfactory profit. Similarly, sales should be increased and operating expenses should be decreased:

Table No.4.3

Operating profit ratio of NTC

(fig. in million)

Fiscal Year	***Sales***	***Operating Profit***	***Ratio***
2001/02	6556.00	3320.063	0.50
2002/03	7669.284	4093.119	0.53
2003/04	8855.034	4550.667	0.51
2004/05	9194.297	4921.529	0.54
2005/06	11058.915	6843.727	0.62
2006/07	NA	NA	

Source: Income Statement and Balance sheet of NTC. (Appendix-3)

Above table show the satisfactory operating profit of NTC. Its all operating ratios were above standard and indicate that the organization was maintaining its operating expenses very efficiently. There was neither high fluctuation nor below the standard. So, the operating ratio of NTC was sound.

4.1.1.02 Net profit margin / Ratio (NPR/ NPM)

Net profit margin ratio is a good indicator of the efficiency of a firm. This ratio measures the overall profitability of the firm by establishing relationship between net profit and sales. It indicates management efficiency in controlling the manufacturing and administrative cost of the products. The net profit margin reflects how much amount of net profit has been earned in the sales of rupee one. A high result is favorable and vice-versa. It is calculated by dividing net profit by net sales.

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

Table No.4.4

Net Profit Ratio of NEA

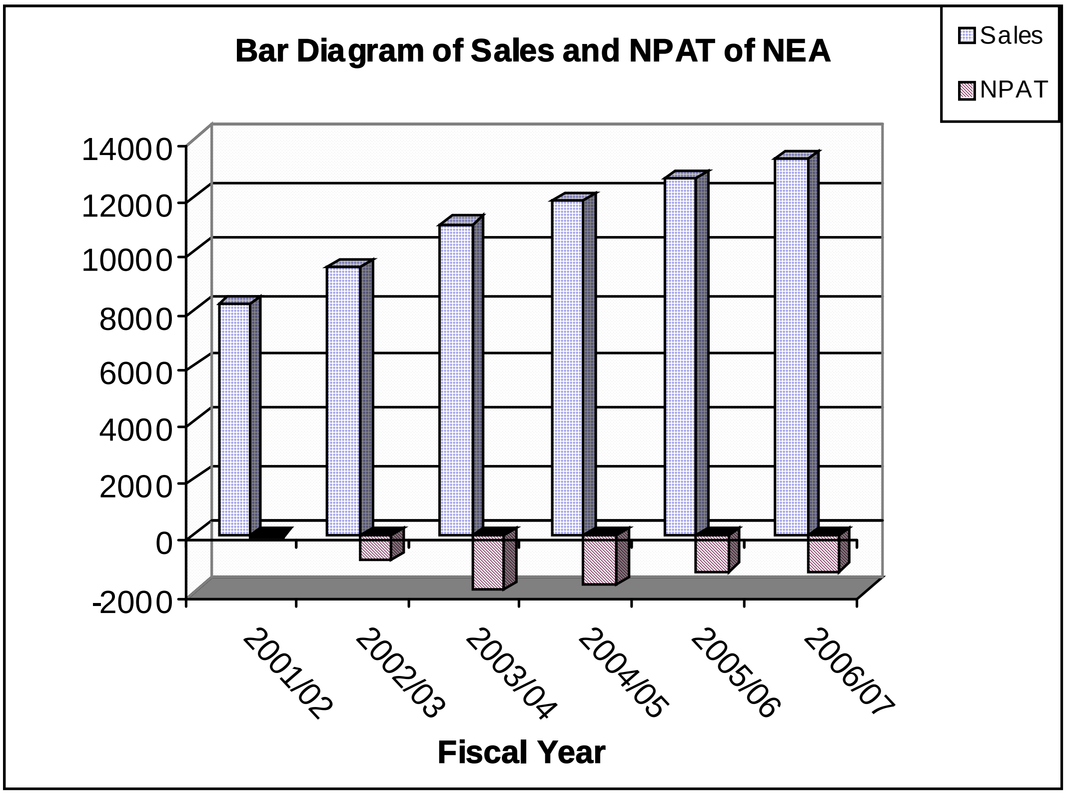
(fig. in million)

Fiscal Year	***Sales***	***NPAT***	***Ratio***
2001/02	8160.80	(51.00)	(0.0062)
2002/03	9476.20	(860.70)	(0.09)
2003/04	11012.60	(1953.70)	(0.17)
2004/05	11874.70	(1760.30)	(0.15)
2005/06	12605.20	(1312.80)	(0.104)
2006/07	13331.90	(1267.80)	(0.095)

Source: Income Statement and Balance sheet of NEA. (Appendix-1)

Above table shows the very poor condition of net profit margin of NEA. There were negative NPR i.e. loss in every year. The ratio of NPR was not satisfactory because NPR should be at least 12%. This ratio indicated that NEA was suffering from heavy loss.

Diagram -1



Above diagram reflects the position of sales and NPAT of NEA during the study period of six year. On the basis of diagram it can be said that sales is in increasing condition and NPAT is negative. It is due to other factor such as high operating expenses and poor utilization of resources etc.

Table No.4.5

Net Profit Margin / Ratio of NWSC

(fig. in million)

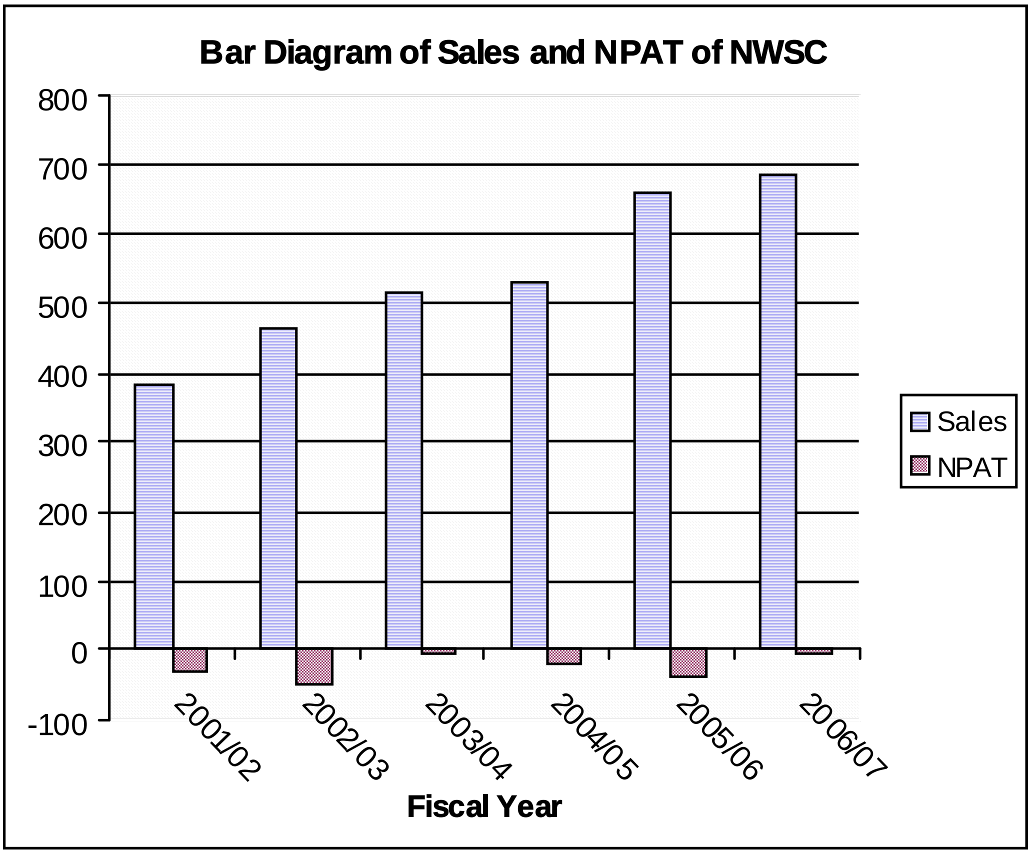
Fiscal Year	***Sales***	***NPAT***	***Ratio***
2001/02	382.52	(30.30)	(0.07)
2002/03	462.59	(47.73)	(0.103)
2003/04	513.33	(4.60)	(0.0089)
2004/05	530.81	(19.20)	(0.036)
2005/06	662.41	(35.70)	(0.054)

2006/07	683.85	(5.00)	(0.0073)

Source: Income Statement and Balance sheet of NWSC. (Appendix-2)

The above table shows very poor condition of Net profit margin of NWSC. There were negative NPR i.e. loss in every year except FY 2005/06. The ratio of NPR was not satisfactory because NPR should be at least 12%. This ratio indicates that NWSC was suffering from heavy loss.

Diagram -2



Above diagram reveals the condition of sales and NPAT of NWSC which is very miserable. Though sales are in increasing condition but NPAT is negative.

Table No.4.6

Net Profit Margin of NTC

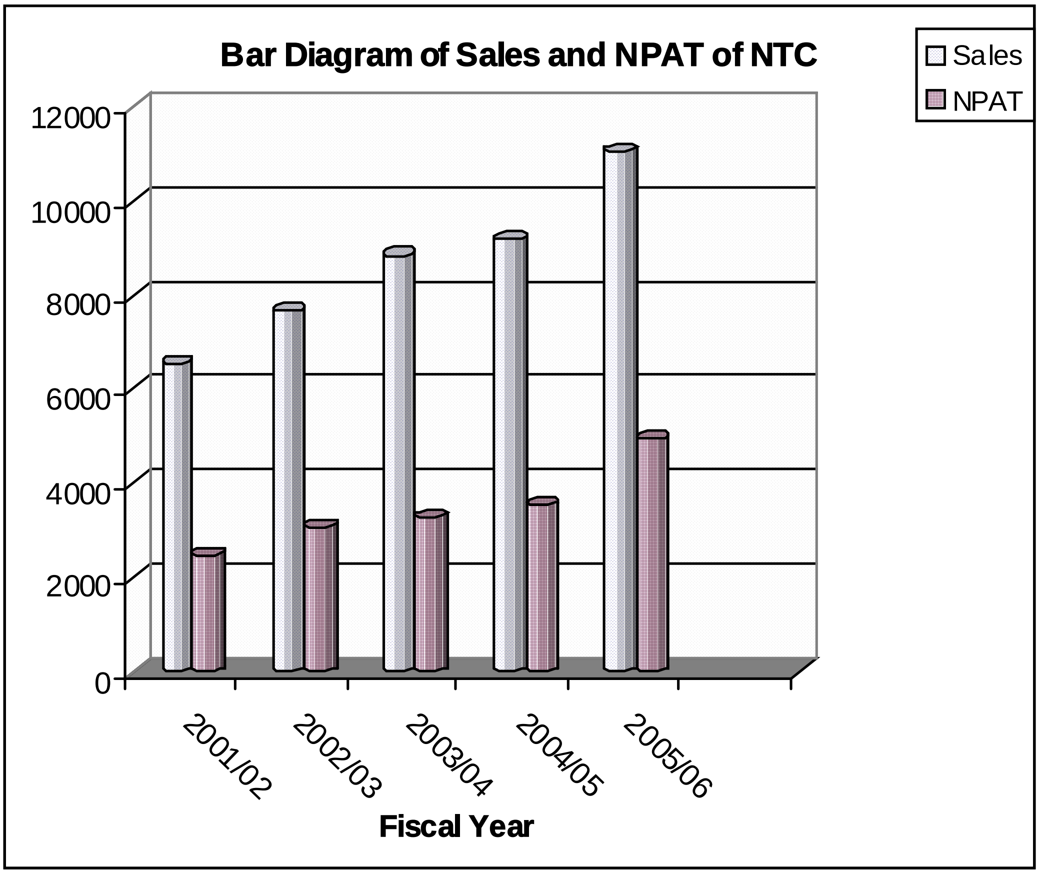
(fig. in million)

Fiscal Year	***Sales***	***NPAT***	***Ratio***
2001/02	6556.00	2467.13	0.376
2002/03	7669.284	3087.782	0.403
2003/04	8855.034	3290.117	0.372
2004/05	9194.297	3542.461	0.385
2005/06	11058.915	4936.647	0.45
2006/07	NA	NA	NA

Source: Income Statement and Balance sheet of NTC. (Appendix-3)

Above table shows the NPR of NTC. The average NPR shows the satisfactory profit of NTC. It indicates that NTC had steady performance in profitability to its sales.

Diagram-3



Above diagram reflects the position of sales and NPAT of NTC during the study period of five years. On the basis of diagram it can be said that both variables were in increasing trend but increment sales is higher than increment ratio of NPAT. Both variables are changing in same direction which is already reflected by positive correlation.

4.1.1.03 Operating Expenses Ratio (OE Ratio)

This ratio shows the relationship between operating expenses and net sales. Operating expenses include administrative expenses, selling and distribution expenses etc. It is calculated as:

$$\text{Operating expenses ratio} = \frac{\text{Operating expenses}}{\text{Sales}} \times 100$$

Table No.4.7

Operating Expenses Ratio of NEA.

(fig. in million)

Fiscal Year	***Sales***	***Operating Expenses***	***Ratio***
2001/02	8160.80	4576.80	0.56
2002/03	9476.20	5886.70	0.62
2003/04	11012.60	5408.70	0.49
2004/05	11874.70	6726.10	

			0.57
2005/06	12605.20	7627.10	0.61
2006/07	13331.90	8332.70	0.63

Source: Income Statement and Balance sheet of NEA. (Appendix-1)

Above table shows the operating expenses ratio of NEA. Its operating expenses were higher in the past year. During the year 2002/03, 2005/06 and 2006/07, It had very high operating expenses which adversely affected the profitability.

Table No.4.8

Operating Expenses Ratio of NWSC.

(fig. in million)

Fiscal Year	***Sales***	***Operating Expenses***	***Ratio***
2001/02	382.52	341.60	0.89
2002/03	462.59	478.82	1.04
2003/04	513.33	474.30	0.92
2004/05	530.81	481.62	0.91

2005/06	662.41	524.30	0.79
2006/07	683.85	588.21	0.86

Source: Income Statement and Balance sheet of NWSC. (Appendix-2)

Above table shows the operating expenses ratio of NWSC. Its operating ratios shows high operating expenses in NWSC. This is very miserable condition for any organization.

Table No.4.9

Operating Expenses Ratio of NTC.

(fig. in million)

Fiscal Year	***Sales***	***Operating Expenses***	***Ratio***
2001/02	6556.00	3235.929	0.49
2002/03	7669.284	3576.165	0.46
2003/04	8855.034	4304.367	0.49
2004/05	9194.297	4272.768	0.46
2005/06	11058.915	4215.188	0.38
2006/07	NA	NA	NA

Source: Income Statement and Balance sheet of NTC. (Appendix-3)

Above table shows the sound operating expenses ratios of NTC during the study period. The ratios were less than 50% which is sound position for any organization.

4.1.1.04 Return on Assets (ROA)

Return on assets evaluates how for the management is effective in using the total resources invested in assets whatever the source of financing may be. It measures the profitability of all financial resources invested in the firm's assets. This ratio is calculated by applying the following formula:

$$ROA = \frac{NPAT + Interest}{Total\ Assets} \times 100$$

Table No.4.10

Return on Assets of NEA

(fig. in million)

Fiscal Year	***NPAT***	***Interest***	***NPAT +Interest***	***Total Assets***	***Ratio***
2001/02	(51.00)	1188.20	1137.20	67574.70	1.68%
2002/03	(860.70)	1395.50	534.80	71251.00	0.75%
2003/04	(1953.70)	2973.40	1019.70	73908.00	1.38%
2004/05	(1760.90)	2991.50	1230.60	78179.40	1.57%
2005/06	(1312.45)	3079.80	1767.35	87215.80	2.03%

2006/07	(1267.80)	3050.90	1783.10	93379.30	1.91%

Source: Income Statement and Balance sheet of NEA. (Appendix-1)

Above table shows the ROA of NEA. The percentage of ROA is very low in NEA. A high ROA shows the better profitability of the organization. Its highest ROA is 2.03% and lowest ROA is 0.75%. It implies that NEA is earning 2.03% in investment of real assets in maximum and 0.75% is minimum.

Table No.4.11

Return on Assets of NWSC.

(fig. in million)

Fiscal Year	***NPAT***	***Interest***	***NPAT +Interest***	***Total Assets***	***Ratio***
2001/02	(30.30)	32.00	1.70	4028.30	0.42%
2002/03	(47.73)	48.11	(0.38)	4560.40	(0.0083%)
2003/04	(4.60)	52.30	47.7	4393.40	1.086%
2004/05	(19.20)	56.20	37	4543.90	0.81%
2005/06	35.70	61.80	97.5	4714.60	2.07%
2006/07	(5.00)	66.10	61.10	4922.5	1.24%

Source: Income Statement and Balance sheet of NWSC. (Appendix-2)

Above table shows the ROA of NWSC. The percentage of ROA is very low in NWSC. Its highest ROA was very normal i.e. 2.07% in 2005 and lowest ROA was (0.0083%) in 2002. This indicates that ROA of NWSC was very worst and NWSC should generate profit to decrease interest in order to increase ROA.

Table No.4.12

Return on Assets of NTC

(fig. in million)

Fiscal Year	NPAT	Interest	NPAT +Interest	Total Assets	Ratio
2001/02	2467.93	106.782	2574.712	25115.658	10.25%
2002/03	3087.782	98.204	3185.986	29724.632	10.72%
2003/04	3290.117	89.942	3380.059	33080.441	10.22%
2004/05	3542.461	57.732	3600.193	35430.582	10.16%
2005/06	4936.647	65.046	5001.693	39214.958	12.75%
2006/07	NA	NA	NA	NA	NA

Source: Income Statement and Balance sheet of NTC. (Appendix-3)

Above table shows the ROA of NTC. Average ROA of NTC was good. It shows the good profitability of the organization. Its shows the good profitability of the organization. Its highest ROA was in the year 2005 and lowest ROA was in the year 2004. ROA was slightly decreased in the year 2003 and 2004 which showed the profit on assets decreased. It indicates that the organization should utilize the assets in proper way. Yet overall ROA was good.

4.1.1.05 Return on Shareholders Equity (ROSE)

This ratio indicated the profitableness of owner's investment. This is the most commonly used ratio for measuring the return on investment and is calculated as follows:

$$\text{Return on Shareholders Equity} = \frac{\text{NPAT}}{\text{Shareholders equity}}$$

Table No.4.13

ROSE of NEA

(fig. in million)

Fiscal Year	***NPAT***	***OShareholders Equity***	***ROSE***
2001/02	(51.00)	24865.40	(0.21)%
2002/03	(860.70)	23838.60	(3.61)%
2003/04	(1953.70)	22054.40	(8.86)%
2004/05	(1760.30)	22516.50	(7.82)%
2005/06	(1312.80)	24861.20	(5.30)%
2006/07	(1267.80)	27365.00	(4.63)%

Source: Income Statement and Balance sheet of NEA. (Appendix-1)

Above table shows ROSE of NEA. The return was very critical condition because of regular losses. It reveals decrement in share price. ROSE of NEA were negative. This situation is very critical for any organization. Overall management of NEA is responsible for this situation, which is needed to be reformed.

Table No.4.14

ROSE of NWSC

(fig. in million)

Fiscal Year	***NPAT***	***OShareholders Equity***	***ROSE***
2001/02	(30.30)	1918.90	(2.11)%
2002/03	(47.73)	1770.30	(2.69)%
2003/04	(4.60)	1713.93	(0.268)%
2004/05	(19.20)	1645.01	(1.17)%
2005/06	35.70	3722.20	0.96%
2006/07	(5.00)	3774.28	(0.13)%

Source: Income Statement and Balance sheet of NWSC. (Appendix-2)

Above calculation shows the ROSE of NWSC. The rose of NWSC was very worst due to the loss. ROSE was positive only in the year 2005/06. The percentage of ROSE was very low in NWSC. A high ROSE shows the better profitability of the organization. Its highest ROSE was 0.96% and lowest was (2.69)%. It implies that NEA is earning 0.96% shareholders return on their investment in maximum and (2.69)% in minimum.

Table No.4.15

ROSE of NTC

(fig. in million)

Fiscal Year	***NPAT***	***OShareholders Equity***	***ROSE***
2001/02	2467.93	16761.25	14.72%
2002/03	3087.78	19353.51	15.95%
2003/04	3290.117	20612.30	15.96%
2004/05	3542.461	20439.50	17.33%
2005/06	4936.647	23549.58	20.96%
2006/07	NA	NA	NA

Source: Income Statement and Balance sheet of NTC. (Appendix-3)

Above table shows the ROSE of NTC. It's ROSE is good to the shareholders. ROSE of NTC is in increasing condition. It's minimum ROSE was 14.72% and maximum was 20.96% which shows that shareholders return on their investment 14.72% in minimum and 20.96% in maximum.

4.1.2 Profitability Tools Regarding Capital Budgeting.

ARR, PI, AI and NPV are used for this analysis.

4.1.2.1 Average Rate of Return (ARR)

Average rate of return on investment is the percentage of annual net return before adding depreciation and but after tax to the initial investment of the project. The higher ARR is selected for the decision. It completely ignores the time value of money. Mathematically, the ARR can be calculated as follows:

$$ARR = \frac{\text{Average Net Income (ANI)}}{\text{Average Investment (AI)}} \times 100$$

Table No. 4.16

Average rate of return

(fig. in million)

Enterprises	***ANI***	***AI***	***ARR***
NEA	(1250.94)	9161.24	(13.65%)
NWSC	(211.02)	685.52	(30.78%)
NTC	2045	1026.5	200%

Above table shows ARR of NEA, NWSC and NTC are (13.65%), (30.78%) and 200% respectively. ARR of NEA and NWSC is veryu poor but ARR of NTC is very good it indicates that NWSC and NEA have to improve the management to get high rate of return.

4.1.2.2 Profitability Index (PI)

Profitability index is sometimes referred to as benefit cost ratio and excess present value index. A ratio of total present value of cash flow and initial cash outlay is called profitability index. The profitability index is calculated as under:

$$PI = \frac{TPV}{IO}$$

Where,

TPV = Total Present Value

IO = Initial Investment

Table No.4.17

Profitability Index.

(fig. in million)

Enterprise	***TPV***	***Investment***	***PI***
NEA	(3699.06)	18322.48	(20.18%)
NWSC	(621.17)	1371.04	(45.29%)
NTC	6775.03	2053.00	330%

Above table shows profitability index of NEA, NWSC and NTC which are (20.18%), (45.29%) and 330% respectively. PI of NEA, NWSC have negative which indicate that it needs to improve management to get positive PI and PI of NTC is very much satisfactory.

4.1.2.3 Net Present Value (NPV)

This method is the best method for evaluating capital investment project. NPV is the difference between total present value of cash inflows discounted at projects cost of capital and net investment. This method considered time value of money and all cash inflows.

NPV = Total Present Value of Cash out flows - Net Investment

Table No.4.18

Net Present Value of NEA

(fig. in million)

Fiscal Year	***Cahs Flow***	***PVFactor of 15%***	***Present Value***
2001/02	(386.30)	0.870	(336.08)
2002/03	(100.10)	0.756	(75.66)
2003/04	(1004.00)	0.658	(660.63)
2004/05	(3451.50)	0.572	(1974.23)
2005/06	(1312.80)	0.497	(652.46)
		TPV =	(3699.06)

Less: Investment = 18322.48

NPV = (22021.54)

Table No.4.19

Net Present Value of NWSC

(fig. in million)

Fiscal Year	***Cahs Flow***	***PVFactor of 15%***	***Present Value***
2001/02	75.00	0.870	65.52
2002/03	(242.48)	0.756	(183.31)
2003/04	(250.36)	0.658	(164.74)
2004/05	(288.86)	0.572	(165.22)
2005/06	(348.40)	0.497	(173.15)

TPV = (621.17)

Less: Investment = 1371.04

NPV = (1992.21)

Table No.4.20

Net Present Value of NTC

(fig. in million)

Fiscal Year	***Cahs Flow***	***PVFactor of 15%***	***Present Value***
2001/02	1826	0.870	1588.62
2002/03	1911	0.756	1444.72
2003/04	2066	0.658	1352.85
2004/05	2548	0.572	1457.45
2005/06	1874	0.497	931.38
		TPV =	6775.03
		Less: Investment =	2053.00
		NPV =	4722.03

Above table no.4.18, 4.19 and 4.20 shows NPV of NTC, NWSC and NEA which are 4722.03, (1992.21) and (22021.54) respectively. The NPV of

NTC is positive which indicates favorable condition. The NPV of NWSC and NEA is negative which is very miserable condition. It shows the NWSC and NEA both have to improve management to get positive NPV.

Diagram 4

Diagram of ANI and AI of NEA, NWSC and NTC

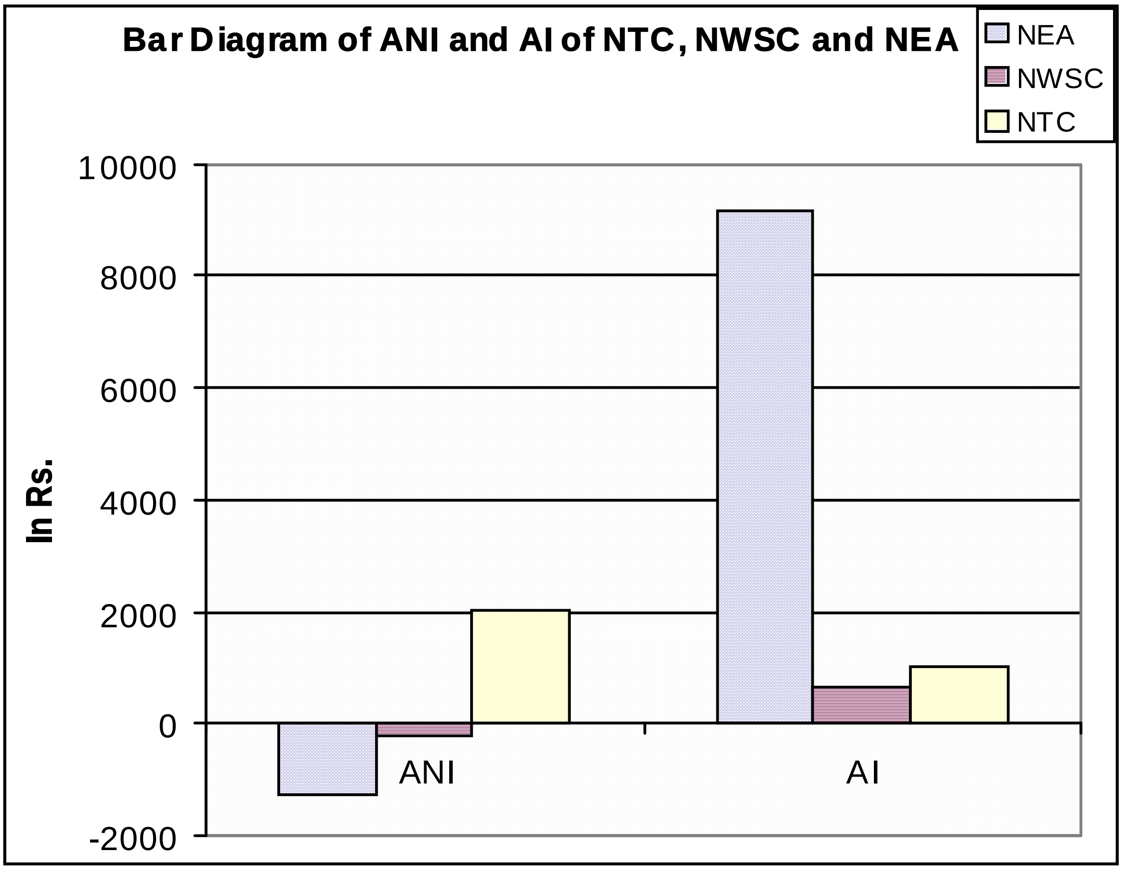
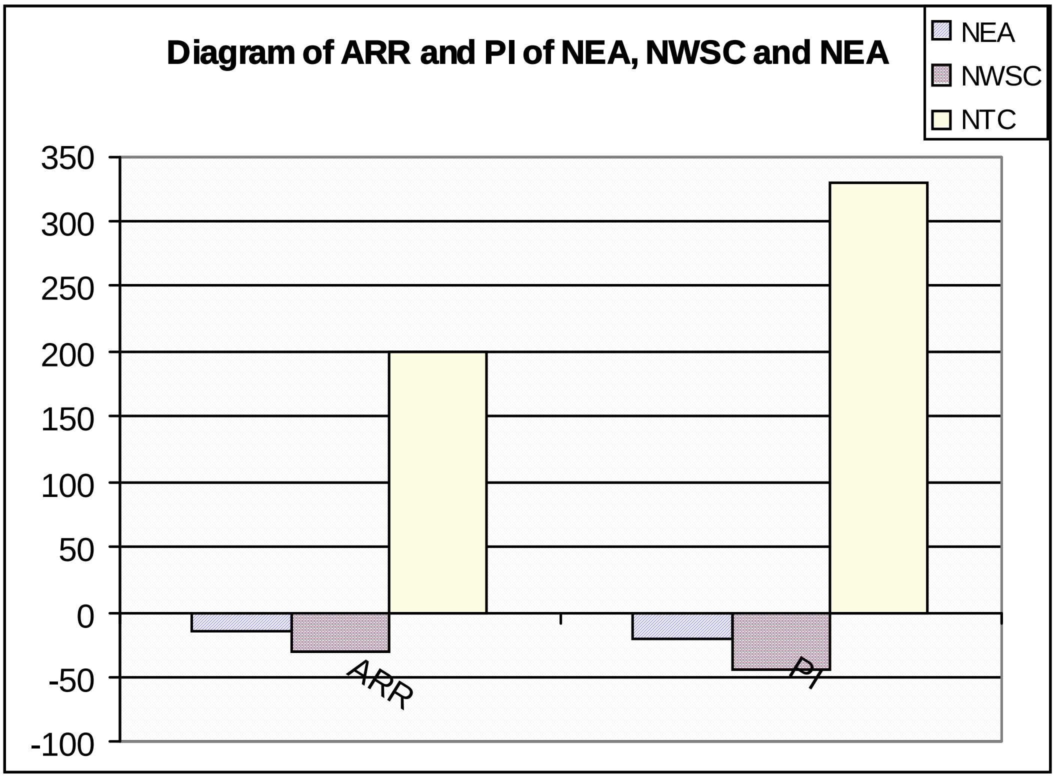


Diagram 5

Diagram of ARR and PI of NTC, NWSC and NEA



<u>Diagram 6</u>

Diagram of TPV and investment of NEA, NWSC and NTC

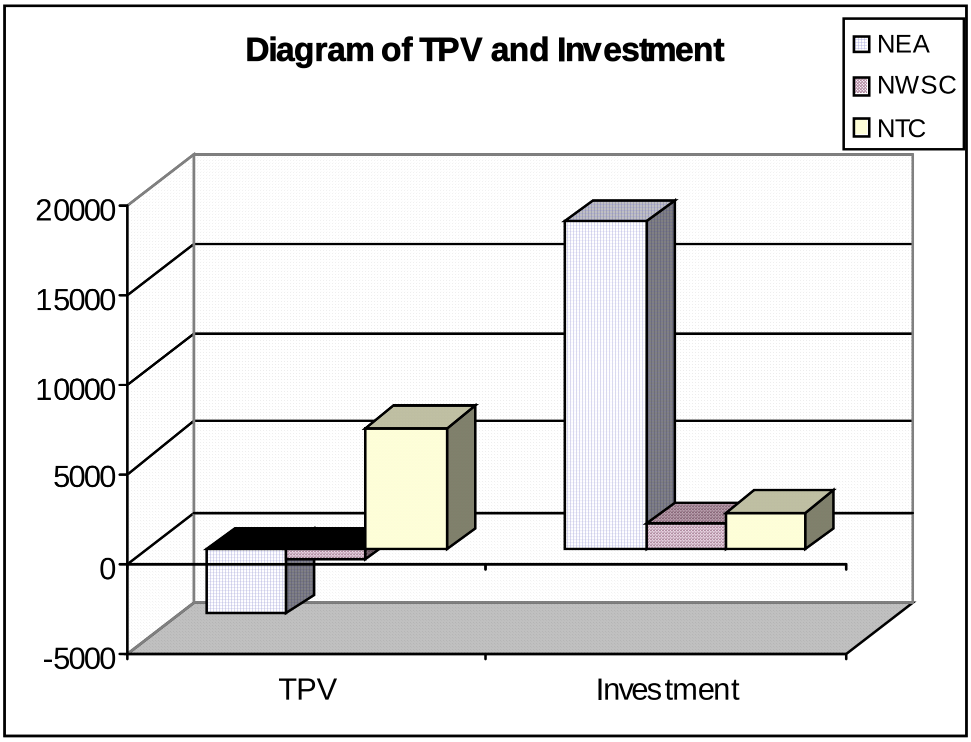
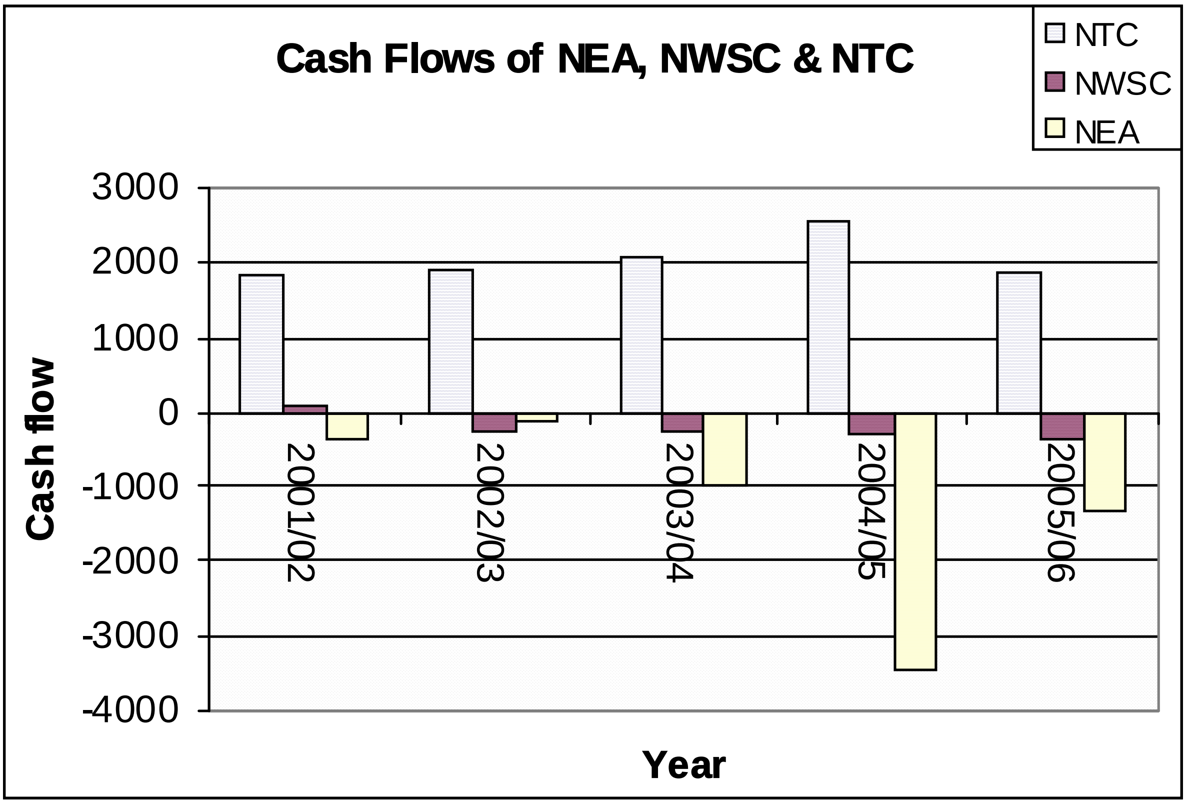


__Diagram 7__

Diagram of cash flows of NTC, NWSC and NEA



4.1.3 Statistical Tools

Besides financial tools, statistical tools are used to measure the relation of different variables. Under statistical tools means, standard deviation (SD), correlation, co-efficient of variation (CV), probable error (PE) and regression analysis between selected variables are used which are as follows:

4.1.3.1 Regression Analysis Between Sales and NPAT of NEA

Calculation of mean, standard deviation (SD), correlation, co-efficient of variation (CV), probable error (PE) and regression between sales and Net profit after tax of NEA.

Table No.4.21

Calculation of statistical tools.

(fig. in million)

Fiscal Year	***Sales (x)***	***NPAT (Y)***	***x - x***	***y - y***	***(x - x)^2***	***(y - y)^2***	***(x - x)(y***
2001/02	8160.80	(51.00)	(2916.10)	1150.05	8503639.20	1322615.00	(3353366
2002/03	9476.20	(860.70)	(1600.70)	340.35	2562240.49	115838.13	(544798
2003/04	11012.60	(1953.70)	(64.30)	(752.65)	4134.49	566482.02	48395.40
2004/05	11874.60	(1760.30)	(797.8)	(559.25)	636484.84	312760.56	446169.
2005/06	12605.20	(1312.80)	1528.30	(111.75)	2335700.89	12488.06	(170787
2006/07	13331.90	(1267.80)	2255	(66.75)	5085025	4455.56	(150521
Total	66461.4	(7206.30)		0	19127224.91	2334639.34	3725202

Source : Income statement of NEA (Appendix-1)

Mean (x) = 11076.90

Mean (y) = -1076.56

SD of x (σ x) = 1785.50

SD of y (σ y) = 623.78

CV of x (CV_x) = 16.12%

CV of y (CVy) = -5.2%

Correlation (r) = -0.478

Probable Error (PE) = 0.212

Regression = -1.6

Explanation:

The above table shows the mean, standard deviation, co-efficient of variation of sales (x) and NPAT (y), mean of sales is Rs.11076.90 million and mean of NPAT was (1076.56) million. Standard deviation of sales was Rs. 1785.50 million and SD of NPAT was Rs.623.78. Similarly CV of sales was 16.12% and CV of NPAT was (5.2%). CV of NPAT was negative which shows its variability was less than sales.

To analysis the relationship between sales NPAT; other statistical tools i.e. correlation of co-efficient is also used. Karl Pearson's co-efficient of correlation is used to find the relationship is denoted by "r" correlation between sales (x) and NPAT (y) was (0.478) which shows the negative correlation of these two variables. It gives the result that NPAT does not change in the same direction as the changes of sales.

To test the significant of r we take help of probable error (PE). If r is greater the 6 PE, the value of r is significant.

From the above table,

We have, PE = 0.212

Again

6 PE = 1.272

Our calculation shows that r<PE i.e. -0.478 < 1.272 which implies that the value of r is insignificant.

4.1.3.2 Regression Analysis between Sales and NPAT of NWSC

Calculation of mean, standard deviation, co-efficient of variance (CV), probable error, correlation and regression between sales and net profit after tax.

<u>Table No.4.22</u>

Calculation of statistical tools.

(fig. in million)

Fiscal Year	*Sales (x)*	*NPAT (Y)*	*x - x*	*y - y*	*(x - x)²*	*(y - y)²*	*(x - x)(y-y)*
2001	382.52	(30.30)	(156.78)	(18.44)	24579.97	340.00	2891.00
2002	462.59	(47.73)	(76.71)	(35.87)	5884.42	1286.60	2751.58
2003	513.33	(4.60)	(25.97)	7.26	674.44	52.71	(188.54)
2004	530.81	(19.20)	(8.49)	(7.34)	72.08	53.88	62.32
2005	662.41	35.70	123.10	47.56	15156.10	2261.90	5854.64

2006	682.85	(5.00)	144.55	6.86	20894.70	47.05	991.60
Total	3235.50	(71.13)	(0.030)	0.03	67261.70	4042.30	12362.60

Source : Income statement of NWSC (Appendix-2)

Mean of Sales (x) = 539.30

Mean of NPAT (y) = (11.86)

SD of sales (σ x) = 105.88

SD of NPAT (σ y) = 25.96

CV of sales (CVx) = 19.63%

CV of NPAT (CVy) = (2.2)%

Correlation (r) = 0.75

Probable Error (PE) = 0.13

Regression = 0.184

The above table shows the mean, standard deviation, coefficient of variation of sales (x) and NPAT (y) of NWSC. Mean sales was Rs.539.30 million and mean of NPAT was Rs.(11.86) million respectively SD of sales was Rs.105.88 million and SD of NPAT was Rs.25.96 CV of sales was 19.63% and CV of NPAT was (2.2)%. It shows that NPAT of NWSC was more consistent than sales value due to its smaller CV. correlation between sales and NPAT was 0.75 which implies that there were positive correlation between these two variable. It gives the result that NPAT change to the same direction change in sales. Now the significant of r is tested with the help of PE.

We have,

PE = 0.13

6 PE = 0.78

Here, r>PE i.e. (0.75<0.78) which gives that r was insignificant change in NPAT do not of to the same direction as the change of sales. In other words, NPAT was not dependent upon sales only. There were other variables which affect the organization's NPAT.

4.1.2.3 Regression between Sales and NPAT of NTC:

Calculation of mean, standard deviation, co-efficient of variance (CV), probable error (PE), correlation and regression between sales and net profit after tax.

Table No.4.23

Calculation of statistical tools.

(fig. in million)

Fiscal Year	***Sales (x)***	***NPAT (Y)***	***x - x***	***y - y***	***$(x - x)^2$***	***$(y - y)^2$***	***(x - x)(y-y)***
2001/02	6556.00	2467.13	(2110.706)	(997.70)	4455079.80	995397.71	2105851.40
2002/03	7669.284	3087.782	(994.72)	(377)	994850.65	142162.33	375009.44
2003/04	8855.034	3290.117	(188.33)	(174.71)	35467.44	30523.30	32903.13
2004/05	9194.297	3542.461	527.59	77.63	278352.30	6027.16	40956.80
2005/06	11058.915	4936.641	2392.20	1471.80	5722663.90	2166256.90	3520839.96
2006/07	NA	NA	NA	NA	NA	NA	
Total	43333.53	17324.13	(373.97)	0.020	11486414.06	3340366.90	6075560.73

Mean (x) = Rs.8666.706

Mean (y) = Rs.3464.83

SD of x (σ x) = Rs.1515.70

SD of y (σ y) = Rs.817.40

Correlation (r) = 0.98

Probable Error = 0.012

Regression = 0.53

CVx = 17.50%

CVy = 23.60%

Where,

$$\text{Mean of x } (\bar{x}) = \frac{\sum x}{n}$$

$$\text{Mean of y } (\bar{y}) = \frac{\sum y}{n}$$

$$\text{SD of x } (\sigma x) = \sqrt{\frac{1}{n}\sum(x-\bar{x})^2}$$

$$\text{SD of y } (\sigma y) = \sqrt{\frac{1}{n}\sum(y-\bar{y})^2}$$

$$\text{C.V. of x (CVx)} = \frac{\sigma x}{\bar{x}} \times 100$$

$$\text{C.V. of y (CVy)} = \frac{\sigma y}{\bar{y}} \times 100$$

$$\frac{1}{n}\sum(x-\bar{x})(y-\bar{y})$$

Correlation (r) = n

$$1 \quad \sum(x-x)^2 \qquad 1 \quad \sum(y-y)^2$$

n n

Probable Error = $0.6745 \quad x \quad \frac{1-r^2}{\sqrt{n}}$

Regression y on x

y-y = byx (x-x)

$$byx = \frac{\frac{1}{n}\sum(x-x)\,(y-y)}{\frac{1}{n}\sum(x-x)}$$

Explanation:

Above table no.4.23 shows mean, standard deviation, co-efficient of variation (CV) of sales and NPAT. Similarly correlation between sales(x) and NPAT (y), regression and probable error is also calculated. Mean of sales was Rs.8666.706 million and NPAT was rs.3464.83 million, SD of sales and NPAT was Rs.1515.70 and Rs.817.40 million respectively. CV of sales was 17.5% and CV of NPAT was 23.6%. So sales were more consistent than NPAT. A distribution with greater CV was said to be more neterogeneous or more variable than other. In other words a distribution with smaller CV was said to be more homogeneous or less variable than other. It could be said that NTC sales in the nature was more variability than NPAT.

To analysis the relationship between sales and NPAT another statistical tool i.e. Karl's coefficient of correlation was used to find correlation between sales & NPAT. It is denoted by r. correlation between sales (x) and NPAT (y) was 0.98 which showed the position correlation between sales and NPAT. So it could be said that the dependent variable y i.e. NPAT would change in the same direction as the change of sales.

Now the significance could be tested with the help of probable error (PE). From the above we have the value of :

PE = 0.12

6 PE = 0.072

If r>PE the value or r is significance.

Here, r> PE i.e. 0.98>0.072 which implies there is positive correlation between sales and NPAT will increase if sales will be increased and vice versa.

Assuming there is linear relationship between sales (x) and NPAT (y) the line of best fit was,

Y = 0.53x - 1128.50

This equation showed that the value of NPAT (i.e. y) change by 0.53 units when the value of sales (i.e.x) change by one unit.

CHAPTER - 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary:

This chapter has mainly focused on summary, conclusion and recommendation of the study. The study is mainly concentrated on profitability of public enterprises of Nepal for this purpose, we have included Nepal

Electricity Authority (NEA), Nepal Water Supply Corporation (NWSC) and Nepal Telecom (NTC).

The main purpose of the study is to evaluate comparative financial performance of public enterprises stated above.

NEA is a leading corporation in power production, transmission and distribution. Under Nepal Electricity Act 2041, it is established on 1st Bhadra 2042 B.S. It was established following the amalgamation of the Electricity Department Nepal, Electricity Corporation and number of boards related to the power sector.

NWSC is established in 2030 B.S. under Development Board Act named as water supply and Sewerage Board. It was converted into Nepal Water Supply Corporation (NWSC) from water supply and Sewerage Board on 15th Falgun 2046.

Similarly, NTC is established on 2032 Ashar 1st under Nepal Telecommunication Act 1971 and turned into Nepal Telecom in 1st Baisakh 2061.

The history of all these three Public Enterprises are already reflected in the first chapter. In this chapter statement of problem, importance of the study, limitation of the study and organization of the study are included. Besides these development of public enterprises in Nepal up to Ninth plan and target during tenth plan is also included.

In the second chapter different books, document dissertations, financial journals, previous studies have been reviewed with introduction, meaning and use of financial tool.

In the third chapter research methodology have been described. Introduction, research design, population and sample, time period covered, sources of data, data analysis tools, research variables have been included in this chapter.

In fourth chapter, we have made analysis and presentation of data with the help of analytical tools and statistical tools. With the help of financial tools profitability position of all three public enterprises have been analyzed and evaluated. Moreover, we have also used statistical tools such as mean, standard deviation, consistency and variability, correlation and regression analysis and interpreted. Diagram of different variables have been also presented.

In the fifth chapter, the summary conclusions and recommendations have been given.

5.2 Conclusions:

On the basis of analysis main finding and conclusions are as follows:

(1) NEA has generated poor operating profit. NEA has generated 0.30, 0.26, 0.39, 0.33, 0.29 and 0.26 operating ratio in FY 2001/02, 2002/03, 2003/04, 2004/05, 2005/06 and 2006/07 respectively. It has fluctuating trend with decrement. NWSC has generated loss by 0.035 and 0.076 in FY 2002/03 and 2003/04 and nominal operating profit in the FY 2001/02, 2004/05, 2005/06 and 2006/07 by 0.107, 0.093, 0.208 and 0.141 respectively. Which is due to poor stock management, inefficient assets utilization and high operating expenses. It means both organizations were not able to meet their internal expenses through operating profit. The operating profit

ratio of NTC have been 0.50, 0.50, 0.51, 0.54 and 0.62 in FY 2001/02, 2002/03, 2003/04, 2004/05 and 2005/06 respectively, which seems to be satisfactory. It has increasing trend.

(2) Due to the nominal OP Ratio of NEA, NP-Ratio was also affected adversely. During the study period, NP ratio of NEA were (0.0062), (0.09), (0.17), (0.15), (0.104) and (0.095) in FY 2001/02, 2002/03, 2003/04, 2004/05, 2005/06 and 2006/07. Which shows NEA has always in loss. NP ratio of NWSC were (0.07), (0.103), (0.0089), (0.036), 0.054 and 0.0073 in FY 2001/02, 2002/03, 2003/04, 2004/05, 2005/06 and 2006/07 respectively which indicate that NWSC has get profit in only one FY. It is due to poor operating profit ratio and high operating expenses including interest. NP ratio of NTC were 0.376, 0.403, 0.372, 0.385 and 0.45 in FY 2001/02, 2002/03, 2003/04, 2004/05 and 2005/06 respectively, which reflects NTC is utilizing overall resources in efficient way.

(3) During the study period operating expenses of NEA were 0.56, 0.62, 0.49, 0.57, 0.61 and 0.63 in FY 2001/02, 2002/03, 2003/04, 2004/05, 2005/06 and 2006/07 respectively which was very much fluctuating. These ratio showed the unsatisfactory result. NWSC has 0.89, 1.04, 0.92, 0.91, 0.79 and 0.86 operating expenses in FY 2001/02, 2002/03, 2003/04, 2004/05, 2005/06 and 2006/07 respectively. Which show worst condition. OE ratio of NTC has 0.49, 0.46, 0.49, 0.46 and 0.38 respectively in FY 2001/02, 2002/03, 2003/04, 2004/05 and 2005/06. Which shows satisfactory condition because all OE ratio were less than 50%.

(4) ROA of NEA were poor during the study period. In FY 2001/02, 2002/03, 2003/04, 2004/05, 2005/06 and 2006/07 ROA of NEA were 1.68%, 0.75%, 1.38%, 1.57%, 2.03% and 1.91% respectively. ROA of NWSC in

FY 2001/02, 2002/03, 2003/04, 2004/05, 2005/06 and 2006/07 were 0.042%, (0.0083)%, 1.086%. 0.81%, 2.07% and 1.24% respectively which reflects that both organization has poor utilization of assets and low net profit was the causing inefficient assets management. NTC has 10.25%, 10.72%, 10.16% and 12.75%. ROA in FY 2001/02, 2002/03, 2003/04, 2004/05 and 2005/06 respectively. Which was very much satisfactory. It showed that assets utilization was very good in NTC.

(5) NEA has (0.21)%, (3.61)%, (8.86)%, (7.82)%, (5.30)% and (4.63)% ROSE in FY 2001/02, 2002/03, 2003/04, 2004/05, 2005/06 and 2006/07 respectively. NWSC has (2.11)%, (2.69)%, (0.268)%, (1.17)%, 0.96% and (0.13)% ROSE in FY 2001/02, 2002/03, 2003/04, 2004/05, 2005/06 and 2006/07 respectively. Which reflects that these both organization were lacking of efficient utilization of capital. ROSE of NTC during the study period were 14.72%, 15.95%, 15.96%, 17.33% and 20.96% in FY 2001/02, 2002/03, 2003/04, 2004/05 and 2005/06 respectively. Which indicate that shareholders has good return in their investment and their investment was secure.

(6) The NEA and NWSC has negative ARR i.e. (30.78)% and (13.65)%. It indicated that both organization had to improve a lot to run. The ARR of NTC was 200% which was very much satisfactory. It meant that NTC has sound management policy.

(7) NEA and NWSC has negative profitability index which was (45.29)% and (20.18)%. It was very critical condition. Both organization have to improve the management to earn profit otherwise it will have great problem in future. The PI of NTC was 330% which was very high. It showed that NTC was gaining high profit.

(8) NPV of NEA and NWSC were in very miserable condition i.e. (22021.54) and (1992.21). It was very critical and serious situation of the organization. NPV of NTC was 4722.03, which was very sound condition. It showed that NTC was operating smoothly having high benefit.

5.3 Recommendations:

Based on the findings and conclusions of the study some suggestions have been recommended to improve profitability. It is hoped that these recommendations will be fruitful to management of the organization and concerned institutions and individuals as well.

1 To improve the overall performance these organizations should give attention to SWOT (strength, weakness, opportunities and threats) analysis.

2 To control over cost NEA and NWSC should adopted the standard costing system which helps these to look forward and assess what the cost "should be" as distinct from what the cost has been in the past. Cost of NTC was sound so the organization should sustain and cope with changing environment.

3 To generate additional income without additional cost these organizations should pay attention for efficient utilization of their assets, specially NEA and NWSC. This is more important in case of acquisition of assets in future. In case of NTC, utilization of assets seems satisfactory and it should sustain this capacity in future too.

4 Among several resources, human resources is the key resources in any

organizations. Thus, these organization have to select staff "Right man in right job at right place" which helps organization to meet theirs target. For this, these organization should always try to maintain its staff on high spirit by providing motivation, training, promotional opportunities etc. and also communicate their goal, objective, strategies to lower level staff and brings their opinion, suggestion for taking decision and making new rules, regulations and laws.

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