

IMPACT OF BUDGETING ON PROFITABILITY OF DURGA ROSIN AND TURPENTINE INDUSTRY

A Thesis

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Declaration

I hereby declare that the data and work report in this thesis entitled “**IMPACT OF BUDGETING ON PROFITABILITY OF DURGA ROSIN AND TURPENTINE INDUSTRY**” submitted to office of the Dean, Faculty of Management, Tribhuvan University is my automatic work done for the partial fulfillment of the requirement of the Degree of Master of Business Studies (M.B.S.) under the guidance and supervision of **Mr. Kesav Nath Wagle**, Associate Professor of Nepal Commerce campus, Tribhuvan University.

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Lastly, I don't want to state that this research report is complete and perfectly satisfactory. There may be various limitations and short comings. I am alone responsible for all those.

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Acronyms

AD	=	Anno Domini
ARR	=	Average Rate of Return
BEP	=	Break Even Point
BOD	=	Board of Director
BS	=	Bikram Sambat
Cov	=	Covariance
CV	=	Coefficient of Variation
CVP	=	Cost Volume Profit
DRTI	=	Durga Rosin and Turpentine Industries
FC	=	Fixed Cost
FY	=	Fiscal Year
GDP	=	Gross Domestic Product
IRR	=	Internal Rate of Return
Ltd.	=	Limited
NPV	=	Net Present Value
P/V ratio	=	Profit Volume Ratio
Pa	=	Per Annum
PBP	=	Pay Back Period
PPC	=	Profit Planning and Control
Rs.	=	Nepalese Rupees
SD	=	Standard Deviation
VC	=	Variable Cost

Chapter - I

Introduction

1.1. General Background

Nepal is a landlocked country, situated in South Asia, occupying 1, 47, 181 sq.km. It is located between 26 22" to 30 27" North Longitude and 80 4" to 88 12" East Latitude. The average length being 885 km. east to west and average breath is 193 km. north to south. It is an independent country that lies between two powerful countries, India and China.

It is one of the least developed countries of the world. Over 30% of people of the country are under absolute poverty line. There is a great challenge for the nation to eliminate massive poverty existing in the country through gradual development of the industrial sector and to provide basic needs to the people. So, industrialization has been considered essential for the economic development of the country.

In Nepal the history of development of industries begins after the Democracy of 2007 B.S. During the Rana Regime, they were not interested in the development of the country. Through, Biratnagar Jute Mill, Nepal Bank Ltd., Juddha Match Factory, Morang Cotton Mill, Mahendra Sugar Mill and Butawal Plywood & Bobiu Factory had been established during this Regime. They are the parents industries in Nepal. After the introduction of democracy, the government felt the need of the industrialization and started some public enterprises. The government established a separate unit as "Udhyog Parisad" and "Industry Department". After the restoration of democracy, the department has been recognizing by its new name "Cottage and Small Industry Department".

It was felt that the private sector could not set up all basic and feasible industries capable of making special contribution to the industrial development of the country. Within the period of the fourth plan the new industrial policy 1974 A.D. was also announced by the government. In 1981 A.D. a new industrial policy was declared and the main features of this policy were that all industries were kept open to private sector except the defiance industry.

The changing political situation compelled to change its industrial policy. In 1992 new industrial policy was declared and this policy is very liberal in respect of registration and other official procedures. Private investment is welcomed. In this reference, the government has conducted the procedure of privatizing some public enterprises, such as Bhrikuti Paper Mill and Harisiddhi Bricks Factory are the major in first phase. The process will continue. Likewise the ministry of industry, UNDP has jointly conducted a foreign investment forum at the first week of December 2004, the investors more than hundred countries attended the conference and should their keen interest in the Industrialization to be established in Nepal. It is believe that the conference leads the industrial situation of Nepal towards the golden future.

1.2. Introduction of Durga Rosin and Turpentine Industry.

Because of the easy availability of the pine trees in the forest of Nepal, there is a huge potentiality of the resin products. So with the help of USSR, Nepal Rosin and Turpentine was established by the government sector. But it could not produce the expected outcome and the private sectors were gradually being involved in the sector and Durga Rosin and Turpentine is one of them.

Durga Rosin and Turpentine started its service as a welfare institution. Slowly it converted itself to a company and now it occupies one to the greatest place in the factories of this kind. Its main area of work is the eastern hillside forest

and it exports the rosin and turpentine to India by processing the resin in its own factory. It has helped too many in its area in various ways. It pays to the public forest committee for the use of its forest provides employment to the local people and more than that it helps to promote the industrial sector in our country. By the competition with several other industries, it has made itself intact and fit. It is even growing and expanding because of its good administration and management.

DRTI is the selected representative enterprise of the present study. This enterprise is Sole proprietorship manufacturing industry dealing in Resin Collection and Production of Rosin and Turpentine.

DRTI is one of the industries in the Private Sector which is continuously increasing its efficiency and getting Success in its field. DRTI was established in 2055 B.S. and it has been continuing its operations since the time of establishment.

The head office of this industry is located at Charpane Village Development Committee in Jhapa district. Industry's ownership is undertaken by Mr. Ratan Tayal

1.3. Importance of the study

This research study will be concerned with the budgeting of Durga Rosin and Turpentine Industry. So that, it tries to be bridge between the literatures and the present practice of the company.

In many of private enterprises and private limited companies of Nepal, budgets are prepared at random and profit planning process is not applied in the real sense. In its consequences, most of the enterprises suffer from the poor performance. The significance of the study will be really to examine whatever the DRTI is applying budgeting system properly or not and analyze if there is and drawback in profit planning system of DRTI.

It will be more important for Durga Rosin and Turpentine Industry's management because it will be provided necessary theoretical as well as contemporary situational concept to make appropriate decisions in this regard.

1.4. Statement of the problems:

The main problem of enterprises is ignorance of objective of enterprises even among the managers. Defective objectives, limited participation of lower level management in developing goals and objectives, A big communication gap between top and lower level employees, lower number of competent planners with limited skills, a little analysis of internal and external environment of the enterprises, excessive interference of the board in major decisions, unsound financial position of the enterprises, frequent change of the chief executives limited use of modern technologies are the problems generally faced by Nepalese enterprise.

Success of any business enterprise is measured by capacity of Surplus generation. But the financial performances of manufacturing enterprises in Nepal are quite dismal and have not been able to contribute towards generation of surplus.

The Successful operation of an organization largely depends upon the planning system that it has adapted. Budgeting is one of the most important managerial devices that plays a key role for the effective formulation and implementation of strategic as well as tactical plans of an organization. Profit planning system requires the effective Co-ordination between various functional budgets of an organization like Sales plan, Production Plan, material Plan, labor Plan, Cash budget and Capital expenditure budget etc. This research report attempts to show the relationship between these budgets and

their application along with their achievement for solving the problems of DRTI. Like:-

- a. Maintaining budget discipline also stands as a major problem to some extent in DRTI
- b. The company has huge amount of cash and bank balance which is lying idle and this is not appropriate for the company from the benefit point of view.
- c. DRTI has not maintained clear cut boundaries about cost classification as fixed and variable.
- d. Cash inflow of the company has been mainly spent to meet the operating losses.

Enterprise cannot accomplish its predetermined goals and objectives without efficient and proper planning. The basic issues of profit planning have been discussed in this research Paper. Some important methods of looking of Profit Planning are budgeting, cost-volume profit analysis, ratio analysis, cash flow analysis etc.

In the contest of above, the study has tried to answer the following questions:

- (a) To what extent is the process of profit planning followed in DRTI.
- (b) What are the main problem of DRTI in developing and implementing profit plans?
- (c) What steps should be taken to improve the profit planning or managerial budgeting system of DRTI.

1.5. Objectives of the Study

The basic objective of the study is to examine the practice and effectiveness of budgeting in Durga Rosin and Turpentine Industry. The other objectives of the study are as follows:

- (a) To analyze the budgeting procedures applied in DRTI.
- (b) To analyze the major functional and financial plans formulated and implemented in DRTI.
- (c) To examine the outcome of those budgets in terms of achievement.
- (d) To point out possible suggestions and recommendations to improve the performance of DRTI based on the study.

1.6. Limitation of the Study

The study is focuses on the budgeting of Durga Rosin and Turpentine Industry. The following factors have limited the scope of the Study:

- (a) The study covers the analysis of only five years i.e. from F.Y. 2060/061 to 2064/065. .
- (b) This study is only concerned budgeting of Durga Rosin and Turpentine Industry.
- (c) This study is based on the primary as well as secondary data provided by the management of DRTI. Reliability of the study depends upon the accuracy of such data.

1.7. Chapter Scheme

The Study is organized by the following chapter:

Chapter I:	Introduction
Chapter II:	Review of Literature
Chapter III:	Research Methodology
Chapter IV:	Presentation and analysis of data
Chapter V:	Summary, Conclusion and Recommendation

The first chapter i.e. introduction of this study is to be included general background, an overview of DRTI, statement of the problems, importance of the study, objectives of the study, limitations of the study and chapter-scheme.

The second chapter - Conceptual Framework is mainly include the Profit Planning concept, fundamentals of Profit Planning process or profit planning, importance of profit planning, development of profit planning deals with different budget, Review of literature which included a brief review of previous research work.

The third Chapter- the research methodology is follow to achieve the purpose of the study have described. It consists of the research design, the population and sample, period covered, nature and sources of data, tools used and research variables and questions.

The fourth chapter- Presentation and analysis of data is consisting of various sales budget, profit and loss account and balance sheet. Cost volume profit analysis and flexible budget also is to be done at the last of this chapter.

The fifth chapter- Summary, conclusion and recommendations mainly include the summary, conclusion and recommendations on the basis of the study.

At the end, bibliography and various appendix has been given.

Chapter - II

Review of Literature

2.1 Concept of Profit Planning

Budgeting is a part of overall planning process of an organization. When a management plans its profit performance that is known as profit planning or Managerial Budgeting. The managerial process and budgeting are interrelated to each other. Success of management is always depended on well planning.

"The concept and techniques of profit planning and control (PPC) have wide application in individual business enterprises, governmental units, charitable organizations and virtually all group endeavors".¹

Comprehensive profit planning and control is viewed as a process designed to help management effectively perform significant phases of the planning and controlling functions. Comprehensive profit planning and control is defined as a systematic and formulized approach for performing significant phases to help the management. The comprehensive budgeting involves.

- (a) The development and application of broad and long-range objectives of the enterprise,
- (b) The specification of enterprise goals,
- (c) A long-range profit plan developed in broad term,
- (d) A short-range profit plan detailed by relevant responsibilities,
- (e) A system of periodic performance reports detailed by assigned responsibilities, and
- (f) Follow-up procedures.

¹ Glenna A Welsch,. "Budgeting: Profit Planning and Control", 4th Edition. Prentice Hall of India Pvt.1986 Ltd. p. 1.

Comprehensive profit planning and control or Managerial budgeting is primarily applicable in management process planning, organizing, controlling, staffing and leading. The comprehensive profit planning and control is a new term in the field of business but not a new concept in the management. "The concept of comprehensive profit plan and control theory, i.e. the primary success factor in an enterprise is the competence of management to plan and to control enterprise activities. This notion says that a management earns its bread and butter only if it can plan and control in ways that determine the long-range destination of the enterprise. The foundation for profit planning and control, then, is that management must have confidence in its ability to establish realistic objectives and to device efficient strategies to attain those objectives. The market theory argues very little for the concept of profit planning and control."²

Profit Planning is a tool, which may be used by the management in planning the future course of action and controlling the actual performance because profit planning or Managerial budgeting is a written plan in which all aspects of business operation concerned with future period, are included. Profit Planning is a predetermined detail plan of action developed and distributed as guide to current operations and as a partial basis for the subsequent evaluation of performance.

"Profit planning is estimation and predetermination of revenues and expenses that estimates how much income will be generated and how it should be spent in order to meet investment and profit requirements, it presents a plan for spending income in a manner that does not result in a loss".³

In this way, Profit Planning or Managerial budgets or profit planning and control which have been develop Welshmen to facilitate effective performance of the management process, is a major improvement approach of the

² Ibid p6

³ Nire, Mcirer. Jack and Schmidgal Raymend S. "Basis Accounting Standards", 5th Edition West Port. Avi P ublishing Co., 1994, p-10.

organization and has the ultimate objectives to achieve the optimum profit for the organization.

2.1.1 Profit

Profit is a controversial term. It is defined by different peoples taking into consideration different aspects. According to Lynch and Williamson "Usually profit doesn't just happen, profit are managed". Before we can more an intelligent approach to the managerial 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 is provides a base for negotiating a wage increase. An investor will view it as a gauge of the return on his or 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 predicting revenue in a given fiscal period.⁴

Using the accounts measuring stick, management thinks profit as:

- (i) A tangible expression of the goals, it has set for the firm.
- (ii) A measure of the performance toward the achievement of its goals.
- (iii) A means of maintaining the health, growth and continuity of the company.

The word "Profit" implies as comparison of the operation of business between two specific data. Which are usually separated by an interval of one year. No company can survive long period without profit; profit is the ultimate measure of its effectiveness and in a capitalist's society, there is no future for a private enterprise, which always incurs losses.

⁴ Lynch Richard M. And Williamson Robert W. "Accounting for Management". 7th Edition ,Tata Mc raw-Hill Publishing Company Ltd. New Delhi, 1992, p.99-100.

The main target of management to maximize profits over the long term, consistent with its social responsibility in profit planning.

2.1.2 Planning

Planning is a deciding in advance what's to be done. It is the determination of action to achieve a desired result. A plan is then a projected course of action. "All planning involves anticipation of future course of elements and therefore bears the elements undertaking in respects of its success."⁵ In the opinion of Memorial, planning is a complex and hard job. "Planning is a hard task for it involves the ability to think to periodic, to analyze and come to decide to control the actions of its personnel and to cope with a complex dynamic fluid environment. They bridge the gap between, where they are and where they want to go".⁶

Planning is a tool of developing and achieving the organizational objectives. According to Glenn A. Welsch "Planning is a process of developing enterprise objectives and selecting a future course of action to accomplish them. It includes:

- (a) Establishing enterprise objectives,
- (b) Development premises about the environment in which they are to be accomplished.
- (c) Selecting a course of action for accomplishing the objectives.
- (d) Initiating activities necessary to translate plans into action and
- (e) Current re-planning to correct current deficiencies.⁷

⁵ Y.K. Bhusan, "Fundamentals of Business Organization and Management", 8th Edition, Sultan Chand and Sons Publisher New Delhi, 1976, p. 522.

⁶ C.B. Memoria, "Personnel Management" 7th Edition, Prentice Hall of India 1995, p.36.

⁷ Gelnn A. Welsch, Ronald W. Hilton, Paul N. Gordon, "Budgeting Profit Planning and Control", 5th Edition, Prentice Hall of India, 2001, p.3

Planning could be taken as the tools of achieving organizational goals efficiently and effectively from the selection of various alternatives. "Planning consist in setting goals for the firm both immediate and the long-range considering the various means by which such goals may be achieved and deciding which of any variable alternative means would be best suited to the condition express to prevail."⁸

Correct definition is, "Planning is essential to accomplish goals. It reduces uncertainty and provides direction to the employees by determining the course of action in advance. Formal planning indicates the responsibilities of management and provides an alternative to grow without direction. Planning on the other hand involves the determination of what should be done, how the goals may be received and what individuals are to assume responsibility and to be hold accountable."⁹

So, planning means deciding in advance what is to be done in future. It is a method of thinking out acts and purpose beforehand.

Uncertainty and risk in future and conformity to achieve desired objectives as possible, forecasting is playing vital role in planning. F.D. Newbury rightly says - "There can be no intelligent or effective planning for a business enterprise without the primary steps of forecasting"¹⁰. The role of forecasting in planning is clearly pictured by D.W. Editing "Good planning depends on good forecasting."¹¹

Finally, according to the American accounting institution, "The distinction between forecasting and planning is not an easy one. Webster gives, "To plan an eared" as the leading definition for forecasting. Forecasting is our best thinking about what will happen to us in the future. In forecasting we define

⁸ R.M. Lynch and R.W. Williamson , "Accounting for Management," 7th Re-print, Tata Mc Graw Hill Publishing Com. Ltd., New Delhi., 1992, p.13

⁹ C.E. Grace, "Management Control",5th Edition, New York Mitchell and Co., 1998, p.102

¹⁰ Frank D. Newbury, "Business Forecasting Principles and Practices". 4th Edition, Publishing House Allababad,1976, p-90.

¹¹ Devid W Ending., "Long Range Planning for Management" 1st Edition, Harper and Row Publishers New York, Evanston and London, 1964, p.-5.

situations and recognize problems and opportunities. In planning we develop our objectives in practical detail and we correspondingly develop schemes of action to achieve these objectives."¹²

2.1.3 Forecasting Vs planning

2.1.3.1 Long-range Planning

"Long range planning involves the period of 5 to 7 years varying with the enterprise, sometimes extended to 10 years. Long range planning is one of the most difficult time span involved in planning as many problems in short range planning can be tracked to the absence of a clear sense of direction and the practices which a comprehensive long-range of direction and the practices which a comprehensive long-range plan provides".¹³ Basically it is more important for broad and long living enterprises. "Long range planning is concerned with the concept of the corporation as a long living institution."¹⁴ The objectives of long range planning given by George R. Terry are.¹⁵

- (a) To provide a clear picture of whether the enterprise is handed.
- (b) To keep enterprise strong.
- (c) To focus on long-range opportunities.
- (d) To evaluate management personnel.
- (e) To expedite new financing.
- (f) To bring attention to new techniques.

2.1.3.2. Medium Term Planning

"Two to three year generally not exceeding this period, medium range planning usually includes a time span of about three years. One valuable purpose for using, it is to establish interim objectives between long-term goals and for use

¹² E.Thomas William , "Readings in Cost Accounting, Budgeting and Control" 5th Edition American Accounting Institution,1999, p. 502.

¹³ Dimitries N. Chorefas "Hand Book for Scientific and Technical Personnel" 8th Edition TAB Professional and reference book, 1990.p-22.

¹⁴ David W. Eding "op cit, p. 6.

¹⁵ George R Temy. "Principles of Management"8th Edition, Richard Dirwin TNC HOME Wood Lillonis, 1968, P.235.

in the development of annual program and budgets. In this case, target with specific result and definite time's schedules must be developed. More detail is involved than long range plans but less than for short-range plan. While resource allocation is important, final approval will only be required for the short range and a consideration of alternatives is still possible."¹⁶

2.1.3.3. Short Term Planning

The short term plan is synonymous with the classical budgetary period of one year. The short range planning is made after a freeze is taken on the consideration of possible alternative course of action. Such courses are outlines for the medium range plan. Which doesn't concern implementation, its aims is weeding out a plethora of possibilities which are for the most part long on promises and short and feasible, tangible results."¹⁷

Short range planning is a limited time dimension usually it covers one year's time period. It is used by the management as substantial parts of long range and short-range plan.

Corporate Planning

Corporate planning was first started in the United States in the late 1950's and it is now being used in one form or another in the several companies.

Four premises of corporate planning are¹⁸.

- (i) Before drawing up a plan, which is designed to do something, decide what you want is to do.
- (ii) In these days of rapid change it is necessary to go ahead as far as possible to anticipate these changes.
- (iii) Instead of treating a company as a collection of departments, treat it as a corporate whole.

¹⁶ Dimitris N.Chorfs, op cit p. 52

¹⁷ Ibid P-52

¹⁸ Andrew Robertson, "Corporate Planning" 8th Edition Hand Book of Publication Division British Institute of Management, 1968, P-11.

- (iv) Take full accounts of the companies' environment before drawing any plan.

According to Shiv Ram P. Koirala - "Corporate planning as a management technique for effectiveness in the organized form is still in every poor condition. Even in 1966, in Britain corporate planning was not in much. Probably a few dozen people in that country understood it and it was not considered essential for good management. However the scale gradually changed and the economic situation was more pregnant with hope than despair and many business people began thinking that the growth would continue upward trend. Experts having highly specialized knowledge and equipment, such as computers, able to handle enormous information arrived on the stage, their presence made the concept of corporate planning acceptable in the developed country".¹⁹

According to Krishna Dev Bhatta, "Corporate Planning is action oriented and not concerned with more plans. Since, corporate planning is also concerned with long term goals, they cannot be obtained without a forecast whose purpose is to anticipate the future based on factors from the forecast one and then determines the means which must be achieved in order to achieve the objectives."²⁰

"Corporate planning therefore seems to be the technique for action new for ensuring the goal."²¹

"Corporate planning is done for the company as a whole on a continuous basis for making present enterprise neutral risk taking decisions systematically and with the best possible knowledge of their probable outcome and effect organizing systematically the efforts and resources needed to carry out these

¹⁹ Koirala Shiva Ram P." Managerial Problems In Corporate Planning in Public Sector Manufacturing of Nepal," Unpublished Master Degree Dissertation,. faculty of management, T.U., 2055,p-2.

²⁰ Krishna Dev Bhatta, " Profit Planning in Royal Drugs Limited" Unpublished Master Degree Dissertation, Faculty of Management, T.U., 1999, p-4.

²¹ I.C. Higgin "Strategic and Operational Planning System, Principle and Practices" Publishing House Allabad,1996.

decisions and measuring the result of these decisions against the expectation through organized systematic feedback."²²

Corporate Planning VS Long-range Planning

"Very often corporate planning is considered synonymous with long term planning and one inter changed by use. But, in fact, they are not"²³. Koirala express his opinion thus "Corporate planning is concerned with objective determination and developing means to achieve the objective. It may encompass both the short range as well as long range plan. Long or short is not determined arbitrarily. It all depends on how far a need of a company made to forecast needs to forecast and can plan. It will be determined by the company's commitment of resources. He thus sees long-range planning as a part of corporate planning."²⁴

2.2 Fundamentals of Profit Planning and Control or Managerial Budgeting

The fundamentals concerned effective implementation of the management process in resource by complex endeavors. It desires management orientations, activities, and approaches necessary for proficient and sophisticated application of comprehensive profit planning and control. These fundamental needs to be established on a sound foundation of managerial commitment. The more important fundamentals are:²⁵

2.2.1 Managerial Involvement and Commitment

Managerial involvement entails managerial support, confidence, participations and performance orientation. In order to engage competently in Profit Planning or Managerial Budgeting, all levels of management, especially top management must.²⁶

²² Ratna Raj Ojha, " Profit Planning System Principle and practices", Unpublished Master Degree Dissertation,. faculty of management, T.U. 1980, p- 4.

²³ S. Bhattacharya, "Corporate Planning" 4th Edition, New Delhi: Mohan Primlani Oxford and IBH, Publishing Co., 1989, p-58.

²⁴ S. R. Koriral, op-cit, pp. 27-28

²⁵ G.A. Welsch. "Budgeting, Profit Planning and Control" 4th Edition, Prentice Hall of India, 1996.p. 30

²⁶ Ibid, p-30

- (i) Understand the nature and characteristic of profit planning and control.
- (ii) Be convinced that this particular approach to managing is preferable for their situation.
- (iii) Be willing to devote the effort required to make it operative.
- (iv) Support the program in all its ramifications and
- (v) View the result of the planning process as performance commitments.

A comprehensive profit planning and control or Managerial budgeting program to be successful, it must have the full support; direction must come from the very top.²⁷

2.2.2. Organizational Adaptation

Profit planning program must rest upon sound organizational structure for the enterprise and a clear-cut designation of lines of authorities and responsibilities. The purpose of organizational structure and the assignment of authority is to establish a framework within which enterprise objectives may be attained in a coordinated and effective way on a continuing basis. The scope and inter-relationship of the responsibilities of each individual manager are specified.²⁸

Thus the company as a whole is a responsibility center, as is a division, department, a sales district. Responsibility centers are further classified in respect to the content of responsibility as follows:²⁹

- (i) **Cost Center:** - A responsibility center for which the manager is responsible for the controllable cost incurred in the subunit, but is not responsible, in a financial sense for profit or investment in the center. The lower level, and smaller, responsibility centers tend to be cost center.

²⁷ Ibid, p-30.

²⁸ Ibid, p- 33.

²⁹ Ibid, p-34.

- (ii) **Profit Center:** - A responsibility center for which the manager is responsible for both revenue and costs, and hence profit, for the center. An important planning and control points focuses on the center's profit figure.
- (iii) **Investment center:** - A responsibility center that goes one step: further than a profit center. In an investment center, the manager is responsible for revenue, costs (profit) and the amount of resources invested in the assets used by the center. An important planning and control point, therefore, focuses on the return on investment earned by the center.

2.2.3 Responsibility Accounting

"In order to set up Profit Planning or Managerial budgeting on a sound basis, there must be a responsibility accounting system, that is one tailored first and for most to the organizational responsibilities. Within the primary accounting structure, secondary classifications of cost, revenues and other financial data that are relevant may be utilized in accountancy with the needs of the enterprise. A responsibility accounting system can be designed and implemented on a relevant basis regardless of the other features of the accounting system non-cost system. Standard costing system directs costing system and so on. When the accounting system is established on a responsibility basis, the historical data generated become especially pertinent for planning and control purposes."³⁰

2.2.4. Full Communication

"Communication in the management and operation of an enterprise is a major managerial problem. Communication can be broadly defined as an inter change of thought or information to bring about a mutual understanding between two or more parties. It may be accomplished by combination of words, symbols and messages of understanding that come from working together, day-in and day-

out, by two or more individuals. Communication may be thought of as the link that brings together the human elements in an enterprise.

Management is implemented through communication, the means by which behavior is affected, modified and energized. Decision-making rests in large measure upon effective communication. Too often communication is taken for granted consequently, information flow is inadequate. There must be three primary flows of information in an entity downward, upward and normally in the organization. Koontz and O' Durnell list the following basis to effective communication, badly expressed messages, faulty transmission and poor retention, inattention, unclassified assumptions, evaluation, fear and failure to communicate.

There are numerous approaches for improving communication in the management process. Comprehensive profit planning and control, resting upon a sound foundation of communication, provides important avenues to enhance effective communication fundamentally. These relate to the process of developing enterprise objectives, specification of goals, the development of profit plan, and the reporting and follow-up activities related to performance evaluation for each responsibility center.

Communication for effective planning and control requires that both executive and subordinate have the same understanding of responsibilities and goals, profit plans. It develops through full participation and in harmony with assigned responsibilities, assures a degree of understanding not otherwise possible. Full and open reporting in performance reports that focus on assigned responsibilities likewise, enhances the degree of communication essential to sound management".³¹

2.2.5 Realistic Expectation

In profit planning and control, management must be realistic and avoid either undue conservatism or irrational optimism. The care with which budgeted goals

³¹ Ibid, p. 38.

and objectives are set for such items as sales, production levels, costs, capital expenditure, cash flow and productivity determines in large measure the future success of the profit planning and control program. For Profit Planning or Managerial budgeting proposes enterprise objectives and specific budget goals should represent realistic expectations. Goals set so high as to be practically impossible of attainment discourage serious efforts to achieve them. Alternatively, goals set so low that they require, no special effort will provide no motivation. Thus, enterprise objectives and specific budget goals, in order to constitute realistic expectations, must represent a real challenge to the manager and to the operational unit. As a practical matter, the top management of the enterprise has the direct responsibility to define, as a matter of board policy, the degree of challenge that should be represented by realistic expectations. The definition of realistic expectations in a given enterprise therefore, should be related to many pervasive variables such as: size of the enterprise, characteristics of the manager, leadership characteristics, maturity of the enterprises, sophistication of the management, nature of operations and numerous psychological factors.³²

2.2.6 Time Dimension

Effective implementation of the managerial budgeting or profit planning concept requires that the management of enterprise establish the defined time dimensions for certain types of decision. In viewing time dimension perspective in managerial planning, a clear-cut distinction should be made between historical considerations and future considerations.³³

Another time dimension relates to project planning. A continuing necessity exists for management to plan specific and identifiable projects (programs) each of which as a unique time dimension because such projects entail commitments over variable time spans. The focus in project planning is on each separate project which may represent either an operational or a non-operational commitment.

³² Ibid, p. 38.
³³ Ibid, p. 41.

Periodic planning is the environmental necessity for management to plan, evaluate operations which in relatively short and consistent interim periods imposed by custom."The concept of comprehensive profit planning or managerial budgeting encompasses systematic and integrated approach to project planning to tactical planning and so to strategic planning".³⁴

2.2.7 Flexible Application

This fundamental stresses that a profit planning and control program or Managerial budgeting must not dominate the business and that flexibility in applying the plans must be a forth right policy so that "strait jackets" are not imposed and all favorable opportunities are seized even through "they are not covered by the budget. It is not uncommon for budgets to impose inflexibility on an endeavor and act as a serve constraint on the decision-making freedom of managers and supervisors. Contrary to this view, profit planning and control or Managerial Budgeting program administered in a sophisticated manner permits greater freedom at all management levels.

To cost control, the principle of flexibility is essentially important. Expense and cost budgets must not be used and interbreed rigidly, the budget must not prevent the making of rational decisions in respect to expenses merely because an expenditure was not anticipated. Flexible expense budgets frequently are employed to meet, one of the problems of cost control arising from a change in circumstances.³⁵

2.2.8 Behavioral View Point

"The motivation of human resources through dynamic leadership is central to effective management. The behavioral aspects of management process have been accorded extensive and intensive investigation by psychologists, educators and businessman. This attention is increasing in scope and intensity in recognition that there are many unknowns, misconceptions and speculations

³⁴ Welsch, Hilton, gorden , op. cit, p. 37-39.
³⁵ Glenn A. Welschop. Cit, p. 45.

concerning the responses of the individual and the group in varying situations. The comprehensive profit planning approach to manage brings many of these behavioral problems into sharp focus. A sophisticated view of managerial budgeting focuses on a positive approach to resolve certain behavioral problems. Clearly, the approach cannot resolve behavioral problems, but in any respects it can provide one effective approach to their partial resolution."³⁶

2.2.9 Zero Base Budgeting

Under zero bases budgeting, even, budget is constructed on the premise that every activity in the budget must be justified. It starts with the basic premise that the budget for next year is zero and that every expenditure, old and new, must be justified on the basis of its costs and benefit. The discipline of zero base budgeting takes a different approach-in fact, a reverse approach to this problem of justifying everything. What it says is this:" Begin with where you are and establish a business as usual budget for next year the same way and the same things you would do if you weren't concerned about constraint and total justification".³⁷

2.2.10 Follow-up

The fundamental holds that both good and substandard performance should be carefully investigated, the purpose being three fold:³⁸

- (i) In the case of substandard performance, to lead in a constructive manner to immediate corrective action.
- (ii) In the case of outstanding performance, to recognize it and perhaps provide for a transfer of knowledge to similar operation.
- (iii) To provide a basis for better planning and control in the future.

2.3 Components of a Comprehensive Profit Planning and Control or Managerial Budgeting Program

³⁶ Ibid, p-46

³⁷ Glenn A. Welsch, op. cit. p. 44.

³⁸ Glenn A. Welsch, 5th Edition p. 49.

A comprehensive profit planning and control or Managerial Budgeting program encompasses much more than the traditional idea of periodic budget. Moreover, it encompasses the application of a number of management concepts through a variety of approaches, techniques and sequential steps. Basic components of comprehensive profit planning and control program are below.³⁹

1. Evaluation of the potential effect of all relevant variables on the enterprise.
2. Specification of broad objectives of the enterprise by executive management.
3. Establishment of specific goals for the enterprise.
4. Development and evaluation of enterprise strategies.
5. Preparation of planning premises.
6. Preparation and evaluation of project plans.
7. Development and approval of a strategic long-range profit plan.
8. Development and approach of a tactical short-range profit plan.
9. Development of supplementary analyzes.
10. Implementation of plans.
11. Development, dissemination, and utilization of performance reports.
12. Implementation of follow-up actions.

Some of them are described below:

1. Evaluation of Relevant Variables Affecting the Enterprise

Variables, which have a direct and significant impact on the enterprise, are relevant variables. Variables may have their different relevancy according to the nature of the market. For a large firm with a national market, the relevant variables obviously be broad in scope where as a small firm would be concerned primarily with regional and local variables operating within the

³⁹ Ibid, p. 61.

narrow environment of enterprise. These relevant variables include the environmental variables, which have a deep concern in the continuation of the enterprise. Political, social, legal points have a sharp impact and which constitute the strength and weakness of the enterprise. Profit Planning or Managerial budgeting program begins with the identification of these variables.

2. Specification of the broad objectives of the enterprises

The statement of broad objectives is viewed as a pervasive and general expression of the philosophical objectives of the enterprise. The broad objectives normally should avoid specific statement of quantitative goals; rather they should focus on such broad factor as long-range economic potentials, attitudes toward customers, product and service availability, employee rationale and attitudes toward owners.

The statement of broad objectives should express the mission, vision and ethical tone of the enterprise. It tends to provide enterprise identity, continuity of purpose and definition. Purposes to specification of broad objectives are as follows:⁴⁰

- (i) To define the purpose of the company.
- (ii) To clarify the philosophical character of the company.
- (iii) To create a particular "climate" within the business.
- (iv) To set down a guide for managers so that the decisions they make will reflect the best in interests of the business with fairness and justness to those concern.

Thus, the objectives should be specified, so, as to serve as the foundation of the company and they should be 'believable', to be grasped easily by every part concerned to the enterprise i.e. shareholders, customers, government, employees and so on.

⁴⁰

Ibid, pp. 63-64.

3. Development and Approval of Strategic and Tactical Profit Plans

“The strategic long-range and tactical short-range profit plans normally should be developed concurrently for all practical purpose and that the executives in charge of each of the responsibility centers throughout the firm should participate in their development in harmony with planning premises. Meaningful participation in the planning process generates positive behavioral effects. A manager of each responsibility center has to initiate immediate activities within his own functional sphere to develop a strategic long-range profit plan (say five years) and in harmonally with the five years plan a tactical short-range profit plan (one year) as soon as he receives the planning premises and procedural instructions”.⁴¹

4. Development of Supplemental Analysis

“A number of important analyses may be developed supplementary to the short and long-range profit plans. These analysis apply many useful managerial techniques in the decision making process, specific important analysis are planning model simulation, cost-volume-profit (break even), marginal cost, return on investment, linear programming models (LPP), variable expense budgets, and accessory statistics (both historical and prospective).”⁴²

5. Implementation of Plans

Implementation of management plans that have been developed and approved in the planning process involves the management function of directing subordinates in the accomplishment of enterprise objectives and goals; communication is an especially important aspect of direction. Thus, component management at all levels requires that enterprise objectives, goals, strategies and policies be keenly appreciated and understood by subordinates. There are many facets involved in management direction and objectives and goals should be realistic and attainable, yet they should present a real challenge to the overall enterprise and to each responsibility center. “The plans should have

⁴¹ Ibid, p 67
⁴² Ibid, p 68

been developed with the managerial conviction that they are going to be met or exceeded in all major respects. If these principles are made effective in the development process, the various executives and supervisors certainly should have a clear understanding of their responsibilities and the expected level of performance.”⁴³

“Expectation of the managerial plans is assured through dynamic and flexible control. Thus, performance report must be measured and reported to each level of management.”⁴⁴

6. Implementation of Follow- up Action

“Follow- up action is an important facet of effective control and re- planning. Performance reports; since they indicate the status of performance by responsibility provide a basis for certain follow- up actions. It is important to distinguish between cause and effect. The performance variations are effects (the result), the management must determine the underlying causes. The identification of causes primarily is responsibility of line management. Analysis and determination of underlying causes of both favorable and unfavorable performance should be given immediate priority. In the case of unfavorable performance, after identifying the basic cause, as opposed to the result and having selected what appears to be the most fruitful alternative for corrective action, the manager must initiate its implementation. In addition, special type of follow- up procedure should be implemented continuously, it should be designed.”⁴⁵

- i. To determine the effectiveness to the prior corrective actions. And
- ii. To provide a basis to improve future planning and control procedures.

2.4 Advantages or Importance of Profit Planning

The chief advantage of comprehensive profit planning and control are:⁴⁶

⁴³ Ibid, p 71

⁴⁴ Ibid, p 72

⁴⁵ Ibid, p 72-73

⁴⁶ Welsch, Hilton and Gordon op. cit, pp. 60-61.

- i. It forces early consideration of basic policies.
- ii. It requires adequate and sound organization structure that is there must be a definite assignment of responsibility for each function of the enterprise.
- iii. It compels all members of management, from the top down to participate in the establishment of goals and plans.
- iv. It compels departmental managers to make plans in harmony with the plans of other departments and of the entire enterprise.
- v. It requires that management put down in figures what is necessary for satisfactory performance.
- vi. It requires adequate and appropriate historical accounting data.
- vii. It compels management to plan for the most economical use of labor, material and capital.
- viii. It instills at all levels of management the habit of timely, carefully and adequate consideration of the relevant factors before reaching important decisions.
- ix. It reduces cost by increasing the span of control because fewer supervisors are needed.
- x. It frees executives from many day-to-day internal problems through predetermined policies and clear-cut authority relationship. It thereby provides more executive time for planning and creative thinking.
- xi. It tends to remove the cloud of uncertainty that exists in many organizations, especially among lower levels of management, relevant to basic policies and enterprise objectives.
- xii. It pinpoints efficiency and inefficiency.
- xiii. It promotes understanding among members of management of their co-workers problems.

- xiv. It forces management to give adequate attention to the effect of general business conditions.
- xv. It forces a periodic self- analysis of the company.
- xvi. It aids in obtaining bank credit. Banks commonly require a projection of future operations and cash flows to support large loans.
- xvii. It checks progress or lack of progress toward the objectives of the enterprises.
- xviii. It forces recognition and corrective action (including rewards).
- xix. It rewards high performance and seeks to correct unfavorable performance.
- xx. It forces management to consider expected future trends and conditions.

2.5 Assumption and Limitation of Profit Planning

Profit planning system is more common in larger companies, to serve management. Still, the usefulness of profit planning or Managerial Budgeting to very small business could have been circumvented by an early attempt to the dreams of head strong but sloppy thinking entrepreneurs who never directly faced the uncertainties of their venture.

But, there are so many assumptions in using profit-planning programs. Firstly, the basic plans of a business must be measured in terms of money, if these are to be any assurance that many will be available for the needs of the business. Secondly, it is possible to plan for the future of a business in a comprehensive way coordinating every aspects of the business with other aspects to establish optimum profit goals. Thirdly, profit planning is pre-planning not merely what to do if things, workout as forecasted, but also what to do if things, workout differently from the forecast.

Effective budgeting requires co-ordinate planning .It is essential that all persons participating in the building of budget are planning toward the same objective and are contemplating the some company, industry and general

economic conditions that can be accomplished by issuing a statement of basic assumption prior to the start of the budgeting system.

In developing and using a profit-planning program, the following additional limitation should be kept in mind:

- a. The profit is based on estimates.

A profit program must be continually adopted to fit changing circumstances.

- b. Execution of a profit plan will not occur automatically.

- c. The profit will not take the place of management and administration.

The profit plan should not be regarded as ends of the organizations rather it should be applied as means to accomplish the predetermined objectives of the organization. It is one of the best tools yet devised for advancing the affairs of a company and the individuals in their various spheres of managerial activity. It is not assumed that any profit plan is perfect. The most important consideration is to make sure, by intelligent use of the profit plans that all attainable benefits are derived from the plans rendered.

Similarly, according to Welch the main arguments usually given against profit planning are as follows:⁴⁷

- i. It is difficult, if not impossible, to estimate revenues and expenses in our company realistically.
- ii. Our management has no interest in all estimates and schedules. Our strictly informal system is better and works well.
- iii. It is not realistic to write out and distribute our goals, policies and guidelines to all the supervisors.
- iv. Budgeting places too great a demand on management time, especially to revise budgets constantly. Too much paper work is required.

⁴⁷ Ibid, p. 60.

- v. It takes away management flexibility.
- vi. It creates all kinds of behavioral problems.
- vii. It places the management in a straitjacket.
- viii. It adds a level of complexity that is not needed.
- ix. It is too costly, aside from management time.
- x. The managers, supervisors, and other employees hate budgets.

2.6 Development of Profit Planning or Managerial Budgeting

Development of profit planning or Managerial Budgeting includes the preparation of various functional budgets, analysis of variance and presentation of projected income statement and balance sheet. Top management with the participation of low management involves in the development of profit plan. The preparation process of budget forces executives to become better administrator and budgeting puts planning where it belongs in the forefront of the manager's mind. Developing profit plan begins with the preparation of master budget. The steps included in the preparation of master budget are outlined by John R. Schermerhorn as below:⁴⁸

- Step 1: Forecast demand for products or services.
- Step 2: Identify cost patterns of responsibility centers.
- Step 3: Estimate production costs.
- Step 4: Specify operating objectives.
- Step 5: Develop a sales budget.
- Step 6: Develop a production budget.
- Step 7: Develop a purchasing budget.
- Step 8: Develop budgets for responsibility centers.
- Step 9: Formulate a profit plan.
- Step 10: Compare profit plan with operating objectives.

⁴⁸ Sehermerhorn, John R.J.R. "Management for Productivity", 6th Edition, Texas, 2004, pp. 482-985.

Step 11: Formulate a projected cash budget.

Step 12: Prepare a projected statements of financial position.

2.6.1 Sales Budget or Plan

A. Introduction

After the planning premises have been received, the development of sales plan is the next step in the preparation of profit plans. In practical sense, sales plan is the starting points for the development of the profit plan. The sales forecast is the starting point for budgeting because inventory level, purchases and operating expenses are generally geared to the rate of sales activity. "Sales plan is the starting point in the preparation of the comprehensive profit planning and control. All the other plans and budgets are dependent upon the sales budget. The budget is usually presented both in units and dollars (the sales revenue or sales volume). The preparation of sales plan is based upon the sales forecast. A variety of methods are use to forecast the sales for the planning period".⁴⁹

The sales plans are foundation for periodic planning in the firm because particularly all other enterprise planning builds on it. The primary source of cash is sales; capital additions need the amount of expenses to be planned. The manpower requirement, the production level and other important operational aspect depend on the volume of sales. Therefore, the sales plan must be realistic. The Sales plan has three district parts:

- i. The planned volume and the selling price per unit for each product.
- ii. The sales promotion plan and
- iii. The sales or distribution expenses plan. The sales budget itself is an estimate of main three figures. They are:
 - (a) The income that will be earned from sales,
 - (b) The cost and expenses of making these sales, and

⁴⁹ Arthur W. Holmes Robert A. Meir and donald F. Pabst, "Accounting for Control and Decision", 5th Edition, Texas,2000, p. 637.

- (c) The sales surplus. The income from sales depends on the quantity and the price of the goods, which will be sold.⁵⁰

Sales plan forecast is what the business can responsibly expect to sell to its customers during the budget period. The primary purposes of sales plan are:

- (i) To reduce uncertainty about future revenues,
- (ii) To incorporate management judgment and decisions into the planning process,
- (iii) To provide necessary information for developing other elements of a comprehensive profit plan, and
- (iv) To facilitate management's control of sales activities.⁵¹

Sales in units or amount can be computed as follows:

		Unit or Rs.
Opening stock (inventory) of finished goods		
Add: Planned productions	XXX	XXX
Total	XXXX	XXX
Less: Closing stock of finished goods	XXX	XXX
Planned sales	XXX	XXXX

B. Sales Planning and Sales Forecasting

“Sales planning and forecasting often are confused. Although related, they have distinctly different purpose. A forecast is not plan rather it is a statement and/or a quantified assessment of future conditions about a particular subject (e.g. sales revenue) based on the one or more explicit assumptions. A forecast should always state the assumptions upon which it is based. A forecast should be viewed as only one input into the development of a sales plan. The management of a company may accept, modify or reject the forecast. In contrast, a sales plan incorporates management decisions that are based on the forecast. Other inputs and management judgments about such related items are sales volume, prices, sales efforts, production and financing.

⁵⁰ John Halshall. "How to prepare an operating Budget".5th Edition, Longman Group Ltd, 1974. P-4
⁵¹ Welsch, Hilton and Gordon, op. cit, 5th Edition, p. 172.

A sales forecast is converted to a sales plan when management has brought to bear management judgments, planned strategies, commitments of resources, and the managerial commitment to aggressive actions to attain the sales goals. In contrast, sales forecasting is technical staff function.

Sales forecasts are conditional. The internal technical staff of the organization are not involved to make the fundamental management decisions and judgment are used to mold the sales plan. Sales forecasts are done by the technical staff on the basis on the basis of qualified data."⁵²

“A sales forecast has to be translated in to a sales budget and here a number of factors have to be taken in the considerations.”⁵³

Now it is clear that sales plans are formulated by top executive on the basis of strategies. Objectives and guidelines as well as considering the forecast and sales forecast is the job of technical staffs who estimate sales on the basis of their past knowledge and experience. And this estimate is used in formulating sales plan.

C. Strategic and Tactical Sales Planning

A comprehensive sales plan includes two separate but related plans, the strategic and the tactical sales plan. The strategic sales plan is a long term sales plan and it is usually covers at 5 or 10 years time horizon. Whereas tactical sales plan has shorter time horizon and usually covers one year period.

Strategic long term sales plan is developed as one of the first step in the overall completion process of comprehension profit planning. Long-term sales plans are usually developed as annual amounts. The long-term sales plan uses broad groupings of products (product lines) with separate consideration of major and new products and services. It usually involves in depth analysis of future market potentials, which may be built up from a basic foundation such as population changes, state of the economy, industry projection and finally

⁵² Ibid, pp. 172-173.

⁵³ T.S Mac. Alpine. "The basis Arts of Budgeting" 7th Edition, London business Books Ltd.1998, p 66.

company objectives. Long-term managerial strategies would affect such areas as long term pricing policy, development of new products and innovations of present products, new directions in marketing efforts, expansion or changes in distribution channels and cost patterns. The influence of managerial strategy decisions is explicitly brought to bear on the long-term sales plan primarily on a judgmental basis.

“Short-term sales plan or tactical sales plan is prepared to plan sales for the twelve months in to the future detailing the plan initially by quarters and by months for the first quarter. At the end of each month or quarter throughout the year, the sales plan is restudied and revised by adding a period in the future and by dropping the period just ended. Thus tactical sales plans are usually subject to review and revision on a quarterly basis. The short-term sales plan includes a detailed plan for each major product and for groupings of minor products. Tactical sales plans are usually developed in terms of physical units (or jobs) and in sales and/or service dollars. To establish policy about detail in the short-range sales plan, the main question is for the use of the results. First, the major consideration is to provide detail by responsibility for planning and control purpose. Second, the short-range sales plan must provide detail needed for completing the profit plan components by other functional managers. That is, the production managers will need sufficient detail for planning production levels and plant capacity needs. The financial manager will need sufficient detail for assessing and planning cash flows, unit product costs; inventory needs and so on. Third, the amount of detail also depends on the type of industry, size of the firm, availability of resources, and use of the results by management.”⁵⁴

D. Components of Sales Plan

The component of comprehensive sales plans are as follows:⁵⁵

- (i) Management policies and assumptions.

⁵⁴ welsch, Hiltoni and Gordon; op. cit, pp. 173-175.
⁵⁵ Ibid, p. 176.

- (ii) Marketing plan (sales and services revenues).
- (iii) Advertising and promotion plan.
- (iv) Distribution or selling expenses plan.

E. Developing a Sales Plan

Following steps are followed to develop comprehensive sales plans.⁵⁶

Step 1: Develop management guidelines for sales planning.

Step 2: Prepare one or more sales forecast.

Step 3: Assemble other relevant data.

- i. Manufacturing capacity.
- ii. Sources of raw material and supplies or goods for resale.
- iii. Availability of key people and a labor force.
- iv. Capital availability.
- v. Availability of alternative distribution channels.

Step 4: Develop the strategic and tactical sales plan.

There are four different participative approaches widely used in the process of developing sales plan:

- (i) Sales force composite (Maximum participation) Sales division managers composite (participation limited to managers only)
- (ii) Executive decision (participation limited to top management)
- (iii) Statistical approaches (technical specialists plus limited participation)

Step 5: Secure managerial commitment to attain the goals in the comprehensive sales plan.

⁵⁶ Ibid, pp. 177-182 (summarized).

F. Evaluation of Alternatives

Developing a sales plan consists of the consideration of various policies and related alternatives and a final choice by executive management among many possible courses of action. There are mainly two types of problems to which important considerations should be given while preparing the sales plan.

1. Price-Cost-Volume consideration in sales planning.

"In a competitive market, price and sales volume are mutually interdependent. The close relationship between sales volume and price poses a complicated problem to the management of every company. Thus, two basic relationships involving the sales plan must consider".⁵⁷

- (i) Estimation of the demand curve that is the extent to which sales volume varies at different offering price, and
- (ii) The unit cost curve, which varies with the level of productive output.

Thus, this price-cost-volume relationship has a significant impact on the managerial strategy that should be adopted.

2. Product-line Consideration

Determination of the number and variety of products that a company will plan to sell is crucial in the development of a sales plan. Sales plan must include tentative decision about new product lines to introduce, old product lines to be dropped, innovations and product mix.

2.6.2 Production Budget or Plan

After preparing the sales plan the next step in comprehensive profit planning and control is the formulation of production plan. Production budget is an estimate of the number of units of product that will be produced in the budget period. The production plan involves determining the number of units (each product) that must be manufactured to meet planned sales and maintain the

planned inventory levels of finished goods. It is an estimate of how cheaply the goods required by sales can be made.

"Once sales and inventory requirements have been established, the logical first step in the production plan is facility survey. This survey should determine that all planned products can be produced on existing or contemplated equipment and that they can be made in the volumes required. In this initial stage, availability of labor supply and skill are considered. Bottlenecks caused by lack of skill or equipment are frequently uncovered. At this point, decisions must be made either to eliminate bottlenecks or to reduce planned volume".⁵⁸

Production budget is based on estimated sales. Production must be planned to allow sufficient time to manufacture the products before the estimated data on sales. The annual sales budget and the inventory requirement provide the framework for the production budget. It is prepared on the basis of:⁵⁹

- a. Sales budget.
- b. Plant capacity.
- c. Opening inventory of finished goods and
- d. Required closing inventory of finished goods, and
- e. Policy of management.

Production budget is divided into monthly budgets for the purpose of production planning. In production planning, the following factors are to be considered.

- i. Economic batch quantity.
- ii. Delivery schedules.
- iii. Seasonal Conditions.
- iv. Optimum utilization of plant capacity.

⁵⁸ Willan E. Thomas "Reading in cost Accounting: budgeting and Control", 7th Edition, American Accounting Association 1995, p. 508.

⁵⁹ P. V. Rathmen, "Budgeting", 7th Edition, Himalaya Publishing House, 1999, pp. 14-15.

- v. Optimum utilization of labor without much over time and idle time.
- vi. Reduction of bottlenecks such as shortage of man, material etc.
- vii. Stock requirements.
- viii. Work in progress.

"Production plan entails the development of policies about efficient production levels, use of productive facilities and inventory levels (finished goods and work-in-progress inventory). The quantities specified in the marketing plan, adjusted to conform to production and inventory policies give the volume of goods that must be manufactured by product and by interim time period. Thus, the production budget can be represented in this way. Sales volume \pm finished goods inventory change = production requirement".⁶⁰

"A complete production plan should show budgeted data, classified by (a) products to be manufactured (b) interim time periods and (c) activities of each responsibility center in the manufacturing process."⁶¹

A. Objectives of Production Plan or Budget

The objectives of Production plan are:

- i. To bring to common focus of all the factors necessary to establish policies and to determine operations.
- ii. To project these established policies into the future by an analysis of past performance.
- iii. To plan and control the operations being carried out to implement policies decided upon.
- iv. To make provisions for material at right time and place.
- v. To plan the sequence of operation required for economical production.
- vi. To co- ordinate the various aspects of factory operation so as to make them aviate link in the chain of profitable program.

⁶⁰ Welsch Hilton and Gordon, op.cit, P. 210.

⁶¹ Ibid, p. 213.

B. Responsibility for Production Planning

Production managers are responsible for the development of production plan. The complete marketing plan is given to the production manager for translating it into a production program consistent with managerial policies and subject to certain constraints. Production managers are fully responsible for production plan and they have also to consider top management policies in respect of (i) inventory level (ii) stability of production and (iii) capital additions.

“An efficient and coordinated production plan requires the careful attention of executive management, particularly where there is multiple production requiring the determination of both time and place of production. The production manager must plan an optimum co-ordination between sales, inventory and production levels.”⁶²

C. General Considerations in production Plan or Budget

"The production plan represents the implications of planned sales volume for planned production volume as a basis for planning the various aspects of the manufacturing functions, plant capacity requirements, direct material and component requirements, timing of purchase, direct labor requirements and costs and factory overhead."⁶³ There must be coordination between sales plans, production plans and inventory policies and the production budget provides the basis of obtaining the coordination.

The production plan affects so many decisions, therefore; there should be serious consideration in preparing the production plan. So, the decisions required to develop the production plan include the following:⁶⁴

- 1) Total production requirement (by product) for the budget period.

⁶² Ibid, pp. 211-212 (summarized)

⁶³ Ibid, p 213.

⁶⁴ ibid, p. 214.

- 2) Inventory policies relevant to levels of finished goods and work in progress.
- 3) Plant capacity policies such as the limits of permissible departures from a stable production level throughout the years.
- 4) Adequacy of manufacturing facilities.
- 5) Availability of direct materials, purchase components and labor.
- 6) Length of processing time.
- 7) Economic lots or runs.
- 8) Timing of production throughout the budget period, by product and by responsibility centers.

D. Time Dimension of Production Plan (Long- range Vs Short- range)

"To develop a long- range plan, broad estimates of production levels are necessary to plant capacity requirements, factory cost structures, personnel requirements and cash flows. For long- range planning purposes, only major increases or decreases in inventories need to be taken into account. But the short-range production plan should not be planned annually, but detailed by products and by months or quarters. Also the production activities should be planned by responsibility centers within the manufacturing division".⁶⁵

E. Developing the production Plan

i. Recasting of sales budget

As sales budgets are typically classified according to product line and sales territory, it is necessary to recombine these planned sales figures on a basis that will permit determination of physical input requirements, generally means for individual plants or productive facilities.

ii. Production analysis

⁶⁵ Ibid, p. 214.

This consists of breaking down production into its ultimate parts or components.

iii. Scheduling

It is concerned with fitting the various processes into a general time table to permit orders to be manufactured according to requirements based upon selling estimates.

iv. Dispatching

This covers the movement of materials and stores from the place they are initially deposited to the first process and thereafter from one process to another.

v. Inspection

It is designed to exercise control over the quality of the product to prevent further work on spoiled parts, to ensure that payment is made in respect of satisfactory work only, to find and locate faults in machines and to maintain a satisfactory standard of accuracy.

The production budget is phrased primarily in physical term units of output, labor hours and material requirements. Annual plans for production costs, purchases, manpower and cost of goods sold are all derived from the physical production budget which determines the actual production level by taking into account deviation from planned sales and inventory levels. Moreover, normal loss in many process industries has to be reckoned in estimating production requirements.

The following formula is generally used to determine the planned production.

Planned sales in unit or amount	XXX
Add: desired ending inventory of F.G.	<u>XXX</u>
Total Requirement	XXXX

Less: Beginning inventory of F.G.	<u>XXX</u>
Production for the year	XXXX

F. Production and Inventory Policy

The coordination between the sales plan, inventory level and production requirement comes into focus and resolved in production plan. The production plan fully depends upon inventory level and demand of sales. To plan about inventory level and production level, it is not easy as it depends on variation of sales. So we have to adopt different policies in production level and inventory level. Which are as follows:

1. Stable production policy

There are fixed production in each month or specified period while inventory levels are changed reversibly to sales volume. If sales increases, inventory level decreases and if sales decrease inventory level increases.

2. Stable inventories policy

Under this policy, inventory levels are fixed in each month or specific period time while production levels are changed due to change in the level of sales. When sales increases, production level also increases and when sales decrease, production level also decreases.

3. Production and inventory within limit or flexible policy

Under this approach flexible units of final inventory are to be maintained for specific period. If sales increases, production level will be slightly increased and stock level will be decreased within a certain limit.

4. JIT production (Just in time production)

The JIT approach to production planning is a recent trend in manufacturing. Japanese companies developed this policy. Under this approach, production

must be as per order specification. JIT is a production concept in which virtually nothing is purchased or manufactured units just before it is needed.

G. Considerations in Establishing Inventory

The management should consider the following factors establishing or setting inventory policies:⁶⁶

- 1) Quantities needed to meet sales requirements.
- 2) Perish ability of items.
- 3) Length of the production period.
- 4) Storage facilities.
- 5) Adequacy of capital to finance inventory, production, some time in advance of sales.
- 6) Distribution of time requirements
- 7) Cost of holding inventory.
- 8) Protection against direct material and component shortages.
- 9) Protection against labor shortages.
- 10) Protection against materials and parts price increase.
- 11) Risk involved in inventory.
 - a) Price declines.
 - b) Obsolescence of stock.
 - c) Casualty loss and theft.
 - d) Lack of demand.
 - e) Customer returns policies.

2.6.3 Material Plan or Budget

⁶⁶ Ibid, pp. 220-221.

The raw material budget is prepared after production and sales budget. The production budget gives information about the units to be produced and on this basis; the raw material need is estimated. Based on the production budget, the quantities of each material usage lead to the solution of the problem of when and how much to purchase of each material. "A comprehensive profit planning and control program includes planning and controlling raw material and components used in the manufacturing of finished products. Adequate coordinate and balance should be planned and controlled in between (i) production requirement for raw material and component parts (ii) raw material and parts inventory levels, and (iii) purchases of raw materials.

“To assume the right, amounts of raw materials will be on hand at the time required and to plan for the costs of such materials and part, it is essential that the tactical short-term profit plan includes (1) detailed budget specifying quantity and cost of material required and (2) A related budget of material and parts purchases. These planning raw materials usually require the following four sup-budgets.”⁶⁷

A. Material and Parts Budget

This budget specifies the planned quantities of each raw material and parts required for planned production. It should specify quantities of each raw material and parts by time, product and responsibility center. Thus, material and parts budget = planned production × usage rate.

B. Material and Parts Purchase Budget

The materials and parts budget specifies the quantities and timing of each raw material and component part needed. Therefore, a plan for purchase must be developed. The purchases and parts budget specifies the planned quantities of materials and parts to be purchased, the estimated cost and the required delivery dates.

⁶⁷ Ibid, pp. 240-241.

Material purchase budget = material required for production + closing stock of raw material – opening stock of raw material.

C. Materials and Parts Inventory Budget

Material inventory budget specifies the budgeted level of material parts inventory in term of unit and cost. In other word, material inventory budget deals with the difference between the required quantities budget and purchased unit budget.

D. Cost of materials and parts used budget

This budget specifies the planned cost of the materials and parts that will be used in the productive process.

The material and purchasing budget and its sub budgets should be designed in such a way that the related activities and cost will be budgeted in terms of responsibility center, interim time periods, type of raw materials and parts and type of finished product.

Consideration in materials and parts purchase and inventory policies:

According to Welsch Hilton, Gorden "The primary considerations in setting inventory policies for materials and parts are as follows:⁶⁸

- 1) Timing and quantity of manufacturing needs.
- 2) Economics in purchasing through quantity discounts.
- 3) Availability of materials and parts.
- 4) Lead time (order and delivery).
- 5) Perish ability of materials and parts.
- 6) Storage facilities needed.
- 7) Capital requirements to finance inventory.
- 8) Cost of storage.
- 9) Expected change in the cost of materials and parts.
- 10) Protection against shortages.
- 11) Risk involved in inventories.

12) Opportunity cost (inadequate inventory).

In developing the policy with respect to purchase and inventory the basic two questions should be answered. The first is how to purchase at a time is determined by well-known approach called economic order quantity (EOQ). In EOQ the ordering cost and carrying cost of the inventory will be minimum. EOQ can be calculated by using the following formula.

a) **How much to purchase at time.**

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

Where,

EOQ = Economic order quantity (units)

A = annual used quantity (units)

O = cost of order (average annual cost)

C = Annual carrying cost/unit in inventory for one year.

b) **When to purchase**

The time when a purchase is made is called the 'Reorder point'. This model is used to calculate the timing for purchases. This is

Re-order point (level) [ROL] = Replacement stock + Safety Stock"

Or

Re-order point (level) [ROL] = Maximum consumption × Maximum Lead time

2.6.4 Direct Labor Cost Budget or Plan

A. Meaning

Direct labor budget is the pre-determination of planned direct labor hours and labor cost. After preparing the production budget, the direct labor hours is calculated by multiplying the units to be produced and estimated labor hours for each product. After finding total labor hours required, labor cost is calculated by multiplying the labor hours and wages rate.

"Planning and controlling labor costs involve major and complex area (i) Manpower (personnel) needs. (ii) Recruitment (iii) Training (iv) Job

description and Evaluation (v) Performance evaluation (vi) Union negotiations and (vii) wage and salary administration.

Comprehensive profit planning and control or Managerial Budgeting program should incorporate appropriate techniques and approaches applicable to each problem. Careful planning and realistic control of long term and short-term labor costs will be beneficial for both the company and its employees".⁶⁹

Labor costs in the broad sense, are composed of all expenditures of those employees of the firm from top executive to middle management personnel, staff officers, supervisors, foremen, skilled workers and unskilled workers. It is necessary to consider separately the different types of labor cost.

Labor is generally classified as:

- i) Direct labor
- ii) Indirect labor

The direct labor comprises the estimates of direct labor requirements necessary to produce the types and quantities of output planned in production. Although, some companies prepare a labor budget that includes both direct and indirect labor budget.

B. Approaches used in Direct Labor Cost

The approach used to develop the direct labor budget depends primarily on the:⁷⁰

- i) Method of wage payment
- ii) Type of production process involved
- iii) Availability of standard labor times.
- iv) Adequacy on the cost accounting records relating to direct labor costs.

C. Developing the Direct Labor Budget

⁶⁹ Ibid, p. 280
⁷⁰ Ibid, p. 281

Basically there are three approaches to the development of direct labor budget. These are:

- i. Estimate the standard direct labor hours required for each unit for each products and department. Then estimate the average wage rate by department cost center or operation. Planned production unit usage hour = required hour for production.
- ii. Then calculate labor cost multiplying the standard hour by hourly wage rate by department, cost center or operation $Q = \text{required hour for production wages rate}$.
- iii. Develop personnel tables by enumerating personnel requirements (number and cost) for direct labor in each responsibility center

$$\frac{\text{Total hour}}{\text{Hour worked}}$$

Direct labor budget depends on direct labor hour. So an important function of industrial engineers is to develop standard labor times for various operations and products. In some producing departments, reliable labor time standard can be developed. In some cases, it is impractical to estimate direct labor time except in terms of averages based on experience.

D. Four Sources or Approaches commonly used in Planning Standard Labor Times are as follows:

i) Time and Motion studies

The individual engineers analyze about the fastest, slowest or average employee that should be used. Time and motion studies can provide reliable information about the labor time needed to perform each specific operation or production. When supervised by competent industrial engineers, time and motion studies generally represent the best approach to the planning of standard labor time.

ii) Standard Cost

With the help of standard cost accounting system, we can provide standard time taken for the production or operation.

iii) Direct Estimate by supervisors

The supervisors of production department can provide standard direct labor hour by his judgment, recent and past performance of the department, assistance from the next level of management and technical staff personnel.

iv) Statistical Study

Under this approach, the historical ratio of direct labor hours to some measure of physical output is computed and then adjusted for planned change in the responsibility center. The accuracy of this method depends on the reliability of the cost records and uniformity of the production process from period to period.

2.6.5 Overhead Budget or Plan

A. Introduction

To accomplish planning and control objectives of the organization, overhead budget also plays a significant role. It is important for every organization to classify expenses by responsibility, designated as controllable or non-controllable and estimated with respect to their cost behavior pattern.

"Mangers should view expense planning and control as necessary to maintain reasonable expense levels to support the objective and planned programs of the enterprise. Expense planning should not focus on decreasing expenses, but rather on better utilization of limited resources. Viewed in this light, expense planning and control should focus on the relationship between expenditures and benefits derived from those expenditures. The desired benefits should be viewed as goals, and sufficient resources must be planned to support the operating activities essential for their accomplishment.

The planning and controlling the three broad categories of expenses are (i) factory or manufacturing overhead (ii) selling and distribution overhead, and (iii) general administrative expenses."⁷¹

The knowledge of cost behavior which is essential in cost planning and control is the response of a cost to different volume of output. There are three kinds of expenses. Which are viewed in relation to changes in output. They are as follows:

i) Fixed Expenses

The expenses, which are constant in total form within relevant range and given set of condition. For example, salaries, property taxes, insurance, depreciation etc.

ii) Variable Expenses

The expenses which changes in total directly with changes in output or volume or work done. For example, direct material, direct labor etc.

iii) Semi-variable expenses

The expenses which are neither fixed nor variable and posses some features of both are semi-variable expenses. It changes in same direction but not in proportion of output changes.

B. Factory or Manufacturing Overhead Budget

"Manufacturing overhead is that part of total production cost which is not directly identifiable with specific product or jobs. Manufacturing overhead consists of (i) indirect material (ii) indirect labor and (iii) all other miscellaneous factory expenses, such as taxes, insurance, depreciation, supplies, utilities and repairs. Manufacturing overhead includes many dissimilar expenses. Therefore, it causes problems in the allocation of these costs to productions. This is the total of indirect material cost, indirect wages and indirect expenses of the factory."⁷²

⁷¹ Ibid, p. 302
⁷² Ibid, p. 307.

While developing the manufacturing overhead budget, the following steps should be taken:

- i) Compute the planned departmental output or activity by translating the requirements specified in the production plan into output or activity in each department.
- ii) Plan departmental overhead expenses.
- iii) Allocate the planned departmental expenses to the producing departments.
- iv) Allocate the producing department expenses to the products.

From the above steps, per unit overhead rates for each product could be computed and by adding the direct material cost and direct labor cost for each product, we are in position to compute the cost of goods manufactured.

Manufacturing overhead involves the following two problems:

- i. Control of manufacturing or factory overhead.
- ii. Allocation of manufacturing or factory overhead to products manufactured.

C. Selling and distribution expenses (Overhead) Budget

"Selling and distribution expenses include all costs related to selling, distribution and delivery of products to customers. In many companies, this cost is a significant percentage of total expenses. Careful planning of such expenses affects the profit potential of the firm."⁷³

The two primary aspects of planning distribution expenses are as follows:

- a) Planning and coordination
- b) Control of distribution expenses.

Fundamentally, the top marketing executive has the direct responsibility for planning the optimum economic balance between (i) The sales budget, (ii) The

advertising budget, and (iii) The distribution expenses budget. Therefore profit planning and control views sales, advertising and distribution expenses as one basic problem rather than as three separate problems. All these expenses must be planned by responsibility center.

D. Administrative Expenses Budget

Expenses other than manufacturing and distribution are included in administrative expenses. "These expenses are incurred in the responsibility center that provide supervision and service to all functions of the enterprise, rather than in the performance of any one function. Because a large portion of administrative expenses are fixed rather than variable and they cannot be controlled. Beside from certain top management salaries, most administrative expenses are determined by management decisions. It is common to find administrative expenses 'Top Heavy' when measured by the volume of business done. The administrative expenses center, after preparation by the respective managers, should be subject to approval by higher management in the same manner as discussed for all other budgets.

It is advisable to base budgeted administrative expenses on specific plan and programs. Past experience, adjusted for anticipated changes in management policy and general economic condition is helpful. Because most administrative expenses are fixed, an analysis of the historical record will often provide a sound basis for budgeting them."⁷⁴

2.6.6 Capital expenditure Budget

A. Introduction

Capital expenditures are investments because they require the commitment of resources today to receive higher economic benefits in the future. Capital expenditures become expenses in the future as their related goods and services are being used to earn higher future profits from future revenues or to achieve future cost saving.

"A capital expenditure is the use of funds to obtain operational assets that will (a) help to earn future revenues or (b) reduce future cost".⁷⁵ Capital expenditures budget is the firm's formal plan for the expenditure of money to purchase fixed assets. It is an internal corporate document that lists the allocated investment projects for a given focal period".⁷⁶

"Capital budgeting may be decided as the decision making process by which firm evaluates the purchase of major fixed assets including building, machine and equipment. It is a part of the firm's formal planning process for the acquisition and investment of capital."⁷⁷

"Capital projects are those that are expected to generate returns for more than one year. Capital budgeting refers to the process of planning capital projects, raising funds and efficiently allocating resources to those capital projects."⁷⁸

"capital budgeting involves the generation of investment proposals: the estimate of cash flows for the proposals, the evaluation of cash flows; the selection of projects based upon an acceptance criterion, and finally, the continual revaluation of investment projects after their acceptance."⁷⁹

Thus it is clear that capital budgeting is the process of determining capital investment. it is developed by responsibility center and time periods.

B. Capital Expenditure Budget Process

"The management should be design a systematic process to develop the long-term and short-term capital expenditure budget because of the importance of sound capital expenditure decisions. The primary phase of a yearly budget

⁷⁵ Ibid, p. 394

⁷⁶ Harderson, Glenn v. Trenn Oph. Gray L. and Wert. Jmes E. "An Introduction to Financial Management" 5th Edition, London Business Books Ltd,1998, p. 119.

⁷⁷ Hampton, John J. "financial Decision Making"8th Edition Reston Publishing Company, Virgonia 1976, p. 245.

⁷⁸ Peferson, H. Crarg and Lewis W. cris, "Managerial Economics" 57th Edition, Publishing House of India, 1995,pp33

⁷⁹ Van Horne, James C. "Financial Management and Policy", 8th Edition, Prentice Hall of India Pvt. Ltd. New Delhi, 1976, p. 66.

process for planning and controlling capital expenditures are summarized below:"⁸⁰

Phase Component (activity)

- 1 Identify and generate capital addition projects and other needs, this activity should be continuous in most cases.
- 2 Develop and refine capital additions proposal, collection of relevant data about each proposal, including any related alternatives.
- 3 Analyze and evaluate all capital additions, proposals, and alternatives. Emphasis should be given to the validity of the underlying financial and operational data.
- 4 Make capital expenditure decisions to accept the best alternative and assignment of project designations to select- alternatives.
- 5 Develop the capital expenditures budget.
 - a) Strategic plan – Re-plan and extend the long-term plan by dropping the past year and adding one year in to the future.
 - b) Tactical plan- Develop a detailed annual capital expenditures budget by responsibility center and by time, that is consistent with the comprehensive profit plan.
- 6 Establish control of capital expenditure during the budget year by using periodic and special performance report by responsibility centers.
- 7 Conduct post completion audits and follow-up evaluations of the actual result from capital expenditures in periods after completion.

C. Capital Expenditure Decisions

The conical capital expenditure decisions are the choices of management from the competing capital expenditures alternatives (e.g. projects). Such decisions must focus on two over riding problems.

⁸⁰ welsch, Hilton, and Gordon, op cit, pp. 400-401.

- a. Investment decisions- selecting the best alternatives based on their economic worth to the company-called investment worth.
- b. Financing decision-determining the amounts and sources of funds needed to pay for the selected alternatives. This cash constraint may necessarily limit the projects and proposals that can be initiated.

D. Methods of Measuring the Economic Value of a Capital Expenditure

Numerous method of measuring the economic value, also called investment worth of an investment, is developed. The most widely used methods for this propose are:

I. Discounted cash flow (DCP) method.

- a) Net present value (NPV)
- b) Internal rate of return (IRR)

II. Short cut and simple method.

- a) Payback period (PBP).
- b) Accounting rate of return (ARR).

1. Discounted cash flow method.

In this method there are two types.

a) Net Present value (NPV)

This method compares the present value of the net cash inflows with the present value of the initial net cash cost of capital expenditure project. The amount difference between these two present values called net present value. The net cash inflows are discounted to present value by using a target or minimum rate of return. The formula to calculate NPV

$$\text{is: NPV} = \sum \frac{A^t}{(1+K)^t} - C$$

Where,

= Sum of different year's transactions

K = Cost of capital or target rate of return

t = No. of years

C = Initial cash (investment)

A = Expected cash for inflows.

b. Internal rate of return (IRR)

The IRR is the rate that will discount all the future net cash inflows so that their discounted sum will exactly equal to initial outflows of the investment project. The formula to calculate IRR is:

$$A_0 = A_1/(1+r) + A_2/(1+r)^2 + \dots + A_n/(1+r)^n$$

Where,

r = IRR

A₀ = Initial investment time zero

A₁, A₂, A_n = Cash inflow at future

2. Shortcut and simple Methods

This method does not consider the time value of money. There are mainly two methods of simple method, which are as follows:

a. Pay Back Period (PBP)

This method computes the payback period, which is number of years that it takes to recoup cash investment from the annual net cash inflow from the investment.

The formula is

$$\text{PBP in years} = \frac{\text{NCO}}{\text{ACFAT}}$$

Where,

NCO = Net cash budget (investment)

ACFAT = Annual cash inflow after tax

b. Accounting rate of return or average rate of return (ARR)

This method represents the ratio of the average annual profits to the investment in projects.

The formula is

$$\text{ARR} = \frac{\text{AP}}{\text{I}} \times 100$$

Where, AP = Average Profits and

I = Investment

From the above, after analyzing the methods of measuring capital investment, the decision criteria can be summarized as follows:

<u>Methods</u>	<u>Accepted Project</u>
i. NPP	Higher the NPV
ii. IRR	Higher the IRR or IRR > cost of capital (K)
iii. PBP	Lower the PBP
iv. ARR	Higher the ARR

2.6.7 Planning and Controlling Cash Flows

A. Cash Budget

A comprehensive profit planning and control or managerial budgeting program establishes the foundation for realistic cash budget. To plan, control and safeguard the cash assets of the enterprise is one of the important responsibilities of the management. The planning and control of the cash inflows and cash outflows is important and cash budget is an effective way for this. Cash budgeting not only plans and controls the cash inflows and outflows but also assess cash needs and effectively use excess cash. The cash plan or budget is prepared from the previously completed budgets such as the sales, materials, and labor, overhead and capital expenditure budgets.

"A cash budget shows the planned cash inflows, outflows and ending position by interim periods for a specific time span. Most companies should develop both long term and short term plans about their cash flows. The short-term cash budget is including in the annual profit plan. A cash budget basically includes two parts. (i) The planned cash receipt (inflows) (ii) The planned cash disbursement (outflows).

Planning cash inflows and outflows gives the planned beginning and ending cash position for the budget period. Planning the cash inflows and outflows will include (i) the need for financing probable cash deficits or (ii) the need for investment planning to put excess cash to profitable use. The cash budget is

directly related to other plans, such as sales plan, accounts receivable and the expense budgets and the capital expenditures budget.

The primary purposes of the cash budget are as follows:

1. Give the probable cash position at the end of each period as a result of planned operations.
2. Identify cash excesses or shortages by time periods.
3. Establish the need for financing and / or the availability of idle cash for investment.
4. Coordinate cash with (a) total working capital (b) sales revenue (c) expenses (d) investments (e) liabilities.
5. Establish a sound basis for continuous monitoring of the cash position."⁸¹

B. Techniques for Improving Cash Flow

"Planning the cash flow of company should include consideration of how to improve cash flow. Improving cash flow basically involves increasing the amount of available cash on a day-to-day basis. To accomplish this objectives, the management should focus on (a) The cash collection process to speed-up cash collection (b) The cash payment process to slow-down the payments of cash and (c) The investment policies for the immediate investment of idle cash balances to maximize interest earnings."⁸²

Some of the ways often used to improve the efficiency of the cash collection process are as follows:⁸³

1. Review the lag from the date of sales of goods and services on credit to the mailing of (a) invoices (b) the first bulling.

⁸¹ Ibid pp. 433-434.

⁸² Ibid, p. 454.

⁸³ Ibid, pp. 454-455.

2. If cash discounts are given to customers for early payment, review their effect on early cash collection and whether the discount is too high or too low.
3. Review the credit granting process to determine whether bad credit risks are being screened out.
4. Consider ways to decrease the time between the date that customers pay by check and the date that the cash is available for use in the company's bank account.

Some of the ways often used to improve the efficiency of the cash payment process are as follows:

1. Make all payments on the last non-penalty day. Do not pay early.
2. Make all payments by check, preferably on Friday to maximize float in favor of the company.
3. Take all cash discounts allowed for early payment.
4. Establish a policy of no cash advance to both outsiders and employees.
5. Establish policies, and a payment process to minimize the possibility of fraudulent payments by company's employees.

A company should develop a specific policy about the investment of temporarily idle cash. The policy should be specific about such issues as (a) types and mix of acceptable securities (b) monthly reporting and monitoring of the portfolio and (c) safeguarding and disposal of temporary investments.

2.7 Implementation of the Profit Plan

2.7.1 Completion of the Annual Profit Plan

"The development of an annual profit plan ends with the planned income statement, the planned balance sheet and the planned statement of cash flows. These three statements summarize and integrate the detailed plans developed by management for the planning period. They also report the primary impacts

of the detailed plans on the financial characteristics of the company".⁸⁴ Before redistributing the completed profit plan, it is generally desirable to recast certain budget schedules so that technical accounting mechanics and jargons are avoided as much as possible.

The redesigned budgeted schedules should be assembled in a logical order, reproduced and distributed before the first day of the upcoming budget period. The profit plan completion date is important; issuance of a profit plan after the beginning of the budget period is one sure way of destroying much of the budget potential. Timely completion of the planning budget suggests the need for a budget calendar.

2.7.2 Alternatives in Developing the Profit Plan

"Profit plan development might suggest that once the sales plan is completed, this can be followed by a series of simple clerical activities that result in the production, inventory, purchase, labor and material budgets. This view is misleading because it ignores the fundamental importance of decision-making, policy formulation and consideration of alternative actions throughout the planning process. The development of decisional inputs and the preparation of a sub-budget by the manager of each responsibility center is the heart of a comprehensive profit planning and control program."⁸⁵

The important areas where planning alternatives must be considered and choice made are as follows:

- 1) Setting of pricing policy to fix the sales price.
- 2) Development of general advertising policies.
- 3) Sales territory and sales force expansion or contraction.
- 4) Sales mix refers to the relative sales emphasis given to the various products sold by the company.
- 5) Balance between sales, production and inventory levels.
- 6) Research and development expenditures

⁸⁴ Ibid, pp. 466.
⁸⁵ Ibid, pp. 468.

- 7) Capital expenditures.
- 8) Testing alternative decisions.

If the profit is satisfactory, preparation of the profit plan can be continued. If the profit is unsatisfactory, management should re-examine the alternative decisions (approvals) made to date.⁸⁶

2.7.3 Implementing the Profit Plan

"The ultimate test of whether the effort and cost of developing a profit plan are worthwhile is its usefulness to management. The plan should be developed with the conviction that the enterprise is going to meet or exceed all major objectives. Participation enhances communication. If this principle is to be effective, the various executives should have a clear undertaking of their implementation responsibilities."⁸⁷

The copies of the complete profit plan should be prepared and distributed to the vice presidents and to the head of certain staff groups. The guiding principle in establishing the distribution policy might to be provided one copy to each member of the management team according to their overall responsibilities, taking into account the problem of security. The distribution policy should allow distribution of parts of the profit plan to middle and lower management.

After the distribution of the profit plan, a series of profit plan conferences should be held. The executives comprehensively discuss the plans, expectations and steps in implementation. At this top-level meeting, the importance of action flexibility and continuous control should be emphasized. In essence, each manager has to realize that the budget is a tool for his or her use. Conferences should be held so as to convey the profit plan to each level of management. The manager of each responsibility center obtains an approved profit plan for his center and it becomes the basis of current operations and exerts considerable coordinating and controlling effects.

⁸⁶ Ibid, pp. 469-70 (summarized).
⁸⁷ Ibid, pp. 471-72

2.7.4 Performance Report

Performance reporting is an important phase of the control process "Performance reporting for internal management use is an important part of a comprehensive profit planning and control system. The performance reporting phase of a comprehensive profit planning and control program significantly influences the extent to which the organizations planned goals and objectives are attained."⁸⁸ The performance reports are usually prepared on a monthly basis and follow a standardized format from period to period. Such reports are designed to facilitate internal control by the management. They should be composed of carefully selected series of data related to each responsibility center. Fundamentally, the report (actual results) compared with goals and budget plans. Frequently, they identify problems that require special reports, are designed to pin point both efficient and inefficient performance.

The comprehensive profit planning and control or managerial budgeting and performance report are vital because the activities of all sub units must be focused on enterprise objectives. The central objective of performance reports is the communication of performance measurements, actual results and the related variances. The performance to budget report is the management report that affects the operating manager's efforts to live within and beat his budgets allowances, performance reports should be prepared by considering criteria are as follows".

1. Tailored to the organizational structure and locus of controllability.
2. Designed to implement the management by exception principle.
3. Repetitive and related to short time periods.
4. Adopted to the requirements of the primary users.
5. Simple and understandable report is only essential information.
6. Accurate and designed to pinpoint significant distinctions.
7. Prepared and presented promptly.
8. Constructive in tone.

2.8. A Review of Previous Work

Very few researchers have been made in areas of profit planning or managerial budgeting in the context of Nepalese manufacturing organization. Whatever, have been made, are also not in depth. Some researchers have been reviewed here:

2.8.1. Mr. Ratna Raj Ojha

Mr. Ratna Raj Ojha has conducted a research in the topic “Profit Planning in Nepal Rosin and Turpentine Limited”. This research of Mr. Ojha was mainly centered with the current practice of profit planning and its effectiveness in NEROT. The main objectives of this research were:

- 1) To examine the system of profit planning applied in NEROT.
- 2) To analyze the major functional and financial plans formulated and implemented in NEROT.
- 3) To examine the outcome of those plan in terms of achievement.
- 4) To sketch the main problems of developing and implementing profit planning system in NEROT.
- 5) To point out possible suggestion and recommendation to improve the performance of NEROT with the means to profit planning system.

Time period covered by this research was 5 years from FY 2052/053 to 2056/057 the data and other necessary information's were collecting by using secondary as well as primary sources of data. In his research he has pointed out findings as follows:

- 1) NEROT has not clear objective.
- 2) There is a lack of systemic profit planning and controlling systems.
- 3) There is a role conflict and no co-ordination between different departments and personnel.
- 4) The management of NEROT cannot work without government intervention for its every function.

- 5) The company is suffering from high rate of spoilage and leakage of crude resin as well as finish product, rosin and turpentine. And
- 6) The company does not consider the cost of production while pricing products. The price is fixed by boarder price.

Mr. Ojha summarizes his findings by telling there is lack of systematic profit planning and control. He has recommended various recommendations to improve the profit planning system of NEROT. Major recommendations are as follows:

- 1) NEROT should develop its specific goal for the coming budget year.
- 2) Government intervention should not be made for functional aspect of enterprises.
- 3) Industry should have in depth analysis of the industries strength and weakness.
- 4) Sales budgets should be prepared on the realistic ground.
- 5) The product should be made widely available everywhere.
- 6) The pricing policy of the industry should be revised.
- 7) The company should make sales promotion by different media in Nepal and other country. And
- 8) It should search a market of his products in third country.

2.8.2. Mr. Govinda Raj Joshi

Mr. Govinda Raj Joshi has conducted a research in the topic “Budget: Profit Planning in Nepal Rosin and Turpentine Limited”. He has tried to examine whether the NEROT is applying profit-planning system properly or not and analyze if there is any drawback in profit planning system of the NEROT. The study covers only 5 years period from FY 2051/052 to 2055/056. The data with other information’s were taken from both sources: primary and secondary.

The basic objectives of this study were to examine the practice and effectiveness of budgeting in NEROT. Other objectives were as follows:

- 1) To analyze the profit planning system of NEROT.
- 2) To highlight the company.
- 3) To evaluate the variables in the budgeted and actual results. And
- 4) To point out variation in the budgets and to give suggestions and recommendations.

Mr. Joshi's research work points out some findings and recommendations as follows:

- 1) There is not adequate planning of profit due to lack of skilled planners.
- 2) There is no executive management planning instruction and effective communications system in the company.
- 3) The internal as well as external market variables have not been evaluated properly.
- 4) The company has not maintained the periodic performance reports, goal and objectives are limited only to high ranking officials.
- 5) In-adequate knowledge of technical knowhow. And
- 6) The pricing method and policy of the company are not clear and government makes the work of pricing.

Recommendations:

- 1) A systematic approach to comprehensive profit planning should be adopted.
- 2) The sales budget should be prepared showing sales units, sales revenue and sales territories for each product.
- 3) The company should utilize full capacity to meet target production so that the gap between actual and budgeted production should be removed or fulfilled and the operating expenses will down.

- 4) The material budget showing required quantity of material along with cost of raw material.
- 5) System of periodical performance reports should be strictly followed.
- 6) NEROT should stress and effectiveness utilization of fixed assets.
- 7) Effectiveness sales promotion activities should be made to increase the export of the company. And
- 8) Wastage of rosin and turpentine should be controlled.

2.8.3. Mr. Nur Nath Subedi

Mr. Nur Nath Subedi conducted a research in the topic “Profit Planning in Manufacturing Company of Nepal (a case study of Nepal Rosin and Turpentine Limited)”. This research as mainly focused on profit planning system and drawbacks of NEROT. The study covered only 5 years period from FY 2053/054 to 2057/058.

The basic objectives of this study were as follows:

- 1) To analyze the profit planning system applied in NEROT.
- 2) To analyze the plans applied and effectiveness of this plans.
- 3) To highlight NEROT.
- 4) To examine whether the achievements and plans are meet or not.
- 5) To give possible suggestions to NEROT.

Some findings of Mr. Subedi’s research work were as follows:

- 1) Working at low capacity.
- 2) Performance is below than target.
- 3) Over staffing problem in NEROT.
- 4) Suffering from high fixed cost.
- 5) Political influence in management of NEROT.
- 6) Lack of skilled planners.

- 7) Lack of sufficient market research.
- 8) Wrong pricing decision.
- 9) Lack of proper marketing strategy.

Mr. Subedi recommended NEROT as follows:

- 1) To try to overcome its weakness by using and knowing the strengths.
- 2) To utilize its full capacity to increase its production and reduce its cost.
- 3) To manage from domestic style.
- 4) To fix price by considering its cost of production.
- 5) To follow periodical performance report strictly.
- 6) To make sales promotion by different media.
- 7) To search product market in third country.
- 8) To make light staffing.
- 9) To increase its liquidity position.
- 10) To distribute bonus only when there is sufficient income.
- 11) To organize planning training programs providing new theory and concept of planning.

2.9. Research gaps

All the research studies maintained above about profit planning system are basically related to the planning system of manufacturing concern of production oriented activities. All these have pointed out that there no proper profit planning system and have recommended for the effective implementation of profit planning system.

None of the previous study has attempted to analyze the profit planning of sole conducted industry. Most of them are concentrated to state public or government owned enterprises. But this has tried to present the impact of budgeting on profitability of private manufacturing industry. By this the system

of preparing budgets and their use to insure the budgeted profit related problems and hindrances of profit planning and budgeting of manufacturing industry conducted from private sector will be known which will be useful to all industrial entrepreneurs.

This research is also related to impact of budgeting on profitability of manufacturing industry "DRTI", Which have been producing rosin and turpentine since, its establishment. This study has tried to indicate the need and role of budgeting for the effectiveness of enterprises.

Chapter - III

Research Methodology

3.1. General

As the basic objective of the research is to highlight the current practice of managerial budgeting and its effectiveness in Durga Rosin and Turpentine and accordingly the sub-objectives are formulated. The research methodology is followed to achieve the basic objectives and goals of the research work.

Following are the major contents of research methodology followed in course of this study.

3.2. Research Design

The Research design followed in the study is analytical as well as descriptive. The study is an examination and evaluation of budgeting procedure in the process of planning (Profit Planning) of Durga Rosin and Turpentine industry (DRTI). The study is closely related with the various functional budgets and other accounting statements as well as the actual result of the budgets. These information and data are presented in an analytical form. But the qualitative aspects of the research such as effectiveness of profit planning or managerial budgeting in "DRTI", problems of formulating and implementing the profit plans, views of top personnel of the enterprise and the theoretical prescriptions is explained in words wherever necessary.

3.3. The Population and Sample

Being a case study, the population and the sample for the study is the some organization i.e., DRTI.

3.4. Period Covered

The Study covers a time period of five years from FY 2060/ 061 to 2064/ 065. The analysis is basically made on the basis of these five years data taken from

"DRTI". For the purpose of the analysis of tactical profit plan analysis, data is taken from FY 2064/ 065. Both budgeted and actual data is taken from the same year FY 2064/ 065.

3.5. Nature and Sources of Data

To fulfill the objectives of the study, primary as well as secondary data has been used. Primary data is collected through interview with the related officer and other staff of Durga Rosin and Turpentine Industry.

Secondary data is taken from the published documents of "DRTI", books, booklets, and magazines and similar dissertations and other publications.

3.6. Tools Used for Analysis

Data collected from various sources is managed, analyzed and presented in proper table and formats. Such table and formats is interpreted and explained wherever necessary.

To analyze the collected data, financial and statistical tools are mainly used. Financial tools like: financial ratio, CVP analysis and flexible budgets are used. Similarly the statistical tools used are mean, correlation, regression line, time series, coefficient of variance, standard deviation, graphs diagrams etc as per need.

3.7. Research Variables

The research variables of the study are mainly related with the accounting statement of "DRTI". Sales, production, inventories, purchase, expenses, capacity utilization, profit and loss, manpower, capital expenditures and cash flows relating to long term and short term period of "DRTI" are the main research variables of the study.

3.8. Research Questions

The research study is concentrated to answer of the following question to fulfill the objectives of the study;

- 1) What obstacles are being faced by “DRTI” for not getting its objective fulfilled?
- 2) To what extent the procedure of budgets formulation is followed by “DRTI”?
- 3) What steps should be taken to improve the profitability of “DRTI”?
- 4) What are the overall profit planning problem and what suggestion can be recommended for their proper solution?

Chapter- IV

Presentation and Analysis of Data

4.1. Introduction

Profit Planning or Managerial budgeting is a systematic approach for attaining effective management goals. Profit is the primary measure of business success in any enterprise. The primary purpose of Profit planning or managerial budgeting of business enterprise is to increase the chance of making profit. Comprehensive profit planning and control or Managerial Budgeting continues to be of prime importance in virtually all organizations. Planning involves the control and manipulation of relevant variables (controllable and non-controllable) and reduces the impact of uncertainty so that the enterprise could be saved from the chances of making losses.

Private enterprises are established due to ineffective and inefficient performance of public enterprises. So, like public enterprises, they are also responsible to prepare infrastructure services, to produce the required goods in the country, to help in controlling the price situation, to increase government revenues and to contribute significantly in the national development as well as to assist in the country's economic advancement.

Durga Rosin and Turpentine Industry (DRTI) is a solo manufacturing company, which is continuously increasing its profit since the time of

establishment. DRTI is fully an operator in the area of its sector to collect, to process and to sell rosin and turpentine.

4.2 Sales Budge.

On the basis of time period, there are two types of sales budgets. First, the long-term sales plan, which covers the period of 5 or above years and the second is short-term sales plan (budget) covering the period of one fiscal year.

4.2.1 Long-term Sales Plan (Rosin)

The following table represents the sales budget and actual sales achievement of Rosin in kg. From FY 2060/061 to 2064/065:

Table-1

Sales Budgets and Achievements.

Fiscal Year	Rosin (kg)		Achievement
	Target	Actual	
2060/061	3,80,000	3,46,250	91.12%
2061/062	3,80,000	3,76,200	99.00%
2062/063	4,00,000	3,92,840	98.21%
2063/064	4,10,000	3,99,760	97.50%
2064/065	4,20,000	4,15,230	98.86%
2065/066	4,40,000	-	-
Average	-	-	96.94

The above table shows that the actual sales are always near to target sales. The average actual sale of Rosin is 96.94% of target sales.

In order to find out the nature of variability of sales budget and actual sales of different year, we have to calculate the arithmetic mean, standard deviation and coefficient of variation of the budgeted and actual figures of DRTI.

The detail calculations of these statistical tools are presented in appendix-1. From appendix-1, we have,

Table-2

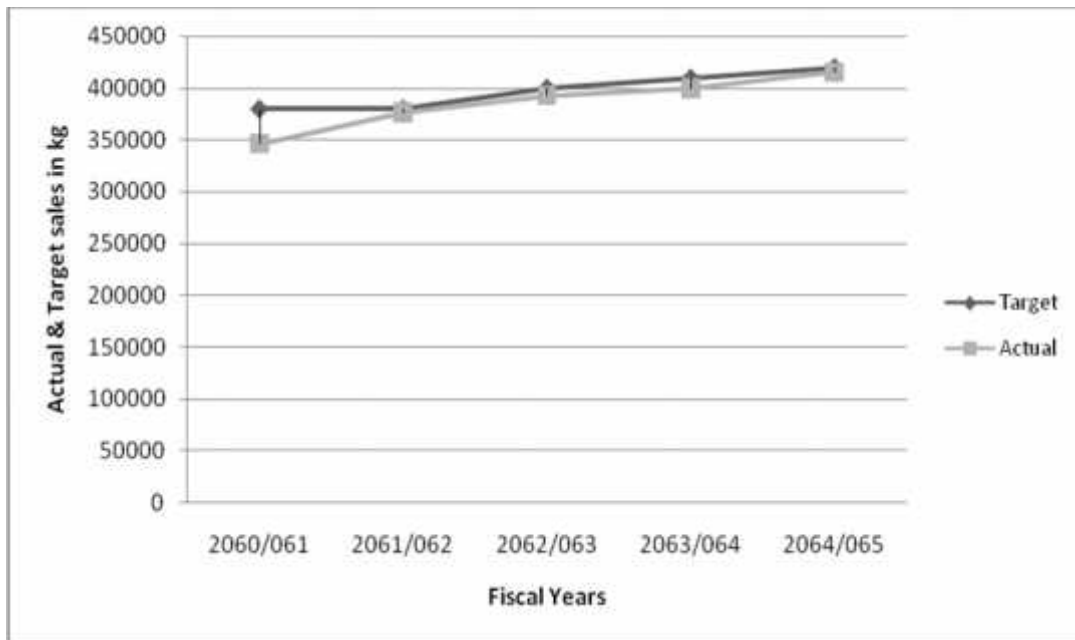
Sales Budgets and Tools

Tools	Sales budget in kg.	Sales achievement in kg
Mean	3,98,000	3,86,056
Standard deviation	16,000	23,522.77
Coefficient of variation	4.02%	6.09%

The above analysis shows that coefficient of variation of actual sales is higher than of target sales. This means the actual sales is more variable than budgeted sales. Lower C.V. is said to more homogenous or uniform or less variable than the other.

The targeted and actual sales can be shown in graphical form:

Fig.:1 (Rosin)



This graphical presentation shows that the actual sales aren't meeting the target sales. However, every sales figure are almost near to the target sales. Both budgeted and actual sales figures are in upward trend. The deviation between target and actual sales is more in FY 2060/061, which is 91.12% and the very low deviation is in FY 2061/062, where the actual sales is near to meet the budgeted sales or actual sales is 99% of budgeted sales.

Another statistical tool, correlation coefficient can be used to analyze the relationship between budgeted and actual sales. For this purpose, we can take the help of Karl Pearson's coefficient of correlation and it is denoted by (r). By calculating r, we can examine, whether there is positive correlation between budgeted and actual sales or not. In other words, whether or not the actual sales will change in the same direction of the change in budgeted sales. For this reason, budget figure, indicated by 'x' are assumed to be independent variable and actual figure, indicated by 'Y', are assumed to be dependent variable. This achievement is large if the target is large and vice-versa. Calculation of 'r' and 'Probable error of r' are presented in appendix-1 and from this appendix, we have, the calculated value of 'r' is 0.9107.

This figure of 'r' shows that there is positive and close correlation between budgeted and actual sales. This means actual and budgeted sales both will go to same direction.

The significance of 'r' is tested by the help of "Probable error of r". We have, probable error of $r = 0.0515$.

Since, r is greater than probable error of r ($0.9107 > 0.0515$), it can be said that actual sales will go to same direction of budget or the value of r is significant.

A regression line can also be fitted to show the degree of relationship between budgeted and actual sales and to forecast the possible actual sales with given budget figure. For this purpose actual sales achievements have been assumed to dependent upon budgets.

So, the regression line of achievement on budget Means, Sigma or Y on X is as follows:

$$Y - \bar{Y} = r \frac{S_Y}{S_X} (X - \bar{X})$$

Where the following values are calculated above

Tools	Budget sales (X)	Actual Sales (Y)
Mean	3,98,000	3,86,056
S.D. (σ)	16,000	23,522.77

$$r = 0.9107$$

Putting the above values in to the formula,

$$Y - 3,86,056 = 0.9107 \times \frac{23,522.77}{16,000} (X - 3,98,000)$$

$$Y - 3,86,056 = 1.3389X - 5,32,876.89$$

$$Y = 1.3389 X - 1,46,820.89$$

By this equation, we came to know that, there is positive relationship between budgeted and actual sales. Actual sales will be increased by 1.3389 times per k.g. increase in budgeted sales.

By the help of regression equation, we can determine the expected sales achievement with the given value of budgeted sales (x). If we use this equation to ascertain the expected sales achievement of FY 2063/064, the following result will come out:

Budgeted sales for FY 2065/066 = 4, 30,000 kg.

Or, X = 4, 30,000 kg.

Then, expected sales achievement,

$Y = 1.3389 \times 430,000 - 146820.89 = 428900$ kg.

If the relationship between budgeted and actual sales remains same as previous year, then the actual sales for the FY 2065/066 will be 428900 kg as stated by the above regression equation.

By the help of least square method, we can analyze the trend of actual sales and estimate the possible future sales for a given time or a year. Time element is an important factor. With the passage of time, the sales achievement change can be expressed by the component of time series. Least square method will show the relationship between years (time) and actual sales.

Table – 3

Time Series Analysis

Fitting straight-line trend by least square:

FY	Actual sales(Y) in kg.	X	X ²	XY
2060/061	346,250	-2	4	-6,92,500
2061/062	3,76,200	-1	1	-3,76,200
2062/063	3,92,840	0	0	0
2063/064	3,99,760	1	1	3,99,760
2064/065	4,15,230	2	4	8,30,460
Total	Y = 19,30,280	X = 0	X ² = 10	XY= 1,61,520

In the above table, FY 2062/063 is assumed as base Year, straight-line trend,

$$Y_c = a + bx$$

$$a = \frac{SY}{N} = \frac{19,30,280}{5} = 3,86,056$$

$$b = \frac{SXY}{SX^2} = \frac{1,61,520}{10} = 16,152$$

$$Y = 3,86,056 + 16,152X$$

The trend line shows the increasing sales figure for the future. The sales will be increased by 16152 kg yearly. This is the past trend and continues in the future. With the help of trend equation, it is easy to estimate the actual sales for FY 2065/066.

The value of X for the year 2063/064, from the base year 2062/063 = 3

$$\begin{aligned} \text{Sales for 2064/065} &= 3,86,056 + 16,152 \times 3 \\ &= 4,34,524 \text{ kg.} \end{aligned}$$

4.2.2 Long-Term Sales Plan (Turpentine)

The following table shows the sales budgets and actual sales of turpentine in liters of 5 years from FY 2060/061 to 2064/065

Table-4

Sales Budgets and Achievements

FY	Turpentine (Ltr)		Achievement
	Target	Actual	
2060/061	95,000	82,000	86.32%
2061/062	95,000	93,430	98.35%
2062/063	98,000	96,250	98.21%
2063/064	1,00,000	99,720	99.72%
2064/065	1,10,000	1,05,680	96.07%
2065/066	1,25,000	-	-

The above table shows the satisfactory sales achievement of turpentine though the actual sales figures have not met the budgeted figures but the achievement is very near or average 95.735% of budgeted sales. The lowest achievement is in year 2060/061, which is 86.32% of budget and the greatest achievement is in FY 2063/064, which is very close to budget or 99.72% of budgeted sales.

In order to find out the nature of variability of budgeted and actual sales of different years, we have to calculate the arithmetic mean, standard deviation and coefficient of variation of the budgeted and actual figures of DRTI.

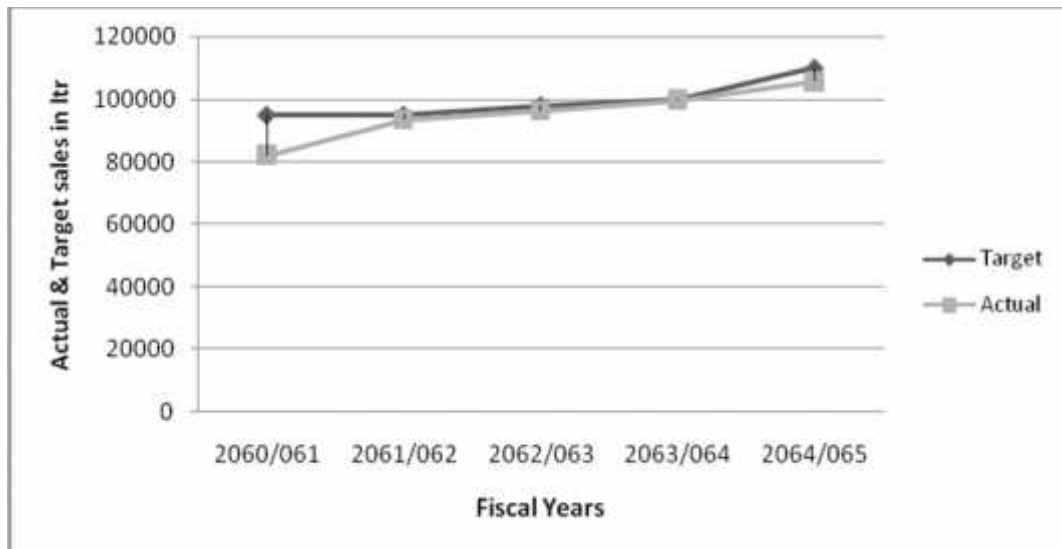
These statistical tools are calculated in appendix-2. Summarizing the results, from appendix-2, we have,

Tools	Sales budget in Ltr.	Actual Sales in Ltr.
Mean (\bar{x})	99,600	95,416
S.D. (\dagger)	5,535.34	
C.V.	5.56%	8.23%

The above result shows that the achievement is strongly near but less than the mean budgeted sales. The actual sales are more variable than that of budgeted sales but the results are uniform because the both variances are less than 10%. Both the deviations are insignificant.

The actual and budgeted sales of 5 years can be presented in graphical form:

Fig.: 2(Turpentine)



The graphical Presentation shows that the actual sales don't meet the budgeted sales. But both the lines are in very near and are in approximately parallel from FY 2060/061 to FY 2064/065.

To find out the correlation between target and actual sales, Karl Pearson's coefficient of correlation (r) is determined. For this purpose, target figures (x) are assumed to be independent variable and achievement figures (Y) are assumed to be dependent variable. If the target sales are large, actual achievement will be large and vice versa. The detail calculation of ' r ' and 'Problem error of r ' is presented in appendix-2 and from this appendix; we have the calculated value of ' r ' as 0.8233.

The value of ' r ' shows the positive and very close relationship between budgeted and the actual sales figures. This means, both the target and achieved sales are in same direction.

The significance of ' r ' is tested by the help of 'Probable error of r '. from appendix-2, we have the calculated value of 'Probable error of $r = 0.0972$.

Since, the value 0.0972 is less than the correlation coefficient i.e. 0.8233 (or $0.8233 > 0.0972$) so, the value of ' r ' is significant. Budgeted and actual sales will go to the same direction.

A regression line can also be fitted to show the degree of relationship between budgeted and actual sales and to forecast the possible actual sales for the future with given budget figure. For this, sales achievement has been assumed to be dependent upon budget.

So, the regression line of achievement Y on budget X or Y on X is as follows:

$$Y - \bar{Y} = Y_{xy} \frac{S_Y}{S_X} (X - \bar{X})$$

Tools	Sales budget (X) Ltr.	Actual sales (Y) Ltr.
Mean	99,600	95,416
S.D.	5,535.34	7,854.97

$$r_{xy} = 0.8233$$

Putting the value on formula,

$$\text{Or, } Y - 95,416 = 0.8233 \times \frac{7,854.97}{5,535.34} \times (X - 99,600)$$

$$\text{Or, } Y - 95,416 = 1.16831 (X - 99,600)$$

$$\text{Or, } Y = 1.16831X - 20,94$$

Then, expected sales achievement

$$\begin{aligned} Y &= 1.16831 \times 1,25,000 - 20,948 \\ &= 1,25,090.75 \text{ ltr.} \end{aligned}$$

-If the relationship between budgeted sales and actual sales remain same as previous year, then the actual sales for the year 2065/066 will be approx. 1,25,091 liters as stated by the above regression equation.

The next statistical tool, called 'Least Square Method', can also be used to analyze the trend of actual sales and to estimate the possible future sales for a given time of year. Least square method will show the relationship between year (time) and actual sales.

Table-5

Fitting Straight Line Trend by Least Square

FY	Actual sales (Y) in ltr	(X)	(XY)	(X ²)
2060/061	82,000	-2	-1,64,000	4
2061/062	93,430	-1	-93,430	1
2062/063	96,250	0	0	0
2063/064	99,720	1	99,720	1
2064/065	1,05,680	2	2,11,360	4

Total	$\sum Y = 4,77,080$	$\sum X =$ 0	$\sum XY =$ 53,650	$\sum X^2 = 10$
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Assumed base year FY 2062/063

Straight line trend (Y_c) = $a + bx$

$$a = \frac{\sum Y}{N} = \frac{4,77,080}{5} = 95416 \text{ ltr.}$$

$$b = \frac{\sum XY}{\sum X^2} = \frac{53,650}{10} = 5,365$$

$$\sum Y = 95,416 + 5,365$$

The trend line indicates the increasing sales figures. The sales will be increased by 5,365 liters every year if sales trend of past year continues for future.

With the help of trend equation, the actual estimated sales for FY 2065/066 is calculated below:

The value of x for the year 2065/066 according to the base year 2062/063 = 3

$$\sum Y = 95,416 + 5,365 \times 3 = 1,11,511 \text{ ltr.}$$

If the trend doesn't change, the possible sales for 2065/066 will be 1,11,511 ltr.

To conclude the sales budget of DRTI, following points can be noted out:

- a) Generally an actual sale doesn't meet the budgeted sales.
- b) Achievement is satisfactory and is very near to target.
- c) There is perfect and positive correlation between actual and budgeted sales.
- d) Variations in budgeted and actual sales are not in significant position or both are uniform and realistic.
- e) There is systematic and rationale approach about sales budget making.
- f) Sales of both Rosin and Turpentine are better.
- g) Analysis shows, sales of both products will increase in the future.

4.2.3 Tactical Short-Range Sales Plan

DRTI hasn't proper and systematic plan about short-range sales budget. Planners of DRTI forecast the annual sales plan as a whole at first and then divide the total annual budget into four different quarters according to their

hypothetical judgment. Then, they also divide the quarterly sales in to different months but there is no any hard and fast rule for making short-range sales forecasting. DRTI doesn't develop short-term sales plan by territories. The head office collects all raw materials (Resins) and manufactures it in to Rosin and Turpentine. So, head office doesn't make budget by territory but only by products and by time period. Planning and monitoring department plans the sales budget. The sales department has only the responsibility to supply goods to customers and to record the orders.

DRTI doesn't plan its sales budget in amount because rate of the products is not fixed. Product price changes due to change in external market or Product price changes according to the external market fluctuation.

The rough estimation of short-range sales for the FY 2064/065 is presented below:

Table-6

DRTI sales Target (Plan)

By period and by Product for the FY 2065/066

Period	Rosin (kg)	Turpentine (ltr)
Shrawan	19,750	5,650
Bhadra	36,500	10,400
Ashwin	41,000	11,650
Total of 1 st Quarter	97,250	27,700
2 nd quarter	1,42,000	40,300
3 rd quarter	1,24,000	35,200
4 th quarter	76,750	21,800

Total Target for the Year	4,40,000	1,25,000
---------------------------	----------	----------

Sales budget is mainly focused on second and third quarters. DRTI feels the two quarters as the main seasons to sell its products. Past record also shows low sales in other two quarters.

But, DRTI has not proper records of quarterly sales. So, it is said that the short-term sales plan is only for formality.

4.3 Production Plan (Budget)

4.3.1 Long-term Production Plan (Rosin)

The following table represents the production budget and actual production achievement of Rosin in kilograms from fiscal year 2059/060 to 2063/064:

Table-7

Production Target and Achievement

FY	Rosin (kg)		Achievement%
	Target	Actual	
2060/061	3,80,000	3,52,230	92.69%
2061/062	3,80,000	3,83,810	101.00%
2062/063	4,00,000	3,91,715	97.93%
2063/064	4,10,000	4,04,582	98.68%
2064/065	4,20,000	4,18,790	99.71%
Average	398000	-390225.4	--

The above table shows the homogeneity between budgeted and actual sales figures. All the data of sales achievement are very near but below the budgeted sales figures, except in year 2061/062, where actual sales has exceeded the

budgeted sales, which is 101% of budget. The production is budgeted on the basis of sales budget. Therefore, the budgeted production is equal to budgeted sales. It shows the zero inventory policy of DRTI.

To find out the nature of variability of production budget and actual production of different years, we have to calculate the arithmetic mean, standard deviation and coefficient of variation. The detail calculations of these variables are presented in appendix-3.

From appendix-3, we have:

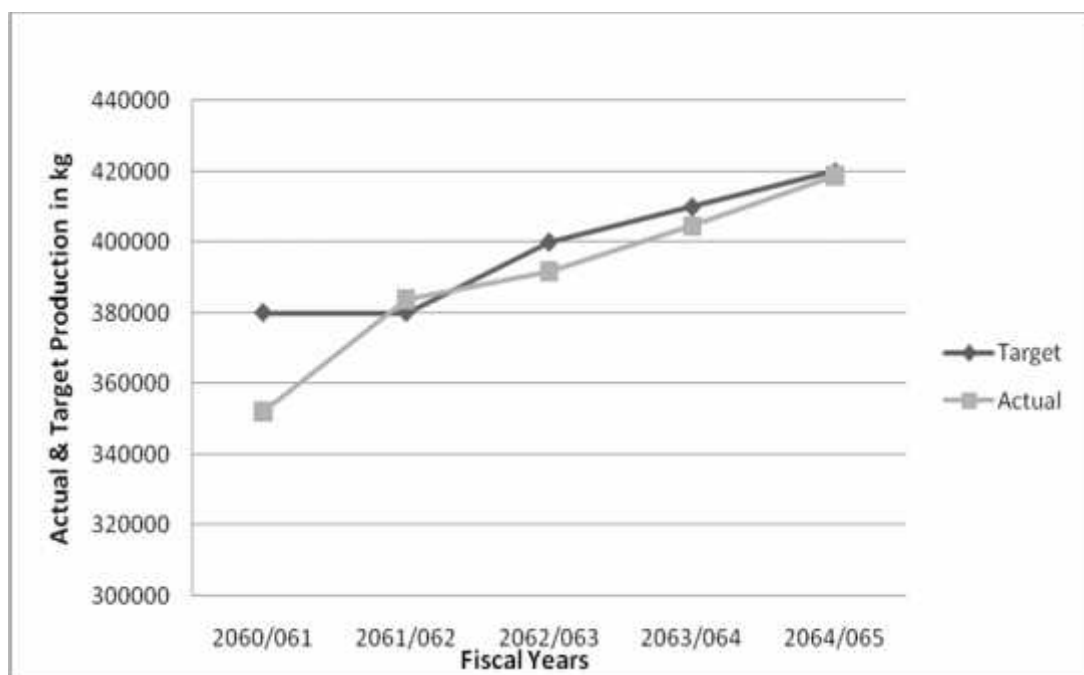
Tools	Production budget in kg(X)	Actual production in kg (Y)
Mean (\bar{X})	3,98,000	3,90,225.4
S.D. (\dagger)	16,000	21,557.25
C.V.	4.02%	5.52%

Source:- Appendix-3

The mean of budgeted production is higher than actual production but the difference is not so much. The coefficient of variation of actual production is little greater than budgeted production. Therefore, we can say that the actual production is more variable than that of budgeted production.

The budgeted and actual production can also be shown by graph presentation as below:

Fig.:3 (Rosin)



Above graphical presentation shows the very little gap between budgeted and actual production. Always budgeted figure has exceeded the actual except in the fiscal year 2061/062.

A statistical tool, correlation coefficient (r) can be used to analyze the relationship between budgeted and actual production. For the purpose of calculating ' r ', budget figures, denoted by ' x ' are assumed to be independent variable and actual figures, denoted by ' y ' are assumed to be dependent.

The detail calculation of ' r ' and 'Probable error of r ' is presented in appendix-3 and from this appendix; the calculated value of r is 0.9295.

The above value of 'r' shows the great relation or the maximum positive relation between budgeted and actual production. The significance of 'r' can be tested by the help of 'Probable error of r'. We have, Probable error of r = 0.0410.

Since, the value of 'r' is much greater than the value of 'Probable error of r' or $0.9295 > 0.0410$. So, the value of 'r' is significant. That means that the actual production will go on the same direction of budgeted production.

A regression line can also be fitted to show the degree of relationship between budgeted and actual production, and to forecast the possible actual production with given budgeted figures. For this purpose, actual production has been assumed to be dependent upon budgets.

So, the regression line of achievement Y on budget X or Y on X is as follows:

$$Y - \bar{Y} = r \frac{s_Y}{s_X} (X - \bar{X})$$

We have, the following value as calculated above,

0 Tools	Budget production(X)	Actual Production(Y)
Mean (\bar{X})	3, 98,000 kg.	3, 90,225.4 kg
r_{xy} S.D. (\dagger) =	16,000 kg.	21,557.25 kg.

0.9295

Putting the value on Formula:

$$Y - 3, 90,225.4 = 0.9295 \times \frac{21,557.25}{16,000} (X - 3,98,000)$$

$$\text{Or, } Y - 3, 90,225.4 = 1.25234X - 498432$$

$$\text{or, } Y = 1.25234X - 10,8206.6$$

This regression equation shows the positive relationship between target and actual production. Actual production will be increased by 1.25234 times per kg

with increase in budgeted production. By this regression equation, we can ascertain the expected production achievement with given value of target production say (x). If we use this equation to ascertain the expected production achievement for FY 2065/066, the following result will be come out.

Budgeted production units for FY 2065/066 = 4, 40,000 kg

$$X = 4, 40,000 \text{ kg}$$

The expected production achievement (Y)

$$= 1.25234 \times 4, 40,000 - 108206.6$$

$$= 4, 42,823 \text{ kg.}$$

If the relationship between budgeted and actual production remains in the same direction as previous year, the actual production for the FY 2065/066 will be 4,42,823 kg which is little greater than the budgeted production for the year.

Least square method can also be used to analyze the trend of actual production and to estimate the possible future production for a given time or year. A straight-line trend by this method will show the relationship between time or year and actual production of that relevant year. To fit the straight-line trend, the time factor is considered as independent factor and production is considered as dependent factor.

Table – 8

Time series Analysis

Fitting Straight Line Trend by Least Square

FY	Actual Production in (kg) capital Rosin (y)	X	X²	XY
2060/061	3,52,230	-2	4	-7,04,460
2061/062	3,83,810	-1	1	-3,83,810
2062/063	3,91,715	0	0	0

2063/064	4,04,582	1	1	4,04,582
2064/065	4,18,790	2	4	8,37,580
Total	$\sum Y = 19,51,127$	$\sum X = 0$	$\sum X^2 = 10$	$\sum XY = 1,53,892$

FY 2062/063 assumed as base year.

Straight-line trend.

$$Y_c = a + bx$$

$$a = \frac{\sum Y}{N} = \frac{1951127}{5} = 390225.40$$

$$b = \frac{\sum XY}{\sum X^2} = \frac{153892}{10} = 15389.20$$

$$\sum Y = 3,90,225.4 + 15,389.2X$$

The production will be increased by 15,389.2 kg per year, if production trend of past years continue for future.

By using trend equation, we can estimate the actual production for FY 2065/066. The value of X for the year 2065/066 (2062/063 base year) or X = 3.

So that,

$$\begin{aligned} Y &= 3,90,225.4 + 15,389.2 \times 3 \\ &= 4,36,393 \text{ kg.} \end{aligned}$$

If the trend does not change, the possible production for the FY 2065/066 will be 4,36,393 kg.

4.3.2 Long Term Production Plan (Turpentine)

The table-13 shows the target and actual production (in litter) from FY 2060/061 to 2064/065.

Table –9

Production Target and Achievement

FY	Turpentine (Litter)		
	Target	Actual	Achievement%
2060/061	95,000	88,520	93.18%

2061/062	95,000	92,480	97.35%
2062/063	98,000	96,605	98.58%
2063/064	1,00,000	1,01,240	101.24%
2064/065	1,10,000	1,09,635	99.24%
2063/064	1,25,000	-	-

The above table indicates that the actual production of each year is nearly equal to or greater than budgeted (target) production. Ratio of achievement is from 93.18% (in FY 2060/061) to 101.24% (in FY 2063/064). Average production achievement is 98.09% of budget, which is very near to 100%.

The different types of statistical tools: Mean, Standard Deviation and Coefficient of variation should be calculated to find out the nature of variability of budgeted and actual production of turpentine.

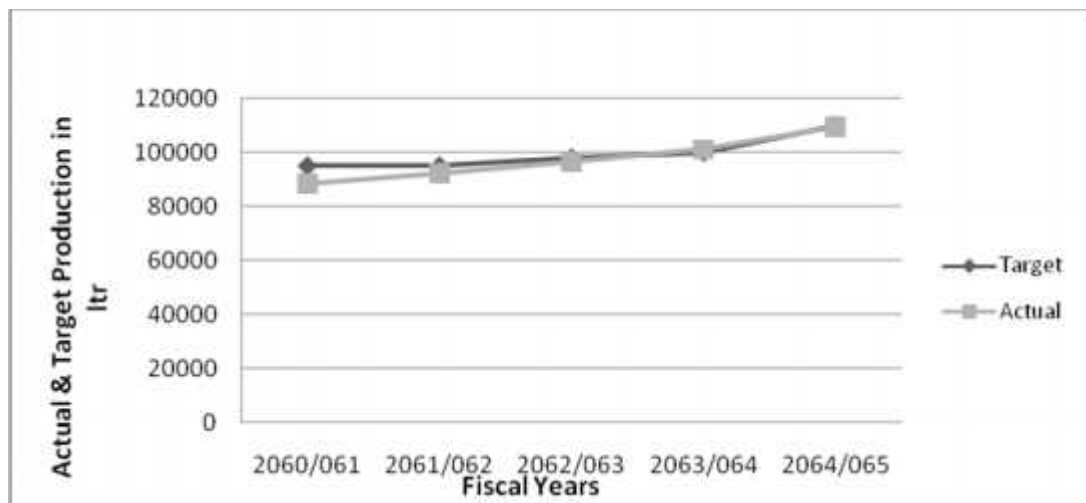
The detail calculation of these variables is presented in Appendix-4. From the appendix, we have:

Tools	Budgeted production	
	in ltr (X)	Actual Production in ltr (Y)
Mean (\bar{X})	99,600	97,696
S.D. (\dagger)	5535.34	7,317.04
C.V	5.56%	7.49%

The mean of budgeted production is little higher than actual production of Turpentine. The C.V. of actual Production is higher than the budgeted production, but both the variances are below than 10% or insignificant. Analysis shows only that the actual production is of the nature of more variability than budgeted production.

Budgeted and actual production of Turpentine of different FY can be shown by graphical presentation, as below:

Fig.:4 (Turpentine)



Above graphical presentation shows that both the lines are very close to each other. Budgeted production line of each FY is little higher than actual production line except in FY 2063/064. In FY 2063/064, line of actual production of Turpentine has crossed the budget line.

A statistical tool, Correlation coefficient (r) can be used to analyze the relationship between budgeted and actual production. For the purpose of calculating r , budget figures denoted by 'X' are assumed to be independent variable and actual figures denoted by 'Y' are assumed to be dependent variable. The detail calculation of ' r ' and 'Probable error of r ' is presented in appendix-4 and from this appendix, we have the calculated value of $r = 0.9557$.

This value of 'r' shows the maximum positive relationship between budgeted and actual production figures.

The significance of "r" can be tested by the help of 'Probable error of r'. From appendix-4, we have:

Probable error of r = 0.0238

Since, the value of "Probable error of r' is very low as compared to the value of 'r'. (i.e. r > probable error of r or 0.9557 > 0.0238), we can say that the value of r is significant or, there is significant relationship between budgeted and actual production.

Similarly, a regression line can also be fitted to show the degree of relationship between budgeted and actual production of Turpentine and to forecast the possible actual production with given budgeted figures. For this purpose, actual production has assumed to be dependent up on budgets.

So, the regression line of achievement Y on budget X or Y on X is as follows:

$$Y - \bar{Y} = r \frac{s_Y}{s_X} (X - \bar{X})$$

We have the following values as calculated above,

Tools	Budgeted production(X)	Actual Production (Y)
Mean (\bar{X})	99,600 ltr.	97696 ltr.
S.D. (\dagger)	5,535.34 ltr.	7,317.04 ltr

$$r_{xy} = 0.9557$$

Putting the value into formula:

$$Y - 97696 = 0.9557 \frac{7,317.04}{5,535.34} (X - 99,600)$$

$$\text{Or, } Y - 97,696 = 1.26332X - 1,25,826.5$$

$$\text{Or, } Y = 1.26332X - 28,130.5$$

This regression equation shows the positive relationship between target and actual production. Actual production will be increased by 1.26332 times per ltr. Increase in budgeted production.

By this equation, we can ascertain the expected production achievement with given value of target production, say (X). When we use this equation to ascertain the expected production for FY 2065/066 the following result will be come out:

Budgeted production ltr. for FY 2065/066 = 1,25,000 ltr.

$$\text{Or, } X = 1,25,000 \text{ ltr.}$$

Then, Expected production achievement (Y)

$$\begin{aligned} Y &= 1.26332 \times 1,25,000 - 28,130.5 \\ &= 1,29,784.5 \text{ ltr.} \end{aligned}$$

If the present relation of budgeted and actual production is remained same as previous years, the actual production of Turpentine will be 129784.5 ltr in FY 2065/066.

Least square method can also be used to analyze the trend of actual production and to estimate the possible future production for a given time or year. A straight-line trend by this method will show the relationship between time or years and actual production of the relevant year. To fit the straight-line trend, the time factor is considered as independent factor and production is considered as dependent factor upon time.

Table – 10**Fitting Straight Line Trend by Least Square**

FY	Actual Production in ltr (y)	X	X²	XY
2060/061	88,520	-2	4	-1,77,040
2061/062	92,480	-1	1	-92,480
2062/063	96,605	0	0	0
2063/064	1,01,240	1	1	1,01,240
2064/065	1,09,635	2	4	2,19,270
Total	$\sum Y = 4,88,480$	$\sum X = 0$	$\sum X^2 = 10$	$\sum XY = 50,990$

Assumed base year is FY 2062/063

Straight-line trend,

$$y_c = a + bx$$

$$a = \frac{\sum Y}{N} = \frac{488480}{5} = 97696$$

$$b = \frac{\sum XY}{\sum X^2} = \frac{50990}{10} = 5099$$

Substituting the value of a and b, we have:

$$y = 97,696 + 5099x$$

This trend line shows the increasing production figure for future. The production will be increased by 5099 ltrs, every year if the production trend of past years continues for future.

By using above trend equation, we can estimate the expected actual production for FY 2065/066.

The value of X for the year 2065/066 = 3. (2062/063 base year)

Hence, by putting the value of x, we have:

$$\begin{aligned} Y &= 97,696 + 5099 \times 3 \\ &= 1, 12,993 \text{ liters.} \end{aligned}$$

If the trend does not change the possible production for FY 2065/066 will be 1, 12,993 liters.

4.2.3 Short-range Production Budget.

The overall responsibility of developing production plan rests upon planning manager in DRTI. DRTI consults with Production manager for capacity utilization, technical consideration and other relevant factors. Zero inventory policy is adopted by DRTI. So, there is no difference between sales and production budget for DRTI.

It has been already discussed that DRTI has not any proper and hard and fast rule or technique for making short-range planning. The same applies in short-range production budget also.

DRTI prepares its strategic planning and then divides it in to different ranges or short duration of time periods. Planning is based upon judgment of planning manager.

The table shows the tactical or short-range production budget of DRTI by quarter and by product for the fiscal year 2064/065:

Table –11

Production Plan

(By Product and by Time)

Period	Target (Rosin) kg.	Target (Turpentine) ltr.
Shrawan	19,750	5,650
Bhadra	36,500	10,400
Ashwin	41,000	11,670
Total of 1 st quarter	97,250	27,700
" 2 nd quarter	1,42,000	40,300
" 3 rd quarter	1,24,000	35,200
" 4 th quarter	76,750	21,800
Total for the year	4,40,000	1,25,000

4.4 Pricing Policy of DRTI

Pricing strategy is the vital part of sales planning. Sales price and sales volume are mutually interdependent with each other. There must be planned sales price and expected sales volume. Price setting is that field of business in which management only becomes an art. In a sales plan, pricing strategy plays a crucial role. There must change in volume of sales due to changes in sales price.

Sales price of DRTI is totally affected by the Indian market price of Rosin and Turpentine. DRTI sells all the products in the Indian market. Price is very flexible in the Indian market. So, Pricing of DRTI is also flexible. DRTI analyzes the market and fixes the average, price for the estimation of its sales Amount.

DRTI has not any grade wise price lists although differential pricing is adopted for different grades of its products.

Market researchers of DRTI have forecasted the prices of Rosin in between Rs. 42 to Rs. 48 per kg. and Rs. 22 to Rs. 26 per liter of Turpentine. So, the

industry has forecasted its sales amount with average selling price i.e. Rs. 45 per kg of Rosin and Rs. 24 per kg of Turpentine.

4.5 Actual Production and Sales of Rosin and Turpentine

The Production budget is prepared with the help of sales budget or the production budget is dependent upon the sales budget. So, it makes necessary to examine whether production meets sales or not and it is very important to analyze the relationship between actual production and sales. The following table shows the actual production and sales of last 5 years from FY 2059/060 to 2063/064 for each product:

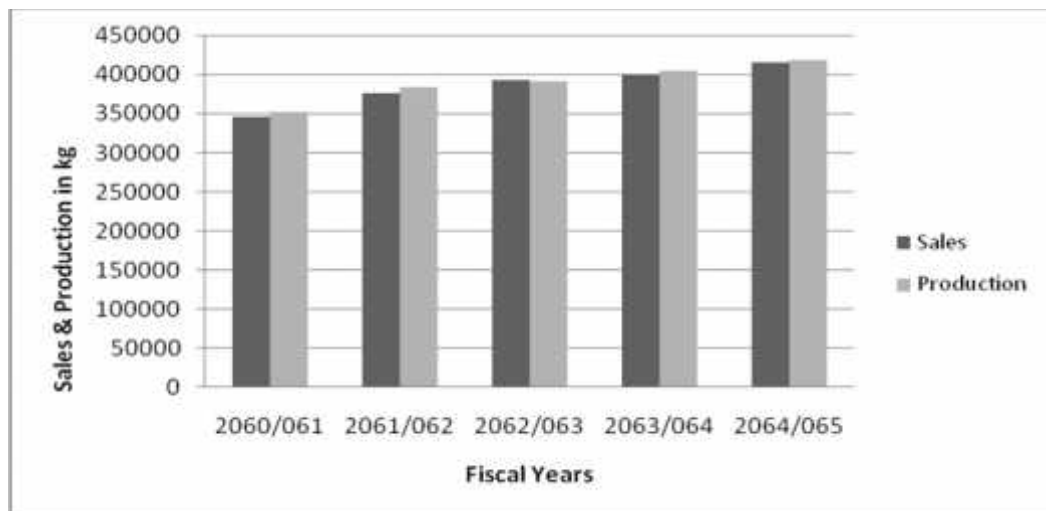
Table-12

Actual Production and sales of Rosin:

FY	Rosin in kg. (Actual)	
	Sales	Production
2060/061	3,46,250	3,52,230
2061/062	3,76,200	3,83,810
2062/064	3,92,840	3,91,715
2064/065	3,99,760	4,04,582
2065/066	4,15,230	4,18,790

The above data can also be presented on the Bar diagram as:

Fig. 5 Actual Production and sales of Rosin



The above diagram shows the relationship between production and sales of Rosin. In spite of zero inventory policy of DRTI, there is difference in sales and production. It shows the ineffective performance of budget policy. But, there is not remarkable gap between them.

Table -13

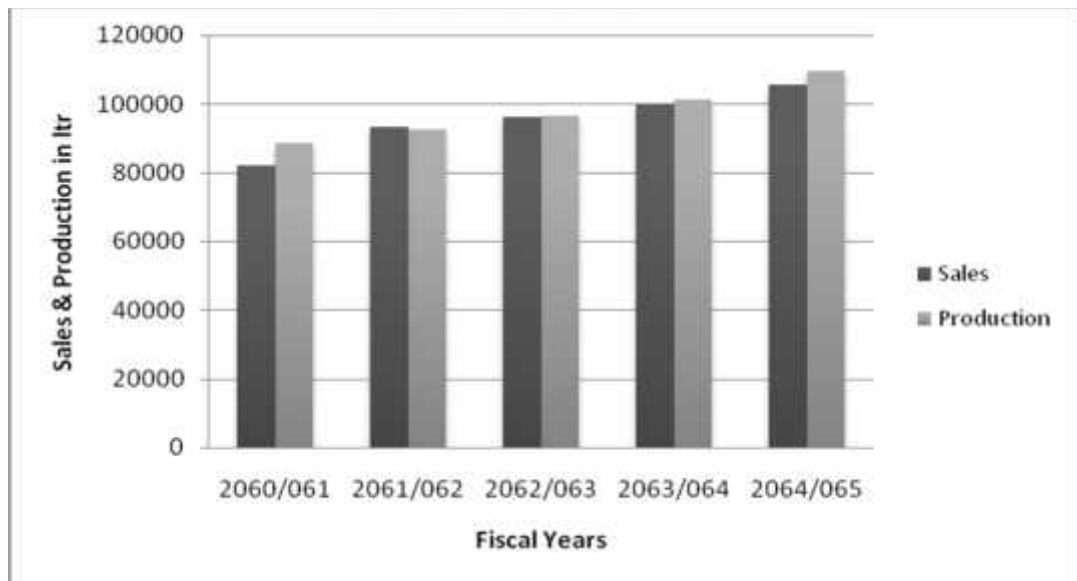
Actual Production and Sales of Turpentine

FY	Turpentine in Ltr. (Actual)			
	Sales	Increase %	Production	Increase %
2060/061	82,000	11.26	88,520	7.82
2061/062	93,430	16.38	92,480	4.47
2062/063	96,250	3.02	96,605	4.46
2063/064	99,720	3.61	101,240	4.48
2064/065	105,680	5.98	109,635	8.29

The above figures can be presented on Bar Diagram as:

The above diagram shows the relationship between actual production and actual sales of turpentine. Like Rosin, difference in production and sales is also

Fig. 6 Actual Production and Sales of Turpentine



in Turpentine. But the difference is very low. In year 2060/061, In FY 2061/062, Sales has exceeded the Production and the other fiscal year's sales and production are nearly equal to each other.

4.6 Finished Goods Inventory

Finished goods inventory plays an important role in profit planning or Managerial Budgeting. A better inventory policy makes the organization better. If sales are exceeded than production, the inventory is used for sales and the level of inventory is decreased. When production exceeds the sales the remaining products are the inventories in the business. Therefore, a inventory policy should always be better. Generally, inventory of finished goods is determined by nature of product, seasonably, production process portability, perish ability and other many other factors.

DRTI has been adopting zero or stable inventory policy. The planned production is equal to planned sales but there is deviation between actual sales and actual production. The following table shows the actual inventory position of DRTI.

Table - 14

Finished Goods Inventory By Period and Product

FY	Opening Stock (Qty.)		Closing Stock (Qty.)	
	Rosin (Kg.)	Turpentine	Rosin (Kg.)	Turpentine.(Ltr)
2060/061	6,28,040	92,500	8,12,526	1,94.100 "
2061/062	8,12,526	1,94,100	10,76,998	1,79,664
2062/063	10,76,998	1,79,664	11,02,682	1,93,582
2063/2064	11,02,682	1,93,582	12,70,944	2,24,598
2064/065	12.70.944	2.24.598	14.35.260	2.56.650

4.7 Resin collection Trend and Expenses Trend

The yield of crude pine resin from each matured tree is 3.5 Kg. per annum from *Pinus roxburghii*. The lip and French cup method is used for Collection. Resins collected from the *Pinus roxburghii* having minimum circumference of 90 cm. The average collection is almost Rs. 10 per Kg of resin- DRTI pays Rs.. 3 per kg. of resin to the government or the same amount to the community, in the case of the forest owned by community as royalty or the forest ownership charges. Resin collection season is in the month of Falgun to Kartik of next year. DRTI collects resin from four hilly districts of eastern zone of Nepal. The districts are Dhankuta, Panchthar, Tehrathum and Taplejung. The actual resin collection trend in different years is presented below:

Table - 15

Actual Resin Collection Trend

S.N.	Fiscal Year	Collection of Resin (K.g.)	Change trends (%)
1.	2058/059	4,35,286	35.18%
2.	2059/060	5,86,785	34.80%
3.	2060/061	6,69,616	14.12%
4.	2061/062	7,13,327	6.52%
5.	2062/063	7,40,912	3.86%
6.	2063/064	7,53,852	1.75%
7.	2064/065	7,67,625	1.83%

It shows the resin collection in increasing trend. But the increasing rate is becoming very low in the last some years.

Table - 16

DRTI Expenses Trend

FY	Manufacturing Expenses (Rs.)	Administration Expenses (Rs.)	Depreciation(Rs.)	Total(Rs.)
2060/061	85,65,570	53,90,070	4,25,000	1,43,80,640
2061/062	94,53,580	54,80,900	4,25,000	1,53,59,480
2062/063	1,02,56,605	61,24,450	4,25,000	1,68,06,055
2063/064	1,08,82,312	63,61,652	-	1,72,43,964
2064/065	1,13,06,014	71,29,505	-	1,84,35,519

The above table shows the actual manufacturing, administrative & selling and depreciation expenses of last five years.

4.8 Capacity Utilization

DRTI is the men based (labor based) manufacturing industry. The term 'capacity' for DRTI means only the availability of raw materials because Nepal has very high percentage of manpower unemployment, i.e. labor forces are not constraints for the industry only the constraint factor for DRTI is crude resin.

DRTI is trying to utilize its capacity but yet it hasn't succeeded to run in full capacity or to collect all available raw resin.

The table - 23 shows the average capacity utilization of DRTI from FY 2060/061 to 2064/065.

Table - 17

Capacity Utilization

Fiscal year	Overall Capacity	Capacity Utilization
2060/061	669616	70.89%
2061/062	713327	71.33%
2062/063	740912	74.09%
2063/064	753852	74.64%
2064/065	767625	76.00%

Above table shows that DRTI does not utilize its full capacity. It shows that DRTI can increase its production by using its full capacity in the future.

4.9 Profit and Loss Trend

Profit and loss account shows the performance of the company. The below table shows the profit and loss and gross profit trend of DRTI since 2060/061 to 2064/065

Table - 18

Profit and Loss Trend

Fiscal Year	Net Profit (Rs.)	Gross Profit (Rs.)
2060/061	16,56,000	74,71,070
2061/062	19,35,000	78,40,900
2062/063	21,63,000	87,12,450
2063/064	25,77,000	89,38,652
2064/065	26,22,481	9751986

The above table shows the increasing profit trend of DRTI. Both net profit and gross profit are increasing in every year. Net profits are very low, compared to gross profit. It shows the high fixed charges or administration charges.

From the above net profit trend, we can fit a straight-line trend to forecast the possible profit position for the coming year (s). Calculation is presented below:

Table - 19

Straight-line trend by using Least Square Method

FY	Net Profit (y)	X	X ²	XY
2060/061	16,56,000	-2	4	-33,12,000
2061/062	19,35,000	-1	1	-19,35,000
2062/063	21,63,000	0	0	0
2063/064	25,77,000	1	1	15,77,000
2064/065	26,22,481	2	4	52,44,962
	$\sum Y = 1,09,53,481$	$\sum X = 0$	$\sum X^2 = 10$	$\sum XY = 25,74,962$

Let,

$$\text{Base Year} = 2062/063$$

Least Square trend,

$$Y_c = a + bx$$

$$a = \frac{\sum Y}{N} = \frac{1,09,53,481}{5} = 21,90,696.2$$

$$b = \frac{\sum XY}{\sum X^2} = \frac{25,74,962}{10} = 2,57,496.2$$

By Putting the value of a and b, we have:

$$Y_c = 21,90,696.2 + 2,57,496.2 X$$

Using this equation, we can compute the forecast actual profit for the year 2065/066

Where,

The value of X = 3

(From base year 2062/063)

Then,

$$\begin{aligned} Y_c &= 2190696.2 + 257496.2 \times 3 \\ &= \text{Rs. } 2963184.8 \end{aligned}$$

☺☺ In FY 2065/066 the net profit will be Rs. 29,63,184.8 if trend does not change.

4.10 Marketing System

Marketing plan frequently refers to the sales budget, quantities sales in volume and rupees for each major sub- division of sales. Marketing plays a vital role in any business organization either profit oriented or not. Production is impossible in the long - run without adequate marketing policies. 'Market' is the dominant factor for manufacturing and trading organizations.

Rosin and Turpentine are export-oriented products but a certain percentage of products are demanded for domestic use also.

DRTI sells its almost of all products in the external market. Its' main markets are some cities of India. Indian parties purchase the products from head office. Marketing representatives collect purchase orders from the Indian markets but delivery facilities are not given. Parties themselves come to collect their lots. Sales are made both on Cash and Credit basis.

DRTI has straight channel of distribution, directly from producer to customers. As mediator, DRTI has placed some marketing representatives in the salary basis.

Promotional campaigns are not done by DRTI because of great competition in this field; DRTI is also feeling the needs of some promotional activities. Some competitor's of DRTI are as follows:

1. Khanal Rosin - Nepalgunj
2. Laxmi Rosin - Nepalgunj
3. Akmi Rosin - Butwal
4. Bhawani Chemicals - Dhangadi
5. Bhadrakali Rosin - Dhangadi
6. Sunrise Rosin - Itahari
7. Ganga Rosin - Dhairjan
8. Himal Rosin - Doti

4.11 Manpower Budget

Manpower planning is an important part in Profit Planning or Managerial Budgeting. Since, DRTI is the labor based manufacturing industry, so manpower planning must be adequate. Inadequate manpower bring unnecessary cost and inefficient performance in the organization.

DRTI is a Sole Trading and Manufacturing Concern (Industry), registered in the name of Mr. Ratan Tayal. He himself handles the Industry as Founder Chairman and under his Chairman other many personnel's are recruited (placed) for different posts.

DRTI has 122 staffs, out of which 22 are involved in administrative activities, 33 are of technical staffs and 67 are workers. Among 67 workers, 42 are semi-skilled and remaining 25 are un- skilled. DRTI pays fixed salaries the staffs on

the monthly basis. It has paid to all staffs on the basis of time not on the basis of productivity or piece rate. The table- 26 shows the current position of manpower in DRTI.

Table- 20

DRTI Personnel Chart

Post	Position Ranks	Administration	Technical	Labor
Founder Chairman	1 st			
Managing Director	2nd	1	-	-
Manager (head office)	3rd	1	1	-
Branch Managers	4th	-	4	-
Assistant (chief)	5 th	5	4	-
Assistant	6 th	10	24	-
Head Peon	7th	1	-	-
Peon	-	4	-	-
Labor	-	-	-	67
Total		22	33	67

Besides above personnel's, the following persons are also engaged in collecting and transportation of Crude resin from forest to road - side depot:

Tapping labor	74
Transportation labor	63
Others	23

Total	160
--------------	------------

Payment is made for these labors on the basis of their productivity or on piece rate basis.

4.12 Planning Expenses

DRTI is the labor-based industry. All the manufacturing process are done by labor except some process completed by machine. DRTI has a old machine purchased on the year of establishment. The written down value of machine at present is zero, all the value has been depreciated in first five years. The machine requires repair and maintenance. Because of the ceaselessness condition of work site it has become necessary to pay a large amount as donation to the different commercial and terrorist groups.

The below table represents the expenses report of DRTI based on FY 2064/065.

Table - 21

DRTI Production Expenses (FY 2064/065)

S.N.	Particular	Amount (Rs)
1.	Resin	23,02,800
2.	Firewood	1,86,000
3.	Acid	92,550
4.	Salt	5640
5.	Lime Stone	560
6.	Wages:	
	Tapping labor	30,70,400
	Transportation labor	23,02,800

7.	Carriage (depot to factory)	11,51,400
8.	Other tools	4,32,000
9.	Repairs and Maintenance	45,250
10.	Insurance	80,322
11.	Electricity charge	1,32,000
12.	Fuel for other use	1,56,820
13.	Cost of empty tins	14,95,000
14.	Welfare fund	48,840
	Total	1.15.02.382

Cost of Production	1,15,02,382
+ Opening Stock	14,95,542
- Closing Stock	<u>16,91,910</u>
Cost of sales of goods	<u>1.13.06.014</u>

Table – 22

Expenses Report (FY 2064/065)

S.N.	Items	Amount(Rs.)
1.	Salary and Provident fund	50,40,600
2.	Allowance and TADA	2,34,850
3.	Medical Treatment Expenses:	30,200
4.	Insurance	4,45,635
5.	Repair and Maintenance	45,648

6.	Printing and Stationary	42,300
7.	Newspaper and Stationary	18,412
8.	Electricity and Water	35,180
9.	Stamp and Telephone	96,560
10.	Fuel and Transport	2,54,470
11.	House Rent	1,04,500
12.	Uniform	64,250
13.	Primary Treatment	46,500
14.	Donation	3,00,000
15.	Audit fees	15,800
16.	Welfare Fund	42,100
17.	Contingencies	20,800
18.	Employees Compensation fund	1,20,000
19.	Extra activities	30,500
20.	Flowering and Finishing	8,600
21.	Miscellaneous Material	<u>1,32,000</u>
	Total	<u>71,29,505</u>

4.13 Capital Expenditure Planning

Capital expenditure involves generally a huge amount to be invested. This is intended to acquire some operational assets such as fixed assets, plants, building, equipment, machinery etc. in order to earn future revenues or to reduce future costs. In capital expenditure projects funds are tied up for relatively long period of time. Capital expenditure plan enables management to plan the amount of resources that should be invested in Capital additions.

DRTI does not prepare long-term capital expenditure budget. It prepares short-term budget but this is not prepared in detail. Total amount is allocated for all capital expenditures and Founder Chairman decides what to be purchased according to the necessity of the industry and within the limitation of the allocated amount. Therefore, there are no systematic budget procedures in the context of capital additions.

For evaluations purpose, DRTI does not use modern methods like NPV, IRR etc.

4.14 Cash Budget

DRTI does not prepare its cash budget for the coming year. So, it is not available in DRTI. Instead of cash budget, actual cash inflows and outflows are tabulated below:

Table - 23

Actual Cash Collection and disbursement

FY 2064/065

Particular	Amount	Amount
Cash inflows: Opening cash balance		56,83,505
Add: Cash sales and collection from debtors	2,05,14,400	
Sales of fixed Assets interest, dividend received from investment	83,700 1,60,500	2,07,58,600
(a) Total Cash inflows (collection)		<u>2,64,42,105</u>
Cash Outflows:		
Production Expenses	11502382	
Administrative and fixed Expenses	71,29,505	
Investment	12,50,000	
Purchase of fixed assets	4,56,000	
Income Tax Paid	575400	<u>2,08,53,288</u>
(b) Total Cash Outflows (disbursement)		<u>2,08,53,288</u>
(c) Closing Cash Balance (a-b)		55,88,817

Above table shows the amount of Rs. 55,88,817 as closing balance or surplus of cash for the year 2064/065, which is opening balance of cash for the next fiscal year (2065/066).

4.15 Profit and Loss Account of DRTI

Budgeted profit and loss a/c is prepared after preparing all functional budgets. Budgeted P/L a/c indicates the possible future profit or loss for the budgeted period. It shows the final conclusion of operation in an accounting year.

DRTI does not prepare a projected profit and loss account in advance. But at the end of each fiscal year. Profit and Loss a/c is prepared to know the profit and loss situation of the industry.

There is going to be a profit of Rs. 26,22,481 on FY 2063/064 from its regular operation and Rs. 1,60,500 from other incomes. After transferring into provision for taxation and general reserve, net profit (balancing figure of P/L a/c) is Rs/ 9,03,485. This is presented below:

Table - 24

Profit and Loss for the

Dr.

FY 2064/065

Cr.

Particulars	Amount	Particulars	Amount
To Cost of goods sold	1,13,06,014	By Sales (Rosin and Turpentine)	2,10,58,000
To Gross Profit c/d	97,51,986		
	2,10,58,000		2,10,58,000
To Administrative and Fixed expenses	71,29,505	By Gross Profit b/d	97,51,986
To Provision for Taxation	5,24,496	By Interest, dividend	1,60,500
To Transferred to general reserve	13,55,000		
To Balance c/d	9,03,485		
	99,12,486		99,12,486

4.16 Balance Sheet

Balance Sheet is a statement of assets and liabilities of a firm. It shows the overall financial condition of a firm. Balance Sheet indicates the financial strength and weakness of the company. It is prepared at the end of accounting period. DRTI prepares its balance sheet at the end of each fiscal year, but it does not prepare the projected balance sheet for the coming fiscal year. The balance sheet of DRTI as at 31st Ashad 2065 is presented in below table:

Table25

DRTI

Balance Sheet As at 31st Ashad 2065

Capital & Liabilities	Amount	Assets	Amount
Initial Capital invested	1,75,00,000	Fixed Assets	1,26,22,40
General reserve	68,72,568	Plant and Machinery	254025
Current liabilities	7,32,528	Closing stock	35,75,600
Provision for income	5,24,496	Bank and Cash	61,04,217
P/LA/c		Investment	43,00,000
Previous: 9,03,485			
Total	2,82,94,127	Total	2,82,94,12

The balance-sheet shows that the financial structure of DRTI is satisfactory. The company has enough amount of Profit and has sufficient cash balance. DRTI has a old machine which is operating in good condition but at present the book-value of machine is zero i.e. depreciation was fully deducted in the initial five years.

4.17 Financial Ratios of DRTI

An arithmetic relationship between two figures is known as ratio. It is computed by dividing one item of relationship with the other. Ratio simply means one number expressed in terms of another. Financial ratio means the relation between balance-sheet and income statement items. It shows the actual situation of the industry. Below table shows the financial ratios of DRTI of different fiscal years:

(Detail calculations of all ratios are presented in appendix-5)

Table - 26

Financial ratios of DRTI

Ratio \ FY	2060/061	2061/062	2062/063	2063/064	2064/065
Current ratio	4.70:1	4.092:1	5.77:1	7.71:1	9.047:1
Quick ratio	3.85:1	3.298:1	4.91:1	6.512:1	7.70:1
Inventory turnover	9.92:	8.354	8.035	7.796	7.094
Fixed assets turnover	1.492	1.441	1.399	1.295	1.244
Current assets turnover	2.885	2.67	2.183	2.06	1.852
Gross Profit margin	46.59%	45.34%	45.93%	45.10%	46.31%
Net Profit margin	8.78%	9.298%	9.12%	10.40%	9.963%
Cost of goods sold to sales	53.41%	54.66%	54.07%	54.90%	53.69%

The above result of ratios can be interpreted as below:

- (i) **Current Ratio:** Current ratio shows the relationship of current asset and current liability. Higher the current ratio better is the liquidity position. If this ratio is less than 2:1, the cash may not available to pay current liabilities. But DRTI has very high current ratio than standard. It shows that the industry can pay current liabilities easily or the result is satisfactory.

- (ii) Quick Ratio: Quick ratio is considered to be better if it is 1:1. DRTI has 3.85 to 7.70:1 quick ratio in different years. It shows better condition. But very high ratio than standard also shows unnecessary stock of quick assets.
- (iii) Inventory turnover: A high inventory turnover is indicator of good inventory management. DRTI has almost 7 times inventory turnover which shows very good inventory management of DRTI but ratio is decreasing every year from 2060/061 to 2064/065. Because of increment of inventory.
- (iv) Fixed assets turnover: Higher the ratio of fixed assets turnover indicates the more efficient management on utilization of fixed assets. A fixed asset turnover of DRTI is between 1.244 to 1.492 times, which is satisfactory, but decreasing value of ratio also indicates little unsatisfactory condition.
- (v) Current assets turnover: - Higher the current assets turnover is considered as better for the industry. Table shows the satisfactory condition of current assets turnover for DRTI.
- (vi) Gross Profit Margin: - The gross profit Margin is between 45.10% to 46.59% of sale for DRTI. From this, we can see very good condition of gross profit margin. It shows better profitable condition of industry.
- (vii) Net Profit Margin: - Net Profit Margin shows the relationship between net profit and sales. Net Profit Margin of DRTI is in between 8.78% (In FY 2060/061) to 10.40% (In FY 2063/064). Net profit margin of DRTI is very low as compared to gross profit margin, which shows excess administrative expenses of DRTI.
- (viii) Cost of goods sold to sales: -Lower the cost of goods sold to sales is considered as better. This ratio of DRTI is between 53.41 % (In FY

2060/061) to 54.90% (In FY 2063/064) which shows better position of recording cost management.

4.18 Profit Planning with Cost-Volume- Profit Analysis

4.18.1 Identification of Cost Variables

Identification of the variability of cost is necessary in planning and controlling of the cost. Thus, the knowledge of cost behavior is very important. Generally, Cost behaves in two ways with relation to volume of Output. First, it does not change with the change in Output and second, it changes proportionately with the change in output. Cost behavior gives us answer about the change in cost as the output increase or decrease.

According to the behavior of the cost. Cost can be classified in two ways: (1) Fixed Cost which remains constant in total for certain period of time and (2) Variable Cost that changes in total directly with changes in output or volume of operation but remains constant in per unit basis.

Classification of costs into variable and fixed is very important to plan cost. It helps to determine the volume of operation desired to maintain the industry's profitability. But DRTI has not maintained any clear-cut boundaries about cost classification as fixed and variable components. There is rough practice of classifying the expenses into fixed and variable.

The classification of expenses in fixed and variable components of DRTI is presented below in table:

Table-27

Cost Classification of DRTI

Based on FY 2064/065

Fixed item	Fixed Cost(Rs.)	Percent	Variable Cost(Rs.)	Percent
Cost of resin	-	-	23,02,800	12.36

Wages	-	-	5,373,200	28.84
Salary	50,40,600	27.05	-	-
Other adm expenses	2,088,905	11.21	-	-
Other direct charges	-	-	38,26,382	20.54
Total	7,129,505	38.26	1,15,02,382	61.74

The above table shows fixed cost (based on FY 2064/065) is Rs. 71,29,505 and variable cost is Rs. 1,15,02,382.

The variable and fixed cost to sales ratios is:

$$\text{Variable Cost Ratio} = \frac{\text{Variable Cost}}{\text{Sales}} \times 100\%$$

$$= \frac{1,15,02,382}{2,10,58,000}$$

$$= 54.62\%$$

$$\text{Fixed Cost Ratio} = \frac{7129505}{2105800} \times 100\%$$

$$= 33.86\%$$

And, Variable Cost is 61.74% and fixed cost is 38.26% of Total cost.

4.18.2 Cost-Volume-Profit Analysis of DRTI

CVP analysis shows the relationship between the cost of producing the product, the volume of the product sold and the total fixed cost, per unit variable cost and profit gained by selling the product. It is the management accounting tool for planning the volume of operation and level of profit plan is a function of the sales price of a unit product, the volume of product units sold and the fixed costs. Cost-Volume analysis shows which volume or level of activity is necessary to stay at break-even or to gain a certain amount of profit. Breakeven point is point of sales volume at which sales revenue is equal to total costs.

Table -28

Flexible Budget of DRTI

Particular	Level of activity		
	80%	100%	120%
Sales Revenue	1,68,46,400	2,10,58,000	2,52,69,600
Less: Variable Cost 54.62%	92,019,060	1,15,02,382	1,38,02,858
Contribution Margin	7644494	9555618	1,14,66,742
Less: Fixed cost	7129505	712950	7129505
Profit (Loss)	5.14.989	24.26.113	43.37.237

Above table shows the different levels of Profit Schemes at different levels of activities. Table shows that profit or loss is more flexible than flexibility of sales volume.

We can see that 20% decrease in sales revenue causes 78.77% reduction in profit and 20% increase in sales, increase profit by 78.77% t.

4.19 Major Findings

The various functional budgets of DRTI have been presented along with achievements by comparing budget and actual results. By analyzing the various functional budgets and financial tools, we came to know that there are some internal and external problems existing in the company's Profit Planning or Managerial budgeting.

Major findings of the research work can be presented below:

- The actual sales of DRTI are satisfactory, which is about 96.94% of budgeted sales.
- Different statistical tools show the positive and very close relationship between budgeted Production and actual production and between budgeted sales and actual sales.

- Gross profit and net profit margin of DRTI are always positive but net profit margin of DRTI is always very below than gross profit margin which shows the bearing a huge amount as fixed and administrative expenses.
- DRTI does not prepare long-rang strategic Profit plan but prepared short-term profit plan. The period covered by the budget is only one year but not in details.
- Financial rations show the strong condition of DRTI, but, balance-sheet shows a huge amount of cash remaining idle.
- Analysis shows, DRTI has not maintained its inventory policy. Budget shows stable inventory but in actual not so.
- Regression line about sales of DRTI indicates a positive or increasing trend.
- Least square straight line sales trend of DRTI shows that sales will be high in future.
- DRTI does not prepare flexible budget to know the capacity utilization condition.
- DRTI has not prepared capital expenditure planning. No criteria are used to evaluate major capital expenditures.
- DRTI does not prepare plan for direct labor.
- There are no clear cut boundaries to separate cost in to fixed and variable. The costs are roughly classified and this classification is not scientific and appropriate.
- The plans are prepared at top level; lower level participation in planning is not encouraged.
- Budgeted production is made in accordance with the budgeted sales. In other words, budgeted production is equal to budgeted sales.
- There is no effective system in recording of essential documents.

- Budgets are prepared just to fulfill the formalities but these are not used effectively for the profit planning process.
- Employees are very careful about their duties and responsibilities. Reward and punishment to employees on the bases of their work performance is maintained in DRTI.
- Pricing in DRTI is market based but not cost based.
- CVP relationship is not considered at the time of developing the sales plan and pricing policy.
- DRTI has not prepared various functional budgets for the application of existing budgets. There is no system of taking corrective action for re-planning

Chapter - V

Summary, Conclusion and Recommendations

5.1 Summary

The main objective of planning or budgeting of business is to increase the chances of making profit. Business managers are continually involved in organizing, planning and controlling the operation of both large and small business organizations. Profit planning or Managerial Budgeting is one of the most important tools, which is used to plan and control business operations.

Profit Planning or Managerial budgeting is one of the most important tools to plan business operations. The effective operation of a business concern resulting in to the excess of income over expenditure fully depends upon what extent the management follows proper planning, effective co-ordination and dynamic control. Profit planning or Managerial Budgeting plays a vital role in the performance of all organizations (manufacturing and non-manufacturing), whether they are small or large in size. Without proper planning of profits and their implementation, no organization can achieve its goals and objectives efficiently. Therefore, these days, profit planning of management tools to plan business operations in any short of business organizations.

Time dimension is another important consideration in profit planning. Profit plans are prepared for two time dimensions, strategic Long range plan for 5 or above years and tactical short range plan for a year detailed by interim periods. Having prepared a plan, it is equally important to implement effectively and to watch performance. Difference between actual results and the budgeted may arise to indicate the necessity for correction so as to assure the realization of forward plans.

Most of the Nepalese enterprises are facing the ambiguity upon their goals and objectives. Lower level management's perception and participation both are ignored by most of the enterprise in developing plans, goals, objectives and strategies. There is the lack of proper co-ordination and communication between the different levels of management and management has no commitment on the goals and objectives of the organization. Likewise, planners are having no proper skill and technique to develop various functional budgets. In DRTI, though many of the functional budgets are prepared, there is no practice of developing flexible budgets. The real sense, without developing flexible budget, Profit Planning or managerial budgeting system becomes baseless and groundless.

The present study has examined the application of profit planning or managerial budgeting in Durga Rosin and Turpentine Industries. This study has analyzed and examined the practice of Profit Planning or managerial budgeting of DRTI. It also tried to answer of certain questions stated in the statement of the problem.

The basic objective of the study is to examine the impact of budgeting on profitability of DRTI. In addition other sub budgets are laid down with consistent to the basic objective. For the fulfillment of this objective. Various functional budgets are analyzed in detail. For the purpose of analyzing a short term budget data of 2060/061 to 2064/065 has been taken and only five years trend have been analyzed with the help of various statistical and financial tools. Descriptive approaches have equally been used to analyze the quantitative data wherever necessary. Data have been collected from both sources primary and secondary. On the other hand, the objective of the present study is to highlight the current practice of Profit Planning or managerial budgeting and its effectiveness in DRTI.

The study has been organized in five chapters consisting of:

- (1) Introduction
- (2) Review of Literature
- (3) Research Methodology
- (4) Presentation and analysis of the Chapter
- (5) Summary, conclusion and recommendations

5.2 Conclusion

After analyzing in detail the present practice of budgeting in respect of profit planning process of DRTI. This study concludes the following: The industry has not been working in full capacity. The highest utilized capacity in FY 2063/064 is 76.0%

- Fluctuation of selling price in external market has made it more complicated.
- Inventory policy has not been maintained because of fluctuation in demand of Indian market.
- The Company (industry) is suffering from high fixed cost (demonstration costs).
- DRTI is spending a large amount as donation due to placeless condition of nation.
- There is lack of skilled planners for profit planning and controlling.
- The company (Industry) does not consider the cost of production, while pricing its product. The price is fixed by boarder price.
- DRTI makes its long-term sales and production budget but there is lack of short-term budget as well as budgeted income statement and budgeted balance sheet.

- There is some problems in Cost Classification.

Investment in current assets is being higher than necessity, which may reduce the profitability of industry in the future

5.3 Recommendation:

Based on the above study, the following suggestions are recommended to improve the formulation and implementation of profit planning or managerial budgeting system of DRTI.

- DRTI should have in depth analysis of the industry's strengths and weaknesses. It should try to overcome its weaknesses by using the strengths.
- DRTI should utilize full capacity to increase its production and to generate more income.
- It should develop its specific goals for the coming year. Such goals may be net profit on sales, cost of production, sales revenue etc. Without such goals the operation of the industry may not be effective.
- Democratic style of management should be followed while formulating plans, policies of the organization. Lower level's participation should be encouraged in budgeting or profit planning and similarly there should be proper communication to all levels of management about the tactical and strategic plan of the industry.
- The pricing policy of the industry should be revised. The cost of production should be considered while pricing the products.
- The sales budget should be prepared showing sales units, sales revenue and sales territories for both products.
- CVP relationship should be considered while formulating profit plan and the industry should be accustomed with flexible budget system.

- System of periodical performance report should be strictly followed.
- Cost should be clearly classified as fixed and variable.
- If possible, DRTI should formulate the Profit planning or managerial budgeting calendar (both short-term and long-term).
- It should make sales promotion by different media in Nepal and foreign country.
- DRTI should make search of a market of its products in third country.
- The cash budget should be developed per year to find out surplus or deficit from receipts and payments of cash.
- Finished goods inventory and raw material inventory volume should be reduced to optimum level. So, it will reduce idle current assets.
- Planning department should have adequate authority to decide and create new ideas to formulate various plans.
- There should be the proper co-ordination among the different types of personnel as regards to objectives, goals and strategies of the company.
- DRTI should have an effective as well as scientific record system of the essential documents.
- The cost control program should be introduced to control the high overhead costs.
- The management needs to organize planning training program, time to time for providing new theory and concept of planning of the planner.
- Last but not the least, to make profit planning or managerial budgeting system more progressive, the effective implementation of management control system is very essential.

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Appendix –I

Calculation of Mean, Std. deviation and Coefficient of Variation

Budgeted Sales and Actual Sales in K.G. (Rosin)

FY	Target(X)	Actual(Y)	U(X- \bar{X})	V(Y- \bar{Y})	U ² (X- \bar{X}) ²	V ² (Y- \bar{Y}) ²	UV
060/61	380000	376200	-18000	-39806	324000000	97140736	716508000
061/62	3346250	346250	-18000	-9856	324000000	1584517626	177408000
062/63	400000	392840	2000	6784	4000000	46022656	13568000
063/64	410000	399760	12000	13704	144000000	187799616	164448000
064/65	420000	415230	22000	29174	484000000	851122276	641828000
Total	X=	Y=	U=	V=	U ² =	V ² =	UV=
	1990000	1930280	0	0	128000000	2766602920	1713760000

We have,

$$\text{Mean } (\bar{X}) = \frac{\sum X}{N}$$

$$\text{Standard deviation } (\dagger) = \sqrt{\frac{1}{n}(X - \bar{X})^2}$$

$$\text{Co-efficient of variation (C.V.)} = \frac{\dagger}{\bar{X}}$$

Let,

X is the target sales

Y is the actual sales

For target sales (X)

$$\text{Mean } (\bar{X}) = \frac{\sum X}{N} = \frac{1990000}{5} = 398000 \text{ kg.}$$

$$\begin{aligned} \text{S. D. } (\dagger_x) &= \sqrt{\frac{1}{n} \sum (X - \bar{X})^2} \\ &= \sqrt{\frac{1}{5} \times 1280000} = 16000 \text{ kg.} \end{aligned}$$

$$\begin{aligned} \text{C.V. } _x &= \frac{\dagger_x}{\bar{X}} \quad 100\% \\ &= \frac{16000}{398000} \quad 100\% = 4.02\% \end{aligned}$$

For actual sales (Y)

$$\begin{aligned}\text{Mean } (\bar{Y}) &= \frac{\sum Y}{N} \\ &= \frac{1930280}{5} \\ &= 386056 \text{ Kg.}\end{aligned}$$

$$\begin{aligned}\text{S.D. } (t_y) &= \sqrt{\frac{1}{n} \sum (Y - \bar{Y})^2} \\ &= \sqrt{\frac{1}{5} \times 2766602920} \\ &= 23522.77 \text{ Kg.}\end{aligned}$$

$$\begin{aligned}\text{C.V. } _y &= \frac{t_y}{\bar{Y}} \quad 100\% \\ &= \frac{23522.77}{386056} \times 100 \% \\ &= 6.09\%\end{aligned}$$

Calculation of correlation coefficient

We have,

$$\begin{aligned}\text{Correlation Coefficient } (r_{xy}) &= \frac{\sum UV}{\sqrt{\sum U^2 \times \sum V^2}} \\ &= \frac{1713760000}{\sqrt{1280000000 \times 2766602920}} \\ &= 0.9107 \text{ or } 91.07\%\end{aligned}$$

Calculation of probable error of r

$$\begin{aligned}\text{Probable error of r} &= 0.6745 \times \frac{1-r^2}{\sqrt{N}} \\ &= 0.6745 \times \frac{1-0.9107^2}{\sqrt{5}} \\ &= 0.0515 \text{ or } 5.15\%\end{aligned}$$

Appendix – II

Calculation of Mean, Standard deviation and Coefficient of variance

Budgeted sales and Actual sales in ltr. (Turpentine)

FY	Target(X)	Actual(Y)	U(X- \bar{X})	V(Y- \bar{Y})	U ² (X- \bar{X}) ²	V ² (Y- \bar{Y}) ²	UV
060/061	95000	82000	-4600	-13416	21160000	179989056	61713600
061/62	95000	93430	-4600	-1986	21160000	39944196	9135600
062/63	98000	96250	-1600	834	2560000	695556	1334400
063/64	100000	99720	400	4304	160000	18524416	1721600
064/65	110000	105680	10400	10264	108160000	105349696	106745600
Total	X=	Y=	U=	V=	U ² =	V ² =	UV=
	498000	477080	0	0	153200000	308502920	177982000

We have,

$$\text{Mean } (\bar{X}) = \frac{\sum X}{N}$$

$$\text{Standard deviation } (s) = \sqrt{\frac{1}{n} \sum (X - \bar{X})^2}$$

$$\text{Co-efficient of variation (C.V.)} = \frac{s}{\bar{X}}$$

Let,

X is the target sales

Y is the actual sales

For target sales (X)

$$\text{Mean } (\bar{X}) = \frac{\sum X}{N} = \frac{498000}{5} = 99600 \text{ ltr.}$$

$$\text{S. D. } (s_x) = \sqrt{\frac{1}{n} \sum (X - \bar{X})^2}$$

$$= \sqrt{\frac{1}{5} \times 153200000}$$

$$= 5535.34 \text{ ltr.}$$

$$\text{C.V. } s_x = \frac{s_x}{\bar{X}} \quad 100\%$$

$$= \frac{5535.34}{99600} \quad 100\% = 5.56\%$$

For actual sales (Y)

$$\begin{aligned}\text{Mean } (\bar{Y}) &= \frac{\Sigma Y}{N} \\ &= \frac{477084}{5} \\ &= 95416 \text{ ltr.}\end{aligned}$$

$$\begin{aligned}\text{S.D. } (\sigma_y) &= \sqrt{\frac{1}{n} \Sigma (Y - \bar{Y})^2} \\ &= \sqrt{\frac{1}{5} \times 308502920} \\ &= 7854.97 \text{ ltr.}\end{aligned}$$

$$\begin{aligned}\text{C.V. } &= \frac{\sigma_y}{\bar{Y}} \times 100\% \\ &= \frac{7854.97}{95416} \times 100\% \\ &= 8.23\%\end{aligned}$$

Calculation of correlation coefficient

We have,

$$\begin{aligned}\text{Correlation Coefficient } (r_{xy}) &= \frac{\Sigma UV}{\sqrt{\Sigma U^2 \times \Sigma V^2}} \\ &= \frac{17892000}{\sqrt{153200000 \times 308502920}} \\ &= 0.8233 \text{ or } 82.33\%\end{aligned}$$

$$\begin{aligned}\text{Probable error of } r &= 0.6745 \times \frac{1-r^2}{\sqrt{N}} \\ &= 0.6745 \times \frac{1-0.8233^2}{\sqrt{5}} \\ &= 0.0972 \text{ or } 9.72\%\end{aligned}$$

Appendix – III

Calculation of Mean, Standard deviation and Coefficient of variance

Budgeted and Actual production in Kg. (Rosin)

FY	Target(X)	Actual(Y)	U(X-X̄)	V(Y-Ȳ)	U ² (X-X̄) ²	V ² (Y-Ȳ) ²	UV
060/61	38000	352230	-18000	-37995.4	324000000	1443650421	683910000
061/62	380000	383810	18000	-6415.4	324000000	41157357.16	115477200
062/63	400000	391715	2000	1489.6	4000000	2218908.16	2979200
063/64	410000	404582	12000	14356.6	144000000	20611196.36	172279200
064/65	420000	418790	22000	28564.6	484000000	815936373.2	678421200
Total	X=	Y=	U=	V=	U ² =	V ² =	UV=
	1990000	1951127	0	0	1280000000	2323574256	1603066800

We have,

$$\text{Mean } (\bar{X}) = \frac{\sum X}{N}$$

$$\text{Standard deviation } (s) = \sqrt{\frac{1}{n} \sum (X - \bar{X})^2}$$

$$\text{Co-efficient of variation (C.V.)} = \frac{s}{\bar{X}}$$

Let,

X is the target production

Y is the actual production

For target production (X)

$$\begin{aligned} \text{Mean } (\bar{X}) &= \frac{\sum X}{N} \\ &= \frac{1990000}{5} \\ &= 398000 \text{ Kg.} \end{aligned}$$

$$\begin{aligned} \text{S. D. } (s_x) &= \sqrt{\frac{1}{n} \sum (X - \bar{X})^2} \\ &= \sqrt{\frac{1}{5} \times 1280000000} \\ &= 16000 \text{ Kg.} \end{aligned}$$

$$\text{C.V.}_x = \frac{s_x}{\bar{X}} \times 100\%$$

$$= \frac{16000}{398000} \quad 100\%$$

$$= 4.02\%$$

For actual sales (Y)

$$\text{Mean (Y)} = \frac{\Sigma Y}{N}$$

$$= \frac{1951127}{5}$$

$$= 390225.4 \text{ Kg.}$$

$$\text{S.D. (Y)} = \sqrt{\frac{1}{n} \Sigma (Y - \bar{Y})^2}$$

$$= \sqrt{\frac{1}{5} \times 2323574256}$$

$$= 21557.25 \text{ Kg.}$$

$$\text{C.V.}_y = \frac{\text{S.D.}_y}{\bar{Y}} \quad 100\%$$

$$= \frac{21557.25}{390225.4} \times 100 \%$$

$$= 5.52\%$$

Calculation of correlation coefficient

We have,

$$\text{Correlation Coefficient (r}_{xy}) = \frac{\Sigma UV}{\sqrt{\Sigma U^2 \times \Sigma V^2}}$$

$$= \frac{1603066800}{\sqrt{128000000 \times 2323574256}}$$

$$= 0.9295 \text{ or } 92.95\%$$

$$\text{Probable error of } r = 0.6745 \times \frac{1-r^2}{\sqrt{N}}$$

$$= 0.6745 \times \frac{1-0.9295^2}{\sqrt{5}}$$

$$= 0.0410 \text{ or } 4.10\%$$

Appendix – IV

Calculation of Mean, Standard deviation and Coefficient of variance

Budgeted and Actual production in ltr. (Turpentine)

FY	Target(X)	Actual(Y)	U(X-X)	V(Y-Y)	U ² (X-X) ²	V ² (Y-Y) ²	UV
060/61	95000	88520	-4600	-9176	21160000	84198976	42209600
061/62	95000	92480	-4600	-5216	21160000	27206656	23993600
062/63	98000	96605	-1600	-1091	2560000	1190281	1745600
063/64	100000	101240	400	3544	160000	12559936	1417600
064/65	110000	109635	10400	11939	108160000	142539721	124165600
Total	X=	Y=	U=	V=	U ² =	V ² =	UV=
	498000	488480	0	0	153200000	267695570	193532000

We have,

$$\text{Mean } (\bar{X}) = \frac{\sum X}{N}$$

$$\text{Standard deviation } (s) = \sqrt{\frac{1}{n} \sum (X - \bar{X})^2}$$

$$\text{Co-efficient of variation (C.V.)} = \frac{s}{\bar{X}}$$

Let,

X is the target production

Y is the actual production

For target production (X)

$$\begin{aligned} \text{Mean } (\bar{X}) &= \frac{\sum X}{N} \\ &= \frac{4980000}{5} \\ &= 99600 \text{ ltr.} \end{aligned}$$

$$\begin{aligned} \text{S. D. } (s_x) &= \sqrt{\frac{1}{n} \sum (X - \bar{X})^2} \\ &= \sqrt{\frac{1}{5} \times 153200000} \\ &= 5535.34 \text{ ltr.} \end{aligned}$$

$$\begin{aligned} \text{C.V. } x &= \frac{\dagger_x}{\bar{X}} \quad 100\% \\ &= \frac{5535.34}{99600} \quad 100\% \\ &= 5.56\% \end{aligned}$$

For actual sales (Y)

$$\begin{aligned} \text{Mean (Y)} &= \frac{\sum Y}{N} \\ &= \frac{488480}{5} \\ &= 97696 \text{ ltr.} \end{aligned}$$

$$\begin{aligned} \text{S.D. } (\dagger_y) &= \sqrt{\frac{1}{n} \sum (Y - \bar{Y})^2} \\ &= \sqrt{\frac{1}{5} \times 267695570} \\ &= 7317.04 \text{ ltr.} \end{aligned}$$

$$\begin{aligned} \text{C.V. } y &= \frac{\dagger_y}{\bar{Y}} \quad 100\% \\ &= \frac{7317.04}{97696} \times 100\% \\ &= 7.49\% \end{aligned}$$

Calculation of correlation coefficient

We have,

Correlation Coefficient (r_{xy})

$$\begin{aligned} &= \frac{\sum UV}{\sqrt{\sum U^2 \times \sum V^2}} \\ &= \frac{193552000}{\sqrt{153200000 \times 2676935570}} \\ &= 0.9557 \text{ or } 95.57\% \end{aligned}$$

$$\begin{aligned} \text{Probable error of } r &= 0.6745 \times \frac{1-r^2}{\sqrt{N}} \\ &= 0.6745 \times \frac{1-0.9557^2}{\sqrt{5}} \\ &= 0.0238 \text{ or } 2.38\% \end{aligned}$$

Appendix – V

Documents and Statements

1. Background of the company.
(Any introductory magazines or papers published or unpublished which clears the introduction of this industry)
2. Statement regarding.
 - a) Broad objectives of this industry.
 - b) Specific goals which are targeted.
 - c) Basic strategies to achieve target goals.
 - d) Internal communication system followed.
 - e) Managerial involvement in budgeting.
3. The financial plans.
 - a) Strategic (long range) profit plan.
(For past five years up to FY 2064/065)
 - Sales target and achievement.
 - Production target and achievement.
 - Purchase trends.
 - Expenditure trends.
 - Profit and loss.
 - Balance sheet.
 - b) Tactical (short-range) profit plan.
(For 12 month periods)
 - Sales plan and sales achievement.
 - Raw material plans and actual.
 - Industry plan and actual inventory.
 - Expenses plan.
 - Capital expenditure plan.
 - Cash budget.
 - Profit and loss account.
 - Balance sheet.
4. Performance evaluation system.
 - Ratio analysis.
 - C. V. P. analysis.
 - Flexible budgets.
5. Implementation and problems of profit planning in the industry.