ST. MARY'S UNIVERSITY COLLEGE
SCHOOL OF GRADUATE STUDIES

EVALUATION OF FINANCIAL FORECASTING METHOD OF HORIZON ADDIS TYRE SHARE COMPANY

BY

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A THESIS SUBMITTED TO ST.MARY'S UNIVERSITY COLLEGE, SCHOOL OF GRADUATE STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION

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APPROVED BY BOARD OF EXAMINERS

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DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of Dr. Zenegnaw Abiy. All sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

YIMREHA MEKONNEN   _____

Name   Signature

St. Mary's University College, Addis Ababa   **February 28, 2013**

ENDORSEMENT

This thesis has been submitted to St. Mary's University College, School of

Graduate Studies for examination with my approval as a university advisor.

Dr. ZENEGNAW ABIY   _____

              Advisor   Signature

St. Mary's University College, Addis Ababa   February 28, 2013

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Last not least, I would like to thank my family and friends for their support and encouragement.

Abstracts

The process of estimating the funds requirement of a firm and determining the sources of funds is called financial planning. Financial planning indicates a firm's growth, performance, investments of funds during a given period of times usually three to five years. It involves the preparation of projected profit and loss account, balance sheet and funds flow statement. Financial planning helps a firm's financial manager to regulate flow of funds. Benefits of financial forecasting are: it identifies advance actions to be taken, develop a number of options in various areas that can be exercised under different conditions and forecast what is likely to happen in the future and hence in avoiding surprises. The objective of this study is to evaluate the financial forecasting method of Horizon Addis tyre Share Company and to recommend the best possible method. In this study the methodology followed will be exploratory as well as descriptive approaches. To achieve the research objectives, relevant data needed for analysis were collected through interviewing different Horizon Addis Departments and major importers of tyre. The data collected is analysed by qualitative and quantitative analysis technique. The result of the study indicates that Horizon Addis tyre forecast its sales based on opinion of sales department. They decide the desired level of market share in each category so that they can forecast sales of each category. By adding the forecasted sales in each category they arrive at annual sales forecast. The problem with this forecasting method is that the forecasters become optimistic or pessimistic about the market condition. Finance department prepare the forecast of material requirement based on actual order for 6 months and 10% add up to the last order price for the remaining 6 months. The forecasting method used resulted in significant difference between the plan and the actual result. In 2008 it was 85% of the plan, in 2009 it was 70% of the plan, in 2010 it was 83% of the plan and 2011 it was 125% of the plan.

List of Acronyms

OEM-   Original Equipment Manufacturer

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Chapter One

1.1 Introduction

The most important function of business is forecasting. A forecast is a starting point for planning. The objective of forecasting is to reduce risk in decision making. Sales forecast is typically the starting point of the financial forecasting exercise. Most of the financial variables are projected in relation to the estimated level of sales. Hence, the accuracy of the financial forecast depends critically on the accuracy of the sales forecast.

Financial planning is an important aspect of the firm's operations because it provides road maps for providing, coordinating and controlling the firm's action to achieve its objectives. Financial planning is a part of the longer planning process in an organization. It is an indication of the overall plan of a firm in financial terms. Financial planning is the responsibility of the top management.

A financial plan generally describes a firms operating or commercial activities, the investment it requires, and the sources of the funds to be used all in a time-phased schedule

In Ethiopia financial forecasting is not common in all organizations even though financial planning exists in some companies. There is no research being done on this area in Ethiopia so far to my knowledge. Therefore this research will encourage others in this area.

1.2 Back ground of the study

Horizon Addis Tyre Share Company was established in 1970 G.C as state owned company with the help of the then Czechoslovakia government. It started production in 1972 G.C and produced 200 diagonal tires per day with the help of 7 Czechoslovakia experts. The company sold its 30% share to Japanese Yokohama Rubber Company in 1973 G.C and replaced 7 Czechoslovakia experts with 13 Japanese experts.

The company incurred continuous loses in the following years and the government of Ethiopia suggested that the debt of the company has to be covered by Yokohama Rubber Company and

the Ethiopian government. But Yokohama Rubber Company refused to cover the debt; therefore the Ethiopian government covered all the debt so that the share of Yokohama Rubber Company decreased to 6%.

July 8, 2004 G.C 61% of the share of the company is sold to Horizon Group. Horizon Group was composed of Horizon plantation and Matador Group. In January 2011 Horizon Plantation bought Matador Group's share and the name of the company has been changed to Horizon Addis Tyre Share Company.

1.3. Statement of the Problem

Most business decisions are made in the face of risk or uncertainty. A firm must decide how much of each product to produce, what price to charge, how much to spend on advertising and it must also plan for the growth of the firm. All these decisions are based on some forecast of the level of future economic activity in general and demand for the firm's product in particular. (Salvatore 2005)

The firm's demand and sales are usually forecasted on the basis of its historical market (industry) share and its planned marketing strategy. From its general sales forecast, the firm can forecast its sales by product line and region. These, in turn are used to forecast the firm's operational needs for production (raw material, equipment, warehousing, workers), marketing (distributional network, sales force, promotional campaign), finances (cash flows, profits, need for and cost of outside financing), and personnel throughout the firm.

Chandra (2004) identified the following benefits of financial forecasting:

- Identifies advance action to be taken in various areas.
- Seeks to develop a number of options in various areas that can be exercised under different conditions.
- Facilitate a systematic exploration of interaction between investment and financing decision.

- Clarifies the links between present and future decisions.

- Forecasts what is likely to happen in future and hence helps in avoiding surprises.

- Ensures that the strategic plan of the firm is financially viable.

- Provide benchmarks against which future performance may be measured.

Absence of financial forecasting will greatly harm the organization. Because the organizations do not know where they are going financially. Further they cannot evaluate their performance because of absence of benchmarks.

There is no research done on financial forecasting in any industry in Ethiopia so far to my knowledge. This research will fill this gap by taking the case of Horizon Addis Tyre Share Company.

Horizon Addis Tyre Share Company applied wrong financial forecasting method to forecast its sales and associated expenses which results in huge amount of inventory as safety stock. Therefore the study looks in to the financial forecasting method applied in Horizon Addis Tyre Share company and recommend suitable method for forecasting its financial statements.

1.4. **Research Question**

The study will attempt to address the following questions.

- What are the financial forecasting methods applied in Horizon Addis Tyre Share Company?

- To investigate whether there are discrepancies between the forecasted financial statements and the actual results?

- What are the suitable financial forecasting methods for Horizon Addis Share Company?

- What is the market share of Horizon Addis Tyre Share Company?

- What are the factors affecting the company to identify the demand and supply of tyre in the local market?

- What are the causes of huge inventories?

- What are the causes of large amount of receivables?

1.5. Objective of the study

The general objective of the study is to evaluate the financial forecasting method applied in Horizon Addis Tyre Share Company.

Specific Objectives

Specific objectives of the study are:-

- To identify the financial forecasting method applied in Horizon Addis Share Company
- To identify whether there are discrepancies between forecasted financial statements and the actual results.
- To recommend suitable financial forecasting method based on findings
- To identify the aggregate demand of tyre in the local market
- To identify the aggregate supply of tyre in the local market
- To identify the market share of Horizon Addis Tyre share company
- To identify the cause of large amount of inventory.
- To identify the causes of large amount of receivables.

1.6. Significance of the Study

Financial forecasting generally begins with a forecast of the firm's sales in terms of both units and dollars (Earhart and Brigham 2011).

There is no financial forecasting research being done in Ethiopia to my knowledge so far. This research will encourage other to do research in this area.

Horizon Addis Tyre Share Company applied wrong financial forecasting methods to forecast its financial statements which results in huge amount of inventories. Therefore the study looks into the financial forecasting method of Horizon Addis Tyre Share Company and recommends suitable financial forecasting method which helps the company to reduce its huge inventories and use its resources more appropriately.

1.7. Research Methodology

In any research undertaking, the methodology or research design to be followed is determined by the nature of the problem statement or more specifically by the research objective. In this study the methodology followed will be exploratory as well as descriptive approaches. One major importance of the exploratory research is it helps the researcher to gain background information on the study's subject. The descriptive approach will be employed to analyse financial statements.

1.7.1.Data Gathering Techniques

The study will employ both primary and secondary data collection techniques. Review of annual reports and financial statements will be used as a source for the secondary data collection.

Structured, semi-structured and unstructured interviews will be conducted at Horizon Addis Tyre Company and questionnaire will be given to importers of tyre to get necessary information as a source of primary data collection.

1.7.2. Data Analysis

Data obtained and gathered from various sources will be analysed using qualitative and quantitative analysis to understand the reason behind the forecasted financial statements and the actual results.

1.8.   Scope of the study

I take the tyre industry as a corporate study and the industry has its own nature and problems. The research will focus on Horizon Addis Tyre Share Company as a case study after it was privatised and a new ownership took control. The time period will be taken in to consideration will be 4 years. Therefore, only financial forecasting methods of the company for the last four years will be evaluated.

CHAPTER TWO

2. LITERATURE REVIEW

Growth in sales is an important objective of most firms. An increase in a firm's market share will lead to higher growth in sales. It may have to invest in additional plant and machinery to increase its production capacity. Also, it would need additional current asset to produce and sell more goods or services. The firm would have to acquire raw materials and convert them into finished goods after incurring manufacturing expenses. It may have to sell goods on credit because of the industry norms or to push up sales. This gives rise to debtors or account receivable. The supplies of raw materials may extend credit to the firm. The firm may use its internally generated funds to finance current and fixed assets. When the firm grows at a high rate, internal funds may not be sufficient. Thus the firm would have to raise external funds either by issuing equity or debt or both. The process of estimating the funds requirements of a firm and determining the sources of funds is called financial planning (Pandey, 2005).

Financial planning indicates a firm's growth, performance, investment and requirements of funds during a given period of time usually three to five years. It involves the preparation of projected or proforma profit and loss account, balance sheet and funds flow statement. Financial planning helps a firm's financial manager to regulate flow of funds.

Financial planning is a part of the longer planning process in an organization. It is an indication of the overall plan of a firm in financial terms. Financial planning is the responsibility of the top management.

A financial plan generally describes a firms operating or commercial activities, the investment it requires, and the sources of the funds to be used all in a time-phased schedule.

The financial plan of a corporation should be formulated in the light not only of present but of future development as well. It should take in to consideration the present capital needs for fixed

assets, working capital, probable earnings and requirement of investors and it should anticipate possibilities of later expansion, combination with other corporations, higher or lower future interest rates.

Total financial planning has been defined as advance programming of all the plans of financial management and the integration and coordination of these with the operating plans of the other functions of the enterprise (Kulkarni and Satyaprasad, 2004).

Chandra (2004) identified the following benefits of financial forecasting:

- Identifies advance action to be taken in various areas.
- Seeks to develop a number of options in various areas that can be exercised under different conditions.
- Facilitate a systematic exploration of interaction between investment and financing decision.
- Clarifies the links between present and future decisions.
- Forecasts what is likely to happen in future and hence helps in avoiding surprises.
- Ensures that the strategic plan of the firm is financially viable.
- Provide benchmarks against which future performance may be measured.

2.1 The Financial Planning Process

Financial planning is an important aspect of the firm's operations because it provides road maps for providing, coordinating and controlling the firm's action to achieve its objectives. Two key aspects of the financial planning process are cash planning and profit planning. Cash planning involves preparation of the firm's cash budget; profit planning involves preparations of proforma statements. Both cash budget and the proforma statements are useful for internal financial planning. They also are routinely required by existing and prospective lenders.

The financial planning process begins with long term, or strategic, financial plans. These in turns guide the formation of short-term, or operating, plans and budgets. Generally the short term plans and budgets implement the firm's long term strategic objectives (Gitman,2008).

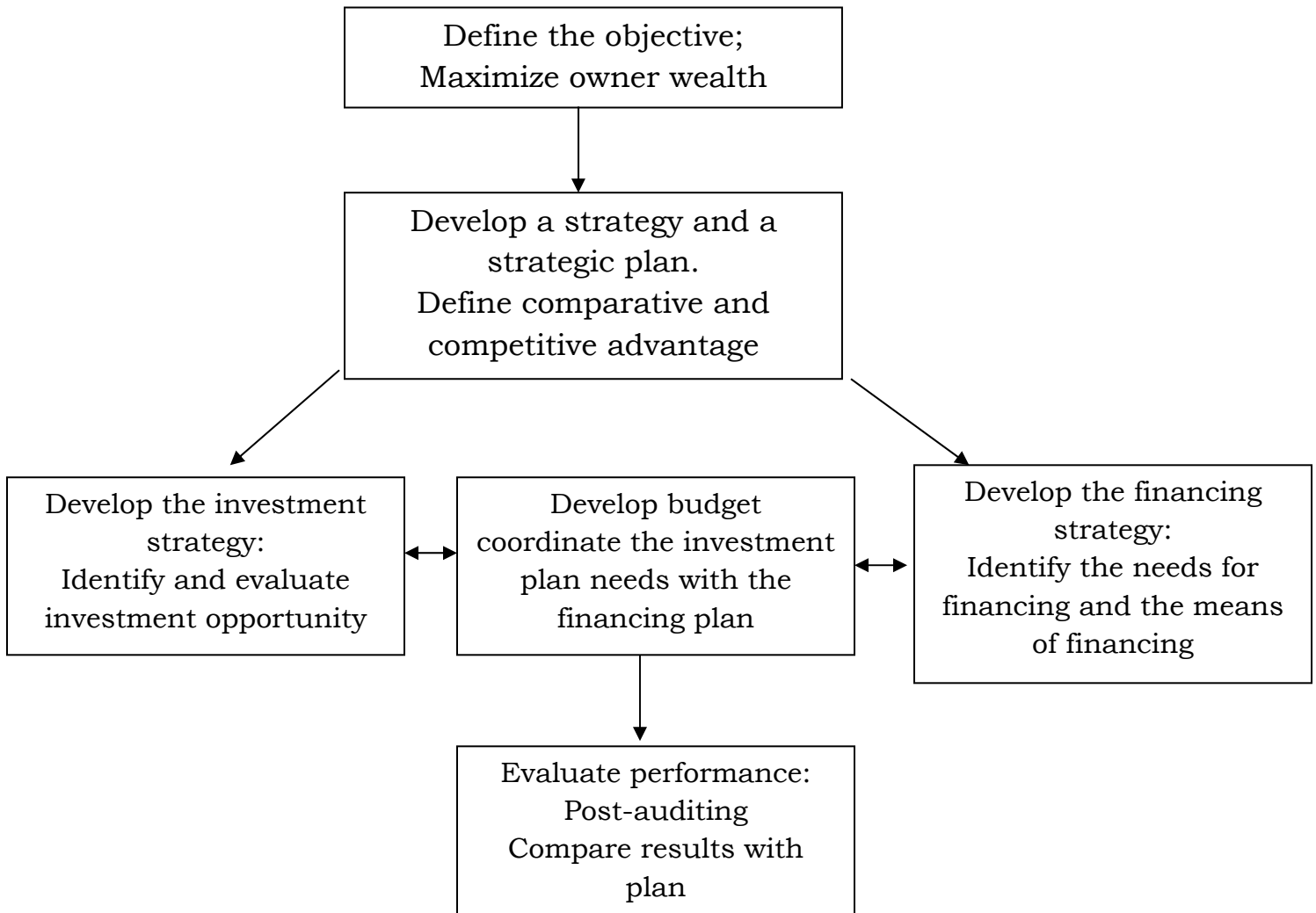According to Erhardt and Brigham (2011), financial planning process involves the following five steps**.**

1. The firm forecasts financial statements under alternative versions of the operating plan in order to analyse the effects of different operating procedures on projected profit and financial ratios.

2. Next, it determines the amount of capital that will be needed to support the plan; that is, it finds out how much the new assets needed to achieve the target sales will cost, since without adequate capital, the plan obviously cannot be realized.

3. Then the firm forecasts the funds that will be generated internally. If internal funds are insufficient to cover the required new investment, then it must identify sources from which the required external capital can be raised, taking account of any constraints due to bond covenants that limit its debt ratio and other financial ratios. Market conditions must also be recognized. For example, in 2009, banks reduced many firms' lines of credit and also increased the fees and interest rates on such lines. This surprised firms that were not keeping up with conditions in financial markets.

4. The firm establishes a performance based management compensation system that rewards employees for creating shareholder wealth. The emphasis here should be on the long run, not on profit over the next few quarters or even years. A failure in this area was perhaps the most important factor leading to the worldwide financial and economic crises that hit in 2008 and 2009.

5. Finally, management must monitor operations after implementing the plan to spot any deviations and then take correction actions. Computer software is helping greatly here, and it's changing the way companies do business. In particular, corporate information systems are reducing the need for "middle" and flattening firms management structure

A properly prepared forecast should fulfil the following requirement

1. The forecast should be **timely**. Usually, a certain amount of time is needed to respond to the information contained in the forecast.

2. The forecast should be **accurate**, the degree of accuracy should be stated.

3. The forecast should be **reliable**; it should work consistently.

4. The forecast should be expressed in **meaningful units.**

5. The forecast should be in **writing.**

6. The forecasting technique should be **simple to understand and use or work with them.**

7. The forecast should be **cost effective**. The benefit should outweigh the cost.

An overview of the Planning Process

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┌─────────────────────────────┐
│   Define the objective;     │
│   Maximize owner wealth     │
└─────────────────────────────┘
              │
              ▼
┌─────────────────────────────┐
│   Develop a strategy and a  │
│        strategic plan.      │
│   Define comparative and    │
│   competitive advantage     │
└─────────────────────────────┘
```

| Develop the investment strategy: Identify and evaluate investment opportunity | ◄──► | Develop budget coordinate the investment plan needs with the financing plan | ◄──► | Develop the financing strategy: Identify the needs for financing and the means of financing |

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              │
              ▼
┌─────────────────────────────┐
│   Evaluate performance:     │
│      Post-auditing          │
│   Compare results with      │
│           plan              │
└─────────────────────────────┘
```

The firm's planning process.

(Fabouzzi and Peterson,2003)

2.2 Financial Forecasting Method /Approach

Sales forecast is typically the starting point of the financial forecasting exercise. Most of the financial variables are projected in relation to the estimated level of sales. Hence, the accuracy of the financial forecast depends critically on the accuracy of the sales forecast. (Chandra 2004)

The most important function of business is forecasting. A forecast is a starting point for planning. The objective of forecasting is to reduce risk in decision making. Forecast must also be made of money and credit conditions and interest rates so that the cash needs of the firm may be at the lowest possible cost.

There are a wide range of forecasting techniques which the company may choose from. There are basically two approaches to forecasting: qualitative and quantitative (Delta publishing 2005). They are:-

1.Qualitative approach – forecasts based on judgment and opinion

        A. Executive opinion

        B. Delphi techniques

        C. Sales force polling

        D. Consumer survey

        E. Techniques for eliciting expert's opinion – PERT Derived.

2. Quantitative approach

a) Forecasts based on historical data

- Naive methods
- Moving averages
- Exponential smoothing
- Trend analysis
- Decomposition of time series
- Box-Jenkins

b) Associative (Causal) forecasts

- Simple regression

- Multiple regression
- Econometric modelling

c) Forecasts based on consumer behaviour

- Markov approach

d) Indirect methods

- Market surveys
- Input-output analysis
- Economic indicators

The choice of a forecasting technique is significantly influenced by the stage of the product life cycle, and sometimes by the firm or industry for which a decision is being made.

After evaluating the particular stages of the product, and firm and industry life cycles, a further probe is necessary. Instead of selecting a forecasting technique by using whatever seems applicable, decision makers should determine what is appropriate. Some are best suited for short term projections, whereas others are better prepared for intermediate or long-term forecasts.

Delta publishing (2005) identified six criteria's for selecting forecasting method. These are:
1. What is the cost associated with developing the forecasting model compared with potential gains resulting from its use? The choice is one of benefit-cost trade-off.
2. How complicated are the relationships that are being forecasted?
3. Is it for short-run or long-run purposes?
4. How much accuracy is desired?
5. Is there a minimum tolerance level of errors?
6. How much data are available? Techniques vary in the amount of data they require.

Quantitative models work superbly as long as little or no systematic change in the environment takes place. Pattern or relationships do change, by themselves, the objective models are of little use.

It is where the qualitative approach, based on human judgment, is indispensable. Because judgmental forecasting also bases forecasts on observation of existing trends, they too are subject

to a number of short comings. The advantage, however, is that they can identify systematic change more quickly and interpret better the effect of such change on the future

Common features and assumption inherent in forecasting.

Forecasting techniques are quite different from each other. But there are certain features and assumptions that underlie the business of forecasting (Delta Publishing 2005). They are:
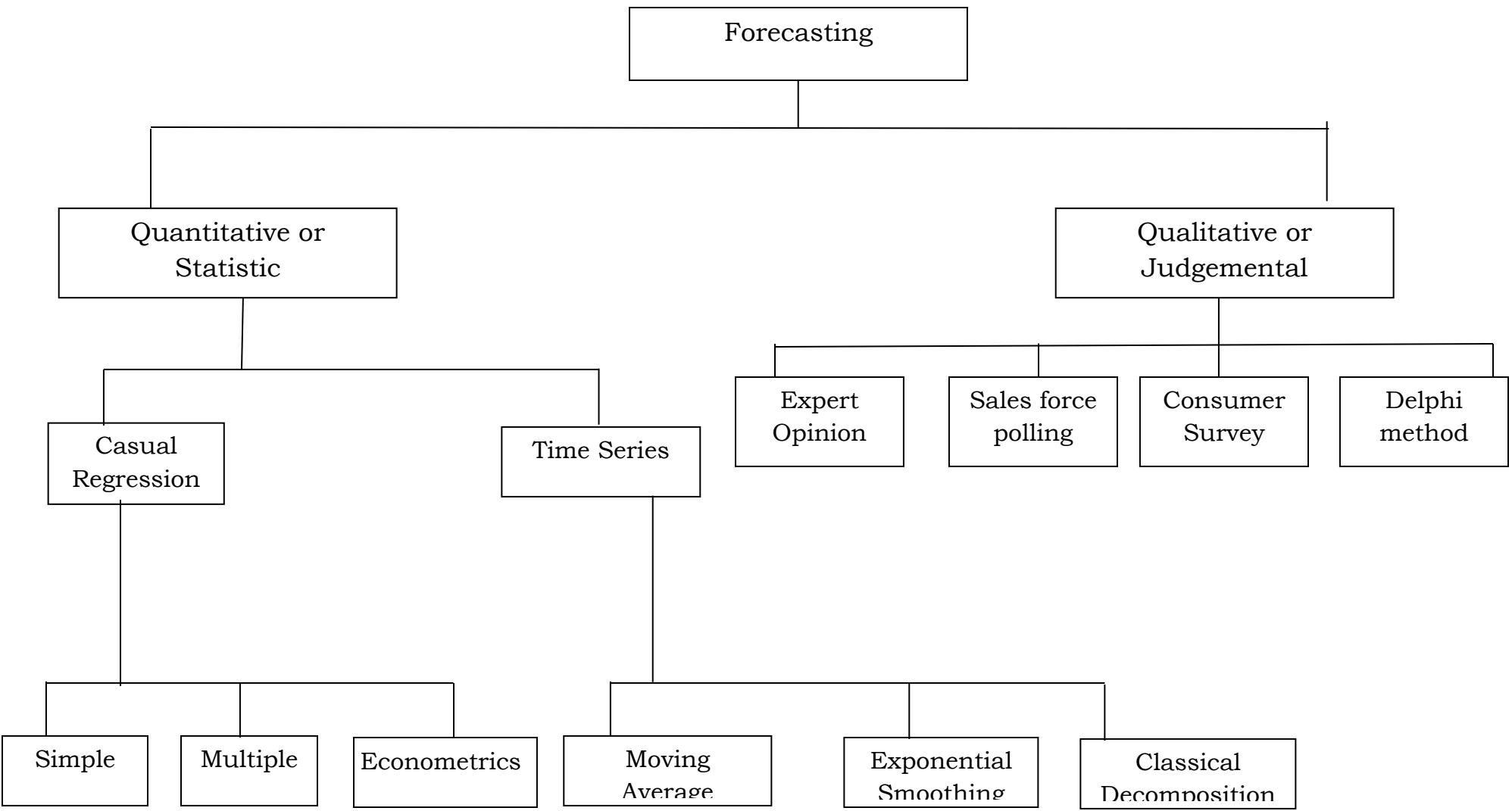
1. Forecasting techniques generally assume that the same underlying causal relationship that existed in the past will continue to prevail in the future. In other words, most of our techniques are based on historical data.

2. Forecasts are very rarely perfect. Therefore, for planning purposes, allowances should be made for inaccuracies.

3. Forecast accuracy decreases as the time period covered by the forecast (that is, the time horizon) increases. Generally speaking, a long-term forecast tends to be more inaccurate than a short-term forecast because of the greater uncertainty.

4. Forecasts for groups of items tend to be more accurate than forecasts for individual items, since forecasting errors among items in a group tend to cancel each other out. For example, industry forecasting is more accurate than individual firm forecasting.

STEPS IN THE FORECASTING PROCESS

There are six basic steps in the forecasting process (Delta Publishing 2005). They are:

1. Determine the why of the forecast and what will be needed. This will indicate the level of detail required in the forecast (for example, forecast by region, forecast by product, etc.), the amount of resources (for example, computer hardware and software, manpower, etc.) that can be justified, and the level of accuracy desired.

2. Establish a time horizon, short-term or long-term. More specifically, project for the next year or next 5 years, etc.

3. Select a forecasting technique.

4. Gather the data and develop a forecast.

5. Identify any assumptions that had to be made in preparing the forecast and using it.

6. Monitor the forecast to see if it is performing in a manner desired. Develop an evaluation system for this purpose. If not, go to step 1.

Forecasting Methods

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                            ┌─────────────────┐
                            │   Forecasting   │
                            └────────┬────────┘
             ┌───────────────────────┴───────────────────────┐
    ┌─────────────────┐                             ┌─────────────────┐
    │ Quantitative or │                             │  Qualitative or │
    │    Statistic    │                             │   Judgemental   │
    └────────┬────────┘                             └────────┬────────┘
     ┌───────┴────────┐              ┌──────────┬─────────┼──────────┐
┌──────────┐   ┌─────────────┐  ┌─────────┐ ┌──────────┐ ┌─────────┐ ┌────────┐
│  Casual  │   │ Time Series │  │ Expert  │ │Sales force│ │Consumer │ │ Delphi │
│Regression│   │             │  │ Opinion │ │ polling  │ │ Survey  │ │ method │
└────┬─────┘   └──────┬──────┘  └─────────┘ └──────────┘ └─────────┘ └────────┘
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Quantitative or Statistic → Casual Regression → Simple, Multiple, Econometrics

Time Series → Moving Average, Exponential Smoothing, Classical Decomposition

| Simple | Multiple | Econometrics | | Moving Average | Exponential Smoothing | Classical Decomposition |

Delta Publishing (2005)

1. Qualitative Forecasting Methods

The qualitative (or judgmental) approach can be useful in formulating short-term forecasts and also can supplement the projections based on the use of any of the qualitative methods. Four of the better known qualitative forecasting methods are Executive Opinions, the Delphi Method, Sales Force Polling, and Consumer Surveys. (Delta Publishing 2005)

A. EXECUTIVE OPINIONS

The subjective views of executives or experts from sales, production, finance, purchasing and administration are averaged to generate a forecast about future sales. Usually this method is used in conjunction with some quantitative method such as trend extrapolation. The management team modifies the resulting forecast based on their expectations.(Delta Publishing 2005)

- Advantage of this approach is that the forecasting is done quickly and easily, without need of elaborate statistics. Also, the jury of executive opinions may be the only feasible means of forecasting in the absence of adequate data.
- The disadvantage, however, is that of "group think." This is a set of problems inherent to those who meet as a group. Foremost among these problems are high cohesiveness, strong leadership, and insulation of the group.

B. THE DELPHI METHOD

It is a group technique in which a panel of experts are individually questioned about their perceptions of future events. The experts do not meet as a group in order to reduce the possibility that consensus is reached because of dominant personality factors. Instead, the forecasts and accompanying arguments are summarized by an outside party and returned to the experts along with further questions. This continues until a consensus is reached. This type of method is useful and quite effective for long-range forecasting. The technique is done by "questionnaire" format and thus it eliminates the disadvantages of group think. There is no committee or debate. The experts are not influenced by peer pressure to forecast a certain way (Delta Publishing 2005).

C.SALES-FORCE POLLING

Some companies use as a forecast source sales people who have continual contacts with customers. They believe that the sales force that is closest to the ultimate customers may have significant insights regarding the state of the future market. Forecasts based on sales-force polling may be averaged to develop a future forecast. Or they may be used to modify other quantitative and/or qualitative forecasts that have been generated internally in the company (Delta Publishing 2005).

The advantages of this forecast

- It is simple to use and understand
- It uses the specialized knowledge of those closest to the action
- It can place responsibility for attaining the forecast in the hands of those who most affect the actual results.
- The information can be broken down easily by territory, product, customer or sales persons

Disadvantages include:- sales people's being overly optimistic or pessimistic regarding their predictions and inaccuracies due to broader economic events that are largely beyond their control.

D.CONSUMER SURVEYS

Some companies conduct their own market surveys regarding specific consumer purchases. Surveys may consist of telephone contacts, personal interviews, or questionnaires as a means of obtaining data. Extensive statistical analysis is usually applied to survey results in order to test hypotheses regarding consumer behaviour (Delta Publishing 2005).

E.PERT-DERIVED FORECASTS

A technique known as PERT (Program Evaluation and Review Technique) has been useful in producing estimates based on subjective opinions such as executive opinions or sales force polling. The PERT methodology requires that the expert provide three estimates: (1) pessimistic

(a) (2) the most likely (m), and (3) optimistic (b). The theory suggests that these estimates combine to form an expected value, or forecast (Delta Publishing 2005).

EV = (a + 4m +b)/6

With a standard deviation of

σ= (b - a)/6

Where EV = expected value (mean) of the forecast

σ = standard deviation of the forecast

There are two distinct advantages to this method:

(1) It is often easier and more realistic to ask the expert to give optimistic, pessimistic and most likely estimates than a specific forecast value.

(2) The PERT method includes a measure of dispersion (the standard deviation), which makes it possible to develop probabilistic statements regarding the forecast.

2. **Quantitative Forecasting Approach**

2.1 Time series

A. **NAIVE MODELS**

Naive forecasting models are based exclusively on historical observation of sales or other variables such as earnings and cash flows being forecast. They do not attempt to explain the underlying causal relationships, which produce the variable being forecast (Delta Publishing 2005).

Naive models may be classified into two groups. One group consists of simple projection models. These models require inputs of data from recent observations, but no statistical analysis is performed. The second group are made up of models, while naive, are complex enough to require computer. Traditional methods such as classical decomposition, moving average, and exponential smoothing models are some examples.

Advantages: It is inexpensive to develop, store data, and operate.

Disadvantages: It does not consider any possible causal relationships that underlie the forecasted variable.

B. <u>MOVING AVERAGES</u>

Moving averages are averages that are updated as new information is received. With the moving average, a manager simply employs the most recent observations to calculate an average, which issued as the forecast for the next period (Delta Publishing 2005).

ADVANTAGES AND DISADVANTAGES

The moving average is simple to use and easy to understand. However, there are two shortcomings.

- It requires you to retain a great deal of data and carry it along with you from forecast period to forecast period.
- All data in the sample are weighted equally. If more recent data are more valid than older data, why not give it greater weight?

C. <u>EXPONENTIAL SMOOTHING</u>

Exponential smoothing is a popular technique for short-run forecasting by financial managers. It uses a weighted average of past data as the basis for a forecast. The procedure gives heaviest weight to more recent information and smaller weights to observations in the more distant past (Delta Publishing 2005).

The reason for this is that the future is more dependent upon the recent past than on the distant past. The method is known to be effective when there is randomness and no seasonal fluctuations in the data. One disadvantage of the method, however, is that it does not include industrial or economic factors such as market conditions, prices, or the effects of competitors' actions.

THE MODEL

Y'new= αY old + (1 - α) Y'old

Y'new = Exponentially smoothed average to be used as the forecast.

Yold = Most recent actual data.

Y'old = Most recent smoothed forecast.

   α= Smoothing constant.

The higher the α, the higher the weight given to the more recent information.

D. FORECASTING USING DECOMPOSITION OF TIME SERIES

When sales exhibit seasonal or cyclical fluctuation, we use a method called *classical decomposition*, for dealing with seasonal, trend, and cyclical components together. Note that the classical decomposition model is a time series model. This means that the method can only be used to fit the time series data, whether it is monthly, quarterly, or annually. The types of time series data the company deals with include sales, earnings, cash flows, market share, and costs (Delta Publishing 2005).

We assume that a time series is combined into a model that consists of the four components - trend (T), cyclical (C), seasonal (S), and random (R). We assume the model is of a multiplicative type, i.e.

   Yt = T x C x S x R

The approach basically involves the following four steps:

1. Determine seasonal indices, using a four-quarter moving average.

2. Deseasonalize the data.

3. Develop the linear least squares equation in order to identify the trend component of the forecast.

4. Forecast the sales for each of the four quarters of the coming year.

E. Box-Jenkins

The methodology suggested by Box and Jenkins represents a systematic approach to modeling and forecasting discrete time series. There are two basic reasons why the Box and Jenkins methodology will lead to better forecasts than traditional fore-casting methods and thus should be preferred to them. First, using traditional approaches the forecaster would select more or less arbitrarily a specific forecasting model. Second, the specific form of a given model which is to be used has traditionally been the result of a trial-and-error procedure with a good deal of experience and intuitive judgment thrown in. Box and Jenkins, however, present a rational, structured approach to the determination of a specific model. Certainly experience and judgment must remain, but their structured approach eliminates various hit-and-miss tactics.(Mabert and Radcliffe 1974)

The generalized, mixed autoregressive moving average model is:-

$$\Phi p(B)(l- B)d(1 - B^8)^{dl} X_t$$

2.2 FORECASTING WITH REGRESSION

Regression analysis is a statistical procedure for estimating mathematically the average relationship between the dependent variable and the independent variable(s). *Simple regression* involves one independent variable, price or advertising in a demand function, whereas *multiple regression* involves two or more variables, that is price and advertising together (Delta Publishing 2005).

I will discuss *simple (linear) regression* to illustrate the *least-squares method*, which means that we will assume the $Y = a + bX$ relationship.

2.2.1 Simple regression

A. THE LEAST-SQUARES METHOD

The least-squares method is widely used in regression analysis for estimating the parameter values in a regression equation. The regression method includes all the observed data and

attempts to find a line of best fit. To find this line, a technique called the least-squares method is used.

To explain the least-squares method, we define the error as the difference between the observed value and the estimated one and denote it with u (Delta Publishing 2005). Symbolically,

$$u = Y - Y'$$

where Y = observed value of the dependent variable

Y' = estimated value based on Y' = a + bX

The least-squares criterion requires that the line of best fit be such that the sum of the squares of the errors is a minimum, i.e.,

Minimum: $\Sigma u^2 = \Sigma(Y-a-bX)^2$

B. <u>TREND ANALYSIS</u>

Trends are the general upward or downward movements of the average over time. These movements may require many years of data to determine or describe them. They can be described by a straight line or a curve. The basic forces underlying the trend include technological advances, productivity changes, inflation, and population change. Trend analysis is a special type of simple regression. This method involves a regression whereby a trend line is fitted to a time series of data (Delta Publishing 2005).

The *linear* trend line equation can be shown as

Y = a + b t

where t = time.

The formula for the coefficients a and b are essentially the same as the cases for simple regression. However, for regression purposes, a time period can be given a number so that $\Sigma t = 0$. With $\Sigma t = 0$, the formula for b and a reduces to the following:

$$b = \frac{n \sum ty}{n \sum t^2}$$

$$a = \frac{\sum y}{n}$$

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2.2.2 <u>MULTIPLE REGRESSIONS</u>

In multiple regressions that involve more than one independent (explanatory) variable, managers must look for the following statistics):

- t-statistics
- R-bar squared (R^2) and F-statistic
- Multicollinearity
- Autocorrelation (or serial correlation)

2.3 FORECASTING WITH THE MARKOV MODEL

Consumers tend to repeat their past consumption activities. Some consumers become loyal to certain product types as well as specific brands. Others seek other brands and products. In general, there is a great degree of regularity about such behaviour. The Markov model is developed so as to predict market share by considering consumer brand loyalty and switching behaviours (Delta publishing 2005).

The model has the following objectives:

1. To predict the market share that a firm will have at some point in the future.
2. To predict whether some constant or level market share will be obtained in the future. Most Markov models will result in a final constant market share where changes in market share will no longer result with the passage of time.
3. To investigate the impact of the company's marketing strategies and promotional efforts, such as advertising, on gain or loss in market share.
4. *To answer these questions, we need to compute what is called transition probabilities for all the companies involved in the market. Transition probabilities are nothing more than*

the probabilities that a certain seller will retain, gain, and lose customers. To develop this, we need sample data of past consumer behaviour.

2.4 Market survey

Market surveys of customers can provide estimates of future revenue.(Fabozzi and Peterson 2003).

In the survey the organization need to determine its market share and also the expected sales for each of its products in different markets. To do so, the firm can use its own market survey department or it can employ outside market survey specialist to survey its customers.

We should expect to learn from market surveys;

• Product development and introductions by the company and its competitors

•The general economic climate and the projected expenditure on products.

2.3 Elements of financial Forecasting

2.3.1. Sales forecast

The sales forecast is typically the starting point of the financial forecasting exercise. Most of the financial variables are projected in relation to the estimated level of sales. Hence the accuracy of the financial forecast depends critically on the accuracy of the sales forecast. Chandra (2004)

Sales forecast may be prepared for varying planning horizons to serve different purposes. Sales forecast for the period of 3-5 years or for even longer durations may be developed mainly to aid investment planning. A sales forecast for the period of one year is the primary basis for the financial forecasting exercise. Sales forecasts for shorter durations (six months, three months, and one month) may be prepared for facilitating working capital planning and cash budgeting

2.3.2.   Forecasted income statement

The forecasted 2013 income statement starts with the 2012 income statements. Next, new operating cost ratio is multiplied by the forecasted sales level to calculate the forecasted 2013 operating costs which are subtracted from sales to obtain the forecasted EBIT. Once the interest expense has been calculated and entered in the income statement, the forecasted net income is determined. Dividends for 2013 are found by multiplying the target pay-out ratio by 2013 forecasted net income. Dividends are then subtracted from net income to find the 2013 addition to retained earnings.

1.3.3.   Forecasted Balance sheet

The forecasted 2009 balance sheet is developed from 2008 statements. Cash and fixed assets increase at the same rate as sales growth. Account receivables are found by multiplying receivables/ sales ratio by sales.

Inventories are found by multiplying inventories/ sales ratio by sales. We then sum the four assets account to find forecasted 2009 total assets

On the liability side, because payables and accruals grow at the same rate as sales, we multiply them by sales growth rate. 2009 retained earnings are found by adding the 2009 addition to retained earnings from the income statements to 2008 retained earnings. To complete the balance sheet, we need to find the amount for short term bank debt, bonds and new common stock. We multiply the target debt ratio times the just calculated total assets to obtain the forecasted total debt amount. we then subtract payable and accruals from this amount to find the forecasted for interest bearing debt which includes bank loans and bonds. Next, we multiply the interest bearing debt by the 2008 proportions of bank debt and long term bonds to find the forecasted amounts for those two items. Similarly we find the required amount of 2009 total equality by multiplying (1-target debt ratio) times the forecasted assets. We then subtract forecasted retained earnings to find 2009 common stock which we insert in the balance sheet. When we sum the liability and equity accounts, the total matches the forecasted assets, which it must. Brigham and Houston (2009).

2.3.4 External Fund Needed

If we start with the required new assets and then subtract both spontaneous funds and additions to retained earnings, we are left with the additional funds needed. The additional fund needed must come from external sources: hence it is sometimes called External Fund Needed /EFN/. The typical sources of external funds are bank loan, new long term bonds, new preferred stock and newly issued common stock

$$EFN = (\ A_o/S_o\ )\Delta S - S_1 M(1\text{-}POR)$$

2.3.5 The self- supporting growth rate

One interesting question is "what is the maximum growth rate the firm could achieve if it had no access to external capital?". This rate is called the "self-supporting growth rate" and it can be found as the value of g that, when used in the AFN equation, results in an AFN of zero. We first replace Δs in the AFN equation with gS_o and S_1 with $(1 + g)$ So so that the only unknown is g: then we then solve for g to obtain the following equation for the self-supporting growth rate.

$$\text{Self} - \text{supporting } g = \frac{M(1\text{-}POR)\ (S_o)}{A_o* - L_o* - M(1\text{-}POR)\ (S_O)}$$

If the firm has any positive earnings and pays out less than 100% in dividends, then it will have some additions to retained earnings, and those additions could be combined with spontaneous funds to enable the company to grow at some rate without having to raise external capital

M – Profit Margin

POR – Pay out ratio: DPS/EPS

AO/SO – Required Asset per dollar of sales

LO/SO - Spontaneous liabilities per dollar of sales

S1 – Coming year's sales

Ao - Asset that must increase to support the increase in sales

Lo – Last year spontaneous Asset i.e payable + accruals

So - Last year sales

gSo – Change in sales = S1 – S2 = Δs

g - Forecasted growth rate in sales

2.4 Indian tyre industry

The Indian tyre industry accounts for approximately 5% of the global tyre demand generating revenue of approximately 30,000 cr for 2011. The growth in domestic tyre industry was negatively impact by the global slowdown in 2009. Nevertheless, the industry experienced a remarkable recovery in 2010. The growth was primarily driven by strong revival in automobile demand on the back of improvement in macro economy and easing of interest rate. www.indian tyre sector-Money control .com (2012)

The industry produced 119.2 Million units of tyre (1.5 mn tonnes) in 2011. On average, in India nearly 60 % of the production is for replacement market followed by 25% sold to OEMS directly and the balance is exported. Globally of the OEM segment constitutes 30% of the tyre market, exports 10% and the balance for replacement market. Export turnover for India during 2011 stood at 3,600 Cr.

The Industry is characterized by its raw material intensity (raw material costs account for approximately 70% of turn over) there exists huge competition among the top few players who dominate the market and that result in low margins. These players are constantly focused on advertising, branding their products and strengthening their distribution network by increasing dealer network so as to increase their market share.

The industry drives its demand from the automobile industry. The OEM market off take is dependent on the new vehicle sales while replacement market demand depends on the total population of vehicles on the roads, road condition and average tyre life and prevalence of tyre retreading. Radialization of tyre is still at extremely low level in India. In the passenger car market, it reached 98% but in all other categories, cross ply tyre are still preferred.

The radial tyres are generally 20% more expensive than the Bias tyres, the tyres have longer life and more fuel efficient. The poor road condition of the Indian roads has led to lower penetration of radial tyres in India (nearly 10%) against global trend of above 60 %.

Original equipment manufacturer (OEM) enjoys lowest margins reason being that the OEM's always have high bargaining power as they buy in bulk from the suppliers. To get a pie of high volume business, tyre manufactures are forced to sell at lower margins. The benefits are- commitments given by the OEM's in terms of the volume they would procure from the tyre manufacturers.

Replacement segments generally operated through dealer network and company owned outlets. The bargaining power for the replacement segments is moderate as the buyers are not that strong as compared to OEM's. The demand in the replacement market remains strong due to sharp growth in Auto sector witnessed Post 2009. In the replacement market, tyre manufactures are better able to pass on the increase in prices as compared to the OEM segment. This segment therefore commands the highest margins. Tyre companies are continuously focusing on replacement market and constantly increasing dealer and company outlets to increase the business from this high margin segment.

Exports segment generally operates at margins which fall between the margins achieved in replacement and the OEM markets. Export business at the industry level currently stands at nearly 10-15 % of the industry wide turnover. Export of tyre and tubes are freely allowed in India. Exports initially comprises mainly of Bias Tyres. However with the global market moving quickly towards Radialization, the exports of Redial tyres is on the rise.

The tyre retreading industry at present is nearly 10 % of the total turnover of tyre industry. The major segment where retreadings is used is CV and off the road tyres. The majority of the Indian retreading industry is fragmented and with large number of unorganized participants.

Retreading includes replacing the treads and providing a fresh life to the tyre with cost of nearly 25 % of new tyre there by resulting in huge savings. A heavy commercial vehicle tyre has the ability to get retreaded 2-3 times in India. The body of the used tyre must have desirable level of characteristic to enables retreading. Retreadingcannot be done if the tyre has already been over used to the extent that the fabric is exposed or damaged.

With tyres being one of the primary costs for commercial fleet operators, retreading helps increases the life of tyres and reduce the operating costs for the companies. The increasing price of tyres owning to higher input costs for tyre manufactures is expected to result in increased retreading especially in the Indian medium and heavy commercial industry. Retreading is acting as a big threat for the tyre industry. Most transporters in India retread their tyre twice during its life time, while a few fleet owners retread thrice.

The tyre sector is significantly dependent on input materials like rubber and crude derivatives; any increase in these costs directly impacts the profitability for the industry as a whole. Due to high competitive pressure within the Indian markets and even form imports, the tyre manufacturers are unable to pass on the increase in input costs to the end customers completely which impacts the bottom-line performance. Tyre sales especially to the replacement segment are dependent up on the distribution network of the company. Large companies with extensive distribution manage to generate high volume which partially offsets the sharp increase in input costs. With the tyre industry growing, the manufactures have been adding up capacities at the robust pace intending to extend their geographical reach and also focus on higher margin radialized tyres.

Indian tyre industry is highly raw material intensity industry and margins are highly correlated to the price movements of raw materials. The movement in the natural rubber prices can make or break the fortunes of the tyre manufactures. The prices of natural rubber, the key raw material constituting around 44% of total raw materials costs.

Tyre companies across India and globally took several prices hikes to counter the sharp rise in rubber prices during 2011. However, the hikes were not enough to cover up for the entire input cost rise and significantly impacted the margins of the manufactures. Nevertheless, the situation started improving from the start of 2012 when prices of natural rubber started to decline from the peak.

Tyre manufactures are now increasingly looking out to isolate themselves from fluctuation in natural rubber prices and are now looking at backward integration measures such as acquiring rubber plantation

Indian tyre industry currently is dominated by domestic participants catering to over 85 % of the domestic requirement. The imported tyres are priced at a premium over domestic tyres. In an extreme price sensitive market like India, buyers are hesitant to pay any kind of premium for relatively superior product

The tyre industry registered growth of nearly 25% in revenue backed by healthy demand from OEM and replacement segments. The huge demand was supported by capacity ramp up by major players.

Higher input costs especially that of natural rubber led to a sharp decline in operating profits for the industry companies which had sales mix of higher presence in the relatively high margin radial passenger car segment and higher presence in the replacement market segment which offers better pricing ability have been able to post relatively better performance.

For fiscal year 2013, automotive OEM tyre demand is expected to revive owing to expected decline in interest rates leading to higher demand for automobiles. The strong growth in OEM sales during the last two years is expected to translate in to higher replacement demand, especially in the passenger car segment.

Chapter 3

3.1.Tyre Demand In Ethiopian market.

To estimate the Tyre demand in a country, it is important to know the number of vehicles operating in the country. According to federal transport Authority, there are 429,146 vehicles in Ethiopia in 2011.

The term vehicle represent cars, motor cycles, Bajaj's, trailers and any other instrument of transport that must be registered every year in order to operate in the country.

To determine the annual demand of tyre we must classify the total number of vehicles in different categories and then assume vehicles in each category have different tyre wear rate. We must classify these vehicles in to passenger car (PC), light trucks (LT) and buses and trucks (BT) so that we can give each class a different tyre wear rate.

Tyre consumption per year is given by:

Tyre consumption   =   number vehicles X Number of Tyre per vehicle
Per year   wear rate in years.

Table 3.1.Tyre consumption in Ethiopia in 2011

Type of vehicle	Number of vehicle	Number of tyre per vehicle	Wear rate In year	Yearly tyre consumption
Passenger car	112,490	4	1.5	299,794
Light truck	147,913	6	1	601,400
Truck and Bus	63,473	10	0.83	740,571
Total	323,876			1,641,945

Source: Federal Transport Authority

In the above table, passenger car represent car used for human transportation and have up to five seats. Light trucks represent cars used for human transport and have seat number from 6-12 capacity and dry cargo's with up to 70 quintals. While buses represent vehicles used for human

transport which have more than 12 seats capacity and trucks represent vehicles which have more than 70 quintals capacity. Other vehicles such as motor cycles and Bajaj's, tractors and construction equipment's are excluded.

After apply the tyre consumption formula the estimated total annual demand of tyre in Ethiopia in 2011 was 1,641,945 units. When we see the estimated annual tyre demand in each category pc had 299,974 tyres, LT had 601,400 tyre and BT had 740,571

Regarding the average number of tyre per vehicle, it is assumed that pc have 4 tyres per vehicle, LT to have 6 tyres (some field cars have 4 tyres per vehicle), trucks have 10 tyres per vehicle and buses have 6 tyre per vehicle. Based on study conducted by horizon Addis, tyre wear rate for passenger car is 1.5 years, for light truck it is 1 year and for truck and buses it is 0.83 years.

3.1.1 Market share of Horizon Addis Tyre

In order to get the market share of Horizon Addis Tyre in Ethiopia Market, we have to see the tyre sales of the company in each category.

Table 3.2. Tyre sales of Horizon Addis in 2011

Tyre category	Number of tyres sold	Annual demand	Market share
PC tyre	58,413	299,974	19.5%
LT tyre	99,530	601,400	16.5%
TB tyre	39,114	740,571	5.3%
Total	197,057	1,641,945	12%

Source: Horizon Addis Tyre share Company

From the above table Horizon Addis had 19.5% market share in pc, 16.5% market in LT and 5.3% market share in BT. As a whole Horizon Addis had 12% market share in the Local market in 2011.

Table 3.3 Tyre demand prepared by Horizon Addis in 2011

Type of vehicle	Number of Vehicles	Number of per vehicle	Wear rate	Yearly tyre consumption
Passenger car	159,324	4	1.5	424,864
Light truck	58,836	6	1	353,016
Truck and Buses	39,105	10	0.83	471,145
Total	257,265			1,249,025

Source: Horizon Addis Tyre Share Company

From table we can see than the total number of vehicles in the country is understated by 66,611 vehicles by Horizon Addis. This is due to vehicles in Afar, Benishangul, Gambela, Harer, Oromia and southern nations were not included in the data.

Because of this the company underestimated the total tyre demand in the country. Furthermore passenger car is overstated because current data in federal transport authority shows that passenger car in the country is 112,490. Due to this the company expected 423,864 tyre demands in 2011 but actual demand was 299,974. In light truck horizon Addis expected 353,016 tyre demands but the actual demand was 601,400 tyres. In truck and buses the company expected 471,145 tyre demands but the actual demand was 740,571 tyres. The total demand the company expected in 2011 was 1,249,025 tyres but the actual demand was 1,641,945 tyres. The company underestimated the total demand by 392,920 tyres.

3.2 Tyre Supply In Ethiopian Market

The data on imported tyre was collected from Ethiopian Revenue and custom Authority. The data understates the quantity of tyre imported because sometimes they record the number of containers imported instead of units of tyre. In 2011 the total amount of tyre imported was 690,301 tyres. In 2011Horizon Addis sold 197,057 tyres. This would give us the total supply

which was 887,358. It was far below than the demand. This shows that imported tyre number was understated due to recording problem. But it gives better information regarding CFI value and the tax received on imported tyre.

Currently there are more than 140 companies who are engaged in import of tyre to the local market. There are less than 20 agents of the known brands of tyre in the market. The rest of importers import known tyre brands mainly from the Middle East market.

Table 3.4. Imported tyre by countries of origin in 2011

No	Country origin	CIF+Tax	Market share
1	China	1,159,198,809.56	44.7%
2	Japan	604,716,212.16	23.3%
3	India	469,221,288	18.1%
4	Egypt	83,918,423.61	3.2%
5	Italy	69,306,695.87	2.7%
6	Others	209,826,023.4	8%
	Total	2,596,187,452.08	100%

Source: Ethiopian Revenue Authority

From the above table we can see that 86% of imported tyres are from china, Japan, and India, we can conclude that imported tyre are concentrated to these three Asia countries

As I identified earlier the market share of Horizon Addis is 12% in 2011. Imported tyre filled the remaining 88% of the demand. Imported tyre has huge market share in the local market due to high quality tyre. Its durability is much higher than horizon Addis tyre. Horizon Addis tyre expected to travel 50,000 km in its life time. But imported tyre like Bridgestone can travel 90,000 km in its life time. Customers of tyre know that imported tyres have more life time than Horizon Addis Tyre.

In 2011 CFI value of 1,785,778,123.63 birr of tyre imported to the local market. The government collected 810,409,319.45 birr on tax. It is difficult to identify the market share of each brand of tyre in the local market because sometimes the custom experts did not recorded the brand of tyre, they record tyre only. Furthermore, some companies are not willing to give the amount of tyre

they imported to the local market. Below are some brands which are imported to the local market.

Table 3.5. Imported tyre by brands in 2011

No	Brand Name	Value of import
1	Bridgestone, firestone	1,024,753,800
2	Pireli	181,815,011
3	MRF	151,198,554
4	Yokohama, AELOS	59,545,068
5	Roadsun	53,5813,605
6	Triangle	47,753,737

Source: Ethiopian Revenue Authority

The total number of tyre imported in 2011 was 690,301 units. The total number of tyres Horizon Addis sold to the market was 197,057 units. The total number of supply was 887,358 units .I identified earlier that total demand in the local market were 1,614,945 unit. The reason why supply was understated is that sometimes custom officer record number of containers instead of units tyres.

Chart 1. Market Share of Horizon Addis and Imported tyres
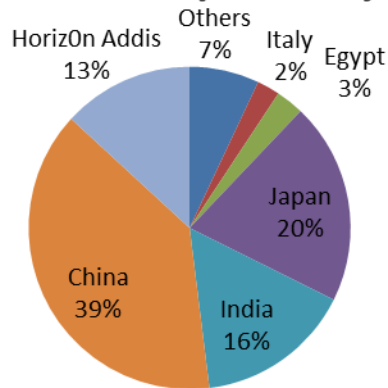
3.3 Financial Forecasting Process at Horizon Addis

Financial forecasting at Horizon Addis tyre Share Company is prepared by finance department and sales department. Sales department prepares sales forecast and finance department prepares the rest of income statement items and balance sheet items.

Financial forecasting at Horizon Addis Tyre is revised depending on the performance of the company. If current performance is significantly different than expectations, the forecasted items will be adjusted according to performance. Some items in the income statement are directly related with the level of sales. So any change in the sales level affects them directly. The company adjusts its income statement forecast according to its sales performance.

Each department will request its budget for the coming year. The requested budget will be discussed by the top management and if approved it will be included in the forecast.

Sales4 and marketing department consider the following assumptions when preparing the sales forecast.

- Number of orders for the next year. All government organizations buy tyres from horizon Addis to support the local economy.

- Past sales data. The department considers the last three years forecast and actual sales data.

- Domestic market trend. If there is shortage of tyre, over supply of tyre and shortage of foreign currency will be considered.

- Number of tender the company participated and proforma invoices given to customers.

Based on the above assumption the sales department forecast the next year sales. They consider the last three year sales data and compute the market share of Horizon Addis in each tyre category. By considering market potential and production capacity the desired level of market share is determined. By determining the desired level of market share in each category the desired level of sales is calculated. By adding the desired level of sales in each category annual sales is forecasted. The forecasted sales will be discussed by the top management. If the management considered the forecast to be reasonable, it will be approved. They did not use any forecasting methods discussed in the previous chapter. The forecasting method adopted is the opinion of the sales department. If they are optimistic about the market, they consider more market share and if they are less optimistic they consider less market share. In 2008 they were optimistic about the market and the forecast in quantity was 421,100 units but they sold 241,019 units of tyre. It was 57.2% of the plan. In recent years sales forecast was understated because they were less optimistic about the market. The forecast decreased year after year in quantity in the period under study.

Table 3.6 Income Statement Items forecast and actual

No	Distribution	Plan	Actual	Percentage of Achievement
1	Sales 2008	285,250,000	275,344,972	96.5%
2	Sales 2009	303,584,000	247,341,788	81.5%
3	Sales 2010	317,307,623	321,302,802	101.2%
4	Sales 2011	352,019,185	393,677,511	111.8%
5	Material 2008	195,091,000	165,922,980	85%
6	Material 2009	175,439,000	123,818,625	70%
7	Material 2010	230,559,751	191,672,745	83%
8	Material 2011	252,302,944	315,767,657	125%
9	Salary Expense 2008	11,213,000	15,814,590	141%
10	Salary Expense 2009	20,660,000	15,642,288	75.7%
11	Salary Expense 2010	22,552,000	21,257,359	94.3%
12	Salary Expense 2011	23,246,250	23,659,438	101.7%
13	Interest Expense 2008	5,852,000	5,007,329	85.5%
14	Interest Expense 2009	4,885,000	7,726,587	158.2%
15	Interest Expense 2010	3,478,000	3,399,640	97.7%
16	Interest Expense 2011	4,953,253	6,218,526	125.5%
17	Net income 2008	-7,260,000	12,243,257	
18	Net income 2009	1,976,000	32,644,895	1652%
19	Net income 2010	2,058,795	28,817,063	1400%
20	Net income 2011	4,474,637	2,065,335	46.2%

In 2008 the company planned to sell 421,100 units of tyre to get 285,250.000 birr and sold 241,019 units of tyres and got 275,344,972 birr. It achieved 57.2% in terms of quantity and 96.5% of its plan in terms of monetary value. The reason for huge difference was the company became a joint venture and they plan to sell more to domestic market and to export. In 2009 the company planned to sell 219,257 units of tyres to get 303,584.000 birr and sold 163,120 units and got 247,341,788 birr. It achieved 74.4% of the plan in terms of quantity and 81.5% of its

plan in terms of monetary value. The difference is due to power interruption and the company was closed for a number of months and the company was out of stock. In 2010 the company planned to sell 196,562 units of tyres to get 317,307,623 birr and sold 197,012 units of tyres and got 321,302,802. It achieved 100% of the plan in terms of quantity and 101.2% of the plan in terms of monetary value. In 2011 the company planned to sell 176,200 units of tyres to get 352,019,185 birr and sold 190,543 units of tyres and got 393,677,511 birr. It achieved 108% of the plan in terms of quantity and 111.8% of the plan in terms of monetary value.

The company sold 241,019 in 2008,163,120 in 2009, 197,012 in 2010 and 190,543 in 2011.As we can see from the data the sales of the company was decreasing in terms of quantity but in monetary terms it is increasing due to price increment of the tyres. From its peak year in 2008 to 2011 the company lost 21% of its market share. The company has advertising budget of 1% of its sales but they did not use their budget appropriately. Recently in 2012 the company had 3.5 million birr advertising budget but they used 1.5 million birr only. The company did not advertise on television. They advertise on radio for six weeks consecutively. For the rest of the year they did not advertise. They advertise on Addis Zemen newspaper twice in a week for six months but most people do not read this newspaper. And also they advertise on Fortune newspaper for twenty six weeks. Research done by marketing shows that most people do not know the new name of the company.

The finance department experts forecast the raw material requirement for the next budget year usually they prepare the forecast in December. On December they already have 6 months inventory for the next budget year. For remaining 6 month of the year they add up 10% to the last order price. They did not use any forecasting method discussed in the previous chapter to forecast material cost. So they prepare the forecast based on actual order for 6 months and 10% add up for the last order price for the remaining 6 months. In recent years rubber price in the world market become volatile and this made the forecast significantly different from the actual raw material cost. In 2011 rubber price increased three fold. Rubber constitutes 44% of the raw material requirement in tyre production. The forecasting method used resulted in significant difference between the plan and the actual result. In 2008 it was 85% of the plan, in 2009 it was 70% of the plan, in 2010 it was 83% of the plan and 2011 it was 125% of the plan.

Forecast for material in 2008 was 195,091,000 birr and the actual cost was 165,922,980 birr. It was 85% of the plan. The difference is due to forecasting error. In 2009 Plan for material cost was 175, 439,000 birr and the actual cost was 123,818,625 birr. It was 70.6 % of the plan. The huge difference was due to power interruption and the company was closed for a number of months. Due to this reason the company used lower amount of raw material. In 2010 Plan for the material was 230,559,751 and the actual cost was 191,672,745 birr. It was 83% of the plan. The difference is due to the tyre they produced required low amount of raw material. In 2011 Plan for material cost was 252,302,944 birr and the actual material cost was 315,767,657 birr. It was 125% of the plan. The difference is due to rubber price increased three fold. Rubber constitutes 44% of the raw material requirement in tyre production.

Salary expenses are forecasted by the actual personnel working in the company and the actual vacancies in the organization. Salary increments are also considered when the forecasts are prepared. In 2008 the plan for salary was 11,213,000 birr and the actual expense was 15,814,590 birr. It was 141% of the plan. In 2009 the plan was 20,660,000 birr and the actual was 15,642,288 birr. It was 75.7% of the plan. The reason why there were huge discrepancies was not known because the people who prepare the plan left the company.

Each department prepares its operating expense (budget) for the next period. Their budget request is discussed by the management. Based on the budget request, the management allocates the financial resource for each department. It will become the forecast for the next period. It is executive opinion.

Forecast for interest expense is prepared by considering long term debt and short term debt of the company. How much interest expected should be known in advance.

In 2009 the plan for interest expense was 4,885,000 and the actual expense was 7,726,587 birr. It was 158.2% the plan. In 2011 the plan was 4,953,253 birr and the actual expense was 6,218,526 birr. It was 125.5% of the plan. The reason of huge discrepancies in the two years was the company borrowed new loan.

Net income is forecasted by deducting all expenses and raw material from sales. Most of the time there is huge discrepancies between the forecasted profit and the actual result. This was due to error in forecasting material cost. In 2008 the plan for net income was a loss of 7,260,000 birr

but the company made a profit of 12,243,257 birr. The reason for huge difference was the company made a loss of 14,553,141 birr in 2007 and the plan was to reduce the loss by half. In 2009 the plan was 1,976,000 birr and the actual result was 32,644,897 birr. It was 1652% of the plan. The huge difference was that there was shortage of tyre in the local market due to shortage of foreign currency. The company increased price and sold most of its inventories. In 2011 the plan was 4,474,637 and the actual was 2,065,335. It was 46.2% of the plan. The reason for the difference was due to rubber price was increased in the world market and this reduced the profit.

Table 3.7, Asset forecast and actual

No.	description	Plan	Actual	Percentage of Achievement
1	Intangible fixed asset 2008	20,231,000	13,105,019	64.7%
2	Intangible fixed asset 2009	16,736,000	16,736,221	100%
3	Intangible fixed asset 2010	13,233,000	13,241,568	100%
4	Intangible fixed asset 2011	4,309,000	6,508,000	151%
5	Good will 2011	1,943,000	3,239,000	166.7%
6	Tangible Fixed Asset 2008	176,135,000	148,422,806	84.2%
7	Tangible Fixed Asset 2009	165,104,000	132,824,837	80.4%
8	Tangible Fixed Asset 2010	132,683,000	133,295,252	100%
9	Tangible Fixed Asset 2011	147,001,000	114,152,000	77.6%
10	Inventory 2008	95,441,000	93,435,602	97.9%
11	Inventory 2009	120,398,000	132,881,871	110.4%
12	Inventory 2010	120,398,000	188,133,746	156.3%
13	Inventory 2011	213,084,000	243,046,000	114%
14	Receivables 2008	45,715,000	38,574,166	84.3%
15	Receivables 2009	31,480,000	29,887,668	94.9%
16	Receivables 2010	20,123,000	33,868,619	168.3%
17	Receivables 2011	22,475,000	66,246,000	294.7%
18	Cash 2008	1,450,000	34,102,972	2351%
19	Cash 2009	721,000	64,647,269	8966%
20	Cash 2010	32,883,000	57,241,464	174%
21	Cash 2011	36,980,000	7,489,000	20.3%

The knowhow of the Addis tyre was considered as intangible asset at the time of joint venture. Through amortization the company forecast the next year intangible asset. In 2008 the plan was 20,231,000 birr and the actual intangible asset was 13,105,019 birr. It was 64.7%. In 2011 the plan was 4,309,000 birr and the actual intangible asset was 6,508,000 birr. It was 151% of the plan. The difference in both years was they did not amortise the intangible asset.

Tangible asset is forecasted by deducting depreciation from tangible assets. If the company will purchase fixed asset in the next period, it will be added in the tangible assets forecast. In 2008the plan was 176,135,000 birr and the actual tangible asset was 148,422,806 birr, It was 84.2% of the plan. In 2009 the plan was 165,104,000 birr and the actual tangible asset was 132,824,837 birr. It was 80.4% of the plan. In 2011 the plan was 147,001,000 birr and the actual tangible asset was 114,152,000 birr. It was 77.6% of the plan. The reason for the difference was the company planned to invest on additional machinery but they made the investment on 2012.

Inventory is forecasted by inventory at the beginning of the year plus production for the year minus sales for the year.

Ending inventory =Inventory beginning + Production – Sales.

In 2010 the plan for inventory was 120,398,000 and the actual inventory was 188,133,746 birr. It was 156.3% of the plan. The huge difference was there were devaluation of the birr and huge safety stock. In 2008 inventory was 93,435,602 birr and in 2011 it was 243,046,000 birr. The huge difference is devaluation of birr, price of raw material increased in the world market and huge safety stock. The company has 6 month sales as raw material inventory and 2 month sales as finished good inventory as safety stock. Due to this reason the company has huge amount of inventories.

Standards developed in production management analysis might indicate the necessity for 30 days sales in inventory (Weston 1958). But the company has 8 months sales as safety stock. The ratio of inventory to number of days sales increased from 122 in 2008 to 222 in 2011. This shows that the company was increasing its safety stock. In 2008 safety stock was 4 months sales but in 2011 it was 8 months sales.

The company has credit sales policy. The company gives its customers 45 day to pay for the product which they bought on credit. The company has a number of distributors in the country who buys on credit. Those sales which are less than 45 days considered as receivables. 70% of the sales of the company are on credit. The plan for receivables in 2008 was 45,715,000 birr and the actual receivable was 38,574,166 birr. It was 84.3% of the plan. The reason for the difference was that the market was good and credit customers paid on time. In 2010 the plan was 20,123,000 birr and the actual receivable was 33,868,619 birr. It was 168% of the plan. The reason for the difference was that the last two years performance was below the plan and they expected the receivables to be lower due to foreign currency shortages and the company also increased prices of its product. In 2011 the plan was 22,475,000 birr and the actual receivable was 66,246,000 birr. It was 294% of the plan. The reason for understatement was they expected foreign currency shortages in the economy. But there was major devaluation of currency and the price of tyres increased. Due to these reasons the value of receivables are significantly above the plan.

Cash is forecasted by preparing cash flow statement at the beginning of the period. Net profit, depreciation and other financing activities are determined so that we can get cash at the end of the period. Most of the time the forecast is significantly different than the actual result. This was because profit, inventory and receivables were not forecasted correctly. Therefore forecasting correctly of these elements of cash flow statements are important to forecast cash. In 2008 the plan for cash was 1,450,000 birr and the actual cash was 34,102,972 birr. It was 2351% of the plan. The reason for understatement for the plan was the company was expected to incur 7,260,000 birr loss for the year but the company made a profit of 12,243,257 birr. And also receivables were lower than expected. In 2009 the plan was 721,000 birr and the actual cash was 64,647,269 birr. It was 8,966% of the plan. The reason for the difference was the company made huge amount of unexpected profit of 32,644,895 birr and receivables was lower than expected. In 2011 the plan for cash was 36,980,000 birr and the actual cash was 7,489,000 birr. It was 20% of the plan. The reason for the difference was inventory and receivables were more than expected.

Table3. 8, Equity and Claim forecast and actuals

No.	description	Plan	Actual	Percentage of Achievement
1	Share Capital 2008	251,829,000	255,041,369	101.3%
2	Share Capital 2009	255,041,000	255,041,369	100%
3	Share Capital 2010	255,041,000	255,041,369	100%
4	Share Capital 2011	282,890,000	255,041,369	90.2%
5	Retained Earnings 2009	8,520,000	15,263,654	179.2%
6	Retained Earnings 2010	19,454,000	7,122,553	36.6%
7	Retained Earnings 2011	7,123,000	7,123,000	100%
8	Current Liability 2008	41,596,000	46,340,145	111.4%
9	Current Liability 2009	69,360,000	59,551,881	85.9%
10	Current Liability 2010	44,848,000	94,834,290	211.5%
11	Current Liability 2011	97,441,000	125,433,000	128.7%
12	Long term Debt 2008	61,490,000	55,495,717	90.3%
13	Long term Debt 2009	39,434,000	31,492,532	79.9%
14	Long term Debt 2010	31,568,000	37,298,620	118%
15	Long term Debt 2011	12,378,000	46,198,000	373.2%

The company is a share company between Ethiopia privatization agency and Horizon group. The capital of the companies determined by their mutual agreement. It is beyond from finance department who forecast the balance sheet items. They also decide how much to take from profit, how much to remain as retained earnings and how much as legal reserve. In 2011 the plan for capital was 282,890,000 birr and the actual was 255,041,000 birr. It was 90% of the plan. The reason for the difference was they plan to invest on machinery and they did not.

Most of the purchase of the company is from other countries. Raw materials and spare parts are purchased from other countries. Domestic purchases are done by cash and on credit basis. By negotiating with suppliers certain per cent are purchased by cash and certain per cent remain as account payable. The company expects certain per cent of domestic purchases to remain account payable at the end of the year. There were significant difference between the plan and the actual result for a number of years. The people responsible for preparing the forecast left the company and the exact reason was not known.

Long term debt of the company is known in advance. How much principal and interest is going to be paid is also known. By deducting the principal payment from the long term debt, the company forecast next year long term debt.

Table 3.9, Ratios forecast and actual

No.	description	Plan	Actual	Percentage of Achievement
1	Inventory turnover ratio 2008	2.04	1.77	86.8%
2	Inventory turnover ratio 2009	1.46	0.93	63.8%
3	Inventory turnover ratio 2010	1.91	1.01	53%
4	Inventory turnover ratio 2011	1.18	1.3	110%
5	Receivable turnover ratio 2008	6.24	7.13	114.3%
6	Receivable turnover ratio 2009	9.64	8.27	85.8%
7	Receivable turnover ratio 2010	15.77	9.5	60.2%
8	Receivable turnover ratio 2011	15.66	5.94	37.9%
9	Asset turnover ratio 2008	0.55	0.47	85.4%
10	Asset turnover ratio 2009	0.9	0.63	70%
11	Asset turnover ratio 2010	0.99	0.75	76%
12	Asset turnover ratio 2011	0.76	0.84	110.5%
13	Current ratio 2008	3.43	3.58	104.3%
14	Current ratio 2009	5.02	3.82	76%
15	Current ratio 2010	3.9	2.94	75.3%
16	Current ratio 2011	3.15	2.71	86%
17	Quick ratio 2008	1.13	1.57	138.9%
18	Quick ratio 2009	1.06	1.59	150%
19	Quick ratio 2010	1.22	0.96	78.7%
20	Quick ratio 2011	0.97	0.77	79.3%
21	Debt to Equity ratio 2008	0.4	0.39	98%
22	Debt to Equity ratio 2009	0.26	0.36	138%
23	Debt to Equity ratio 2010	0.3	0.45	150%
24	Debt to Equity ratio 2011	0.24	0.37	154%

Inventory turnover ratio is forecasted by dividing forecasted sales by forecasted inventory. In 2009 the plan for inventory turnover was 1.46 but the actual was 0.93. It was 63.8% of the plan. The reason for the discrepancy was that the company was closed for a number of months and material consumption was lower. In 2010 the plan was 1.91 but the actual was 1.01. It was 53% of the plan. The reason for the difference was inventory increased significantly compared to the plan.

Receivables turnover ratio is forecasted by dividing total sales by receivables. In 2010 the plan for receivables turnover was 15.77 and the actual was 9.5. It was 60.2% of the plan. The reason for the difference was receivables were 168% higher than the plan. In 2011 the plan was 15.66 and the actual was 5.94. It was 37.9% of the plan. The reason for the difference was receivables increased 294.7% compared to the plan.

Asset turnover is forecasted by dividing total sales by total asset. In 2009 the plan for asset turnover was 0.9 and the actual was 0.63. It was 70% of the plan. The reason for the difference was the company was closed for a number of months and sales was lower and asset was higher due to cash compared to plan. In 2010 plan was 0.99 and the actual was 0.75. It was 76% of the plan. The reason for the difference was asset was higher due to cash compared to plan.

Current ratio is forecasted by dividing current asset by current liability. In 2009 the plan for current ratio was 5.02 and the actual was 3.82. It was 76% of the plan. In 2010 the plan was 3.9 and the actual was 2.94. It was 75.3% of the plan. The reason for the difference for the two years was current liability increased significantly compared to the plan.

Quick ratio is forecasted by current asset minus inventory divided by current liability. In 2008 the plan was 1.13 and the actual was 1.57. It was 138% of the plan. In 2009 the plan was 1.06 and the actual was 1.59. It was 150% of the plan. The reason for the difference was cash increased significantly compared to plan. In 2010 the plan was 1.22 and the actual was 0.96. It was 78% of the plan. The reason for the difference was current liability increased significantly compared to plan.

Debt to Equity ratio is forecasted by dividing total debt by shareholder equity. In 2009 the plan was 0.26 and the actual was 0.36. It was 128% of the plan. In 2010 the plan was 0.3 and the actual was 0.45. It was 150% of the plan. The reason for the difference for the two years was

current liability increased significantly compared to plan. In 2011 the plan was 0.31 and the actual was 0.58. It was 187% of the plan. The reason for the difference was current liability as well as long term debt increased significantly compared to plan.

Debt to total asset is forecasted by dividing debt by total asset. In 2009 the plan was 0.2 and the actual was 0.23. It was 115% of the plan. In 2010 the plan was 0.14 and the actual was 0.31. It was 221% of the plan. The reason for the difference for the two years was current liability was significantly higher than the plan. In 2011 the plan was 0.24 and the actual was 0.37. It was 154% of the plan. The reason for the difference was long term debt as well as current liability was significantly higher than the plan.

Fixed asset turnover ratio is forecasted by sales divided by fixed asset. In 2011 the plan was 2.3 and the actual was 3.14. It was 136% of the plan. The reason for the difference was sales increased significantly and fixed asset decreased compared to plan.

Capital turnover ratio is forecasted by sales divided by share capital. In 2009 the plan was 1.15 and the actual was 0.81. It was 70.7% of the plan. The reason for the difference was the company was closed for a number of months and sales was decreased. In 2011 the plan was 1 and the actual was 1.33. It was 133% of the plan. The reason for the difference was sales increased significantly and capital was lower than the plan.

Current asset turnover ratio is forecasted by sales divided by current asset. In 2008 the plan was 1.37 and the actual was 0.99. It was 72% of the plan. In 2009 the plan was 1.99 and the actual was 1.09. It was 54% of the plan. The reason for the difference for the two years was cash was significantly higher than the plan. In 2010 the plan was 1.81 and the actual was 1.15. It was 63% of the plan. The reason for the difference was inventory, receivables and cash were significantly higher than the plan.

Return on asset is forecasted by net profit divided by total asset. In 2009 the plan was 0.005 and the actual was 0.08. It was 1600% of the plan. The huge difference was that there was shortage of tyre in the local market due to shortage of foreign currency. The company increased price and sold most of its inventories and earn higher profit. In 2011 the plan was 0.009 and the actual was 0.004. It was 44% of the plan. The difference was due to rubber price was increased in the world market and this reduced the profit.

CHAPTER FOUR

The chapter contains summary of findings, conclusions and useful recommendations.

Summary

Based on the data gathered and analysed, the following summaries are made. After analysing the data, the researcher found out that:-

- The sales department do not use any forecasting method discussed in chapter two to forecast its sales. The forecasting method applied is the opinion of the sales department

- Finance department do not use any forecasting method discussed in chapter two to forecast its material requirement. The plan for material is significantly different than the actual cost.

- Horizon Addis Tyre Sold 80 % of its product to the government.

- Sales forecasts rely mostly on government orders.

- Market share of Horizon Addis tyre was 12% in 2011. This shows that there is huge market potential for its product.

- The company do not use its advertisement budget appropriately.

- Quality of Horizon Addis tyre is inferior to imported tyre.

- Plan for cash was significantly different than the actual cash for the periods under study.

- Plan for current liability was significantly different than the actual current liability for the period under study.

- Plan for inventory was significantly different than the actual inventory for the period under study.

- Plan for receivables was significantly different than the actual receivables for the period under study.

- Plan for profit was significantly different than the actual profit for the period under study.

Conclusion

Horizon Addis tyre forecast its sales based on opinion of sales department. They decide the desired level of market share in each category so that they can forecast sales of each category. By adding the forecasted sales in each category they arrive at annual sales forecast. The problem with this forecasting method is that the forecasters become optimistic or pessimistic about the market condition. In 2008 they were optimistic about the market and forecasted 421,100 units to sell but they sold 241,019 units of tyre. It was 57.2% of the plan. In recent years sales forecast was understated because they were less optimistic about the market. The forecast decreased year after year in quantity in the period under study.

Recent years the sales forecast was understated because they are rely on government purchase. The company sold most of its products to the government. 80% of its sales at any given year are sold to the government. All government organizations buy their tyre consumption from Horizon Addis to support the local economy. The company is benefiting from the government policy. But it has to attract other customers as well. It has to advertise its product more aggressively. It is not safe to put 80 % of your egg in one basket.

The finance department experts forecast the raw material requirement for the next budget year usually they prepare the forecast in December. On December they already have 6 months inventory for the next budget year. For remaining 6 month of the year they add up 10% to the last order price. They did not use any forecasting method discussed in the previous chapter to forecast material cost. So they prepare the forecast based on actual order for 6 months and 10% add up to the last order price for the remaining 6 months. The forecasting method used resulted in significant difference between the plan and the actual result. In 2008 it was 85% of the plan, in 2009 it was 70% of the plan, in 2010 it was 83% of the plan and 2011 it was 125% of the plan.

The company's market share at 2011 was 12%. There is huge market potential for Horizon Addis in the domestic market. The marketing budget for 2012 was 3.5 million birr but they used only 1.5 million birr. Research done by marketing department shows that most people do not know the new name of the company. The company does not advertise on Television. They advertise on radio for six week consecutively but the rest of the year they do not advertise. They advertise on

AddisZemen newspaper twice a week but most people do not read this newspaper. So the company has to use its advertisement budget appropriately and use more suitable media to reach the audience. Due to this reason the company sales in terms of quantity is decreasing year after year. From 2008 to 2011 the company lost 21% of its market.

The company has to improve the quality of its product. Bridgestone tyre can travel 90,000 km in its life time but Horizon Addis tyre can Travel only 50,000 km in its life time. This huge difference affects tyre customers which brand to buy.

The company has huge amount of inventory at any given time. It has six month sales as raw material inventory and two month sales as finished good inventory as safety stock. Due to this reason the company had 243,046,000 birr inventory in 2011.

Inventory has two costs, one holding the inventory and the second for the problems it hides. Just as water in a lake hides the rocks. (Heizer and Render 2004)

Inventory is a waste; therefore the company can eliminate this waste and use its resources more productively.

Recommendation

Based on the result of the study, the following recommendations are forwarded:-

- The market share of Horizon Addis in 2011 was 12%. This shows that there is huge potential for its product in the domestics market. The company is relying on government purchases. Government purchase accounts 80 % of its sales. The company has to adversities it product aggressively through right channels. Research done by marketing department shows that most people do not know the new name of the company. It should improve the quality of its product. Imported tyres have much longer life time than Horizon Addis tyre.

- The company has huge amount of raw material and finished goods inventory as safety stock. It has to eliminate this waste. Inventory has two cost one holding inventory and the second for the problems it hides

- The company has to forecast its inventory more realistically. There was significant difference between the plan and the actual inventory. When the price of its product increases the value of its inventory will also increase. The company increased price year after year. They have to appropriately forecast their raw material inventory also.

- The company has to forecast its raw material requirement more appropriately. Most of the time the forecast and the actual cost are significantly different. They have to see world market price trends. There are different websites and TV channels which forecasts prices of commodities. They have search from these sources.

- The company has to forecast its receivables more appropriately. There was significant difference between the plan and the actual receivables recently. When the company increase its prices the value of its receivable also increases because those sales which are sold on credit with less than 45 days are considered receivables. Therefore the company has to consider the price of its product when forecasting its receivables. The last four years the company increased its prices every year.

- The company has to forecast its cash more appropriately. There was significant difference between the plan and the actual cash for a number of years, net income and

other financing activities have to be forecasted more realistically so that they can forecast cash appropriately.

- The company has to forecast its profit more appropriately. There were significant differences for a number of years. This was due to difference in materials cost and amount of sales. Therefore the company has to forecast these elements of income statements more appropriately to forecast profit more realistically .

- The company has to forecast its current liability more appropriately. There was significant difference for a number of years. Other elements of current liabilities than trade account payable and indebtedness should be considered when preparing the forecast. These elements created huge difference between the plan and the actual current liabilities.

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Appendixes 1

Interview for sales department

1. What are the assumptions you consider when you forecast annual sales?
2. Do you prepare aggregate demand and supply of tyre in the local market?
3. What is the market share of horizon Addis? do you prepare it annually ?
4. Is there seasonality for sales of tyre?
5. Which financial forecasting method do you use to forecast annual sales and why?
6. Do you revise your forecast depending on your performance?
7. There was significant discrepancy between forecasted sales of retread tyre and actual sale for a number of years? What the reasons?
8. You have huge amount of finished goods invitatory as safety stock. What is the reason?
9. How much was your advertisement budget in 2012?
10 . Do you advertise your product when there is excess stock?
11 . What is the impact of advertisement on your sales performance?
12 . How many times do you advertise on TV, radio and news paper in?
13 . What are the major challenges you face when preparing sales forecast?
14 . Is there any comment?

Appendixes 2

Interview for finance department

Balance sheet

1. Do you have credit sales?

2. If yes, which financial forecasting method do you use to forecast your receivables?

3. What method do you use to forecast your cash requirement?

4. Did you company faces cash shortages inthe past?

5. If yes, what measures do you take?

6. Do you buy goods and services on credit?

7. If yes, how do you forecast your payables?

8. Does the company has debt?

9. If yes, how do you forecast the debt level?

10. How do you fore cast the retained earning

Income statement

11. How do you forecast material and energy?

12. In 2011, there is significant difference between the forecasted material and energy and the actual result. What was the reason?

13 How do you forecast operating expenses?

14. How do you forecast profit?

15. There were a significant difference between the forecast and the actual result. What were the reasons?

16. How do you forecast cost of goods for Inner tube ?

17. There were significant difference between the forecast and the actual result for many years. What were the reasons?

18. What are the major challenges you face when preparing the forecast?

19. Is there any comment?

Appendixes 3

Questionnaire for tyre importers

1. Which tyre brand do you import to the local market?

2. How much worth of tyre do you import per year for the Last five year?

3. Do you advertise your product on tv, radio, and news Papers?

4. If yes, how many times do you advertise on tv, radio and newspapers?

5. How much was your advertisement budget last year?

6. How much is the price of your product?

7. is the price of your product cheap or expensive compare to Addis tyre?