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ASSESSMENT OF BALANCED SCORECARD IMPLEMENTATION PRACTICE AND ITS  
CHALLENGES  
ON PROCUREMENT DEPARTMENT  
IN



A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR  
THE AWARD OF MA DEGREE IN LOGISTICS AND SUPPLY CHAIN MANAGEMENT

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## Declaration

I, Wubeamlak Mekonnen declare that, this paper prepared for the partial fulfillment of the requirements for MA in Logistics and Supply Chain Management entitled “**Assessment of Balanced Scorecard implementation Practice and its challenges on Procurement Department in Ethio telecom**” is prepared with my own effort. This thesis is my original work and has not been presented for a Degree in any other University and I have made it independently with the close advice and guidance of my advisor.

Wubeamlak Mekonnen

Signature \_\_\_\_\_

Date \_\_\_\_\_

## Certification

This is to certify that Ato Wubeamlak Mekonnen has carried out this research work on the topic entitled “**Assessment of Balanced Scorecard implementation Practice and its challenges on Procurement Department in Ethio telecom**” under my supervision. This work is original in nature and it is sufficient for submission for the partial fulfillment for the award of MA in Logistics and Supply Chain Management.

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ADDIS ABABA UNIVERSITY  
SCHOOL OF COMMERCE  
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(MA PROGRAM)

This is to certify that the thesis prepared by Wubeamlak Mekonnen entitled **Assessment of Balanced Scorecard implementation Practice and its challenges on Procurement Department in Ethio telecom**, which is submitted in partial fulfillments of the requirements for the degree of Masters in Logistics and Supply Chain Management (LSCM) complies with the regulation of the university and meet the accepted standard with respect to originality and quality.

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## ABSTRACT

The purpose of this study is to assess Balanced Scorecard implementation Practice and its challenges on Procurement department in Ethio telecom. Both qualitative and quantitative approaches are employed. The data are gathered from employees of sourcing/procurement department in ethio telecom through survey questionnaires and 73 questionnaires were circulated all of them were received and analyzed using descriptive statistical tools like Mean, standard deviations and frequencies. Software called Statistical Package for Social Sciences (SPSS) was used for the data analysis. The study identified major bottleneck for implementation of BSC on procurement department in ethio telecom are Balance Scorecard measurement implementation data sources are not clearly stated, BSC evaluation system was not user friendly, Performance progress was not monitored periodically before formal evaluation, boss influence on evaluation was reduced, evaluation was not performed always based on plan, and lack of technical skill on balanced scorecard. Finally, the thesis concludes by proposing recommendations to management in order to use different methods in solving challenges faced in balanced score card(BSC) implementation on procurement department such as facilitating the accomplishment of BSC goals ,elaborating and expounding key areas of BSC to the staff, supervising the implementation process, providing clarification, assessing achievement of lower level employees, clearly state measurement data source and validated by authorized body, execute evaluation always based on plan without boss influence on the result obtained, open and transparent communication, enlightening staff on the importance of procurement planning and BSC to fulfil company's strategies, coordination between top management and low level management and acting as source of information.

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## **Acronyms**

BPR Business Process Reengineering

KPIs Key Performance Indicators

TQM Total Quality Management

FGD Focus group discussion

3PL Third party logistics

MFA Master Frame Agreement

ERP Enterprise resource Planning

PO purchase Order

## CHAPTER ONE: INTRODUCTION

---

### 1.1 Background of the Study

The Balanced Scorecard tries to translate an organization's strategic direction and objective in to actionable initiative and measurements. During 1990s, Kaplan and Norton had made several studies in several companies throughout the world with the purpose of exploring the new methods of performance measurement that is based on numerous foundations of management theories. These include management by objective (Drucker, 1954), principles of management (Fayol, 1976), open book management (Case, 1978), leading change (Kotter, 1996) hierarchy of needs (Maslow, 1962, and value discipline (Treacy and Wieseemy, 1995). Finally, Balanced Scorecard was developed by Kaplan and Norton (1992). Since the concept was introduced in the early 1990's by Kaplan and Norton as a Performance measurement system, the Balanced Scorecard (BSC) has attracted Considerable interest among different organization practitioners and researchers.

A study conducted by Rigby, D. and Bilodeau, B. (2009) indicates that about 49.1% organizations in North America, 54% in European, 52% in Asia, and 56% in Latin America use the Balanced Scorecard. Due to its wide acceptance and effectiveness, the Balanced Scorecard (BSC) was proclaimed one of the 75 most influential ideas to the twentieth century by the Harvard business review (Niven 2005). Balanced Scorecard was originally conceived for profit world mind; however due to demonstrating accountability and generating results attracting scarce resources, creating a focus on strategy, producing information, self-preservation, driving change and inspiring trust.

In 1992, Kaplan and Norton published an article about the Balanced Scorecard (BSC) [KN92]. At that time, it was a new approach to strategic management. They recognized some of the weaknesses and vagueness of previous management approaches. The balanced scorecard approach provides a clear description as to what companies should measure in order to 'balance' their financial perspectives. Nowadays many large companies use a performance measurement system like the BSC but many smaller companies have no performance measurement system [SAG06]. Companies that start with a performance measurement system face difficulties with the implementation.

The telecommunications service was introduced in Ethiopia by Emperor Menelik II in 1894 when the construction of the telephone line from Hara to the capital city, Addis Ababa, was commenced. Then the interurban network was continued to expand satisfactorily in all other directions from the capital. Many important centers in the empire were interconnected by lines, thus facilitating long distance communication with the assistants or operators at intermediate stations frequently acting as verbal human repeaters between the distant calling parties.

After the establishment, through many years, Ethio telecom take different names given that the objective remains to be engaging in accordance with development policies and priorities of the government in construction, operation, maintenance, expansion and provision of telecommunication services. In 1989 E. C Ethiopia telecommunication corporation formed by the proclamation of 10/1989. A highly visible consequence of the phenomenal developments in the telecommunication sector in Ethiopia is the emergence of the economic growth and the big role of telecommunication service in the word. From the last fifteen years on ward the telecommunication operator in Ethiopia is experienced tremendous change and nowadays it undertakes multiple network and service expansion.

As a continuation of the 2005/06-2009/10 five year plan the Ethiopian government has decided to focus on the improvement of telecommunication services, considering them as a key lever of the development of Ethiopia; accordingly ethio telecom was born, on Monday 29<sup>th</sup> November 2010, from this ambition of supporting the steady growth of our country, within the Growth and Transformation Plan (GTP), with ambitious objectives for 2015 the government has also found it necessary to involve the world-class telecom operator with viable experience of employees and capability in the sector so as to render world standard telecom services and formed a new telecom company of ethio telecom “under the regulation which is issued by the council of ministers pursuant to article 5 of the definition of powers and duties of the / executive organizations of the Federal Democratic Republic of Ethiopia proclamation No.6912010 and article 47(a) of the public Enterprises proclamation No. 25/1992 November 20, 2003 E.C.

To achieve operational improvements in support of an organization’s strategic objectives and the steady growth of the country’s economy, ethio telecom re-structured its functions in different

Divisions, Departments and Sections. Sourcing and Facilities Division (SFD) is one of biggest support divisions' that is in charge of supplying goods, services and works needed by end users. Sourcing Department is one of the three Departments' which exists in SFD whose objectives are: “ providing step by step instructions for responsible ethio personnel in Sourcing activities, aligning their decision and duty to the Sourcing policy and strategies; ensuring Sourcing activities are conducted as per the Sourcing principles stated in the policy; aligning Balanced Scorecard to build up results based measurement system and develop new attitude of employees who choose to be measured only through their results throughout ethio telecom’.

Accordingly, to enhance the company’s efficiency and effectiveness Balanced Scorecard commenced implementation on July 01, 2015. Thus, this Master thesis attempts to assess Balanced Scorecard implementation Practice and challenges on Procurement Department in Ethio telecom during this period and gives constructive feedback for the continuity of the tool.

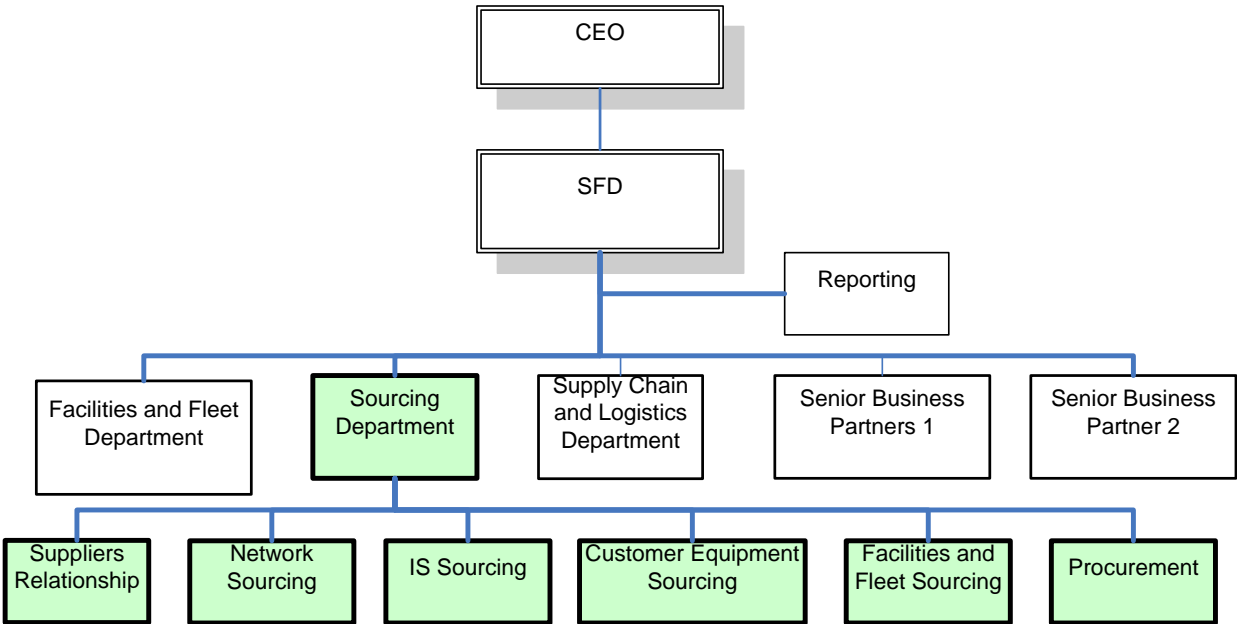


Figure 1.1. Divisional structure of SFD adapted from company’s hierarchical structure.

## 1.2 Problem Statement

Historically, the performance measurement systems were based on the management accounting systems, which were primarily based on the financial performance results of the company. (Otley, 1999) They were based on the approach, developed by Anthony (1965), when management control, strategic planning and operational control were targeted to be distinguished. However, Anthony (1965) neglected operational control and strategic planning as too complex questions and focused mainly on management control. However, the importance of more sophisticated approaches, taking into consideration the other dimensions, was clear. The Balanced Scorecard (BSC) framework, introduced by Kaplan & Norton (1992), was an attempt to integrate all dimensions, having high importance for the management of performance; Balanced Scorecard is one of the best available approaches providing the overview of the strategy of a company or a business unit. Thus, the researcher expects the Balanced Scorecard to be a relevant tool for providing a measurement and assist to boost procurement efficiency.

Although many different organizations are using the BSC as a management technique to implement corporate strategy, a number of them have encountered different problems when trying to introduce the concept in their business. Majority have either implemented the BSC but without any significant improvement in performance, or they have given up in the implementation process itself. What makes the implementation of the BSC so difficult? A literature review and different cases will be used to identify reasons for Balanced Scorecard implementation challenges on Procurement. Taking this as a foundation, it should be assessed if there is any relation between the many reasons discovered by researchers and the reasons identified as causing the Balanced Scorecard implementation challenged on measurement of employee performance/appraisal and/or the assigned task to the employees/buyers on Procurement Department in Ethio telecom.

Based on above studies, it is evident that though studies have been done on procurement field, limited studies have been done on Balanced Scorecard implementation challenges on telecommunication sector, mainly on procurement activities. Thus, the aim of this study is to examine the existing Practice and its challenges of implementing Balanced Scorecard on Procurement department..

### **1.3 Research Questions**

Consequently, throughout this master thesis the researcher tried to address the following research questions to achieve the intended research objectives:

1. What are the challenges of implementing the Balanced Scorecard Card (BSC) in procurement department of Ethio telecom?
2. To what extent is the BSC measurement is implemented and stakeholders' trained and understood BSC in procurement department of Ethio telecom?
3. To what extent is the BSC evaluation system took place in procurement department of Ethio telecom?

### **1.4 Objectives of the Study**

#### **1.4.1 General objective**

The main objective of this study is to assess Balanced Scorecard implementation Practice and its challenges on Procurement Department in Ethio telecom

#### **1.4.2 Specific objectives**

On the basis of the above general objective, this research paper derives the following specific objectives which are:

1. To identify the challenges of implementing the Balanced Scorecard Card (BSC) and to make possible recommendations for the challenges identified.
2. To know the extent to which BSC measurement has been implemented in procurement department of Ethio telecom
3. To assess in what extent is the BSC evaluation system took place in procurement department of Ethio telecom.

### **1.5 Significance of the study**

BSC implementation has evolved to become an effective strategy execution framework. The BSC concept is seen as a critical foundation to optimize and execute procurement/purchasing process and besides helping organizations to articulate purchasing process in actionable terms, provides a road map for procurement activities execution and for aligning executives and employees in the work environment.

From this study it is expected to update the existing body of knowledge on BSC implementation on procurement improvement to stakeholders or organizations which may have interest to adopt the Balanced Score Card. It is hoped that the study yield information which is useful for future proper planning to implement BSC and optimize procurement activities in Ethio telecom to improve competence and meet their objective of increasing the status of the telecommunication services and customer satisfaction. The findings and recommendations of the study also are useful to the management of Ethio telecom, to be aware of the challenges encountered on and overcome them to effectively implement BSC on procurement activities and to appraise performance of Purchasing team's or buyers by using BSC method, through theoretical framework and adapt performance measurement smoothly to existing business environment. Consequently, the researcher hopes that the study forms a basis for further research on how to implement BSC on procurement and the challenges encountered to enhance the competence of the organizations.

### **1.6 Scope of the study**

BSC implementation on Procurement processes varies from one organization to another. This implies that nature of the firm and the nature of the business determine the implementation of BSC on procurement processes and techniques to adopt. The study was limited to assess on the Practice and challenges of implementing Balanced Scorecard on Procurement Department in Ethio telecom, which is one of sole telecom company in the country.

### **1.7 Limitation of the study**

In order to make the study more valuable and admirable the researcher applied his full knowledge but the study is not without limitations. Some of these include distributing question-

naire and made focus group discussion to the employees/ interviewees at their work place were the most difficult work but the researcher did his best to persuade the respondents for the successfulness of the study.

### **1.8 Organization of the Study**

The study is organized in the following ways. The first chapter was on background of the study, statement of the problem, and objectives of the study, research methods used, scope and limitations, and significance of the study. In the second chapter, theoretical literatures which cover issues related to BSC, Procurement Concept and Role in Supply Chain Management and Business Performance Measurement are reviewed. Under this topic a detailed coverage on the concept of the proposed study is given. In the third chapter, under this chapter, the type and design of the research; the subjects/participant of the study; the sources of data; the data collection tools/instruments employed; the procedures of data collection; and the methods of data analysis used should be described or illustrated. In the Fourth chapter data presentation, discussion and analysis are done. The last chapter, chapter five, provides conclusions and recommendations on the basis of the analysis made in the preceding chapter.

## CHAPTER TWO: LITERATURE REVIEW

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### 2.1 Introduction

This chapter examines the literature to develop a framework for this study. It is organized under the following subheadings: Conceptual framework, Concept of supply chain, strategic procurement, , why do strategic planning, basic components and characteristics of BSC, Tools and Techniques for Performance Measurement, barriers in procurement BSC implementation, Corporate strategy and procurement performance measurement, Effectiveness and Efficiency Dimensions in Procurement, performance measurement of purchasing process, purchasing performance and Purchasing Skills and Capabilities . Finally, the chapter gives a summary and highlights on issues raised and issues reviewed as well as the conceptual framework of the study.

### 2.2 Procurement Concept and Role in Supply Chain Management

#### 2.2.1 Strategic Procurement

The ideas about the necessity for the firms to give more attention for the purchasing function and the whole procurement department were already demonstrated at the beginning of the 1990s. Pearson and Gritzmacher (1990) proposed that purchasing function has to be oriented to strategic roles. Besides, procurement and supplier management needs to interact with other departments via the purchasing function in order to improve the monitoring environment of the supply market Pearson and Mendez (1994) suggested that procurement and supplier management must have the ability to execute the following activities: quality requirement assessment, training, supplier selection, total cost analysis, evaluation standards, strategic alliances and collaboration. Cox (1996) raised a problem of conceptualization and theory building within the developing discipline of purchasing and supply chain management. One of the questions addressed in his article was about the concept of strategic procurement management and the way that it differs from the traditional conception of purchasing and supply management. He stressed that there must be an attempt to provide a theoretical clarification of the optimal role for procurement within business management. Only in this way it is possible to develop operationally practical concepts, tools

and techniques and to assess under which circumstances and conditions they are 'fit for purpose' (Cox, 1996), where the main 'purpose' of every company is a profit.

Cox (1996) investigated the way to approach the effective business strategy through the strategic procurement management. The first and the vital point on which the author is basing procurement management model is proactive approach and in no case it can be reactive. If company is basing its business management on such approach, then company's boundaries need to change constantly in response to customer's preferences and the strategic procurement management must always focus on the ultimate role of the company.

Furthermore, Cox (1996) notifies that it is crucial to understand what adds value for the business and what profit margins are. That can be reached by proactive behavior of decision-maker and constant seek of how the costs and value are created in their supply and value chains, also in relation to the competitors. Only in that case strategic procurement management approach can be implemented because the very first task of this approach is to undertake value chain positioning. Value chain positioning concept means "the process by which the key decision-makers within a firm consciously undertake market positioning through an analysis of the totality of supply and value relationships within their markets" (Cox, 1996, p. 69). While the company is heading to achieving sustainable profitable advantage through the strategic procurement management, a number of external contractual relationships have to be considered. The decision of which ones of them 'fit for purpose' cannot be made only in relation to upstream external supply management. The decisions of procurement managers have to be made on the basis of the corporate strategic goals of the company in terms of its market and value positioning objectives.

In relation to the positioning of the procurement activities in company's value chain, in 1985 Porter has composed a value chain differentiating primary and supporting activities (van Weele, 2005). Primary activities are related to physical transformation and handling of the product that company is producing and distributing to its customers, whereas procurement is one of the supporting activities, which are enabling and supporting the primary activities. Procurement here relates to the activities of purchasing, some of which may be purchasing raw materials, manufacturing equipment, or buildings. These purchasing actions can be related to all primary activities and go along with supporting activities, such as technology development, HR management and

firm infrastructure, therefore Porter has distinct procurement as supporting activity for creating value in a company (van Weele, 2005).

Furthermore, Chen et al. (2004) distinguish slightly different approach to the success of the business through the strategic procurement. They state that strategic procurement is a vital link in a working supply chain and that strategic purchasing can give a competitive advantage to a firm by enabling the firm to: 1) foster close working relationship with limited number of suppliers, 2) promote open communication among supply chain partners and 3) develop long-term strategic relationship orientation to achieve mutual gains. Researchers feature procurement with two major goals (Lambert and Cooper, 2000; Skjott-Larsen et al., 2003; Christopher and Gattorna, 2005; Wisner, 2003; Piramuth, 2005): to ensure an uninterrupted flow of raw materials at the lowest total cost, and to improve the quality of the final product and to react rapidly to market changes.

Scholars agree that strategic procurement management is crucial for better financial performance of a company (e.g. Kerkhoff, 2005, Dimitri et al., 2006). Kerkhoff (2005) notices that of the financial situation of the company through the procurement function can be improved by locating and exploiting the potential for increased profit and reduced procurement expenditures. Moreover, the way managers design the procurement has a major effect on company's performance in both short and long run (Dimitri et al., 2006). Procurement is influencing short-term performance because it is immediately determining the cost and quality of inputs in the supply chains; whereas procurement has a great significance for a long-term performance by determining suppliers' and more generally firms' incentives to invest in R&D and to innovate in general (Dimitri et al., 2006).

Additionally to the improvement of financial measures, the shift from simple purchasing to strategic procurement (in different literature it may be named as strategic purchasing) would raise the role of procurement department to the higher position, equaling its importance to the research and development, production or marketing and sales, which would provide purchasers with a chance to contribute their know-how to the strategic corporate decisions (Kerkhoff, 2005).

Kerckhoff (2005) suggests several phases of the provision of strategic procurement. First, an analytical background for accounting from existing data and information has to be created. That means that an effort should be put in mechanical and very detailed work. Second, creative work is required in order to develop an efficient profit-oriented procurement strategy, which has to be consistently implemented.

### **2.3 Emergence and Evolution of BSC and Strategic Planning**

In the late 1980s, organizations started realizing that in order to assess the overall health and performance of the organization, it was important to measure and manage nonfinancial measures also in addition to the traditional financial measures such as profits, share values, sales volumes etc. Traditional financial measures are usually the lag indicators of the business performance and tell the story of the past. They do not provide any insight into the intangible assets and capabilities that need to be developed in order to be able to achieve the desired financial results. For example, frontline workers in a manufacturing set up are far removed from these financial measures and have no idea about how their day to day work translates into financial results. Thus, financial measures fail in assessing the intangible value possessed by the organization or the value it can create. They can also fail the knowledge based strategies by treating human capital as expense items; whereas it is widely recognized that human capital is actually the most important component of the value creation chain (Kaplan and Norton, 1996).

Balanced Scorecard was developed in response to this need (Kaplan & Norton 1992; 1996; 2001). BSC introduced the idea of measuring the drivers of performance, while retaining the measures of financial performance (Brown, 2000).

The term 'Balanced Scorecard' was coined by Art Schneiderman in 1987. But, till the early 1990's the system was understood to be a mix of financial and non-financial measures limited to 15-20 numbers which were clustered in four perspectives. BSC became a popular term when Kaplan and Norton who worked extensively on scorecards published reports of several BSC implementation successes. However, there were no clear definitions of BSC.

The measures on the Balanced Scorecard ensure a balance between external measures for shareholders and customers, and internal measures of critical business processes, innovation and

learning and growth. It strikes a balance between the outcome measures of past performance (lag indicators); the measures that drive future performance (lead indicators), and also between clearly quantifiable and somewhat subjective measures.

The word "strategy" comes from the Greek strategos, referring to a military general and combining stratos (the army) and ago (to lead). The primary tasks of strategic management are to understand the environment, define organizational goals, identify options, make and implement decisions, and evaluate actual performance. Thus, strategic planning aims to exploit the new and different opportunities of tomorrow, in contrast to long-range planning, which tries to optimize for tomorrow the trends of today (Drucker, 1980).

The long-range planning cycle begins by monitoring selected trends of interest to the organization, forecasting the expected future of those trends (usually based upon extrapolation from historical data using regression analysis or a similar technique), defining the desired future by setting organizational goals in the context of the expected future, developing and implementing specific policies and actions designed to reduce the difference between the expected future and the desired future, and monitoring the effects of these actions and policies on the selected trend (Kraus et al, 2006).

### **2.3.1 Why do strategic planning?**

Strategic Planning helps management understand the current situation. This in turn allows management to plan for the future. In a world of rapid change, it is becoming imperative for management to think strategically (plan for the future). And since the rate of change seems to be escalating, the importance of strategic planning continues to grow. In fact, the best managed companies tend to engage in continuous strategic planning. Some organizations have intuitive thinkers who almost seem to see into the future. Therefore, strategic planning is a way of preparing for the future by attempting to simulate the future (Bryson, 1995).

Strategic Planning has a tendency to force people to think about the future. This is extremely important since many organizations are inward thinking, focusing too much on the short-term.

Strategic planning looks at the long-term which is how organizations survive and thrive. It has been proven that organizations that focus on the long-term through strategic planning outperform organizations that lack long-term planning. Consequently, one of the benefits of strategic planning is long-term performance and growth. Another benefit of strategic planning is communication. Strategic Plans communicate the intentions of management to employees, shareholders, and others (ibid).

### 2.3.2 Basic Components and Characteristics of BSC

According to Kaplan and Norton (1996) there are six basic components of BSC. They are perspectives, themes, objectives, measures, targets, and initiatives.

**Perspectives:** There are four standard perspectives as suggested by Kaplan and Norton. These are financial, customer, internal business process, and learning and growth. However, organizations' can choose any number of perspectives as may suit their need of sufficiently measuring the present performance and the drivers of future performance. The number would depend on how the stakeholders' expectations are being represented and the manner in which the organization would decipher their strategy. All relevant factors for strategy execution are accounted for in these perspectives, thus creating a balance between the short term and long term objectives as well as linking the desired outcomes and the performance drivers for those outcomes. Thus, perspectives form the basic architecture of BSC.

**Themes:** Themes are inherent in the strategy and provide an insight into how an organization would carry out its mission. There are usually three to four basic themes consisting of a collection of objectives across perspectives which enable execution of the theme.

**Objectives:** They highlight critical factors to the success of the organization which must certainly be achieved.

**Measures:** What gets measured gets achieved. Measures help organisation determine its success in executing strategy. The two fundamental purposes served by measures are organizational motivation and objective evaluation of the strategy as well as strategic learning.

**Targets:** Targets help define the level of performance or the rate of improvement that is needed.

**Initiatives:** These are key action programs that are required to achieve the objectives.

The distinguishing characteristic of BSC which is not found in other management control systems is the assumption of the cause-and-effect relationships between measures across the four perspectives. Strategy is understood in terms of a series of linked hypothesis that describe cause-and-effect relationships. For example, it can be hypothesized that ‘employee satisfaction’ shall lead to ‘employee retention’ and ‘employee productivity’.

Accordingly, when there is improvement in ‘employee satisfaction’ the other two ‘effect’ parameters shall also show improvements. If they don’t, the hypothesis can be considered invalid. Thus, measurements in BSC provide an ongoing account of the projected cause and- effect relationships across perspectives which are essential for making informed decisions. The causal relationships across four perspectives help predict the financial performance based on the indication from non-financial measures.

BSC constitutes a good balance between financial and non-financial measures. Objectives across the four perspectives show balance between the external measures usually present in the financial and customer perspectives and the internal measures that are in the other two perspectives of internal business process and learning and growth. It also indicates a balance between the lag indicators of past performance and the lead indicators that drive future performance.

Moreover, the Balanced Scorecard creates awareness of the strategic goals and consequent operational goals through cascading set of performance indicators, enabling well-coordinated targets and behavior across the organization (Beatham et al., 2004).

There are two key aspects in development of a Balanced Scorecard (Axelsson et al., 2002):

- i. finding the factors, which are driving long-term performance in a particular organization of strategic business unit, and
- ii. balancing the performance drivers, i.e. using measures from different and complementary functional areas

It is important to notice that the nature of Balanced Scorecard is contrasting with other traditional measurement systems, where mostly short-term and strictly financial measures are used. (Axelsson et al., 2002)

Thus, the Balanced Scorecard as a tool is beneficial for top level and lower level management as well as buyers, as it provides the clear understanding of relationship between objectives, activities and results; also it enables all these factors to be integrated into the management process. One of the main targets of the researcher's thesis is to investigate how the previously mentioned relationship helps to support procurement optimization by using the management tool (i.e; BSC)



Figure 2.1: Adapted from Robert S. Kaplan and David P. Norton, "Using the Balanced Scorecard as a Strategic Management System," Harvard Business Review (January-February 1996): 76

## **Financial Perspective**

Naturally, the most obvious financial measures are related to the profitability of the business unit. Axelsson (2002) identified the financial perspective as the measures, related to the costs of running the operations and the results. However, depending on the life cycle of the business unit, other financial objectives can be applied. The main directions of non-profitability financial objectives are (Kaplan & Norton, 1996a):

Rapid growth conform the business units in the early stage of development. These objectives emphasize development, particularly depending on the nature of the business unit e.g. investing in expansion of operational capabilities and systems, expanding global networks, developing relationships with various stakeholders, etc.

Sustain – applied in developed business units, which still attract investments, however the emphasis on return on investments is introduced, in contrary to the rapid growth direction. The nature of investments in this stage is targeted at e.g. relieving bottlenecks and sustaining continuous improvements.

Harvest – used in the mature business units, which don't attract investments any more, apart from repair and maintenance activities. The main target of such business units is to maximize the cash flow back to the corporation.

Thus, depending on the development stage of the business unit, the objectives and measurements are different. A business unit in the rapid growth stage will apply financial measures such as sales growth in new markets and with new customers, maintaining levels of investments into product or process development and employee capabilities. During the sustain stage, the traditional measures such as return on capital employed, gross margin, economic value added, shareholder value and others, targeting to the same concept – highest return on investment. Finally, as the harvest stage identifies the short time remaining in the economic life of the business unit, thus the measures are directed towards increased cash flow from the business unit to the company, in contrast to the reverse cash flow in the previous stages.

## **Customer Perspective**

The customer perspective is based on particular customer segments, where the business unit is competing. A basic description of customer perspective, provided by Axelsson (2002), is the internal customers' views on the development of the operations. There are five main aspects of customer perspective, which must be measured in any type of the business unit:

Customer satisfaction – this measure is extremely important, however it can be taken into account only when the customers are completely or extremely satisfied – only in this case customer retention and loyalty can be expected.

Customer retention – a basic measure, identifying the customer retention rate (wiki – measured as the number of customers placing a second order in 12 months after the first order) as well as customer loyalty.

New customer acquisition – rate identifying the number of new customers acquired in a certain period of time.

Customer profitability – without customer profitability, the other customer perspective measures are irrelevant, as after all, the customer profitability is the most relevant measure. If the company finds out, that the efforts and investments required to e.g. acquire new customer is higher than the margins earned from selling to these customers, the unprofitable customers should be discouraged.

Market and account share – the measures are targeting at identifying the market share and account share (of 'customer's wallet' share) in the target customer segments. These measures are particularly important as they are complementary to the purely financial measures of sales, which can provide false positive results due to sales in the non-target segments.

## Internal Business Processes Perspective

The internal business process measurements should focus on the most crucial functions of the business unit, which contribute the most to achievements in the financial objectives of the company as well as customer perspective. The internal business process perspective reveals the significant differences between measurements in the Balanced Scorecard and other approaches. The difference mainly is noticed in attempt to improve the internal processes – the Balanced Scorecard emphasizes the crucial importance of innovation and the other approaches are limited to measurements of improvement in the existing processes. It is clearly proven that in order to achieve long-term success, innovations in services, actions and tools are necessary. On the other hand, improvements in existing processes can ensure only short-term benefits. Thus, Balanced Scorecard's framework is including both the improvements in the existing processes as well as innovations, as only in this way both short-term and long-term financial benefits can be achieved. Depending on the nature of the business, the examples of the internal business process perspective could be the number of agreements settled, initiatives taken, etc., as defined by Axelsson (2002).

The internal business process perspective is illustrated in the picture below, presenting the three main functions of the perspective: the innovation process, the operations process and the post-sale service process.

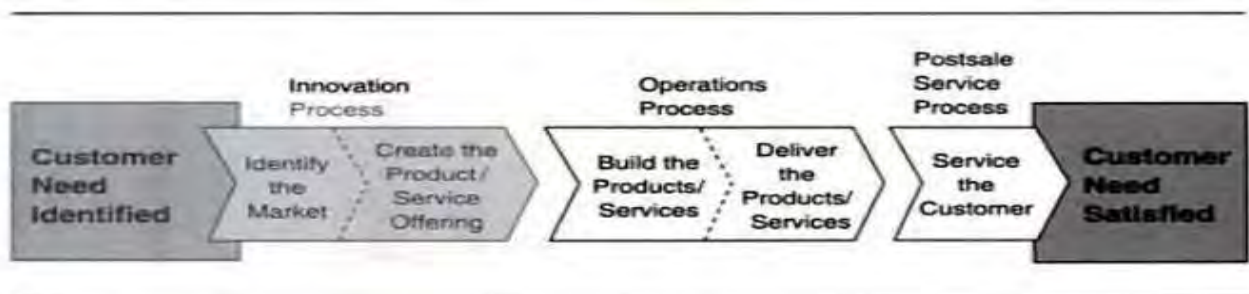


Figure 2.2. Internal business process perspective: Kaplan & Norton (1996b), p. 98

## Learning and Growth Perspective

In the learning and growth perspective, three main sources are considered:

People – employee satisfaction, employee retention, employee skills based on the market requirements and investments in training in order to achieve them.

Systems – the availability, suitability and usability of the IT systems, meeting employee and customer demands.

Organizational procedures – improvements in the critical customer-based and internal processes.

Moreover, as Axelsson (2002) notices, the suitable examples of measures in learning & growth perspective could be the number of days employees spent in training, evaluation of new recruitment patterns, etc.

### **What is “Balance Scorecard”?**

The Balanced Scorecard aims for a complete description of everything that it is important to know in order to execute the company strategy spread over four perspectives (Olve et al., 2003). Besides introducing non-financial measures to Chapter 2: The Balanced Scorecard Concept motivates optimal management decisions, the Balanced Scorecard shows its “balance” in a few other ways:

According to Olve et al. (1999), the BSC should link short-term operational control to long-term vision and strategy, following day-to-day operations which will affect tomorrow’s development. In this way, the BSC is based on three dimensions in time: yesterday, today, and tomorrow: “what we do today for tomorrow may have no noticeable financial impact until the day after tomorrow” (Olve et al., 1999). In this context, the Balanced Scorecard contains a mix of lagging (performance objectives) and leading indicators (performance drivers). Lagging indicators represent the consequences of previously taken actions, while leading indicators are measures that drive and enable the results measured by the lagging indicators (Niven 2005 and 2006, Olve et al. 1999 and 2003).

The Balanced Scorecard is balanced in that it shows both the internal and external aspects of the business. It indicates the internal processes important to achieve business results, but also the external view from the customers' and market position (Olve et al., 2003).

The Balanced Scorecard is linked through a series of cause-and-effect assumptions (Olve et al. 2003). According to Kaplan and Norton (2000), strategy is the movement of an organization towards a desired but uncertain future position. It consists of a series of linked hypotheses and assumptions on the best way to reach this future position. According to Niven (2006), the Balanced Scorecard aims to document and test the assumptions which inhere to the strategy. He argues that the Balanced Scorecard should describe the strategy through selected measures and objectives appearing in the strategy map. Measures linked together in a cause-and-effect chain of relationships from the performance drivers should be reflected in the performance objectives in the Financial Perspective.

#### **2.4 Implementation Directions for Procurement Performance Measurement**

In the previous sub-chapter (2.3.2 Emergency & Evolution of BSC and Strategic planning) the researcher defined the basic components & characteristics of BSC. Before assessing the BSC on the procurement performance measurement, the researcher wants to explain several issues, which set certain specificity on the procurement performance measurement. First of all the researcher discuss general tools and techniques for performance measurement, barriers which are appearing during the implementation of the BSC in practice, in order to be aware of certain issues while assessing procurement optimisation. Second, the researcher explaining the relation between procurement function and company's corporate plan which would help to review Balanced Scorecard on procurement department. Furthermore, the researcher explain the dimensions of efficiency and effectiveness in procurement performance measurement recommended by van Weele (2002), which would complement to BSC application to the procurement.

### **2.4.1 Tools and Techniques for Performance Measurement**

Bull (2007) identified three dimensions, upon which the performance could be measured: efficiency, effectiveness and efficacy. The choice of the relevant measurement dimensions is dependent on the strategy chosen:

The efficiency dimension is related to the resource-based view of a firm, when the emphasis is noted on how efficiently the resources of a company are used.

The effectiveness dimension is based on the market-led strategy, when meeting customer demands and creating added-value is essential

The efficacy dimension, founded on success-led strategy, when the measures are targeted at evaluating, how well a company is able to achieve its vision and purpose.

Bull (2007) claims that the third dimension – efficacy is rarely used, as the most common dimensions of performance measurement are efficiency and effectiveness. According to the definition it can be understood that efficacy dimension is covering both efficiency and effectiveness dimensions and it is a very broad dimension. Thus, I believe that as efficacy dimension is reflected by effectiveness and efficiency dimensions, it is reasonable to concentrate of only effectiveness and efficiency in my research.

Performance measurement, according to the measurement recommendations, can have several kinds of frameworks:

A structural framework (e.g. Balanced Scorecard (Kaplan and Norton, 1992)) specifying the typology for performance measurement management; or

A procedural framework (e.g. Wisner and Fawcett (1991) framework) – a step-by step process for developing performance measures from strategy

A performance measurement framework facilitates the building of performance measurement system by:

Setting the boundaries for measurement, clarifying the dimensions or views of measurement and possibly predicting the relations among the dimensions

(Folan and Browne, 2005)

The successful performance measurement system must contain two frameworks – structural and procedural, and a number of performance measurement tools, e.g.

The Balanced Scorecard (Kaplan and Norton, 1992) is combining the financial measures with non-financial measures, which are evaluating the performance from three other perspectives (customers, internal business processes, and learning and growth); whereas other frameworks are relying on either only financial measures or only non-financial measures (e.g. Maskel, 1992, Dixon, et al., 1990). The balance of the measures enables companies to follow financial results and at the same time observe and control the progress in building the capabilities and acquiring the intangible assets they would need for future growth (Kaplan and Norton, 1996). In this way the Balanced Scorecard is not changing the previous frameworks which are based on financial measures, but it is complementing them by additional view.

Moreover, the balance scorecard is oriented towards the long-term strategic objectives by ensuring that short-term actions are contributing to the long-term strategy. The short-term actions are linked to the long-term actions by four management processes: translating the vision, communicating and linking, business planning, and feedback and learning.

#### **2.4.2 Barriers in Procurement BSC Implementation**

The application of the Balanced Scorecard for the purchasing department is not complicated from the first sight if all the guidelines provided by the experienced academics and practitioners are followed. However, the research of Wagner & Kaufmann (2004) proved it to be more difficult than expected.

The main barriers during initiation and set-up of Balanced Scorecard in purchasing function, as Wagner & Kaufmann (2004) claim, are:

Lack of commitment, which means lack of motivation from people who develop and work with corporately initiated procurement BSC;

Adverse support from consultants – experience is needed for implementation of procurement BSC, thus, if there is lack of experience inside the company, support from external consultants should be invoke;

Lack of top-management support – top-managers should support the implementation of procurement BSC right from the beginning in order to make it successful;

Insufficient alignment between BSCs in different areas of a corporation, it is extremely significant to align all BSCs in one company, in order to prevent sub optimisation between different departments;

Lack of purchasing vision and strategy – strategy must be clearly formulated, approved and frequently emphasized during the score carding process. Additionally, procurement strategy should support procurement vision, based on internal and external situation evaluation;

Difficulties identifying strategic objectives and cause and effect relationships between them;

Lack of completeness, happening in case when several elements of Balanced Scorecard are not completed, e.g. BSC matrix, BSC story and BSC map presenting strategic goals, indicators and targets for each perspective and cause-effect relationships between the objectives.

Consequently, the researcher intended to identify the existing practice of BSC implementation and its challenges in procurement department of ethio telecom vis-à-vis the authors' Wagner & Kaufmann (2004) claim during initiation and set-up of Balanced Scorecard in purchasing function to provide possible solution to alleviate BSC implementation undertaking on sourcing department.

### **2.4.3 Corporate Strategy and Procurement Performance Measurement**

Procurement department, like all other departments in a company, is an element of the overall organisation, which must contribute to the achievement of the corporate goals. Thus a clear link between the corporate strategy and procurement strategy is crucial to understand, follow and im-

plement in each function and action. The position of the procurement department in the overall strategic map of a company can be exemplified as in the picture below.



Figure 2.3. Purchasing position in corporate business plan. Redrawn from Jones and Oliver, 2006, p.39

It is clear, that although each department has its own strategy, goals and KPIs, all these factors must feed upwards to the corporate business plan. Thus the mentioned factors are crucially dependent on the company vision, values and development directions, defined by the top strategic management team. (Jones & Oliver, 2006).

Moreover, the strategy and targets of the procurement function should not only reflect the company's vision and development directions, but as well should represent the perception of the top strategic managers to the procurement function. Consequently, the KPIs of the procurement function should also reflect the top management attitude towards procurement. (Farmer and van Weele, 1995)

Depending on the perception of the top management, there are several ways that purchasing department can be seen, organized and measured:

Operational, administrative activity. This is the most basic approach towards purchasing, more noticeable historically, when the purchasing was considered to be a passive function of the company. ((Pearson and Gritzmacher, 1990; Carr and Smeltzer, 1999; Ammer, 1989). The performance measurement in this case is based on such factors as order backlog, purchasing administrative lead time, number of order issued, adherence of existing procedures, etc. (Farmer & Van Weele, 1995)

Part of integrated logistics – in this case the purchasing department is already considered as an element of a system. Particularly, purchasing is seen as a part of the supply chain, where various parts have significant influence on each other (Lambert et al., 1998, B. Jones and J. Oliver (2006)). Thus the dangers of seeking for only financial profit only due to possible negative effects to the other elements of the supply chain and even other functions outside the supply chain. For example, if the price is lowered due to lower timely delivery expectation or quality of a purchased product, it leads to sub-optimisation, when only one element is optimized by sacrificing the other elements. In this stage the purchasing performance measurement is supplemented by measures of quality improvement, lead-time reduction and improved supplier reliability (Farmer & Van Weele, 1995)

Strategic business area - many academics have written about the necessity for top management to see procurement as a function of strategic importance (Pearson and Gritzmacher, 1990; Carter & Narasimhan, 1996; Carr & Smeltzer, 1997,1999; Anderson and Katz, 1998). In the case of procurement as a strategic tool, the purchasing function is supplemented by such responsibilities as make-or-buy decisions, strategic corrections to the supply base and globalization of the supply base, etc. Thus, the performance measurement of procurement function is as well extended with measures such as number of changes in the supply base, number of international suppliers (Farmer & van Weele, 1995). Surely, the previous financial, supplier performance and other measures are not disregarded too.

#### **2.4.4 Effectiveness and Efficiency Dimensions in Procurement**

In order to measure the procurement performance, first the elements of performance should be defined clearly. Van Weele (2002) is differentiating two main aspects of the procurement per-

formance: effectiveness and efficiency. Procurement effectiveness is the extent to which the previously stated goals and objectives are being met. It refers to the relationship between actual and planned performance of any human activity. Additionally, he explains that procurement efficiency is the relationship between planned and actual resources required to realize the established goals and objectives and their related activities, referring to the planned and actual costs. As a result, procurement performance is identifying the extent to which the procurement function is able to reach the objectives and goals with minimum costs.

The two areas of purchasing performance – effectiveness and efficiency – are divided into activities, which van Weele (2002, p. 258-270) defines as following:

- Purchasing effectiveness (effective measures require examining the relationships from both purchaser and supplier sides):

- Purchasing materials costs and prices (evaluates the usual and paid prices for the materials and services):

Materials price/cost control – monitoring and evaluation of the prices of the materials and their increases that are announced by the suppliers in order to control them and make decisions about the supplier;

Materials price/cost reduction – aims at evaluating the initiatives related to the structured costs reduction of the materials, e.g. search for new suppliers, less costly substitutes for the materials, value analysis, etc.;

- Product/Quality:

Purchasing involvement in new product development—by evaluating the correspondence of the new product target cost and time to market while using certain measures, procurement function may help to indicate the deficiencies in new product development projects. The measures can include: number of man hours spent by purchasing on innovation projects, the number of engineering hours spent by suppliers or the project's total lead time;

Purchasing and Total Quality Control – indicates the extent to which the purchased materials incoming from suppliers are corresponding to the order specification. The measures can be the following: rejects rates on incoming materials, the number of lines rejected, number of approved suppliers, number of certified suppliers, number of reject reports handled, etc.;

- Purchasing logistics:

Adequate requisitioning identifies the level of control of the on-time and accurate handling of materials request. Such measures as an average purchasing administrative lead time, number of orders issued, undelivered orders.

Order and inventory policy relates to control of timely delivery by suppliers. Measurement of this performance aims at defining the level of control of the timely delivery by suppliers. The following measures can be used: supplier delivery reliability, shortages of materials, over/under delivery, number of just-in-time deliveries, etc.

Supplier delivery reliability relates to the control of quantities delivered. Procurement has the responsibility of determination and control of cost effective inventory levels, therefore, for the performance evaluation the following measures may be used in this activity: inventory turnover ratio, number of over/under deliveries, pipeline, average order size, etc.

- Purchasing efficiency:

- Purchasing organizations:

Personnel – background level, training, development and motivation of purchasing personnel,

Purchasing management – quality and availability of procurement strategies, action plans, reporting procedures, management style and communication structure,

Procedures and Policies – the availability of procedures and working instructions for purchasing staff and suppliers,

Information system – effort for improving the purchasing information systems which is serving for daily work of employees.

## **2.5 Purchasing Performance Measurement**

### **2.5.1 Performance Measurement of Purchasing Process**

The process is defined as a sequence of activities or tasks completed by a person, group, team and set of equipment or their combination. Process outputs are often inputs to another process. Also processes have variations of different causes, but by reducing variations process output quality is higher at lower cost notifies Cartin (1999, p. 93). Processes which are interrelated to each other are acting like supplier and customer by supplying output of another process. Cartin (1999, p.94) defined simply that high quality processes are achieving intended results and are satisfying customer requirements. The resource usage is efficient and process displays variability at lowest economically achievable level, key quality measures are used to assess performance and process is adding value to organization's objectives.

Purchasing process is set of successive actions creating purchase orders to meet company's demands and requirements. The purchasing process is covering actions sending and handling enquiries, negotiations and decision making for most suitable suppliers, but recently basic order making has been automated or even transferred to suppliers. (Sakki 2009, p. 42)

The generic purchasing process is defined by van Weele (2010, p.30) to have steps for scope definition, supplier selection, contract agreement, ordering, expediting and evaluation. The process steps are presented in the following Figure. Scope definition is a combination of technical and commercial requirements, specifications and these requirements may be changed according to communication with suppliers. The supplier selection is including required actions to select the best possible supplier. In this process step, it is also included method of subcontracting, preliminary qualification of suppliers, preparation of documents and suppliers for enquiries. Placing of purchase order is the step including negotiation of contractual terms and finally placing a purchase order or an agreement. Expediting is actions securing deliveries in time and monitoring fulfilment of contractual obligations. The purchase process is completed with "follow up and evaluation" -step. Supplier evaluation, possible claim management and relevant documentation are covered in this step.



Figure 2.4: Generic purchasing process (van Weele 2010, p. 29).

### 2.5.2 Purchasing performance

The purchasing performance measurement is a challenging and an unclear issue according to van Weele (2010, p. 301). There is no universal approach determined yet to measure purchasing performance, despite of the importance of purchasing function to different type of companies. Purchasing organizations have established performance measuring systems according to their own, local needs and according to the understanding of local purchasing managers. The purchasing organization performance is often measured by the effectiveness and the efficiency.

The role and the importance of the purchasing function have impact on respective performance measurement issues as presented in the following Figure. Van Weele (2010, p.303) noted that purchasing performance measurement has a connection to the role and to the importance of purchasing in a company. Van Weele (2010, p.303) divided the role and position of a purchasing in a company with four categories. Purchasing is seen in different companies as an operative and administrative activity, a commercial activity, to be part of an integrated logistics and a strategic business area. When purchasing is seen as an operational and administrative activity, purchasing performance is typically measured e.g. by amount of orders, order backlog, purchasing process lead time. Typically the purchasing position is low in the hierarchy in operative and administrative viewpoint. When the purchasing is viewed as a commercial function, the performance is typically measured by savings, price reduction, ROI-measures and inflation reports. Within this viewpoint the purchasing is reporting to the management, annual targets are agreed for the price and cost reductions. The purchasing is also seen as part of an integrated logistics instead of price hunting van Weele (2010, p. 303) concludes. With this viewpoint the purchasing is securing deliveries, enabling quality improvement actions, reducing inventory and payment terms together

with reducing lead times and improving suppliers' delivery performance. Hierarchically the purchasing is integrated to other material-related functions within this viewpoint. With the strategic business area - viewpoint, the purchasing is involved to make-or-buy - studies, challenging local vendors with global competition. The performance is measured typically with amount of realized savings, number of supplier base reduction, number of new contracted international suppliers and also amount of revenues generated by new business areas.

### **2.5.3 Purchasing Skills and Capabilities**

Suitable purchasing skills and capabilities have been studied by Tassabehji and Moorhouse (2007, p. 56) as the role of procurement has been changed. At the same time the macroeconomic has been changed, internet based systems and increased globalization have effected to procurement and purchasing. Purchasing has been facing the change from a transactional and commercial orientation to value delivery strategy.

The increased specialization has been noted with move from purchasing function to processes, from transactions to a relationship management and importance of a supply chain management. Expanding of core processes to manage more widely supplier coordination, cost analysis, strategic planning and international outsourcing are needed to maintain purchasing organizational competitiveness. These changes are requiring modern type of skills; the existing skills are needed to be updated in order to contribute effectively to the financial, operational and strategic success. The procurement skills are grouped in five categories as follows:

Technical skills are required for administrative operations. These skills are product knowledge, computer literacy, quality management and legislation knowledge. Advance procurement process skills are revealed for category management, global sourcing and detailed cost driver analysis. Utilizing and managing effectively the e-procurement technology and related processes, Optimizing supplier selection has been noted as new skill requirements in a purchasing process. Interpersonal skills are needed to successful interactions in teams and on an individual level. Interpersonal skills are including oral and written communication and conflict resolution. Important skills are affecting to group dynamics, influencing and persuasion. Also skills concerning leadership, problem solving and awareness of interpersonal and cultural aspects importance is revealed

in Tassabehji and Moorhouse (2007, p. 59) study. Interpersonal enterprise skills are related to overall business and knowledge of how different functions are interacting. These skills are consisting of for example market analysis, internal relationship management, evaluation of global sourcing, internal change management and planning skills. External enterprise skills are related to supply chain and network managing skills. Strategic business skills are related to broader strategic issues delivering added value to the organization. These skills are covering issues like planning and managing strategic partnership and alliances, risk management and naturally additional value adding issues.

Based on issues mentioned before, it is important to define required skills and capabilities to reach strategic targets of the purchasing personnel. Personnel skills and competences may be improved towards targeted state and competence development measured.

## **2.6 Ethio telecom Procurement Process**

The case company is Ethio telecom located in Ethiopia. The selected Sourcing Department is part of Procurement - business unit in the company. Procurement is covering all indirect spend in the company with strategic sourcing activities and stakeholders' requests purchased with the purchasing processes. The strategic sourcing is recently established to focus on future agreements which known as master Frame agreement (MFA) and the purchasing process is ordering goods as requested by internal stakeholders. The purchasing is covering Local and International goods and/or services purchased for the purpose of telecommunications.

Previously the purchasing operations have been part of each stakeholder's business. However, With the recent centralized purchasing organization, the common process can be defined and the strategic sourcing benefits obtained especially by focusing purchases to selected suppliers and using same agreements in all corporate locations whenever it is suitable.

The purchased volume in the scope of this study is annually in average of three years (i.e.; from 2013 to 2015) around 80.3 Tender/Bid launched, 6677.3 Purchase order (PO) placed and 1690.3 Suppliers engaged roughly by 90 buyers. The purchasing has been organized into six Sections: facilities and Fleet sourcing Section, Network Sourcing Section, Customer equipment sourcing

Section, Information System Sourcing Section, Contract Management Sourcing Section and Suppliers relation Sourcing Section. All the sourcing Sections have similar process with company's ERP-system, and Sourcing policy and procedure.

The purchasing requests for purchasing orders are covered in this process, the main strategic actions in the purchasing process are: to secure quality of goods and/or services for telecommunications utilities, to improve efficiency and responsiveness of purchasing. Also the implementation of a supplier management, enhance safety and overall performance of contractors together with deepen competences and establish career paths are key actions to meet Procurement unit's strategic objectives. On the basis of unit's performance is operative purchasing and inspiring leadership.

The purchase process is consisting of enquiries, commercial and technical evaluation, negotiations, creation of purchase orders and expediting. The user division manager is approving the purchase requests delivered to purchaser. Purchaser is selecting the source of supply i.e. use frame agreements or start the RFP -process. The first priority is to use frame agreements whenever applicable. If frame agreements do not exist or they are not applicable to requested goods or services, the RFP -process is started. Purchaser is creating enquiries; sending them to approved suppliers and receiving offers. Received offers are analyzed with technical and commercial evaluation. Both the technical and commercial offer evaluated by the commodity team formed prior to the purchasing process and eventually by Sourcing officials based on their hierarchical required and in some scenarios higher body (sourcing committee jury) approve the final evolution. Quite often bid clarification meetings are required to share requirements and execution possibilities. Also during the evaluation process negotiations are held with the most suitable candidates. Consequently, the buyer issued the contract and PO to the supplier.

## **2.7 The practice of BSC in Ethio telecom**

According to Mohammed N. Al Shaikh Ali (2007) BSC primarily serves as a system to improve Telecommunications service quality and support long-term survival, besides that, it also used as to reduce goal uncertainty in the organisation, enhance customer focus, create a common language on how to improve Telecommunications service quality, and support strategy implementa-

tion. The former aims to monitor organizational outcomes and correct faults from standards of performance and thereby ensure the achievement of organizational strategies and goals, while the latter aims to define, communicate, and reinforce basic values, purpose, and direction for the organisation in order to encourage opportunity-seeking behaviour.

Moreover, according to Kaplan and Norton (1996), the BSC should include a wide range of performance measures in order to represent all dimensions of the organisation. In telecommunications especially procurement context, the BSC takes into account quality of telecom goods and/or services, and professional staff learning, a process reinforces a move from traditional, bureaucratic control (Aidemark, 2001 as cited in Kollberg and Elg 2010). The multi-dimensional thinking promoted in the BSC is also emphasized by Andersson et al. (2000). In Telecommunications it is essential to measure and follow-up quality and on time delivery of goods to prevent proactively interruption of services rendered as well as administrative activities (e.g. efficiency, rationality, productivity, conformity, waiting times and care times on Network usage, economic measures.

In general, Ethio telecom sourcing department used to this management tool (BSC) to purchase goods and services based on annual demand given by the user department at the beginning of the new budget year to reduce shortage of materials within reasonable time period with a good quality and reasonable price; the department also started to measure employees appraisal based on the values set on BSC tool.

## **2.8 Conclusions**

Kaplan and Norton had introduced the Balanced Scorecard (BSC) in 1992. The BSC is used as performance evaluation instrument that forces an organization to identify a number of factors that are crucial to the success of an entity. These “critical success factors” naturally vary from organization to organization. Business houses which adopted BSC had gained unassailable competitive advantages and created the culture of organizational excellence.

Subsequently, the development of the Balanced Scorecard is a fundamental process that enables continuous improvement and enhancement. The implementation of a strategy requires active

contributions by everyone in the organization. Each member of the college needs to understand this strategy and, beyond that, to conduct day-to-day business in ways that contribute to the success of the strategy.

There are a number of “balances” in the BSC, among which are the balance or equilibrium between four historical domains or perspectives considered to be mutually linked in terms of strategy and performance namely, Learning and Growth Perspective, Internal Process Perspective, Customer Perspective and Financial Perspectives.

Now a day’s Balanced Scorecard is more than a planned or an operational measurement system. Companies are using the scorecard as a strategic management system to manage their strategy in the long run. In the same token, to optimize the procurement process companies should have integrated BSC perspectives with its strategic planning.

Ethio telecom implemented Balanced Scorecard to link day-to-day activity with the organization’s long term direction and to create a sustainable system of strategic planning and management. There are different challenges and opportunity or benefit generate as a result of implementation. However In order to accomplished BSC into a truly strategic system and for the company to full realize the benefits of a best practice BSC system,

## 2.9 Conceptual Framework

A conceptual framework can be defined as a set of broad ideas and principles taken from relevant fields of enquiry and used to structure a subsequent presentation (Reichel and Ramey, 1987). As cited in literature balanced scorecard is a framework for translating an organization's strategic objectives into a set of performance indicators distributed among four perspectives: Financial, Customer, Internal Business Processes, and Learning and Growth. In addition, if the companies adopt such a management tool that derived from the company's strategy, they can be helpful in formulating procurement planning and process and BSC and it provides the framework for justifying requests for resources and if effectively and efficiently implemented lead to customer satisfaction. The schematic diagrams below will not only guide the study but will also show the interrelationship among the key variables in the study as illustrated in Figure. 12.

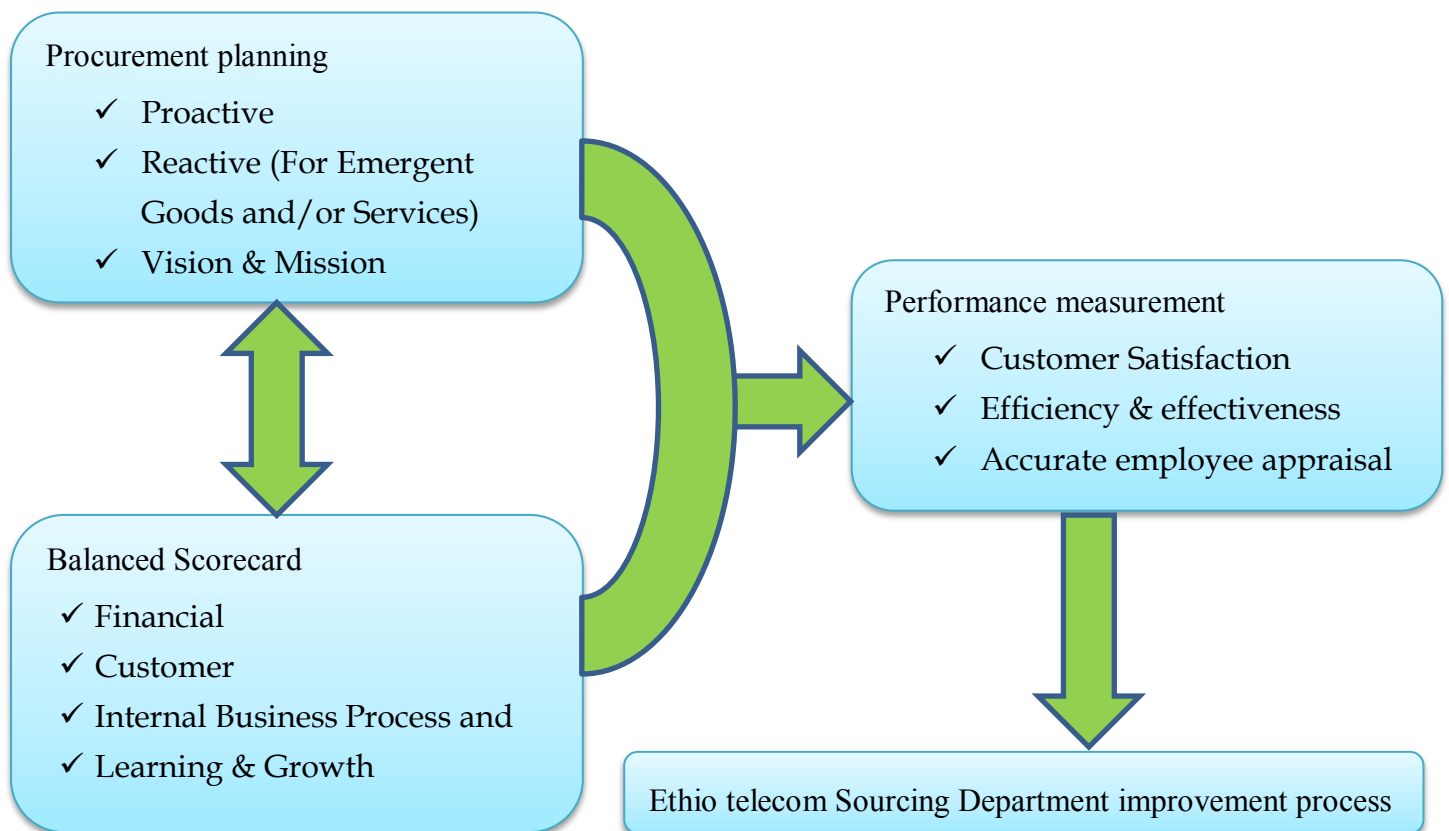


Figure 2.5 Conceptual Framework Source: Developed by Author, 2016

## CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

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### 3.1 Introduction

This chapter presents operational definition of terms, the methodology employed for the study. It presents a concise description of the explanatory study that was used. It explains the research design, population, sample as well as the sampling procedure adopted to achieve the objectives of study. It describes the research instrument used, validity and the reliability of the instrument, data collection procedures, and how the data was collected and analyzed. The study was aimed on Assessment of Balanced Scorecard implementation Practice and its challenges on Procurement Department in Ethio telecom.

### 3.2 Operational Definition of Terms

**Strategic planning** is to a business what a map is to a road rally driver. It is a tool that defines the routes that when taken will lead to the most likely probability of getting from where the business is to where the owners or stakeholders want it to go (Dix and Mathews (2002)

**Balanced Scorecard** complements financial measures of past performance with measures of the drivers of future performance. The objectives and measures of the scorecard are derived from an organization's vision and strategy. The objectives and measures view organizational performance from four perspectives: financial, customer, internal business processes, and learning and growth. These four perspectives provide the framework for the Balanced Scorecard

**Financial Perspective** deals with the long term objectives of the organization. Kaplan and Norton (1996) summarizes the financial perspective as rapid growth, sustain and harvest. Growth stage measures the volume of sales, sustain puts stress on return on capital employed; net profit rate etc and the harvest stage deals with cash flow analysis. In short, financial measures are similar to the ones we use in the traditional performance measurement.

**Customer Perspective** the customer perspective measures the extent to which customer is satisfied with the products or services of the organization. It can be divided into two measures. Market Share and Customer Retention and Customer Acquisition

**Internal Business Process Perspective** deals with innovation of the production process and the product itself. Kaplan and Norton (1996)

**Learning and growth perspective** Learning and growth perspective measures to what extent our human resources are capable of meeting the future requirements. This perspective states that the organizations must invest in human resources if they are to achieve their long term financial objectives Kaplan and Norton (1996).

**Performance measurement** A process of assessing progress toward achieving predetermined goals, including information on the efficiency with which resources are transformed into goods and services (outputs), the quality of those outputs (how well they are delivered to clients and extent to which clients are satisfied) and outcomes (the results of a program activity compared to its intended purpose), and the effectiveness of government operations in terms of their specific contributions to program objective. It is not simply concerned with collecting data associated with a predefined performance goal or standard. Performance measurement is better thought of as an overall management system involving prevention and detection aimed at achieving conformance of the work product or service to your customer's requirements. Additionally, it is concerned with process optimization through increased efficiency and effectiveness of the process or product.

### **3.3 Research methodology**

Best and Kahn (2006) says research can be qualitative, if it describes events and persons scientifically without the use of numerical data while quantitative research consist of research in which data can be analyzed in terms of numbers. Mixed approach is an approach, which combines both qualitative and quantitative ones. Thus, the study applied mixed approach that is quantitative and qualitative approaches as research methodology. Mixed approach helps to make scrutinize on the existing practice and its challenges of implementing Balanced Scorecard on Ethio telecom Pro-

curement department, procurement planning and other related issues in detailed manner and to gain a better understanding by obtaining data from different sources, such as interviews, questionnaire and focus group discussion (FGD) which helps to harnesses diverse ideas about the same issue and assist in cross-checking the results, and consequently helps to increase the validity, reliability of the findings and comforts data analysis.

### **3.4 Research Design**

An explanatory study was used to meet the aim of the research which was to make a close analysis of the possible challenges to implementing the BSC and to provide recommendations to help future BSC initiatives overcome these challenges. An explanatory study interviews provided additional depth to the subject matter and further explained the data collected in the quantitative phase of the study (Narriball & while, 1994; & Teddlie, 2003).It allowed for the mixing of both quantitative and qualitative dta sets and ensured exploration of the phenomenon was under taken ( Creswell & Plano Clark, 2007; Glesne, 2006). An explanatory study is generally useful in three specific situations:

- i. To seek an explanation of a situation or problem - to answer the question what happened?
- ii. To explain relating patterns to the researched phenomenon – to answer the question why it happened?
- iii. To explain the relationship between aspects of a phenomenon – to answer the question how it happened?

### **3.5 Data sources**

Both primary and secondary sources of data were used in order to collect appropriate data. Primary data were collected from unpublished sources from top level managers, workers and specific team of BSC which are the results of questionnaires, interview and focus group discussion (FGD). The secondary data were collected from different published materials like report and

manuals of sourcing and procedure of Ethio telecom, journals, books, magazines, websites, research findings, policy documents and other relevant materials were reviewed.

### **3.6 Data collection techniques and instrument**

In order to obtain relevant and adequate information the researcher used to collected primary data from unpublished sources from top level managers, workers and specific team of BSC, which are the results of questionnaires, interview and focus group discussion (FGD) as instruments of data collection. The questionnaire consist of both open and closed ended question designed and distributed to the employee to make an assessment on the existing Practice and its challenges of implementing Balanced Scorecard on Procurement and its impact on organization improvement.

Both structured and un-structured interviews were conducted. Because using only one type of interview might leads to less rich data or information. Un-structured interviewing method was used in this study because this method involves direct interaction between the researcher and a respondent and hence, it gives chance to move the conversation in any direction of interest that may come and also used to ask questions which were not included in the structured interview in case new questions raised as ideas emerge through the process. Generally interview was held with managers' and supervisors' of Ethio telecom sourcing staffs, believing that they have deep and relevant information about the issues. Lastly focused group discussion (FGD) was held with procurement specialists' teams to harness an assessment on the existing Practice and its challenges of implementing Balanced Scorecard on Procurement Department and its impact on organization improvement. Accordingly, two focused group discussion, each consisted of five members were conducted.

#### **Interview**

In-depth interviews can be defined as a qualitative research technique which involves “conducting intensive individual interviews with a small number of respondents to explore their perspectives on a particular idea, program or situation” (Boyce and Neale, 2006, p.3). Accordingly, the researcher used all forms of interview (i.e.; structured, semi-structured and unstructured) to have a detailed information about the subject matter.

## **Focus group interviews**

Saunders et al. (2007) present three ways for explanatory research to be conducted:

- ✓ Researching the literature;
- ✓ Interviewing “experts”;
- ✓ Focus group interview.

Khan and Cannell (1957, quoted by Saunders et al., 2007) define an interview as a “purposeful discussion between two or more people”. Among the various types of interview for the present study, one way of collecting data was through the individual and focus group interview, conducted in a semi-structured and sometimes in an unstructured form. This kind of interview can contribute to the study in several ways. To seek new insights and find out what really happened in an explanatory study, Robson (2002) recommends using semi-structured interviews. In qualitative research using semi structured interviews, the researcher may have a list of different questions or themes in order to meet the objective of the study. Depending on the course of the conversation, the interviewer may change the sequence of questions, skip some or ask additional questions for the purpose of better understanding the research problem (Saunders et al., 2007). When there is a need to deeply explore some case where the interviewee needs to talk freely and in a relaxed manner about the researched topic, informal unstructured interviews are the most suitable (Saunders et al., 2007). The flexibility of semi-structured and especially of unstructured interviews provides many advantages in qualitative research. Such types of interviews are applied in this study.

Kreuger (1988, cited by Lewis, 2000) defines a focus group as a "carefully planned discussion designed to obtain perceptions in a defined area of interest in a permissive, non-threatening environment". In focus group interviews, participants are led by a facilitator (moderator) who encourages them to discuss and share opinions about the topic without any pressure. The role of the facilitator is of great importance to keep the group focused on the discussed topic and to encourage discussion without pushing members of the group toward predetermined conclusions (Saunders et al., 2007).

In purposive sampling researcher has sufficient knowledge of the topic to select sample of experts and subjects are chosen in this sampling method according to the type of the topic. Therefore, skills and capabilities of the researcher to find appropriate individuals to contribute to the achievement of research objectives play important role on the outcome of studies using this sampling technique.

In connection to this, from six Sourcing sections 4 managers and six Supervisors were selected based on purposive sampling for interview.

### **Pilot Study**

According to Sekeran (2003) a pilot test is necessary for testing the reliability of data collection instruments. Pilot study is thus conducted to test weaknesses in design and instrumentation to provide proxy data for selection of a sample. Reliability refers to the consistency of a measure. A test is considered reliable if the same result is got repeatedly (Cooper and Schindler, 2003). The pilot study was done by selecting five respondents from the population and issuing them with the questionnaire. The data obtained was evaluated to ensure that questions were properly answered. However the findings from the pilot test were not included in the final results.

### **3.7 Study area and population**

This study was conducted at Ethio telecom, it's the sole telecom service provider in Ethiopia and wholly owned by Federal Government of Ethiopia. The Head Quarter of the company is located in Kebele 02 of the Kirkos Sub-city. The establishment of the company dates back to 1894 E.C. Ethio telecom has been engaged in providing the telecom service in the country. The study area for this research was Ethio telecom's one Divisions' in particular on Sourcing Department functions. Since the company is engaged in providing different types of products and services to the country, its contribution to the speedy growth of the country's economy is paramount. To address the level of expectation, providing goods, services and works at the right time, from the right source, at the right quality and price, to the right place is highly crucial. Therefore, the researcher intended to examine a Sourcing Department function which is engaged in sourcing goods and service from local and international market, specifically to examine the existing Prac-

tice and its challenges of implementing Balanced Scorecard on Procurement department and its impact on organization improvement.

The population of this study comprised of all the members of Sourcing department sections. Presently, Sourcing Department has been organized into six teams: facilities and Fleet sourcing team, Network Sourcing team, Customer equipment sourcing team, Information System Sourcing team, Contract Management Sourcing team and Suppliers relation Sourcing team a total of 90 employees 51 are males and the rest 39 are females.

### **3.8 Sample and Sampling procedures**

#### **Sampling**

Sampling can be explained as a specific principle used to select members of population to be included in the study. It has been rightly noted that “because many populations of interest are too large to work with directly, techniques of statistical sampling have been devised to obtain samples taken from larger populations” (Proctor, 2003, p.100).

The researcher used **Stratified random sampling** to select the respondents. Since, Stratified random sampling intends to guarantee that the sample represents specific subgroups or strata. Accordingly, application of stratified sampling method involves dividing population into different subgroups (strata) and selecting subjects from each stratum in a proportionate manner.

In relation to this, Stratified sampling can be divided into the following two groups: proportionate and disproportionate. Application of **proportionate stratified random sampling** technique involves determining sample size in each stratum in a proportionate manner to the entire population

Therefore, the choice of stratified random sampling by the researcher enabled to have adequate representation of all subgroups can be ensured.

The sample size was 73 respondents out of a target population of 90 sourcing department sections. These were selected to ensure that the sampling size had characteristic representation of

the population using the formulae developed by Mugenda and Mugenda (2003). The formula to find the sample size is:

$$n = \frac{N}{1 + (N * e^2)}$$

Where;

N= population size

e= Tolerance at desired level of confidence, take 0.05 at 95% confidence level

n= sample size.

How the formula is used is shown below

$$n = \frac{90}{(1 + (90 * 0.05 * 0.05))}$$

n= 73

The distribution of the sample across the categories was done using the formula =

Number of individuals in the category x the sample size

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Total number of employees

Sr. No.	Section	Officer	manager	Supervisors and specialists	Staffs/ buyers	Total no.of employee	Sample
1	Suppliers Relation Sourcing	1	1	4	5	10	8
2	Procurement Sourcing		1	3	13	17	14
3	Customer Equipment Sourcing		1	6	3	10	8
4	IS Sourcing		1	3	8	12	10
5	Network Sourcing		1	5	12	18	14
6	Facilities & Fleet Sourcing		1	7	14	22	18
						1	1
<b>Total</b>						90	73

Table 3.1. Summary of samples taken from each Sourcing Sections

### **3.9 Validity and Reliability**

#### **Validity**

Validity of an instrument is how accurate the instrument is in obtaining the data it intends to collect (Mugenda & Mugenda 2003). Validity indicates the degree to which the instrument measures what it is supposed to measure (Kothari, 2004). To ensure precision, relevance and content validity of the instrument, the questionnaire was subjected to critical evaluation by the researcher and the supervisor. Discussions were held with peers and professional experts in procurement department, who will went through the instruments to evaluate if it contained representative sample.

#### **Reliability**

To measure the consistency of the scores obtained, and how consistent they were for each individual from one administration of an instrument to another and from one set of items to another, the study used Cronbach's alpha (a measure of the internal consistency of the questionnaire items) using data from all the respondents. Separate reliability tests for each of the variables were computed. The key statistic in interpreting the reliability of the scale was the alpha listed under the reliability co-efficient section at the end of the output. The value of coefficient alpha ranges from zero (no internal consistency) to one (complete internal consistency); accordingly, the alpha coefficient for the thirty five items were 0 .858, suggesting that the items have relatively high internal consistency. (Note that a reliability coefficient of .70 or higher is considered "acceptable" in most social science research situations). Hair et al. (2007) mentioned that the rationale for internal consistency is that the individual items or indicators of the scale should all be measuring the same construct and thus be highly inter- correlated. The measurement scales for the variables in this study were based on a 5-point Likert scale ranging from "strongly agree" to "Strongly disagree".

### **3.10 Data analysis method**

According to Marshall and Ross man (1999), data analysis is the process of bringing order, structure and interpretation to the mass of collected data. It involves the coding, editing and cleaning of data in preparation for processing. The completed questionnaires were received, checked for completeness and edited for correctness. Descriptive statistics was used to analyze the data in this study with SPSS as the main tool for data analysis and presentation.

#### **Qualitative Analysis**

The qualitative data generated from the study guide were categorized in themes in accordance with research objectives and reported in narrative form along with quantitative presentation. The qualitative data were used to reinforce the quantitative data.

#### **Quantitative Analysis**

Quantitative data was analyzed through the use of frequency distribution, mean scores and standard deviations. These analyses were used to address specific objectives I to IV. With the help of Statistical Package for Social Science (SPSS) the findings were presented in the form of percentages, frequency distribution tables, means, standard deviations, bar charts and pie charts. The data was summarized according to the study's specific objectives.

### **3.11 Ethical consideration**

Data collection was undertaken after permission is obtained from the concerned body. Study participants were asked for verbal consent before being asked for any information and written and informed verbal consent were obtained from every study participant. Objectives of the study were explained for every participant and they were asked to give information only after they give their consent. No person obliged to participate to the study without his/her consent. The information provided by each respondent will be kept confidential. Study subjects will be fully authorized to withdraw from the study at any time of their involvement. Interview of study subjects has been made in a way to maintain their privacy. Moreover, any information that can be perceived as spoiling the goodwill and the reputation of the company under study is not included the report of the study.

## CHAPTER FOUR: RESULT AND DISCUSSION

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### 4.1 Introduction

This chapter presents data gathered through questionnaires, interviews, focus group discussions and from secondary sources that included published materials like report and manuals of sourcing and procedure of Ethio telecom, journals, books, magazines, websites, research findings, policy documents and other research findings. The aim of the study was to assess Balanced Scorecard implementation Practice and its challenges on Procurement Department in Ethio telecom. The questionnaires were collected from employees of Ethio telecom Sourcing department who occupy different position. While the interviews were conducted with managers of Ethio telecom sourcing department and the focused group discussions were conducted with the Supervisors' and specialists' of sourcing department of the company. The findings are presented in this chapter mainly in form of tables, pie-charts, percentages, frequency distributions, mean and standard deviations. A total of 73 questionnaires were issued and all were returned. This represented a response rate of 100% and this response rate was considered abundant for data to be analyzed and interpreted.

### 4.2 Demographic Characteristics

The respondents were asked to show their gender, this was expected to guide the researcher on the conclusions regarding the degree of congruence of responses with the gender characteristics on the Balanced Scorecard implementation Practice and its challenges on Procurement Department in Ethio telecom. The results as shown in the figure 4.1 show that majority of the respondents were male at 58% while female were 42%. This indicates that majority of the staff working on the sourcing department in the organization were male.

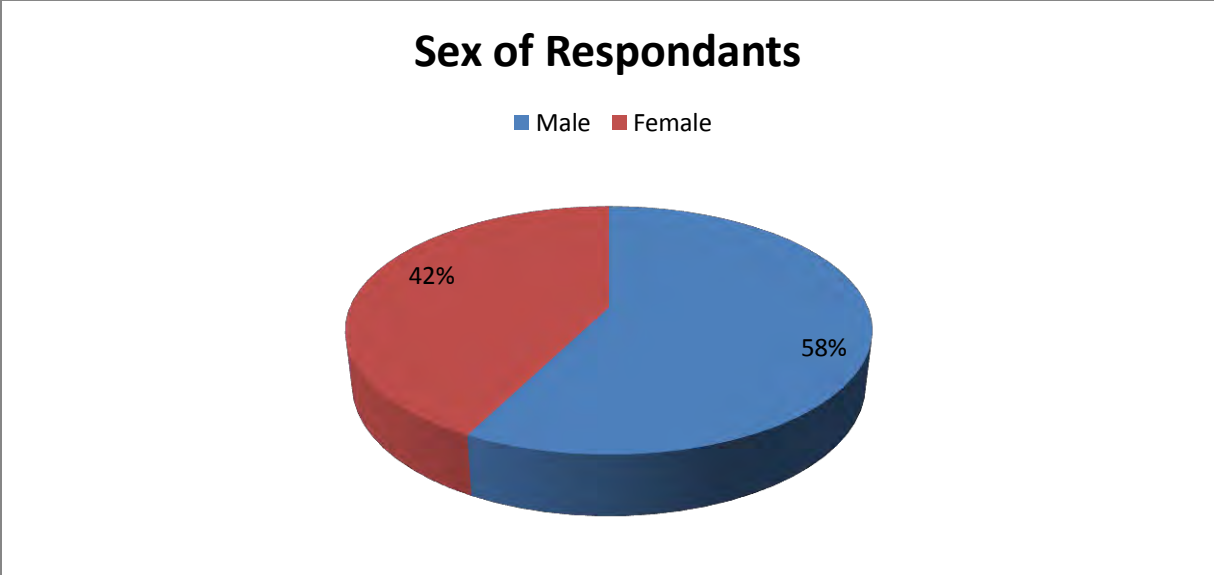


Figure 4.1 Gender Representation

### 4.3 Educational Background

The respondents were asked to show their highest attained education level. Figure 4.2 shows that majority of the respondents 78.1% working in firm had attained their education up to degree level while 21.9% had attained their education up to post graduate. This means that majority of those working in the organization had attained education up to university level and had gained rich information and they were conversant with the process, therefore they were appropriate for responding to our study questions.

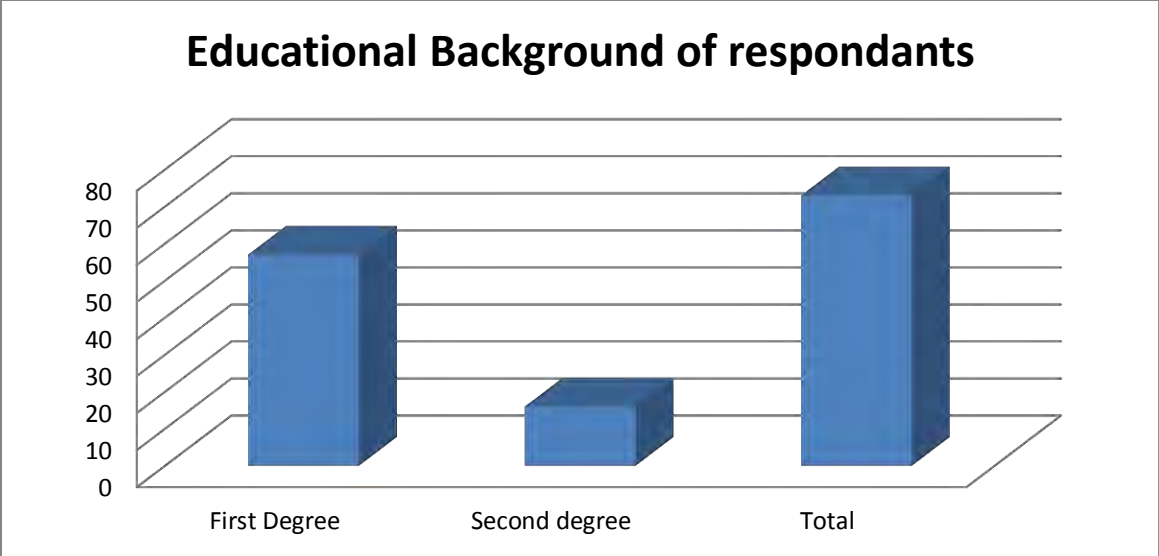


Figure 4.2 Educational level Representation

**4.4 Work experience in the organization**

The findings below indicates that majority of the respondents (43.8%) had been working in the organization for a period between 6 -10 years, (27.4%) had been working in the organization for a period between 0 -5 years, (16.4%) had been working in the organization for a period between 11 -15 years while 12.3% had been in the organization above 15years. Hence, based on their work experience results, it is evident that their work experience is equally weighted and therefore be valuable to the realization of the research objective.

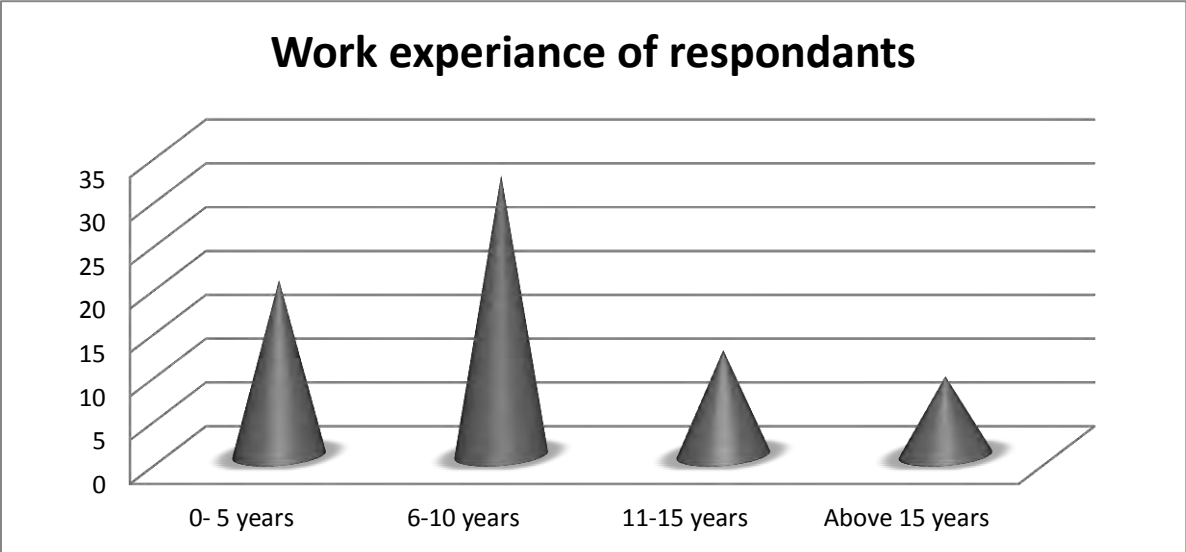


Figure 4.3 Work experience in the organization

#### 4.5 Experience on BSC implementation

The findings below indicates that majority of the respondents (63.0%) had been Experience on BSC implementation for a period of 6 months to 1 year, (21.9%) had been Experience on BSC implementation for a period of 1-2 years, (7.9%) had been Experience on BSC implementation for a period of more than 2 years, (6.6%) had been Experience on BSC implementation for a period of less than 6 months. Hence, based on their work experience on BSC implementation results, it is evident that the majority work experience on BSC implementation is substantial to be equally weighted and therefore be valuable to the realization of the research objective.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 6 months	5	6.6	6.8
	6 month to 1 year	46	60.5	69.9
	more than 2 year	6	7.9	8.2
	1 year – 2 year	16	21.1	21.9
	Total	73	96.1	100.0

Table 4.1 Experience on BSC implementation

#### 4.6 Position of respondents

The findings below indicates that majority of the respondents were Procurement & supplier relation administrator/staff (47.9%) followed by procurement Supervisors in the department (23.3%). The procurement specialists and mangers were constituted (17.8%) and (11.0%) respectively of the respondents. This findings shows that the respondents were adequately represented based on their current position since the top and middle level staff were interviewed in the research and therefore that the results will be well representative.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Management	8	10.5	11.0
	Supervisor	17	22.4	34.2
	Specialist	13	17.1	52.1
	Procurement and supplier relation administrator/Staff	35	46.1	100.0
	Total	73	96.1	100.0

Table 4.2 position of respondents

#### 4.7 Challenges of implementing Balanced Scorecard Card (BSC) in procurement department

The respondents were asked to indicate how much they agree or disagree with the following statements concerning the challenges of implementing the Balanced Scorecard Card (BSC) in procurement department. The table below shows the study results.

	N	Minimum	Maximum	Mean	Std. Deviation
Q1.1_ Appropriate proactive planning and setting target has adopted in order to implement BSC	73	1	5	3.26	1.259
Q1.2_ Procurement function has adopted BSC hence procurement activities are done efficiently & effectively	73	1	5	3.27	0.99
Q1.3_ Lack of improvement concerning BSC implementation process	73	1	5	3.22	1.083
Q1.4_ Align the organization/department, systems and employee performance around procurement planning through rewards and recognition program.	73	1	5	3.26	1.08
Q1.5_ Empower competent people to help plan and implement change.	72	1	5	3.17	1.138
Q1.6_ Every employee and their job are aligned with planning.	73	1	5	2.99	1.149
Q1.7_ Holding review meeting around procurement planning	73	2	5	3.49	0.819
Q1.8_ Consider balanced scorecard as the strategic procurement planning and management framework.	73	1	5	3.79	0.816
Q1.9_ Reaching consensus strategy before developing the scorecard.	73	1	5	3.18	1.072
<b>Average Score</b>				<b>3.292222</b>	<b>1.045111</b>

Table 4.3 Challenges of implementing Balanced Scorecard Card (BSC) in procurement department

The findings of the study in the table shown above indicate the extent to which Challenges of implementing Balanced Scorecard Card (BSC) in procurement department. The results show that

most of the respondents' agreed on considering balanced scorecard as the strategic procurement planning and management framework, Holding review meeting around procurement planning , Procurement function has adopted BSC hence procurement activities are done efficiently & effectively, Align the organization/department, systems and employee performance around procurement planning through rewards and recognition program, Appropriate proactive planning and setting target has adopted in order to implement BSC, Lack of improvement concerning BSC implementation process were mainly the challenges of implementing Balanced Scorecard Card (BSC) in procurement department. They were represented by means of 3.79(74%), 3.49(45.2%), 3.27(54.8%), 3.26(35.6%), 3.26(38.4%), and 3.22(46.6%) respectively. Considering balanced scorecard as the strategic procurement planning and management framework, Holding review meeting around procurement planning were rated highest because improper understanding of these variables hinder the proper implementation of the Balanced Scorecard Card (BSC) in procurement department.

However, respondents' disagreed on empower competent people to help plan and implement change and every employee and their job are aligned with planning to be the challenges of BSC implementation on procurement department. They were represented by means of 3.17(38.9%) and 2.99(35.6%) respectively. on the other hand, Reaching consensus strategy before developing the scorecard had the challenges of implementing the Balanced Scorecard Card (BSC) in procurement department was a neutral response and it was represented by means of 3.18(32.9%). The standard deviation show the spread of ideas of the respondents and from the table the standard deviation ranges from 1.072 to 1.138 indicating that it is a small value thus respondents were agreeing to the same idea.

#### **4.8 BSC measurement is implemented in procurement department of Ethio telecom**

The respondents were asked to indicate how much they agree or disagree with the following statements concerning BSC measurement is implemented in procurement department of Ethio telecom. The table below shows the study results.

	N	Minimum	Maximum	Mean	Std. Deviation
Q2.1_ The right objective/activity/ measures are identified.	73	1	5	3.03	1.13
Q2.2_ Balanced Scorecards at all levels have sufficient key performance indicators to measure objectives.	73	1	5	3.15	1.277
Q2.3_ Each measure weighted based on their importance.	73	1	5	3.37	1.161
Q2.4_ Measurement data sources are clearly stated.	73	1	5	3.12	1.258
Q2.5_ The data collected on measurement validated by authorized body.	73	1	5	3.79	0.912
Q2.6_ For each measures baseline, target and threshold were set clearly.	73	1	5	3.38	0.981
Q2.7_ While designing Performance measures data validating body assigned properly.	73	1	5	3.08	0.862
Q2.8_ The organization evaluation depends on the target/plan of balance scorecard.	73	1	5	3.66	0.975
<b>Average Score</b>				<b>3.3225</b>	<b>1.0695</b>

Table 4.4 BSC measurement is implemented in procurement department of Ethio telecom

The findings of the study in the table shown above indicate the extent to which Balanced Scorecard Card (BSC) measurement is implemented in procurement department. The results show that most of the respondents' agreed on The data collected on measurement validated by authorized body, The organization evaluation depends on the target/plan of balance scorecard, For each measures baseline, target and threshold were set clearly, Each measure weighted based on their importance, Balanced Scorecards at all levels have sufficient key performance indicators to measure objectives and The right objective/activity/ measures are identified. They were represented by means of 3.79(45.2%), 3.66(50.7%), 3.38(39.7%), 3.37(45.2%), 3.15(37.0%) and 3.03(42.5%) respectively. The data collected on measurement validated by authorized body and The organization evaluation depends on the target/plan of balance scorecard were rated highest because they enable the implementation of Balanced Scorecard Card (BSC) on procurement process to unfold in a faster, more efficient and effective manner, with fewer plan inconsistencies and most likely reasonable appraisal of procurement staffs. This appraisal system motivates employees and associated with less cycle time to perform their task, which translates into higher

customer satisfaction and a more efficient and simplified purchasing process. The purchasing process is simplified and also has a favorable impact on the purchasing cycle time. Faster cycle time provides increased flexibility and more up-to-date information at the time of placing a purchasing order.

However, respondents' disagreed on measurement data sources are clearly stated. This was represented by means of 3.12(27.4%). on the other hand, designing Performance measures data validating body assigned properly was a neutral response and it was represented by means of 3.08(42.5%). Though, the standard deviation show the spread of ideas of the respondents and from the table the standard deviation ranges from 1.258 to 0.862 indicating that it is a small value thus respondents were agreeing to the same idea, it should be clearly stated measurement data source to the procurement staffs.

#### 4.9 BSC evaluation system took place in procurement department of Ethio telecom

	N	Minimum	Maximum	Mean	Std. Deviation
Q3.1_ Evaluation is always based on plan.	73	1	5	2.7	0.982
Q3.2_ Performance progress monitored periodically before formal evaluation	73	1	5	2.81	1.089
Q3.3_ Formal evaluation takes place regularly.	73	1	5	3.47	1.015
Q3.4_ Evaluation takes place in Open and transparent two-way- communication.	73	1	5	3.05	0.864
Q3.5_ The boss influence on evaluation is reduced.	73	1	5	2.75	0.983
Q3.6_ There is Reward for those who performed above standard.	73	1	5	3.19	1.076
Q3.7_ The result of evaluation is used for decision making.	73	1	5	3.12	0.881
Q3.8_ BSC evaluation system is user friendly.	73	1	5	2.9	0.974
<b>Average Score</b>				<b>2.99875</b>	<b>0.983</b>

Table 4.5 BSC evaluation system took place in procurement department of Ethio telecom

The respondents indicated BSC evaluation system took place in procurement department as follows: Most of the respondents' agreed on formal evaluation takes place regularly, there is Reward for those who performed above standard. They were represented by means of 3.47(61.6%) and 3.19(49.3%) respectively. However, respondents' disagreed on. BSC evaluation system is user friendly, Performance progress monitored periodically before formal evaluation, the boss influence on evaluation is reduced, and Evaluation is always based on plan. They were represented by means of 2.9(41.1%), 2.81(42.5%), 2.75(37.0%) and 2.70(43.8%) respectively. On the other hand, the result of evaluation is used for decision making and Evaluation takes place in Open and transparent two-way- communication were a neutral response and they were represented by means of 3.12(46.6%) and 3.05(42.5%) respectively.

Though, formal evaluation takes place regularly the study revealed most of the respondents disagreed on BSC evaluation system is user friendly, Performance progress monitored periodically before formal evaluation, the boss influence on evaluation is reduced and evaluation is always based on plan. The Balanced Scorecard is a tool to facilitate communication within the process of translating the strategy; If the BSC is used only as a tool for measuring and monitoring performance in the dimensions incorporated in it, without implementing the related process, this will restrict the effectiveness of the Scorecard and it is more likely to fail (Olive et al., 2003; Davis, 1996; Hasan and Tibbit, 2000 as stated by Othman et al., 2006). Therefore, these variables enable the implementation of Balanced Scorecard Card (BSC) on procurement process to unfold in inefficient and ineffective manner, with inconsistent planning, boss influence in appraisal of procurement staffs. This appraisal system impedes motivation, customer satisfaction and simplified purchasing process.

#### 4.10 Leaders\managers, experts and stakeholders trained and understood balanced scorecard

	N	Minimum	Maximum	Mean	Std. Deviation
Q4.A_ Training and education about balanced scorecard.					
Q4.1_ High level of knowledge the managers and employee have on balanced scorecard at this time.	73	1	5	2.63	1.021
Q4.2_ Lack of adequate education and experience.	72	2	4	2.99	0.813
Q4.3_ Lack of technical skill.	73	2	5	3.47	0.867
Q4.4_ Encourage and facilitate sharing of knowledge and ideas.	73	1	5	3.47	0.867
Q4.5_ Encourage and facilitative learning by individual and teams.	73	2	5	3.29	0.92
<b>Average Score Q4A</b>				<b>3.17</b>	<b>0.8976</b>
Q4.B_ Level of understanding about balanced scorecard.					
Q4.6_ High level of understanding about balanced scorecard at this time during program implementation	73	1	5	2.92	1.14
Q4.7_ Perceive balanced scorecard as measurement tool	73	2	5	3.78	0.712
Q4.8_ Perceive balanced scorecard as a middle management task.	73	2	4	3.18	0.77
Q4.9_ Adequate awareness to all stakeholders about balanced scorecard.	73	1	5	2.71	0.874
<b>Average Score Q4B</b>				<b>3.1475</b>	<b>0.874</b>
<b>Average Score</b>				<b>3.51222</b>	<b>0.98684444</b>

Table 4.6 Leaders\managers, experts and stakeholders trained and understood balanced scorecard

The respondents were asked to indicate their level of agreement with the following statements regarding leaders\managers, experts and stakeholders were trained and educated on balanced scorecard in procurement department as follows: Most of the respondents' agreed on Lack of technical skill on balanced scorecard, but Encourage and facilitate sharing of knowledge and ideas and Encourage and facilitative learning by individual and teams. They were represented by means of 3.47(63.0%), 3.47(57.5%) and 3.29(52.1%) respectively. However, Lack of adequate education and experience on balanced scorecard and High level of knowledge the managers and employee have on balanced scorecard at this time were a neutral response and they were represented by means of 2.99(34.76%) and 2.63(32.9%) respectively.

Out of the four values given for the question three of them on the Leaders\managers, experts and stakeholders were Level of understanding about balanced scorecard, majority of the responses were agree giving a composite score of 3.1475. This shows that the sourcing department has high level of understanding on BSC. High level of understanding on BSC leads to improvement and implementation of BSC on sourcing department to satisfy the needs of all stakeholders. However, still study inadequate awareness to all stakeholders about balanced scorecard represented by a means of 2.71(42.5%).

The data collected above indicates a composite mean score of 3.51222 with standard deviation of 0.98684444 across the means for leaders\managers, experts and stakeholders trained and understood balanced scorecard on sourcing/procurement department. The data shows that majority of the respondents agreed to sourcing department staffs have lack of technical skill even though they have moderate of understanding about balanced scorecard at this time. With the inclination towards the agree and response the research can conclude that the respondents showed inadequate awareness to all stakeholders about balanced scorecard and pre requisite to cushion the challenges eminent in BSC Implementation in procurement department.

### **Further analysis based on interview and focus group discussion**

This analysis is made on the basis of the interview conducted with Sourcing managers and supervisors and focus group discussion with specialists and documents related to the implementation of the Balanced Scorecard was examined to study Balanced scorecard implementation practice and its challenges on procurement department. To gain an overview of the Challenges of implementing Balanced Scorecard Card (BSC) in procurement department, BSC measurement is implemented in procurement department of Ethio telecom, BSC evaluation system took place in procurement department of Ethio telecom and whether Leaders\managers, experts and stakeholders trained and understood balanced scorecard well during implementation process. Consequently, most of the respondents' that were interviewed felt that appropriate proactive planning and setting target has should been adopted in order to sustain the implement of BSC, and they observed Lack of improvement concerning BSC implementation process after commencement of BSC implementation in procurement department, finally, they recommended based on their experience to boost BSC implementation process measurement data sources should be clearly

stated, Performance progress monitored periodically before formal evaluation, the bosses should not influence on evaluation is reduced in contrast to the measurement defined and to be improve technical skill on balanced scorecard.

## CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

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### 5.1 Introduction

This chapter presents summary of findings, conclusions, recommendations that the researcher found to be fundamental in relation to the assessment of Balanced Scorecard implementation practice and its challenges on procurement Department in ethio telecom.

### 5.2 Summary of Findings

From the study it is revealed that ethio telecom has a vision of making operational improvements in support of an organization's strategic objectives and the steady growth of the country's economy, re-structured its functions in different Divisions, Departments and Sections. Sourcing and Facilities division (SFD) is one of biggest support divisions' that is in charge of supplying goods, services and works needed by end users. Sourcing Department is one of the three Departments' which exists in SFD whose objectives are: " providing step by step instructions for responsible ethio personnel in Sourcing activities, aligning their decision and duty to the Sourcing policy and strategies; ensuring Sourcing activities are conducted as per the Sourcing principles stated in the policy; aligning Balanced Scorecard to build up results based measurement system and develop new attitude of employees who choose to be measured only through their results throughout ethio telecom'. Likewise, the main intent of this research was to assess Balanced Scorecard (BSC) implementation practice and its challenges in procurement department.

- ✓ The study established out of 73 respondents most of the respondents are males and majority of the respondents are 6-10 years' work experience in the organization.
- ✓ Additionally respondents educational background reveals that majority of them are educated and have better experiences in the company.
- ✓ The results show that the practice and challenges of implementing the Balanced Scorecard (BSC) in procurement department had been seen Balanced Scorecard as the strategic procurement planning and management framework, Holding review meeting around procurement planning , Procurement function has adopted BSC hence procurement activities are done efficiently & effectively, Align the organization/department, systems and

employee performance around procurement planning through rewards and recognition program.

- ✓ Nevertheless, the result shows from questionnaire, focus group discussion and interview there is a need to have appropriate proactive planning and setting target has adopted in order to implement BSC, improvement concerning BSC implementation process, empower competent people to help plan and implement change and enable every employee and their job aligned with planning.
- ✓ On the other hand, the study shows majority of the respondents agreed on the practice of BSC measurement implementation in procurement department on the following variables: The data collected on measurement validated by authorized body, The organization evaluation depends on the target/plan of balance scorecard, For each measures baseline, target and threshold were set clearly, Each measure weighted based on their importance, Balanced Scorecards at all levels have sufficient key performance indicators to measure objectives and the right objective/activity/ measures are identified.
- ✓ However, the study also found from the interviewees & focus group discussion that the main challenges they faced from the Balance Scorecard measurement implementation data sources are not clearly stated.
- ✓ The study also found that majority of employees' needs improvement on BSC evaluation system is to be user friendly, Performance progress monitored periodically before formal evaluation, the interference of boss on influence of evaluation is reduced, and Evaluation is performed always based on plan, even though they agreed on formal evaluation takes place on regularly bases.
- ✓ Regarding leaders\managers, experts and stakeholders aptitude for training and understood balanced scorecard the study revealed that the implementation of BSC was not exhaustive. 63.0% of the respondents' agreed on Lack of technical skill on balanced scorecard. Conversely, majority of the responses were agreed on giving a composite score mean of 3.1475 on the level of understanding about balanced scorecard.

### **5.3 Conclusions**

Despite its worldwide popularity and its acceptance as a powerful strategic management tool, a significant number of organizations have encountered different problems when trying to introduce the Balanced Scorecard in their business. A majority of organizations have either imple-

mented the BSC without achieving any significant performance improvement, or have abandoned it at the implementation stage.

The purpose of this thesis has been to assess Balanced Scorecard implementation practice and its challenges on procurement Department. First, a literature review of the BSC, its concepts and main characteristics was conducted. Second, previous studies were used to identify the most important barriers and/or challenges to the successful implementation of the BSC on procurement.

- ✓ The findings show that the barriers and/or challenges found in the literature and the challenges observed in sourcing/procurement department are not similar.
- ✓ The most significant problem was found in the study are: Balance Scorecard measurement implementation data sources are not clearly stated, BSC evaluation system was not user friendly, Performance progress was not monitored periodically before formal evaluation, boss influence on evaluation process, Evaluation was not performed always based on plan, and lack of technical skill on balanced scorecard. Both the interview and the focus group participants recognized all of the challenges identified in the study in the as well.
- ✓ In both the interview and the focus group, the participants showed great interest on a need to have appropriate proactive planning and setting target has adopted in order to implement BSC, improvement concerning BSC implementation process, empower competent people to help plan and implement change and enable every employee and their job aligned with planning.
- ✓ The researcher further conclude that Balanced Scorecard as part of procurement Performance Management program has brought improvements and benefits at Sourcing department in ethio telecom as it serves as a gold standard against which to benchmark long-term goals for diversification, customer satisfaction, employee engagement and corporate social responsibility and it was established that Balanced Scorecard has not only enabled the procurement department to align its strategic objectives to the company's overall objective but also to undertake measurable performance management initiatives that align people, processes and resources for their most efficient deployment and operational excellence.

## 5.4 Recommendations

Based on the findings listed, the researcher forwards the following recommendations:

The researcher recommends that members of staff/procurement department should be involved more in the change process particularly in areas that touch their day to day operations like in the case of implementing balanced scorecard if management wishes to achieve maximum response and output. There is a need to develop a continuous training and technical skills mechanism so that the members of staff are updated regularly on the developments and for the concepts to be meaningful.

Procurement department should use BSC as a vehicle for communication among user sections and its employees through the organisation by defining measures that relate to more detailed activities. So this would make it possible to use the balanced scorecard as a basis for setting personal goals and linking these goals to employees' personal rewards. The researcher recommends full involvement and/or support of all procurement staffs in forecasting and planning of goods and/or services as a critical component of BSC because it allows the employees to identify with the targets to be achieved and subsequently becoming effective. Feedback, learning and growth provide the most innovative and most important aspect of the entire BSC management process on procurement department.

The study also recommends that management should use different methods in solving challenges faced in balanced score card(BSC) implementation on procurement department such as facilitating the accomplishment of BSC goals ,elaborating and expounding key areas of BSC to the staff, supervising the implementation process, providing clarification, assessing achievement of lower level employees, clearly state measurement data source and validated by authorized body, execute evaluation always based on plan without boss influence on the result obtained, open and transparent communication, enlightening staff on the importance of procurement planning and BSC to fulfil company's strategies, coordination between top management and low level management and acting as source of information.

In order to address the challenges on implementation of balanced scorecard on procurement department management strategies which should be used these management strategies include; offering performance pegged rewards related to the overall performance, close monitoring through

reviews, staff involvement in crafting some of the targets, create awareness & provide training on the concepts, measurement & evaluation systems, bottom upward development of BSC, provision of proper information, provision of guides to solve these challenges, guidance by BSC building team.

The BSC offers a perspective on how to link the various key indicators on performance targets altogether. The management can validate the balanced scorecard as tool for measuring the performance of its activities and that of its employees. There will be need however to ensure effective follow up and review of the deliverables to ensure that all staff are comfortable that the tool measures their performance effectively.

### **5.5 Suggestion for Further Studies**

According to Niven (2006), no two BSC implementations are completely alike. Further, the same author states that organizations which decided to implement the tool should do so in a way that fits the individual culture, current management processes, and readiness for such a major change initiative. Therefore, the study was limited to Sourcing/procurement department in ethio telecom. The researcher would thus recommend for further study in the topic of Balanced Scorecard implementation Practice and its challenges on procurement activities.

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## APPENDICES

### APPENDIX-I



**Addis Ababa University  
School of Commerce**

**Department Of Logistics and Supply Chain Management  
Program: MA Degree in LSCM**

Research on assessment of Balanced Scorecard implementation practice and its challenges  
on procurement Department  
in  
Ethio telecom

**Questionnaire to be filled by employees of Ethio telecom working on Sourcing Department**

**Dear Participant,**

I am conducting a research at Addis Ababa University School of commerce pursuing studies in MA Degree In logistics and supply chain management. The purpose of this questionnaire is to collect data for a research paper entitled ‘‘**Assessment of Balanced Scorecard implementation Practice and its challenges on Procurement Department in Ethio telecom**’’. This is purely an academic work. The questionnaire is intended to evaluate the overall implementation of the Balanced Scorecard (BSC) on procurement department in Ethio telecom. The study shall also assess particularly the challenges faced by the procurement department in measurement and evaluation of the Balanced Scorecard. Thus your reply will have a real contribution to the accuracy and usefulness of the study. Therefore, I kindly request your cooperation in filling up the questionnaire. All the data gathered will be kept confidential.

If you have any question about the questionnaire. Please contact me via cell phone +251 (09) 11 50 08 50 or E-mail [wubamlak.mekonnen@ethiotelecom.et](mailto:wubamlak.mekonnen@ethiotelecom.et)

**Thank you in advance**

Wubeamlak Mekonnen

## Instructions

1. Please, answer all questions,
2. In all cases where answer options are available, tick (√) inside the given box
3. For the open questions, write your answers in the space provided.

### Section A. Respondent's profiles

Please indicate your appropriate choice among the options provided by circling the alphabet that best represents you.

#### 1. Gender

A/ Male

B/ Female

#### 3. High Attend Educational level

A. Certificate

B. Diploma

C. First Degree

D. Second degree

E. Above

#### 4. Work experience in the organization

A. 0- 5 years

B. 6-10 years

C. 11-15 years

D. Above 15 years

#### 5. Your Experience on BSC implementation

A. Less than 6 months'

B. 6 month to 1 year

C. more than 2 year

D. 1 year – 2 year

#### 6. What is your job level?

A. Management

B. Supervisor

C. Specialist

D. Procurement and supplier relation administrator/Staff

**Section B.**

1. Kindly indicate how much you agree or disagree with the following statements concerning the practice & challenges of implementing the Balanced Scorecard Card (BSC) in procurement department

Use the scale of

(1-Strongly Agree 2- Agree 3-Neutral 4-Disagree 5-Strongly Disagree)

No.	Description	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.1	Appropriate proactive planning and setting target has adopted in order to implement BSC					
1.2	Procurement function has adopted BSC hence procurement activities are done efficiently & effectively					
1.3	Lack of improvement concerning BSC implementation process					
1.4	Align the organization/department, systems and employee performance around procurement planning through rewards and recognition program.					
1.5	Empower competent people to help plan and implement change.					
1.6	Every employee and their job are aligned with planning.					
1.7	Holding review meeting around procurement planning					
1.8	Consider Balanced Scorecard as the strategic procurement planning and management framework.					
1.9	Reaching consensus strategy before developing the scorecard.					

Please you are kindly requested to write your response as much as possible to the following open ended question.

What are the obstacles in the implementation of the BSC in your department? What improvements can be recommended concerning the implementation process?

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2. Kindly indicate how much you agree or disagree with the following statements concerning BSC measurement is implemented in procurement department of Ethio telecom

Use the scale of

(1-Strongly Agree 2- Agree 3-Neutral 4-Disagree 5-Strongly Disagree)

No.	Description	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
2.1	The right objective/activity/ measures are identified.					
2.2	Balanced Scorecards at all levels have sufficient key performance indicators to measure objectives.					
2.3	Each measure weighted based on their importance.					
2.4	Measurement data sources are clearly stated.					
2.5	The data collected on measurement validated by authorized body.					
2.6	For each measures baseline, target and threshold were set clearly.					
2.7	While designing Performance measures data validating body assigned properly.					
2.8	The organization evaluation depends on the target/plan of balance scorecard.					

Please you are kindly requested to write your response as much as possible to the following open ended question.

What is your view on BSC measurement implementation in procurement department?

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3. Kindly indicate how much you agree or disagree with the following statements concerning BSC evaluation system took place in procurement department of Ethio telecom?

Use the scale of

(1-Strongly Agree 2- Agree 3-Neutral 4-Disagree 5-Strongly Disagree)

No.	Description	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
3.1	Evaluation is always based on plan.					
3.2	Performance progress monitored periodically before formal evaluation					
3.3	Formal evaluation takes place regularly.					
3.4	Evaluation takes place in Open and transparent two-way- communication.					
3.5	The boss influence on evaluation is reduced.					
3.6	There is Reward for those who performed above standard.					
3.7	The result of evaluation is used for decision making.					
3.8	BSC evaluation system is user friendly.					

Please you are kindly requested to write your response as much as possible to the following open ended question.

Do you think that BSC evaluation system took place in Open and transparent way based on setting plan target? If so what improvements can be recommended?

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4. Kindly indicate how much you agree or disagree with the following statements concerning do the leaders\managers, experts and stakeholders trained and understood Balanced Scorecard

Use the scale of

(1-Strongly Agree 2- Agree 3-Neutral 4-Disagree 5-Strongly Disagree)

No	Description	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
A	Training and education about Balanced Scorecard.					
4.1	High level of knowledge the managers and employee have on Balanced Scorecard at this time.					
4.2	Lack of adequate education and experience.					
4.3	Lack of technical skill.					
4.4	Encourage and facilitate sharing of knowledge and ideas.					
4.5	Encourage and facilitative learning by individual and teams.					
B	Level of understanding about Balanced Scorecard.					
4.6	High level of understanding about Balanced Scorecard at this time					
4.7	Perceive Balanced Scorecard as measurement tool					
4.8	Perceive Balanced Scorecard as a middle management task.					
4.9	Adequate awareness to all stakeholders about Balanced Scorecard.					

Please you are kindly requested to write your response as much as possible to the following open ended question.

Do you think that everybody have knowledge skill and awareness about Balanced Scorecard?

Would explain your suggestion toward this?

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***APPENDIX – II***

**Addis Ababa University  
School of Commerce**

**Department Of Logistics and Supply Chain Management  
Program: MA Degree in LSCM**

**Interview Questions for managers**

- 1) Can you elaborate the major activities accomplished to properly put into practice the Balanced Scorecard?
- 2) Is BSC system improved continuously based on periodic assessment?
- 3) What are the challenges faced in Balanced Scorecard measurement/evaluation system?
- 4) Did BSC solve the challenges of the previous measurement tools?
- 5) Do you think procurement planning lead to proper implementation of BSC efficiently and effectively?
- 6) To what extent the Balanced Scorecard and strategic procurement planning has enhanced customer satisfaction in the provision of the services in procurement department?
- 7) What improvements can be recommended concerning BSC implementation process in procurement department?

***APPENDIX – III***

**Addis Ababa University  
School of Commerce**

**Department Of Logistics and Supply Chain Management  
Program: MA Degree in LSCM**

**Focus Group Discussion**

- 1) What improvements can be recommended concerning BSC implementation process in procurement department?
- 2) What advantages and disadvantages do you see as a user the BSC?
- 3) Do you think that everybody have knowledge, skill and awareness about Balanced Scorecard? Would explain your suggestion toward this?
- 4) What are the obstacles in the implementation of the BSC in the organisation?
- 5) What are the challenges faced in Balanced Scorecard measurement/evaluation system?
- 6) Did BSC solve the challenges of the previous measurement tools?

## APPENDIX – IV Reliability test

Reliability test result.spv [Document1] - SPSS Viewer

File Edit View Data Transform Insert Format Analyze Graphs Utilities Add-ons Window Help

Output

- Log
- Reliability
  - Title
  - Notes
  - Active Dataset
  - Warnings
  - Scale: ALL VARIABLES
    - Title
    - Case Processing Summary
    - Reliability Statistics
    - Item Statistics
    - Inter-Item Correlation
    - Item-Total Statistics
    - Scale Statistics

[DataSet1] C:\Users\Wubeamlak\Desktop\pilot test questionnaire.sav

**Warnings**

Each of the following component variables has zero variance and is removed from the scale: Q4.3\_ Lack of technical skill.

The determinant of the covariance matrix is zero or approximately zero. Statistics based on its inverse matrix cannot be computed and they are displayed as system missing values.

**Scale: ALL VARIABLES**

**Case Processing Summary**

		N	%
Cases	Valid	5	62.5
	Excluded <sup>a</sup>	3	37.5
	Total	8	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.858	.863	33