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Performance Analysis and Improvement of Ethiopian Leather Footwear Factories:

With Special Reference to Anbessa Shoe S.C.

By: Tomas Cherkos

A thesis submitted to school of Graduate Studies of Addis Ababa University in partial fulfillment of the requirements for the Degree of Masters of Science in Mechanical Engineering (Industrial Engineering Stream)

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Addis Ababa University

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List of Abbreviations

AALF	All Africa Leather Fair
AGOA	African Growth Opportunity Act
ASSC	Anbessa Shoe Share Company
BSC	Balanced Scorecard
COMESA	Common Market for Eastern and Southern Africa
CSA	Central Statistical Agency
ECBP	Engineering Capacity Building program
ELFF	Ethiopian Leather Footwear Factories
ELIA	Ethiopian Leather Industry Association
ERP	Enterprise Resource Planning
GoE	Government of Ethiopia
GTP	Growth and Transformation Plan
HRD	Human Resource Development
KPI	Key Performance Indicator
LIDI	Leather Industries Development Institute
LLPI	Leather and Leather Products Industries
MoI	Ministry of Industry
MoT	Ministry of Trade
MoTI	Ministry of Trade and Industry
OBSC	Organizational Balanced Scorecard
PBSC	Personal Balanced Scorecard
PPP	Performance, Productivity and Profitability
SCOR	Supply Chain Operation Reference
SME	Small and Medium Enterprises
TPS	Total Performance Scorecard
UNIDO	United Nation Industrial Development Organization

Abstract

Nowadays there is a need for business enterprises to measure, analyze and improve performance as they encounter increasing competition from an ever-changing business environment. Performance is the valued productive output of a system in the form of goods and services and performance measures are the lifeblood of organizations, since without them no decision can be made, as it is the first step to control and improvement.

Though the Government of Ethiopia is promoting the leather footwear industry as a priority area and the sector has a huge potential for developing an economy, its performance is unsatisfactory due to external and internal problems that hinders its competitiveness. Thus, the aim of this study is to assess and evaluate performance management practice of Ethiopian Leather Footwear Factories, identify critical problems and propose a firm level total performance improvement method and suggest roles of stakeholders or improvement directions towards the external problems.

To undertake this research, primary and secondary data are collected through a survey questionnaire, interviews (in the form of discussion) and physical observation in the case factory (Anbessa shoe share company), as well as referring previous research works and case company records. To analyze and present the data, pie charts, bar graphs, and cause and effect diagram are used. In addition, to see the performance gap of the case factory, benchmarking is done.

From the research, it is concluded that the leather shoe factories have both internal and external problems resulting low performance and competitiveness. To alleviate the internal or firm level problems, a total performance improvement method called Total Performance Scorecard (TPS) is proposed. In addition improvement directions are forwarded towards the external or sector level problems. Regarding the proposed method, a performance measurement framework/scorecards and its implementation guideline is developed for Anbessa S.C. TPS is a combination and also an extension of the concept BSC, TQM and Competences Management which is being defined as a systematic process of continuous, gradual and routine improvement, development and learning. The process focused on the solid increase of both the personal and organizational performances. This method has an important aspect in maximizing the involvement and loyalty of all involved person, as well as encouraging individual and team learning and creativity via its Personal Balanced Scorecard (PBSC).

Key words: ***Performance, Performance improvement models, ELFFs, footwear manufacturing, Total performance scorecard***

CHAPTER ONE

INTRODUCTION

1.1 Background & justification of the study

Nowadays there is a need for business enterprises to measure, analyze and improve performance as they encounter increasing competition from an ever-changing business environment. Furthermore, in order to more effectively cope with the significant competitive issues of increasingly sophisticated customers and management practices, accelerating globalization and product differentiation, a number of proposals have been put forward with regard to developing more appropriate performance improvement methods. Performance is the valued productive output of a system in the form of goods and services. The actual fulfillment of the goods or services requirement is thought of in terms of units of performance. These goods or services units of performance are usually measured in terms of quantity, time and quality feature measures. Performance measures are the lifeblood of organizations, since without them no decision can be made, as it is the first step to control and improvement [1, 2].

The industrial sector in Ethiopia has been characterized by a low level of development, even by the standards of many least developed countries. This sector is basically intended for the production of both for the local market as well as the export market. Ethiopia, as it is known, is the leading African country in its livestock wealth. This huge potential resource will play a significant role for the leather industry sector to be further enhanced. In addition, this sector is one of the sectors that are believed to play a significant role in the enhancement of the overall economy of the country thereby contributing a paramount share towards the five-year goals of the Growth and Transformation Plan (GTP) being implemented by the Government of Ethiopia (GoE). The leather industry sector is one of the leading foreign currency generating sectors of the country. Therefore, the sector needs more foreign and local investments to come in the areas of footwear, glove, leather garment, leather goods and articles.

Footwear is an active product in international markets. It is being delocalized from developed countries to developing ones. As Tetsushi 2007, the production of leather shoes in Ethiopia dates from the late 1930s when Armenian merchants founded two shoe factories in Addis Ababa. These factories nurtured a number of shoemakers, who opened their own factories in Addis Ababa and trained their workers. Ethiopian leather shoe industries are producing shoes for export market. The industry took back the domestic market from Chinese shoes which had flooded the market in around

2001. Since then, the industry has been growing vigorously. These developments are good news to those who are interested in poverty reduction in Sub-Saharan Africa because Ethiopia is one of the poorest countries and the leather-shoe industry is one of the most labor-intensive industries which provide ample employment opportunities for the poor [3].

The leather industry has been one of the major traditional industries together with the coffee and garment industries, but it is now at a turning point to change itself from a traditional industry to a modern industry to penetrate the international high value-added leather market, under the strong initiative of the GoE. *The leather footwear industry is considered as an important sub-sector that leads the whole sector's modernization.* Although the export of leather footwear started only in 2005, the export value has been growing steadily since then and is expected to have a big impact on the Ethiopian economy. The importance is not only the economic impact resulting from the trade but also the job opportunities the industry may create could make a significant impact on poverty reduction.

As the study made by embassy of Japan in Ethiopia in 2008 shows, Ethiopia possesses one of the largest populations of livestock in Africa and even 7^{th}-9^{th} in the world, i.e. 41miilion cattle, 25million sheep and 23million goats. However, the resource is not fully utilized and only 2.7million hides, 8.1million sheep skins and 7.5million goat skins are sold on the market in 2007/2008. Therefore, the leather industry still has room for development by utilizing the abundance of the resource. But not only this but also proper utilization of finished leather for footwear is low in most footwear industries [4]. Berhanu Nega (Ph.D.) and Kibre Moges, 2002 investigates that the raw hide and skins are purchased from local tanneries what is domestically supplied to the leather products industry is only the *14 percent* of the total product of the tanning industry. The bulk of the tanning industry output is exported in semi-processed form, a testimony to the underdeveloped nature of the sector as a whole: inefficient tanning and infant leather products sub-sectors. Birhanu, 2002 analyzed that on average, Ethiopia produces only 25 million dollars worth of footwear annually which is less than *50 percent* of the tanning industry's output [5]. This can be one of the major indications of low performance for the Ethiopian shoe factories.

Studies on Ethiopian leather footwear industries made by UNIDO, Japan Embassy and other researchers shows that their performance unsatisfactory and also faces some difficulties [4, 5, 7, 8, 9&45]. Most of these factories are not achieving their proper performance and are characterized by low productivity (material and labor), poor working conditions, and improper utilization of resources, weak relationship with customers and suppliers and poor management.

Performance improvement in the firms could be achieved through effective implementation and use of modern performance improvement methods which will bring total performance improvement. This does not rely for its success on the application of specific performance techniques – it depends much more on the commitment and creativity of all members of the manufacturing plant [6, 12&13]. Ideally, most manufacturing plants would like to find the method for the overall performance/productivity improvement strategy. However, manufacturing firms that are searching for improvement strategies are still likely to find that they are unable to take full advantage of the modern methodologies and techniques of performance improvement. Part of this can be attributed by fear of changes, complexity in working culture, lack of management commitment and lack of understanding of performance.

Performance analysis using manufacturing performance measures and improvement techniques is one of the promising tools employed for assessing performance and then taking the necessary measures for improvements of existing deficiencies. Moreover, Performance measures are devices to aid decision makers discriminate among competing manufacturing arrangements or to improve the performance of an existing system. The main objective of this paper is assessing and analyzing the performance of Ethiopian leather footwear factories and proposing a total performance improvement method.

1.2 Statement of the problem

The Ethiopian leather footwear industry has grown within the past few years owing to the strategic support and attention provided by the government. Ethiopian made leather footwear is now being exported to many European, African countries and also recently to US. Moreover, potential buyers from Europe, North American and African are also showing their interest to source leather footwear from Ethiopia. Increased investment by local and foreign investors to take part in the sectors is also evident to further justify the growth will continue in the years to come. According to the benchmark implementation plan for the Ethiopian footwear sector in 2009, the level of competitiveness in the international market is far below average to hinder the level of desired growth rate though the sector is growing [7]. As Birhanu 2002 analyzed, on average, Ethiopia produces only 25 million dollars worth of footwear annually. But this is less than *50 percent* of the tanning industry's output and this is one of the major indications of low performance for Ethiopian shoe factories.

Considering production which is one of the manufacturing performance measures, international benchmark has a production of 6500 pairs/shift whereas in Ethiopia, Anbessa Shoe Share Company (ASSC) has 2250pairs/shift and others below this. In addition, international benchmark has labor

productivity of 16pairs/person whereas Ethiopian shoe factories have about 3pairs/shift [7]. This indicates that the manufacturing performance is low and an improvement is a need.

A benchmarking analysis on shoe production in Ethiopia made by Global Development Solutions in 2006 indicates that Ethiopia is relatively competitive against Indonesia with respect to the cost of leather shoe assembly, but less against Bangladesh. Ethiopia's shoe manufacturing productivity is very low, and compared with China, the largest shoe producer in the world; it takes 78 minutes to produce one pair of shoe uppers in Ethiopia, whereas it only takes 30 minutes for Chinese manufacturers [8, 9]. Also, since the industry has been targeting only the domestic market for a long time, the product development, market development and productivity improvement are crucial to increase the trade volume.

From Central Statistics Agency (CSA, 2010) data and Leather Industry Development Institute (LIDI) five year [1997-2001E.C] export performance plan of leather footwear factories, the five year average export performance is 28% comparing to the planned export which is low. In addition, the sector is envisaged to generate export income amounting to 500 million USD at the end of the plan year (2014/15) and it will focus mainly on finished leather, **footwear (63%)**, gloves and leather garment and articles [10, 11]. This indicates that the leather footwear sub-sector has given more emphasis compared to the other leather subsectors. However, based on the previous plan year of low performance (28%), the sector will not also meet the new or current plan year performance unless an improvement strategy or method is used by the footwear factories.

The major problems occurring in the leather footwear factories are shortage of raw materials (processed leather), long procurement lead time for imported materials, lack of demand, low quality of finished leather, production delays and bottleneck at the workstations, lack of measurement and improvement method, working far from the standard and the installed capacity and inefficient utilization of resources (machine, labor and material). In addition, as per the benchmark implementation plan for the Ethiopian footwear sector in 2009, low labor productivity (best practice =16 pairs of shoe/day/person but actual average production of Anbessa= 3 pairs of shoe/day/person & that of Peacock = 4 pairs of shoe/day/person) is another major problem which have great impact on the operational performance and production efficiency [7]. On the other hand, all these factors have a great impact on the product cost which in turn contributes for the decreasing in profit. To sum up, these are the performance problems which currently affect the total performance and competitiveness of the firms. Therefore, it is a need to identify the critical ones, analyze and bring an improvement on the performance of Ethiopian leather footwear factories (ELFFs).

1.3 Objective of the study

General objective

The main objective of the study is to assess the performance of Ethiopian leather footwear factories, analyze the existing performance practices and propose appropriate performance improvement method so as to improve its global competitiveness.

Specific objectives

- Extensive review of the footwear sector to assess and evaluate the current performance and performance improvement practices of ELFFs
- Determine the current performance factors and analyze the SWOT of ELFFs
- Case study analysis to investigate the existing performance measurement practices, identify and analyze firm level operational performance problems
- Identify performance gaps of the company via benchmarking and cause and effect analysis to identify the root causes of poor performance
- Propose a total performance measurement and improvement method and develop measurement framework which fill the gap and bring proper measurement culture
- Develop an implementation guideline for the proposed method

1.4 Scope of the study and limitation

The Ethiopian footwear (shoe) industry is, composed of two sub-sectors: the larger mechanized[1] shoe industries sub sector and the smaller production units – micro, small and medium enterprises including the informal ones. As LIDI, 2002E.C, there are currently eleven medium and large mechanized footwear factories in the formal sector [11]. According to the information obtained from LIDI, the shoe factories which are given due attention by GoE are the larger mechanized ones which are export-oriented. Thus, this study is limited or gives more focus in assessing, reviewing and analyzing performance to these footwear factories. It also includes performance analysis of the manufacturing processes in the case factory and proposes an appropriate performance improvement method. Absence of documented data and lack of cooperativeness of the firms were among the limitations faced.

1.5 Research methodology

It is important to identify and understand the research approaches to be undertaken because it influences the research instruments to be employed and the ultimate goal of the thesis. In addition, its selection should be based on the problem of interest, resources available, skills & training of the researcher, and the audience for the research.

Integration of the following methods is used to achieve the objectives of this paper.

1. **Literature Survey**

In the first stage of the study, an extensive survey has been conducted (to understand the existing concepts, arguments, methods and advancements on performance measurement and improvement) with a particular focus on the problems and improvement activities of manufacturing industry. This is conducted using the following secondary data sources:

- Academic sources - The academic sources consist of books, journal articles and graduate report on various aspects of the performance analysis and improvement.
- Official sources – it include studies and previous surveys of the manufacturing industries in Ethiopia, conducted by government and non- government bodies.
- Public sources - The public sources consist of articles from local and foreign newspapers, magazines and websites.

[1] *Mechanized footwear plant, a production unit, which is equipped with a complete line of machinery for the production of footwear*

2. Data collection

a. Primary Data:

- ***Physical observation***: case company (ASSC) and LIDI model shoe factory and tannery
- ***Interview (in the form of discussion)*** with different responsible bodies in the case company and LIDI researchers
- **Survey Questionnaire:** It was designed and developed to assess the availability of performance factors via collecting qualitative and quantitative primary data regarding the current performance management practices in ELFFs.

b. Secondary Data:

- ***From organizations & associations*:** the researcher tried to collect minimum of recent five year data related to Ethiopian footwear industries (such as; policy & strategy, capacity utilization, production and sales volume, export value, employee creation and wage, etc) in the form of study and journal in different organizations and associations such as; MoT & MoI, CSA, ECBP, UNIDO, LIDI, and ELIA. In addition to collecting raw data, it is tried to have some discussion with experts who work in LIDI. In addition, the questionnaire survey helps to assess the current performance status of ELFFs relative to global.
- Case company previous ***records or documents*** to assess the performance measurement/evaluation practices

3. Data analysis and Presentation

To analyze the collected primary and secondary data, tools used are: bar-graphs, pie-charts, and cause and effect diagrams via spreadsheet/Excel file. After the analysis, discussion and identification of major performance problems, performance gap analysis via benchmarking is done and intervention areas of the case factory are identified. Based on the result of the study, an appropriate performance improvement method with its measurement framework and implementation guideline was proposed. Finally, a conclusion is drawn and strong recommendation with future research areas is forwarded.

1.6 Significance of the study

The footwear companies are associated with company-wide problems. Although they are the focus area by the government, they are not competitive in the global market. As such, identifying the problems and suggesting appropriate improvement method to improve the performance and global competitiveness of ELFFs is necessary to increase Ethiopian economy, reduce poverty and enhance job opportunity. The beneficiaries of this paper can be: the case shoe factory, Ethiopian footwear industries, researchers and students who will conduct studies related to this research area.

1.7 Organization of the thesis

The study is compiled into six chapters. The first chapter comprises the introduction, problems and its approaches. The extensive literature review which includes performance and related terms, manufacturing systems performance measures, and performance improvement methods or models has been presented in the second chapter. The third chapter contains the detail overview of shoe industry globally and in Ethiopia, performance assessment and evaluation of Ethiopian leather shoe factories, survey questionnaire analysis and SWOT analysis of ELFFs. The case study analysis and summary of critical performance problems has been presented in chapter four. Chapter five contains the proposed performance measurement and improvement method with its performance measurement framework and implementation guideline. Finally, the sixth chapter contains study conclusion, recommendations and future research areas.

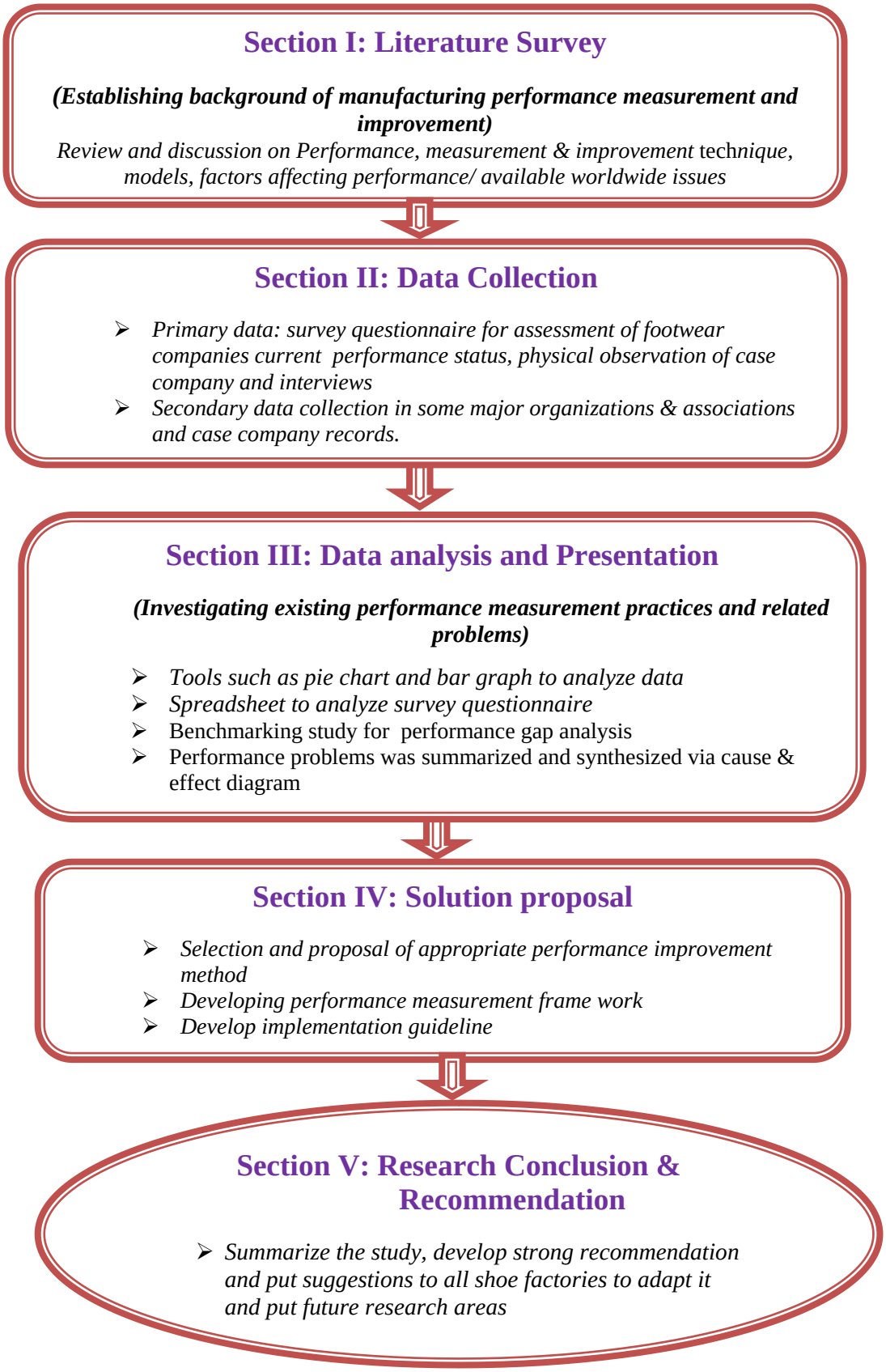


Figure 1.1: Research frame work

CHAPTER TWO

LITERATURE REVIEW

2.1 Overview of performance, production system and related issues

2.1.1 Introducing performance and related terms

As Darryl D. 2000, performance is defined as "the progressive achievement of tangible, specific, measurable and personally meaningful goals." Specific and measurable goals help organizations evaluate success. A number of factors have caused companies to reexamine their performance. These factors include competition, customer demands and knowledge, rapid technological change and internal needs and desires [12].

As Gruenberg T. 2004, the terms performance, productivity and profitability (PPP) have similar or overlapping meanings. All can be described as ratios, and they are easy to confuse. The terms efficiency and effectiveness can be similarly confusing - even though they are often distinguished as being doing things right and doing the right things [2]. To ease the understanding and make the terms usable for improvement work, a presentation of the relations between the terms is made.

Two main views of the relationships between the terms are a hierarchical view and a subset view. The hierarchical classification of measurements supports monitoring and pinpointing measures, where the monitoring measures are of a more general kind and can be used as indicators of problems. However, it is difficult to get information on the specific causes of a problem when information is not sufficiently detailed. The subset view provides information on how to relate the different measures.

Performance and productivity can be viewed as a company's ability to provide customer value. As PPP are often described as ratios, the generic description could be summed up to customer value/resources. However, this ratio is extremely broad and needs to be divided into smaller concepts for use in improvement work.

PPP measurements are an essential ingredient of improvement work, since information about objects in need of change and improvement has to be gathered and measured. These measures help decide which problem areas to approach for improvement and also help evaluate the results of an improvement program.

The measurements of PPP can also input into ongoing control processes - helping the organization to focus on the important characteristics of operations. It is important to understand that

measurement systems have both intended and unintended consequences. As Shirley Daniels 1997, a common problem with measurements of operations is not to measure what can be measured, but to reduce the list of measurements to measure only desired attributes of operations [6]. This is often a problem in case studies, where the practitioner has an overload of measurements to choose problem and for communicating the case effectively to others.

Performance

As Gruenberg T. 2004, performance is perhaps the "widest" term used here, and covers overall economic and operational aspects. The three terms in PPP overlap each other and if they are viewed hierarchically, then performance is at the top, representing an overarching concept [2].

To sum up, performance is the valued productive output of a system in the form of goods and services. The actual fulfillment of the goods or services requirement is thought of in terms of units of performance. These goods or services units of performance are usually measured in terms of quantity, time and quality feature measures.

As Gruenberg T. 2007, discussing and measuring performance has two main aims - first to connect company goals and objectives to improvements and secondly to set targets for improvement activity. Together, these help focus energy and activity and increase the impact of any improvement initiative [13].

An improvement program - if it is to have real impact - must be tightly connected to performance goals and objectives. This helps to ensure clarity of the improvement program and to ensure that all participants are working in the same direction. In turn, if all levels of the company understands the program and its direction; all resources can more easily be directed to the same targets and goals. If improvement goals are connected with overall strategic goals, there can be a "multiplier effect" which fuels performance - objective results (see Figure 2.1 below). A linkage between performance objectives and improvement objectives can raise the impact of improvement work, which in turn helps fulfill performance objectives.

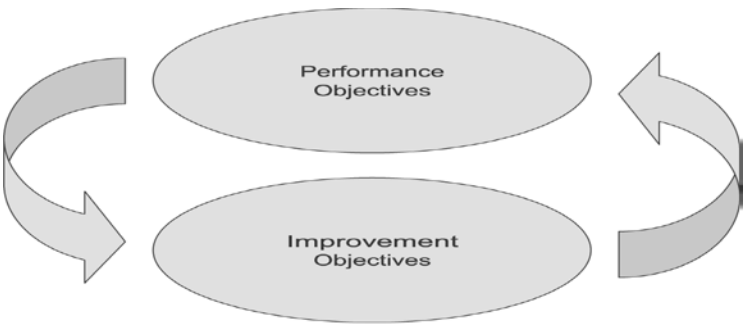
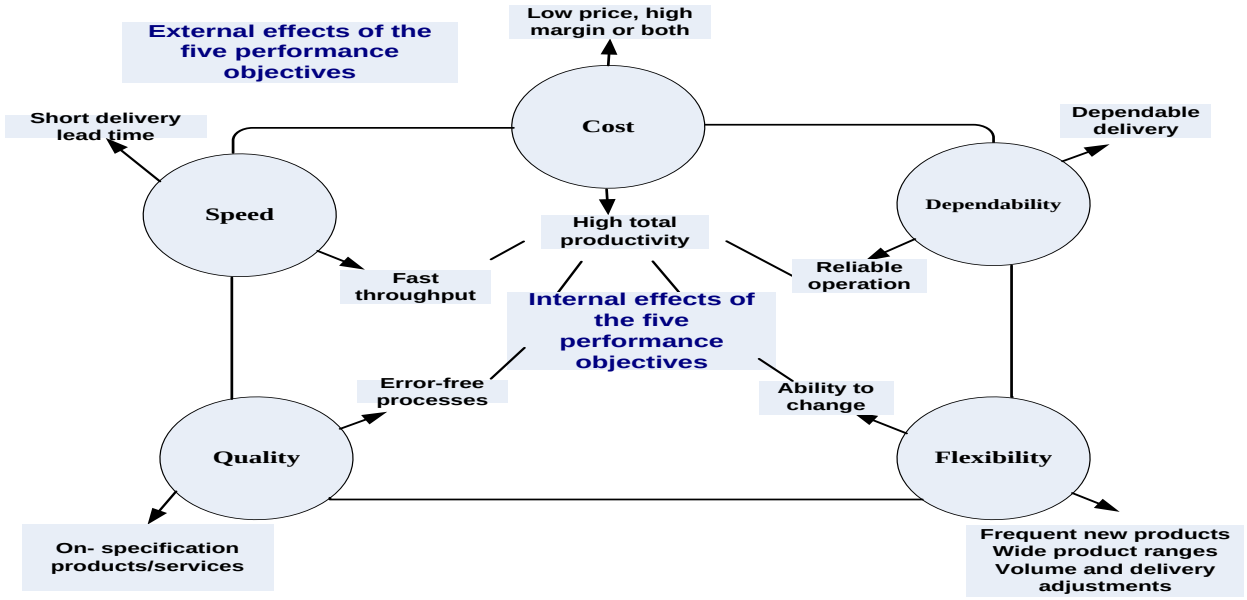


Figure 2.1 A linkage between performance objectives and improvement objectives [2]

Performance objectives - for most organizations - relate to a company's ability to compete and meet customer expectations. Slack et al. (1998) have identified five performance objectives which can be considered generic - applying to just about every commercial, manufacturing organization (see Figure 2.2).



Source: Slack et al. (1998)

Figure 2.2 Performance considerations

``Speed" describes how quickly a delivery can be made after an order is received; whilst the complementary characteristic of “precision” deals with delivering goods and services to the agreed schedule. ``Quality" is the degree to which a company meets customers' perceptions on a variety of characteristics of the delivered products/services and is often expressed and managed using a variety of technical quality factors such as percentage of defect goods. The selling price to customers and the internal production cost are both addressed as part of the performance objective of “cost” - recognizing that some products can be made at low cost but sold at high price (and vice versa!). Finally, the “flexibility” objective deals with how a company reacts to changing demands of customers and changing factors in the general environment.

These performance characteristics can be viewed from two sides, one internal and one external. For example, ``cost" is internally viewed as the costs of production - labor, material supply, energy costs, etc. - and externally as the price to customers. An understanding of these relationships helps determine an appropriate performance measurement regime and an appropriate improvement strategy (Whiting, 1986).

Some aspects of performance are difficult to measure, e.g. customer satisfaction and flexibility, since customer behavior is not static and flexibility is hard to benchmark between different

organizations. Where performance characteristics are difficult or too blunt to be easily measured or of sufficient utility, they may be sub-divided - or even measured ``by proxy". These divided measurements, often as simple ratios, turn out to resemble ``productivity" measurements. Sometimes it is difficult to identify whether a measurement is a performance measure or a productivity measurement. For simplicity, it is suggested that a measure can be regarded as a performance measure if it is related to the five attributes of the triple model – see figure 2.4.

Productivity

The simplest definition of productivity is an output/input ratio. However, the question is what the ingredients of the formula should be. The name productivity implies that it reflects a company's production ability. The measures of productivity are a subset of the performance measurements, but they are not directly connected to the five performance characteristics. These measures are more of a utilization character. The utilization of a production process is important in improvement work, since there often are losses to reduce.

There are many different examples of productivity measurements used in companies and organizations. These measurements are both used for monitoring and development of the daily operation as well as for long-term strategic considerations of the business. The productivity measures can be divided into three types (Hannula, 1999; Stainer, 1997) [2]:

1) Total productivity
2) Total factor productivity; and
3) Partial productivity measures

The three categories of productivity measurements above are hierarchically arranged - offering less coverage and more detail as one move down the list. It is difficult to include monetary units in the productivity ratio so that productivity is properly reflected. These monetary units are often used in the productivity measures as output and input factors. A mixture of monetary and physical as well as only physical measures (hours, kg, pieces, kWh, etc.) is in use by the industry.

The major drawback with monetary units in productivity measurement is that they need to be deflated, i.e. adjusted for price changes. This involves difficulties when calculating the measures. In fact, often approximation of the price changes needs to be used to make the calculations easy to handle. Many researchers, for example Wolff (1990), Lofsten (2000) and Edgren (1996) point out this problem and recommend adjusting for price variations of the input factors when calculating productivity. However, this price-change issue is a source of ``error" for productivity calculations and Edgren (1996) suggests that monetary units should be avoided in productivity calculations in

order to measure true productivity. For improvement work, it is strongly recommended that monetary units are kept separate from the productivity ratios [2].

A low level of productivity implies a low growth of economy. A low growth of economy means low income leading to low standard of living and a low level of savings, resulting in low level of investment and low productivity. Thus, we are caught in a vicious circle of poverty. If we can somehow pull all our resources together to improve productivity, a rise in productivity will lead to a higher national output and a higher per capital income. A higher per capita income makes a higher level of savings possible, and this will lead to a higher investment and better technology resulting in increased productivity. The vicious circle of poverty would then be broken and replaced by a spiral of prosperity [14].

Profitability

For improvement purposes, profitability does not have a direct impact since it is a result of, rather than a contributor to, the actions and processes in operations. However, profitability is a useful complementary or countermeasure to performance and productivity since it helps identify the effects of monetary effects like inflation, price changes, devaluation and currency effects and distinguish them from "true" performance and productivity changes. A company can increase its profit and at the same time decrease productivity, because of these monetary effects. If both performance (productivity) and profitability are measured, the true reasons for increased profits can become clearer.

The measurement of profitability can be seen in economic reports as various ratios. A couple of examples will be explained here as it completes the picture of PPP. Cash flow is a comparison of how the cash amount differs between two points in time. This helps determine momentarily whether a company is profitable or not - but is a form of partial profitability measure, useful for particular reasons but perhaps dangerous to use on its own. The basic profitability ratio is revenue/cost, but a number of other profitability ratios do exist. Common ratios are [2]:

- ✓ Return on assets (ROA), calculated by dividing net income by average total assets
- ✓ Return on investment (ROI) which shows profit in relation to the investment; and
- ✓ Return of sales (ROS) indicates profit in relation to sales.

2.1.2 Efficiency, effectiveness and performance

Efficiency and effectiveness are the central terms used in assessing and measuring the performance of organizations (Mouzas, 2006) [15]. Performance, in both profit and non-profit organizations, can be defined as an appropriate combination of efficiency and effectiveness. However, there seems to

be some inconsistency in the use of these terms in the existing literature on the subject matter. For the managers, these terms might be synonymous but each of these has their own distinct meaning. Drucker (1977) distinguished efficiency and effectiveness by associating efficiency to "doing things right" and effectiveness to "doing the right things" [2 & 15]. In Drucker's terminology, a measure of efficiency assesses the ability of an organization to attain the output(s) with the minimum level of inputs. It is not a measure of a success in the marketplace but a measure of operational excellence in the resource utilization process. More precisely, efficiency is primarily concerned with minimizing the costs and deals with the allocation of resources across alternative uses (Achabal et al., 1984).While commenting on effectiveness, Keh et al. (2006) observed that a measure of effectiveness assesses the ability of an organization to attain its pre-determined goals and objectives. Simply, an organization is effective to the degree to which it achieves its goals (Asmild et al., 2007). In sum, effectiveness is the extent to which the policy objectives of an organization are achieved [15].

It is significant to note that though efficiency and effectiveness are two mutually exclusive components of overall performance measure yet they may influence each other. More specifically, effectiveness can be affected by efficiency or can influence efficiency as well as have an impact on the overall performance (Ozcan, 2008). Figure 2.3 below puts the argument in proper scenario. Nevertheless, it is possible that an organization can be efficient in utilizing the inputs, but not effective; it can also be effective, but not efficient. A proposition of the linkage between the terms efficiency, effectiveness and performance is presented by Petersson (2000. This dualistic view is needed since high efficiency without high effectiveness is sub-optimal) [2].

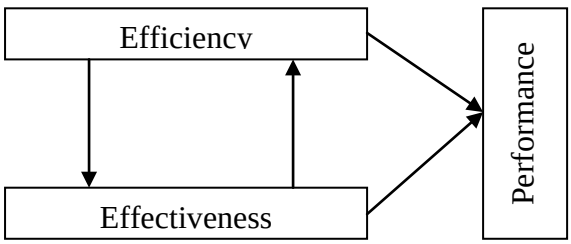


Figure 2.3 Components of performance [15]

Effectiveness can be seen as how well a set of results is accomplished, while efficiency reflects how well the resources are utilized to accomplish the result. This means that efficiency in manufacturing is a measure that shows how much resources are actually used compared to the minimum resource level that is theoretically required to run the desired operations in a given system. Effectiveness, on the other hand, can be viewed as the actual output related to the expected output.

It is possible for an effective system to be inefficient; it is also possible for an efficient system to be ineffective. However, if high values of both effectiveness and efficiency are achieved, productivity or performance will be high.

As described by Gruenberg T. 2004, a "picture" of the terms described so far can be formulated as the Triple P model as shown in Figure 2.4. The Triple P model shows that performance, productivity and profitability can all be expressed as ratios of output and input. Efficiency is focused on the input side and effectiveness on the output, to mirror the customer value.

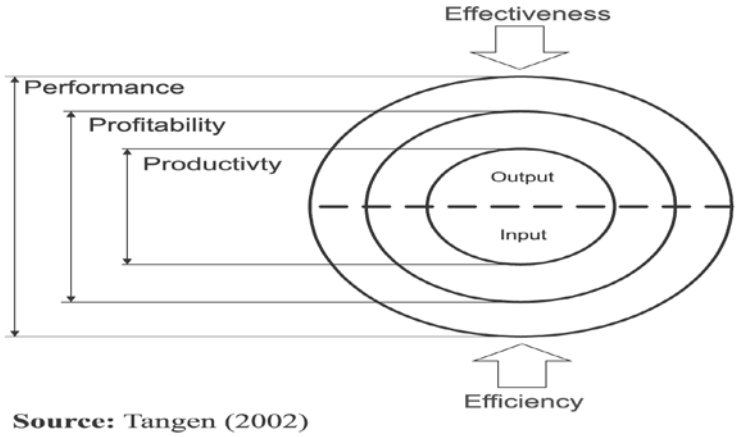


Figure 2.4 The Triple P model showing the relations of the terms performance, profitability and productivity

2.1.3 Production system and manufacturing performance

Manufacturing is the application of tools and a processing medium to the transformation of raw materials into finished goods for sale. This effort includes all intermediate processes required for the production and integration of a product's components [16]. Manufacturing is a transformation process in which the inputs (raw materials, equipment, electrical energy, and labour) are converted in to completed work-piece which carries some definite value in the market place. Transformation processes involve a sequence of steps, each step bringing the materials closer to the desired final state. For example, in shoe manufacturing, some of the transformation processes are cutting, stitching, lasting and finishing. The key to successful manufacturing is therefore to produce constituent parts in accordance with the desired specification at the lowest cost in the shortest possible time that satisfies the customer requirement [14]. In doing so, customers' performance can be improved.

Production function is that part of an organization, which is concerned with the transformation of a range of inputs into the required outputs (products) having the requisite quality level. Production is defined as *"the step-by-step conversion of one form of material into another form through chemical or mechanical process to create or enhance the utility of the product to the user"* [17]. Thus production is a value addition process and at each stage of processing, there will be value addition.

The production system of an organization is that part, which produces products of an organization. It is that activity whereby resources, flowing within a defined system, are combined and transformed in a controlled manner to add value in accordance with the policies communicated by management. A simplified production system is shown below [17].

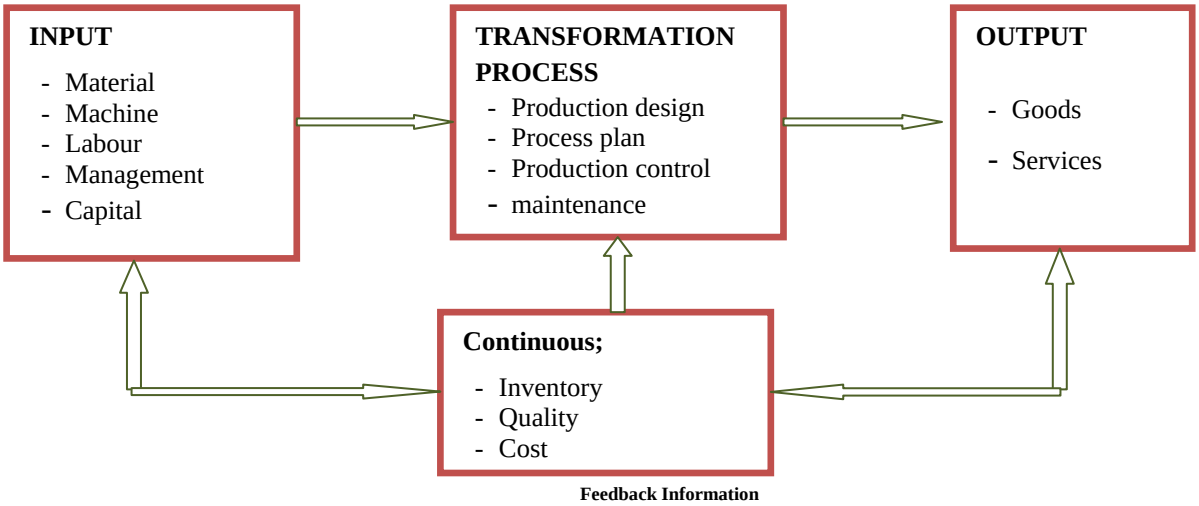


Figure 2.5 Schematic production systems

The production system has the following characteristics:

1. Production is an organized activity, so every production system has an objective.
2. The system transforms the various inputs to useful outputs.
3. It does not operate in isolation from the other organization system.
4. There exists a feedback about the activities, which is essential to control and improve system performance.

Manufacturing Performance

For the design or improvement of manufacturing systems it is important to be able to predict their performance. For this purpose, performance of manufacturing has to be measured, analyzed, evaluated and an improvement models and tools have to be used.

Performance of a manufacturing firm can be defined in various ways depending on the questions in mind when one inquires about a firm's performance. From a socio-economic perspective, profit is the most common measure of a firm's performance. Other indicators include internal rate of return, productivity, superior quality and reliability, flexibility, efficiency, effectiveness, capacity utilization, growth of output and net present value, and market share (Skinner, 1974; Wheelwright, 1978; Krajewski and Ritzman, 1987; Leong *et al*., 1990; White, 1996; Vokurka *et al.*, 1998; Ward *et al*., 1995 and 1998) [18].

In the study *manufacturing performance* is defined as the relationship between the quality and quantity of physical output in relation to inputs used in the production process and as the efficiency with which inputs are transformed into desired output. This definition of manufacturing performance reflects the basic rationale for a production system, which is to produce something of value (Buffa, 1984) [18]. The definition of performance of a manufacturing firm describes a joint impact of several factors. Some of these factors are the efficiency of production, the level of technology in use, and the structure and composition of industry.

Recent Concepts and Practices in Manufacturing Performance

The manufacturing performance assessment and analysis introduced in Ahmad and Benson (1999) covered the areas of quality, delivery reliability, cost (price minus profit margin), and delivery lead time. The Key Performance Indicators (KPIs) within manufacturing strategy are cost, quality, inventory, flexibility, and delivery (Corbett, 1998) [19].

A part of a project survey was carried out to identify which performance indicators companies' use and which ones they characterize as important. The top five were: profitability, conformance to specifications, customer satisfaction, return on investment, and materials/overhead cost. When looking at the performance areas to which the specific indicators are related and considering their relative importance it was also possible to rank the importance of these performance areas (from top to bottom): efficiency, quality, competence (technical), flexibility, innovativeness, speed, and capacity (Jose et al., 1999). The measured KPIs are normally split into six sections: (1) safety and environment, (2) flexibility, (3) innovation, (4) performance, (5) quality, and (6) dependability. The focus was on the KPI of the dependability which consist of: (1) customer complaints, (2) on-time-in-full delivery to customers (OTIFc), (3) on-time-in-full delivery from suppliers (OTIFs), and (4) overall equipment effectiveness (OEE) & product quality rate availability (Ahmad and Dhafr, 2002). A six-item scale is used to measure the operational performance of a manufacturing plant after different levels' lean manufacturing practice. The items include 5-year changes in scrap and rework costs, manufacturing cycle time, first pass yield, labor productivity, unit manufacturing cost, and customer lead time (Shah and Ward, 2003). Global competition demands the manufacturing organizations improve quality, reduce delivery time, and minimize costs. In response to this, many manufacturing organizations have implemented different excellence programs to improve their performance. Lean manufacturing techniques, performance measurement, and benchmarking, were included in many of those excellence programs (Ahmad et al., 2005) [19].

2.1.4 Performance factors

To support improvement work it is vital to find performance factors that support the performance strategy set by the company. Since many improvement suggestions do not provide help on where to start changing, a proposal is presented below to support practitioners in their improvement work [2]. The literature survey showed that many performance factors were too dedicated to a specific case. Further, many of the factors are very general and/or include several other factors. Logistics for example is mentioned by Waters (1999) and Bilberg and Alting (1994). However, logistics includes factors such as lead-times and material flow. ``Logistics'' in itself is tough to affect as a whole and one needs to decompose the concept logistics into smaller, component factors.

Other authors like Ong (1997) and Gunasekaran and Cecille (1998) have their performance factors tightly connected to the specific case study described in their articles. Ong (1997) concludes that two major areas are of importance while working to improve a company's productivity and quality - shortest improvement time and the company's budget. Gunasekaran and Cecille (1998) found some important performance factors in their case study, such as bottlenecks, layout and material flow. These factors are adapted for the respective cases since they were suggested for improvements specific for that company. Bilberg and Alting (1994) found in their case studies that productivity factors could be divided in some categories. Their approach is developed from ten different case studies and they are more specific than the other authors.

Elimination and reduction of waste is important in the attempt to increase productivity (Petersson, 2000; Slack et al., 1998). One of the three key issues in JIT is elimination of waste (Slack et al., 1998). The wastes mentioned in this article are considered as performance factors and are useful targets for improvement. Pettersson (1991) gives examples of productivity factors in his case study. These factors are significant but, again, are connected to this particular case.

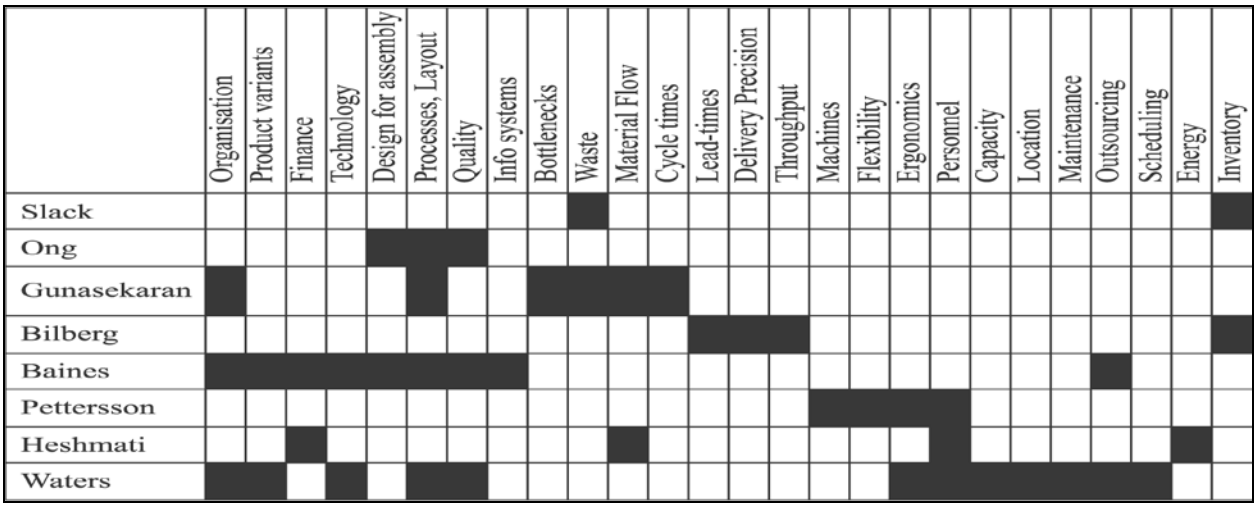


Figure 2.6 List of performance factors found in the literature survey (Thomas Gruenberg, 2004)

Economic approaches result in the CLEM (capital, labour, energy and material) categorization (Heshmati, 2000). Inputs to manufacturing are in general decomposed into these ``traditional'' elements - capital, labor, energy and material. These elements are of a very general nature and give few hints as to what to approach in improvement work.

The categories proposed in the study made by Gruenberg T. [2 & 13] (see Figure 2.6) are: ***Process, Resources, Product and Control.*** The process factors relate to areas such as shop-floor logistics, cycle-times, bottlenecks and factors regarding the company's processes. These factors mostly affect speed and precision. The product category deals with issues such as product design (including particular aspects such as ``design for assembly'') and product variety. These affect such important ``end factors'' as customer quality and assembly efficiency. Resources are the people and machines that are used for the transformation of service/products in operations. A factor in this category could affect for example flexibility and technical quality. To control operations, administration and economic functions are used, and these can have a significant impact on the cost function.

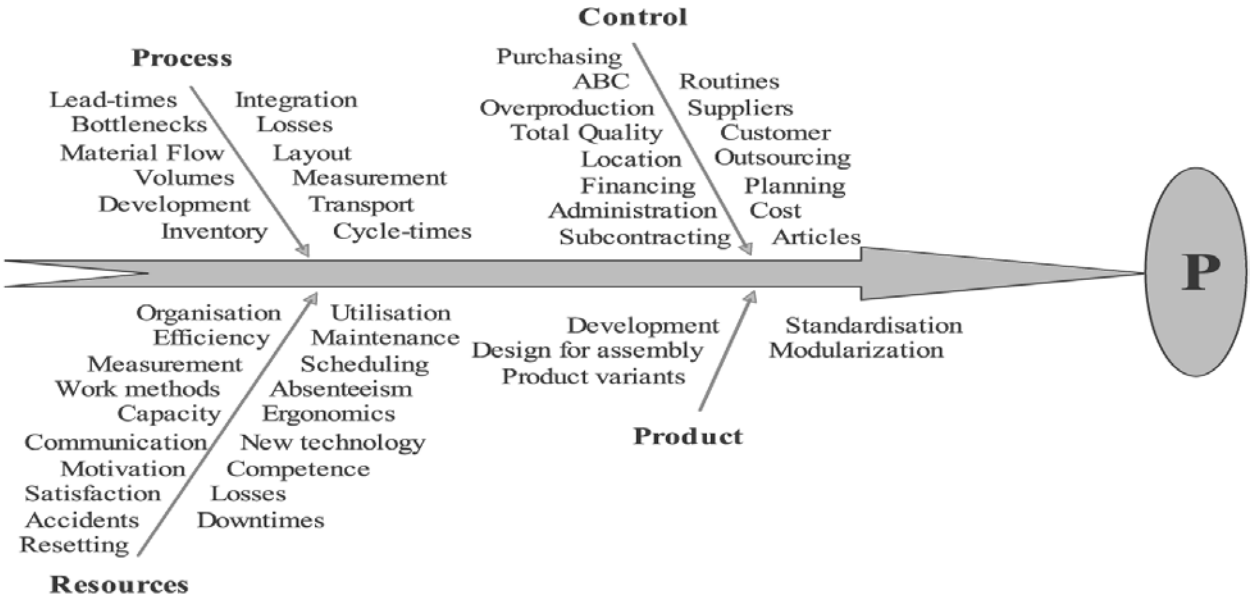


Figure 2.7 List of factors influencing the performance of operations

2.2 Performance measures and measurement

2.2.1 Introduction

How to measure performance? How often do you ask yourself this question? - Once a week? Once a month? Or Never? If you're a successful manager in a successful organization, you probably ask yourself this question every single day. However, measuring performance often isn't easy. In the performance measurement arena, you don't always (or even often) get the results that you expect,

want, or predict. After expending a great deal of energy collecting information, just when the results look promising, you find that you're measuring the wrong things.

A sound approach to performance measurement is a necessary ingredient for ensured success, but it alone is not sufficient. You will also need to know what to do with performance measurement data once it has been collected.

The use of performance measures in business is hardly new. Companies have been measuring costs, quality, quantity, cycle time, efficiency, productivity, etc., of products, services, and processes as long as ways to measure those things have existed. What is new to some extent is having those who do the work determine some of what should be measured in order that they might better control, understand, and improve what they do. [20]

All high-performance organizations, whether public or private, are, and must be, interested in developing and deploying effective performance measurement and performance management systems, since it is only through such systems that they can remain high-performance organizations. [20]

2.2.2 Performance measures and the need to measurement

What Are Performance Measures?

Performance measures quantitatively tell us something important about our products, services, and the processes that produce them. They are a tool to help us understand, manage, and improve what our organizations do. Performance measures can let us know [20]:

- How well we are doing
- If we are meeting our goals and if our customers are satisfied
- If our processes are in statistical control
- If and where improvements are necessary

Generally, they provide us information necessary to make intelligent decisions about what one do. Performance data must support the mission assignment(s) from the highest organizational level downward to the performance level. Therefore, the measurements that are used must reflect the assigned work at that level. [19 & 20]

What Is Performance Measurement?

Because performance measurement is a broad topic, the term can mean different things to different people. So broad is the topic and so specific are some of its applications that entire books have been

written on measuring performance for a specific area of business (e.g., *Measures of Manufacturing Excellence,* edited by Robert S. Kaplan), a specific type of performance measure (*Fast Cycle Time,* by Christopher Meyer), and even for a specific measure, economic value added (*The Quest for Value,* by G. Bennett Stewart). These are just three examples from the hundreds of books written on the topic of performance measurement and performance metrics. Seemingly, it's possible to measure just about everything.

As is so often the case for many concepts, performance measurement has no generally accepted definition. In recent literature, it has been suggested that performance measures are the lifeblood of organizations, since without them no decision can be made. Measurement is the first step to control and improvement. Resources in any organization are limited and scarce. Performance measurement provides management with the opportunity to make the right allocation of resources and to set the right priorities for improvement.

In "Performance Measurement and Evaluation: Definitions and Relationships (GAO/GGD-98-26)", the U.S. General Accounting Office (GAO) provides the following definition:

Performance measurement is the ongoing monitoring and reporting of program accomplishments, particularly progress towards pre-established goals.

It is typically conducted by program or agency management. Performance measures may address the type or level of program activities conducted (process), the direct products and services delivered by a program (outputs), and/or the results of those products and services (outcomes). A "program" may be any activity, project, function, or policy that has an identifiable purpose or set of objectives [20]. Performance measurement is quantifying, either quantitatively or qualitatively, the input, output or level of activity of an event or process [21].

In terms of performance measurement choices, there are measures of financial performance, operational performance, product or service performance, customer satisfaction, quality performance, employee satisfaction, employee performance, supplier performance, project performance, and contract performance [22].

The basic concept of performance measurement involves (a) planning and meeting established operating goals/standards; (b) detecting deviations from planned levels of performance; and (c) restoring performance to the planned levels or achieving new levels of performance.

Why Do We Measure and Need to Measurement?

Measuring is the act of assigning numbers to properties or characteristics. We measure to quantify a situation, to regulate, or to understand what affects things we see. Sometimes we measure with gauges and instruments; sometimes, we simply count things. Performance measures can help you understand and improve performance. It is exciting to measure, to benchmark, and to stretch to do better. *If you cannot measure an activity, you cannot control it. If you cannot control it, you cannot manage it.* Without dependable measurements, intelligent decisions cannot be made. Performance measurement is a prerequisite to performance improvement and a first step in deciding what to measure is to decide what you want to improve [20]. Measurements, therefore, can be used for:

1. Control: Measurements help to reduce variation. Their purpose is to reduce expense overruns so that agreed-to objectives can be achieved.
2. Self-Assessment: Measurements can be used to assess how well a process is doing, including improvements that have been made.
3. Continuous Improvement: Measurements can be used to identify defect sources, process trends, and defect prevention, and to determine process efficiency and effectiveness, as well as opportunities for improvement.
4. Management Assessment: Without measurements there are no way to be certain we are meeting value-added objectives or that we are being effective and efficient.

Performance measurement, reporting and management

The following could be considered as possible definitions: [21]

- *Performance measurement* is quantifying, either quantitatively or qualitatively, the input, output or level of activity of an event or process.
- *Performance reporting* is providing an account, and often some analysis, of the level of input, activity or output of an event or process usually against some form of target.
- *Performance management* is action, based on performance measures and reporting, which results in improvements in behavior, motivation and processes and promotes innovation.

It could be considered, therefore, that performance measurement and reporting is about efficiency, productivity and utilization. It is a reductionist concept based on the performance measurement and management (PMM) regime which dominated the majority of the twentieth century, whereas performance management builds on performance measurement and is concerned with effectiveness and a broader, more holistic, even qualitative view of operations and the organization which has risen as a concept and the PMM from the 1980s until today.

Besides capital investments and technology innovations, manufacturing industries have focused great efforts on Production Management (PM). It is necessary for a firm to realize its own relative competitive position and implement efficient PM to improve its productivity. It is clear that more capital inputs, such as equipment renovation or the introduction of advanced technology, should come with appropriate management systems in order to increase performance. Neglecting the implementation of PM hinders the promotion of business performance and degrades a firm's competitiveness [23].

2.2.3 Classification of performance measures

Generally, performance measures are divided into five types. These five types are: [24]

a) **Input Measures** - Used to understand the human and capital resources used to produce the outputs and outcomes.
b) **Process Measures** - Used to understand the intermediate steps in producing a product or service. In the area of training for example, a process measure could be the number of training courses completed as scheduled.
c) **Output Measures** - Used to measure the product or service provided by the system or organization and delivered to customers. An example of a training output would the number of people trained.
d) **Outcome Measures** - Evaluate the expected, desired, or actual result(s) to which the outputs of the activities of a service or organization have an intended effect. For example, the outcome of safety training might be improved safety performance as reflected in a reduced number of injuries and illnesses in the workforce.
e) **Impact Measures** - Measure the direct or indirect effects or consequences resulting from achieving program goals. An example of an impact is the comparison of actual program outcomes with estimates of the outcomes that would have occurred in the absence of the program.

You may also hear of performance measures categorized as *leading*, *lagging*, and/or *behavioral*. These types of measures are defined below [20]:

- **Lagging Measures** - Measure performance after the fact. Project cost performance is an example of a lagging indicator used to measure program performance.
- **Leading Measures** - Are more predictive of future performance and include measures such as near misses, procedural violations, or estimated cost based on highly correlated factors.
- **Behavioral Measures** - Measure the underlying culture or attitude of the personnel or organization being measured. Examples would include management walk-throughs, safety program implementation, or employee satisfaction questionnaires.

The University of California identifies five classifications of performance measures: Efficiency, Effectiveness, Quality, Timeliness and Productivity. [20]

Table 2.1 Classification of performance metrics

Measure of...	Measures...	Expressed as ratio of...
Efficiency	Ability of an organization to perform a task	Actual input/planned input
Effectiveness	Ability of an organization to plan for output from its processes	Actual output/ planned Output
Quality	Whether a unit of work was done correctly. Criteria to define "correctness" are established by the customer(s).	Number of units produced correctly/total number of units produced.
Timeliness	Whether a unit of work was done on time. Criteria to define "on-time" are established by the customer(s).	Number of units produced on time/total number of units produced.
Productivity	The amount of a resource used to produce a unit of work	Outputs/inputs

2.3 Performance improvement and review of models/tools

2.3.1 Performance improvement

In this section, first introduction on what improvement is and reviews of historical perspectives towards manufacturing performance improvement are presented, then it is tried to discuss about the concepts and methods developed to this era of globalization and finally the objectives of a factory which leads to a better performance are forwarded.

Globalization is posing several challenges to manufacturing and service industry. Organizations develop new technology and adopt new paradigms to improve system productivity, but the importance of quantifying the impact of technology innovation is overlooked. Since one cannot improve what one cannot measure, performance metrics become a prerequisite to achieve organizational excellence [25].

In the production literature, the term improvement defies a simple definition. Improvement, however, generally means to seek improvement opportunities in daily life (Bakerjian, 1993, p.1-1). Improvement demands repeatedly asking 'why?' and a stubborn refusal to give up the search for the best single way (Shingo, 1992, p.29-30). Most studies on manufacturing performance improvement reflect the experiences and situations of the developed world, where real social demands and economic and technological constraints are different from those in Least Developed Countries (LDCs). In most LDCs manufacturing firms operate in diverse internal markets where living standards often range from absolute poverty to the most sophisticated lifestyles [18].

Efforts to improve the performance of companies have been important since the start of the industrial era. The first known and well-documented practitioners in the area of performance improvement were Adam Smith (1776), Eli Whitney (1800), Baggage (1832), Frank B. and Lillian Gilbreth (1900), Taylor (1903) and Henry Ford (1913) (Johansson, 1997; Olhager, 2000). Since the 1950s, competition between companies has increased as markets have become increasingly global and there are no signs that this competition will ease. This increased competition creates an ever greater need for first-rate improvement methods that can sustain competitiveness.

The origins of a number of the methods of operations improvement in use today lie in the strong development period during and immediately following the Second World War, principally in the USA. These methods were imported to, and improved on in, Japan; for example at the Toyota Company Womack *et al*., (1996). Examples of such methods are total preventive maintenance (TPM) that originated with the simple concept of preventive maintenance (PM) in the USA Nord *et al*., (1997) and total quality management (TQM) developed by Juran and Deming Bergman and Klefsjo¨, (1995). The original US methods were successfully imported and adapted to a Japanese way of working. From simple, basic concepts and approaches, the Toyota production system (TPS) was synthesized and resulted in various additions and derivative methods like *kaizen,* 5S and benchmarking. Together, such methods resulted in the lean manufacturing concept. When such methods were re imported into the West, implementation was often not fully successful. This is still the case Womack *et al*., 1996). Womack *et al*. (1996), assert that most Western companies are still ''traditional'' mass production companies. They exemplify this with General Motors, which has too many plants, too many managers and too many workers. However, the development of such methods in Japan did spark a new round of thinking in the West and the development of a number of new improvement methods as a competitive counteraction against the Japanese movement, e.g. theory of constraints (TOC), business process reengineering (BPR) and BPR including *kaizen* – called business process improvement (BPI).

All these methods have a similar fundamental aim, which is to improve operations. However, they are different in the means by which they set out to accomplish this, and in their scope. However, a common failing is that these methods do not give decision support as to which performance factors to improve. When it comes to measurement, the literature often lists specific measurements to be made – but this approach can suggest that improvement methods are static. Since operational activity is dynamic, so must the improvement methods be [13, 26].

Improving the performance of an organization is not a straightforward task. Instead, it is frequently a complex and poorly defined problem which solution often requires a process of organizational learning enabling decision makers to change the way they think and act, and consequently, enabling

a more effective use of the available information. It is therefore my belief that approaches which allow decision makers to identify and understand the causes of poor performance, which allow decision makers to understand the implications of alternative courses of action before they become operational and which help them in evaluating and eventually selecting appropriate corrective actions, can provide very valuable insights when supporting the process of performance measurement and improvement.

(Goldratt and Cox, 1986) and (Goldratt and Fox, 1986) said that the goal of a factory is to make money, and there are three important measures (which are defined in monetary rather than physical units): throughput, inventory and operations expenses. The first should be maximized and the last two should be minimized. (Desrochers, 1990) mentioned some of the objectives of a factory which leads to a better performance: [25]

- minimized total time required to complete all the jobs (i.e. minimized make span)
- minimized set-up costs
- meeting the due date
- minimized mean time in the shop (mean flow time)
- minimized machine idle time and minimized mean number of jobs in the system
- Minimized mean lateness of jobs and mean queue time.

Businesses must continually improve performance if they are to remain competitive. Performance Improvement discusses strategies for improving performance and includes concepts, models, processes, tools and techniques for all types of businesses and work teams. Performance improvement becomes a self-fulfilling prophecy. If leaders believe in their people, their people will perform. If they don't, they won't [12].

2.3.2 Review of performance improvement models/ tools

The more widely used models and tools have been reviewed as part of the Performance Management, Measurement and Information (PMMI) Project being conducted jointly by the Audit Commission and the Improvement and Development Agency (IDeA) of US. The aim of this review is to help gain awareness and understanding of the models and tools available to local authorities and others. It is tried to summarize the performance improvement models and tools reviewed as part of the PMMI project, 2006, listed (1-5) and in table 2.2 [24]. In addition, benchmarking, total performance scorecard (TPS), TQM and Supply Chain Operation Reference Model (SCOR) models are included in the review.

1. Balanced Scorecard

Kaplan and Norton, who developed the balanced scorecard in the 1990s in the USA, noticed that financial measures being used to gauge performance in many organizations were not necessarily related to achieving strategic objectives. The scorecard sought to remedy this by providing a more balanced suite of performance measures across a number of key perspectives. Typically these look at customers, finances, internal processes and organizational learning (figure 2.8 below). However, they can be adapted depending on what factors are considered important for the success of the particular organization.

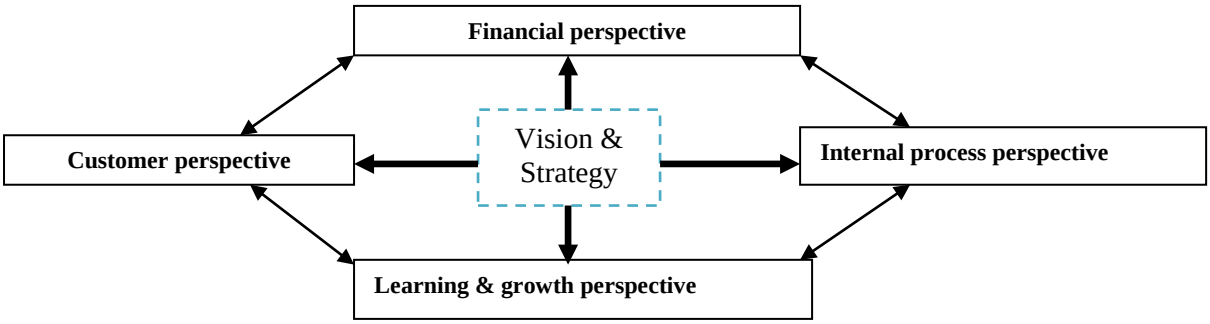


Figure 2.8 The Balanced Scorecard

The Balanced Scorecard aims to:

1. Enable organizations to manage strategy by linking corporate objectives, initiatives, measures and targets at all levels in the organization;
2. Achieve a balanced set of performance measures and targets that allow managers to track progress in key areas.

2. Business Process Reengineering (BPR)

BPR became popular in the early 1900s with the publication of Hammer and Champy's bestselling book 'Reengineering the Corporation' 1993. Hammer and Champy described BPR as 'the fundamental rethinking and radical re-design of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service and speed'. The approach applies six steps to reengineering and involves reviewing the current situation, developing a business model that addresses the issues at hand and planning implementation. This are: define the project, review the business baseline, identify opportunities, verify the opportunities, plan the achievement of the benefits, and review and report.

3. ISO 9001:2000

ISO 9001:2000 is the global standard and approach for quality management systems. The standard focuses on the management of processes and documentation in order to meet customer's needs and expectations. The standard originated in the UK in 1976 as BS 5750. It later evolved to ISO9001 and was revised in 2000 to ISO9001:2000. The nature and reduced documentation requirements of the latest edition of the standard have significantly increased its applicability to the public sector. Over time the standard has evolved to become a quality approach for improving procedures.

ISO9001:2000 identifies eight quality management principles that can be used by managers to improve performance. These are: customer focus, involvement of people, systems approach to management, factual approach to decision making, leadership, process approach, continual improvement, and mutually beneficial supplier relationships. ISO9001:2000 aims to: establish excellent working practices through effective processes; and document processes in order to improve understanding among staff; with the aim of better meeting customer needs and expectations.

4. Kaizen Blitz

Kaizen Blitz was developed in the Japanese motor industry and is well established in manufacturing industry. 'Kaizen', meaning 'continuous improvement', is a Japanese business philosophy of making continuous improvements and enhancements in business processes. 'Blitz' refers to the concentrated assault on inefficiency. Kaizen techniques are based on the principles of focused continuous improvement, commitment of leadership, empowerment of staff, hands on doing not proposing, and elimination of waste and low budget incremental improvements with occasional breakthroughs. Kaizen principles and techniques can be used on a continuing basis without the intensity of a blitz week. Kaizen Blitz aims to:

- Improve identified processes and functions;
- Achieve 'quick wins' and develop action plans for longer term gains;
- Create ownership of the new processes through involvement and empowerment of those working in that area.

5. Performance Prism

The Performance Prism is a stakeholder-centric framework for performance measurement and management. The model was developed by the 'centre for business performance" at Cranfield School of Management, in conjunction with Accenture. It evolved from the balanced scorecard, but unlike the Scorecard, it acknowledges the full range of stakeholders an organization has. Principally these are investors, customers & intermediaries, employees, suppliers, regulators and communities.

It does this in two ways; by considering what the current and future wants and needs of those stakeholders are, and more uniquely, what the organization wants and needs from its stakeholders. In this way the reciprocal relationship with each stakeholder is examined in the context of improvement. The Performance prism aims to:

1. Help organisations develop a set of performance measures that reflect the wants and needs of its key stakeholders;
2. help organisations to identify, measure and manage the strategies, processes and capabilities they require to satisfy these wants and needs;
3. Enable an organization to build an explicit understanding of the drivers of performance at all levels that enable sustained achievement of performance objectives.

6. Benchmarking

Over the past decades, benchmarking has gained wide acceptance among organizations as a practice to improve business performance and competitiveness. This can be confirmed by the number of benchmarking web sites in operation nowadays. ***What is benchmarking?*** It is defined as the process of comparing a firm's operational and managerial practices and performance against others, competitors or not, in order to achieve improvements [27, 28].

Benchmarking Procedure: Although different companies have adopted different models to benchmarking, most of these models generally conform to a process comprising five basic steps, as shown in Figure 2.9 below *[27]*.

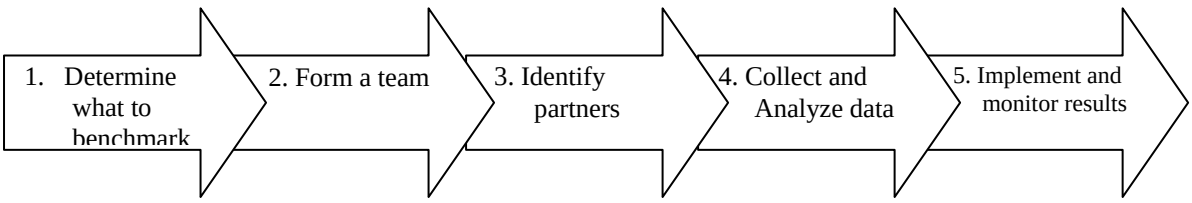


Figure 2.9: Generic benchmarking process

7. Supply Chain Operation Reference Model (SCOR)

SCOR model is a process reference model, developed in 1996 by the supply-chain council, as a cross-industry diagnostic, benchmarking, and process improvement tool for supply chain management. SCOR provides a complete set of supply chain performance metrics, industry best practices, and enabling systems' functionality that allows firms to thorough analyze all aspects of their current supply chain. [29]. Process reference models integrate the well-known concepts of business process reengineering, benchmarking, and process measurement into a cross-functional

framework [30]. It is based on five distinct management processes: plan, source, make, deliver and return. SCOR is used to describe, measure and evaluate supply-chain configurations:

- **Describe:** Standard SCOR process definitions allow virtually any supply-chain to be configured.
- **Measure:** Standard SCOR metrics enable measurement and benchmarking of supply-chain performance.
- **Evaluate:** Supply-chain configurations may be evaluated to support continuous improvement and strategic planning.

8. Total Performance Scorecard (TPS)

As Rampersad, H.K.2005 and 2007, Total Performance Scorecard (TPS) is defined as the systematic process of continuous, gradual, and routine improvement, development and learning, focused on a sustainable increase of personal and organizational performances [31, 32]. It stresses the importance and need to develop a high-performance culture that combines the goals and aspirations of the individual with those of the company. This model will help organizations manage the demanding and often frustrating road toward sustained employee engagement and improvement [55]. As TPS is a holistic management process of improvement and change; within this concept, improvement, development and learning are treated as cyclic and ethical processes through which the development of personal competence, of the organization as well as the internal implication are reciprocally consolidated [56].

This management concept encompasses the personal and organizational mission, vision, key roles, core values, critical success factors, objectives, performance measures, targets and improvement actions, as well as the resulting process of continuous improvement, development and learning. This model was developed to fill the gap or pitfalls of BSC and other methods. It consists of the following elements: [31, 32 & 56]

I. **The Personal Balanced Scorecard (PBSC):** entails the total idea of personal mission, vision, key roles, critical success factors, objectives, performance measures, targets, and improvement actions (Rampersad, 2003). A new Plan-Do-Act- Challenge cycle (PDAC-learning) is used for personal improvement.

II. **The Organizational Balanced Scorecard (OBSC):** encompasses the total organizational mission, vision, core values, critical success factors, objectives, performance measures, targets and improvement actions. This corporate BSC is communicated and translated into all business unit BSCs, team BSCs and the performance plans of individual employees.

III. **Total Quality Management:** encompasses a disciplined way of life within the entire organization whereby continuous improvement of oneself, one's job and organization stand central. Defining problems, determining root causes, taking actions, checking the effectiveness of these actions and reviewing business processes are done in a routine, systematic and consistent way (Rampersad, 2001). The emphasis is on the mobilization of the entire organization in order to continuously satisfy the needs of the customer. It is a philosophy as well as a set of guidelines forming the basis for a continuously improving organization using the effective Deming cycle (plan, do, check and act) as its starting point (Deming, 1985). This learning cycle (PDCA-learning) is used for process improvement.

IV. **Competence Management:** involves the continuous development process of the human potential within an organization, having as a purpose the continuous supply of top performances with motivated and developed personnel and focusing upon the employees' maximum development and on the optimum use of their potential with the purpose of fulfilling the goals of the organization. The process involves the development of the competences related to the job requirements. Information, abilities, experience, skills, standards, values and principles are focused on skillfully complying with the job requirements. The main part here is the development cycle which is made up of the following stages: *Results planning; Guidance (coaching); Evaluation and development of the competences related to the job requirements.*

V. **Kolb's Learning Cycle:** This process of *instinctive learning* (learning by experience) is seen in all four management concepts mentioned. Together with the process of *conscious learning* (learning by education) they result in individual and collective behavioral changes. These two learning forms as well as *individual learning, PDCA-learning* and *collective learning* are important themes in the TPS-concept. These are used to create conditions for effective organizational change. Kolb's learning cycle contains the following four phases (Kolb, 1984): Gaining hands-on experience, observing this experience, drawing conclusions from this experience, and testing these ideas in experiments, which again will result in new behavior and experiences.

9. Total Quality Management (TQM)

Total quality management is the management philosophy & company practices that aim to harness the human & material resources of an organization in the most effective way to achieve the objective of the organization. These objectives may include customer satisfaction, business objectives such as growth, profit or market, or the provision of services to the community [33, 14]. It is a management process or system that emphasizes continuous quality improvement & demands

that top management (leader ship) be committed to continuous improvement. The key ideas in the definition or model of TQM are: customer focus, internal alignment, external alignment, total involvement, continuous improvement, and leadership commitment.

Generally, this method, TPS, can be considered as the state of the art of performance improvement as it considers personal performance where other methods give less emphasis.

2.3.3 Selection of an appropriate improvement model/tool

Before selecting a particular performance management model or improvement tool or approach, organizations need to be clear in what they are trying to achieve and why. This will involve asking a series of questions, including:

- What are you aiming to change, improve and what outcome are you looking for?
- Does the improvement need to be holistic covering all the organizations activities or designed for a specific task, service or area of activity?
- What is the key driver for change i.e. inspection or review, change of staff etc
- What is the timescale for the change and what resources are available?
- To what extent do you want to involve staff in the changes?

Table 2.2 below summarizes the models and tools across a number of these criteria: [24] Individual authorities and organizations will need to undertake research to decide on the approach or balance of approaches that would best suit their organization and circumstances. It is unlikely that a single approach would address all their needs. The above review does not aim to provide definitive information on each approach but is provided to help people make more informed decisions. Those considering the adoption of a particular models or tools are advised to undertake further research and speak to users prior to making a final decision.

Table 2.2 Selecting an appropriate model or tool [24]

Performance models	Scope	Time	Resource	Staff involvement
Balanced scorecard (BSC)	Holistic model that can be used at various levels across the organization, service, team or group.	Four to six months to implement depending on level of measurement in place	Low resource investment – often just facilitation costs and staff time	Inclusive if scorecards are cascaded and widely deployed
Business Process Reengineering (BPR)	Improvement tool used to bring about change in systems and people who operate them	Improvements anticipated in 6-12 months from the start of the project, although can be sooner for individual processes	Investment of resources can be high due to the intensive nature of the approach. External support often required	Inclusive of staff in the areas of activity being improved
EFQM Excellence Model®	Holistic self assessment model	Approx 35 staff days over six weeks	Can be resource intensive. Costs are estimated to be at least £4000-£5000 for external support per assessment	Fully inclusive. Involvement usually through facilitated staff workshops
ISO9001:2000 quality system	Processes and documentation	Implementation to assessment takes approx. six to nine months	Organizations of 60-70 would pay approx £3000 for the assessment and £1600 a year for audits	inclusive of staff in the areas of activity being improved
Kaizen Blitz	Processes or functions	Usually two to three months from conception to bedding in of new processes	Consultant costs within the region of £7000-10,000 per blitz event	Fully inclusive of staff in the areas of activity being blitzed
Performance Prism	Stakeholder centric-model	Up to approx 6 months to implement depending on strategies & performance measures in place	Relatively low resource investment. Independent facilitation may be required to maximize the effectiveness of workshop sessions.	Inclusive of organizational managers and stakeholders
Six Sigma	Processes, functions or services	Black belt projects will normally take three to nine months	Costs vary depending on methods adopted and consultancy requirement	Inclusive of staff in areas of activity being improved
Statistical Process Control	Processes or functions	Less than 6 months to implement improvements to processes or functions	Moderately resource intensive. External support often required	Inclusive of staff in areas of activity being improved
Value Management	Organizations, projects or functions	Several months but varies depending on the breadth of application	Start up costs vary depending on training needed and consultancy requirement	Inclusive of staff in areas of activity being improved

CHAPTER THREE

PERFORMANCE OVERVIEW OF FOOTWEAR SUB-SECTOR

3.1 Ethiopian manufacturing

Development of the manufacturing sector in Ethiopia went back to the establishment of strong central government at the end of the 19th century. However, a deliberate attempt to develop industrialization through import substitution strategy started only after 1950s. Until then there was no noticeable intentional industrial development strategy in the country. Until the fall of the imperial regime in 1974, most of the manufacturing industries were private owned. However, following the 1974 revolution, the government took away almost all the medium and large-scale manufacturing industries and became the major owner. After 1991/92, the role of both domestic and foreign private sectors was given attention with the change in government and policy direction. To this effect, different policy measures like privatization of government owned enterprises and spread of new investment code have been made [34].

3.2 Global review of shoe industry

a) Production and consumption of footwear

From the newsletter published by ETFLPMA (currently known as ELIA), 2006, on the analysis of global trade in HSL (hide, skin and leather), China is the main manufacturer of footwear producing 60% of the world's total [35]. The world shoe production is estimated up to 16 billion USD in 2007 G.C. showing significant increment from the previous result. The reasons for the growth are: - [10]

- Chinas local market shift, to international in less than 20 years. (china has 63% share in world shoe market)
- 84% of the total shoe production produced in Asia and Asia has 41% share in the world market and expected to increase in future.
- India’s 12.3%, Vietnam’s 41%, Indonesia’s 3.5% and Thailand’s 1.6% growths in the industry.
- Outside of Asia, Brazil has registered 4.9% growth in the sector.
- About 52% of the total skin and hides supply used for shoe in 2007.
- Shoe industry created job opportunity for about 10 million people in the world.

The global footwear industry accounts for the production and sales of more than 2 billion pairs of shoes around the world each year. Rapid globalization and the 2008 to 2009 economic recession

have impacted operations and sales across the industry [36]. See the following tables (table 3.1 and table 3.2) global footwear consumption and production [37]

Table 3.1 – Global footwear consumption over 10 years

Consumption (millions of pairs)	1998	2000	2002	2004	2008
Asia (all)	4744	5222	5474	5840	6528
Americas	3011	3274	3279	3433	3611
Europe (all)	2239	2396	2544	2717	2886
Rest of the World	1086	1187	1172	1317	1399
TOTAL	**11080**	**12079**	**12469**	**13307**	**14424**

Table 3.2 - Global shoe production 2004

Producer	Footwear 000' pairs
China	7,000,000
Vietnam	480,000
India	1,736,000
Brazil	650,000
Europe	705,090

b) Share of leather by end use

The leather use by end product, 2003 looks like as seen in the following table and figure. It can be seen that footwear takes the highest percentage (56%) share of leather by end use.

Table 3.3 World leather use by end product 2003 & 2007

Million square feet & (%)		
Leather product	2003	2007
Footwear	**10,835 (56%)**	**52.0%**
Garments	2,205 (11.4%)	10.0%
Automotive	1,220 (6.3%)	10.2%
Furniture upholstery	2,420 (12.5%)	14.0%
Gloves	850 (4.4%)	4.4%
Other leather Products	1,820 (9.4%)	9.4%
Total	**19,350 (100%)**	

*Source: Industry estimates [*Newsletter by ETFLPMA, 2006*] and ELIA journal, 2011*

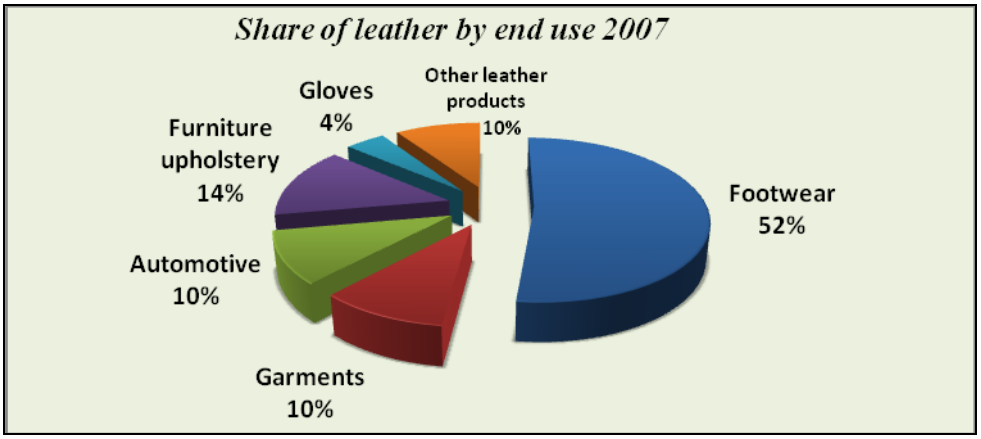


Figure 3.1: World share of leather by end use

c) Global review of footwear market (import and export) and its impact

The manufacturing and marketing of leather products has consolidated in the last 5 years into broad geographic groups. Manufacturing takes place in the East and marketing takes place in the West. The countries which manufacture, hence export, do not have saturated local markets. They have developed their leather products industry as a means of exploiting a particular advantage(s) to gain competitiveness and so gain hard currency. China which is the biggest producer of leather products, particularly footwear, in the world does not have a saturated domestic market for its products. It concentrates on exports. It is well known that China's source of competitive advantage is a plentiful supply of productive, acquiescent, labour who are willing to work, (at present) for relatively low wages coupled with benign industrial policies set by Government. It is a similar case in India although this country has not yet realized its exporting capacity. It is a "sleeping giant" with an installed production capacity second only to China [37].

China has emerged as the dominant player in leather products exports, particularly footwear, because of its high capacities installed, (at least for the USA), infrastructure, and component supply industry. It also gives excellent service to its customers. Vietnam is becoming a competitor to China. It is easier to deal there with smaller companies and less official bureaucracy, costs compare favorably with China. Vietnam is building up its infrastructure aiming to become a serious player and has normalized its relationship with USA. It produces footwear and garments equally well. In parallel with these developments, India was also targeting its large and to some extent informal leather sector to modernize. Through Government legislation the sector aims to become one of the dominant leather shoe supplying countries.

Globally, the manufacture of footwear for exports has quadrupled and relocated from the developed countries to the developing countries. The growth of Chinese exports is simply overwhelming and makes China the leader in the field as far as footwear exports world-wide are concerned. The

restructuring process of the footwear industry globally by moving to developing countries generally follows the economic rationale of the cheapest producer where the relocation cost and the start up cost of manufacturers are low enough to shift production easily and quickly. However, higher cost countries such as Italy, Spain, Portugal and others still remain among the major footwear producers. [38].

A market research report entitled "*Global Footwear Market to Reach US$195 Billion by 2015*" in January 2011 shows that, world footwear market was projected in 2007 to reach 13.9 billion pairs corresponding to a value of US$192.4 billion by 2010. New estimations point that the total value of this industry will rise to US$195 Billion by 2015, what happens to be nearly 2.5 billion in five years. United States and Europe occupy the leading positions, accounting for a major share of the global footwear market revenues, as stated by this market research report. Region-wise, developed markets bore the brunt of the recession pummeled by the financial crisis, which was the deepest in North America and Europe, and demographic factors, such as, aging population and falling birth rates [36].

Illegal footwear imports, more particularly the practice of under-invoicing, seriously undermine the process of customs control and have enormous undesirable effects for the footwear sector where imports compete unfairly with local products. Illegal imports of footwear and leather goods has serious negative consequences for the industry and the broader economy as it leads to loss of market share, job losses, factory closures, pressure on the sector's competitiveness, damage of brand equity and undermines attempts by the sector to restructure.

d) Cluster

It is believed that more than 1000 enterprises are producing leather shoes in Addis Ababa. This cluster is as large as successful footwear clusters in other countries. According to case studies, Agra, India, had around 5000 footwear enterprises in 1990-1991, even though the number decreased to around 2375 in 1996. In Brazil, the Sinos Valley footwear cluster consisted of about 500 shoe manufacturers and about 700 subcontractors. In Mexico, there were about 1700 shoe enterprises in the Leon cluster and 1200 in the Guadalajara cluster. Thus, the Addis Ababa cluster is comparable to these well-known footwear clusters at least in terms of the number of enterprises [3, 39].

e) African perspective

Manufacturing industries in Sub-Saharan Africa have generally been stagnant or shrinking for the last three decades (Bigsten and Söderbom, 2005). From the viewpoint of poverty reduction, this is worrisome because industrial development is expected to offer plenty of employment opportunities to the poor. As Collier and Gunning (1999) and Fafchamps (2004) and many others argue, industrial development in Africa has been hindered by many problems ranging from high transportation costs, high transaction costs to highly risky business and political environments. Moreover, both the provision of public services and the development of grass-roots institutions and social capital are considered to be insufficient in Africa to cope with such problems [3, 39].

African countries have 20% of the world's cattle, sheep and goats, but produce only 14.9% of world output of hides and skins. They have 10% of the world's cattle but produce only 4.5% of bovine hides. Their exports of hides and skins have fallen in recent years from 4% to 2%, and their tanning capacity from 9.2% to 6.8%. Import penetration of their domestic leather footwear markets by other developing countries is estimated at 73.3% [40]. This gap between resources and production shows the considerable potential of the African leather industry. Reducing this gap is especially critical in an important strategic sector for the economic and industrial development of many African countries. Not only does this sector have an excellent and renewable resource base, but it is also labor-intensive with the potential to be a major source of employment all along its supply chain. In eight of the nine countries[2] surveyed in the studies from which this Blueprint is derived, the leather and shoe manufacturing sub-sector already provides 4% to 5% of total industrial employment, with contributions to MVA of 2.9% in Egypt, 8.3% in Tunisia and 74% in Ethiopia, where the cattle population is the highest in Africa, and close to 1% in the remaining five countries. Clearly the realization of the African leather industries potential would bring significant economic gains to the continent [40].

The African footwear sub-sector seems isolated from the fast pace of technological innovation taking place globally. Lack of design capabilities, operator, supervisory and manager skills, and knowledge of more appropriate material inputs and marketing techniques, all combine to cause poor productivity and low competitiveness. Even in the local market, high operational costs and lack of attention to what the market demands in shoes in terms of quality and price, allow cheap Asian products and second hand shoes to penetrate the market [40].

[2] *Countries: Egypt, Tunisia, Morocco, Ethiopia, Senegal, South Africa, Tanzania, Benin, and Kenya [Years 1997-1999, UNIDO World Industrial Data Base]*

According to a report from the US International Trade Commission, Ethiopia is emerging as one of the leading sub-Sahara footwear exporters, along with South Africa, Kenya, Zimbabwe and Cape Verde. These 5 countries account for 80 % of the shoe exports from the region. The development comes on the eve of substantial private investment in shoe production in Ethiopia, and the export is also benefitting the country's trade balance. Exports have been helped by improved quality in the production among other reasons because of a government established training institute giving six months training for employees in the industry. The industry is also benefitting from tax exemption in imports of materials for the production and export taxes on the ready products [41].

3.3 Review of Ethiopian leather footwear sub sector

3.3.1 Background of the footwear sub-sector

The production of leather shoes in Ethiopia dates from the late 1930s when Armenian merchants founded two shoe factories in Addis Ababa - Tikure Abbay and Anbessa [3]. These were nationalized by the military government in 1974 and remained the largest and second largest shoemakers in the country. These factories nurtured a number of shoemakers, who opened their own factories in Addis Ababa and trained their workers. Today, the neighborhood of Mercato, a huge marketplace in the city, swarms with shoemakers, wholesale shops dealing in leather, soles, and shoe accessories, and shoe retail stores.

Ethiopia possesses the largest livestock population in Africa, and the 10^{th} largest in the world. Ethiopia's livestock population is estimated at 44.3 million cattle, 23.6 million sheep, 23.3 million goats and 2.3 million camels in 2007. The skin removal rate is 7% for cattle, 33% for sheep and 37% for goats. The country produces 2.7 million hides, 8.1 million sheepskins and 7.5 million goatskins annually [9]. It can be seen that resource utilization as well as output performance of Ethiopian leather sector is low. Therefore, the leather industry still has room to be developed further, optimizing the abundance of the resource. However, the leather industry has been traditionally active, based on the abundance of this resource.

Currently, 22 tanneries and another 18 leather products manufacturing enterprises operate in the country, producing products ranging from various forms of semi-processed leather to finished leather articles such as shoe uppers, leather garments, stitched upholstery, school bags, handbags, industrial gloves and finished leather [9].

In general, the installed capacity amounts 7 million pairs/year, but the actual production is currently about 5 million pairs. This output is equally divided between the mechanized large and medium firms and the SME sub-sector. Most of the mechanized shoe companies have started to export recently and few remaining are upgrading to enter the export market. As SMEs produce low quality, low priced mostly men's shoes; they are focussed on the local market. A threat for SMEs is that they continue loosing the local market share to cheap imported shoes from China. Ethiopian footwear factories produce men's casual shoes and children's shoe-uppers made from pure leather. Additionally, the factories: [43]

- Sell directly to overseas importers/wholesalers, or to direct buying offices
- Facilitate the production and export of footwear under the private labels of department stores, boutiques, shoe retail chains and mail-order houses

- Source out from Ethiopia and other nations in East Africa and re-export
- Facilitate the production and export of internationally well-known brands under contract

3.3.2 Ethiopian leather footwear sub sector

Manufacturing of footwear is a promising option to increase the value added of the leather industry, making use of Ethiopia's low labour costs. The production of leather shoes on a handicraft basis has a long tradition in Ethiopia, but only a handful of modern factories have been established. In the early 2000s, the footwear industry suffered a serious crisis when Chinese imports of cheap synthetic shoes flooded the domestic market, driving many small-scale producers out of business. Larger enterprises, however, reacted to the challenge, importing modern machineries and improving the quality, design, and durability of shoes. Soon after the first wave of Chinese imports, consumers became aware of the low quality and durability of these synthetic products, returning to buy genuine leather shoes from domestic producers. Today mechanized factories are clearly competitive and growing, whereas small producers of low-quality shoes are still struggling to compete with Chinese imports [44].

The leather sector in general can be divided into three phases [44]: the acquisition of hides and skins, the leather processing in tanneries, and the manufacture of leather products. Leather footwear is the last rung of the value chain starting from livestock, through slaughtering, to tanning. It is also a by-product of the meat industry.

The leather footwear industry is considered as an important sub-sector that leads the whole sector's modernization. Although the export of leather footwear started only in 2005, the export value has been growing steadily since then and is expected to make a big impact on the Ethiopian economy. Not only is the economic impact resulting from the trade important but also the job opportunities the industry may create could make a significant impact on poverty reduction.

In the next section it is tried to assess the Ethiopian leather footwear sub-sector with respect to different issues (one by one) such as: policy and strategy, market (domestic & export), product development, comparative and competitive advantages, HRD and employment, contribution of the subsector to the Ethiopian economy and capacity building activities in the sub sector.

a) Policy and Strategy of the Government of Ethiopia

The importance of the leather footwear industry as a part of the leather industry has been emphasized by the GoE at various levels. In the PASDEP (Plan for Accelerated and Sustained Development to End Poverty), the leather industry is mentioned as an important sector for trade and

industry development. PASDEP, which is the strategic plan from 2005/06 to 2009/10, sets a target to export 6.4million pairs of leather footwear in 2005/06 and to increase to 20million in 2009/10. With regards to leather products and commodities, it is planned to increase export earnings to $43 million. Ethiopia's Industrial Development Strategy, which was prepared in August, 2003, prioritizes the leather product industry together with garment/textile, meat processing, construction, small and medium sized enterprise (SME), and IT industries. The government supports the export of finished leather by prohibiting export of raw sheepskin and also discouraging the export of leather at the wet blue stage (not much value adding) by imposing a 150% tax on its export [9].

The development of the leather industry is in line with the Agricultural Development Led Industrialization (ADLI), which is the basic development strategy of the country, in that the promotion of high value-added leather products is going to encourage the process of the industrialization of agriculture.

The Policy Framework for the Ethiopian LLPI, An-Export-Led Strategy: Policies for the LLPI have been identified, formulated and are being implemented by the government. The short-term strategy is to transfer leather production from the wet-blue stage to crust, and then to finished leather. The long-term objective is to gradually increase the volume of hides and skins that are processed to finished leather products especially to leather shoe (63% in 2007E.C) [10].

The lack of finished leather is a serious constraint to the operation and to the development of this sector. It was recommended by UNIDO that in the short term, finished leather should be imported in order to facilitate the expansion of this sector (footwear in particular). As this sector expands, it creates an ample market opportunity for the leather tanning industries, as tanneries can move, stage-by-stage, to a more advanced level of finished leather manufacture. In order to facilitate the penetration of export markets, it is proposed in the *strategy* that tools such as benchmarking, and partnership mechanisms such as sub-contracting and joint ventures should be pursued. Institutions such as the LIDI and QSAE should play a catalytic role in the development of the LLPI [45].

b) Marketing (domestic and export)

Even though an optimistic market is found in the world, Ethiopia gets lower stage in the sector. In the previous 30 years, evidences shows that the demand of leather shoe increased by double fold [10].

The Leather Association and MoTI have been promoting the Ethiopian leather/leather products through international fairs and the Ethiopian embassies abroad. However, despite the high quality of the finished leather and the effort of the relevant organizations, the negative image of Ethiopia

makes the promotion difficult. According to the interview, MoTI projects that the productivity will increase from 7,000-8,000 pairs of shoes per day to 50,000 in the near future [4]. If this happening, marketing will be required to find additional sales channels to sell the increased number of products. UNIDO held a fashion show of Ethiopian leather and leather products at the Embassy of Italy in Ethiopia in June, 2007. This kind of effort could gradually change the image of Ethiopian leather/leather products and help them to penetrate into international markets.

The domestic market*:* The retail market in Addis Ababa at this time suffers from low quality Chinese made synthetic footwear, though its price is cheap. These plastic shoes are squeezing out the local manufacturers of leather shoes. The shoes are all very similar in styling and pricing in almost all shops in the *Merkato* and *Piazza* areas. The Chines shoes look good and fashionable in terms of last shapes and heel heights and are freely available in different style (men's, women's and children's). As a result they have high market though there is little product differentiation [45]. It is believed that companies must become more market-oriented in order to counter shoe imports. This will require a better leather shoe at competing prices supported by advertising campaigns directed at the local market: using well planned inexpensive advertising campaigns that comprise points of sale materials, billboards and editorials

The Export Market: Serving the export market will require the co-ordination of activities by the enterprises, the raw material suppliers and the supporting institutions, both public and private that operate in the different segments of the value chain. The LLPTI (LIDI) plays a critical role in the development of the footwear industry as a source of technical and managerial training programs, indispensable to the success of the ventures. Subcontracting agreements and joint ventures with producers in the global chain would facilitate the entrance of Ethiopian companies into the global footwear market.

Leather is exported to more than 60 countries, the major destinations Italy, the United Kingdom and China. Leather products such as shoe uppers, leather garments, stitched upholstery, school bags, handbags, industrial gloves, and finished leather are also exported to Europe, the United States, Canada, Japan and the Far East. There are also some export sales to countries in Africa, in particular to Nigeria and Uganda, as well as to the Middle East, and especially Yemen. The destination of export for Ethiopian market in 2001 E.C is shown below.

Table 3.4 Ethiopian leather footwear export by destination [47]

Country	weight	Value	% share	unit price(USD)
Italy	279,755	4,572,722	63.17	16.35
Germany	82,580	1,703,976	23.54	20.63
Sudan	54,677	401,844	5.55	7.35
Netherlands	17,453	207,885	2.87	11.91
France	6,000	75,000	1.04	12.50
united states of America	1,817	58,153	0.80	32.01
Spain	3,333	50,793	0.70	15.24
united kingdom	1,400	37,583	0.52	26.85
Saudi Arabia	3,180	34,980	0.48	11.00
Yemen	1,710	10,330	0.14	6.04
Swaziland	855	10,080	0.14	11.79
Poland	300	8,736	0.12	29.12
Canada	460	6,816	0.09	14.81
Denmark	155	4,937	0.07	31.85
Ghana	245	3,744	0.05	15.28
Uganda	140	1,661	0.02	11.86
Norway	35	966	0.01	27.60
Djibouti	800	607	0.01	0.76
Niger	15	596	0.01	39.73
Kenya	8	184	0.003	23.01
Unspecified		46,778	0.65	23.01
Total sum	**454,918**	**7,238,371**	**100.00**	**15.91**

In fiscal year 2004/2005, regular exports of leather footwear started with small batches delivered to Italy. Three years later, exports of footwear were increased to US$ 10 million. Nine large mechanized enterprises dominated the footwear industry in 2009, in which most of them are exporters. [44]

The top-down approach in which the strategic action plan has proposed picks up the leather footwear industry as a leading sub-sector industry to pull up the whole industry. The export, however, started in 2005 and accounts for only 2% of all the leather-related exports in the same year [4]. Since the industry has been targeting only the domestic market for a long time, the product development, market development and productivity improvement are crucial issues to increase the trade volume. At the moment, some factories have started to trade with some European countries, such as Italy and Germany.

c) Product Development

The main products in the Ethiopian footwear industry are men's and children's shoes, because they have less model changes than women's footwear. Product development of women's footwear for the domestic market is on the way. For the international market, however, the mainstream of footwear produced is subcontracted with European factories. European companies order with a sample and Ethiopian factories replicate it precisely. Ethiopian companies have not yet reached the level of developing their own designs and selling them on the international market.

On the other hand, an interesting project led by UNIDO, Italian Cooperation and the International Trade Center is under way. Considering the fact that the market for cheap, mass manufactured shoes is highly competitive and China is far ahead of Ethiopia, these three organizations provided support to create an Ethiopian brand named TAITU targeting the higher-priced market. TAITU is an umbrella company, under which several Ethiopian tanneries and footwear factories have joined together to produce leather bags, garments and shoes which are designed by an Italian designer. The design of TAITU products is very modern and has a good reputation at international trade fairs. Shops in New York and Paris have opened and a new one in Tokyo is planned as well. [4] This is a good practice towards product development of shoe and so improves performance of the leather footwear sector.

d) Comparative and competitive advantages

One of the sectors that Ethiopia (and most African countries too) seems to have a clear comparative advantage in manufacturing is the leather sector. The major advantage that could give a competitive edge to the Ethiopian leather sector is its large livestock base. Ethiopia's footwear industry and its leather sector in general enjoy significant international comparative advantages owing to its abundant and available raw materials (leather), highly disciplined workforce with cheap prices [43].

The leather footwear sector in Ethiopia has great potential to enhance manufacturing and export production, and thereby to increase employment opportunities and reduce poverty. It has several competitive advantages in different areas [46]. In the natural arena, Ethiopia is endowed with the largest livestock population in the whole of Africa, and in particular sheep and goatskins are of exceptional quality. On the policy front, two remarkable developments are the following: firstly, the ban on exports of raw hides and skins implemented by the previous government (the Derg) in 1986 has enhanced indigenous leather tanning and stimulated manufacturing; secondly, following the publication of the Poverty Reduction Strategy Paper (PRSP) by the Ethiopian Government in 2002 several ministries have started promoting actively the opportunities arising through globalisation in the international arena for, among others, leather product manufacturers, in particular the

participation of Ethiopian enterprises in AGOA. Economically, the leather sector has been generating substantial foreign exchange earnings since it is Ethiopia's second export product of the country after coffee. From a social viewpoint, the sector offers substantial employment opportunities and will thus contribute to poverty alleviation. Institutionally, the leather sector is relatively more advanced (e.g. compared to the textile sector). However, maximizing the benefit from this resource requires expanding the leather products industries including footwear & accessories, leather garments, auto upholstery, etc, and fully integrating it into the domestic upstream industry.

The sector has many advantages and opportunities for foreign companies in terms of procuring semi-finished and finished leather and for sourcing footwear and leather goods. These include: [44]

- Locally available raw material
- Established small and medium sized enterprises in the region (tanneries and footwear producers)
- Direct access to finished leather (for the local footwear and leather goods production)
- Low labour costs in the region
- Governmental policies promoting export trade and foreign direct investment
- Potential for local and regional market

e) HRD (Labour force and training) and Employment trend

The work force is hard working, inexpensive and easily trainable. Moreover, the trained labour force in Ethiopia speaks and writes English. The above characteristics should facilitate the promotion of joint ventures and subcontracting agreements within the leather global value chain. The African Competitiveness Report (2001-2002) when analyzing the supply of educated workers to meet the needs of industry places Ethiopia with Kenya and Zimbabwe with a score of 3.0 on a scale of 0 to 6, indicating that there is ample room improvements to increase competitiveness (figure 3.2) [45].

In a study of the leather industry and of the problems affecting HRD carried out in a group of nine African leather-producing countries, including Ethiopia, a number of constraints in the area of HRD were identified. The most frequent constraint was related to the lack of diversified and up-to-date training programs for the improvement of competitiveness together with an insufficient use of the existing training facilities.

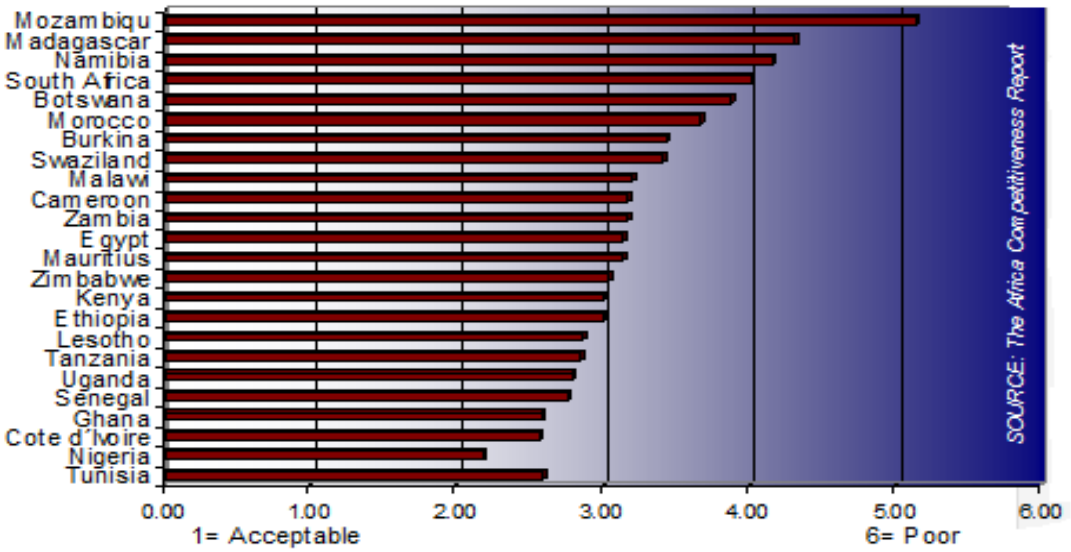


Figure 3.2 Supply of educated workers to meet the needs of the firm [45]

As can be seen from table 3.5 below, the number of persons engaged by major industrial group - public and private 1996 - 2000 E.F.Y, the leather sector results in employment opportunity to the country and it shows an increasing trend.

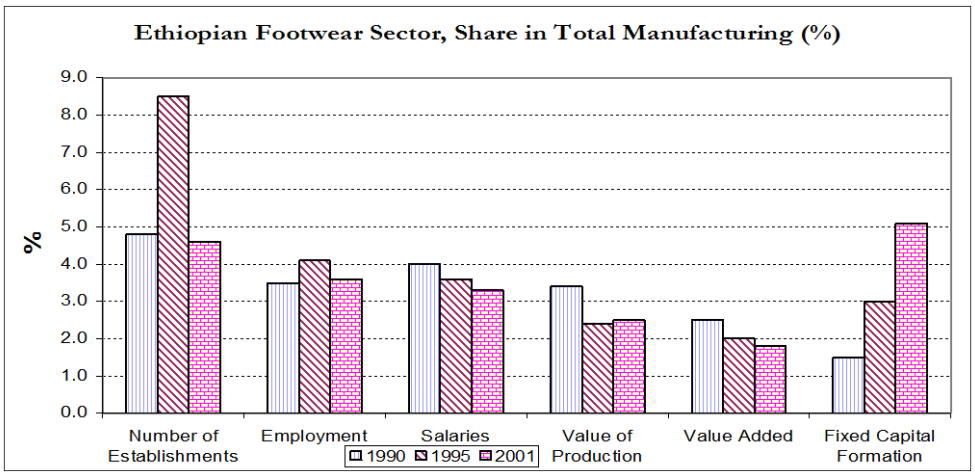
Table 3.5 Number of persons engaged by major industrial group - public and private 1996 - 2000 E.F.Y

Industrial Group	Ethiopian fiscal year				
	1997	**1998**	**1999**	**2000**	**2001**
Tanning and Dressing of Leather; Manufacture of Footwear, Luggage and Handbags	7,965	7,946	8,404	8,650	8,807

Source: CSA, 2010

f) Outputs - Contribution of the footwear sub-sector to the Ethiopian Economy

The LLPI is accounts for 9.7% of the foreign exchange obtained in 2003-2004. The LLPI contributes between 7% and 10% to the total value of manufactures, 6% of the total salaries and value added and almost 4% of employment [45]. Figure 3.3 presents the share (in %) of the leather sector from the total manufacturing. This trend is even more accentuated in the footwear sector. In spite of the increased investment (fixed capital formation) and increase in number of establishments, the value added has decreased and the level of employment is unchanged. This is as a result of the weaknesses of the overall Ethiopian LLPI system.



Source: UNIDO Industrial Statistics 2003, based on data by the Ethiopian Central Statistics Authority

Figure 3.3 Ethiopian footwear sector, share in total manufacturing (%)

g) Capacity Building

The following stakeholders are those who participate in development of Ethiopian leather footwear sub-sector.

- ***Leather Industry Development Institute*** **(LIDI)**

This organization was previously known as Leather and Leather Products Technology Institute (LLPTI) and it is the main responsive body with MoI to the development of the leather sector. The Government of Ethiopia has identified the leather sector as one of the growth sectors capable of accelerating economic development by creating more employment, generating income through exports, and offering investment potential. In this context, the GoE has established the LIDI, whose principal function is to create technical capabilities in order to improve the competitiveness of the leather and leather products industry. Currently, the institute is conducting benchmarking for selected leather footwear factories in cooperation with Footwear Design and Development Industry (FDDI) of Indian.

- ***Ethiopian Leather Industry Association (ELIA)***

This organization was known as Ethiopian tanners association in 1994 and Ethiopian Tanners, Footwear and Leather Products Manufacturing Association (ETFLPMA) from 2004-07. The Leather Association consists of 38 enterprises, 22 of which are tanneries, 11 footwear factories and 5 other leather products factories; where 2 of 38 are public enterprises, which are going to be privatized in the future.

The Leather Association's activities are; i) lobbying, ii) publicity of Ethiopian leather/leather products by joining international fairs, and iii) implementation of pilot projects. In addition, it works on promotion of the Ethiopian leather industry, ensuring quality and standards and it is the organizer of All African Leather Fair (AALF). Since the leather industry has been enjoying privileges, such as tax exemption and tax holidays, and the strong support from the GoE, the lobbying activities of the leather association has been focusing on the provision of technical assistance and extension services for quality improvement of leather rather than additional privileges. The privileges is, however, going to be limited only to those with the capacity to process finished leather as the initiative for the factories to upgrade their capacity [4].

- ***COMESA – Leather and Leather Products Institute (LLPI)***

It has been established by the Common Market for Eastern and Southern Africa (COMESA) and the GoE. It is the biggest institute in the leather sector in Africa and accepts many international trainees from many other African countries, such as Sudan, Zimbabwe, Burundi and Rwanda. The institute gives training, possesses demonstration factories with modern facilities. It leases the facilities as well as provides consultations to the enterprises which have the intention to promote trade. Since the institute is meant to build capacities to promote trade, these services are not provided to those who only deal with the domestic market.

- ***Other development agents***

- USAID: Quality Improvement of Raw Hides/Skins, Marketing, Web Page Development of the Leather Association and Warehouse Construction
- UNIDO: Preparation of the Strategic Action Plan (finalized in 2005), TAITU project
- Embassy of India: support in the quality of the hides/skins, as well as in design improvement via FDDI
- GTZ: Re-engineering in 6 Leather-related Factories, Technical Assistance to the Leather Institute
- ecbp

3.4 Performance assessment and evaluation of the leather shoe factories

To asses and analyze the existing performance of Ethiopian shoe factories and Identify related performance problems, data is collected through;

- Previous studies and leather journals
- Discussion with experts from different leather and footwear associations: e.g. LIDI, ELIA
- Survey Questionnaire

- Documents from MoT, MoI, LIDI, ELIA, TLIDC, CSA, etc

3.4.1 Benchmarking: Ethiopia with Bangladesh, Indonesia and China

A benchmarking analysis (*Benchmarking shoe production in Ethiopia*) made by Global Development Solutions in 2006, indicates that Ethiopia is relatively competitive against Indonesia with respect to the cost of leather shoe assembly[3], but less so against Bangladesh (Table 3.6) [8].

Table 3.6: Shoe manufacturing cost

Assembly cost	Bangladesh		Indonesia		Ethiopia	
	Cost $	% of total	Cost $	% of total	Cost $	% of total
Labour	0.59	78.3	0.60	66.7	0.37	43.9
Other non-material inputs	0.16	21.7	0.30	33.3	0.47	56.1

Source: Global Development Solutions, 2006.

Ethiopia's shoe manufacturing productivity is still very low, compared with China, the largest shoe producer in the world; it takes 78 minutes to produce one pair of shoe uppers in Ethiopia, whereas it only takes 30 minutes for Chinese manufacturers (see table 3.7 below) [9].

Table 3.7 Benchmarking shoe production between China and Ethiopia

	Minutes/pair	Total minutes	Pair/persons
Ethiopia	78	510	6.5
China	30	600	20

3.4.2 Production capacity, utilization and products of ELFFs

The table below shows the types of leather and footwear articles and production trend for three years. Accordingly, the production of leather shoes and boots, leather upper and lining shows an increasing trend.

[3] Assembly cost refers to all non-material costs such as labor, utilities...

Table 3.8 Production of leather and footwear articles, (1999 E.F.Y - 2001 E.F.Y)

Name of products & units	**2006/2007**	**2007/2008**	**2008/2009**
Leather shoes and boots (pairs)	1,748,518	1,719,413	3,144,538
Canvas and rubber shoes (pairs)	107,385	126,125	214,101
Plastic footwear (pairs)	15,901,540	15,684,111	13,317,179
Leather upper and lining ('000 sq.m)	1,052	1,687	3,884
Leather sole (pairs)	860	-	-
Semi processed skins ('000 pcs.)	22,849	13,836	20,560
Leather garment ('000 sq.ft.)	356	1,673	1,022
Plastic sole (pairs)	2,696,625	2,489,780	3,353,423
Crust hides and wet blue hides ('000 sq.ft.)	17,858	24,802	24,669

Source: *CSA, 2010*

Next, the production capacity utilization (installed and Attainable capacity in 2009/10 (2002 E.F.Y) & products of major shoe factories in Ethiopia are reviewed. As it can be seen below from table 3.9, the attainable capacity of the major shoe factories, they are working below the installed capacity. On average the production capacity utilization lie between 50 – 65%. Some factories attain more than this percentage but this was due to production of simple models in mass; else it is believed that most large shoe factories work far from the designed capacity.

Table 3.9 Production capacity, utilization & products of major shoe factories

S.N	Company Name	Installed Capacity (Pairs Per Day)	Attainable (max) capacity in 2002E.C (pairs/ day/8hr)	Capacity utilization (attainable /installed) (%)	Types of products
1.	Anbessa Shoe S.C	4500	2500	55.5	gentlemen's, Ladies, Children's, Shoe upper & last...
2.	Tikur Abbay Shoe S/C	3000	2000	66.67	gents', Military boots, working casual, children shoes
3.	Ramsay Shoe Factory	2000	1000	50	casual shoes, military, Sport, working...
4.	Gelila Shoe Factory PLC	1200	600	50	gent's, children's, sport, working boots and shoes
5.	Jamaica Shoe Factory	1200	800	66.7	gents' shoes (casual, dress, soccer)
6.	Kangaroo Shoe Factory PLC	1000	800	80	men's' casual, children's shoe
7.	Peacock Shoe Factory	3000	2000	66.67	gentlemen's, ladies and children's shoe
8.	Ras Dashen Shoe Factory	2000	1000	50	gentlemen's and children's shoe
9.	Wallia Shoe Factory	3000	1000	33.33	children, gentle, ladies
10.	Ara Shoe Factory	1500	700	46.7	Ladies upper
11.	Sheba Shoe Factory	4000	2000	50	gentlemen's, ladies and children's shoe
12.	Ethio-International footwear Cluster co. society Ltd.	15,000	-	-	gentlemen's, Ladies, Children's shoes

13.	Pu PVC Leather shoe & sole factory	-	-	-	leather shoes and soles
15.	Park Shoe & Leather products Factory	-	-	-	children's and ladies shoe
16.	Melese Teka Shoe factory	240	-	-	gents', ladies', Reflexology insole shoes

Source: LIDI, 2002E.C: Footwear manufacturing industries profile

3.4.3 Evaluation of development plan of the sector (2005/06 – 2009/10)

The Ethiopian industrial development strategy guides the way that the sector should involve in the international market by producing a competitive products in quality, quantity and price. However, the leather industry involvement in the international market was not satisfactory in the last five year. Some of the problems were less understanding of stakeholders on the strategy, under capacity production due to lack of skilled man power and advance technology [10].

Though Ethiopian leather shoe export is started recently, it is now showing a promising result due to the government export led strategy. It is tried to see here first the export performance of the leather sector (leather and leather products) (table 3.10) and then the export performance and trend of each leather shoe factories.

*Table 3.10 The export earnings performance of leather and leather products 1998 – Nov 2002E.C (*In million USD)

S.N	Leather & leather products	2005/06		2006/07		2007/08		2008/09		2009/10	
		plan	actual	plan	actual	plan	actual	plan	actual	Plan	Actual 5 month
1	Leather	90.82	73.43	107.9	84.0	93.4	91.4	145.1	68.28	138.4	16.80
	Pickle	-	-	-	-	12.7	32.1	23.75	19.13	-	-
	Wet blue	-	-	-	-	11.6	29.3	13.63	14.87	-	-
	Crust	-	-	-	-	35.2	17.7	30.78	23.13	81.95	13.40
	Finished leather	-	-	-	-	33.9	12.3	76.92	11.15	56.45	3.40
2	Shoe	9.93	1.60	8.47	5.54	39.64	9.87	47.94	7.19	60.65	2.40
3	Leather products	3.12	0.30	0.26	-	2.52	0.03	-	0.15	0.64	0.10
Total		**103.87**	**75.33**	**116.69**	**89.5**	**143.4**	**101.3**	**193.02**	**75.62**	**199.69**	**19.30**
Country total export		**-**	**1,008.57**	**-**	**1,267.67**	**-**	**1,482.06**	**-**	**1,450.00**	**2,927.80**	**574.30**
The share of leather sector in the export performance			**7.47**		**7.06**		**6.84**		**5.22**	**6.82**	**3.36**

Source: Leather sector development plan, 2002E.C and ELIA journal, 2011

As can be seen from the above table 3.10, the export earnings performance of shoe and finished leather is poor compared to that of leather (pickle, wet blue and crust). This shows that more emphasis was given to exporting leather before processed and being shoe. Table 3.11 also show the export performance of Ethiopian leather shoe factories from 1997-2001 E.F.Y and they are individually at low performance; however, as some of the shoe factories are investing on expansion process, production as well as the export performance will expect to be increased, when the companies operate in their full capacity.

Export performance of 1998 – 2002 E.C (2005/06 – 2009/10) budget year plan: Specifically this plan has been prepared to build the capacity of the sector, to improve the supply chain of the inputs and to support the investors to the sector. The leather industry sector export-oriented has been supported and this sector achieved continuous foreign currency growth rate within the four years except in 2001E.C. In the five year plan, 22 tanneries, 11 shoe firms and 5 leather goods manufacturers were engaged in the export market [10]. It has been planned to earn 103.866 million US dollar in the beginning of the five year plan 1998 E.C with 18% average growth rate every year and at the end of the five year plan 199.693 million US dollars (table 3.10 above). However, the actual performance is at low level. Based on the information of MoTI from1996 – 2000 E.C the export performance shows the average continuous growth rate of foreign currency earning was 25% but in the 2008/09 it was decreased by 25.3%. Hence, the average growth rate of earning foreign currency was 15% in the six years.

Table 3.11: Export performance of shoe factories in the budget year of 1997-2001E.C (2004/05-2008/09). (‘000 USD),

S.N	Name of company	2004/05		2005/06		2006/07		2007/08		2008/09		Average 5 years		
		Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	%
1	Peacock shoe	167	163	1,000	1,526	2,600	3,967	9,800	2,843	5,616	2,613	3,837	2,222	58
2	Ramse shoe	427	56	540	8	1,951	602	5,880	2,414	11,000	911	3,960	798	20
3	Anbesa shoe	108	3	500	1	125	419	4,319	1,224	10,267	2 ,128	3,064	755	25
4	Kangaroo shoe	162	-	300	-	655	-	2,940	597	2,580	460	1,328	212	16
5	Walya shoe	12	-	100	7	14	-	3,528	532	2,246	262	1,180	160	14
6	Ras dashin shoe	7,523	-	1,000	-	2,402	26	2,940	859	3,370	343	3,447	246	7
7	Tikure abay shoe	2,204	219	1,824	-	694	339	1,960	1,143	4,493	303	2,235	401	18
8	Gelila shoe	-	-	-	-	-	-	2,940	-	1,797	-	947	-	-
9	Valino francisco	-	126	-	-	-	-	-	-	-		-	32	-
10	Tizal global	-	-	200	-	-	-	-	-	-		40	-	-
11	Others	-	2,879	-	27	-	188	-	260	-	153	-	702	-
	Subtotal	**10,604**	**3,446**	**5,464**	**1,569**	**8,441**	**5,541**	**34,307**	**9,871**	**41,369**	**7,174**	**20,037**	**5,520**	**28**
Shoe factories on investment & expansion process														
12	Sheba shoe	-	-	-	-	-	-	1,882	-	2,074	-	791	-	-
13	Jamaica shoe	199	-	100	14	32	-	652	1	1,383	20	473	7	1
14	Ethio-Italy shoe	4,362	-	4,362	17	-	-	-	-	-		1,745	4	0.2
15	Hafde (papa guchi) shoe	-	-	-	-	-	-	2,800	-	1,036	-	767	-	-
16	Ethio-leather international shoe cluster	-	-	-	-	-	-	-	-	2,074	-	415	-	-
Subtotal		**4,561**	**-**	**4,462**	**31**	**32**	**-**	**5,334**	**1**	**6,567**	**20**	**4,191**	**10**	**0.2**
Shoe factories total		**15,165**	**3,446**	**9,926**	**1,600**	**8,473**	**5,541**	**39,641**	**9,872**	**47,936**	**7,195**	**24,228**	**5,531**	**23**

Source: LIDI 2002E.C

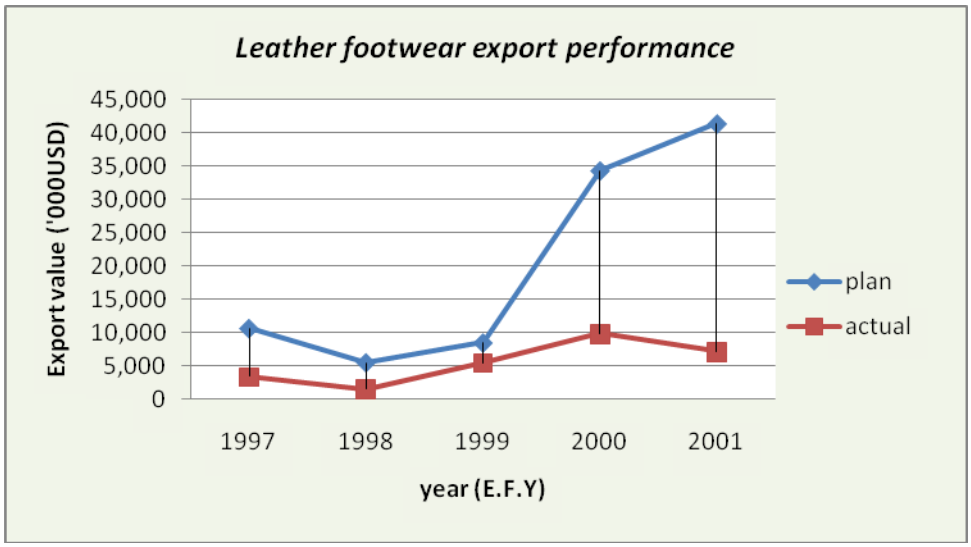


Figure 3.4 Five year leather footwear export performance

To some extent, the export performance of the footwear industry reflects the stage of development of the leather sector as a whole since, for a fully integrated leather sector, its cumulative outcome is reflected in the end product of the leather products sub-sector. The less integrated and inefficient footwear industry in Ethiopia, have little to export. The above figure 3.4 depicts that the export performance is too much below from its plan for the previous five years. Especially in 2000 and 2001E.C, the planed and actual export shows high deviation. As can be calculated form table 3.11, on average, actual exports account for about 28 percent of planned export value. To sum up, the general trend of export is inconsistent; however, it can be said that it has somewhat an increasing trend but at lower rate so that an improvement activities have to be done.

Some of the general reasons for the unsatisfied export performance are:-

- The movement towards the American huge market doesn't go further than sample sales and still there is no order for the products.
- There was shortage of power, long lead time for accessories (components take about three months till their arrival from their suppliers) which makes it difficult to accomplish the samples and show to the customers
- The global economic crises influence the interest of the existing potential buyers.
- The expected existing customers of the footwear industries didn't put an order.
- There is less experience to export market, less awareness about the international selling price ,quality and no coordination to produce in high quantity
- Even if there is some movement to find more customers in the African market, it doesn't go further than sample production.

3.4.4 Next five years export plan of the sector (2010/11 – 2014/15)

The next five year development plan of the leather sector is based on the industrial developmental strategic plan, potential of the sector and the direction of the developmental policies. The plan will be achieved by capacitate the current competence of the private sector, promote the new investors, create the market value chain to increase the share of export value. Moreover, the developmental plan of the sector is based on the export performance of the last five years. Hence, in 2002 E.C (2009/10) it was planned to earn 199.693 US dollar from the sector and 60.65 US dollar from leather footwear by increasing the export performance by 20% in average. As a result, it has been planned to attain 496.895 US dollars foreign currency from the sector at the end of the development plan. This can be categorized in different sub-sector, which is 315.525 US dollars ***(63.5%) for shoes manufacturers***, 136.65 US dollars (27.5%) for finished leather and the rest 44.72 US dollars (9.0%) will be for leather garments and goods, which is shown on the table 3.12 & table 3.13 below.

Table 3.12 The leather sector export plan (in million USD)

Product type	***Year***					
	2009/10	***2010/11***	***2011/12***	***2012/13***	***2013/14***	***2014/15***
Crust	81.950	49.170				
Finished leather	56.450	69.730	113.18	122.19	130.39	136.65
Leather shoe	60.650	119.886	177.95	215.43	260.75	315.52
Leather clothes	0.520	0.690	4.120	11.800	21.020	36.670
Leather goods	0.120	0.150	0.910	2.580	4.610	8.050
Total	**199.689**	**239.625**	**296.16**	**352.01**	**418.43**	**496.89**

Table 3.13 The share of export plan in percentage

Product type	***Year***					
	2009/10	***2010/11***	***2011/12***	***2012/13***	***2013/14***	***2014/15***
Crust	41.04	20.52	-	-	-	-
Finished leather	28.27	29.10	38.21	34.71	31.16	27.50
Leather shoe	30.37	50.03	60.09	61.20	62.32	63.50
Leather clothes	0.26	0.30	1.39	3.35	5.35	7.38
Leather goods	0.06	0.06	0.31	0.74	1.17	1.62
Total	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**

Source: ELIA Journal, 2011

Footwear production and Export Plan

The footwear manufacturing primarily produce and export men's and children's shoes and also they produce ladies shoe for the local and export market. From the leather sector the products of footwear

will be expected to have a lion share in generating foreign currency. At the end of the growth and transformation plan the share of footwear foreign currency will be increased to 63.5%. This indicates that the leather footwear sub-sector has given more emphasis compared to the other leather subsectors and used as a motor to drive the sector. Currently, the production capacity of the eleven footwear manufacturers operating is 4.762 million pairs of shoes per year and when the three firms under investment will start production in 2003 E.C (2010/11), the production capacity of the firms will be 9.24 million pair shoes per a shift. It is possible to increase the production of firms to 14.557 million pair shoes per a year by building their capacity. It was planned to export 70% of footwear production to earn the foreign currency. In 2003 E.C (2010/11) budget year 9.222million pair shoes has been planned to export to earn 119.89 million USD. At the end of the plan year, it is planned to export 21.035 million pair shoes, to earn 315.53 million USD. This will be increase from year to year in the given plan year. To materialize this objective, building capacity of firms by support of marketing research and trade chain will be continued and focusing on expanding the market to America, Europe, Middle East and Africa. Moreover by establishing the new firms in footwear manufacturing in 2011/12 to 2014/15 with production capacity as shown in the table below (table 3.14), the desired plan will become visible.

Table 3.14 Footwear production plan within the leather sector export plan

Description		***Time table***					
		2009/10	***2010/11***	***2011/12***	***2012/13***	***2013/14***	***2014/15***
Amount of products (million pair shoes)	Total	2.671	14.643	18.831	21.983	25.690	30.050
	Existed	2.671	14.643	16.108	17.718	19.490	21.439
	new			2.724	4.265	6.200	8.611
Finished leather amount for footwear (million sq.ft)		13.72	75.383	96.944	113.18	132.22	154.67
Finished leather for export standard shoe (million sq.ft)		24.98	47.475	67.861	79.217	92.576	108.28
Footwear for export (million pair shoes)		4.852	9.222	13.182	15.388	17.983	21.035
Price per pair of shoe (USD)		12.50	13.00	13.50	14.00	14.50	15.00
Foreign currency earning (million USD)		60.65	119.89	177.96	215.43	260.75	315.53

Source: ELIA Journal, 2011

3.5 Review of recently done activities to build the capacity of the sector

1. Education and training

The institute (LIDI) produces skilled man power for the leather industry. The education and training services provided by the institute are 10+3 diploma program, higher certificate (one year duration) and short term training delivery based on the need of the customers in leather, footwear and leather

garment & goods manufacturing technology. From 1998 – 2002 E.C, the institute in shoe manufacturing technology: [10]

- Educates a total of 122 graduates of 10+3
- Educates a total of 232 graduates of higher certificate
- Trains a total of 411 trainees

2. Technical services

- The institute (LIDI) has model factories of tannery, shoe, leather garment and goods manufacturing and CAD/CAM centre. The factories are used to provide practical training and education services for trainees and students. The institute also provides a service of product development by which value adding on semi-finished skins & hides and enables the leather industry to be competitive in the international market. The institute has an internationally certified laboratory which provides services of physical & chemical testing and waste water treatment analysis for the leather products of export-oriented. This laboratory service will enable the firm to export the quality products and it will reduce the high cost of quality checking for their products in foreign countries. Nevertheless, the service laboratory is not adequate for the need of the sector which requires more accreditation in physical and chemical testing [10].
- **Benchmarking and twinning arrangement program:** to make the leather and leather products be competitive in the international market the study and implementation of benchmarking and twining arrangement was done as a remedial.

To increase the capacity of competitiveness of the factories, benchmarking was included in the past budget years plan. The implementation of benchmarking performed was not fast as it was intended. The implementation of benchmarking was limited to few factories on a production process. Moreover, the implementation was not applied from the beginning to the end of the production process at a time. As a result of fragmented implementation of benchmarking the production process productivity cannot be improved. By avoiding this problem in 2003 Ethiopian fiscal year, the benchmarking implementation becomes the key activity of the sector. Hence to ensure the technology transfer, responsible body is selected to facilitate the implementation and to coordinate the stakeholders to contribute for the successful implementation of benchmarking. Currently its second phase is conducted in seven shoe factories of Ethiopia.

Establishing the institute with good facilities should not only be a beginning or an end rather, other major requirements and services should be provided through well qualified and trained staffs. In Ethiopia, such an institute is new and lack experience on how to run the technical matters. Even though the first twining agreement, in the half of 2001 E.C, was done with German institute, it was

terminated because the institute could not achieve the intended plan. To make the sector competitive globally, building the capacity of the institute is indispensable. In this essence, the twining arrangement has been agreed between the LIDI of Ethiopia and Central Leather Research Institute (CLRI) & Footwear Design and Development Institute (FDDI) of India to capacitate the institute in the international level through technology transfer sustainably.

3. Enterprise Resource Planning (ERP) system practice by UNIDO

UNIDO is conducting projects for the up-grading of the technical and managerial capabilities of all actors within the Ethiopian leather sector (to upgrade the Ethiopian LLPI) and the implementation of ERP in Ethiopian shoe companies to manage their supply chain.

In order to upgrade the managerial capabilities of the sector, a business process analysis and reengineering was firstly undertaken. This activity was devoted to some selected footwear companies and will try to improve the performances related to the supply chain management:

- Increase of timely delivery of customer orders
- Reduction of lead times
- Better management of production materials
- Reduction of unnecessary inventory
- Reduction of costs due to bad utilization of production resources and recurrent lack of material

A training activity was undertaken and the procedures was clearly understood and agreed by the managers of the shoe companies however; the implementation of the reengineered processes was resulted in a difficult job. This was due to the unavailability of a well-organized information system (a pre-condition to implement the reengineered process) to collect, manage, store and retrieve all data necessary to support the managerial and operational decisions. Therefore it was proposed to implement an integrated information system based on ERP software specifically customized for a footwear industry. Currently the full implementation is in course in Anbessa Shoe S.C as a pilot experience and then, after succeeding in this first experience, to extend to other companies of the sector.

3.6 Survey questionnaire analysis and results

Questionnaire was developed to assess the performance factors and management practices via collecting qualitative and quantitative primary data regarding the current performance measurement and improvement practices in ELFFs. It also helps to cross check whether performance factors that are found in literatures are really shown and show their effect on performance of our country's shoe factories.

Research Sample

According to the information obtained from LIDI under MoI, leather shoe factories given due attention by GoE are the larger mechanized ones (11 in number) which are export-oriented and members of ELIA. And as this study gives more focus to these footwear factories, the distribution and collection of the questionnaire was done with more attention on these factories. It is also tried to include the medium and small shoe factories; in addition two other shoe factories (via internet) and one questionnaire to an expert from LIDI (who is currently working benchmarking on seven selected shoe factories as a coordinator). Accordingly, a total of 14 questionnaires were distributed and 9 (64%) of it was returned. Though it looks small percentage, seven out of the eight larger mechanized leather shoe factories' questionnaires were collected via direct continuous contact to facilitate the response. The major reason to do not receive all the dispatched questionnaires was because almost all shoe factories are private companies which are not mostly voluntary to provide information due to some misconceptions. The questionnaire is analyzed using Microsoft excel or spreadsheet file and the results are discussed and presented as follows.

Respondents Profile

Most of the respondents were higher managers, production and plan managers and some experts with qualification level of B.Sc. so their job positions and experience indicate that they are responsible to involve and participate in the formulation of strategic plans and evaluation of strategic and corporate business performances. [See appendix C, tableC1]

Interpretation of performance in the firms

The questioner has four parts as shown in appendix B in which the first part is about preliminary information (compiled in table C1, appendix C). In the second section, it is tried to assess how footwear companies interpret performance and the result shows that most of them interpret performance in terms of good quality and customer satisfaction. Some of them also include cost competitiveness, fast delivery time, and high production in their performance interpretation. From

the result it can be drawn that ELFFs have good awareness to what good performance is though they are at low level.

The **third part** of the questionnaire is about assessing factors affecting the performance of ELFFs. Accordingly, it is tried to assess from general reasons (Qn. 15 & 35) to specific firm level factors including to the cost and quality cases (Qn. 16, 36, & 37).

General reasons for low performance

From assessment to the main general reasons behind low performance, as shown in figure 3.5 below, suppliers' related problem takes the highest percentage and customer related problem takes the next share.

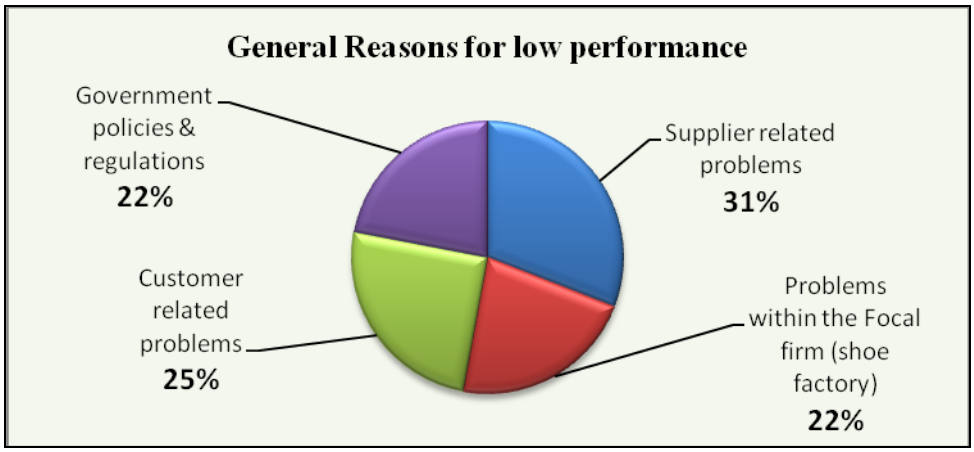


Figure 3.5 General reasons for low performance

Capacity utilization of firms

One of the other reasons which lead ELFFs to a low performance is not being fully operational or not work at full capacity. And the assessment shows that the reasons behind are shown in the following figure (figure 3.6).

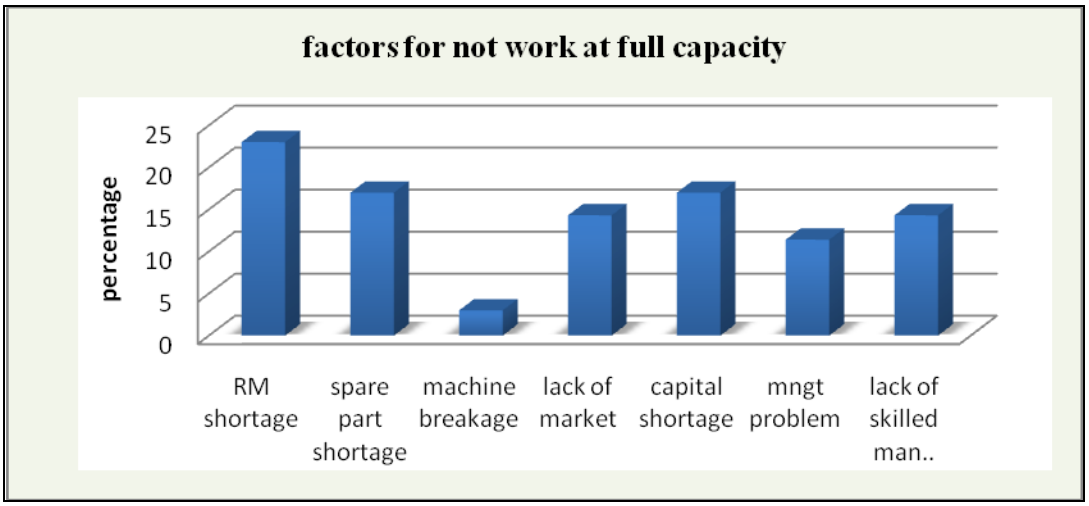


Figure 3.6 Factors for not utilizing the full capacity

As can be seen from this figure, only two of the reasons (raw material shortage and spare part shortage) accounts about 40%. Shortage of working capital and lack of market also takes the next share (about 31%). In addition, it can be seen that the reasons are not specifically related to the shoe production process/ production system. Other specified reasons by respondents towards not working at full capacity were shortage of facility, highly poor wage and incentive system.

- It was also tried to assess which of the main shoe manufacturing processes (supplies & procurement, R&D, shoe production and sales & marketing) frequently faced with problems which in turn affect the performance of the firm. The respondents result show that supplies & procurement process alone takes the highest percentage, about 32.5%. As a result, this indicates how much this process alone affects the performance of a shoe factory. (see appendix C, table C2)

Factors affecting performance of firms

In Qn.17 (see appendix B), It was tried to collect from literatures and secondary data about 13 factors affecting performance and assess whether these factors are really appear in ELFFs and how is their effect on the supplies & procurement process performance. As the respondents result shows (see appendix C, table C3), most factors are existed and take slightly different percentage share towards the effect or somewhat equally important i.e. no vital few case to be analyzed via Pareto analysis. However, four of the factors (raw materials & accessories, lack of coordination with suppliers & customers, machineries & equipments and management) which account about 30% of the total factors in number result in about 42% of the total effect.

Impact of reasons towards high manufacturing cost and unsatisfactory quality

Mostly, Ethiopia's shoes are blamed in their quality and high manufacturing cost. Therefore it was tried to assess the reasons behind these problems in Qn.36 & 37. Regarding the quality of shoe, the critical reasons are lack of skilled labor, lack of quality raw material especially finished leather, lack of efficient machine & equipments and outdated technology. However, finished leather quality problem takes the highest percentage towards low quality of Ethiopian shoes (See figure 3.7). Regarding the high shoe manufacturing costs, high cost of spare parts & accessories and finished leather takes the highest percentage (See figure 3.8).

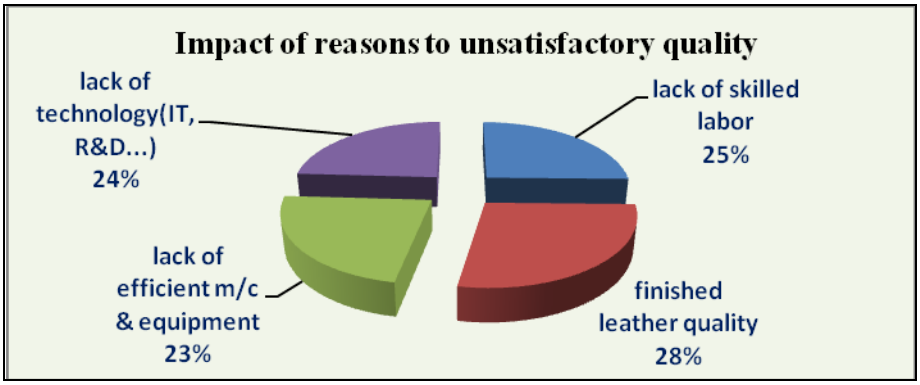


Figure 3.7 Impact of critical reasons towards poor quality of shoe

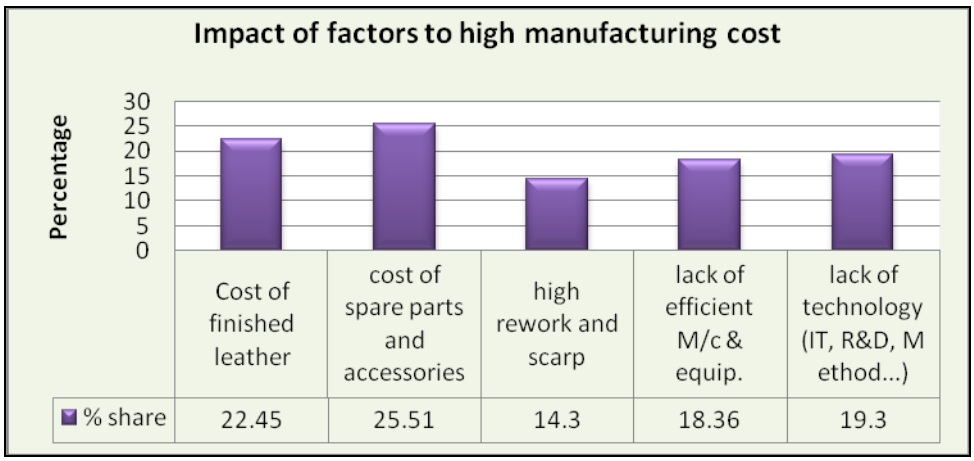


Figure 3.8 Impact of possible facors towards high shoe manufacturing cost

Current performance management practices

The last section of the questionnaire was developed for assessing the current performance measurement and improvement practices and related problems. Accordingly, the following results were obtained.

- It is tried to know whether the firms use performance measurement to identify areas that require strategic focus and the response show that some uses rarely and some of them use sometimes. This shows that most shoe factories did not use regular performance measurement.
- Most shoe factories use financial measures for strategic decision making. However, this is limited to make a decision and so they have to use also non financial performance measures.
- Most of ELFFs have no a well organized & equipped department which is involved in research and development (R & D) duties to find out and introduce innovative methods and technologies that can improve performance. Though they have product development center or design department it is not organized and is on the way to function well.
- Though ELFFs have training programs which are mostly on job trainings, it is not in a regular manner. Mostly they give occasional trainings.

- Some of the factories have standard time for each leather shoe style for all tasks required and some of them have no yet and are on the way. As it is known using standard time helps to increase labor productivity.

Regarding the recent performance measurement & improvement practices/methods in ELFFs, the following points are the results from the respondents.

- For financial performance, most firms use net income & ROI, profitability and financial ratios.
- For operational performance some firms use production & sales volume, benchmarking and its training program.
- For marketing performance they use sales growth and for customer satisfaction producing quality shoe as customer order.
- However, for employee satisfaction, innovation & employee learning and suppliers performance there is no such activity done. Some of the reasons specified by the respondents are lack of skilled staff, absence of improvement method and lack of commitment by the private owners.
- Regarding to the firm level performance improvement methods/tools; some are ongoing in practicing benchmarking, some plan to implement QMS or ISO, and one factory (Anbessa shoe S.C) is ongoing to implement ERP, BSC, and BPR. So these are some indications towards the improvement methods.

Respondents' opinion regarding to the roles of stakeholders

The last question was about the respondents' opinion with regard to different responsible bodies' actions to enhance the performance of shoe factories in Ethiopia and the result is summarized as follow.

- *Government* has to facilitate raw material supply to shoe factories; do different works towards the development of the leather industry like tax relief & incentive, financial support, facilitate infrastructures like power and communication services, provide best policy; create local opportunities for spare parts & accessories which are now costly and time consuming to import.
- *Trade unions & manufacturing firms* should work on accessibility of imported materials, collaboration, information sharing & create good relationship between firms up to utilization of idle stocks and outsourcing and motivating workers to be productive.
- *Academic institutions* have to educate and train manpower consistently, create strong university-industry linkage and conduct applicable projects.

- *NGOs, consultants and associations* have to support and consultancy to improve R&D, technology and innovation, create trade fairs towards international market promotion and try to bring paradigm shift among the owners to face their global competitors rather than working alone.

To sum up performance problems, most of the critical ones which take highest share are all not only specifically related to the shoe production rather they are also problems which are related to supply and procurement process or suppliers and sales and marketing or customers. Accordingly, these are external or national level problems in the sub sector.

3.7 Problems towards low performance and SWOT analysis

In this section, some sort of summary points towards problems of the sub-sector is drawn from different studies and the previous section. In addition a SWOT analysis of the leather footwear sub sector is analyzed.

- According to an industry survey conducted by the Ethiopian export promotion agency, leather-producing firms report that they are operating from 30 to 90% below capacity [47]. The industry faces constraints due to outmode equipment and machinery; lack of market information; low quality standards; and limited supply of raw materials. Firms in the leather sector cite the need to invest in technology upgrades and human skills development as crucial to improving productive capacity and so performance.

- The ministry of Trade and industry has made an extensive assessment on the local leather footwear, garment and leather product industry. As a result, it identifies eleven leather footwear, twelve leather garment and leather product factories that have great potential capacities to produce leather shoes, garment and leather products for the export market. In the report of MoTI 2002E.C, the ministry has estimated the production capacity of the selected shoe factories as 4,438,000 pairs of shoes per annum of this, 80% (3,550,000) is assumed to go to the foreign market and the remaining 20% (876,600pairs of shoes) which fail to fulfill the selection criteria, will remain to the local market. This annual production of leather shoes is estimated by assuming that the leather factories get the required inputs. But the likelihood of achieving this production target is very remote because the leather shoe factories suffer particularly from shortage of finished leather. Moreover; the problem has been aggravated further by shortage of foreign exchange for the import of accessories and components.

According to the extensive review of previous studies and the study done by Freselam M. (Graduate project at Addis Ababa University in 2009/10), the following problems, in the leather footwear subsector of Ethiopia, were identified which leads to a lower performance of the sector.

1. *Shortage of input (components and accessories – mostly imported ones):* This is firstly due to fragmented purchasing system, which leads to high prices paid for poor quality materials and significantly varied prices could be paid for similar quality of material, the factories may be not aware the opportunities of reduction in price that could otherwise have been obtained through bulk purchase, cost of purchase, which consequently burdens its working capital and affects its financial. Secondly it is due to Inadequate Infrastructure for information sharing and material flow – communication system, transportation and port related problems.
2. *Lack of Integration:* Most of the organizations have only ***"companywide image not nationwide",*** this leads to disintegrated industrial system. There was almost no horizontal linkage among enterprises partly due to lack of trust. However, the foreign market forced the local enterprises to unify. The footwear enterprises recently started an association that may help to solve some of their problems. On top of that, they are members of the chambers of commerce and the Ethiopian private manufacturers association.
3. *Poor Production:* poor production planning and control, and low productivity (lack of technological equipment and lack of expertise in the jobs performed)
4. *Marketing:* inadequate awareness about marketing and problems with the distribution system
5. *Poor management of the supply chain*: this has great impact on the business performances of a company. There is poor link between marketing, planning and manufacturing functions. With this poor link it is difficult to satisfy customer needs especially in reducing price and delivery time.
6. *Poor quality of the domestic leather:* The main factors affecting the competitiveness of leather footwear are the relatively poor quality of the domestic leather used in the industry (high quality leather is mostly for export) and the high cost of imported inputs.

In addition to the problem of availability of finished leather, there are a number of common constraints affecting the competitiveness of the footwear. These are: lack of skilled manpower, the simple production techniques, inadequate costing systems, components procurement, and marketing skills. Insufficient knowledge of shoe design is also a specific problem in footwear.

SWOT analysis for the leather footwear sub sector

SWOT analysis is a study about the strengths, weaknesses, opportunities and treats. In the previous sections, the current status of the leather footwear industry has overviewed and assessed which enabled us to see the whole image of the sub-sector. Now, the SWOT analysis for the leather footwear sector of Ethiopia can be drawn. The strength and weakness are internal and the opportunities & treats are external aspects or factors. The Analysis is made based on the SWOT analysis of the Ethiopian Leather and Leather Products Industry made by UNIDO [45], review of recent documents of ecbp [42] and overviews of the Ethiopian footwear subsector made in the previous section.

Table 3.15 SWOT Analysis for ELFFs

SWOT components	SWOT analysis
Strength	☑ Presence of mechanised shoe enterprises and some exports of footwear ☑ Presence of trainable workforce ☑ Availability of finished leather due to presence of fully mechanised tanning facilities and trend to move from export of semi-processed leather to export of finished leather ☑ There is institutional infrastructure for quality, standardization and for services (QSAE) ☑ Education and training by LIDI to have sufficient knowledge of shoe engineering and modern manpower-training capacity ☑ Availability of market access through: COMESA; AGOA.
Weakness	⊗ The quality of leather is not always high enough (inconsistent) ⊗ Lack of diversified and up-to-date training programs in HRD for the improvement of competitiveness together with an insufficient use of the existing training facilities ⊗ Shortage of skilled workers and updated technology, Poor finishing, low productivity ⊗ Slow responsiveness to changing shoe models ⊗ lack of usage of improvement practices like BSC, benchmarking, QMS and other industrial engineering techniques ⊗ Usage of old technology, obsolete equipment & lack of spare parts ⊗ Weak product development, design or research development capabilities and little diversification. ⊗ Insufficient international exposure ⊗ Having insufficient working capital and difficulties to access sufficient capital for investments and working capital. ⊗ Weak marketing: weak promotion and advertising, weak market information services ⊗ Low capacity to respond to the international demand in terms of quantity and time
Opportunity	♠ Presence of Cheap labour force ♠ Access to raw leather locally if tanneries improve their performance

	♠ The establishment of a trade mark or product image "*Made in Ethiopia*" (currently ASSC is practicing it) ♠ Presence of LIDI as a "catalyst" to the development of the sub sector in all stages of the chain. ♠ Export-led industrialization strategy in which LLPI included and fully supported by the government ♠ Availability of potential local market ♠ Transfer of shoe production from developed countries to developing through outsourcing and sub-contracting ♠ Clustering and networking between formal and informal sector (e.g. Ethio-international footwear cluster) ♠ Regional and sub-regional market for leather products (COMESA)
Threat	☛ The large volumes of uncontrolled imports of footwear from Asia and second hand shoes from Europe and North America which are seriously affecting the local shoe manufacturing industry. ☛ Finished leather quality problem due to the growing spread of *Ekek* ☛ Competition from Asian Countries with cheap imports of leather products, without the application of quality standards. ☛ Lack of Marketing System for finished leather based on quality grading ☛ Incapable in getting international market share ☛ Negative image concerning local shoe products

CHAPTER FOUR

CASE STUDY (Anbessa Shoe Share Company)

4.1 Introduction

In the previous section, it was tried to assess and evaluate the performance, and analyze the problems of Ethiopian leather shoe factories. This work has created an opportunity to know their performance level and the problems currently faced as a whole to the sub-sector. However, for the complete study of the research, it is needed to further assess and analyze shoe factory's internal situation (performance problems, working environment and improvement practices, etc.) via primary data. It is because one can bring total performance in shoe factory whenever the whole system has good performance. This is why the case study conducted. It was conducted in anbessa shoe share company (ASSC). The reasons to select the case company are:

1. It is one of the largest mechanized shoe factories which help to see the complete system of footwear production.
2. It is among the currently government focused eleven medium and large mechanized footwear factories in the formal sector especially in export and is member of ELIA
3. It was at lower performance and working with loss in recent years [7,47,48]
4. To assess the current improvement practices such as; ERP system by UNIDO and the firm is undergoing in BPR and QMS practices though it is currently at slow moment.
5. Data availability or easy access to get information than the private factories.

In addition, the expansion project was done in May 2002 E.C to have the company a production capacity of 4500pairs/day but yet its max capacity is 2500pairs. This is also an indication for the low performance of the company. Though it is the leader in capacity utilization and production volume among Ethiopian leather shoe factories, it is not working at satisfactory productivity or performance level.

Thus, in this case study it was tried to conduct recent overview of the company, assess the current performance measurement and working practices, performance evaluation of the company and related problems, performance gap analysis via benchmarking, summary and synthesis of problems via cause and effect diagram, and finally the findings are summarized.

4.2 Overview of the company

This section covers: the recent profile of the company and overview of the firm's capability, supply, market and distribution channel, export condition and production process.

I. Background

Anbessa Shoe, formerly known as the Darmar Shoe Factory, was established in 1939 by an Italian national. The factory was run by its Italian founder for only three years and was sold in 1942 to an Armenian citizen, who ran the factory for 33 years as the Darmar Shoe Factory. Darmar was initially engaged in both tannery and shoe making. In 1975, Darmar was nationalized and organized as two public enterprises: Anbessa Shoe Factory and Awash Tannery. The firm started to export shoes, in small quantities, in the early 1980s. In 1993, following the issuance of a new proclamation, Anbessa Shoe Factory was restructured as a share company. The factory is located in two premises in the capital. The main factory and administrative offices are located in the centre of the capital, Lidetta sub city. In addition, the factory has a branch unit (MANPO Branch) in the eastern part of the city which is now being used as local unit.

II. Nature of the business and specific company objectives

Anbessa shoe factory is engaged in both manufacturing (production) and distribution (sales) of various types of shoes. The objective is with a view of making the profit motive a central theme in general and to enable the factory achieve the following objectives in particular:

- Producing all kinds of leather shoes and shoe uppers which will meet the requirement of market.
- Developing better designs of shoes, shoe uppers and components to local & international
- Developing alternative means of replacing imported raw materials by suitable local components.

III. Vision and Mission of the company

The vision of the factory is to be a leading one producer of high quality leather footwear and leather articles using natural leather, the latest technology and the skill of experienced personnel's for both local and export market.

The mission of the factory is to add value to livestock resource through processing natural leather in to various leather-footwear, leather-articles and leather-shoe-upper that meet the requirements of both local and export market and utilize the revenue derived from it to boost profitability of the

organization which in turn ensures the government its deserved dividend and provide job security for the firm's employees.

IV. Competitive Advantages

Competitive advantages of ASSC arise from various sources (general): firstly from the global point of view, the factory is located in a country with an immense potential source of leather (Ethiopia ranks 10^{th} in cattle population from world and 1^{st} in Africa). Secondly Ethiopia's population of about 80 million people provides a large enough internal market. Specifically:

- ASSC has a well established network of sales outlets located in strategically important cites.
- Has relatively skilled and seasoned staff
- Has relatively new advanced machines and best layout to increase its capacity
- Has well established reputation for manufacturing durable shoes

V. Basic details

Anbessa is engaged in the production of various types of leather shoes. Due to its long years of experience in the business, the company has highly skilled and experienced workers. Currently (2003E.C.), the total number of employees is 825. Efforts are being made to train workers using Italian senior shoe technologists to build their capacity through international experience.

In 2008/09, the firm had an annual turnover of about $4 million, 48% of which came from export sales. The total assets are valued at about $5.5 million, 34% of which is financed by equity. Currently, Anbessa shoe S.C has a payable capital of twenty four million four hundred fifty thousand birr (24, 450, 00.00 birr). [9, 49]

VI. Current production capacity, products and activities

ASSC has made renovation of old equipment with the installation of new and advanced machineries which enabled the company to increase its capacity. This has enabled the factory to increase its capacity. Following with the expansion project, now the designed production capacity of the company has reached 4500 pairs of shoes per day (single shift). Its machineries and layout are the best in the country. It produces finished shoe and other leather articles for both local and international market.

Figure 4.1 Some products of ASSC

VII. Organization and management

The general manager reports to a managing board, which deals with issues of policy. The general manager is responsible for operational matters. Five functional managers are assigned to sales, finance, human resources, and technical and production departments. [See appendix A, organizational structure of ASSC]

VIII. Firm capabilities

Anbessa Shoe is recognized as a pioneer in modern shoe manufacturing in Ethiopia and is a well-regarded brand. It is equipped with modern machinery and employs relatively skilled labour. Its capacity has allowed the firm to be a substantial exporter.

The firm has high overhead costs and faces a serious constraint on its working capital. In addition, it suffers the disadvantage of not having its own tannery. The firm relies on contact initiation from customers in its export markets, and does not have a formal marketing operation. Product design activity is limited; the design for export items is provided by the firm's customers.

IX. Supply, marketing and distribution chain

Processed leather, which constitutes almost 50% of input costs, is mainly sourced from Batu tannery, Ethiopian Tannery, Hafede Tannery and ELICO PLC. Other inputs (TR material for sole, shoe components and accessories) are imported on a competitive international open tender basis. The two major markets are the local market and the export market which the company is recently embarked on. It uses its 17 retailing shops which are found across the country in selected major towns to distribute its products for the local market. Some sales are made to government offices. Though the major market share have been dominated by the local market for the past many years, due to the export oriented market strategy employed in recent years, the export market is taking the helm over the local.

It uses a whole sale for distributing its products to the international market. Italy, Germany, France, Switzerland, Austria, Sweden, Canada and Sudan are the firm's major export destinations. Customers are usually the ones to initiate contact, by contacting the factory directly. In addition to the firm's website, customers get the firm's contact details from development partners such as UNIDO and GTZ and through Ethiopian embassies. Although the firm participates in trade fairs, orders obtained through such events are very limited.

X. Export

Anbessa has accomplished a lot for the past few years and motivating results has also been achieved. Since the government of Ethiopia has made export market its priority, Anbessa is getting all the support it needs to export its products. Anbessa has designed and put in effect an expansion project with the aim to change its all manufacturing facilities and layout so that it can produce export standard finished shoe using its full capacity.

The company has now a newly established (via expansion project) factory employing state-of-the art technology with a designed production capacity of 3000 pairs of export standard leather footwear. The main export markets are Italy (90% of exports), Germany, Kenya, Uganda, Israel and the United States. Mostly they are exporting their products to the European market through Italy.

XI. Recent developments and Development agenda

As it described before, the firm has recently gone through an expansion project, acquiring additional machinery. The main factory has been dedicated to exports. The firm is currently undergoing a BPR exercise, and is developing a resource planning system (ERP system). In addition, it is working towards achieving ISO certification (ISO 9001:2008).

A tender to privatize the firm has been repeatedly considered over the years. Recently around the beginning of July 2011, it is sold and on process to be privatized. The firm aims to increase its export revenue by installing a more modern production system to increase its competitiveness. In addition, there are plans to increase productivity. The firm is working towards improving its design activities and has recently established a design team.

XII. Production Process

Generally the footwear production system has four major processes: cutting, stitching, lasting bottom and finishing. The description of these major processes with some other supportive processes is shown below.

Cutting: Cutting of finished leather to different shoe components is done by modern hydraulic cutting machines.

Unit sole preparation: different types of unit sole, tiles, sealing and so on are produced with the help of two press machines with four and three beds respectively.

Insole preparation: Inside parts of shoe such as toe puff, counter, insole and stock lining are prepared by hydraulic cutting, insole forming, counter splitting and skiving, and insole trimming and so on.

Stitching: Assembly of the different components of the upper parts of shoes is done by different types of flat bed, post-bed, zigzag, eyeleting machines and others. Parts of shoes referred as an upper are vamp, tongue, apron, toecap, counter, quarter, and mudguard, etc.

Lasting: Shaping the upper to the last is done by automatic counter molding machine, toe, and side and heel seat lasting machines.

Bottoming: this is a process of attaching lasted upper to the sole

Unit sole Attaching: this line is equipped with modern roughing, insole reinforcing, sole attaching, pressing and leveling machines.

Finishing and Packing: Trimming, polishing, shoe lacing and packing is done by different shoe finishing machines. In addition to the main processing line, there are also auxiliary lines.

The firm's shoe production operation process is shown in the figure 4.2 below and the description is as follow: Shop order will be released based on production order for cutting & stitching then loading these sections with the required raw materials; Load stitching and laired out stitching line; Cut upper parts then inspect the quality and if there is defect show for operator, record it and replace cutting else bundled the upper parts in to batch size and record. Then it will be transferred to stitching and stitched. If the ordered shoe needs moccasin stitching, stitching upper will be transferred to moccasin section and then manually stitched. Stitching upper will be transferred to mini store and then order will be checked whether it is for upper or finished shoe. If it is for upper, it will be stored for shipment else it will be transferred in to finished goods store and wait for lasting. When time for last reach, loading lasting conveyors and received necessary raw materials; lasting & recording production; finishing and bottomed shoe will be packed with shoe box and stored. Quality inspection is done at the end of each section (cutting, stitching, moccasin stitching, bottom lasting and finishing).

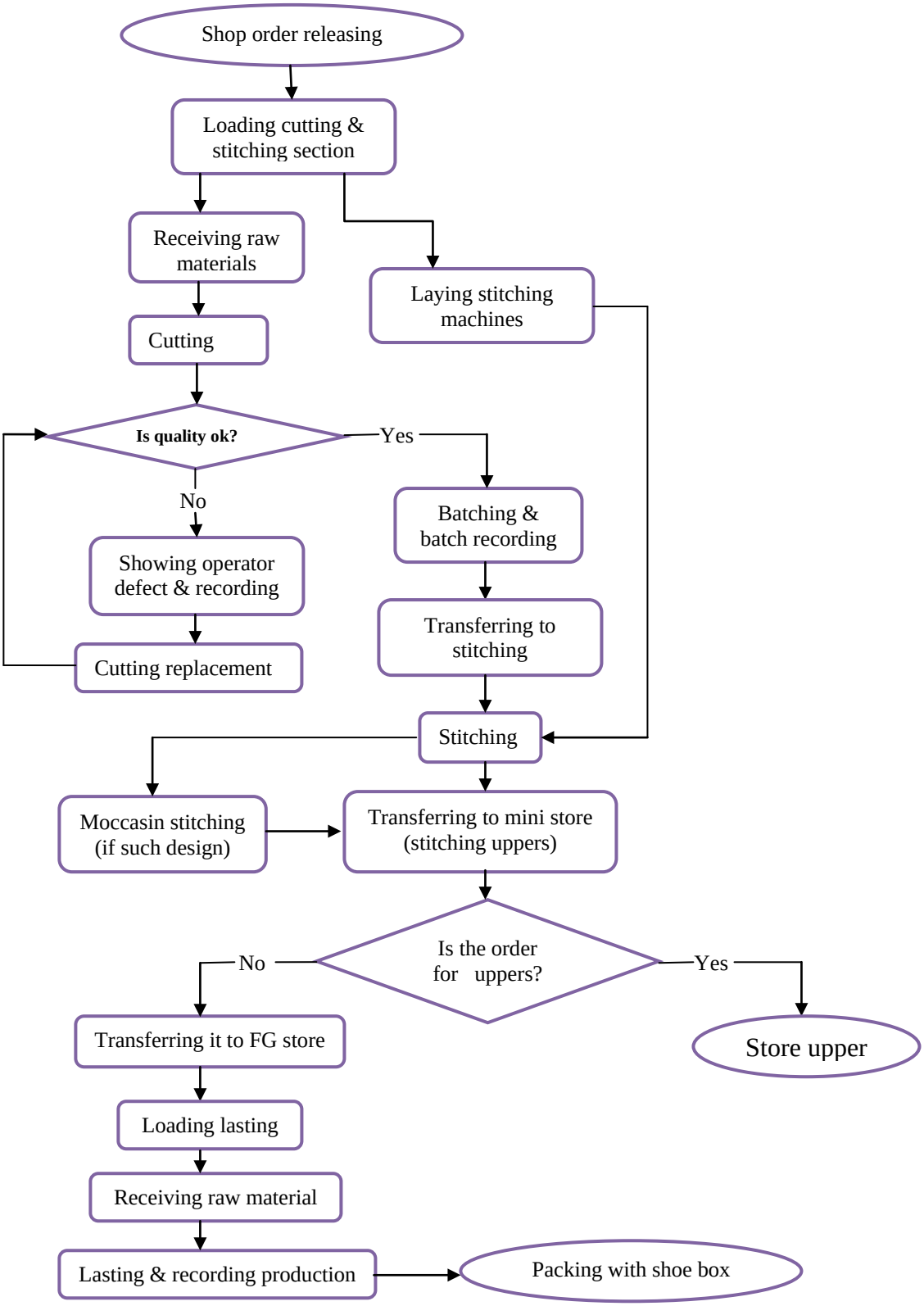


Figure 4.2 Shoe production operation process of ASSC

4.3 Existing performance measurement practices and related problems

In this section, it is tried to assess the current working and performance measurement practices of ASSC and identify the related major problems. Next, the performance variables and measures they use and how they measure is assessed. It is discussed, analyzed and presented under categorizing the processes of the company in to seven major processes based on overall activity and organizational structure of the firm. These are ***production, design & product development, procurement and material stock management, sales & marketing, distribution, human resource development & administration, and finance & accounting***. Data are collected via observation, interview and discussion with different persons in each department and from different company records.

4.3.1 Production process

This core process of the company includes shoe production processes (cutting, preparation & stitching, bottom lasting and finishing), sole production, production plan & control, supervision, quality control, and moccasin works.

Production plan and control: in this section their work is limited to daily production plan and necessary inputs based on order and production capacity of the production lines (machines and workers) – cutting, stitching, lasting and finishing. Then the production sections use this plan and do their work. Control activity is only follow up and cross check with the order as the firm is mostly making to order. There is no timely plan and progress control of production.

Mostly, the supervisors have no proper skill to supervise, control and motivate workers towards high productivity because they primarily selected for the position randomly or informal means of selection by higher bodies. This highly affects the production efficiency of the shoe manufacturing process.

Cutting: prepared raw leather, in which defective parts are selected and marked, cut based on the design and amount required using cutting blades. The cutting yield is 85% with 15% scrap; however the benchmark is 5%. Some of the reasons for this high gap are: lack of cutting skill (workers simply cut as they assume and randomly until the leather is less in area than the cutter), cutting blade maintenance problem, and high quality problem with the raw leather. The workers are also expected to cut 150-200 shoe leather on average and it depends on the type of shoe model because different shoe models require different number of components. Though they measure the cutting yield and cutting efficiency of each worker, no improvement action is taken yet. Even no incentive for the worker who cut more and so this de-motivates the worker to increase the productivity.

In this section, some machines have got problem of auto functioning and affects the operator's productivity and quality of the WIP. For example one of the rabling head machine (sponge sole cutting) is functioning manually using the operators force to cut one by one. However, if it is auto he/she can cut many at a time and scrap will be minimized. This is due to lack of maintenance even breakdown maintenance. Regarding to maintenance, the firm practices generally breakdown maintenance and this in turn increases the downtime.

Another observable problem in the cutting section, which affects the operators' efficiency, is the crowded working condition (improper placement of cutting blades, piling up of WIP due to absence of timely collection, and workloads), absence of timely work environment check up (sharpness of cutting blades, proper placement, proper scrap storage) and no exchange of work and work place which motivate and help workers to get multiple skill.

Stitching and preparation: previously these two activities were done separately; however on the expansion project made recently in doing the layout, these two activities are merged or combined. This helps in minimizing activities (separately done), delay in control and handling, and man power. However there are problems yet like delay in preparation activities of leather and lining (splitting, marking, smoothening and stamping) due to workers efficiency and responsiveness problems which in turn results in bottleneck for the production line. In this production line idleness of workers and lack of responsiveness of some stitching and preparation workers is mostly shown.

Moccasin Stitching: this section has many workers who work manual works as moccasin is manually stitching of shoe to have nice style. This work takes long time and sometimes it will be as a bottleneck for the shoe production line. The positive thing observed in this section is the high motivation of moccasin workers and this is due to the payment is based on the number of shoe they stitch. On the other hand, the working condition is not ergonomically sound due to absence of proper chair (with no back rest), no proper safety materials for hand and leg, and no proper place for leg rest. Such easy observable problems will affect workers efficiency and health.

Lasting bottom and Finishing: in this shoe production section most quality problems (defects of shoe) will be happen and be visible because at this operation, there is high stretching of the shoe which makes the defected leather to be visible. In addition, finishing activities, which add more aesthetic value, done in this process. Therefore, in this production line relatively skilled labor is necessary to reduce defective shoes and make it have nice aesthetic value. In this section they measure quality of shoe in terms of number of defectives per unit volume. If it has small defects which are not accepted to the export standard, they will sale it for local market. If the defect is high level, it will go for rework.

Generally, the major findings from **cutting, stitching, lasting and finishing processes** are:

- While comparing the availability of effective plans/checks/training/samples /facilities for cutting operations like planning for loading, daily cutting and dispatch report, cutters performance report , calculation of departmental absenteeism , checking of dies for damages and bends, availability of the approved samples in cutting department, and training and up gradation of cutters against the best requirements, most of these activities are not implemented effectively in planned and documented manner to ensure consistent operations.
- Regarding cutting directions and understanding the quality regions in leather and shoe, and availability of thickness reduction mechanism for components as per specification, there are some mechanisms and tools are in place but these are not executed constantly in documented manner
- Finishing operation is performed in traditional manner without proper planning that help to guide and control the availability of all resource to finish the shoe according the finishing requirement of the customer
- Minimum use of adhesive and use of environmentally friendly adhesive like latex, water based PU & polychloroprene principle is not yet implemented effectively
- Though standard time in most process (cutting, stitching and lasting) is calculated, it is not regularly used for every running article in documented manner for consistent application and not linked directly to improvement action.
- There is no skill inventory chart/matrix that adequately prepared for all operators in each department by properly considering the actual skill gaps to all operators by conducting skill gap audits or training need assessment via proper annual planning, analysis and involving all concerned bodies. There is no sufficient evidence that indicate attainment of Multi-skilling of workers as result of training needs assessment conducted annually.
- Regarding overall productivity, checks for major production departments – cutting, stitching, lasting and finishing activities are not done consistently in planned and documented manner to generate sufficient records, although productivity targets are mostly met. Due to lack of sufficient records, proper analyze is not done at given interval by participating all concerned bodies to take necessary corrective and preventive action to bring continual improvement in the major production process lines (quantitative requirements of standard)

Sole production

It is known that sole is one of the major components of shoe. ASSC has a sole production section which has a production capacity of 1080pairs of sole per day (180pairs of sole/shift/mold station). It is working with two sole injection machines having three molding stations each with different molds used for different model of shoe. The inputs used by ASSC to the sole production are TR or PVC and master batch (for making black color when PVC is used). The firm also gives sometimes service based on customer order and whenever the sole production is free. It has simple production process – raw material (PVC) added and melt for some minute according to the model and then injected to the mold then when the mild opened the required design sole will be produced.

Most shoe factories have no sole production section and they buy sole from local or foreign producers; however, ASSC uses its own sole. What is the reason to use and why doesn't the firm outsource this work? Some of the reasons are:

- To take advantage of the higher cost (50% more than producing within the firm) in importing sole or buying from local manufacturers [discussion with expert]
- To get required quality and design sole for their customer ordered shoes; local manufactured soles have high quality problem
- When producing within the firm imported raw materials are tax free; however while buying from local manufacturers they pay tax via VAT.
- The company's overhead cost is less than other local manufacturers since the sole production uses the firm's shoe production consumptions together. This is one of the reasons that local manufacturers selling price of sole is higher than producing within the firm.
- The sole production section is working with small human resource and so less labor cost (mostly they allocate 4 persons on the six mold sections.)

Production performance

Though the firm has high production capacity relative to other ELFFs, it is not using the capacity effectively. It has a designed capacity of producing 4,500 pair of shoes per day but its current attainable capacity is about 2000 – 2500 (50%) pairs of shoes per day. The firm has a trend of preparing timely (quarterly) production reports which show production performance against the plan.

Table 4.1 Production and sales of the company (1999 – 2003 E.F.Y)

Description	Unit	1999		2000		2001		2002		2003 (9month)	
		Plan	Performance	Plan	Performance	Plan	Performance	Plan	Performance	Plan	Performance
Local prod.	pairs	-	-	220114	267106	350000	314873	185435	302665	203550	191724
Export prod.	pairs	-	-	383000	112893	287500	189549	392440	83911	309042	142701
Total prod.	**pairs**	**384819**	**343931**	**603,114**	**379,999**	**637,500**	**504,422**	**577,875**	**418,587**	**512,591**	**335,386**
Local sale (‘000)	birr	-	-	17155	26226	26440	24861	16423	42422	18029	30247
Export sale (‘000)	birr	-	-	40674	12186	38525	23722	51986	10729	40939	23307
Total sale (‘000)	**birr**	**32,468**	**32,256**	**57,829**	**38,402**	**64,965**	**48,357**	**68,409**	**53,581**	**58,967**	**54,174**
Total Sales	pairs	384,819	392,734	603,114	421,459	637,500	416,837	577,875	456,830	512,592	376,472
Profit (‘000)	birr	-	-	-	-	718,730	242,072	969,000	94,000	885,000	781,000

[*Source: collected & summarized from annual performance reports of ASSC*][50]

Figure 4.3 shows a four year production trend of the firm. Accordingly, the average four year production performance of the company compared to its yearly plans is: local production 112%, export production 38.6% and total production 70.3%. It can be concluded that the company was performing better local production though the yearly export plan is higher. Generally, the trend is inconsistent.

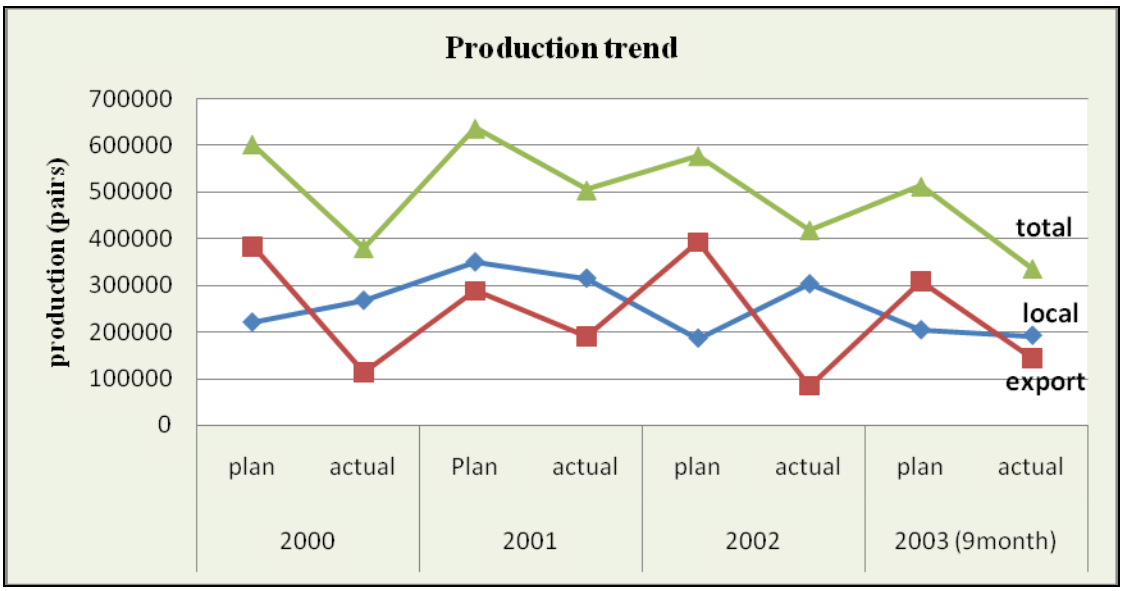


Figure 4.3 Production trend (local, export and total) of ASSC

Quality control

The firm's quality control activities are limited on checking and inspection and there is no formal documented way of indentifying quality problems and taking corrective actions like using statistical quality control tools. Mostly, the quality persons do checking some cutting and stitching defects, color and size matching, thickness, scratches and cleanness. The company measures scrap level (5%) and rework (11%); however, no corrective actions taken like determining quality cost and tries to minimize. The scrap is mostly from cutting and some part of it will be sold in kilogram to manual shoe workers. The **cost of quality** in rework is high. Rework is in one side waste of material and in another side reduces production efficiency. Let us see it using the available and given data as follows:

Given: rework = 11%; daily rework hour = 1hr; 520,000birr monthly labor cost; and factory overhead = 1.05

Labor cost (for rework) = 520,000/8 = 65,000birr/month

Rework cost = 65,000 * 1.05 = 68,250birr/month

Therefore, currently on the average reworks are done on OT work period in half of the monthly working days and so the firm on average will lose 34,125birr monthly or annual cost of 409,500birr due to rework or quality problem. However, if there is overtime rework in all days of the month, the company will lose 68,250 birr monthly. Regarding analysis of the quality control report, it is not done consistently in planned and documented manner to bring improvement by taking corrective actions to fill gaps.

Concerning the poor quality of work, one of the main reasons is not implementing any quality management system (the company is not ISO certified). In addition, the quality awareness level is not satisfactory and no quality related training was given. In light of this, creating awareness of existing support structure via different trainings is an urgent task. Further, there is no quality control analysis in documented way on weekly basis so that the major reasons of rejects must be tackled to stop the occurrence of rejects in future and is not supported by implementing effective quality manual, procedures and supporting formats that ensure consistent execution of QC activities.

The firm works in a single shift and mostly uses overtime; however, it faced with high overtime cost (up to 250,000 birr per month). Considering the above fact, the researcher tried to discuss and analyze why the firm do not work in two shifts to increase the production performance and minimize unnecessary manufacturing costs. Some of the major reasons they forward were: labor

shortage and its cost (30% of OT cost), major raw material shortage, shortage of working capital, and shortage of demand.

Regarding maintenance, though there is maintenance schedule they did not use properly and mostly failure maintenance is used. Preventive maintenance is done only for selected machines without defining a consistent preventive maintenance schedule for all the machines and clearly identifying the status of all machines in documented manner and the minimum inventory level for all machines.

Generally, the shoe production process of the company faced with some major bottlenecks towards high performance, such as:

- Raw material (Finished leather) shortage in quality and quantity
- High raw material cost (65% of total cost, see figure 4.4)
- Lack of export order though they work for local in such situation
- Working capital shortage and Low labor productivity
- There is low IT infrastructure to support planning and controlling activities which will be solved later by ERP implementation - currently undertaken.
- Poor production plan and control, low supervisors and management skill and maintenance problem (no preventive maintenance).
- Poor communication between departments to interchange real time and accurate data and as a result there is no effective material, financial, purchasing, selling and distribution management systems. This will be solved in the near future via the ERP system.

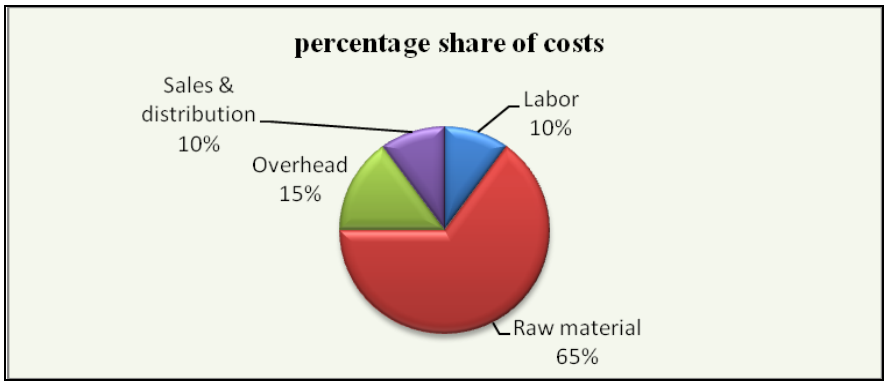


Figure 4.4 Percentage shares of costs in ASSC

Note: processed leather takes 50% of input raw material cost (components and accessories)

4.3.2 Material procurement and stock management process

As discussed in the previous sections, one of the major problems in the shoe factories was shortage of raw material particularly finished leather and long procurement lead time (3-5 months) for

imported materials. In case of ASSC, locally purchased materials like processed leather and some other components like sponge can be purchased within a week; however, most of the components and accessories which are imported will take on about three months. It is due to weak or no supplier relationship or lack of coordination between the firm and suppliers. On the other hand, as mostly the production is make to order, purchase is not with normal yearly production schedule rather it is based on order production schedule. In turn such timely purchases are easy to be faced in problems of not getting right material at right time.

The company has two types of purchasing practices: buy to stock and buy to order. The former one is done based on stock balance and is for some common materials. Rather the later one is based on the order requirement. Local purchases are conducted via Performa and restricted tender to the available supplies or direct manufacturers whereas, foreign purchases are done via direct communication (mostly email) with the available and known manufacturers. For finished leather purchase is conducted via letter and so direct purchase. Processed leather, which constitutes almost 50% of input costs, is mainly sourced from Batu tannery, Ethiopian tannery, Hafede tannery and ELICO plc. Other inputs (TR material for sole, shoe components and accessories) are imported on a competitive international open tender basis.

When assessing the performance of this process, it has to be dealt with some issues like procurement lead time, supplier relationship, potential supplier, supplier rating, etc. Considering the supplier relationship, the firm has no selected and rated potential suppliers and so there is no such formal relationship. The company communicates with it suppliers only when it needs materials. For example, in buying finished leather the firm simply finds and buys from any tannery considering the standard of the leather (quality and quantity). This is because of the presence of shortage in finished leather. The firm evaluates the supplier comparing only with the previous purchase conditions but no planned and documented way of supplier rating. Lack of identified potential supplier will lead to problems in supply and procurement like not getting required material at right time. This will highly affects the production performance of the company due to delay and not getting right quality and quantity raw material. Regarding the procurement lead time it is known that mostly Ethiopian shoe factories faced with delay in getting raw materials specially imported ones. In case of ASSC, procurement lead time takes 3-5 months for imported raw materials and accessories.

The major problems faced in this process are: delay in delivery due to high procurement lead time, inconsistent quality leather supply, random cost variation with the suppliers specially with the accessory suppliers, not being flexible (quantity, quality parameters like thickness, delivery time), transit problems and purchasing power problem due to shortage of working capital. To alleviate

financial problem to some extent, the firm sometimes buy finished leather with credit from Batu tannery.

Concerning the material stock management/inventory management of the firm, though there is material stock and administration division, it is not functioning well with proper inventory management. Accordingly, the firm faces mostly high inventory to some types of raw materials such as components, accessories and stock out in finished leather and lining. As a result, the firm has high stock and shows increasing trend; however this will affect the company in capital tied up; excess inventory reduces cash flow, while too little inventory can decrease sales.

Table 4.2 Stock amount (birr) of ASSC (2008 - 2010)

Stock Item	June 30, 2008	June 30, 2009	June 30, 2010
Finished products	4,534,009	13,481,951	14,213,744
Work in process	4,672,275	5,592,305	5,114,360
Raw materials	9,176,016	8,808,052	10,194,287
Spare parts	3,131,671	2,184,167	2,518,995
Goods in transit	151,774	155,944	46,012
Less: provision for obsolete stock	-1,979,316	-1,979,315	-1,977,214
Total inventory (birr)	**19,686,429**	**28,243,104**	**30,110,184**

[Source: Financial statements of ASSC for the year ended June 30, 2008, 2009 and 2010]

As it is shown on table 4.2, the total inventory level shows increasing trend and this affects the production (work in process), unnecessary expense (obsolete and inventory holding cost) and capital tied up. Holding Costs include the cost due to interest, insurance, taxes, depreciation, obsolescence, breakage, and warehousing costs (heat, light, rent, security).

The overall objective of inventory management is to achieve satisfactory levels of customer service while keeping inventory costs within reasonable limits. The performance of inventory management can be measured in the following terms: [51]

Customer satisfaction: This is measured by the number and quantity of backorders and/or customer complaints. If the customers' complaints are less, then the customer satisfaction is high and vice-versa. It is difficult to measure in case of ASSC due to lack of recorded data.

Inventory turnover: This is the ratio of ***annual cost of goods sold to average inventory*** investment. It is a widely used measure. The *turnover ratio* indicates how many times a year the inventory is sold. The higher the ratio is the better, because that implies more efficient use of inventory. In case of ASSC, for the year ended June 30, 2010, the annual cost of goods sold (COGS) and inventory value was 44,757,481.20birr and 30,110,184birr. Therefore the inventory turnover

ratio will be **1.486** which is less than turnover ratio of shoe manufacturing factories which is **1.85** [*CSA, 2008*]. This shows that the inventory management of ASSC is not good and the ratio has to be increased.

Generally, area discrepancy, quantity checks and purchase cost variance application are not checked consistently for each consignment on receipt of leather respectively in documented way and vendor rating is not properly done by effectively rating its suppliers of the company in planned and documented manner though it is carried out on some basis like delivery date and price.

4.3.3 Design and/or product development process

In this section, designs mostly come from customers either via drawing or sample (especially foreign customers). Then they accept and check up to sample production and if it can be made they accept and go to agreement. For local production, design and product development is made based on raw material requirement, availability and previous market need. However, as there is no market study, research and development activities, the firm is not competitive in new shoe designs and this affects the market share and sales performance.

Some of the major problems shown are lack of design skill, no well organized design room (no proper working material even no computerized work (not supported by CAD-CAM) always manual works, no prepare place for sample), no trainings given since 5 years related to design and new model development, no formal communication with other functional departments such as market, production and quality.

Why the company did not develop its own design? Some of the reasons are: local designs are not known abroad and accepted; most wholesalers need only to have shoes of their own design, model and brand; lack of advanced model shoe due to technology, technique, quality in ASSC: and export wholesalers perception problem towards Ethiopia's designed shoe. In addition using incoming model from export customers help us to minimize design and product development cost of the factory. There is no R&D department in the firm however; on the BPR study (ongoing) 'market research and design development' department is included.

4.3.4 Sales and marketing process

There is no marketing as a department in the organizational structure of the company; though there are some marketing activities done under sales and distribution department. In sales and marketing process, major works of the company were/are finding and communicating with new and previous customers, receiving incoming orders, advertising and sometimes participating in some market fairs,

selling locally and for export, and participating in shoe bids. Some improvement practices planned and practiced currently are: [discussion with the commerce manager]

- They are trying to participate in some international market fairs though it is not well done due to finance problem
- They update their website for advertising
- They prepare yearly catalogue
- They try to follow up their customers (mostly via email contact)
- Outlets assessment to now local customers need
- Advertisement through TV in addition to the outlets

Regarding the sales performance and measures, the company plans 5% increase yearly as a measure and evaluate sales growth trend by preparing company level sales performance report. Though it is increasing since 2002E.C, it didn't generate such profit as expected (profit is less than 2% of sales). The sales performance (4 year average) of the company relative to the plan is: local 158.5%, export 40.6% and total 77.8% (see figure 4.5). Therefore, local sales performance was better and the export one is yet though it shows somewhat increasing trend.

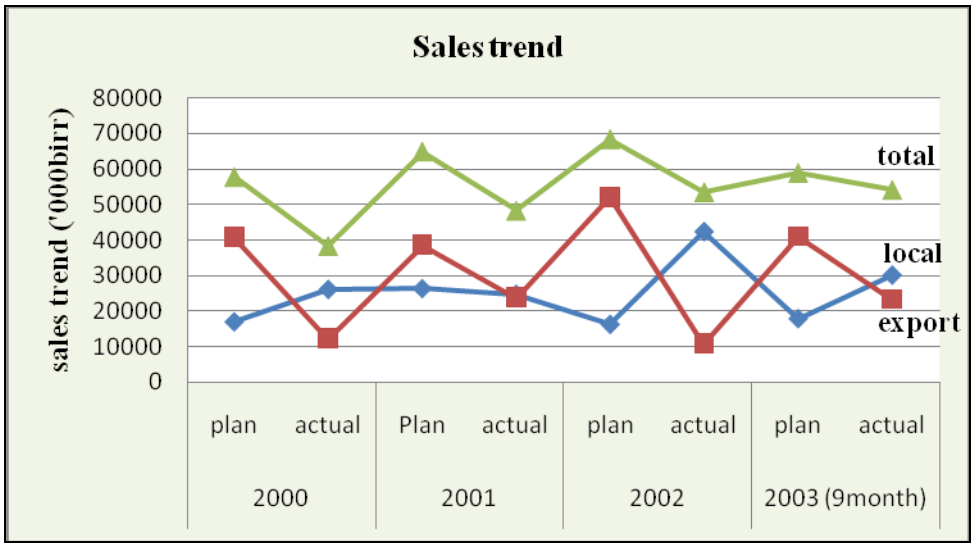


Figure 4.5 Sales trend (local, export and total) of ASSC [data taken from table 4.1]

Keeping delivery time is one of the customer relationship measures in the company. But there is customer complains due to long order lead time (especially locally). The major problem they faced is lack of raw material and others are related with production. They use market share for preparing strategic plan only but not timely assessment of their market share locally which is one of the performance indicator relative to competitors.

There is better demand and sales locally; however, the company gives priority to export market. Due to the following reasons:

- Export oriented strategy of the government and so to take advantage of government support (imported materials are tax free) and *generate foreign currency* which contributes for the economic development of the country
- Export orders are better in getting raw materials (except leather) because the customers themselves bring required materials and so this will have advantage of reducing procurement, material management and shipment costs.
- Mass order by export wholesalers as they can get more customers and this reduces the company's production cost (one model production series)
- Though export market is with less unit price (to enter to the market and be competitive) than the local one it has high sale due to large order and through time price will be increase as becoming familiar with the international market
- Export and local market are both supportive because as one produce for export he gets new models and design shoes. In turn, these models will be also produced for local and this increases shoe model variety locally to satisfy customers. In addition production for export helps in minimizing the factory's own design & product development costs.
- Export market is a must to fill the knowledge gap in shoe technology via **technology *transfer*** (new incoming models, designs, working condition, productivity techniques, etc).
- To sum up, one who can't competitive in the international market couldn't be competitive locally

Therefore, export oriented shoe production and market strategy is not to mean only focus to export market to get foreign currency rather it is to mean it will drive also the local production, market and competition towards imported shoe through the technology transfer mechanism. Regarding this issue, let us see the relation between export, local and total sales with profit using 5 year actual (not the plan) data of ASSC.

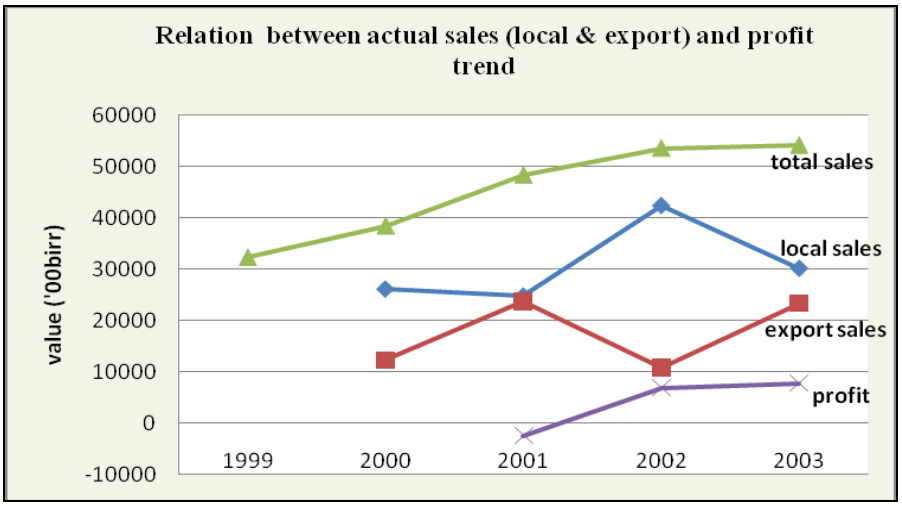


Figure 4.6 Relation between local, exports, total sale and profit trend of the firm [data taken from table 4.1]

The trend shows that total sale is increasing whether export or local increase or decrease because the factory uses flexible marketing strategy. This is to mean when there is demand shortage for export it will focus for local and vice versa. Though the trend is not that much visible due to lack of several year data, it can be said that the export focus will not affect the local one rather it will drive due to the technology transfer and in the long run the firm will be competitive in both.

The selling price of footwear depends on the cost of production and profit margin. Leather shoe factories have different cost of production and so is the selling price. For example, Taiwan and Hong Kong provides at 5.29 US $, which is the lowest price. However, the average selling prices of Ethiopian leather shoe factories is 12 US $, which is expensive as compared to China, Hong Kong, and Taiwan.[10, 11] Anbessa Shoe factory quotes a higher price than its competitors for the same type of product with similar quality level for the same supplies in the export market. As a result, the company usually losses it's anticipated sales order to others and bid competition. The price is calculated without margin and only considering to cover the variable costs. Currently the selling price of the firm ranges from 13-14.5USD for gents and 12-13.5 for ladies export shoe. However, still it fails to compete with its competitors in price which clearly justify the large overhead manufacturing cost that the company bears.

The long delivery time or delivery delay in promised due date of ASSC is mostly affected by raw material supply, production, and distribution; where input sourcing is the major one. This is also due to poor production planning and control system, lack of forecasting techniques and in efficient supply and procurement process.

Weak in conducting market research: market research is an early step in the marketing process, and includes an analysis of market demand for a new product, or for existing products, as well as appropriate methods of distributing those products. In case of ASSC, no major effort has been made to access alternative markets except the long existing buyers in Europe and some African countries. This is due to lack of expertise of know how to negotiate at international level of marketing.

To sum up, the major problems shown in the sales and marketing process and performance level are: lateness of orders (long order lead time on average 45 days and for large orders (more than 30,000pairs though it depends on the type of model) it may take up to 60 days), lack of formal organized and documented market study, no regular and documented assessment of outlets to know local customer needs, customer complain due to long waiting time, lack of customer handling mechanism (they lost some orders due this), low profitability relative to the total sales (mostly net profit is less than 2% of sales) and inadequate awareness of marketing.

4.3.5 Distribution process

Distribution is one of the natures of the business for ASSC next to shoe manufacturing. In addition, it is a key driver of the overall profitability of the firm because it directly impacts both the supply chain cost and the customer experience. That is why it used as a major core process of the firm. The company uses its 17 retailing shops which are found across the country in selected major towns to distribute its products for the local market. It distributes products to international market via wholesale. Mostly, it exports products to European market through Italy. The distribution channel (one side or right wing of the supply chain) of the firm looks like generally as follow.

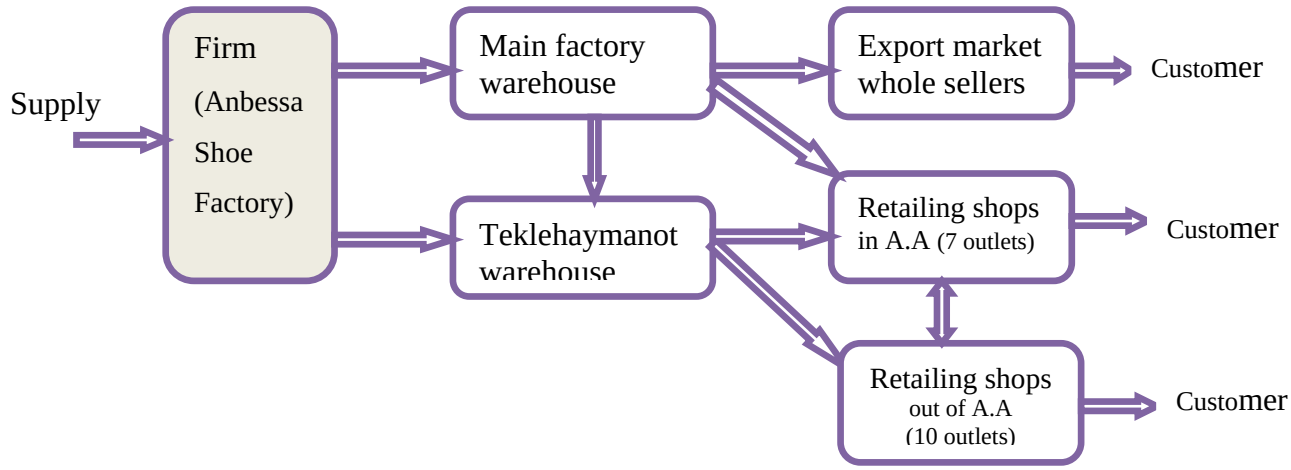


Figure 4.7 Distribution channel of Anbessa shoe factory (General view)

Description of the distribution channel: the company has two production sites and stores its finished products on the two warehouses. The main factory warehouse distributes to export market, second warehouse and retail shops in Addis Ababa. The retail shops take from the warehouse based on order and sometimes the company distributes new products (as a sample) for testing the market. The retail shops also get from each other. Local sales are done directly via the factory (19%) and through the 17 retail shops (more than 80%).

Why not the company outsources the retail shops? Some of the reasons are:

- It help for customer need or market assessment
- It used as brand promotion (Anbessa Shoe)
- It is not used only as a shop, further they do as a wholesaler
- It help to handle customer and give easy access near to them (no need to come to the factory as other shoe factories do)

If the company does not has an organized distribution center or outlets of their own, most of the distribution of output reached to final customers through whole sellers or retailers of third person. It

is known that such system adds additional cost to end customers (higher price of products). Regarding the performance of the outlet shops, their performance is currently measured or present as a report via sales volume/value, sales and distribution expense and inventory level yearly. Though sales performance report (sales volume and value) prepared quarterly there is no trend of taking any corrective action.

Table 4.3 Sales performance and associated expenses of ASSC outlets

S.N	Location of distribution center (Retail Shops)	Sales volume(pairs)	sales value(birr)	transportation cost	operating[4] cost	Distance from main factory (km)
1	Lideta	45,802	5,632,182.74	2,982.90	71,723.80	-
2	Merkato	47,164	5,458,375.80	6,801.10	132,157.03	-
3	Piassa	42,030	5,355,250.53	6,806.50	179,318.27	-
4	Arada	39,469	4,999,832.37	6,537.20	132,571.27	-
5	Ambassader	15,827	1,841,415.98	3,817.75	89,775.09	-
6	T/Haimanot	24,509	1,801,075.65	6,224.40	120,430.62	-
7	Goffa	13,610	1,610,551.41	3,918.25	65,674.98	-
8	Gondar	17,005	1,469,328.68	3,976.65	108,663.12	738
9	Dessie	10,052	1,086,071.20	209.30	95,467.99	401
10	Jimma	8,721	1,075,374.48	1,058.55	96,814.32	346
11	Bahir Dar	10,186	936,417.91	3,313.00	110,457.17	563
12	Dire Dawa	7,682	748,416.71	280.90	90,878.76	515
13	Nazreth	4,965	576,633.41	1,612.60	87,778.49	98
14	Agaro	5,673	571,797.05	0.00	92,782.12	390
15	Mekelle	4,342	473,581.38	329.00	74,573.97	783
16	Awassa	3,661	391,572.30	684.00	74,883.22	275
17	Nekemete	3,106	315,827.92	853.80	72,645.92	321
	Total	**303,804**	**34,343,705**	**49,406**	**1,696,595**	

[Source: ASSC Factory & Shops Sales report (July 2009 - June 2010), Financial Statement for the year ended June 2010, company records and own computation]

As it is shown on the above table 4.3, the company incurs about 1.7million birr for the ended year to have a sales value of 34,343,705birr. It also shows that some retail shops have low sales performance though they have high operating cost with a small difference relative to the shops with high sales performance. This indicates that shops namely; Nazareth, Agaro, Mekelle, Awassa and Nekemete, have unnecessary expense relative to their sales performance.

Generally, distribution centers (DC) in Addis Ababa have a higher sales performance than out of Addis Ababa even they are less in number (41% of the total shops). Let us see this with the following comparison analysis.

[4] *Operating cost is the total sales and distribution cost and it covers all expenses of the shops*

Table 4.4 Performance comparison of ASSC outlets

Comparison criteria	DCs in AA	DCs out of AA	Total
No of DCs (% from total)	7 (41)	10 (59)	17
Sales value (birr)	26,698,683	7,645,021.04	34,343,705
Operating cost (birr)	791,651.06	904,944.08	1,696,595.14
Transportation cost (birr)	37,088.10	12,317.8	49,405.90
Sales share (%)	77.74	22.26	
Operating cost share (%)	46.66	53.34	
Transportation cost share (%)	75.07	24.93	

From the total outlets' annual sale of 34,343,705birr, about 78% is sold by DCs in Addis Ababa which are only 41% of the total outlets. However, these DCs take about 75% and 47% of the total transportation and operating cost respectively. These outlets are very near to the factory but the transportation cost is high. The possible reasons are:

- High frequency of order in AA and so high transportation frequencies
- Non optimal distribution (for any quantity of order there is transportation but for outlets out of Addis Ababa they check the quantity and capacity of car)
- Shortage of order for DCs out of AA which makes the transportation cost low

Table 4.5 below shows that the retail shops are with excessive inventory on hand which affects the company in capital tied up and additional storage handling costs. In addition, excess inventory held too long can become obsolete and lose value which could significantly reduce inventory value. The table also shows that about 10,787pairs of obsolete shoe stock is registered from the finished goods count for the year ended June 2011. As a result, the company incurs unnecessary cost (defect cost) of **1,053,737.5birr** of which, 250,529 birr is only by its retail shops. It was due to poor inventory management of the retail shops and stores of the company.

Table 4.5 ASSC outlets inventory level for the year ended June 30, 2011

S.N	Distribution Centers/stores	normal shoe stock		defect, damage or dispair shoe	
		quantity(pairs)	value(birr)	quantity(pairs)	defect cost(birr)
1	Lideta shop	7869	797093	151	14647
2	Merkato shop	6183	632461	400	38800
3	Piassa shop	6015	614101	413	40061
4	Arada shop	7463	748100	420	40740
5	Ambassader shop	3778	352746	95	9215
6	T/Haimanot shop	2787	290987	0	0
7	Goffa shop	3537	361415	98	9506
8	Gondar shop	6927	827655	0	0
9	Dessie shop	4053	415740	26	2678
10	Jimma shop	867	98340	52	5356
11	Bahir Dar shop	3789	409435	226	24408
12	Dire Dawa shop	2768	291010	76	8208
13	Nazreth shop	2397	265559	0	0
14	Agaro shop	4425	412360	356	36668
15	Mekelle shop	1403	166535	52	5616
16	Hawassa shop	2022	220780	15	1545
17	Nekemete shop	3389	339850	127	13081
18	T/Haimanot store	21322	2068234	8037.5	779637.5
19	Finished G. store	19624	1903528	243	23571
	Total	**110,618**	**11,215,929**	**10,787.5**	**1,053,737.5**

***Note**: the value of inventory (normal or obsolete) was computed considering one month (March) local sales price.*

[Source: ASSC records of outlets inventory count for the year ended June 2011 and own computation]

Generally, some of the retailer shops are not giving much or expected importance for the company because of the following problems:

- Low annual selling performance and high selling and distribution expense
- High damage, defective or mismatched pair
- Higher inventory (finished products)

Weak market assessment and selling; poor management of inventory or stock by shops, high sales and distribution cost (about 1.6million birr yearly); high total stock level (30,110,185birr and 28,243,106birr for the year ended June 30, 2010 and 2009 respectively), no proper control and management of the distribution channel, no study done yet whether the existing channel is optimum and profitable, and high obsolete (damage, despair, defective shoe stock) are some of the major and analyzed issues related to distribution process of the firm.

4.3.6 Finance and accounting process

As of most Ethiopian factories, ASSC uses mostly the traditional accounting management system to measure performance i.e. finance and accounting measures such as cost allocation technique, income statement, statement of owners equity and statement of cash flow. In this process financial performance measures such as sales growth, ROI, annual return on total asset (ROA), and profit and loss are measured yearly via financial statement format. Financial statement of ASSC is done annually and it includes profit and loss statement, statement of cost of goods sold, inventory or total stock check up, sales and distribution expense of each retail shops.

The company is faced with working capital shortage due to financial problem i.e. capital tied up and high inventory holding is one of the major factors. In ASSC, there are much raw materials such as sole, texon board, counter, toe puff and different types of leather, stored for long period - six month and above. This shows that imported raw materials (with high foreign currency) will be stored for long time and cause extra costs (holding costs). The Company is with profitability, cash-flow and indebtedness problems, partly due to high interest rates of debtors [52].

It is recognized practically that with the business era of more demanding customers and more competitive markets, existing cost accounting systems and manufacturing strategies are in sufficient to resist the changes. Therefore, the existing performance measurement ways are lagging indicators that provide only historical financial data; they provide little indication of how performance is achieved or how it can be improved in future; encourage short term benefits and local optimization; they are internally focused rather than externally with little regard for competitors or customers; lack in strategic focus and often inhibit innovation. Quantitative productivity and financial trend indicators are done on routine basis without regularly conducted in planned manner (assigning competent personnel) to lead continual improvement based on analysis of trends.

4.3.7 Human resource development and administration process

In this process, issues that have to be given focus are recruiting, education and training, payment and incentives, motivation and generally employee satisfaction, development and proper human resource management. Unless these issues are performed well they will directly or indirectly affect the total performance of the firm. For example, in ASSC the payment is unsatisfactory and is not based on performance so it did not motivate production workers towards productivity. Production workers mostly are with no training and education for long time, no salary promotion, sometimes unsatisfactory incentives or bonus which these all affects the satisfaction of employee. The discussions with some of the workers of the firm show that there is no regular work progress meeting and discussion with management bodies towards the working environment and timely

problems. Trainings are mostly on job and almost insignificant in giving educational opportunity for employee.

The training performance of the firm for the budget year 2002E.C, only 41% (463) is performed from the plan (1125 workers) and most of them are on job trainings given in different production section of the firm. For this budget year only 4 persons are given other trainings. In the educational level of the permanent employees for the budget year 2003E.C, 3.3% are professional and 16% are semiprofessional. Currently (2003E.C.), the company has 825 total number of employee. Generally, from these conditions it can be said that training, education and development activities are low.

Performance based evaluation system/procedure to evaluate employees objectively based on defined criterion that encourages/motivates best performer workers through bonus or other incentives and penalizes lagging once is not in place.

4.4 Performance gap analysis of ASSC against benchmark targets

The benchmark analysis is done to show the operational performance gap of the firm from the international benchmark or current company status against benchmark target line using the available recent data of the firm. The international benchmark target values are taken from the study made before by the firm under MoTI and UNIDO [7]. Accordingly, the quantitative and qualitative analysis made shows that with regard to the operational performance and productivity, their critical deviation is high.

The gap analysis is made up on 14 quantitative and 13 qualitative parameters. In the qualitative parameters specific targets are not identified and specified. However, the existing reality of the factories is included. The gap analysis of ASSC against quantitative parameter and qualitative observation are analyzed and presented below in table 4.6 and 4.7 respectively. Illustration of the gap identified is presented in graph (figure 4.8) in order to visualize the current status.

Table 4.6 Benchmark intervention for Anbessa shoe factory (quantitative analysis)

S.N	***Benchmark parameters***	***Dimension***	***International Benchmark***	***Company (ASSC)***	***Critical Deviation (%)***	***Comment***
1.	Productivity level					
	Labor (overall)	Pairs/shift/person	16	3	**-433.3**	Taking nine month performance for the 2003E.C.
	Cutting yield	%	94	85	**-10.6**	Design allowance & scrap
2.	Company size	Number of employees	600	825	**27.3**	675 permanent and 150 contract employees in 2003E.C
3.	Production (volume)	Pairs/shift	6500	2250	**-188.9**	1500 for main factory & 750 for MANPO branch on average in 2003 budget year
4.	Capacity usage	%	92	50-65	**-60**	Current capacity utilization
5.	Lead time					
	Raw material	Days of raw material	30	7	**-328.6**	taking 7 days for finished leather (major raw m.) on average but 90 days for imported raw materials and spare parts
	Work in process	Days of work in process	4-10	5	**-**	On target
	Finished product	Days of work in process	10	7	**-43**	Order based
6.	Overhead structure					
	Supervisor/ Worker	Workers per supervisor	25	31	**19.4**	25 supervisors
	Indirect /direct staff	%	<15	48	**68.75**	557 production and 268 supportive staff in 2003E.F.Y
7.	Down time	%	0	25	**100**	Intermittent material supply, power interruption and machine breakdown
8.	Material cost/total cost	%	45-60	60-70	**19.23**	Considering the current market condition & firm practice
9.	Absenteeism	%	<6	2.4	**-**	On target
10.	Level of defects	%	<3	5	**40**	Taking defect level reported for lasting & finishing

Note: In the table above (table 4.6), c*ompany performance measures are made based on its performance report for the nine month of 2003E.C. budget year. Critical (Deviation %) is calculated using (company performance level -benchmark level)/company performance level.*

Table 4.7 Benchmark intervention for Anbessa shoe factory (qualitative analysis)

No	Benchmark parameter	Observation
1	Organizational structure	The company like any public enterprise has an organizational structure. However, it does not correspond with a typical footwear industry. It is functional type and overstaffed. The company has abnormal indirect to direct labor ratio. There is no footwear technology training and R&D departments.
2	Factory layout	The main factory is with appropriate plant layout that assures optimum material and work flow. In terms of work environment design or ergonomic view, there are still some gaps. The branch factory, on the other hand has a layout problems in relative terms.
3	Marketing policy/strategy	The company has export strategic plan. 17 sales outlets for local market. The company is dependent on some specific customers in its export market. No proper formal marketing operations and market study.
4	Design & product development	There is a design section for local product design and development activity. However, its capacity is highly limited to meet the needs of the export market.
5	Human resource and development	▪ Out of its total permanent workers, more than 50% are greater than 50 years old and out of the total workers only about 4% are professional and 16% semiprofessional. ▪ There are no records of effective training system such as lists of property identifying training needs, report of delivered training programs & evaluation results including assessments of impacts of training programs
6	Information Technology system	Limited to typing purpose and recently implementing ERP system to make information sharing easy via IT system.
7	Quality standards and control activities	There is no quality standard implemented. Quality management system (QMS) based on ISO9001:2008 design and implementation is underway integrated with business process reengineering (BPR). No quality manual and Statistical Quality Control application to know reject reasons & take correction.
8	Setting standard time application for every article	It is done some times but not performed for all process in documented way consistently by collecting updated process, machine and related data to reduce work content , for capacity loading of operators and optimizing productivity & linked directly to improvement action
9	Production planning and control	There is production planning and control division. But its current performance is merely limited to planning daily production output based on capacity and order. In the near future it is expected to be fine according to ERP system
10	Performance	Periodic reports and annual employee appraisal using fixed performance

	indicators (employee)	measures is being used and no other performance evaluation system
11	Management capabilities	Poor level of performance and competence by the existing management team and currently most of them work as acting body in their positions.
12	Upgrading	The company has recently(before 3 yrs) implemented expansion project and created a production capacity of 4500 pairs/day (3000 pairs/day in the main factory for export and 1500 pairs per day in the branch factory for local market)
13	Store management	▪ Inventory turnover ratio of materials is not yet carried out in documented manner (4times a year as of benchmark) ▪ ABC (very expensive, expensive, less expensive) analysis of materials and checking of the shelf-life of the materials per the standard provided by the supplier are not yet applied in the company

The gap analysis reveals that ASSC has more than 100% of gap in 4 quantitative parameters (below target line): labor productivity, production capacity, raw material procurement lead time and machine down time. It meets the benchmark target in 2 parameters. It has also an average 58% gap in the remaining parameters. Moreover, out of the 13 qualitative parameters observed, the company has critical deviations in 7 parameters: organization structure, design and product development, human resource and development, IT system, production planning and control, quality standard and control, and management capabilities. In general, the gap analysis shows that the firm's overall productivity is poor as compared to the international standards and it can be said that it is operating at low performance. This is one of the major constraints of the company that challenges its competitiveness in the global market.

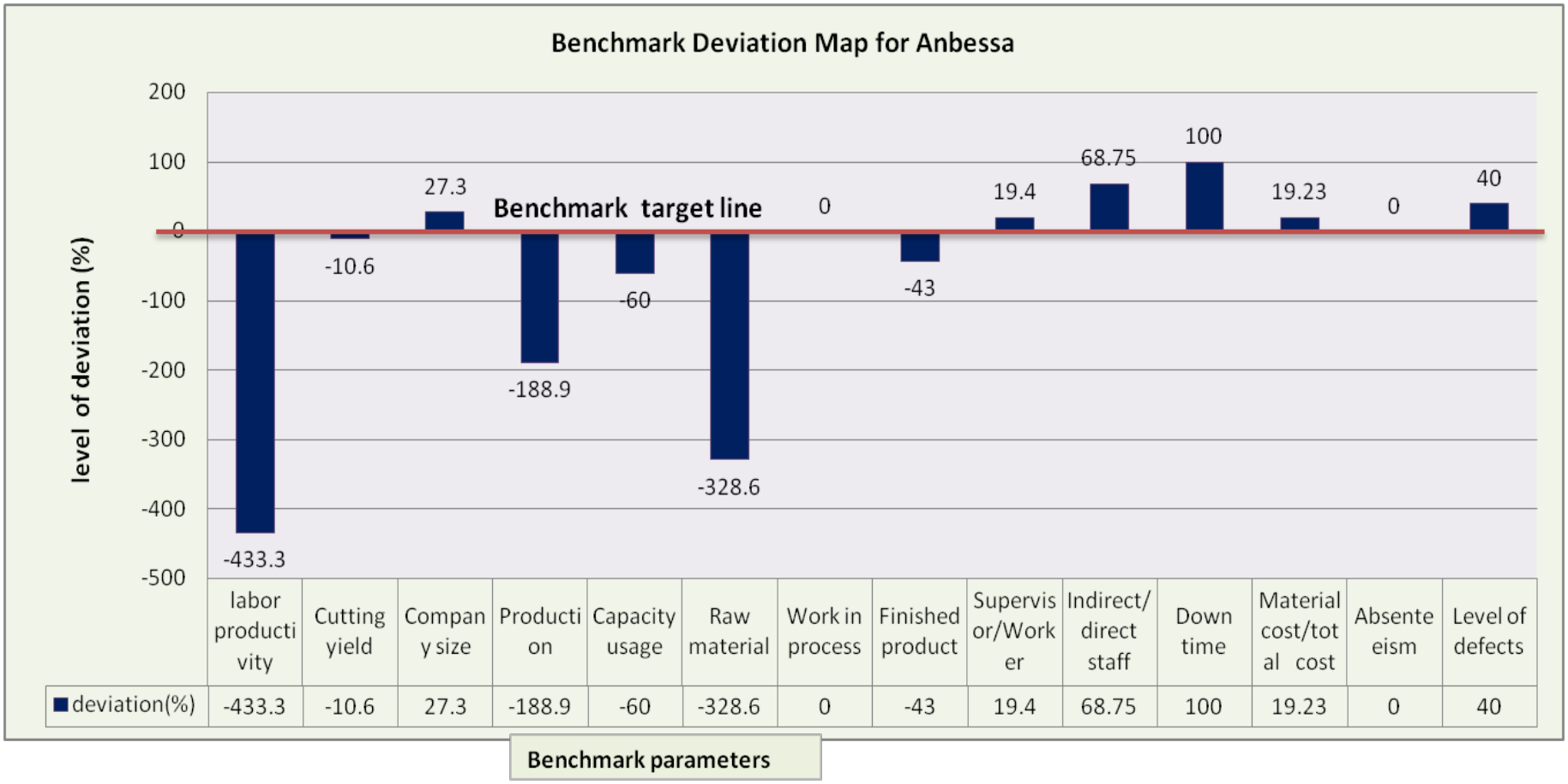


Figure 4.8 Benchmark Deviation Map for Anbessa Shoe factor

4.5 Summary of problems and the findings

4.5.1 Cause and effect analysis

Cause and effect diagram or fishbone diagram was developed by Ishikawa (1976) to determine and break down the main causes of a given problem [33]. Under the cause and effect analysis (figure 4.9), it is tried to illustrate the possible relationships between the major identified performance effects and the causes influencing it. The analysis also assists in helping to uncover the root causes of a performance problem and in generating improvement ideas. The researcher also tries to synthesis the identified performance problems categorizing under the five basic performance objectives (cost, quality, delivery/speed, dependability and flexibility) [13]. The interpretation or way of usage of each performance characteristics in this study is described as follow: Cost= internal production cost, distribution cost & price to customers; Quality= shoe quality and distribution service quality in meeting customer perception; Speed= how quick delivery; dependability= stability of processes in dealing with delivery of shoes & distribution services at the right time or reliable operation and dependable delivery; Flexibility= how the company react to changed demands and requirements of both customers (local and export) and the line of business.

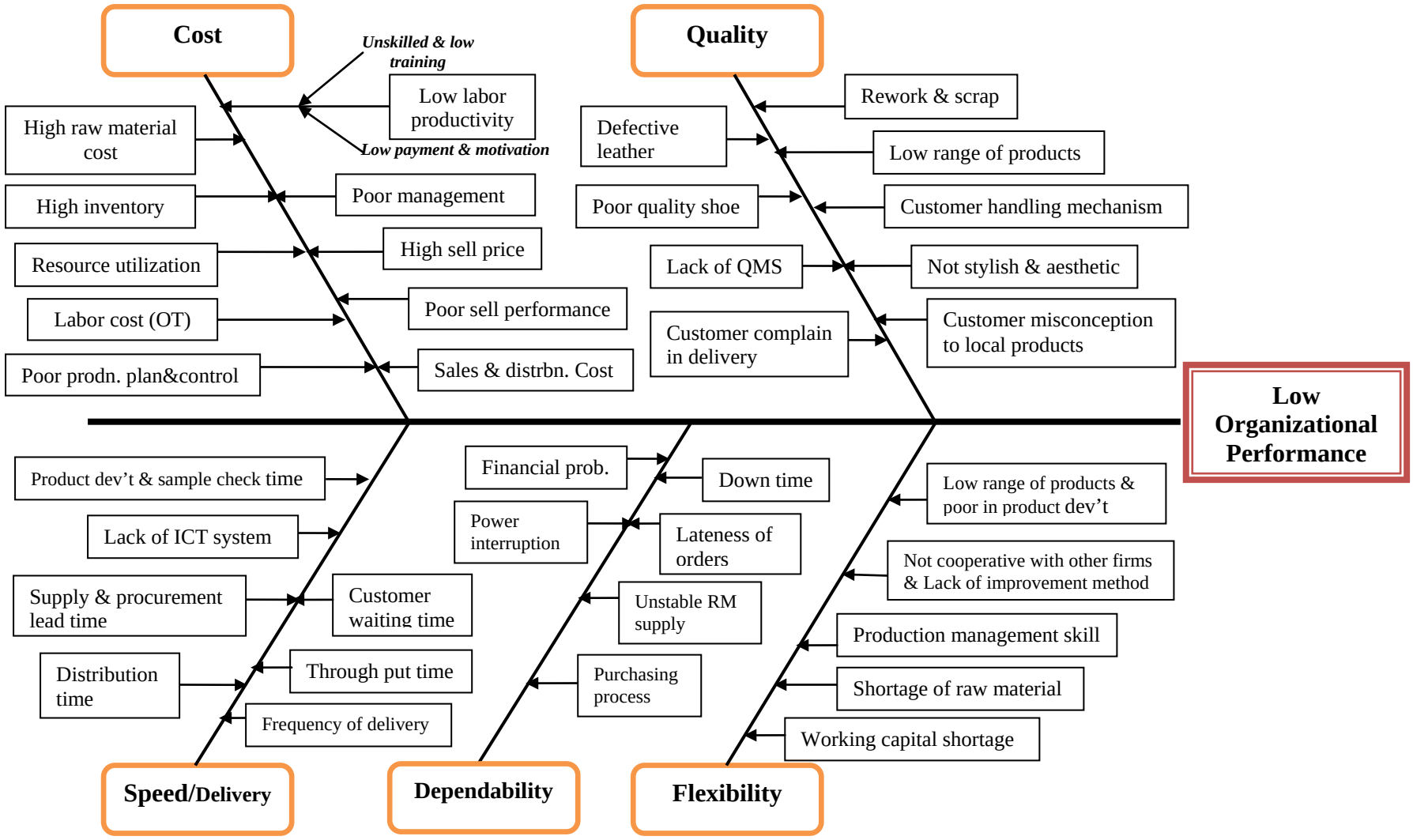


Figure 4.9 Cause and Effect Analysis of organizational performance problems

4.5.2 Classification of problems (internal/firm level and external)

In the previous sections (4.3-4.5.1), different problems within the firm are identified, discussed and analyzed. In this section, the major problems are summarized categorizing each under two groups: internal and external. Internal problems are problems which can be solved by the firm alone using its potentials and resources to improve its organizational performance; whereas external problems are mostly general or sector level problems which needs the involvement of different bodies like government, organizations and associations in cooperation with the firm. The objective of the classification is to identify and know the firm level problems of the company so as to prioritize and identify the intervention areas to be addressed in the solution part and to forward improvement directions to the external ones.

1. **Internal or firm level problems**

The problems are listed under the major processes of the case company as discussed in section 4.3 for ease of management.

⊗ **Production Process Problems**

- Low performance of supervisors in production control and in motivating workers towards productivity
- High manufacturing cost; rework cost, non optimal resource utilization (e.g. cutting 15% scrap)
- Poor and not well organized production plan: no organized way of approving, documenting and recording the different levels of plans in such a way to be used as in input for evaluating to trace performance and then taking necessary improvement actions
- High down time (25%) due to lack of proper maintenance, machine failure and power disruption
- Production delay and delay in delivery due to poor production plan and control
- Low production capacity utilization to respond to some large export order in terms of quantity and time
- Quality problems with the shoe (not defect free): poor quality of raw material (processed leather), poor lasting and finishing due to lack of skilled labour and technology
- Shortage of enough orders and small model type orders which results delay due to changing production line (set up time)
- Lack of communication with other departments such as sales and distribution, procurement and material stock management.

⊗ Procurement and Stock management process problems

- Long procurement lead time (3-5months)
- High stock level (about 10million birr raw material, 5million birr WIP and 14million birr finished goods for 2010)
- Low inventory turnover ratio (about 1.5)
- High cost of raw material (65% of total cost) and inventory holding
- Poor material and or stock management and poor components procurement system

⊗ Design and/or Product Development Process problems

- Lack of design capabilities and no design infrastructures like computer and no CAD/CAM system
- The shoes lack in looking good, fashionable, in terms of last shapes and heel heights and are not freely available in men's, women's and children's styles.
- No documented mechanism for conducting fashion forecasting by considering competitors found in the different region of the world
- No organized research and development department and activity: no new product development activity, less product range

⊗ Sales and Marketing process problems

- Lack of attention to what the market demands in shoes in terms of quality and price
- There is no consistently implemented marketing system or strategy and the marketing staffs lack adequate marketing expertise to enhance marketing endeavors for the factory
- Low sales performance of some factory outlets
- Though total sale shows an increasing trend, net profit is less relative to total sale (1-2%)
- Low export sales performance (40.6% with the planned)
- Not price competitive due to high manufacturing cost
- No market research and less promotion of their products

⊗ Distribution process Problems

- Poor management with the distribution system: high inventory hold up - finished goods stock which leads to capital tied up, obsolete (damage, defective or dispair) stock on each retail shops, low annual selling performance and high selling and distribution expense
- Delay in delivery time for local orders
- Lack of market assessment via the retail shops to know local customer needs
- Poor inventory management with retail shops and warehouses

- Poor communication with the factory as well as in between shops

⊗ **Finance and Accounting process problems**

- Lack of access to finance or shortage of working capital
- Inadequate costing systems which lead to high price decision
- Limited to financial measures or cost accounting which is not an integrated performance measurement technique
- Financial performance is not as expected and lack of awareness towards allocating budget to some improvement actions or projects

⊗ **Human Resource Development and Administration process problems**

- Poor employee satisfaction (unsatisfactory payment, no incentive, no education and regular training) which in turn affects the labor productivity
- The skill improvement trainings are provided not regularly in planned and documented manner by generating sufficient training records like list of identified training topics that arises as result of actual skill gap audit and training reports. The training effort doesn't include management level it only focus on operator or supervisor positions
- Lack of diversified and up-to-date training programs
- Poor training plan performance and unsatisfactory management and administration skill

Generally, there is a traditional performance measurement system (the annual performance report and financial statement which mostly shows the financial measures), utilization of the available performance measures in unbalanced way and no performance improvement method implemented and used scientifically in the factory.

2. External or national level problems

These problems are mostly sector level which cannot be solved only by the firm alone and so integrated national wide or level solutions are required. These include:

- Lack of finished leather which is a serious constraint to the operation and to the development of the firm. Relatively high quality leather is mostly for export
- Lack of skilled labor supply
- High cost of RMs and price variation: finished leather, imported accessories and components
- Delay in delivery due to long procurement lead time and shortage of processed leather
- The negative image of Ethiopia and 'made in Ethiopia shoes' makes the promotion of Anbessa shoe difficult to international market

- Lack of co-ordination of activities by the firm with other enterprises, the raw material suppliers and the supporting institutions, both public and private that operate in the different segments of the value chain. This is the basic requirement in serving the export market
- Lack of subcontracting or share of resources or ideas among firms
- In adequate management of the supply chain, even within the firm (poor communication and link within departments of the firm) due to lack of information system.

4.5.3 Summary of the findings

From the study conducted, though there are both internal/firm level and external problems, the focus of the study is to the firm level problems because these problems can be solved by the firm using its own potentials, resources and appropriate method to improve the organizational performance. However, the external problems need participation of different bodies – government, associations and organizations.

The intervention areas in one or another way are related with the problems of financial, operational, employee satisfaction, quality performance and customer satisfaction which are all total organizational performance problems. To solve such problem, it is a need to use a total performance improvement method which can have a balanced performance measures and management philosophy.

CHAPTER FIVE

SOLUTION PROPOSAL

5.1 Selection and proposal of performance improvement method

As discussed and argued in section 4.5.3, it is needed to use a performance improvement method which have a total performance management concept, balanced measures and continuous improvement. To select and propose appropriate method having such management philosophy, let us review some of the recent and available performance measurement and improvement methods.

Business excellence in the 21st century will be driven by a structured methodology for using performance measurement information. In order for an organization to make effective use of the results of performance assessment, it must be able to make the transition from assessment to management. It must also be able to anticipate needed changes in the strategic direction of the organization, and have a methodology in place for effecting strategic change. Successful accomplishment of these two tasks represents the foundation of good performance management. Both of these tasks can be greatly facilitated by use of the balanced scorecard. In other words, besides simply assessing performance, the balanced scorecard provides a structured framework for performance management [53].

Performance improvement is high on the agenda of many companies around the world and with the growing number of improvement models now available care has to be taken to adopt an approach that will yield the most attractive return on investment. A common theme in the newer integrated performance models or frameworks has been a determined attempt to the performance metrics more closely to a firm's strategy and long term vision. One of the more comprehensive frameworks which has received wide publicity and has recently been adopted by many organizations worldwide particularly in Europe and USA is balanced score card [54]. Though BSC is the better performance measurement and improvement method recently used worldwide, it has got many pitfalls and critics by different authors as discussed below.

Failures of the balanced scorecard concept

Numerous case studies indicate that the implementation of the BSC according to Kaplan & Norton in North America have been disappointing at best, and in Europe and South America even more so (Angel & Rampersad, 2005). An estimated 65% to 70% of organizations within corporate Canada have adopted BSC's. A few users — some 10% — insist their scorecards are achieving positive results and meet with spirited rebuttal suggestions that balanced scorecards do not work. In contrast,

a much larger group doubts that scorecards achieve sustained financial performance improvement. The view from hands on experience is that scorecards rarely achieve sustained financial improvement break-through. **BSC implementations tend to be insufficiently committed to learning and rarely take the personal ambitions of employees into account**. The researchers do not argue that balanced scorecards are fundamentally inappropriate as management tools. Quite the reverse, the researchers support the philosophy of balanced scorecards — but with a modified approach, according to the organizational balanced scorecards (OBSC) system, to implementation that has been proven to produce better results. Our position is that **organizational scorecards need to be aligned with individuals' scorecards to turn the BSC into a powerful tool for sustained organizational performance** [32].

The researchers' (TPS founder) conclusion, based on 20 years of research, is that scorecard performance depends on alignment between the goals of the organization and the personal goals of the employees to realize transformational performance change. What they referring to is the aligning of individuals' personal ambition with the shared ambition, which is a prerequisite for sustainable cultural change and development of organizations. Alignment means linking the organization's mission, vision, and core values with the individual's personal mission, vision, and core values. This lies at the heart of successful organizational change and development.

Traditional balanced scorecard implementations tend to be insufficiently committed to learning and rarely take the personal ambitions of employees into account. Without a set of rules for employees that addresses continuous process improvement and the personal improvement of individual employees, the experience is that too little employee buy-in and insufficient change in the organization's culture underlies BSC disappointment. The result, experienced in so many BSC implementations, is that any improvements tend to be superficial and temporary. The researchers have seen many examples of scorecards that did not achieve alignment and resulted in an apparent performance improvement that dissipated very quickly. In other cases, the improvement never materialized. Frequently in such cases, management's efforts to improve performance were seen as divisive, viewed by employees as aimed at benefiting senior management compensation plans and fostering a "what's in it for me" attitude among the employees. In the aligned environment, metrics needs to support the people alignment to organizational alignment. The text box below shows ten reasons for BSC failures (Angel & Rampersad, 2005). [31, 32]

1. Emphasis mainly on financial rather than nonfinancial measures, leading to measures that do not connect to the drivers of the business and are not relevant to performance improvement.
2. Accounting approach with a systematic neglect of the human capital; no linkage between the critical success factors of the organization and the personal critical success factors of individual employees — creating human capital tensions between work and non-work aspirations.
3. No explicit link between shared ambition and specific organizational objectives; results in insufficient employee support to work according to organizational performance measures and an implementation plan that is not grounded in reality and unable to respond quickly to unforeseen events.
4. Too many objectives defined and too many performance metrics being measured to enable the organization to prioritize improvement steps adequately
5. Data on current individual and organizational performance insufficiently available; poor data on actual performance, negating most of the effort invested in defining performance measures by not being able to monitor actual changes in results from changes in behavior.
6. An implementation plan that is not grounded in reality and unable to respond quickly to unforeseen events
7. An employee mentality that is hostile to management messages (the obverse of the previous point), often because communications have tended to be one-way and forced on an unwilling labour force
8. Results in an individual performance plan that focuses too much on the money side and not enough on delivering organizational values, leading to a "what's in it for me" culture.
9. Self learning and team learning are not stimulated; results in creation of a climate of defensiveness and mistrust and a business strategy that is poorly understood and therefore impossible to execute.
10. No explicit link between personal ambition and shared ambition/organizational.

Due to the failureties, pitfalls and critics towards BSC, as discussed above, another performance improvement method for creating a learning organization is needed in which personal and organizational performance and learning mutually reinforce each other on a sustainable base. Traditional business management concepts are insufficiently committed to learning and rarely take the specific personal ambitions of employees into account. In consequence, there are many superficial improvements, marked by temporary and cosmetic changes, which are coupled with failing projects that lack sufficient buy-in by personnel and, in some cases, even have an adverse effect. Accordingly, this study selects and proposes a new holistic business management concept, called **Total Performance Scorecard (TPS)**. It stresses the importance and need of developing an organizational structure and philosophy that combines the goals and aspirations of the individual with those of the company. It is a melding process, which results in a corporate culture that is both individually and organizationally driven. The concepts embodied in this management concept provide solutions to preserving and utilizing individual rights and capabilities while adjusting the organizational structure and philosophy to this new environment. TPS has been done by expanding

and integrating concepts such as the Balanced Scorecard, Total Quality Management, Performance Management and Competence Management into one overall framework.

5.2 Total performance scorecard (proposed method)

The definitions of the method (TPS) given in different sites, scope and elements of the model are discussed before in the literature part of the study (refer section 2.3.2). In this section it is tried to show how the scorecards in the model (personal balanced scorecard and organizational balanced scorecard) formulated and implemented, what elements they contain, how they will be communicated and linked to bring the total personal and organizational performance.

5.2.1 The Personal Balanced Scorecard (PBSC) of the model

The PBSC forms the total of the personal mission, vision, key roles, critical success factors, objectives, performance measures, targets, and improvement actions (divided along the four perspectives: financial, customers, internal processes, and knowledge & learning), see table 5.1. The formulation and use of the PBSC make up the first step in change management. It enables the factory's workers to distance themselves from their mindsets (ones mental frame work, assumptions and beliefs coloring the world) and allows them to listen effectively to their inner voice. By scrutinizing ourselves (through a better self-image and self-knowledge) our learning ability can be improved. *Self-knowledge means self-awareness*.

Formulating the PBSC

Formulating your personal ambition is a search for your identity. Understanding your identity is the key to action. Through this a stable basis will be created for your own credibility. This also has a positive effect on loyalty, motivation, and dedication of others around you (in the factory and out of the factory). This also involves self-guidance, motivation, enjoyment, passion, commitment, energy, inspiration, and enthusiasm.

Table 5.1: PBSC-elements and related questions (Rampersad, 2003)

Elements of PBSC	**Objectives / related questions**
Personal Mission	Who am I?
Personal Vision	Where am I going?
Personal key roles	What type of relationship would I like to have with others?
Personal critical success factors	Which factors make me unique?
Personal objectives	Which results do I want to achieve?
Personal performance measures and targets	How can I measure my personal performance results and what are my targets?
Personal improvement actions	How do I want to achieve the results?

The development of the shared ambition and the personal ambition takes place simultaneously; when answering the question of what we want for the organization and where we want to go together, we also ask ourselves at the same time, what we want for ourselves and which win-win situation lies between both interests. Hidden behind our behavior are the inner needs (incentives) related to our mindsets. These needs and those of the organization have to be aligned for the sake of more labor productivity. Moreover, it can be seen in practice that if one has a clear personal objective, it gives meaning and direction to one's life. By formulating a PBSC and reflecting on it, you'll gain more control over your own life and finally you'll learn to get to know yourself better.

The same four perspectives in the BSC-concept form the starting point in the PBSC-concept. However, in their content they have a different meaning. The perspectives include the personal results that are of essential importance to your self-development, personal well being and success, namely:

1. ***Financial****:* financial stability. To what degree are you able to fulfill your financial needs?
2. ***Customers (external)****:* relations with your spouse, children, friends, employer, colleagues, etc. How do they see you?
3. ***Internal processes (internal)****:* your physical health and mental state. How can you control these in order to create value for yourself and others?
4. ***Knowledge and learning***: your skills and learning ability (the ability to learn, that is, how to learn learning). How can you remain successful in the future?

Implementing the Personal Balanced Scorecard

After formulating the PBSC, the next step is the implementation of the formulated PBSC in the (self) coaching process. This is necessary to see employee's awareness grow step-by-step, to continuously develop his/her skills and to keep improving and become more creative on the basis of the PBSC. The founder of TPS introduces a new learning cycle to accomplish this, the Plan-Do-Act-Challenge (PDAC), which keeps running continuously (see figure 5.1).

To live in accordance with the PBSC and the implementation thereof as per the PDAC cycle, results in a cyclical learning and step-by-step process in order to increase awareness, joy, fun and creativity, at work as well in your spare time. This cycle consists of the following four phases (Rampersad), 2005):

- **Plan:** Formulate or update your Personal Balanced Scorecard (PBSC), which focuses on job and free time.

- **Do:** Start with a simple objective from your PBSC with corresponding improvement action, keeping in mind the priority this has been given. Submit yourself with courage to this objective, even when you run into resistance. Root your good intentions with an agent (spouse, friend, colleague or manager), or with your group, which will ask questions and gives you honest feedback. After that you start your improvement action with emotional dedication, self-confidence, willpower and purpose and concentrate on your actions. This must be in accordance with your present skills. The "doing" is related to acting with purpose and to deliver efforts to realize your objective. Ask often for feedback from your agent. This gives you the opportunity to measure the improvement you have made. Start with habits, which restrict you, influence your life unfavorably, and deliver poor results.

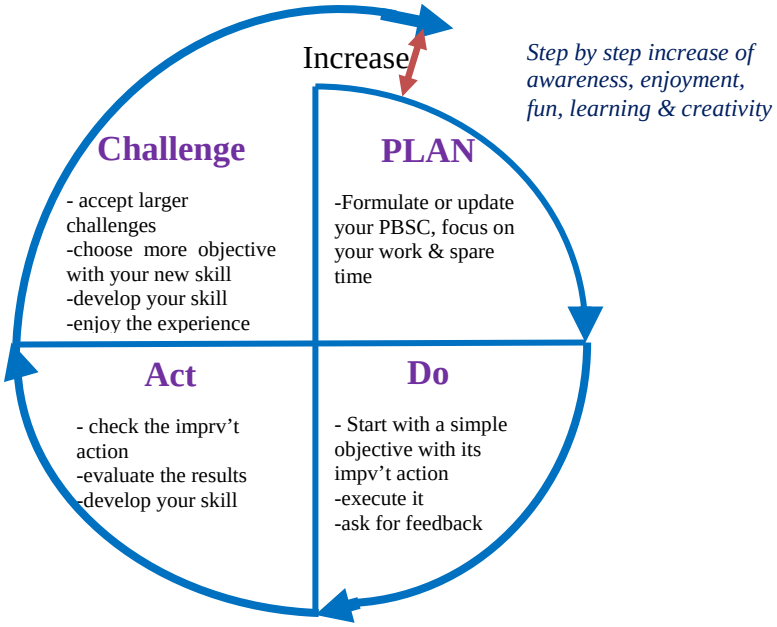


Figure 5.1: The personal PDAC Cycle (Rampersad, 2005)

- **Act:** Check if the improvement action is working and take action when it is not. Review the results according to defined personal performance measures and targets; check to what extent you have realized your personal objectives. If you have not been able to realize your objective, please do not worry about it. Just start again. You will improve steadily and it becomes a habit to do good things, if you evaluate your PBSC each month with your agent, and learn from the acquired experiences. Develop your skills and competencies to achieve the target you selected. Implement the proven personal improvements, assess the personal results, document the lessons learned, and improve and monitor your actions and thinking continuously. Also think about bringing your personal ambition and your personal behavior in balance, which will result in influencing your ethical behavior.

- **Challenge:** Accept larger challenges by selecting a more difficult objective and corresponding improvement action from your PBSC and get on with it. Take your chance and be conscientious to choose a more challenging objective in line with your improved skills when the current improvement action starts being boring. Enjoy the pleasant experience and document what you have learned and unlearned.

Generally, what are the reasons for applying the personal balanced scorecard?

- ***Self-learning and working smarter;*** formulation and implementation of your PBSC results in (if you are open to it) a better self- image and self-knowledge, which results in a larger self-learning ability, higher creativity and real learning.
- ***Personal integrity;*** on the basis of the balance between your personal ambition and your personal behavior, you will create inner peace and improve your own credibility
- ***Effective talent management*** and becoming a highly disciplined time manager by using your time effectively.
- ***Team learning;*** to stimulate individuals to share their personal ambition with each other
- Reducing stress, driving out fear and enjoyment at work
- Recruiting employees effectively – job fit

Aligning Personal Ambition and Personal Behavior

The next step on the way to sustainable personal improvement is to give attention to your personal ambition. Aligning your ambition with your behavior is necessary for developing inner peace and personal charisma, as well as for improving your credibility with others (Rampersad, 2003). When you do this you avoid conflict with your conscience and act in an ethical manner. To become the person you have envisioned in your personal ambition, you also have to know how others see you and what they think of you. When you know this, your self-knowledge increases and you are able to improve the effectiveness of your actions. Therefore, this process of developing self-knowledge involves the establishment of a balance between your personal ambition (which envisions a higher level of consciousness) and your personal behavior (which refers to your present behavior). Aligning your personal ambition with your behavior ensures that your actions in society are right and in accordance with your conscience.

5.2.2 The Organizational Balanced Scorecard (OBSC) of the model

The Organizational Balanced Scorecard (OBSC) is a top-down management instrument used for making an organization's strategic vision operational at all organizational levels [55]. It has the

same framework as the PBSC and therefore the formulation will not be discussed here in detail. The elements of this strategic management concept are presented below in table 5.2

Table 5.2: Elements of OBSC and related questions (Rampersad, 2003)

Elements of OBSC	**Objectives / related questions**
Organizational Mission	Why does our organization exist?
Organizational Vision	What is the most ambitious dream of our organization?
Organizational key roles	Which values are precious to us?
Organizational critical success factors	Which factors make us unique?
Organizational objectives	What results do we want?
Organizational performance measures and targets	How can we measure the results?
Organizational improvement actions	How do we want to achieve the results?

OBSC = organizational mission + vision + core values + critical success factors + objectives + performance measures + targets + improvement actions (divided along the four perspectives: *financial, customers, internal processes, and knowledge & learning*).

Aligning Shared Ambition with Ethics

Business ethics is an essential part of the TPS concept. This implies that organizations must care about ethics and corporate social responsibility to ensure that their actions have integrity and reflect high ethical standards. The shared ambition should, therefore, be inspired by ethics. Ethics concerns human *duty* and the principles on which this duty is based (Thompson and Strickland, 2002). Every company has an ethical duty to its shareholders, employees, customers, suppliers, and the community at large. Each of these stakeholders affects the organization and is in turn affected by it. A shared ethical ambition requires ethical behavior of everyone within the organization. In order to be successful, management and employees should act in accordance with the formulated and values.

Aligning Personal Ambition with Shared Ambition

Previously it is tried to discuss the alignment of personal ambition and personal behavior for the purpose of acting ethically, creating inner peace, developing personal charisma, and improving personal credibility. The *alignment of the personal ambition with the shared organizational ambition* is central for the purpose of stress and burn-out reduction, stimulating the enjoyment, active participation, and motivation of employees. Once these two ambitions have been formulated, there is the need for a period of reflection, a time in which to think profoundly about balancing these

two scorecard elements. This process of balancing deals with obtaining a high level of concordance between personal and organizational goals and a mutual rise in value.

It is known that ‘people do not work with devotion and do not spend energy on something they do not believe in or agree with’. Clarity and uniformity of personal and organizational values and principles are, therefore, essential for the active involvement of people. Experience teaches us that identification with the organization is the most important motive for employees to dedicate themselves actively to the organizational objectives. To sum up aligning personal ambition with shared ambition deals with the mutual concordance of the Personal and Organizational BSCs or individual versus collective learning towards high firm performance.

Communicating and Linking

Now, it is necessary to *link the corporate (OBSC)* to the scorecard of the business units and teams, as well as to the individual performance plans of the employees to be able to put the strategic vision into action. In case of ASSC, this is to mean linking the firm’s scorecard to the scorecards of each department, divisions and sections, as well as the individual employee performance plans. Figure 5.2 below illustrates the different cascading layers in this process. Each process participant formulates his/her own PBSC, which is then situated on a higher abstraction level than the related individual performance plan. With this approach, a bridge is drawn between the successive organizational levels; the message from top management is consistently articulated to the lower levels-shop floor and vice versa.

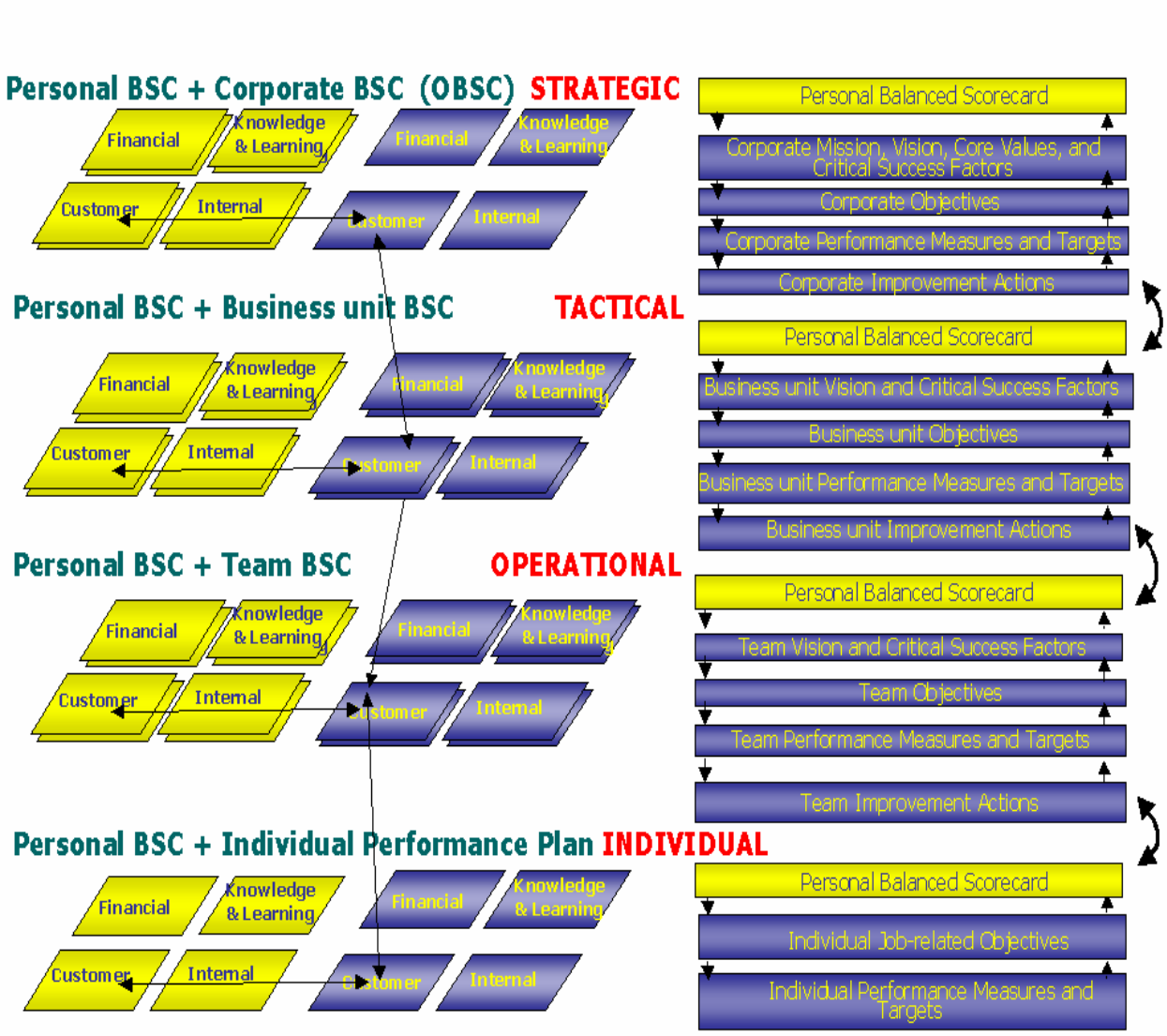


Figure 5.2: Linking the OBSC to the Business Units' BSC, Team BSC and Individual Performance Plan

By linking the objectives as such, the local efforts are aligned to the overall organizational strategy. The formulating process is identical for the first three organizational sections mentioned. The formulated organizational mission in the OBSC and the perspectives apply to all organizational levels. The organizational vision and linked critical success factors, objectives, targets, and improvement actions are adjusted and fine tuned to the related business units (departments) and teams. The OBSC is used here as a frame of reference. Each lower level member should also reflect upon the alignment between the own personal ambition and the organizational, business and team ambition.

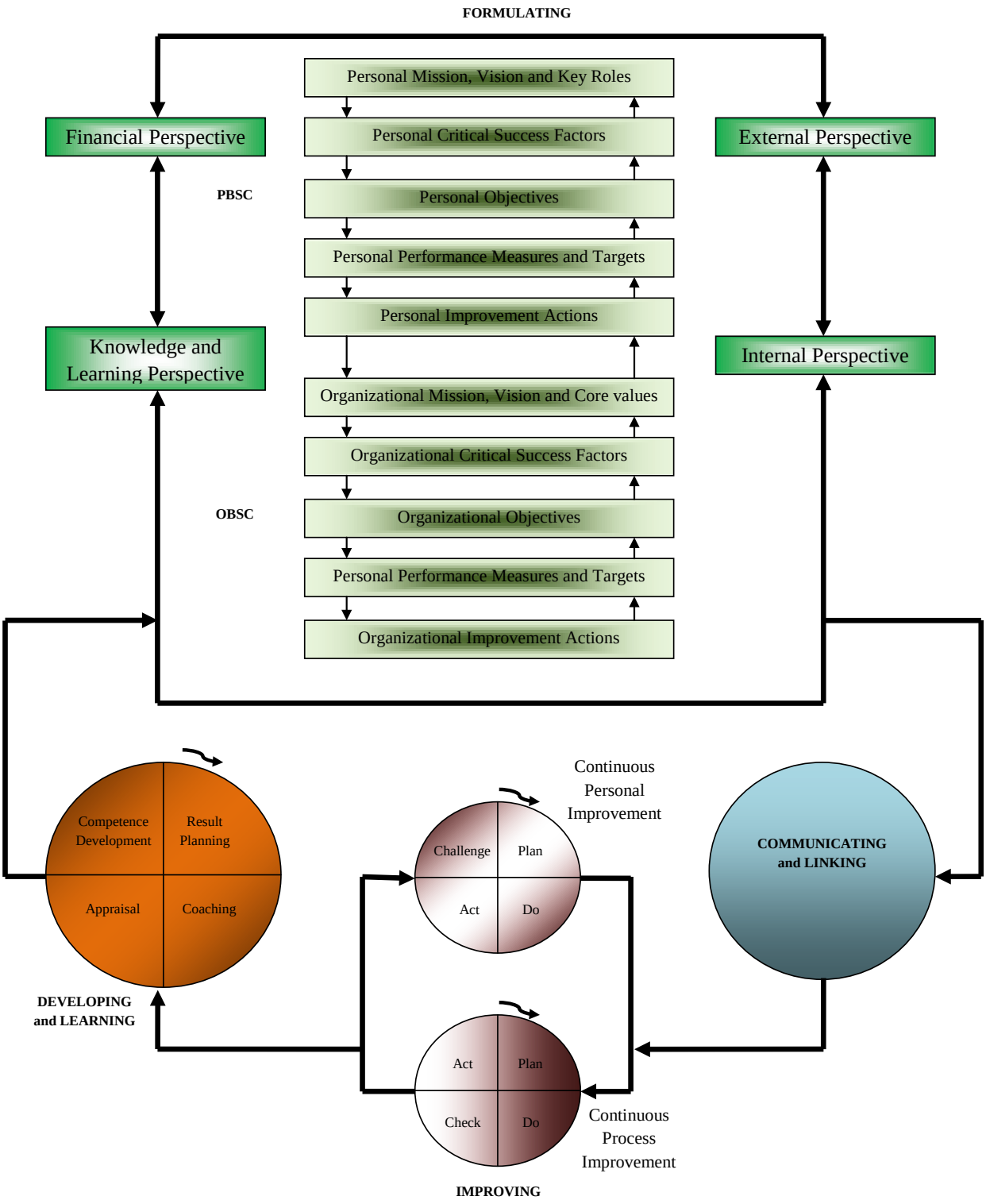


Figure 5.3: Proposed TPS model or cycle [adapted from Rampersad, 2003, 2005]

Elaborated at the beginning of the 90's by Robert Kaplan and David Norton, TPS provides a method for maintaining equilibrium between the financial and non financial indicators and for making the connection between the strategic and operational management [56]. For example, when we intend to improve the sales management, TPS can represent a feasible solution. In this case the Organizational Scorecard Balance transforms itself into the Sales System Scorecard Balance, and this includes: mission, vision, critical success factors, objectives, performance indicators, the improvement targets and actions within the sales system. In this sense, the concept would include continuous improvement and functional processes control within the Sales System as well as the development of certain strategies that focus on obtaining the competitive advantages of the sales activity.

5.3 Development of performance measurement framework/scorecard

Performance measurement plays a significant role in order to sustain an improved performance as it is the first step for business performance improvement. The framework contains key performance indicators or measures. Key Performance Indicators, also known as KPI or Key Success Indicators (KSI), help an organization define and measure progress toward organizational goals. Once an organization has analyzed its mission, identified all its stakeholders, and defined its goals, it needs a way to measure progress toward those goals. Key Performance Indicators are those quantifiable measurements.

The proposed measurement framework/scorecard is developed based on TPS concept and the key performance indicators of the case company (personal and organizational KPIs) are selected according to the intervention areas identified from the case study analysis. Accordingly, the personal scorecard (personal performance measurement framework) contains the four performance perspectives, personal goals of each perspective, personal objectives and performance indicators of the goal, measures to each KPIs and the format for personal performance targets and improvement actions is placed (see table 5.2). Similarly, the organizational scorecard contains these all issues (see table 5.3).

Table 5.2 Proposed performance measurement framework/personal scorecards

Performance Perspectives	Personal Goals	Personal objectives	Personal Performance indicators (KPIs)	Personal performance Measures	Personal performance Targets	Pers. Perform. Improvement Actions
Financial	Financial health or stability	More income or increase salary	Salary	Annual salary percentage growth		
			Incentives	Annual % growth		
		Safer income	Pension	% of gross salary		
			Insurance	% of gross salary		
		Expenses control	% of the income destined to expense	% growth in a period of time		
Customer (external)	To have good r/ship and be appreciated by family, friends, colleagues and employer	To be appreciated by the life partner	number of times you went out together in a nice place	No. of meetings/time period		
		To be appreciated by friends	true friends	Number of true friends		
	To provide high quality work	To be appreciated by the employer	Level of the received reward	Type and number of reward		
		To improve employees' satisfaction level	Employees' satisfaction level	% of employees' satisfaction level		
		To get higher amount of trust from the employer in carrying out my work	The employer's satisfaction level	% of employer's satisfaction level		

Internal personal Process	To fight for physical and psychical health (physical health & mental state)	To be physically and psychically in good health	Sick leave	% of sick leave		
			Pressure level	Level of pressure		
			Immunity level under stress conditions	immunity level		
		To get more spare time	Spare time	The number of paid holiday days per year		
		To enjoy good thinks in life	Pleasure	Happiness level		
Knowledge & Learning	To have initiative, to learn from one's own mistakes, to improve myself and to develop myself continuously	To increase work productivity	Work productivity	Personal outputs/inputs		
		To improved management competences	Initiatives	Number of efficient Initiatives		
	To learn every day	Self-improvement opportunity in the management field	Strategic proposals	# of success strategic success improvements proposals		
			management competences	% of available management competences		
		Leadership abilities improvement	Attended management trainings	# of attended management trainings		
			Employees feeling in the leadership	% of employees that feel they work under an efficient leadership		

Table 5.3 Proposed performance measurement framework /organizational scorecard

Performance Perspectives	Organizational Goals	Org. Performance Indicators	Organizational objectives	Org. performance Measures	Org. Performance Targets	Org. Perf. Improvement Actions
Customer	Continuously improve customer satisfaction	Delivery	Increase on time delivery	% of deliveries on time		
		Customer satisfaction	Satisfying customers	# of complaints		
		Price	Competitive price	Competitive comparison		
Internal Business Process	Continuously improve business processes	Cycle time	Reduce product cycle time	Average cycle time		
		Labor productivity	Increase productivity	Average O/P per employee		
		Quality	Produce defect free product	# of defects & # of items reworked		
		Material utilization	Increase material utilization	Percentage		
		Capacity utilization	Increase capacity utilization	Percentage		
Innovation and Growth	Continuously develop and deliver new innovative products & services	R & D	Enhance R&D activities	# of new products/services		
		Modularization	Improve interchangeability of shoe parts	# of reused parts		
		Training & education	Improve employee skill	Skill level		
			Improve employee qualification status	Qualification growth		
Financial	Continuously improve financial performance	Sales growth	Increase revenue	Growth rate in sales		
		Market share	Increase market share	Company's share		
		Cost of goods sold	Reduce cost/expense	Average unit cost		
		Profitability/ROI	Increase return on investment	ROI or ROA		

5.4 Development of TPS implementation guideline

This section describes how to start a TPS program and bring it to a state where the process of continuous improvement is institutionalized in the shoe factory. Primarily the implementation of TPS to any organization is not an easy task because it requires investment, patience, organization wide commitment etc. It is not a program that is applied and leaves it rather it requires continuous improvement. Since organizations differ in their orientation, the application of one canned TPS system will not generally provide the expected results of the cultural change to others. Nevertheless, seven general steps are developed here to be applied to the footwear company and this is done based on TPS concept and TQM implementation concept (see figure 5.4).

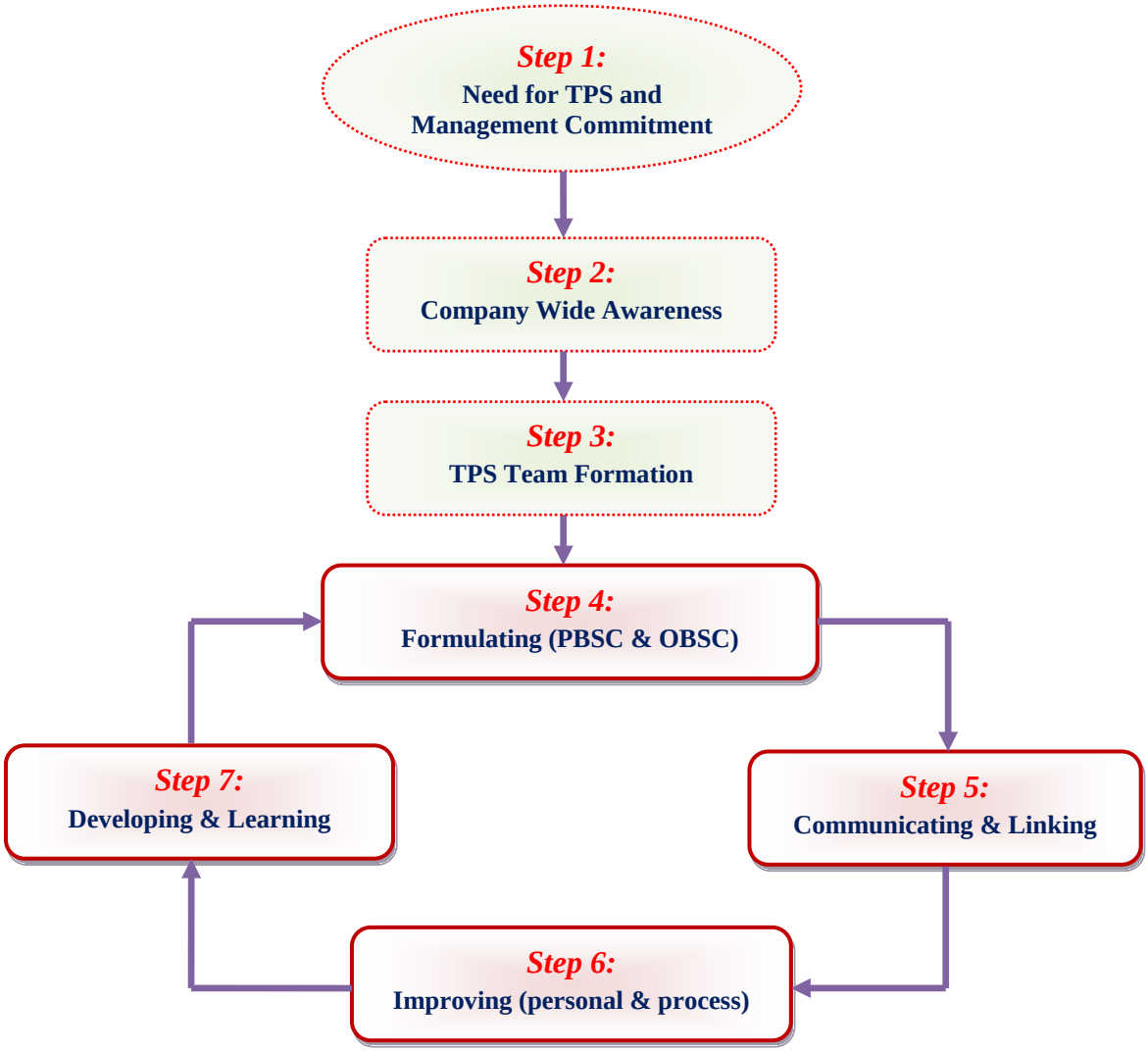


Figure 5.4: Proposed implementation Steps of TPS

The first three steps are considerations and activities to be taken by the shoe company before the application of TPS concept. The TPS cycle has been developed in order to guide in the successful implementation of the TPS concept. This cyclic model (see figure 5.4) consists of the remaining four steps of the implementation guide line.

1) Management Understanding and Commitment

In this first step of the TPS implementation, there has to be a need for performance improvement of the shoe factory using TPS method then understanding and commitment. As the study investigates problems, there is a need to use performance improvement method in the factory. The main thing to know is which method to be used? To do so the management body of the shoe factory has to understand the method (TPS) and show commitment. Top management understanding and commitment is the first step and prerequisite for a firm's TPS implementation efforts. Lack of management commitment is one of the reasons for the failure of performance improvement efforts. Top managers need to demonstrate their commitment through their actions rather than words. The management shall express its commitment and provide evidence for its commitment by allocating the right and efficient resource, give time and participation, and empowerment (giving permission to the workforce to unleash, develop, and utilize their skills and knowledge to their fullest potential for the firm). In addition, it shall establish performance policy (statement on system and training) and ensure the availability of the resources.

Top management commitment can positively affect employees' commitment to improvement method and culturally change people involved. Particularly in a firm with an autocratic general manager, there is a strong trend that employees act on something only in proportion to the manager's degree of interest. However, if top management is committed and empowers workers, it will benefit in increasing employees' motivation to reduce mistakes, increasing the opportunity for creativity and innovation, improving employee loyalty, and allowing top and middle management more time for strategic planning. In case of ASSC, the management bodies includes: the general manager, each heads/leaders of the five main departments and head of 'Information, productivity & service improvement office'. The general view of the method will be given first by expert. The management has to examine how their company's performance compares to the benchmark. This is very much a basic set of rules and helps to set target. The proof that you have top management commitment is given when you establish a steering committee of senior functional managers chaired by the chief executive (top management body). The steering committee should then meet at least once a month, to provide direction and identify priorities.

2) Companywide Awareness Creation

Whatever the level of awareness shown in the firm, there will be some need to explain Total Performance scorecard (especially PBSC) throughout the organization. A top-to-bottom briefing exercise is often the best way to get this message across. It is essential to avoid mere slogan sing and to emphasize the concrete nature of the activities and the objectives of improved competitiveness. In conveying the initial message, articles in company papers will be used. Culture is about the attitude of a society at large. If it is found appropriate, a cultural change needs to be engendered through induction, education and training for all personnel in the company to ensure that the attitude and acceptance of ownership and commitment to TPS will be forged. This will be given first by the expert and later in detail by the TPS team.

There is a need to carry out an attitude and awareness survey to find out how far the staff of the factory understands total performance (personal and organizational). This can be done using some questions, covering some of the key points in this material, e.g. ‘what do you mean by performance?’ and ‘who is most responsible for performance improvement in the organization?’ When we carry out these exercises we like to look some percent of employees (may be at about 10%), with the bias being towards management, but not excluding the shop-floor.

3) Team Formation (TPS Team)

The complexity of most of the processes that are operated in the industry places them beyond the control of any one individual. The only efficient way to tackle process management and improvement is through the use of some form of teamwork which has many advantages over allowing individuals to work separately. Without teamwork, the development of a flexible and effective workforce, TPS will not operate. TPS requires the development of a more unified organization, where individual workers, for example, will have to adhere to group’s standards. So everyone in the company must be trained to work on a team bases. In case of ASSC, the implementation of TPS has to be done by a TPS team consisting at least one member of the top management and the information, productivity and service improvement head. This implementation task force has to be empowered to all accesses of the organization and it is better if the team is composed of multi-departmental members.

4) Formulating

This phase involves the formulation of the Personal and Organizational Balanced Scorecards. Previously the issues of how PBSC and OBSC will be formulated and what elements they contain are discussed in detail (see section 5.2.1 & 5.2.2). In general, the following four-step process that

has been used across a wide range of organizations, are defined by Kaplan and Norton to develop a Balanced Scorecard [53]:

- ***Define the measurement architecture*** - When a company initially introduces the Balanced Scorecard, it is more manageable to apply it on the strategic business unit level rather than the corporate level. However, interactions must be considered in order to avoid optimizing the results of one business unit at the expense of others.
- ***Specify strategic objectives*** - The top three or four objectives for each perspective are agreed upon. Potential measures are identified for each objective.
- ***Choose strategic measures*** - Measures that are closely related to the actual performance drivers are selected for evaluating the progress made toward achieving the objectives. (See the scorecard developed in section 5.3)
- ***Develop the implementation plan*** - Target values are assigned to the measures. An information system is developed to link the top level metrics to lower-level operational measures. This is already done in case of ASSC in ERP system implementation. The scorecard is integrated into the management system.

From the intervention areas identified, there should be a time-phased plan for each project identifying targets and milestones, resources required, costs and projected benefits. All the interventions are important for the realization of the performance improvement targets of the shoe factory. However, for efficient resource utilization and sequential implementation of the interventions, prioritizing the interventions will be vital. Once the plans are prepared, it is the task of the steering committee to prioritize them and to allocate resources.

5) Communicating & linking

In the previous section 5.2.2, it tried to see the formulation of both PBSC and OBSC and how communication and linkage is conducted. All stakeholders share in the business strategy by effectively communicating and translating (rolling out) the corporate scorecard to all scorecards of the underlying business units and teams, and finally linking the team scorecard to the individual performance plan of the employees. This top-down and bottom-up process is implemented, step-by-step, to all successive organization levels in increasing detail. In this way, the overall strategy of the organization is systematically translated into more specific plans on each organization level. This is needed to shift the strategic version into action. Every individual on these three organizational levels formulates his own PBSC and share this with colleagues.

6) Improving

This indicates continuously improving employees' themselves and their work performance. It concerns the implementation of the personal and organizational improvement actions based on the PBSC and OBSC, respectively. The focus is on correct mistakes, improve existing things, do things right the first time, and obtain new skills and capabilities through step-by-step improvement. The personal improvement actions are implemented according to the introduced Plan-Do-Act-Challenge cycle and the developed scorecard (see section 5.2.1 and 5.3 respectively). This result in a step-by-step increase in happiness, awareness, joy, pleasure, learning and creativity occurs at work as well as in your free time. The alignment of personal ambition with personal ethical behavior is also part of this process. The organizational improvement actions are implemented according to the Plan-Do-Check-Act cycle of Deming. This cycle consists of the following 4 phases: 1) *Plan* (develop an improvement plan based on the benchmark gap); 2) *Do* (execute this improvement plan on a limited scale); 3) *Check* (review the results of the improvement actions via the developed scorecard; and 4) *Act* (implement the proven improvements by giving priority).

7) Developing & learning

The emphasis is on job-related talent management and learning. To be able to manage and use the talents within the organization effectively, it is necessary to embed the personal and organizational BSCs together with the ambition meeting in the talent management process. This is done on the basis of the introduced talent management cycle that consists of the following phases: Result Planning, Coaching, Appraisal and Talent Development. The learning process in this phase encompasses the review of the scorecards, the actualization of these scorecards based on changing conditions, the documentation of the lessons learned, and checking which things went well and which went wrong during the previous phases. Depending on these evaluation results the implementation or the formulation of the scorecards may be adjusted. This deals with learning from gained experiences. It refers to internalizing acquired knowledge and actualizing it through experience in order to change both the individual and collective behavior of employees and thus enable the organization to perform better. The concordance of personal ambition and the shared organizational ambition is taken place at all lower levels of the organization. The alignment of the shared ambition with business ethics is also taken place in this phase of the TPS cycle.

Once TPS is implemented, it must be geared to continuous improvement i.e. seeking new ways of opportunities, adapting new changes etc. In this phase continuous follow-up is needed to go on with the dynamic world. The goals which were set at the previous implementation must be evaluated whether they are achieved or not. If they are not achieved corrective actions must be taken before

the improvement proceeds. So after completing the last step in the TPS-cycle, it will again be followed through in order to continuously align the BSCs to the surroundings. Through the thereby created learning effect, the shoe factory will get to know itself and its surroundings better and will thus improve. This will continuously improve the organization's learning ability. Naturally, the same also applies to the employee. For example, by reviewing your PBSC quarterly with a trusted representative and by learning from previously obtained experiences, you'll learn to get to know yourself and your surroundings better and through this you will improve. Strategy formation, improvement, development of human potential and learning are thus a perpetual process. Continuously going through the TPS-cycle will result in the continuous improvement of business results through the years.

5.5 Role of stakeholders in the performance improvement of the footwear sub-sector

The GoE has currently a vision to create globally competitive leather footwear companies. It is shown in this thesis that the ELFFs are associated with firm level as well as external or sector level problems. To fill the gap, the existing problems associated with the companies have to be solved using firm level solutions as of the proposed method. However, involvement of different bodies or stakeholders is needed to solve the external or sector level problems. Thus, to solve such problems associated with the leather footwear sector and make the vision happen, the following improvement directions or roles of stakeholders are suggested.

- The GoE have to play supreme role for the change to happen. Thus, the Government (under MoI and LIDI) and other parties such as ELIA, UNIDO, GTZ, EQA and ecbp have to provide necessary supports such as training, facilitating different activities and finance aids to the companies. The government particularly has to work on not exporting finished leather before processed and control price fluctuation of finished leather.

- A systematic pull approach (co-operative supply chain partnership) which was started by the GoE is essential to improve the coordination between all the actors in the supply chain of footwear manufacturing; therefore, this strategy has to be further supported to create favorable condition for the sectors' competitiveness.

- Regarding to the problem of accessories and components immediate and long-term solutions are required.

  Immediate solution: LIDI and other collaborating organization must help the factories getting reliable supplier of accessories and components.

Long term solution: There must be integrated accessory and components manufacturing unit in Ethiopia producing molds, cutting Knife eyelets, shoeboxes, and shoe rapping papers. This initiative should be taken by the government at first stage by establishing these integrated manufacturing units in the industry zone area later when the market demand for these inputs matures the responsibility can be given to the privet sector.

- To improve the national level problem of labor productivity and technology, LIDI in cooperation with each footwear firms has to work more on it by giving different advanced footwear technology trainings by its local trainers as well as by foreign expertise. The purpose of this intervention is to build in house capacity with footwear knowledge equitable against the best practice in the world. Such capacity will be crucial to retain knowledge from expatriate experts and to supplant them effectively afterwards. It will also aid to facilitate technology transfer which will be crucial for the realization and subsequent improvement of the benchmark targets.

- Regarding to the problems of Marketing either local or international: conduct market study and research, access market information, conduct advertising and promotion by available national media and participating in international fairs. This can be done cooperatively with LIDI, COMESA, ELIA and government media.

- Regarding the Design and development problems: it is known that ELFFs have no potential to this but they can develop partnership with other developed countries and get knowledge via technology transfer. For example, Italy is well developed in design shows so developing partnership is better.

- Generally, the export led strategy of the government is better means for developing competitiveness of ELFFs internationally due to the technology transfer (knowledge, new designs, techniques and methods while bringing their design) in between local firms and foreign customers. In addition, it is highly recommended ere that ELFFs has to work more on it because export strategy will drive the local one.

5.6 Summary

In this chapter a total performance improvement method, total performance scorecard, which can address the total performance problems of the firm is proposed. Though BSC is currently the better performance measurement and improvement method, it has many pitfalls as described in the previous section. Most performance measurement and improvement methods give less emphasis to persons and give most considerations only to the organization. However, TPS concept can be more successful than traditional ones (where improvement is often cosmetized), since real change and organizational improvement can be obtained if *people change and improve* themselves from the inside, this internal involvement being an integrant part of TPS whose purpose aims at maximum involvement and loyalty of all the involved persons, as well as encouraging individual learning, learning within a team and creativity. The main argument brought to this theory is that, if an employee's personal goal corresponds to the organization purpose, then he/she will think and work in the direction of reaching the company's shared purpose.

Balanced scorecard (BSC) is being implemented in some Ethiopian manufacturing industries like Kombolcha textile S.C and Adey Abeba yarn S.C and recently it is widely tried to implement in service industries of government. As ISO is a base or a good starting way to easily implement TQM, BSC implementation is also a better way to implement TPS. Therefore, as implementing scorecard of BSC is somewhat similar to that of OBSC of TPS, it is not difficult to Ethiopian footwear industries to implement TPS whether they start BSC or not.

The proposed personal scorecard using PDAC cycle has to be implemented to all manufacturing firms of Ethiopia because the labor productivity problem is national level and trainings (short term or long term) could not alone bring satisfactory labor productivity improvement. However, it is believed that in addition to on job trainings there has to be a mental setup change within employee and this can be achieved through proper implementation and use of PDAC method.

CHAPTER SIX

CONCLUSION, RECOMMENDATION AND FUTURE RESEARCHS

6.1 Conclusion

Though performance is a widest term, which covers overall economical and operational aspects and has many definitions, this study accepts it as “the progressive achievement of tangible, specific, measurable and personally meaningful goals." Nowadays there is a need for business enterprises to measure, analyze and improve performance as they encounter increasing competition from an ever-changing business environment. *Performance measures are the lifeblood of organizations, as without them no decision can be made, as it is the first step to control and improvement.*

In this research, many investigations are made. In the first place, most ELFFs are operating at low total performance and are faced with many performance problems, mainly with shortage of inputs, poor production planning and control, low productivity, high manufacturing cost and lack of marketing strategy. Though the leather sector is envisaged to generate export income amounting to 500 million USD at the end of the plan year (2014/15) which will focus mainly on finished leather, **footwear (63%)**, gloves and leather garment and articles, it can be concluded that unless an improvement action is designed and a proper performance improvement method is used, this plan cannot be achieved due to the problems listed above, the previous plan year (2004/05-2008/09) low export performance (on average, actual exports account for about 28% of planned export value) and mainly with the current shortage (quantity and quality) of finished leather.

Secondly, from the case study, it can be concluded that the firm (ASSC) is operating at low performance as the statistical values shows:

- The firm on average loses annual cost of 409,500birr due to rework or quality problem and high cutting scrap of 15% (where international benchmark is 5%).
- The inventory management of ASSC is not good (low inventory turnover ratio - 1.48 in 2010)
- The performance of ASSC relative to the benchmark target line is low (show high critical deviation) especially in the parameters like: labor productivity (-433%), production capacity (-189%), raw material procurement lead time (-328.6%) and machine down time (100%).

Further, regarding the export oriented strategy and its impact towards the local market development, it can be concluded that export oriented production drives also the local one. It can be clearly seen from the case company’s four year (2000 – 2003E.C) production and sales trend that it was

performing better in local production and sales though the yearly export plan was high. This depicts that the export oriented strategy of the government is not only to get foreign currency.

The intervention areas identified in one or another way reveal that they are problems of financial performance, operational performance, employee performance/satisfaction, quality performance and customer satisfaction. These are all total organizational performance problems which cannot be solved unless a total performance improvement method (which can have a balanced performance measures and management philosophy) is used.

BSC has many pitfalls though it is currently the better performance measurement and improvement method. In addition, most performance measurement and improvement methods give less emphasis to persons. However, the proposed method, total performance scorecard (TPS), can be more successful than traditional ones, since real change and organizational improvement can be obtained if *people change and improve* themselves from the inside, this interior involvement being an integrant part of TPS whose purpose aims at maximum involvement and loyalty of all the involved persons, as well as encouraging individual learning, learning within a team and creativity. The main argument brought to this theory is that, if an employee's personal goal corresponds to the organization purpose, then he/she will think and work in the direction of reaching the company's shared purpose. When we intend to improve the firms total performance management, TPS can represent a feasible solution particularly with the support of ERP system as of ASSC. Therefore, TPS is the best method to solve the firm level performance problems.

6.2 Recommendation

In this study, two types of recommendations are forwarded. The first one is towards the implementation of the proposed method to alleviate firm level problems whereas the second one is about the recommended improvement directions or stakeholders' role towards the external or sector level problems identified in the study. Accordingly, the following recommendations are forwarded:

- Though the company, ASSC, has both internal and external or sector level problems it has to give more emphasis to the internal or firm level problems, where it can address using only its potentials and resources with the appropriate improvement method. Therefore, the company is highly recommended to implement the proposed method, total performance scorecard, to solve these problems so as to bring total company performance improvement and being competitive.

- While implementing the method, the primary activities to be done by the company are: firstly, the TPS method has to get management understanding and commitment because without top management commitment, trying to implement is simply losing resources. Secondly, it is highly recommended to create companywide awareness and cultural changes regarding the proposed TPS method which helps specially to easily implement the personal balanced scorecard. Finally, it is known that results of individual works are far from that of team work results, so it is highly recommended here to formulate and work with team and the team has to have strong members with at least one member of top management.

- Since IT based management system is the requirement towards better communication within the firm, it is recommended to use the ERP system integrated with the TPS. Fortunately, it is already on implementation in ASSC. Since ERP system can facilitate to improve several business performances of the company, particularly those related to the supply chain (improve coordination within the firms departments, management of customers and suppliers, and improve monitoring business performances and supporting management decisions because of the available reliable updated information in the ERP database), it is highly recommended here to facilitate the current implementation and integrate with the proposed improvement method.

- This performance improvement method is recommended not only to the case company but also to all large and mechanized leather footwear companies of Ethiopia as they all share common firm level problems. The proposed personal scorecard, using PDAC cycle, has to be implemented to all manufacturing firms of Ethiopia because the labor productivity problem is national level and trainings (short term or long term) could not alone bring satisfactory labor productivity improvement. However, it is believed that in addition to on job trainings there has

to be a mental setup change within employee and this can be achieved through proper implementation and use of PDAC method.

- The export led strategy of the government is better means for developing competitiveness of ELFFs internationally due to the technology transfer (knowledge, new designs, techniques and methods while bringing their design) in between local firms and foreign customers. So it is highly recommended that ELFFs has to work more on it because export strategy will drive the local one.

- To solve the external or sector level problems, it is highly recommended that ELFFs has to work cooperatively with stakeholders of the subsector; primarily with the GoE (under MoI and LIDI) and other parties such as ELIA, UNIDO, GTZ, EQA, COMESA and ecbp.

6.3 Future research areas

The following research areas are suggested to be conducted in the future:

1. Investment analysis of Total Performance Scorecard implementation in ELFFs
2. Designing Supply chain network of ELFFs: Many companies are not achieving a corresponding improvement in their business performance due to a failure to address the whole spectrum of their supply chain.
3. Developing market strategy for ELFFs
4. Clustering to improve performance of ELFFs

REFERENCE

[1]. R G Askin, C.R. Standridge, *Modeling Analysis of Manufacturing System*, John Wiley and Sons, 2001.

[2]. Gruenberg T., *Performance Improvement: Towards a method for finding and prioritizing potential performance improvement areas in manufacturing operations*, International Journal of Productivity and Performance Management Vol. 53 No. 1, pp. 52-71, 2004.

[3]. Tetsushi Sonobe , John Akoten , Keijiro Otsuka, *The Development of the Footwear Industry in Ethiopia: How Different Is It from the East Asian Experience?*, Prepared for the Global Development Network Annual Conference Beijing, China, January 2007.

[4]. The Embassy of Japan in Ethiopia, *A Series of Studies on Industries in Ethiopia*, March 2008.

[5]. Berhanu Nega (Ph.D.) and Kibre Moges , *Declining Productivity and Competitiveness in the Ethiopian Leather Sector*, 2002.

[6]. Shirley Daniels, *Back to Basics with productivity improvement techniques*, Work study, Vol.46 No.2, pp. 52-57, 1997.

[7]. *Benchmark Implementation Plan for the Ethiopian Footwear Sector* (Pilot Project on Anbessa Shoe Share Company and Peacock Shoe Factory): prepared by ASSC February, 2009.

[8]. Global Development Solutions, *Value chain analysis for the skins and leather sector in Ethiopia*, Unpublished Report, 2006.

[9]. John Sutton and Nebil Kellow, *An Enterprise Map of Ethiopia*, International Growth Centre, 2010.

[10]. Ethiopian Leather Journal, special publication for all African leather fair (AALF), organized by ELIA, 5th edition, March 2011.

[11]. *Leather Industry sector development plan 2003 – 2007 E.C*: Leather Industry Development Institute (LIDI), Tir 2002 E.C.

[12]. Darryl D. Enos, *Performance Improvement: Making It Happen. - Review - book review*, St. Lucie Press, 2000.

[13]. Gruenberg T., *Performance Improvement -A Method to Support Performance Improvement in Industrial Operations*, A doctorial thesis, Stockholm, 2007.

[14]. Daniel Kitaw, *Industrial Management and Engineering Economics, an introduction to Industrial engineering*, Addis Ababa University Press, 2009.

[15]. Sunil Kumar and Rachita Gulati, *Measuring efficiency, effectiveness and performance of Indian public sector banks*, International Journal of Productivity and Performance Management Vol. 59 No. 1, pp. 51-74, 2010.

[16]. Marcel van Vuuren, Performance *Analysis of Manufacturing Systems: Queuing Approximations and Algorithms*, 2007.

[17]. S. Anil Kumar & N. Suresh, *Production and Operations Management (with skills development, Caselets and Cases)*, New Age International (P) Ltd., Publishers New Delhi, 2nd ed, 2006.

[18]. F.K. Yamfwa, *Improving Manufacturing Performance in LDCs*: the case of Zambia - Eindhoven: Technische Universiteit Eindhoven, 2001.

[19]. Chee-Cheng Chen, *An objective-oriented and product-line-based manufacturing performance measurement*, Int. J. Production Economics, 2008.

[20]. Performance-Based Management Special Interest Group, *Establishing an Integrated Performance Measurement System - The Performance-Based Management Handbook*, Volume 2, September, 2001. Available at: http://www.orau.gov/pbm.

[21]. Veronica Martinez and Zoe Radnor, *Performance measurement and management systems: public and private sectors*, International Journal of Productivity and Performance Management, Volume 56 No. 5/6, pp. 384-396, 2007.

[22]. John Miller, *A Practical Guide to Performance Measurement*, The Journal of Corporate Accounting & Finance, Wiley Periodicals, Inc, 2005.

[23]. Liang-Hsuan Chen and Shu-Yi Liaw, *Measuring performance via production management: a pattern analysis*, International Journal of Productivity and Performance Management Vol. 55 No. 1, Emerald Group Publishing Limited, 2006.

[24]. Amanda Whittaker Brown, Principal Consultant, IDeA. *Review of Performance Improvement Models and Tools*, IDeA and Audit Commission PMMI team, 2006.

[25]. Kanthi Mathi Nathan Muthiah, *System Level Effectiveness Metrics for Performance Monitoring and Diagnostics, (*PhD thesis) University of Cincinnati, 2006.

[26]. Gruenberg T., *A review of improvement methods in manufacturing operations*, Journal of Work Study Volume 52. No. 2, 89-93, 2003.

[27]. L. C. R. Carpinetti, O. T. Oiko, *Benchmarking In Clusters of SMES: Development and Application of a Data Base*, 19th International Conference on Production Research, University of Sao Paulo, Brazil.

[28]. http://www.accaglobal.com/employers/approved/services/employer_toolkits

[29]. Supply-Chain Operations Reference-model, Version 6.0, Supply-Chain Council, 2003.

[30]. Supply-Chain Operations Reference-model, *Overview Version 7.0*, Supply-Chain Council, 2005.

[31]. Rampersad, H.K., *Total Performance Scorecard: Aligning Human Capital with Business Strategy and Ethics*, Nanyang Business Review Vol.4 No. 1, Singapore, 2005.

[32]. Rampersad, H.K., *Total Performance Scorecard; a new blueprint for sustained organizational performance with Integrity*, California, 2007.

[33]. D.Sarkar, *Hand Book for Total Quality Management* - 3rd edition Infinity books, Newdelhi, 2000.

[34]. Alemayehu Kuma , *Manufacturing Sector and Trade Liberalization in Ethiopia*, A thesis submitted to the School of Graduate Studies Addis Ababa University in Partial Fulfillment of the requirement for the Degree of Masters of Science in ECONOMICS, June 2002, unpublished.

[35]. Newsletter published by the Ethiopian Tanners, Footwear and Leather Products Manufacturing Association (ETFLPMA), with support provided by USAID/FINTRAC Agribusiness and Trade Expansion Activity, 2006.

[36]. Global footwear market www.fashionunited.com/.../global-footwear-market-to-reach-uss195-billion-by-2015-20111901486763

[37]. A strategic sector study on the Egyptian Footwear and leather industry: Global Review Cairo, November 2005.

[38]. The Global Footwear Industry, http://www.fibre2fashion.com/news/general-textile-industry-news/vietnam/newsdetails.aspx?news_id=64666

[39]. Tetsushi Sonobe, John E. Akoten, and Keijiro Otsuka, *an Exploration into the Successful Development of the Leather-Shoe Industry in Ethiopia*, 2009.

[40]. A Blueprint for the African Leather Industry a Development, Investment and Trade Guide for the Leather Industry in Africa, 2002.

[41]. Ethiopia emerges amongst leading sub-Saharan footwear exporters, Royal Norwegian Embassy in Addis Ababa newsletter, 2010.

[42]. *Promoting Leather Based Value Chains in Ethiopia* – Project Document by ECBP – (Second Draft), January, 2009.

[43]. Investing in Ethiopia**:** Leather and Leather Goods, www.ethiopianembassy.org

[44]. Tilman Altenburg, *Industrial Policy in Ethiopia*, Discussion Paper /German Development Institute, 2010.

[45]. *A Master Plan for the Ethiopian Leather and Leather Products Industry (LLPI)*, UNIDO, 2005.

[46]. Theo van der Loop, *The Importance of the Leather Footwear Sector for Development in Ethiopia*, Addis Ababa, Ethiopia, 2003.

[47]. Freselam Mulubrhan, *Integrating Supply Chain for Improved Export Market of Ethiopian leather product*, Graduate project (unpublished), Addis Ababa University, February, 2010.

[48]. Anbessa Shoe Share Company, Strategic Plan (2002 – 2006 E.C), May, 2008.

[49]. Anbessa Shoe Share Company, Brief Company Profile, 2009.

[50]. Anbessa Shoe Share Company, Annual Company Level Performance Report, 2000, 2001, 2002, 2003E.C.

[51]. Ram Naresh Roy (PhD), *A Modern Approach to Operations Management*, New Age International (P) Ltd, 2005.

[52]. Anbessa Shoe Share Company, Financial statement, for the year ended June 30, 2010.

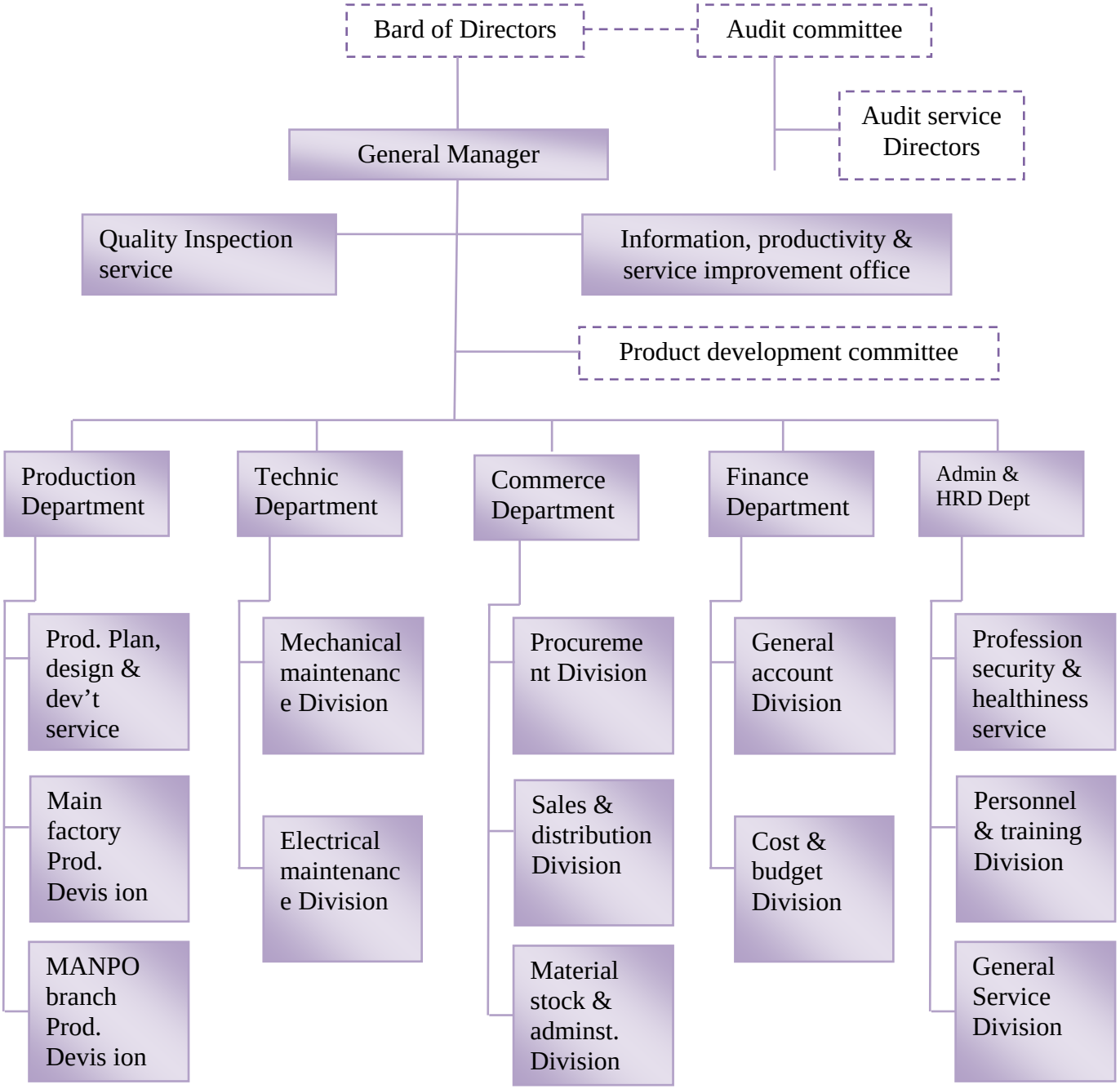
[53]. Yasar Jarrar and Mohamed Zairi , *Best Practice for Implementing the Balanced Scorecard*, European center for best practice management, 2010.

[54]. S.Wngrassamee, etal. *Performance measurement tools*: *the balanced scorecard and EFQM excellence models*, MCB UP limited, Vol. 7, no. 1, 2003.

[55]. Rampersad, H.K., *The way to a high-performance culture with the Total Performance Scorecard*, John Wiley & Sons, Ltd., TPS International Inc., Florida, USA, 2008.

[56]. Brutu M.D.Lina, *The Application of the Total Performance Scorecard (TPS) Process In The Sales Management*, University Of Pitesti, Faculty Of Economic Sciences, Pitesti, Aleea Lacului, Str. Argedava, 2008.

Appendix A: Organizational structure of Anbessa shoe share company



Appendix B: Survey questionnaire

ADDIS ABABA UNIVERSITY

ADDIS ABABA INSTITUTE OF TECHNOLOGY (AAiT)

MECHANICAL ENGINEERING DEPARTMENT

GRADUATE PROGRAM IN INDUSTRIAL ENGINEERING

Survey Questionnaire for Ethiopian Leather Footwear Factories

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I am at present conducting research in the Ethiopian leather footwear manufacturing companies, at Addis Ababa University Institute of technology, department of Mechanical Engineering towards Masters in Industrial Engineering. The title of the study is **"Performance Analysis and Improvement of Ethiopian Leather Footwear Factories"**. ***The objective of the questionnaire*** is to assess the current performance status, existing performance management practices and factors or problems that affect performance of Ethiopian footwear manufacturing firms.

I should appreciate and like to express my gratitude if you would complete the attached questionnaire or direct it to the person in charge with this responsibility. Moreover, *your response is very crucial to the success of the survey*. All information will be treated in the highest confidential and the respondent's name (optional information) will not be revealed.

For further information you can contact using the above mentioned address.

Thank you for your committed cooperation, time and consideration!!!

April 18, 2011

Section I: Preliminary Information

Respondent Profile

1. Your current position in the company:_____
2. Qualification level: College diploma ☐ BA/BSc ☐ MA/MSc & Above ☐
3. Your work experience in this company:_____

Company Information

4. Name of your company_____
5. Owner ship ☐ Public ☐ Private
6. Type of establishment ☐ Domestic ☐ Foreign ☐ Joint venture
7. Start-up year (established in)_____
8. Three main products of the company_____
9. Number of employees currently working in the firm: Direct labor_____ Indirect labor____
10. Latest capital assets (Birr)_____
11. Contact address Tel._____ Email_____

Section II: Considerations and Interpretations of Performance in the Firm

12. Select and circle (more than one is possible) among the following in which your company interpret good performance? It is in terms of...

    a) Cost competitiveness b) high production c) good quality

    d) fast delivery time e) High sell f) high profit

    g) customer satisfaction h) Specify if any.....

13. Rate how the following issues drive performance in your company: [**1= low/slightly; 2= medium; 3=highly**] [Please, put a ✓ mark on the number that applies]

S.No.	Performance drivers	1	2	3
13.1	Investment in machinery and equipment or technology			
13.2	Education and training of employees			
13.3	Planned utilization of raw materials			
13.4	Research & Development and Innovation			
13.5	Government spending (initiative , policy & strategy...) and security			
13.6	Use of branding			

Section III: Factors Affecting the Performance of the Company

14. At what performance level (in terms of *capacity utilization, production, export, customer satisfaction, etc*) is found your company compared to other shoe factories?

    Low ☐ Medium ☐ High ☐

15. Rate the **impact** of the following ***General reasons to do not work at high performance*** in Ethiopian leather Footwear Manufacturing Industries. [***1 = medium; 2 = high; 3 = Critical***]

S.No	Reasons to do not work at high performance	1	2	3
15.1	Supplier related problems			
15.2	Problems within the Focal firm (shoe factory)			
15.3	Customer related problems			
15.4	Government policies & regulations			
	Others (Please specify)_____			

16. Which of the following **shoe manufacturing processes** faced frequently with problems which in turn affect the performance of your company?

Rate their **impact [*1 = medium; 2 = high; 3 = Critical*]**

S.No	Footwear manufacturing processes	1	2	3
16.1	Supplies and procurement process			
16.2	Research and development process			
16.3	Shoe production process			
16.4	Sales and marketing process			

17. How do you rate the **effect of the following factors on the performance** of your company [Please, put ✓ mark on the number that applies] **Rating scale:**

Low Effect =1	**Medium Effect =2**	**High Effect =3**

S.No	**Factors affecting performance**	**1**	**2**	**3**
17.1	Management *(plans & schedules, instructions, ability to adjust staff size & duties, coordination & balancing of material flow, supervision etc)*			
17.2	Materials *(raw materials & accessories -availability, quality, timeliness, import substitutes etc)*			
17.3	Machineries & equipments *(relevance, quantity, accuracy, speed, maintainability, age, etc)*			
17.4	Government regulations , policy and strategy			
17.5	Technology *(innovation, research & development, automation, information technology, etc)*			
17.6	Infrastructures *(transport facilities, means of communication etc)*			
17.7	Physical environment or working condition			
17.8	Organizational structure and culture			
17.9	Human resource *(Labor force -availability, mix, knowledge, skill, attitude, management, etc)*			
17.10	Existing marketing conditions			
17.11	Lack of coordination with suppliers and customers			
17.12	Energy			
17.13	Demographic & social changes			

Section IV: Performance Measurement, Improvement Practices and Problems

Please circle the appropriate response for question 18 - 21.

18. Over the last five years, how would you describe your organization's approach to the use of performance measurement?

    a) Falling interest b) unchanged c) increasing interest d) Heavy emphasis

19. What is your assessment of value of performance measurement to the organization?

    a) Waste of time b) Limited value c) Effective d) A key managerial control

20. Does your organization use performance measurement to identify areas that require strategic focus?

    a) Never b) Rarely c) Sometimes d) Frequently e) As a matter of policy

21. How often do you prepare your formal performance measurement reports?

    a) Quarterly b) twice a year c) annually d) If other please specify.....

22. What performance measures do you use for strategic decision making? Please specify if any

    _____

    _____

23. Over the past 5 years (1998-2002EC) indicate [with a ✓ mark] the **general trend** in your enterprise.

S.No.	Performance types	Decreasing	Constant	Increasing	Seasonal
23.1	Financial performance				
23.2	Operational performance				
23.3	Product/service quality performance				
23.4	Employee satisfaction/performance				
23.5	Supplier performance				
23.6	Export performance				
23.7	Market performance				
23.8	Customer satisfaction				
23.9	Other.....				

24. Does your company have a well organized & equipped department which is involved in research and development (R & D) duties to find out and introduce innovative methods and technologies that can improve performance? Yes ☐ on the way ☐ No ☐

25. Based on the performance measurement report please indicate the following information for the last five years.

Performance Item	Unit	1998E.C	1999 E.C	2000 E.C	2001 E.C	2002 E.C
Capacity utilization	%					
Production	Pairs					
Production cost	Birr					
Sales volume	Pairs					
Sales value	Birr					
Export volume	Pairs					
Export value	Birr					
Operating profit / profit margin	Birr					
Market share (local/foreign)	%					
Level of scraps and rejects	%					
Unfinished production order due to lack of material	%					
New shoe models introduced	Qty					

26. Have you introduced any method (model) or performance improvement program to ***measure & improve*** *performance* within the past 3 years (2000-2002 E.C)? [put ✓mark]

S.No.	Performance types	Yes	No	If your answer is "Yes" please specify
26.1	Financial performance			
26.2	Operational performance			
26.3	Product/service quality			
26.4	Employee satisfaction			
26.5	Supplier performance			
26.6	Marketing performance			
26.7	Customer satisfaction			
26.8	Innovation and employee learning			

If your answers are 'No', please indicate the reason(s)

_____

_____

27. Does the company identify problems of performance improvement? Yes ☐ No ☐

If your answer is yes, list them

_____

_____

28. Does the company have a ***training program***? yes ☐ No ☐

If the answer is yes, provide the number of employees involved in training per annum and list type of training_____-

_____

29. Does the company ***production system flexible*** in handling different volume of production and delivery time adjustments? Yes ☐ No ☐

30. Do you have "**standard time**" for each leather shoe style for all tasks required?

Yes ☐ No ☐

31. Does the company recognize and solve the ***quality related problems***?

Yes ☐ No ☐

32. Does the company identified ***customer requirements***? Yes ☐ No ☐

33. Does the organizational structure create ***suitable working environment***? Yes ☐ No ☐

If your answer is "yes", list them _____

_____

34. Have you implemented or going to implement the following ***performance measurement and improvement tools****?* If so, give your comments regarding the ***practices*** in your enterprise (like BSC, BPR, benchmarking, Quality management system, ERP etc...).

_____

_____

_____

_____

Your Experience based valuable Suggestions

35. What are the **reasons** to Ethiopian shoe factories **for not being fully operational or work at full capacity**? (You can circle more than one).

a) Raw material shortage b) Shortage of spare parts c) Frequent machinery breakage

d) Lack of market d) Working capital shortage e) Management problem

g) Lack of skilled man power h) other please specify_____

36. Rate the **impact** of following possible reasons to Ethiopian shoe factories to **do not** produce **quality shoe** which can be competitive globally. [***1 = medium; 2 = high; 3 = Critical***]

S.No	Reasons to low quality shoe	1	2	3
36.1	Lack of skilled labor/expert			
36.2	Lack of quality raw material (finished leather)			
36.3	Lack of efficient machines & equipments			
36.4	Lack of technology (IT, R&D, automation, innovation)			

37. Rate the **impact** of following possible reasons to Ethiopian shoe factories to **have high manufacturing cost** compared to the standard. [***1 = medium; 2 = high; 3 = Critical***]

S.No	Reasons to high manufacturing cost	1	2	3
37.1	High cost of raw material (finished leather)			
37.2	High cost of spare part and accessories			
37.3	High rework and scrap			
37.4	Lack of efficient machines & equipments			
37.5	Lack of technology (IT, R&D, method, innovation)			
37.6	Other (please specify).....			

38. In your opinion, what can be done by the following agencies to enhance performance of footwear manufacturing companies' in Ethiopia?

a) Government_____

_____

_____

b) Trade Unions & Manufacturing firms_____

_____

c) Academic institution

_____

_____

d) NGOs &Consultants_____

_____

_____

e) Associations_____

_____

_____

f) Any other agency (please specify)

_____

_____

Thank you for your cooperation and valuable information!

Appendix C: Questionnaire analysis

Table C1: Respondent profile and company information

S.N	Name of company	Respondent's position	Qualification level	Type of establishment and year
1	Ramsay shoe factory (S.C)	Manager	B.Sc.	Domestic, 1999E.C
2	Peacock Shoe factory	Planning manager	B.Sc.	Domestic, 1993E.C
3	Ras Dashen shoe factory P.L.c	Production manager	B.Sc.	Domestic, 1981E.C
4	Ok Jamaica shoe factory	Production plan & control head	B.Sc.	Domestic, 2001E.C (*reorganized year*)
5	Kangaroo shoe factory	Planning & production manager	B.Sc.	Domestic, 1978E.C
6	Anbessa shoe S.C	Production division head	B.Sc.	Domestic, 1939E.C
7	Tikur Abay shoe S.C	Production supervisor	B.Sc.	Domestic, -
8	LIDI	Footwear technologist and researcher	B.Sc.	Public, -
9	Productivity improvement officer (ASSC)	Head	B.Sc.	Domestic, 1939E.C

Note: The companies listed are only those that respond the questionnaire.

Table C2: Shoe manufacturing processes (percentage of being faced with problems)

S.No	Footwear manufacturing processes	1(2)	2(4)	3(8)	Total score	Percentage from total (%)
16.1	Supplies and procurement process	x	xxxx	xxxx	50	32.5
16.2	Research and development process	xxxxxxx	x	x	26	16.9
16.3	Shoe production process	xxxx	xx	xxx	40	26
16.4	Sales and marketing process	xxx	xxxx	xx	38	24.6

Note: 'x' represents frequency. *Score is given according to the impact level, i.e. medium effect (1) = 2; high effect (2) = 4 and critical effect (3) = 8. Similar fashion was considered to all questions.*

Table C3: Effect of factors on the performance of ELFFs

S.N	**Factors affecting performance**	**1(2)**	**2(4)**	**3(8)**	**Total score**	**% share**
17.1	Management *(plans & schedules, instructions, ability to adjust staff size & duties, coordination & balancing of material flow, supervision etc)*		xxxxx	xxxx	52	9.8
17.2	Materials *(raw materials & accessories -availability, quality, timeliness, import substitutes etc)*		xxxx	xxxxx	56	10.53
17.3	Machineries & equipments *(relevance, quantity, accuracy, speed, maintainability, age, etc)*	x	xxxx	xxxx	50	9.4
17.4	Government regulations , policy and strategy	xx	xxxxx	xx	40	7.5
17.5	Technology *(innovation, research & development, automation, information technology, etc)*	xx	xxxxx	xx	40	7.5
17.6	Infrastructures *(transport facilities, means of communication etc)*	xxxx	xxxx	x	32	6
17.7	Physical environment or working condition	xxxx	xxxx	x	32	6
17.8	Organizational structure and culture	xx	xxxxx	x	36	6.7
17.9	Human resource *(Labor force -availability, mix, knowledge, skill, attitude, management, etc)*	x	xxxxx	xx	42	7.9
17.10	Existing marketing conditions	xxx	xxxx	xx	38	7.1
17.11	Lack of coordination with suppliers and customers		xxxx	xxxxx	56	10.53
17.12	Energy	xxx	xxxxx	x	34	6.4
17.13	Demographic & social changes	xxxxx	xxx		24	4.5

Note: *1= low effect, 2 = medium effect and 3 = high effect*

Declaration

I hereby declare that the work which is being presented in this thesis entitled "**Performance Analysis and Improvement of Ethiopian Leather Footwear Factories: With special reference to Anbessa Shoe S.C."** is original work of my own, has not been presented for a degree of any other university and all the resource of materials used for this thesis have been duly acknowledged.

Tomas Cherkos	_____	_____
Candidate	Signature	Date

This is to certify that the above declaration made by the candidate is correct to the best of my knowledge.

Dr.-Ing Daniel Kitaw	_____	_____
Advisor	Signature	Date
Mr. Temesgen Garoma	_____	_____
Co-Advisor	Signature	Date