Ecole des Hautes Etudes Commerciales

Thesis Submitted in partial Fulfillment

Of the Requirements for Master's Degree in Commercial Sciences

Major: International affairs

TOPIC:

ISO 9001:2015 CERTIFIED QUALITY MANAGEMENT SYSTEM: AN EFFICIENT TOOL TO IMPROVE THE COMMERCIAL PERFORMANCE OF EXPORTING COMPANIES

CASE STUDY: EL SEWEDY CABLES

Submitted by:

Nour El Houda ALLEL

Supervised by:

Mrs.Hakima BOUDIFA

senior lecturer

5th Class

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Abstract

The world continues to grow, so does the globalization, both of national and international markets are getting wider with the continual emergence of new companies; as a result competition gets intense.

In order to maintain its leader position, companies must have a competitive advantage that let customers choose to purchase their products or services rather than the other companies offer.

So as to remain competitive and fulfill customers needs at the same time; companies start to work on their quality policy; because lately, customers became aware of this attribute and give it a major priority.

Quality management system is the ultimate tool for businesses to assure high level of quality, and certifying it became primordial, since clients are attracted to every product with the ISO 9001 label on its cover; due to the universal norms that ISO 9001:2015 series of standards requires.

Being a customer oriented company, the performance of this latter improves continuously since the main priority is satisfying the clients; their number will increase so as the market share enhancing by that the performance of the commercial performance

The purpose of this research is to investigate the effect of I SO 9001 version 2015 certification on Elsewedy cables Algeria commercial performance.

Key words: quality, quality management system (QMS), commercial performance, ISO 9001:2015, customer satisfaction.

Résumé

Le monde continue de se transformer plus rapidement et la mondialisation a énormément accru l'univers de la concurrence. Les entreprises qui souhaitent perpétuer leur image de marque ou fidéliser leurs clients doivent continuellement prouver les avantages de leurs produits ou services.

Un système de management de qualité efficace permet à toute entreprise d'améliorer ses performances en termes de satisfaction de la clientèle et d'opérations rentables et efficaces. Mais la certification de ce dernier est devenue une nécessité pour chaque entreprise pour assurer le bon déroulement de ses différentes fonctions et atteindre par la suite la performance globale.

La série de normes ISO 9001 version 2015 est basée sur le suivi continu de la qualité, l'évaluation et l'audit interne des processus. Il s'agit de documenter les meilleures pratiques qu'une institution s'engage à livrer à ses clients. Ces pratiques sont ensuite auditées en interne et en externe, afin d'évaluer le degré de performance, plus précisément, la performance commerciale qui induit à la création de richesse au sein de l'entreprise.

Le but de cette recherche est d'étudier l'impact de la certification ISO 9001 version 2015 du SMQ sur la performance commerciale de la société Elsewedy.

Mots-clés: qualité, système de management de la qualité (QMS), performance commerciale, ISO 9001: 2015, satisfaction client.

ملخص

يستمر العالم في التغير بشكل أسرع ومنذ أن زادت العولمة,زادت المنافسة بشكل كبير و حاد.لذلك يجب على الشركات التي ترغب في الحفاظ على علامتها التجارية أو الاحتفاظ بزبائنها أن تبرز باستمرار فوائد منتجاتها أو خدماتها.

يتيح نظام إدارة الجودة الفعال لأي شركة تحسين أدائها من حيث رضا العملاء والعمليات الفعالة من حيث التكلفة والكفاءة.

تعتمد سلسلة المعايير ISO 9001 لعام 2015 على المراقبة المستمرة للجودة والتقييم والمراجعة الداخلية للعمليات

يتعلق الأمر بتوثيق أفضل الممارسات التي تلتزم المؤسسة بتسليمها لعملائها. ثم يتم تدقيق هذه الممارسات داخليا وخارجيا ، من أجل تقييم درجة الأداء ، وبشكل أكثر تحديدا ، الأداء التجاري الذي يؤدي إلى خلق الثروة داخل الشركة.

يهدف هدا البحث إلى دراسة تأثير توثيق نظام إدارة الجودة بمعايير ISO 9001: 2015 على أداء شركة السويدي كابل.

لكلمات المفتاحية: الجودة نظام إدارة الجودة , الأداء التجاري, ISO 9001: 2015, رضا العملاء.

Dedication

I dedicate this work to my role model, My Mother.

You have always supported me from the first beginning.

You've been my main source of motivation and

I hope to be strong enough to be always at your best

expectations ...

May God bless you

Acknowledgment

I want to thank first of all "Allah" the Almighty who gave me the courage and the will to carry out this modest work.

I would like to use this opportunity to thank a number of people who have given me support in the course of my master degree

To begin, I want to thank my Mother, who believed in me during the past five years, without your prayers, your support, your love; I wouldn't be able to get here. I am eternally grateful to you.

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I can never be grateful enough for meeting my BESTIES, you have always been there for me, for the best and the worst moments, thanks to you, campus felt just like home, from the first year at the preparatory school until the graduation, you are absolutely the best part of my college journey.

This thesis wouldn't be possible without the assistance, guidance, and support throughout the process of this research; I would have not achieved the completion of this study without you Mrs. Hakima BOUDIFA so thank you so much.

I'm also truly thankful to my guardian angel Asma, , I am truly lucky to have you, I can't thank you enough for all the support you gave me during the last five past years.

I would like especially to express my gratitude to the lady who has been there for me during the internship, doing her best to supply me with the sufficient information, chief of Quality management department Miss "Nadia CHEKALIL"..

Finally I would thank the commercial department' staff for their time and help; as well as to all those who have contributed from near or far to the development of this thesis

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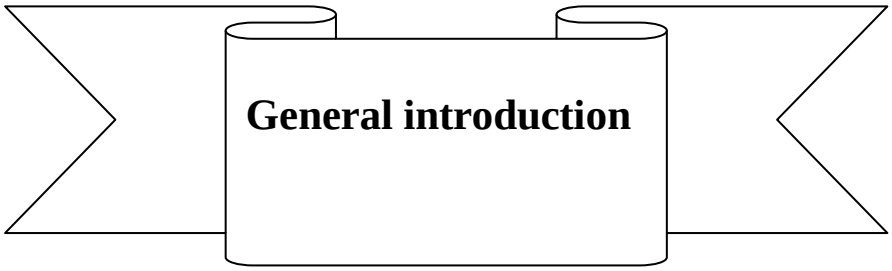
List of abbreviations:

abbreviation	Signification
QMS	Quality Management System
TQM	Total Quality Management
QMP	Quality Management Principles
QC	Quality control
PM	Performance Measurement
DMAIC	Define, Measure, Analyze, Improve, Control.
PDCA	Plan, Do, Check, Act
PDSA	Plan, Do, Study, Act
FMEA	Failure Mode and Effect Analysis method
HACCP	Hazard Analysis and Critical Control Points method:
5S	Seiri, Sieto, Sieso, Seiketsu, Shitsuke.
5M	Machine, Method, Material, Man, measurement.
ISO	International standards organization
CEN	Comite Européen de Normalisation
CENELEC	Comite Europeen de Normalisation Electrotechnique
ETSI	Européen Telecommunication Standard Institut
AFNOR	Association Française de Normalisation
UTE	Union International de Télécommunication
IANOR	Institut Algérien de Nomalisation

Summary:


General introduction

General introduction

Globalization and market expansion have made quality a competitive factor for the company Quality management has gone through a long period of time as it undergoes changes. Companies are increasingly open to global competition where factors contributing to competitiveness such as quality, competitive prices and on-time delivery will play a key role. For quality to be fully and truly a factor of competitiveness, it must not be limited to the product but it must be perceived in a much broader way encompassing both the product, the processes and the entire organization..

The motto "The customer is king" is even more true nowadays. As the quality of life improves, so does the demand for better products and services. Around the world, customers demand that the product or service for which they have paid for their specifications meet their expectations; and that it works as expected. Quality is then seen as the ability to meet the expectations of the consumer at a cost and a price, both "acceptable" one by the company, the other by the customer.

It is now possible to achieve the required level of quality in a product only by using a quality management system worthy of the name. Several companies around the world have understood this and include in their strategies this management of quality considered by Stora and Montaigne as "the implication of all the functions of the company which intervene in the life of a product or a service for the duration of the cycle, with all the staff, directing all the means towards the prevention of the failures, systematizing the customer-supplier relationship, taking into account all the needs of the customers relating to the quality, the deadlines, the price, performance, with the ultimate goal of total customer satisfaction, that is to say the zero - default ".

It is to facilitate this activity that the series of ISO 9001 standards has arrived, presenting itself as a management alternative, likely to lead a company to efficiency and effectiveness, and thus to excellence. The purpose of this set of standards will then be to provide a mechanism to identify and respond to customer needs, to avoid errors where possible and when they are not, to correct them so improve the process and respond to customer needs in a consistent, cost-effective way. Thus, the ISO 9000 version 2015 series enables the company to continuously improve the efficiency of its quality management system by using the improvement loop managed as a process: quality policy, quality

objectives , corrective and preventive actions to reach a high level of performance. The introduction of these principles in the company reflects an evolution:

- From the quality management to the management of the company;

- From product-quality to quality-customer satisfaction;

- And the quality-means towards the quality-results.

In Algeria, as everywhere else, quality management is essential for any company wishing to satisfy increasingly demanding customers, while also being competitive. Today, the customer is one of the most important players for the company, since he is the one who buys the product and / or solicits the service and makes the company prospers. It must be taken into account at all levels of the company. Some Algerian business leaders have understood this, and commit to a certified quality management system within their structures, source of high level performance and customer satisfaction.

The choice of our theme, which is " ISO 9001:2015 CERTIFIED QUALITY MANAGEMENT SYSTEM: AN EFFICIENT TOOL TO IMROVE THE COMMERCIAL PERFORMANCE OF EXPORTING COMPANIES ", is not a result of chance, it because the company certified its quality management system as the ISO 9001 version 2015 norms' require which will helps us to analyze its impact on the commercial performance, moreover, to extend our knowledge acquired in quality management module and apply this knowledge in the environment of a company.

Our choice for El SEWEDY Electric Company was because it began the quality process in accordance with the requirements of the ISO 9001 version 2008 standards from the first beginning, then adopted the latest version (ISO 9001:2015) recently; The biggest exporter of electric cables in Algeria with an exportation turnover of 18 million dollars in 2016; in addition, It is a national and international (Middle East and Africa) leader of electric cables.

By operating in 8 diversified energy segments; Cables & Accessories, Electrical Products, Energy Measurement &Management, Transformers, Communications, Wind Energy Generation, Solar Energy Solutions, Projects & Development; Elsewedy Electric has become a significant contributor to the economic growth through its development into a well-established group with extensive holdings, both locally and beyond borders in several other Middle Eastern & African countries as well as some European & Asian countries. With the

goal of providing customers a one-stop solution in terms of Designing, Engineering, Procurement and Construction.

For this reason it was considered useful to pose the following problematic "how can the certification ISO 9001:2015 of a QMS impact the performance of the commercial function of the company?"

In order to explicit the research question, it is imperative to set the following secondary questions:

-What are the performance indicators, related to the commercial function of the company?

-What is the relationship between a certified QMS in ISO 9001:2015 norms and the commercial performance of the company?

-what is the new addition of the ISO 9001:2015 that allows the company to measure its performance?

To answer our main questions well, we put the following assumptions:

Hypothesis 1: The indicator with which commercial performance is evaluated is based on sales volume and evaluation of clients 'satisfaction.

Hypothesis 2: There is a positive and significant relationship between the QMS and the commercial performance of the company.

Hypothesis 3: The use of evaluation of clients' satisfaction is an important tool to measure and improve the commercial performance of organizations.

In order to carry out our work well, we have opted for a deductive method, that is, we start from the general to the particular. Our review of the literature, enriched by documentary research on the main concepts and theories dealing with our subject, allowed us to insert our study in a descriptive and analytical framework.

In addition, our research was reinforced by a practical part which enabled us to carry out a field survey through the interview guides addressed to both commercial and quality management managers, where we could collect data that helped us identify risks and corrective actions, on the other hand, we have evaluated the survey of customer satisfaction, that the commercial department have conducted.

The work plan that we adopted is structured around two main axes: the theoretical part which consists of two chapters and the second part reserved for the case study.

We followed a logical development from theory to practice. So, our work will be structured as following:

The first chapter entitled "the quality management system" will be a theoretical presentation, in which we will make a small generality about quality, definition of the notion of quality, its different approaches, then what is quality management system, its components and its principles, and finally we will talk about standardization, definition of QMS according to the different standards, its principles and certification definition and its process.

The second chapter will focus on performance in a general way in first section and in the second section the performance of the commercial function and its indicators, and finally the link between the quality management system and the performance of the commercial function of the company.

The third and last chapter deals with the case of "Elsewedy Cables Algeria" in view to study the impact of quality management system certification on the commercial performance of the exporting company.

To conclude, a synthesis of the results is necessary to synthesize the data obtained during our analysis resulting from the interviews and the evaluation of customer satisfaction presented in chapter three. This is to present a list of recommendations and suggestions following the problems detected during the processing of the results.

Chapter I:

The Quality management system

Introduction

In today's global competition and economic liberalization, quality has become one of the important factors for achieving competitive advantage. There is an ever-increasing demand for quality product and/or services and this global revolution had forced organizations to invest substantial resources in adopting and implementing quality management system.

The purpose of this chapter is to define "quality, its history and perspectives" then "the quality management system with its principles and tools and methods" then sum up with "the standardization."

Section 01: conception and characteristics

1.1 The quality

Before the concept of QMS is defined, it is necessary to define the concept of quality:

1.1.1. Definition

One of the most notable quality management author, **Phil B. Crossby**, in his book "**Quality is Free**" , he viewed Quality as "*conformance for requirements*" and it requirements are coming from both producers and customers.[1]

Dr. Juran, the most acclaimed management and quality guru of the 20th century has defined quality as "*fitness for use*". Philip Crosby, another leading exponent of total quality management has defined quality as "*conformance to requirement".* [2]

W. Edwards Deming defined quality as follows: *Good quality means a predictable degree of uniformity and dependability with a quality standard suited to the customer.*

The underlying philosophy of all definitions is the same consistency of conformance and performance, and keeping the customer in mind.
Another definition that is widely accepted is Quality is the degree to which performance meets expectations; this definition provides a means to assess quality using a relative measure.

1.1.2. Evolution of quality

The development of Quality in modern era could be divided into 4 phases according to D.Garvin: Inspection, Statistical Quality Control, Quality Assurance and Strategic Quality Management. Each of these eras has its own characteristics and the latter is the development of the previous one.

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[1] Viet Quan, Hoang, Quality Management: The importance of the collaboration between Focal Firm and First-tier Supplier(s), Bachelor's thesis, JAMK University of Applied Science, April 2017,P7
[2] MADHU RANJAN KUMAR, *Total quality management as the basis for organizational transformation of Indian Railways*, DBA thesis, Southern Cross University, 20005, p 32

Before going to quality eras we start defining the quality control, **Crosby** explained the latter as a scientific measurement process, a gathering of statistics that evaluate the compliance of work by sampling its flow. This is intended to let operators continually measure the work that is in process so that non-conforming output is not produced[1].

a) Inspection era

Quality as a concept is a 20th century phenomenon that has its roots in the industry and management. Quality became an issue with the advent of industrialization and with the implementation of Fordism and **Taylorism** in early phase (adoption of new scientific approach to management based on strict division of labor as propounded by **F.W.Taylor**.[2] Owners start to gain awareness on how their products quality could affect their sale numbers. So, a new method, mass inspection, is introduced, where measuring system is used by supervisors to find out if there are any unqualified products. Still, the process at that time was just basically trying to fix the issues that already occurred, not trying to proactively find the root cause of all the issues.

The year 1922 marked a key point in the history of Quality where the first document mark formally linked inspection to quality control. In his paperwork, "The Control of Quality in Manufacturing", **G.S Radford** started to recognize Quality as a standalone function from the manufacturing process. He considered "the control of quality is the correct starting point for the economy" and inspection is used as a mean to control the set-up standards of quality control.[3]

b) Statistic Quality Control Era

Based on the first form of **Taylorism**, also known as scientific management, in 1931, **Walter A. Shewhart** put his hallmark on being the first to consider using statistics to control quality. He views quality is "the same kind of product differ among themselves, or, in other words, the quality of a product is expected to vary". He creates a quality control tool called statistical process control chart (SPC Chart) to control the variability of the product. **Philip Crosby** claimed in his book "quality is free ," that STATISTICAL PROCESS CONTOL (SPC) is process measurement in real terms, a gathering of numerical data and Management has to learn to recognize the signals that SPC produces and take preventative action as a result of that observation.[4]

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[1] Viet Quan, Hoang,Op Cit, p 7
[2] Sanjaya Mishra, Quality Assurance in Higher Education: An Introduction, © NAAC, June 2006,p 15
[3] Viet Quan, Hoang, Op Cit,p 9.
[4] Philip Crossby, Quality is Free. New York: McGraw-Hill,1979

Another turning point of this era is the formation of American Society for Quality Control. The organization was formed in 1946, is an aggregation of individuals and smaller societies who are enthusiasts about quality, sharing their studies and publications to each other, hosting conferences about the matter.

Up until WW II, the American is the leader in the Quality Control field, but post WW II, the Japanese started to catch up and identity some key elements on how to standardize quality. Their development was heavily influence by W. Edwards Deming, he presented to them a new direction on how to tackle the Quality issue by showing them the Shewhart's Cycles, later being referred to as Deming's Cycles or PDSA Cycles (PDSA stands for Plan-Do-Study-Act), suggested that the Quality needs to be continuously control and improve.

By refining and researching the American approaches, they identify the need to tackle problems concerning Quality Control from right from the start and not until the issue has already occurred. One of the leader of these quality initiatives in Japan is Kaoru Ishikawa with his development of the cause/effect diagram, also known as fishbone diagram.[1]

c) Quality Assurance Era

1950s marks the beginning of a new quality era, where the concept of quality evolved from being controlled to being guaranteed. By proactively looking at the problem concerning quality, the Quality Assurance era brings a new breed of tooling and approaches into play, with the four key elements: Cost of Quality, Total Quality Control, Reliability Engineering and Zero-defect.

Philip Crosby said that quality assurance is work discipline, a gathering of procedures that document what people are supposed to do. This is intended to organize information for the benefit of building a path for work to follow[2].

- **Cost of Quality: Production-focused**

Joseph M. Juran in his 1951's Quality Control Handbook moved the responsibilities to ensure quality to all departments with the emphasis on the top management being the driving force.

According to Juran, Quality Cost can be divided into two type: unavoidable costs and avoidable costs. Unavoidable costs are the type of cost that cannot be impacted. Meanwhile,

[1] Viet Quan, Hoang, Op Cit ,pp14,16
[2] Ibid, p13

avoidable costs are the cost that we can get around if the quality of the product and service is good enough[1].

- **Total Quality Control**

Total Quality is the term that was coiled by The New York Times. It definition is to achieve and maintain the highest quality throughout all level of operation within a company by working efficiently and producing high-quality products and services.

Armand Feigenbaum, suggested that the standard of quality can be achieved if more emphasis is put into managerial duty and on collaboration between multiple departments, or as Feigenbaum called, “inter-functional teams”.

A few years later, during 1960s, a branch of Total Quality Control started to develop in Japan by latching onto Feigenbaum’s concept. The two concepts are still being used as criteria for their own national quality award, the Malcolm Baldrige National Quality Award for American, and the Deming Prize for Japanese.[2]

- **Reliability Engineering**

By adapting the military maintenance and logistics method in performance checking during the Korean Civil Wars, the US Engineers had adopted the method of Reliability Engineering.

It is the study of the dependability of a product or service during its lifetime. By testing the product, engineers could identify the probability of failure, using statistics model to theory craft and predict the performance of the product under different interval of time and conditions.

Several techniques are used at the time, some of which is still widely use in maintenance management these days, such as:

- Failure mode and effect analysis (FMEA): how systematically a product could fail;
- Individual components analysis: whether to remove or fix the components;
- Derating: require items to be used under their specifications level;
- Redundancy: parallel replacement to important components[3].

[1] Viet Quan, Hoang, Op Cit ,p 13
[2] ibid ,pp 14,16
[3] Ibid.

d) Zero Defect

Zero defect is a management method of rallying and motivating workforce to achieve defects-free production and manufacturing. Before this, Quality Control is the study of how to reduce the number of defects, but there are no attempts whatsoever on trying to achieve perfect results. So, in 1961, at Martin Company, a missile company, tryout an ambitious plan of not relying on inspecting but rather on raising their worker's morale and awareness, to produce perfect missiles, which carried out successfully. The CEO of Martin Company, James F. Halpin, later in his book Zero Defects: A New Dimension in Quality Assurance, he explained that if perfection were never to be expected in the first place, and mistakes are being treated as inevitable, then defects will happen. So, if the mindset can be changed, it is possible to achieve zero defects. Zero Defects later is emphasized by Philip B. Crosby where he asserted that the only performance indication is Zero Defects. In his book "Quality is Free", he dismissed the thinking that Zero Defects is a motivation based program. Instead, he thought that when Zero Defects are reached, the Cost of Quality will be the Quality of the product itself, thus urged that everybody should have the mindset of "doing the job right the first time", since people still think that they cannot avoid the inevitable error.

Quality Assurance era has set up a bridge of connection between company divisions on how to achieve the standard goal. People start to recognize how costly it is if Quality is ignored. But the approach to achieve Total Quality is still very reactive and only revolved around Defects. The next era moves away from that approach and focus more on gaining competitive edges through Quality.

e) Strategic Quality Management Era

From late 1970s to early 1980s, Quality is being looked at proactively and the general thought of achieving Quality always comes with a cost has disappeared. With the contributions coming from all preceding eras, Strategic Quality Management era marked the shift from product focus to customer focus, making Quality a competitive advantage. The Total Quality Control soon evolved into Total Quality Management, also known as Total Productive Maintenance, after incorporate all the previous quality elements into one whole new paradigm. The responsibility is still lying on everybody's shoulder, but the process had transformed control to management. This evolution started to occur when managements started to realize the connection between profits and quality.

Total Quality Management

Total Quality Management is defined as:

"Management philosophy and company practices that aim to harness the human and Material resources from an organization in the most effective way to achieve the objectives of the organization". [1]

The first largely dimensioned implementation of Total Quality Management was made by Toyota as a part of their lean production strategy. The concept of TQM is mainly used to improve the quality of the end product and to reduce deficiencies in the production which leads to cost reductions.[2]

The 5 Pillars supporting the TQM system are:

- **Management Commitment**

It is essential for a company to successfully implement TQM as resources and management leadership is required.

- **Customer Focus**:

Woodruff, Schumann and Gardial define customer satisfaction as "the positive or negative feeling about the value received through the use of an organization's product or services."

- **Quality Costs:**

Crosby defines cost of quality as "the price of conformance and non-conformance, where the price of conformance is that which is needed to ensure things turn out right, and the price of non-conformance is the expense incurred in doing things wrong." Quality is many things to many people, but quality is also not some things that have been assumed over time, it's an expensive process, an expensive product and time consuming[3].

- **Quality Systems**

Any company can develop its own quality systems to ensure that principles, procedures and processes are appropriate and adequate for its business operation.

Unlike the division of work in scientific management, TQM requires the integration of tasks

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[1] PHAIK LAN GOH, the implementation of total quality management in small and medium enterprises, a Thesis Submitted for the Degree of Doctor of Philosophy, The University of Sheffield, 2000, p, 23

[2] M. W. B. Abeykoon and Chamaru De Alwis, The Impact of Total Quality Management Practices on Export Performance of Apparel Exporters in Sri Lanka, Kelaniya Journal of Human Resource Management,2015,p106

[3] KENNETH ROSE, Project quality management why, what and how ,J. Ross publishing, USA, 2005 , pp 07,08.

and work into a distinct stage or process carried out by individual workers or by a group or team when the process is complex. Oakland conceptualized an organization as quality chains that cut across conventional internal boundaries, where each process in the quality chain has an internal customer. Employees must be trained to use the seven quality tools, which are: process flow Charts, tally charts, histograms, pareto analysis, scatter diagrams and control charts.

When problem solving teams such as quality control circles, work improvement teams and cross-functional teams are formed, team members must be trained in the appropriate techniques and tools as well as team-building.[1]

- **Continuous Improvement**

This is the continual search for excellence and customer satisfaction. Both of these escalate and evolve into ever higher standards and greater expectations so that any company wanting to rank among the market leaders must actively engage in this pillar of TQM to improve growth and productivity. Employees need to actively participate in "weeding out the last bug from a produce and process" and management must give workers the opportunity to use their brains and make a contribution to the improvement of their companies".

1.1.3 Perspectives of Quality

Quality can be defined in many other ways in addition to the above definitions. The different quality definitions shed light on different perspectives of quality. These different perspectives, described below, include quality of manufacturing, product quality, customer quality, environmental quality and process quality.

a) **The quality of manufacturing**: concentrates on the manufacturing process and ensures that the products are manufactured as defined. The objective of developing the quality of manufacturing processes is to predict the demand and minimize the manufacturing of nonconforming products.

b) **Product quality:** focuses on the design of the product, what the product should look like, how much it should weigh, how many features there should be and so on. Basically product quality highlights the importance of designing, when defining it.[2]

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[1] PHAIK LAN GOH, op cit, p46

[2] Roope Seppälä, Implementing a Quality Management System for an Engineering and Services Company,a thesis submitted for Bachelor of Engineering , Helsinki Metropolia University of Applied Sciences,2015,p4.

c) Customer quality specifies quality according to how customer requirements meet with the products. Customer quality is good if the expectations for the product meet the requirements of the customer.

d) Environmental quality: concentrates on how much the product strains the society and environment. When companies are taking into consideration the society and environment, they should also focus on the product lifecycle and product ingredients.

e) Process quality: can be related to everything in business. There is always an input that starts the process and it ends with an output. The quality of a process is defined by setting metrics for the process. By defining and measuring the processes, it enables to mitigate interruptions in the interfaces and gives a possibility to cost-benefits.

There are still plenty of different perspectives of quality, but the ones introduced here help form an idea of its dimensions, to what quality can be linked. Quality is a truly vast subject, but the next step is to understand quality management.

1.2 Quality management and quality management system

1.2.1. Definition

The ISO 9000 standard defines **quality management** as "coordinated activities to direct and control an organization with regard to quality". In other words quality management is one of the approaches of management, which focuses on quality. Quality management is based on every stakeholder's participation and it aims at long-term success.

Generally the **quality management system** is a management system, where an organization's activities correspond to the quality of products, services and management. According to ISO 9000 the quality management system is defined as a system "to direct and control an organization with regard to quality." The quality management system has to define and manage a set of activities, which are using resources to add value to a customer's product or service. These sets of activities are considered as processes[1].

1.2.2. Quality management principles

Quality management principles" are a set of fundamental beliefs, norms, rules and values that are accepted as true and can be used as a basis for quality management. The QMPs can be used as a foundation to guide an organization's performance improvement. They were

[1] Roope Seppälä, Op Cit, p 5

developed and updated by international experts of ISO/TC 176, which is responsible for developing and maintaining ISO's quality management standards.

The ISO standard has defined eight principles that top management should take into consideration when pursuing better performance which are:

- **Customer focus**

The first principle is about customer focus, because the organizations are dependent on their customers. Organizations should therefore understand the customer's current and future needs and also fulfill their requirements and strive to exceed their expectations.

The customer-focused organization operates on its market proactively, which results in gaining customers and eventually increasing profit. Also the customer-focused organization gets its resources used more efficiently towards enhancing customer satisfaction, as everyone in the organization is focused on the customer. In addition the customers become loyal customers, which show in recurring business event with the same company.

- **Leadership**

The second principle in quality management is leadership. A mutual purpose and direction for the organization should be achieved through the leader's communication. In-side the organization there should be an environment in which the personnel can fully participate in reaching the organization's objectives.

A benefit of implementing the leadership principle appears in the form of commitment and motivation among employees towards common objectives in the organization. An-other benefit would be harmonized activities that are in line with each other. Additionally the principle would decrease miscommunication between different levels of organization.[1]

- **Involvement of people**

The next principle focuses on getting the personnel involved in every level of the organization. If the philosophy of the organization is that every employee is essential for the organization and their abilities are valued, then the organization is bound to get full benefits from the employee.

One benefit would be satisfied employees who are committed to their work. When the employees are satisfied it brings creativity to their work, which helps the organization reach their objectives. In addition the employees are bound to be less resistant of continual improvement. On the contrary they are participating and contributing to it.

[1] Roope Seppälä, Op Cit, p 5.

- **Process approach**

The fourth principle underlines the importance of thinking everything through processes. The main idea is that targets are reached more efficiently when the operations and resources of the organization are managed through processes.

One benefit of using a process approach in the organization is lower costs. Also the improvement opportunities tend to get more attention and prioritization. Additionally the results will be more predictable and consistent by using a process approach principle.

- **System approach to management**

The fifth principle emphasizes a systematic way of managing the processes of the organization to achieve objectives. Leaders should identify, understand and manage all internally linked processes as a system. Recognizing the processes as a system gives a better view of the organization and its improvement areas.

Using a system approach helps to achieve the wanted results by integrating processes to be in line with each other. Also this principle allows focusing on key processes in the organization.

- **Continual improvement**

Principle number six puts emphasis on having continual improvement on every level of the organization. Continual improvement affects the overall performance and would improve the operative site of the organization.

Continual improvement helps the organization to be more flexible in reacting to opportunities and threats. Additionally having aligned improvement activities at all levels of the organization is strategically wise. Continual improvement develops the capabilities of an organization, which is shown in development of performance.

- **Factual approach to decision making**

The seventh principle stresses that the organization should have a factual and systematic approach to decision making. Effective decision-making is based on information and analysis of data. The metrics and processes need to be in shape and also the metrics needs to measure correct targets, so the management can perform rational decisions.

Applying this principle should make decisions clear and transparent to the people, who are involved into the decision-making. Moreover, it enables demonstrating the results of past decisions and it provides a possibility to review and modify the decisions later[1].

[1] Roope Seppälä, Op Cit, p 6.

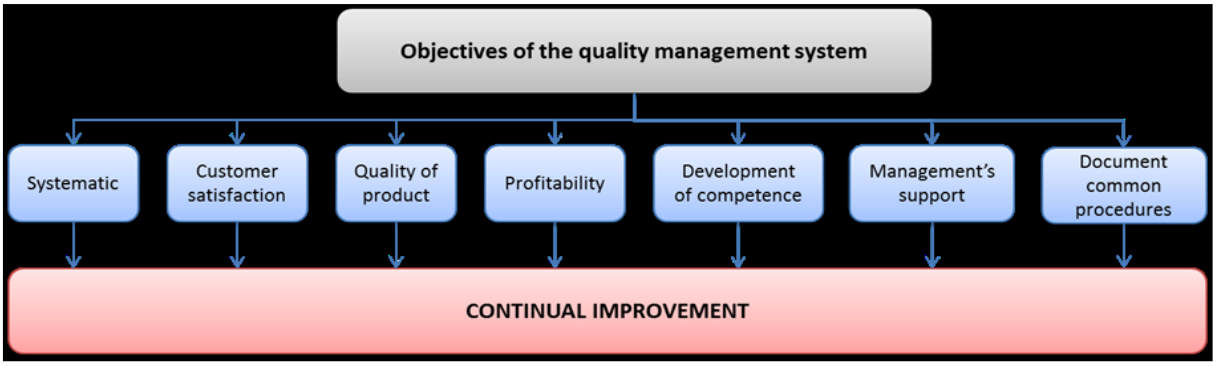
- **Mutual beneficial supplier relationship**

The last principle is about mutual beneficial supplier relationship, the purpose of which is to create a win-win situation for both parties. The organizations should be interdependent of each other and their businesses should create value for both parties. Strong and healthy relationships help both parties to react quickly to the changes in the business, which creates possibilities to obtain market share. In addition the parties improve their communication and help each other to optimize the costs and resources.[1]

1.2.3. Objectives of the quality management system

The quality management system may have several different objectives in the organization. The objectives vary in every organization according to the size of the organization or the industrial field of operation. The following Figure presents a few alternatives for an organization's objectives for the quality management system which are: Systematic objectives, Customer satisfaction, quality of products, profitability, development of competence management's support and document common procedures; all of these objectives are set to achieve continual improvement.

Figure I-1: Different objectives of the quality management system.



Source: Roope Seppälä, Implementing a Quality Management System for an Engineering and Services Company,a thesis submitted for Bachelor of Engineering , Helsinki Metropolia University of Applied Sciences,2015

[1] Roope Seppälä, Op Cit, p 6.

1.2.4. Requirements related to QM

- **General Requirements**

  - Determine needs and expectations of customers and others (e.g., legislation, industry regulation).
  - Establish a quality policy and quality objectives for the organization;
  - Determine processes and responsibilities to achieve the quality objectives;
  - Identify and provide necessary resources to achieve the quality objectives;
  - Establish methods to measure the effectiveness and efficiency of each process;
  - Apply these measurements to determine the effectiveness and efficiency of each process;
  - Determine means to prevent nonconformities and eliminate their causes;
  - Establish and implement a process for continuous improvement of the quality management system[1].

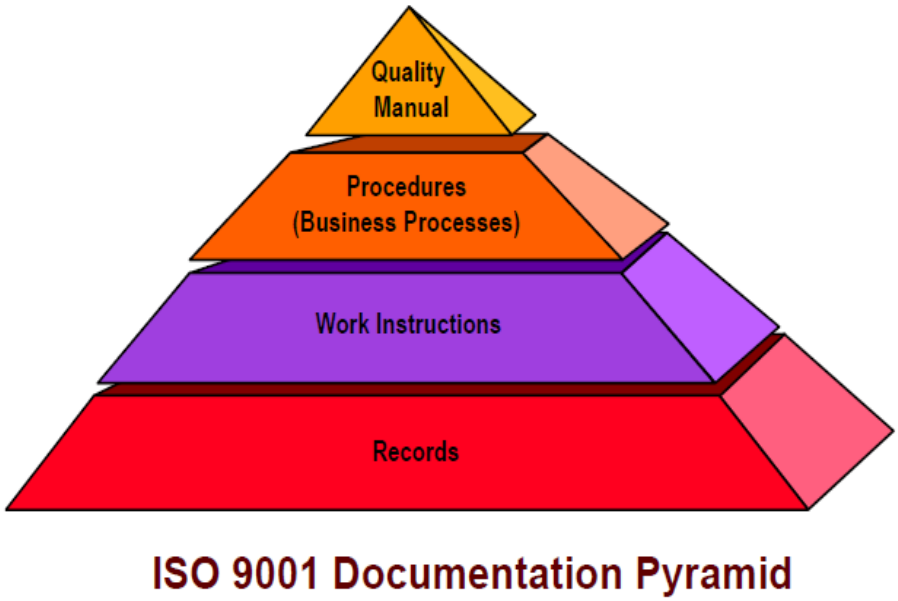
- **Documentation Requirements**

  - Describes information structure of your QMS.
  - Should think in terms of "information" management and control rather than "document" management.

To achieve ISO 9001 certification companies must establish, document and implement a QMS and maintain its effectiveness in accordance with the standard. Controlled documents are typically organized and written according to a hierarchy shown below[2].

[1] Silveraldo Mendes F. Bento et al. (eds.), Quality Management in ART Clinics: A Practical Guide, Springer Science and Business Media, New York, 2013,p 11.
[2] ETI Group, Implementing an ISO 9001 Quality Management System, 2014, p14,19.

Figure I-2: ISO 9001 documentation pyramid



Source: ETI Group, Implementing an ISO 9001 Quality Management System, 2014, p14.

- **Quality Manual** addresses each area of the standard with a statement explaining how the organization maintains compliance to requirements.

- **Procedures** are "high-level" documents that detail how the organization's processes are designed and controlled.
- **Work Instructions** are very specific and detail all necessary instructions required for performing a specific task.
- **Records** must be maintained to show compliance to quality system requirements.
- **Documents:** Quality System documents should detail processes and procedures to ensure they meet the requirements of the standard. This will ensure that:

  - Employees perform the same task, the same way, every time
  - Information is recorded in the same way, every time
  - New employees are trained to a consistent standard.

Section 02: Tools and Methods of Quality

Quality management is more easily understood and implemented when we resort to some methods and tools, great allies of managers, as information, knowledge, and intuition are the main pillars for success.[1]

The combination of methods and tools must be harmonious in order to extract as much knowledge of the processes as possible.

2.1 Quality Tools

2.1.1 Check List

Check sheets are simple forms with certain formats that can aid the user to record data in a firm systematically. Data are "collected and tabulated" on the check sheet to record the frequency of specific events during a data collection period. They prepare a "consistent, effective, and economical approach" that can be applied in the auditing of quality assurance for reviewing and to follow the steps in a particular process. Also, they help the user to arrange the data for the utilization later.

The main advantages of check sheet are to be very easily to apply and understand, and it can make a clear picture of the situation and condition of the organization and help to identify frequently problems, but they don't have effective ability to analyze the quality problem into the workplace.

Figure I-3: example of Check sheet for telephone interruptions

Telephone Interruptions

Reason	Day					
	Mon	Tues	Wed	Thurs	Fri	Total
Wrong number	𝍸	||	|	𝍸	𝍸 ||	20
Info request	||	||	||	||	||	10
Boss	𝍸	||	𝍸 ||	|	||||	19
Total	12	6	10	8	13	49

Source 3: Neyestani B, "Seven Basic Tools of Quality Control: The Appropriate Quality Techniques for Solving Quality Problems in the Organizations." March,2017, p 2.

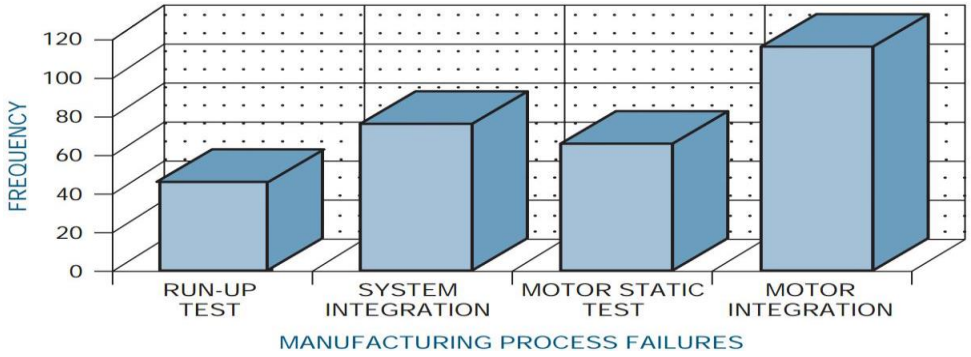
[1] Silveraldo Mendes, Op. Cit, P13

2.1.2 Histogram

It is a very useful tool to describe a sense of the frequency distribution of observed values of a variable. It is a type of bar chart that visualizes both attribute and variable data of a product or process, also assists users to show the distribution of data and the amount of variation within a process. It displays the different measures of central tendency (mean, mode, and average).

It should be designed properly for those working into the operation process can easily utilize and understand them. Also, a histogram can be applied to investigate and identify the underlying distribution of the variable being explored[1].

Figure I-4: Histogram for variables



Source: Neyestani B, "Seven Basic Tools of Quality Control: The Appropriate Quality Techniques for Solving Quality Problems in the Organizations." March ,2017,p 3.

2.1.3 Pareto Diagram

A Pareto chart is a special type of histogram that can easily be apply to find and prioritize quality problems, conditions, or their causes of in the organization[2]. It is a type of bar chart that shows the relative importance of variables, prioritized in descending order from left to right side of the chart.

Objective: to prioritize problems to be solved:

- ✓ Select the problems to be compared;
- ✓ Set the standard for comparing data;
- ✓ Select the time period for analysis;

[1] Omachonu, V. K. & Ross, J. E. "Principles of total quality" ,3rd ed, Boca Raton, Florida,2004.
[2] Juran, M., and Godfrey, A. Juran's quality handbook (5th ed.). Washington, DC: McGraw-Hill Companies, Inc.,1998.

- ✓ Collect data from each category;
- ✓ Compare the frequency of each category;
- ✓ Record the totals in descending order;
- ✓ Calculate percentages to the various selected categories[1].

Figure I-5: Pareto diagram: main reasons for patients' complaints about clinical tests

Source: https://www.slideshare.net/sandroesteves/how-to-implement-qms-in-a-fertility-centre visited 15/02/2018 at 2:10

2.1.4 Fishbone diagram

Kaoru Ishikawa is the founder and developer of the 'Fishbone' diagram (or Cause-and-Effect Diagram) in 1943, for root cause analysis and the concept of Quality Control (QC) circles**.**

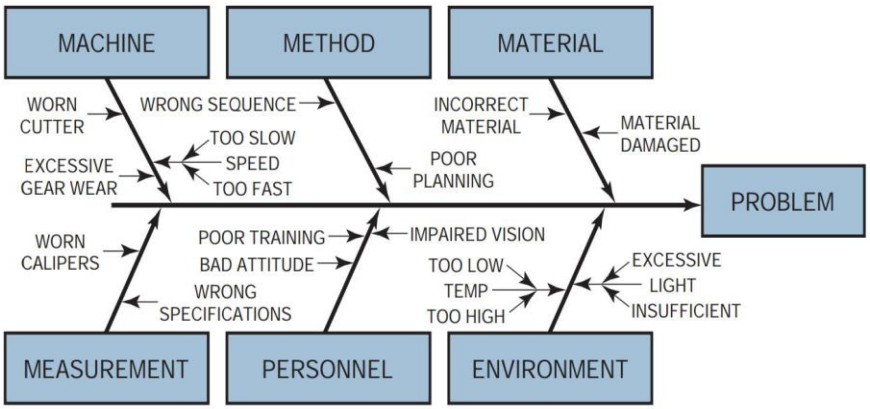
The cause and effect diagram is a problem-solving tool that investigates and analyzes systematically all the potential or real causes that result in a single effect[2].

Objective: to prioritize the factors that may cause an undesired effect:

- ✓ Describe the problem clearly;
- ✓ Brainstorm and record data on those involved;
- ✓ Draw the diagram with the given problem on the right side;
- ✓ Indicate the categories of causes;
- ✓ Group the brainstorm results by category;
- ✓ Elect the most important causes with the group[3].

[1] Silveraldo Mendes, Op. Cit, p13
[2] Neyestani B, op. Cit ,p5
[3] Silveraldo Mendes, Op. Cit, P14

Figure I- 6: The cause and effect diagram (Fishbone Diagram).

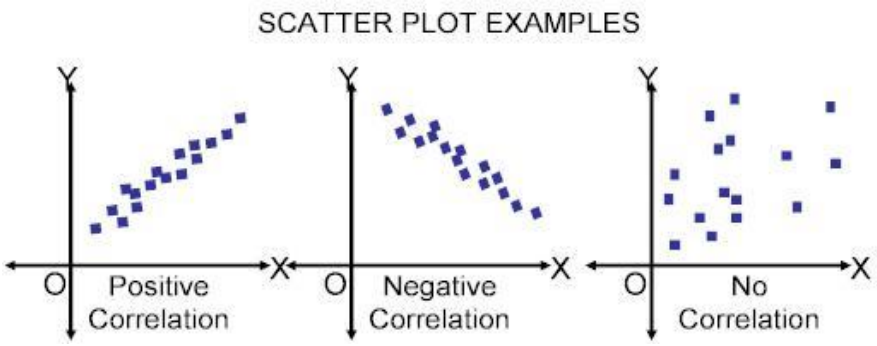


Source : Neyestani B, "Seven Basic Tools of Quality Control: The Appropriate Quality Techniques for Solving Quality Problems in the Organizations." ,March ,2017,p 5.

2.1.5 Scatter Diagram

Scatter diagram is a powerful tool to draw the distribution of information in two dimensions, which helps to detect and analyze a pattern relationships between two quality and compliance variables (as an independent variable and a dependent variable), and understanding if there is a relationship between them, so what kind of the relationship is (Weak or strong and positive or negative). The shape of the scatter diagram often shows the degree and direction of relationship between two variables, and the correlation may reveal the causes of a problem. Scatter diagrams are very useful in regression modeling. The scatter diagram can indicate one of these following correlations between two variables: Positive correlation; Negative correlation, and no correlation, as demonstrated in Figure I-7:

Figure I-7: Scatter Diagrams



Source: Neyestani B, "Seven Basic Tools of Quality Control: The Appropriate Quality Techniques for Solving Quality Problems in the Organizations." ,March ,2017,p6.

2.1.6 Flowchart

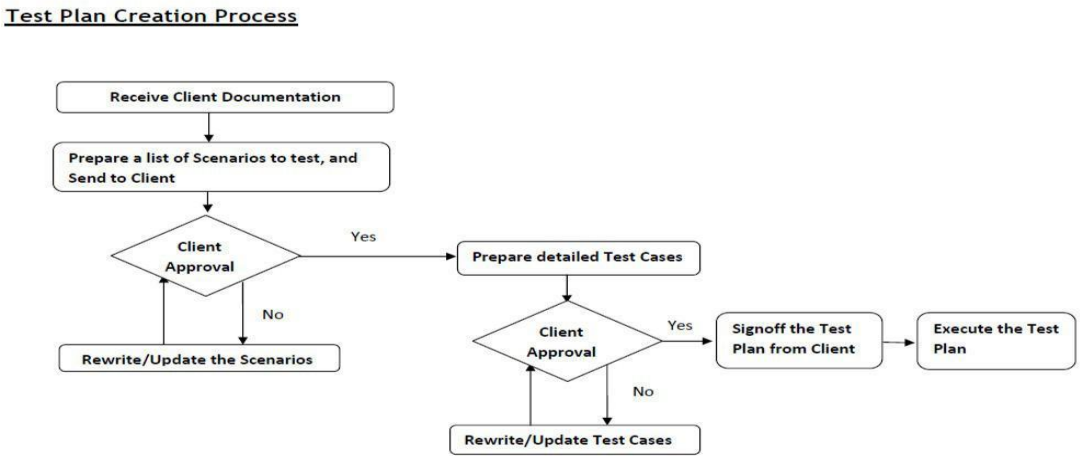
Flowchart presents a diagrammatic picture that indicates a series of symbols; to describe the sequence of steps exist in an operation or process.

On the other hand, a flowchart visualize a picture including the inputs, activities, decision points, and outputs for using and understanding easily concerning the overall objective through process[1].

Objective: to visualize a process and identify improvement opportunities:

- ✓ Assemble all information about the process to be studied;
- ✓ Draw the current flowchart;
- ✓ Study the critical points and draw the flowchart with the steps that the process must follow if all goes well;
- ✓ Compare and analyze the differences between flowcharts[2].

Figure I-8: Flow chart of review process



Source: Neyestani B, "Seven Basic Tools of Quality Control: The Appropriate Quality Techniques for Solving Quality Problems in the Organizations." ,March ,2017,p7.

[1] Neyestany Behnam,Op.Cit,P16
[2] Silveraldo Mendes, Op. Cit, P6,7.

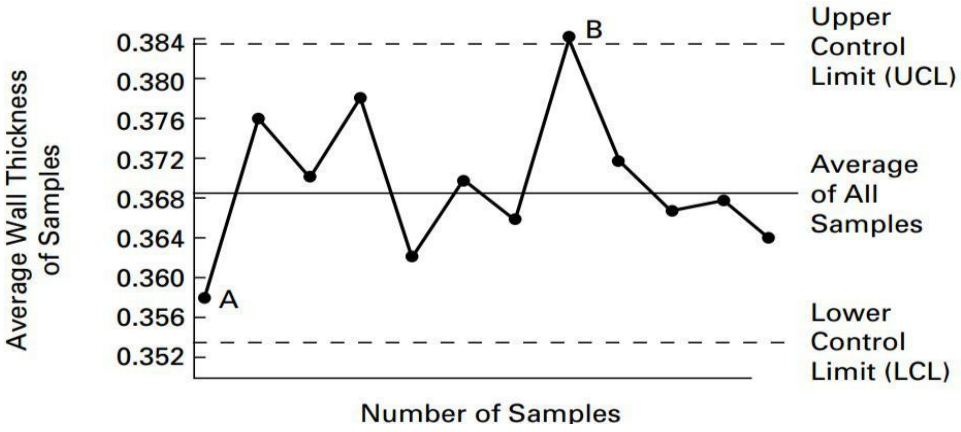
2.1.7 Control chart

Control chart or Shewhart control chart was introduced and developed by Walter A. Shewhart in the 1920s at the Bell Telephone Laboratories, and is likely the most "technically sophisticated" for quality management. A control chart is a special form of "run chart that illustrates the amount and nature of variation in the process over time".

Objective: to monitor the stability or instability of a process:

- ✓ Define mean values produced by the process;
- ✓ Define the maximum variation the process reaches;
- ✓ Obtain the maximum values allowed by the specification;
- ✓ Prepare the chart and record the values obtained in uniform periods of time[1].

Figure I-9: The Shewhart control chart



Source: Neyestani B, "Seven Basic Tools of Quality Control: The Appropriate Quality Techniques for Solving Quality Problems in the Organizations"March,201, p 8.

2.2 Group creativity techniques

2.2.1 Brainstorming: A technique used to generate and collect multiple ideas related to project and product requirements. Although brainstorming by itself does not include voting or prioritization, it is often used with other group creativity techniques.

2.2.2 Nominal group technique: a technique that enhances brainstorming with a voting process used to rank the most useful ideas for further brainstorming or for prioritization[2].

[1] Neyestani B, Op .Cit ,p 8.
[2] Link: https://www.slideshare.net/abdullahalkhadrawy/pmp-pmbook-5th-ch-5-scope-management visited 25/02/2018 at 1h48

2.2.3 Idea/mind mapping: a technique in which ideas created through individual brainstorming sessions are consolidated into a single map to reflect commonality and differences in understanding, and generate new ideas.

2.2.4 Affinity diagram: a technique that allows large numbers of ideas to be classified into groups for review and analysis.

2.2.5 Multi-criteria decision analysis: a technique that utilizes a decision matrix to provide a systematic analytical approach for establishing criteria, such as risk levels, uncertainty, and valuation, to evaluate and rank many ideas.

Conclusion

This study identified that is very essential to apply all seven quality tools for troubles hooting issues within production processes in the organizations. Doubtlessly, all of the aforementioned quality tools should be considered and used by management for identifying and solving quality problems during producing the products and services. Thus, the production processes can be affected and improved by multiple factors of these statistical quality tools. Also, Mirko et al. designed and developed an effective layout for using these quality in the organizations based on the performance of them, in order to apply appropriately these quality tools for solving quality problems and quality improvement[1].

[1] Mirko S., Jelena J., Zdravko K., & Aleksandar V, Basic Quality Tools in Continuous Improvement, Journal of Mechanical Engineering, 2009, pp 1,9.

2.3 Quality Methods

2.3.1 PDCA method

Definition

In a central process, the actual results of an action are compared with a target or a set point. The difference between the two is then mentioned and corrective measures are adopted if the disparity becomes large. The repeated and continuous nature of continuous improvement follows this usual definition of control and is represented by the PDCA (Plan-Do-Check-Act) cycle. This is also referred to as the Deming circle, named after W. E. Deming. Another variation of PDCA is PDSA (Plan, Do, Study, Act).

Objective: to monitor, correct, and improve a process through a consistent and effective method:

- ✓ Set the goals to be achieved and actions to achieve them;
- ✓ Train all those involved in the outlined guidelines planned and implement the process;
- ✓ After implementation, collect data to compare with what was planned;
- ✓ After achieving the goals, formalize the process, making it a standard[1].

Figure I-10: PDCA Cycle

Source: Silveraldo Mendes F. Bento et al. (eds.), Quality Management in ART Clinics: A Practical Guide, Springer Science and Business Media, New York, 2013, p17.

[1] M. Sokovic, D. Pavletic, K. Kern Pipan, Quality Improvement Methodologies – PDCA Cycle, RADAR Matrix, DMAIC and DFSS, Journal of Achievements in Materials and Manufacturing Engineering ,2010

2.3.2. Six Sigma method

Six Sigma is a quality program that seeks to improve processes so that no more than (3or 4) mistakes occur per million opportunities. One commentator describes its approach as "much like that of Total Quality Management, perhaps with a more aggressive goal. Proponents suggest that the relentless focus on error reduction provides a structure and focus missing from other QI techniques. Six Sigma has a five-step improvement cycle corresponding to the acronym DMAIC with the aim to continuously reduce defects:

- ✓ Define by identifying problems, clarifying scope, defining goals;
- ✓ Measure performance against requirements, gather data, refine problems/goals;
- ✓ Analyze by developing hypotheses, identifying root causes, analyzing best practices;
- ✓ Improve by conducting experiments to remove root cause, testing solutions, measuring results, standardizing solutions, implementing new processes;
- ✓ Control by establishing standard measures to maintain performance and correcting problems as needed[1].

In Six Sigma programs the PDCA cycle is called (DMAIC): Define, Measure, Analyze, Improve, Control.

2.3.3 Failure Mode and Effect Analysis method

FMEA is a tool used in manufacturing to evaluate potential failures and their causes and to prioritize potential failures according to risk, pointing to actions to eliminate or reduce the likelihood of occurrence.

FMEA is used to identify potential failure modes, determine their effect on the operation of the product, and identify actions to mitigate the failures. A crucial step is anticipating what might go wrong with a product. While anticipating every failure mode is not possible, the development team should formulate as extensive a list of potential failure modes as possible[2].

FMEA is a Tool FMEA is a tool that allows you to:

- Substantially reduce costs by identifying system, product and process improvements early in the development cycle;
- Create more robust processes;

[1] Link: http://slideplayer.com/slide/5691446/ visited 12/02/2018 at 00h39
[2] Ibid.

- Prioritize actions that can decrease the likelihood of failure occurrence and the associated risk;
- Prevent System, Product and Process problems before they occur;
- Most importantly, evaluate the system design and processes from a new vantage point: the impact on the customer (most often the end user).

FMEA provides a systematic process to

- Identify potential causes of the failure mode;
- Identify and evaluate potential failure modes;
- Identify and quantify the impact of potential failures on customers by assigning numerical values based on ranking systems;
- Identify and prioritize actions to reduce or eliminate the potential failure;
- Implement an action plan based on assigned responsibilities and completion dates;
- Document the associated activities.

Purpose of FMEA

- FMEAs provide a cost effective tool for maximizing and documenting the collective knowledge, experience, and insights of the engineering and manufacturing community;
- FMEAs provide a format for communication across the disciplines;
- The process provides logical, sequential steps for specifying product and process areas of concern;
- FMEAs are most cost effective when they are applied early to new designs or processes.

Benefits of FMEA

- Contributes to improved designs for products and processes;
- Higher reliability;
- Better quality;
- Increased safety;
- Enhanced customer satisfaction;
- Contributes to cost savings;
- Decreases development time and re-design costs;
- Decreases warranty costs.

- Decreases waste, non-value added operations;
- Contributes to the development of control plans, testing requirements, optimum maintenance plans, reliability growth analysis and related activities.

2.3.4 Hazard Analysis and Critical Control Points method

HACCP is a systematic approach to the identification, assessment, and control of hazards. While some definitions directly refer to food—reflecting the near exclusive use to date of HACCP in food production and service—the process is usable in the manufacturing, distribution, and use of any product or service that may experience safety problems. A "critical control point" is a point, step, or procedure at which control can be exercised to prevent, eliminate, or minimize a hazard[1].

- **History of HACCP**

HACCP was developed in 1959 by the Pillsbury Company to ensure the safety of food in the new U.S. space program. In 1973, the U.S. Food and Drug Administration (FDA) mandated the first use of HACCP by regulation for all low-acid canned foods after a public outcry over a botulism outbreak in canned soups. Following other food borne illness outbreaks in the early 1990s, FDA expanded HACCP requirements for seafood and for fruit and vegetable beverages and is now considering HACCP for all foods under its jurisdiction. In 1997, the U.S. Department of Agriculture began implementation of HACCP in all meat and poultry operations under its jurisdiction. HACCP has also become the international food production and service safety standard[2].

- **HACCP approach**

- Conduct a hazard analysis preparing a list of steps in a process where significant hazards occur and identifying preventive measures;
- Identify critical control points—steps at which controls can be applied to prevent, eliminate, or reduce a safety hazard to acceptable levels;
- Establish critical limits for preventive measures associated with each identified critical control point;
- Establish monitoring requirements for each critical control point and procedures to

[1] Institute of Medicine (US) Committee on Data Standards for Patient Safety; Aspden P, Corrigan JM, Wolcott J, et al., editors, Washington (DC): National Academies Press (US); 2004.
[2] https://www.foodsafetymagazine.com/magazine-archive1/december-2009january-2010/happy-50th-birthday-to-haccp-retrospective-and-prospective/

monitor results to adjust the process and maintain control;

- Establish corrective actions to be taken when a critical limit deviation occurs;
- Establish procedures to verify on an ongoing basis that the HACCP system is working correctly;
- Establish record-keeping procedures to document the HACCP system.

2.3.5 KAIZEN method

The Japanese word "KAIZEN" means improvement, improvements without spending much money, involving everyone from managers to workers, and using much common sense. The Japanese way encourages small improvements day after day, continuously. The key aspect of KAIZEN is that it is an on-going, never-ending improvement process. It's a soft and gradual method opposed to more usual western habits to scrap everything and start with new[1].

- **Kaizen activities can be conducted in several ways**

First and most common is to change worker's operations to make his/her job more productive, less tiring, more efficient or safer. To get worker buy-in as well as significant improvement, worker is invited to cooperate, to reengineer by himself and with the help of team mates.

The second way is to improve equipment, like installing foolproof devices (poke yoke) and/or changing the machine layout.

Third way is to improve procedures. All these alternatives can be combined in a broad improvement plan.

The first stage is reviewing the current work standards to check the current performance and then estimate how and how much performance can still be improved. When new leap is done, upgrade the standards.

Kaizen is controlled, It is not acceptable to let anybody change designs, layouts or standards for some pretended "improvement". Most often Kaizen is controlled by improvement groups and everybody, regardless to rank or position, is encouraged to suggest through suggestion submitting system (TEIAN in Japanese). Suggestions will be discussed by authoritative committee. Suggestions likely to be turned into application are usually rewarded according to the global gain. Improvement idea can be a response to a problem exposed by

[1] Link: http://www.qualitiamo.com/en/improving/kaizen/method.html/ visited 14/02/2018 at 15h30

KAIZEN committee or come out spontaneously[1].

2.3.6 FIVE S method

- **Definition**

5S is the Japanese concept for House Keeping.

1) Sort (Seiri)
2) Straighten (Seiton)
3) Shine (SeISO)
4) Standardize (Seiketsu)
5) Sustain (Shitsuke)

It's a tool in which staff at every level can participate to enhance the organization's ability to improve is 5S, which is an easy technique that uses the same language for the whole establishment. Everyone from top management to the front-line people can participate in the 5S program[2].

Definition of 5 S

The 5S program focuses on organizational cleanliness and standardization to improve profitability, efficiency and safety by reducing waste of all types. It gives organizations the five keys to a total- quality management[3].

Five steps to five S

Step 1: Sort

The first of the 5Ss is concerned with removing unwanted items from an area. this often involved what is called a 'red tag attack" that involves touching every item in an area(and the touching part is important when you realize that people stop seeing clutter and mess after it has been in place for as little as two days) and determining whether or not the item is in use and required. If it is not in use, and it is not a safety critical item, or is not required, then it should be removed from the area and put into a "red tag area", with the term Red Tag being from the days when people tagged faulty or unwanted items with a literal red

[1] Link: http://www.qualitiamo.com/en/improving/kaizen/method.html/ visited 14/02/2018 at 15h30
[2] Evans JR. Quality and performance excellence. 6th ed. Mason, OH: South Western Cengage Learning; 2010.
[3] EDWARD MOULDING, 5S a visual control system for the workplace, author house, central Milton Keynes, 2010, p7

tag. After a while items in the red tag area will either need to be returned (because they are in fact required), transferred or disposed of[1].

Step 2: Set

Having removed the unused or unwanted items, set is about giving all the things that are required a logical home and it is at this stage people consider marking floors, desks, shelves, etc and giving items marked homes. If appropriate, you can go further, for example by designing shaped trays with "cut-outs" for equipment to fit into that quickly show what is missing from the box by the resultant empty space. However, with increased intensity comes increased costs of implementing set and you will need to decide how far to take it[2].

Step3: Shine

The third step is concerned with two things; making less mess and ensuring things are put back at the end of a shift or day

Step 4: Standardize

The fourth step is about ensuring that everyone understands the process, it is standardized as far as possible across the team and the process for managing 5S is documented[3].

Step 5: Sustain

The fifth step is concerned with ensuring that the other four steps 'stick' (which is alternative name you will sometimes read in place of sustain) and the basis of this are audits and management involvement to stop old bad habits slipping back in[4].

Closing points

5S is a robust and widely used implementation tool. Sometimes people will refer to a sixth S, namely "Safety", but in reality you should be thinking about safety at every step in the process rather than as a separate step in its own right.

[1] MARK EATON, lean for practitioners, academy press, USA, 2008, pp 57,58
[2] Ibid.
[3] Ibid.
[4] Ibid.

Benefits of 5S

Some of the benefits to the staff and the organization are:

- Gives staff an opportunity to provide creative input;
- Makes the workplace more pleasant to work in;
- Adds job satisfaction;
- Reduces defects to improve quality;
- Reduces delays to improve reliability of deliveries;
- Promote safety by reducing injuries;
- Improves availability of equipment by reducing breakdowns;
- Increases customer confidence , trust and loyalty and reduces customer complaints;
- Builds a culture of continuous improvement and team spirit[1].

Who should be involved?

Adopting 5S at every level of staff will strengthen the daily management of an organization, as it is an easy technique to apply and it speaks the same language across the whole organization. Everyone, from top management to front-line staff-needs to participate to make the program a success[2].

[1] 1EDWARD MOULDING, op cit, pp 12,13
[2] Ibid, p 10

Section 03: Standardization and Certification

3.1 Standardization

Today, no company can be allowed to be unaware of the standardization. The standards are tools of regulation of the market put at the disposal of the whole of the economic partners. They are used by the industrialists like undeniable references. They suggest solutions to technology matters and commercial concerning the products and the services.

3.1.1 Definition

Standardization is the process of fixing certain norms for the product. These norms are established by customs or tradition or by certain authority. It involves determination of basic characteristic of a product on the basis of which the product can be divided into various groups.

It also means determining the standard of product to be produced with regard to size, color, form, weight, shape and quality. Standards are model products which form the basis of comparison. Without standardization the rule of caveat (law) prevails and there may be confusion and unfairness. The term of standardization is used in a broader sense.

3.1.2 History of standardization

The international standardization started in the electro technical field with creation, in 1906, international electro-technical Commission (CIS). The first work fundamental in other fields were undertaken by the International federation of national associations of standardization (ISA), created in 1926. Within the ISA (international standard association), the accent carried in a dominating way on mechanical engineering.

The activities of the ISA ceased in 1942 because of the Second World War. After on a meeting held in London in 1946, the delegates of 25 countries decided to create one new international organization “whose object would be to facilitate coordination and the international unification of the industrial standards, the new organization, ISO, entered officially in function on February 23rd, 1947[1].

[1] Link : https://www.ISO.org/about-us.html visited 5/3/2018 at 12h10

3.1.3 The standardization entities

The standards are elaborated by standardization bodies, the most known are:

At the European level

- The CEN (Comité Européen de Normalisation)-1961
- The CENELEC (comité Européen de Normalisation pour l'Electrotechnique)
- The ETSI (European Standard Telecommunication Institute)

At the French level

- AFNOR (Association Française de Normalisation)
- UTE (Union Technique de l'Electricité)

At the international level

- The CIS (Electrotechnical Commission International)
- The ITU (International Telecommunication Union)
- The ISO (International Organization for Standardization)

At the Algerian level

There are three main official Algerian governmental organizations involved in developing and enforcing the standards used and applied in Algeria. These organizations are:

ALGERAC (Agence Algérienne de l'Accréditation)

ALGERAC, a government body established through the French-Algerian cooperation, is responsible for certifying quality; This organization is under the authority of the Ministry of Industry. Algeria officially wishes to be able to sign association agreements with the EU in order to reach equal treatment concerning norms, accreditation and certification.

ALGERAC is the only Algerian accreditation organism. It ensures that the national regulations concerning accreditation of the laboratories and the organization of certification inspections meet international norms. It enables the customer to benefit from the relevant protections and ease of data availability[1].

INAPI (Institut National Algérien de la Propriété Industrielle)

[1] Link: http://www.state.gov/e/eb/tpp/ visited 5/3/2018 at 14h02

INAPI is responsible for industrial and intellectual property rights protections. This entity handles mainly the deposit and registration of Patents, Trademarks & Copyrights.

INAPI tries to promote innovation through distributing the technological information contained in the patents' documents.

INAPI also tries to ensure a control on licensees' contracts and the implications on the protection of intellectual property rights. Enforcement of these protections, however, remains weak.

Algeria is part of several international organizations and agreements, including:

- The World Intellectual Property Organization (WIPO);
- The Paris Convention for the Protection of Industrial Property;
- The Madrid Agreement Concerning the International Registration of Marks;
- The Madrid Agreement for the Repression of False or Deceptive Indications of Source on Goods;
- The Lisbon Agreement for the Protection of Appellations of Origin[1].

Facts about INAPI

Over 2,000 inventions are protected through patents. Over 80,000 brands are protected and over 195,000 registered. Over 1000 drawings and illustrations are registered.

INAPI produces a bimonthly publication: the Official Bulletin of Industrial Property (BOPI).

IANOR: Algerian Institute of Normalization

This body is in charge of elaborating, publishing and distributing all relevant data on Algerian norms. It is also responsible for providing conformity certifications to Algerian norms, issuing quality labels and delivering appropriate authorizations to use brands according to the applicable regulations.

IANOR officials have participated in research seminars both in Algeria and abroad. The institute provides the appropriate environment to enable the establishment of norms and their application. IANOR's efforts, however, are not providing enough substance to enforcement efforts, and the length of a litigation process can exceed most reasonable expectations.

[1] Quality Guide, Quality Control and Standardization, Algiers book edition, p8.

IANOR establishes and publishes norms which must be respected. Algerian norms prevail in the country, and if a norm does not exist or if a disagreement must be settled, then the ISO norm will prevail.

ISO norms available in Algeria are principally ISO norms 14000, 14001 version 1996, 9001 version 2000 and 9000. For example, ISO norm 14001 version 1996 is about environmental management. It reduces to a minimum the negative effects of one's activity on the environment[1].

In 2000, the government initiated a program enabling companies to go through the certification process. The result was that 167 of the 178 registered companies owned by the private sector or the State have been awarded ISO 9001 2000 compliance. These companies have firmly expressed their commitments towards quality, pricing and minimum delays.

To date, Algeria respects ISO norms in the following areas:

_ Papers, cardboard and its raw materials;

_ Food;

_ Packaging;

_ Toys' safety;

_Cosmetics.

3.1.4 Role of standards

Standards play a critical role in:

- Ensuring the safety, quality and reliability of products, processes and services;
- Efficient production;
- cost reduction through competition;
- Supporting regulation.

By providing a bridge that connects research to industry, standards are equally valuable as a tool for promoting innovation and commercialization through:

- the dissemination of new ideas and good practice;
- validation of new measurement tools and methods;
- the implementation of new processes and procedures.[2]

[1] Link: http://www.ianor.dz/Site_IANOR/A_propos.php?id=1 visited 15/3/2018 at 22h40

[2] Link: https://www.ISO.org/standards.html/ visited 10/.3/2018 at 20h05

3.2 International Organization for Standardization

3.2.1. Definition of ISO

ISO is an independent, non-governmental international organization with a membership of 161 national standards bodies.

Through its members, it brings together experts to share knowledge and develop voluntary, consensus-based, market relevant International Standards that support innovation and provide solutions to global challenges.

ISO's Central Secretariat is situated in Geneva, Switzerland.

3.2.2 Definition of Standards

International Standards make things work. They give world-class specifications for products, services and systems, to ensure quality, safety and efficiency. They are instrumental in facilitating international trade.

ISO has published 22041 International Standards and related documents, covering almost every industry, from technology, to food safety, to agriculture and healthcare. ISO International Standards impact everyone, everywhere[1].

3.2.3. ISO 9000 family - Quality management

The ISO 9000 family addresses various aspects of quality management and contains some of ISO's best known standards. The standards provide guidance and tools for companies and organizations who want to ensure that their products and services consistently meet customer's requirements, and that quality is consistently improved[2].

Standard ISO 9001:

ISO 9001 is the internationally recognized Quality Management System (QMS) standard that can benefit any size organization. Designed to be a powerful business improvement tool, ISO 9001 Quality Management certification can help you to:

- Continually improve, streamline operations and reduce costs;
- Win more business and compete in tenders ;
- Satisfy more customers;
- Be more resilient and build a sustainable business;
- Show you have strong corporate governance

[1] Link: www.ISO.org. visited 14/03/2018 at 19h40
[2] Ibid.

- Work effectively with stakeholders and your supply chain[1].

Standard ISO 9001:2015

ISO 9001:2015 sets out the criteria for a quality management system and is the only standard in the family that can be certified to (although this is not a requirement). It can be used by any organization, large or small, regardless of its field of activity. In fact, there are over one million companies and organizations in over 170 countries certified to ISO 9001. This standard is based on a number of quality management principles including a strong customer focus, the motivation and implication of top management, the process approach and continual improvement. Using ISO 9001:2015 helps ensure that customers get consistent, good quality products and services, which in turn brings many business benefits.

3.3 Certification

A certificate as a formal sign of an implemented QMS can be used in marketing as a proof of a responsible organization that obeys common business rules, thus leading to marketing benefits like expanding the business (e.g. perceived better quality and enhanced consumers' purchase intention, new customers, new orders, entering)

3.3.1 Definition

Certification is "the provision by an independent body of written assurance (a certificate) that the product, service or system in question meets specific requirements"[2].

3.3.2 Types of certifications

a) Product certification

Product certification is the process of certifying that a certain product has passed performance tests and quality assurance tests, and meets qualification criteria stipulated in contracts, regulations, or specifications (typically called "certification schemes" in the product certification industry)[3].

Most product certification bodies (or product certifiers) are accredited to ISO/IEC Guide 65:1996, an international standard for ensuring competence in those organizations performing product certifications. The organizations that perform this accreditation are called

[1] Link: www.ISO.org. visited 14/03/2018 at 19h40
[2] Quality Assurance and Standardization Quality Guide, GAL Edition, 2004, p37
[3] Ibid, p 38

Accreditation Bodies, and they themselves are assessed by international peers against the ISO 17011 standard.

b) Personnel certification

A Personnel Certification Body is an organization that awards credentials to individuals meeting specific competence requirements relating to a profession, an occupation, a job or a portion of a job. A personnel certification body develops criteria against which an individual needs to demonstrate competencies and ensures that these criteria are held by applicants before certifying them.

Most personnel certification bodies offer professional certification if an individual meets requirements such as a minimum number of years of related working experience, minimum education level and having passed a certification exam or equivalent.

Many personnel certification bodies are accredited by accrediting bodies to the ISO/IEC 17024 standard, which was designed to harmonize the personnel certification process worldwide[1].

c) Quality management certification

The certification allows attesting that an organism or a part of its activities answers in definite requirements defined in norms for the systems of management. A management system allows assuring the realization of a product or a service in accordance with explicit and implicit expectations in quality, in health, in security and in management of environment.

3.3.3 The certification process

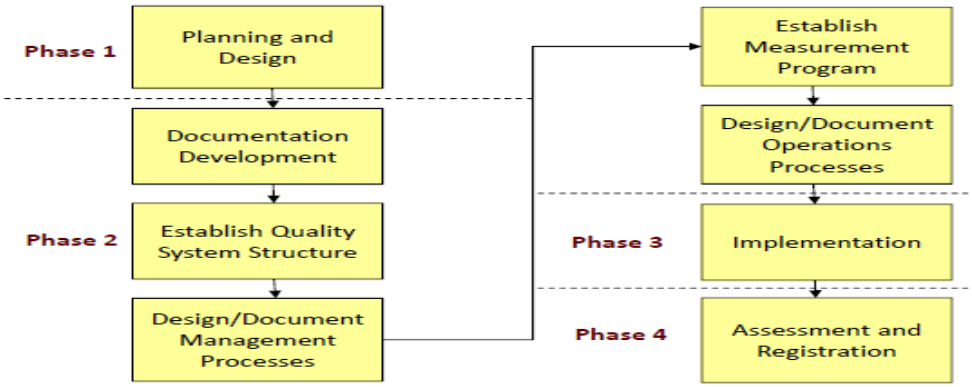
The most important parts of the certification process are:

- Definition of the purpose of certification;
- Pre-audit (optional);
- Gap-analysis and diagnosis of current situations in comparison to standards;
- The objective is to evaluate the process conformity to the requirements of Quality Management;
- The main phases of Gap analysis include: Purpose, definition, Audit and Non-conformity reports and opportunities for improvement.
- Certification audit divided into two steps:
  Step 1: Certification preparation revision;
  Step 2: Certification preparation evaluation;

[1] Quality Assurance and Standardization Quality Guide, Op Cit ,p38.

- Certificate issue, valid for three years;
- Monitoring audit, in order to check the conformity maintenance is kept up to standard and continuous improvement;
- Three year validity - when expired, the certificate can be renewed in accordance with the abovementioned procedure[1].

Figure I-11: four phases of certification.



Source: Tamer Degirmenci, Standardization and Certification in Lean Manufacturing, Science in Mechanical Engineering Waterloo University, Waterloo, Canada, 2008 p58

3.3.4 Certification benefits

- ✓ Become more cost efficient;
- ✓ Increased credibility and competitiveness;
- ✓ Lower costs and shorter cycle times through effective use of resources;
- ✓ Enhanced customer satisfaction and improved customer loyalty leading to repeat business;
- ✓ Increased revenue and market share obtained through flexible and fast responses to market opportunities;
- ✓ Integration and alignment of internal processes which will lead to increased productivity and results;
- ✓ Consistency in the delivery of your product or service;
- ✓ Improved communication, planning and administration processes[2].

[1] link: http://www.dimitto.eu/en/service/certifications/quality-management-certificate-ISO-9001.html. Visited 25/03/2018 at 11h20

[2] Link: https://www.certificationeurope.com/certifications/all-certifications. visited 25/03/2018 at 14h32

Conclusion

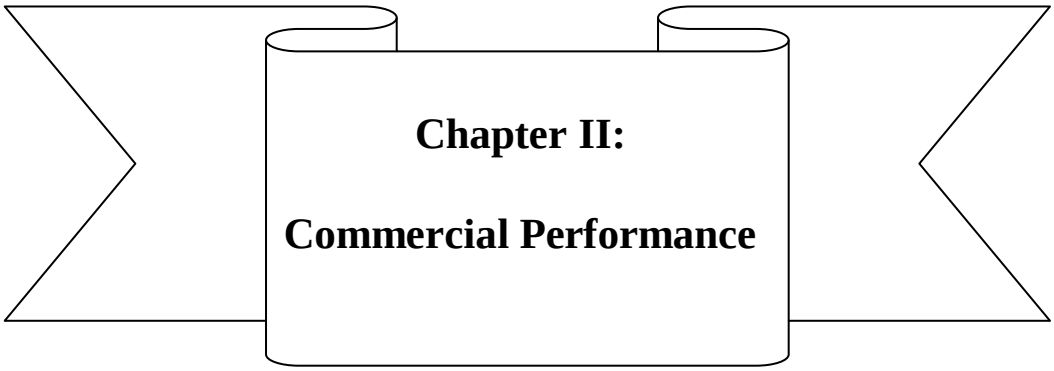
The quality management system meets the requirements of the series ISO 9001 standards; it is implemented to detect non-conformities through problem-solving tools and methods in order to improve their performance.

An ISO 9001 certification increases organizations' ability to satisfy customer needs and customers can rely on that, since the products and services provided are of a high good quality. It has also the role of a tool to streamline the organization's processes and make them more efficient; for that, an increase of sales, and access to new markets will be achieved.

Certification in ISO 9000 series eliminates obstacles and most importantly helps companies to open up internationally.

The ISO 9001 certification is a warranty certificate for the company, since it is a proof of a successful, powerful organization and for the customer who seeks a good quality

Implementing a certified quality management system is a strategic decision that will improves business performance.


Chapter II:
Commercial Performance

Introduction

In the past few decades, a number of organizations have implemented Quality Management Systems to create a culture of continuous quality improvement and improve business performance.

Performance is evaluated by the assessment of an employee, efficiency and effectiveness of procedures and processes, equipment or other factor to gauge progress toward predetermined goals.

If ISO 9001 is well applied, it is expected to make a significant improvement to a company's performance.

In this chapter we will talk about performance in the first place then the commercial performance, and finally the link that exists between a QMS and performance of the commercial function.

Section 01: Conceptions of Performance

1.1. Definition of performance

The term "performance" is currently experiencing a high degree of complexity and to specify its contents it must consider several sides of activities. Assessing the global performance of an entity is useful primarily for shareholders, because they are the ones who invest and assume the greatest risk and as a consequence, the company must first meet their expectations.

Performance is often used to assess the work done by an enterprise and to assess competitiveness. In literature there is a unified vision about the performance concept and especially the business performance concept. Definitions of this concept may be abstract, or general, less defined, or clearly defined.

The performances are defined abstractly by various authors such as[1]:

- **Porter . M** considers that "enterprise performance depends on its ability to create value for its clients.
- **Marmuse . C** considers that performance is "the one that can keep the distance on a long term, compared to the competitors, by using a strong motivation (based on systems of reward) of all the organization's members."
- referring to the business activity, the performance is defined by **Niculescu M. & Lavalette G**.as "a state of competitiveness of the economic entity, reached by a level of efficiency and productivity that assures a sustainable presence on the market".
- **Verboncu I. & Zalman** M. appreciate that "performance is a particular result in the Management, Economics, marketing field; which gives characteristics of competitiveness, efficiency and effectiveness to the organization and to the structural and procedural components.
- **N. Albu & C. Albu** define the performance of an entity by "reference to other concepts, as follows:
  - Performance means to reach the strategic objectives;
  - Performance is an unstable balance between efficiency (as an indicator of endogenous firm) and effectiveness (which shows the relationship with business partners).

[1]Lect. Monica ,Violeta Achim Phd, Business performances: between profitability, return and growth, Faculty of Sciences Economics and Business, Romania. pp 2,3

- Performance implies, as an economic concept, the creation of wealth and the value in the organization."

The business dictionary define performance as the accomplishment of a given task measured against preset known standards of accuracy, completeness, cost, and speed. In a contract, performance is deemed to be the fulfillment of an obligation, in a manner that releases the performer from all liabilities under the contract.[1]

For determining the global performance of the entity, there are two categories of assessment criteria: quantitative (measurable) and qualitative (non measurable).

Therefore, a system for assessing the performance of economic entities usually has two parts namely:

• Quantitative component, which has its content, given by economic and financial analysis;

• Qualitative component, which has its content given by extra financial analysis which includes non-quantifiable aspects but very representative for the global performances of a firm. Extra financial analysis is relatively recent, appeared in the new context of sustainable economic development, where ethical and moral values gather new valences.

The extra financial analysis would include the quality aspects related to: social responsibility of the entity in relation to various partners, intangible capital value and / or the quality management team, quality of activity, other elements such as: company image quality of products / services.

1.2.Characteristics of performance

"Performance management practices must derive from and be tailored to fit each organization's changing requirements."[2] In other term, each organization has its corporate objectives that are set to be met for a specific period of time.

Performance management in this way is a planned process of which the primary elements are agreement, measurement, feedback, positive reinforcement and dialogue. It is concerned with measuring outputs in the in terms of delivered performance compared with expectations expressed as objectives.

[1]Link : http://www.businessdictionary.com/definition/performance.html visited 27/03/2018 at 18h49

[2] Mohrman, A.M., Jr., and Mohrman, S.A.), Performance Management is Running the Business. Compensation and Benefits Review, , July-August,1995, p 6.

Furthermore, it provides the setting for ongoing discussions about performance, which involves the mutual and continuing review of achievements against objectives, requirements and plans. Inputs and values play a significant role in achieving performance. Inputs are characterized in the form of knowledge, skills and behaviors required to generate the expected results. Employee needs are identified by defining the requirements and assessing the extent to which the expected levels of performance have been achieved through the effective use of knowledge and skills through appropriate behaviors that maintain core values[1].

In addition, performance management is a continuous and flexible process that involves managers and those whom they manage acting as partners within a framework that sets out how they can best work together to achieve the required results. It relies on consensus and collaboration rather than control and compulsion.

The performance system developed has to comprise of the following characteristics[2]:

Results Oriented: It will focus primarily on outcomes and outputs

Selective: it will only focus on significant indicators of performance

Reliable: it will ensure that data is accurate and consistent

Useful: it will provide information which will be valuable to decision makers

Accessible: it will be regularly communicated to the appropriate audience

Incentive: it will reward accordingly on the basis of performance.

1.3.Concepts related to performance

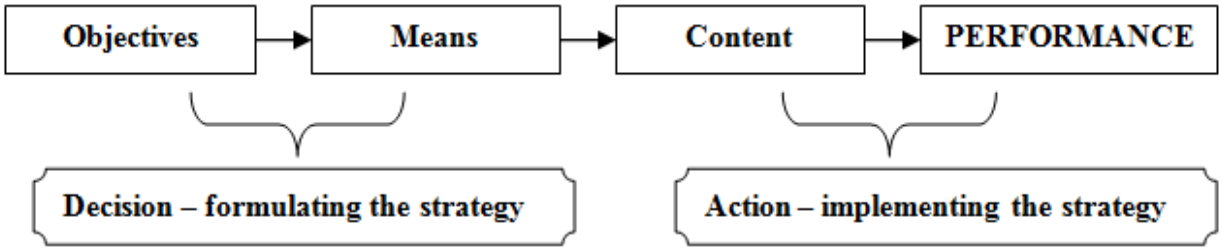
1.3.1. "Performance" versus "efficiency" and "effectiveness"

To study the performance of the organization is to analyze the organizational behavior and performance improvement can come only from an improvement in behavior. These considerations make clear reference to the organizational strategy[3].

[1] Catherine Willens, "Armstrong's Handbook of Human Resource Management Practice (11th ed.)", Industrial and Commercial Training, Vol. 41 Issue: 6, 2009, pp 344,346.
[2]Link: https://www.ukessays.com/essays/business/definitions-of-performance-management-business-essay.php viewed 20/03/2018, at 11h30.
[3] Cosmin Octavian & DOBRIN Gheorghe & N. POPESCU Veronica & Adriana POPESCU & Cristina Raluca POPESCU, the concept of performance in business organizations, case studyon the employee performance in Romanian business organizations,2012.

Bourgeois proposes in this respect the following model[1]:

Figure II-1: Relation "strategy" – "performance"



Source: adapted from Bourgeois, L.J, Performance and consensus, Strategic Management Journal, vol. 1. nr. 30,1980.

The model above is based on individual rationality and the separation between formulation and implementation of strategy, Gordon proposes a complex model concerning performance that takes into account the characteristics of the current environment and need for entrepreneurial strategies. The model contains six determiners of success: founder, opportunity, resources, environment, strategy and time, which integrates a holistic framework.

Firstly, Nicolescu et al.[2] show that the starting point in addressing the determinants of the strategy, respectively the variables with a significant influence on the content and results, is mainly represented by achieving efficiency and effectiveness.

Secondly, by analyzing the connections between "performance" versus "efficiency" and "efficacy", we can state the following:

a) Efficiency represents reaching a level of activity (a result) with the minimum consumption of resources[3]. This is an expression of the inner workings of the company. Most often, the efficiency is expressed as a ratio of the type "input-output ratio[4]. Productivity is one of the most widely used concepts in the sphere of economic efficiency. Currently, productivity is the ratio of production and the means used to obtain it.

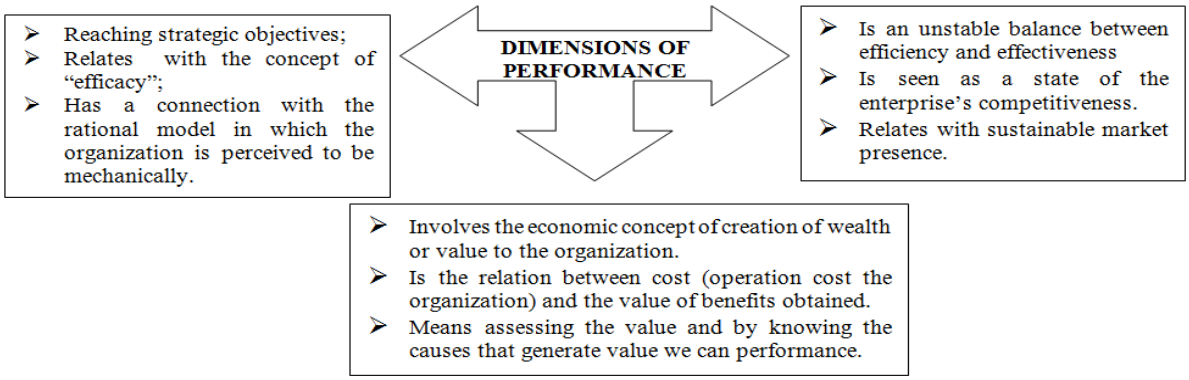
[1] Bourgeois, L.J, Performance and consensus, Strategic Management Journal, vol. 1. nr. 30,1980.
[2] Niculescu, M., Lavalette, G, Growth strategies (in Romanian Strategii de crestere). Bucharest. Economica Publishing House, 1999.
[3] Burlaud, A., Simon C.J. (Accounting control (in Romanian: Controlul de gestiune). Translation. Bucharest. Coresi Publishing House, 1999
[4]Ostroff, C., Schmitt, N, Configurations of organizational effectiveness and efficiency. The Academy of Management Journal. vol. 36. nr. 6, 1993

b) Effectiveness is reaching the objectives set[1], obtaining results that fall into defined strategy or fulfilling the required tasks[2]. A company becomes operationally effective when it knows to identify, master and control the interaction between internal and external sources of development, responding as well to expectations of external partners.

1.4. The dimensions of performance

We can identify the dimensions of performance through the following figure:

Figure II-2: The dimensions of performance



Source: Cosmin Octavian & DOBRIN Gheorghe & N. POPESCU Veronica & Adriana POPESCU & Cristina Raluca POPESCU, the concept of performance in business organizations, case study on the employee performance in Romanian business organizations, 16 november, 2012,p 313.

a) Performance means, firstly, reaching the strategic objectives. This is actually the meaning of the concept of "efficacy". This concept forms the rational model in which the organization is perceived to be mechanically, which means that efficiency is implicitly taken into account in setting goals and effectiveness is measured quantitatively.

b) Performance is an unstable balance between efficiency and effectiveness [3]Performance is also seen as a state of the enterprise's competitiveness, reached by a level of effectiveness and efficiency that ensure sustainable market presence[4].

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[1]Nicolescu, O. Managerial firm strategies (in Romanian: Strategii manageriala de firma). Bucharest. Economica Publishing House,1996.

[2] Morris, M.H., Noel, T., Schindehutte, M.. Entrepreneurship and the need for management control: efficiency versus effectiveness. United States Association for Small Business and Entrepreneurship Conference,2001

[3] Ostroff, C., Schmitt, N., Configurations of organizational effectiveness and efficiency. The Academy of Management Journal. vol. 36. nr. 6, 1993.

[4] Niculescu, M., Lavalette, G,Op Cit, 1999.

c) Performance involves also the economic concept of creation of wealth or value to the organization. Thus, performance is a relation between cost (operation cost the organization) and the value of benefits obtained[1]. Two of the concepts that dominate modern management organizations are value and performance. A performance measure is to assess the value and by knowing the causes that generate value we can performance. In conclusion, value and performance are two adjacent concepts[2].

To the two conceptions of performance presented at points (a) and (b), we added the third conception described at point (c) due to the fact that it imposes the notion of sustainability. Kettinger associate the concept of performance on sustainability which involves maintaining sustainable performance gained or achieved. This concept comes from an idea that was taken from the Report of the United Nations in 1987 entitled "Our Common Future" and is based on the idea that the economic future is closely linked to the health and integrity of natural systems.

They can be met without compromising the requirements of this ability of future generations to satisfy their needs, it makes the transition from economic growth to sustainable development or environmentally involves the integration of economic planning ecologist and has proven to be difficult to detect in an acceptable definition. Things get even more complicated when the term is associated with the companies. Some equate organizational sustainability with the process of surviving on the marketplace. Performance can be defined as long-term prosperity and power held by a company against its competitors. Moreover, associating the term sustainable directs attention to future performance, if performance is somehow seen as a last result.

The concept of sustainability is integrated into management and management accounting issues, making reference to the concept of value. Destruction or poor distributions of value are threats to business continuity. Integrated management control developments need to manage value through customer value management (or customer value), taking into account strategic factors (often external company). Moreover, the concept of sustainable performance is based on the idea that the client is one of the business partners (known as stakeholders) able to participate in the process of value creation.

[1] Lorino, P, Le Balanced Scorecard revisité : Dynamique stratégique et pilotage de la performance. 22ème Congrès de l'Association Française de Comptabilité. Metz. France,2001

[2] Vilain, L, Le pilotage de l'entreprise : l'utilisation d'un tableau de bord prospectif. thèse professionnelle. Mastère Spécialisé HEC. Ecole des Mines de Paris,2003.

1.5. Types of performance

1.5.1. tactical performance

Tactical performance is how effectively your organization *sticks to* its strategy. It is the driver of focus and consistency. It allows organizations to increase strength by directing limited resources to the fewest targets. In Precision's case, good tactical performance required developing rules, checklists, and standard operating procedures and then following them closely. Similarly, when a software engineer delivers the expected features each sprint, you are witnessing tactical performance[1].

1.5.2. adaptive performance

Adaptive performance is how effectively your organization *diverges* from its strategy. Adaptive performance manifests as creativity, problem solving, grit, innovation, and citizenship. It allows organizations to create value in a world filled with, Volatility, uncertainty, complexity, ambiguity; where technology and strategy changes rapidly. At Precision, good adaptive performance would have included every line worker coming up with new ideas and then teaching them to their colleagues. If you've ever seen a coffee-shop adapt its greeting to make you feel personally welcome, or an engineer lean over to help a colleague solve an unexpected problem, you're witnessing adaptive performance.

Essentially, tactical performance is how well you stick to your plan, and adaptive performance is how well you diverge from your plan. Every high performer needs both. A great salesperson will operate much more efficiently with a defined process for reaching out to prospects. They will represent the products more consistently. But they must also adapt the standard approach based on each customer's unique needs. The same is true for any team or organization[2].

1.5.3. Strategic and operational performance

How an executive team drive strategy and change through the organization is quite different from the day to day management of operational performance. One is focused on local issues, managing exceptions and incremental improvements. The other is after

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[1] Lindsay McGregor and Neel Doshi, article about Types of Performance, Harvard Business School ,October 10, 2017

[2] Ibid.

significant change, longer term across the organization. The requirements for strategic change should influence how operational performance is being managed. Many organizations operate their balanced scorecards as simple sets of operational measures in perspectives. Yet Norton & Kaplan devised the Balanced Scorecard System to manage strategy and organizational change. Both operational management and strategic change are useful but they serve quite different performance management needs, interact, and should be designed together to complement one another[1].

1.5.4. Individual and organizational performance

How individuals (or teams) are incentivized, developed and managed is often left to the HR performance management system, yet this is a major influence on operational performance and strategic change. Change how people are developed and managed and how the organization is managed. It seems easy to manage operations and teams yet the changes can clash with the individual appraisal, development and reward systems[2].

1.6.Roles of Performance Measurement

Management can hardly exist without performance measurement[3]. However, a poor methodology of measurement can be a major factor that contributes to frustration of the advancement of a firm[4]. In contrast, a well-designed performance management system is an essential and fundamental factor contributing to the enhancement of effective planning and control of management. In fact, it can be claimed that PM allows business management to excel through motivation enhancement, performance monitoring, improvement of communication, and problem diagnosis[5] . Furthermore, PM can provide an effective approach to study and identify the management strategy, as well as enabling a proper perception of prosperous and present circumstances that influence the progress of a company[6].

The significant roles of PM are briefly presented as following:

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[1] Link: https://www.excitant.co.uk/resources/white-papers/types-of-performance-management/ viewed 2/02/2018, at 16h25
[2] Ibid.
[3] Lebas, M.J., Performance measurement and performance management. International Journal of Production Economics, 1995,pp 23,35.
[4] Maskell, B.H., Performance measurement for world class manufacturing: A model for American companies, Productivity Pr, 1991.
[5] Rolstadås, A., Performance management: A business process benchmarking approach, Kluwer Academic Publishers,1995.
[6] Hashem Salarzadeh Jenatabadi, An Overview of Organizational Performance Index: Definitions and Measurements, Department of Science and Technology Studies,University of Malaya, Kuala Lumpur, Malaysia,may,2015,pp 5,6.

Monitoring business progress: this can be done using the output to observe the progress of a firm in respect of the achievement of its set goals, which makes identification of the future and current status of the company possible. PM can generate a shared understanding, and demonstrate the extent to which the planned expansions have essentially taken place[1].

Monitoring the effect of strategies and plan: outputs enable testing the impact and possibility of strategies and plans. It is through them that the implementation can be observed and controlled. Therefore, the successful achievement of long-term goals can be ensured by the choice of right measures.

Diagnosis: if a business fails or is in decline, the output can show the failure symptoms, and encourages identification of the probable causes that have led to the failure. As a result, a company can search for the problems and their reasons to enhance their protection against the potential future misfortunes and failings[2].

Supporting decision making: PM enables an organization to search and identify the causes that have led to its success and the potential chances that the company can use for further development and advancement in future. Moreover, PM enables the organization to determine whether it has been able to gain the satisfaction of its customers and achieved its desired goals. Actually, in addition to indicating where and how to act, these measurements also monitor the performance efficiency. Further details of identification of potential and actual problems are provided by feedback.

PM is also an essential requirement for the justification of more investment of effort by companies. PM ensures that the decisions are made on the facts instead of assumptions and suppositions. Consistent objective-oriented operations and timely corrections can only be achieved through a direct guide to operations and accurate and timely feedback on operational performance. [3]

Facilitation of motivation and communication: PM indicates the rate of progress of a company and highlights its present and future performance status. The motivation and

[1] Waggoner, D.B. and A.D. Neely, The forces that shape organisational performance measurement systems:An interdisciplinary review. International Journal of Production Economics, 1999, pp 53,60
[2] Ibid.
[3] Hashem Salarzadeh Jenatabadi, op cit, p 7.

clarity of the PM provides the company with an increase in the overall rate of operation including communication among its staff and managers. Performance management both precedes and follows PM in a virtual spiral in order to establish a suitable setting for measurement. In brief, PM is claimed to be a vital and powerful tool for effective management. In the case of supply chain management, PM significantly leads to the development and improvement of performance and feedback of comprehensive performance supports the design and improvement of the supply chain systems.[1]

1.7.Tools for performance measurement

1.7.1. Traditional methods

Financial Measures (input measures)

- ✓ Linked to the budget of the organization;
- ✓ Controlled by the central office;
- ✓ Costs of line budget items;
- ✓ Grants made on the basis of amount spent the previous years;
- ✓ Sometimes estimates taken from the regional or field offices;
- ✓ Circuitous method of funds release leads to delay -surrender of funds[2].

Effectiveness (output measures)

- ✓ Quantitative(number of cases disposed, recoveries made, targets achieved during year)
- ✓ Qualitative measures (Mistakes made in computation, incorrect interpretation of law)
- ✓ Internal and external audit.
- ✓ Points out mistakes and losses to exchequer.
- ✓ Fix responsibility[3].

Net economic value (NEV)

- ✓ NEV is a sophisticated tool that enhances managerial cost consciousness and provides more accurate financial data to optimize resource utilization
- ✓ Enables more effective prioritization of initiatives/ development projects [4]

[1] Lebas, M.J., Performance measurement and performance management. International Journal of Production Economics, 1995. pp 23,35.
[2] Mini and Garima, Measuring performance of the public sector-problems and approaches, Sep 25, 2006.
[3] Ibid.
[4] Ibid.

- ✓ It accounts for the cost of capital in addition to normal operating costs and is thus a primary means to achieve maximum value from the capital and resources of an organization

NEV = Net Operating Surplus After Tax - Capital Charge

Operating Revenue – Operating Expenses less Tax	Cost of Capital X Capital Base

- **Limitations of traditional tools**

- ✓ Missing link between vision & mission of the agency to actual performance ;
- ✓ Main Focus on avoidance of misuse of funds rather than EFFICIENCY;
- ✓ Outcomes of an organization may not be always measurable in quantitative terms;
- ✓ Ex-post facto analysis- Lagging in nature;
- ✓ Lack of flexibility (rules-governed);
- ✓ Does not emphasize learning as the end product of performance assessment.

1.7.2. Multi-dimensional tools

- ✓ Movement from only a financial perspective to a holistic performance analysis;
- ✓ Mission translated into measurable outcomes;
- ✓ Incorporates leading performance measures (predictors of success)along with lagging measures (indicators of success)
- ✓ Focus on Organizational learning

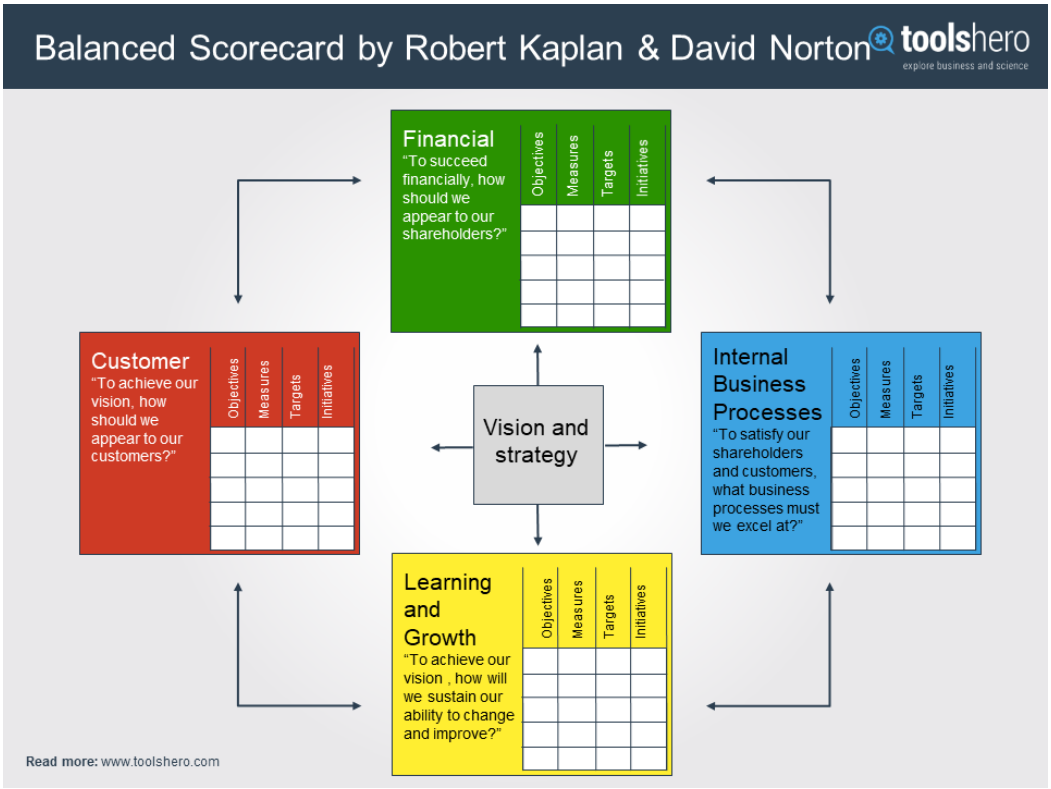
The Balanced Scorecard

Balanced scorecard is a management tool that provides stakeholders with a comprehensive measure of how the organization is progressing towards the achievement of its strategic goals.

Balance scorecard was developed by Kaplan and Norton to:

- ✓ Provides a balanced view of performance by integrating both financial and non-financial information;
- ✓ A communication tool that helps in the implementation of a strategy or a change management program;
- ✓ Creates a better linkage between the performance measurement system and the organization's strategy.

Figure II-3: balanced scorecard



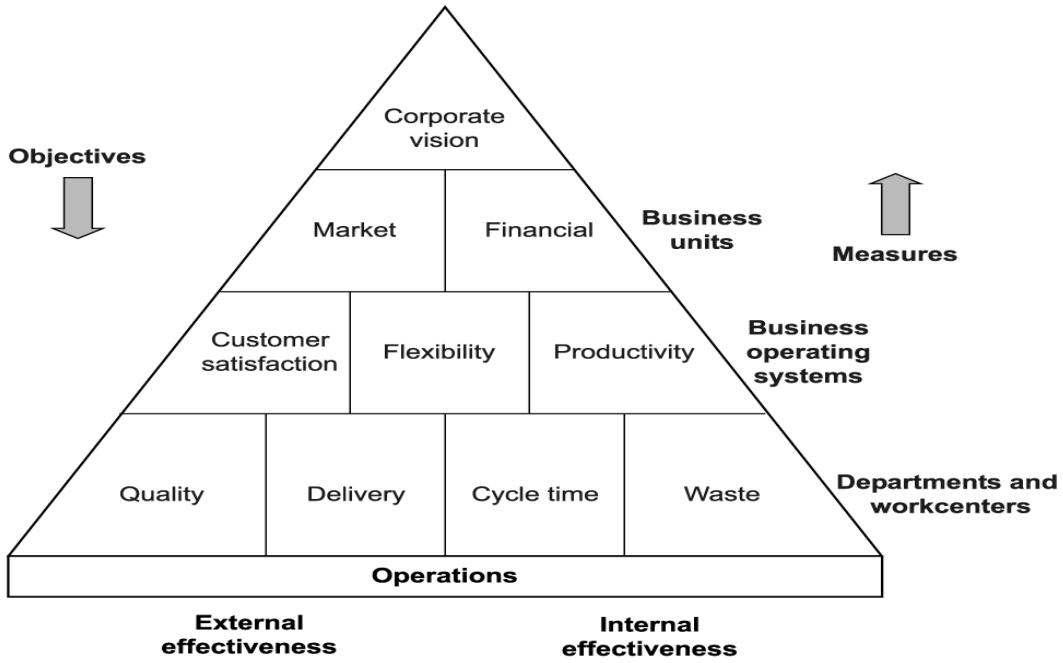
Source: https://www.toolshero.com/strategy/balanced-scorecard/ visited 1/04/2018 at 13h33

Performance pyramid

The performance pyramid derives from the idea that an organization operates at different levels each of which has a different focus. However, it is vital that these different levels support each other. Thus the pyramid links the business strategy with day-to-day operations. The pyramid views a range of objectives for both external effectiveness and internal efficiency. These objectives can be achieved through measures at various levels as

shown in the pyramid. These measures are seen to interact with each other both horizontally at each level, and vertically across the levels in the pyramid[1].

Figure II-4: performance pyramid



Source:https://www.researchgate.net/profile/Georgy_Kurien2/publication/309590235/figure/fig4/AS:423644104007682@1478016033221/Performance-Pyramid-Tangen-2004 visited 05/04/2018 at 16h12

The importance of the performance pyramid model

- ✓ Brings together the hierarchical view of business performance measurement with the business process;
- ✓ Brings together financial and non financial factors and factors which are important to external parties and factors which are important to internal parties.

It should be observed that achievement of each objective at lower level for example improvements in quality and delivery times will help in achieving higher level objectives of customer satisfaction, which further helps to increase in market share.

1.8. The aims of performance measurement

Given their diverse origins, it is not surprising that multiple aims have been attached to the recently launched performance measurement. Often the aims are stated in highly positive

[1] Link: http://kfknowledgebank.kaplan.co.uk/KFKB/Wiki%20Pages/The%20Performance%20Pyramid.aspx visited 5/4/2018 at 16h02

terms. For example, the Kennedy School of Government at Harvard University begins its case for the use of performance measurement with the following statement: 'Effective performance management leads to better outcomes and strengthens democracy. The aims of performance measurement range from the narrowly managerial to the broadly political. Different purposes will require different types of measures. There is not one single magical measure or set of measures that will serve all these purposes equally well. For example, if the principal aim is to achieve budgetary control and productivity, the focus will be on efficiency measures such as the costs of providing a certain volume of output on an annual basis. Since performance measurement systems are costly to create and to maintain, there are practical limits on the number of dimensions of performance that can be measured on an ongoing basis. Also, the proliferation of measures can lead to information overload[1].

We can sum up the performance measurement in the fact that it helps:

- ✓ To clarify organization goals, directions and expectation;
- ✓ Organizations to learn how to accomplish goals more effectively;
- ✓ To communicate the priorities of the organization;
- ✓ To support strategic/business line planning by linking broad statements of direction to specific operational outputs and outcomes;
- ✓ To support budgetary planning and resource allocation processes;
- ✓ To monitor the operation of programs and to make continuous improvements;
- ✓ To motivate public servants and to restore pride within the public service that it is making a positive contribution;
- ✓ To enable citizens to make better informed decisions in the use of public programs;
- ✓ To restore public confidence that they are receiving value for money in public spending;
- ✓ To assess whether the organization is achieving its goals;
- ✓ To strengthen internal administrative and external political accountability[2].

[1] John Wanna, Performance Measurement, Reporting, Obstacles and Accountability: Recent Trends and Future Directions, The Australian National University, chapter4,2006, p11
[2] Ibid.

Section 02: Conception of the commercial performance

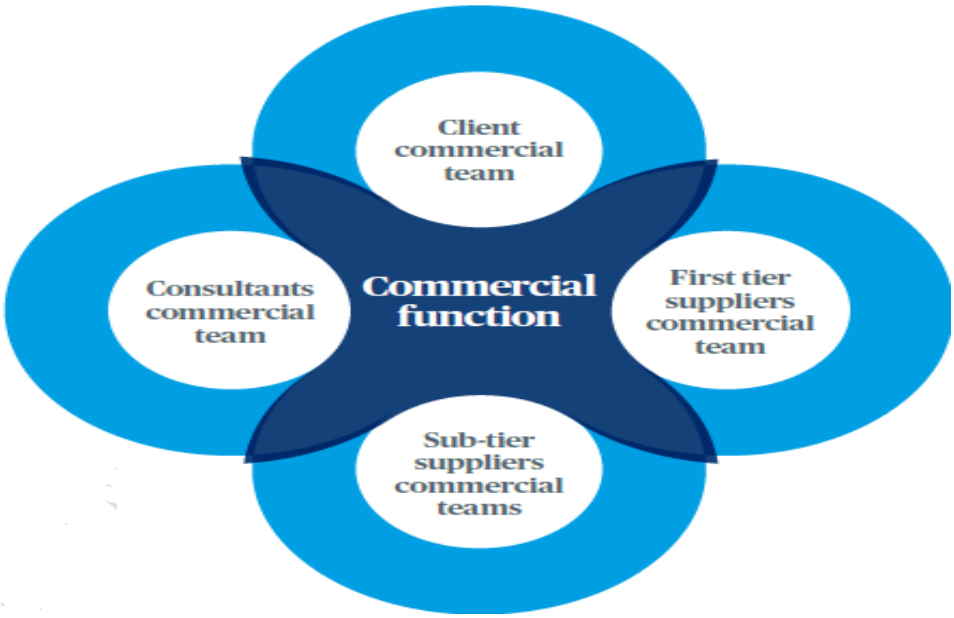
The aim of any business organization is the realization of profit. To make a profit, the company must sell and therefore be commercially successful.

The commercial performance of a business is the achievement of business objectives previously defined with the respect to the means and resources mobilized to achieve them.

2.1.The commercial function

A commercial department is responsible for running company's business successfully. It has the ultimate accountability for profit and loss, and seeks to maximize return on investment for the shareholders. The members of this department are ultimately responsible for the success of the business, and as such, maintain considerable power in the company. While the commercial department is responsible for the bottom line, it also oversees the other departments in the organization, as well as the development of employees and customers[1].

Figure II-5: the commercial function



Source: David Whysall, commercial performance study, Driving commercial performance on major infrastructure programs and projects,2016, p 7.

[1] David Whysall, commercial performance study, Driving commercial performance on major infrastructure programs and projects,2016, p 7.

2.1.1. The Commercial Department

It's the main responsible department for coordinating the actions, in order to sell the products and services that the company might have, and obtain profit and financial revenue to make it possible to grow and survive economically.

2.1.2. The role of commercial department

- ✓ Support the performance management in commercial negotiations;
- ✓ Financial evaluation and analysis, owner of financial appraisal model;
- ✓ Screening of project activities, facilitate robust decision making;
- ✓ Provide timely relevant and accurate information to manage the business and provide strategic direction;
- ✓ Preparation and presentation of business cases;
- ✓ Ensure that commercial reality is reflected in legal contacts;
- ✓ Ensure that the interests of the company are protected all times;
- ✓ Ensure that all projects risks are managed monitored and mitigated[1].

2.2.The objectives of the commercial department

To expand customer base, maximize the collection of revenue and to ensure continued customer satisfaction.

a) Profitability

The commercial department is responsible for the profitability of companies. When it increases sales and profit margin while simultaneously reducing expenses, the bottom line will improve and profits will increase. Accountability for profits ultimately falls to the commercial department. These individuals run the day-to-day business of the company and, through solid management techniques, produce results and a return on investment the organization. From scheduling employees to solving performance issues, commercial department manages the bottom line[2].

b) Increasing Sales

Commercial department also has the major objective of increasing sales. While the sales team meets clients and sells products or services, the commercial team sets sales goals

[1] Ciaràn Deasy,role of commercial department, Bord Gàis Energy, 8th December 2011
[2] Link: http://smallbusiness.chron.com/performance-goals-operations-managers-13167.html. 19 September 2017 viewed 23/02/2018, at 9h20

and monitors progress. Achieving sales results means having an excellent product or service and talented and motivated salespeople. The commercial department sets goals, motivates and manages sales force, and ensures that targets and objectives are met. Through the continual monitoring of commercial performance and assisting sales force in their efforts, the commercial team helps to increase sales.

c) Revenue Growth

Increasing revenue is the most basic and fundamental objective of any business. Revenue growth comes from an emphasis on sales and marketing activities, and is solely concerned with increasing top-line earnings - earnings before expenses. Companies often set revenue goals in terms of percentage increases rather than aiming for specific dollar amounts. An entrepreneur may set an objective of increasing revenue by 20 percent each year for the first five years of a new company's operations, for example[1].

d) Profit Margins

Profit objectives are a bit more sophisticated than revenue growth goals. Any money left over from sales revenue after all expenses have been paid is considered profit. Profit, or bottom-line earnings, can be used in a number of ways, including investing it back into the business for expansion and distributing it among employees in a profit-sharing arrangement. Profit goals are concerned first with revenue, then with costs. Keeping costs low by finding and building relationships with reliable suppliers, designing operations with an eye toward lean efficiency and taking advantage of economies of scale, to name a few methods, can leave you with more money after paying all of bills[2].

e) Customer Service

Good customer service helps you retain clients and generate repeat revenue. Keeping your customers happy should be a primary objective of companies[3].

f) Provide Consumer Satisfaction

[1] Link: http://smallbusiness.chron.com/performance-goals-operations-managers-13167.html. 19 September 2017 viewed 23/02/2018, at 9h20
[2] Ibid.
[3] Ibid.

For success in the performance of their role, the commercial managers need to understand what the product market wants from their companies' goods and services. Customers should feel that they can depend on the business to meet their consumer needs and respond to queries and concerns in a timely manner.

g) Sustainability

At certain times, companies or brands may be primarily concerned with basic economic survival. Retrenching is a marketing technique — based on a financial objective — that attempts to keep a brand alive and keep current revenue and profit levels from falling any further during the “decline” stage of the product/brand life cycle. Companies may be concerned with financial sustainability during periods of economic turmoil, as well. Common financial objectives for survival include collecting on all outstanding debts on time and in full, de-leveraging by paying off debt and keeping income levels consistent[1].

2.3.Determinants of commercial performance

2.3.1. Commercial performance

It is important to recognize that high performance will only be realized if all members of the commercial function perform effectively; in addition to their effective integration between the individual elements.Performance should be measured across two aspects, input factors and output measures as these will equally impact the ability to drive enhanced commercial performance.The maturity and effectiveness of a commercial function is about delivering outputs that add corporate value.

The commercial performance is a product of commercial controls and enablers (inputs) and the ability to demonstrate value for money using quantitative performance measures (outputs).

2.3.2. Determinants of commercial performance

We deal here with the elements that generally determine the commercial performance of a company and those that evaluate it, namely the indicators of commercial performance.

a) Product quality and service

The quality of the product and service is one of the essential elements of the attractiveness of an offer; it represents the set of intrinsic characteristics that makes it possible

[1] Link: http://smallbusiness.chron.com/performance-goals-operations-managers-13167.html. 19 September 2017 viewed 23/02/2018, at 9h20

to satisfy the implicit and explicit needs of the customers. A product is said to be of quality if it meets the requirements of the customers.

b) Financial capacity of resellers

It is all the financial resources available to resellers of a product or service to ensure the smooth running of their activities. It affects almost all business performance indicators.

c) Production capacity

This is the quantity of product offered by the firm to satisfy a demand for a given period of time. A significant increase in inventories is considered to mean that production is not offset by current consumption, while constant decline in inventories reflects a surplus of consumption over current production, thus the breaks as well as the excess stocks of a product handicap the commercial performance of a distribution network.

d) The diversity of the offer

The policy of diversification of the supply has been adopted to meet the needs of the different market segments of the company. The multiplicity of the range of products or services available to the consumer has a direct impact on the satisfaction of the customers and therefore on sales volume.

e) The distribution network extent

The timely availability of the product is an essential element for customer satisfaction, which affects the commercial performance of the company. So the more extensive the network, the more likely the company is to reach the maximum number of consumers who can judge the quality of the product according to their needs and expectations. The number of resellers also has a direct impact on overall network sales.

2.4.The levers of commercial performance

In order to develop and improve the commercial performance, here are some levers that have been recommended

- **Beware and understand your market**

Purchasing practices in the business, the competitive environment, and the strategic functions of the company. It's about knowing and understanding the factors that influence the results of the company, and most importantly, to use this knowledge to produce more value in the future. This step is very important for the company because it clarifies the assumptions on

which the established strategy will be based and "a strategy is good or bad that the assumptions on which it is based[1].

- **Differentiate from the competition**

A company that applies a differentiation strategy attracts a maximum of customers and therefore be more attractive and therefore, achieve more benefits (identify the differences that make the specialty of the company, identify the internal forces to maintain and weaknesses to fight to make the company more attractive)[2].

- **Evaluating your business activity**

Measurement is an indispensable practice for the proper functioning of any trading system, there was no objective without means of measurement, and no performance without evaluation. The company must have measured the effectiveness of the commercial activity and follow all the key aspects of its commercial performance. (Evaluate the client's patrimony, measure the performance of the commercial action).

The company must have a simple measurement system, reliable, relevant and especially providing the immediate information requested[3].

- **Identify your growth deposits**

Segmentation and analysis of the company's customer assets are important sources of information that must be considered in conjunction with market data. They make it possible to identify the sources of growth of the company, (set priorities for development, act on the levers that promote customer loyalty).

- **Orienting commercial action**

The company's commercial policy is closely linked to strategic thinking It is the operational translation of the company's strategy (set the company's business objectives, identify targets to approach or develop).

By quantifying and quantifying things, the company clarifies its ambition, makes its choices gives the sense of action and focuses energies on priorities[4].

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[1] Robin Jarvis, James Curran, John Kitching, Geoffrey Lightfoot, "The use of quantitative and qualitative criteria in the measurement of performance in small firms", Journal of Small Business and Enterprise Development, Vol. 7 Issue: 2, 2000, pp.123,134.
[2] Ibid.
[3] Ibid.
[4] ibid.

- **Determining the individual contribution**

The management system is everything that helps define, motivate, monitor and evaluate the individual work of sales people. It is the engine of the commercial activity (to make management system the engine of the commercial activity, to fix and to follow the objectives of the salesmen).

For the company to be commercially efficient; it is not enough to set the objectives and to give the direction of the action. It is also necessary to create energy, the movement to make things move and it is the vocation of the management system of the commercial force.

- **Enhance the influence of salespeople**

The power of influence of a salesperson depends on his competence (knowledge), and his motivation (power). The key skills of a different commercial depending on the type of sale, the type of product sold, the level of the interlocutors meets, the work environment ... Etc.

It is important for the company to know how to identify and develop the key skills of its salespeople to increase their influence on the market.

- **Manage his sales force**

The managerial habit is measured by the ability of the manager to use all the sources of power at his disposal to manage his team. He must learn to articulate and arouse them in order to increase his power of influence over his team and to focus the energies on the priorities of the company (identification of motivational drivers, improving interpersonal communication to mobilize teams to work ...).

- **Building a team dynamic**

A team dynamic reinforces the motivation, energy, intelligence and competence of each team member. (Development of sales teams, make lasting changes in salespeople's behavior). A team dynamic is created through a series of stages and the manager must steer this development to bring the team to maturity.

2.5.Indicators of commercial Performance

The measurement of performance has been identified as a key issue for Quality Management. Several authors[1] [2] emphasize the importance of measuring performance through indicators for achieving efficiency and effectiveness in the various processes that constitute the production system of the companies.

Particularly, the goals of quality measured and quantified through indicators, allow to express the evolution of a process, product or business of the company, being basic for monitoring the Quality Management System - QMS and, consequently, for the progress of the company.

Souza et al. defines indicators as quantitative expressions that represent specific information, from the measurement and evaluation of a production structure, it processes and/or the resultant[3].

Performance indicators are criteria used to gauge organizational performance and future improvement; they also used to set standards and benchmarks[4].

The choice of the performance indicators depends on the business field and the objective of its use[5]. For some applications the through put is the major performance indicator, but in other circumstances the robustness or service quality can be the focus of the performance measurement.

In the manufacturing context, the performance parameters can be classified as qualitative or quantitative indicators:

2.5.1. Quantitative indicators

A quantitative indicator is a tool for measuring and evaluating commercial performance at a given moment, among the qualitative indicators of commercial performance we will present four main indicators: Turnover, sales volume, market share and the number of new customers.

a) Turnover

The turnover corresponds to the total sales and / or services performed by the company. It represents the amount (excluding taxes) of all transactions carried out by the

[1]LORDSLEEM JR. LORDSLEEM JR., A.C ,Metodologia para capacitação gerencial de empresas subempreiteiras. Tese (Doutorado) - Escola Politécnica, University of São Paulo, Brazil., 2002.

[2] LANTELME; FORMOSO, LANTELME, E. M. V., FORMOSO, C.T. Conceitos, princípios e práticas da medição de desempenho no setor da construção civil, Inovação, gestão da qualidade & produtividade e disseminação do conhecimento na construção habitacional. Rio deJaneiro,2003, pp 255,281, 2003

[3] Lordsleem, A. Jr, Duarte, C, Barkokébas, B. Jr ,Performance Indicators of the Companies QualityManagement Systems with ISO 9001 Certification, Department of Civil Engineering, Polytechnic School, University of Pernambuco.

[4] Link :http://slideplayer.com/slide/5804187/ viewed 13/04/2018 at 01h20

[5] Paulo Leitão and Francisco Restivo, THE USE OF QUALITATIVE INDICATORS FOR PERFORMANCE MEASUREMENT IN MANUFACTURING CONTROL SYSTEMS, Faculty of Engineering, University of Porto, Rua Dr. Roberto Frias, P-4200-465 Porto,

company with third parties as part of its normal and current activity. The turnover is not necessarily calculated each year we can have a monthly or quarterly turnover.
More precisely "the turnover is the sum of the sales of goods (commercial activity and of the sold production (production of goods and services). It is the main indicator of activity of the company, it conditions the performance overall.
Indeed the turnover represents the success of the company, its evolution is based on two variables that are the selling price and the quantity sold[1].

b) sales volume

The sales volume is the quantity of products sold. This notion serves to know the rate of satisfaction of the demand on the market, but it remains a relatively poor indicator because the appreciation of the global weight of 'a business is difficult, the turnover in volume does not reflect the level of technical quality of sold products which makes the comparison between the sales volumes of two competing companies very difficult.
Sales volume = quantity of product sold during a given period (day, month, year)[2].

c) The market share

"Market share represents the percentage of a company's sales for a given product or service compared to all competitors"
The market share thus refers to the ratio between the sales of a product made by a company and the total sales of the same product made on the market by all the companies.
This indicator allows the company to be on the market, to know its position and that of its products and services compared to competing companies.
There are various ways to understand business performance by market share

- **The overall market share**

Which is the ratio of the sales of the company on the total sales of the sector, besides; it is important here to define well the limits of the sector.
The "served" market share is the ratio of the company's sales to the market it has affectively aimed at. The "served" market share is obviously always greater than the global market share.
But the most important indicator is the relative market share, "it expresses the sales of the company compared to the turnover of the largest competitor and therefore reflects the balance of power"

[1] Link: https://www.l-expert-comptable.com visited 20/03/2015 at 15h34
[2] Ibid.

It allows knowing the competitive position of each company compared to its competitors.

d) The number of customers

All customers have a life cycle it is born, lives and dies in order to compensate lost customers (competition, bankruptcy, retirement) by new customers, the company must make prospection to acquire new customers.

The sellers must have in the interest of the company, the ambition to enrich the customer file by new customers so that the turnover is less exposed to unforeseen circumstances or breaks with such and such customers.

2.5.2. The qualitative indicators

These indicators are obtained frequently thanks to the use of statistical treatments (measurement of volume of realization, calculation of ratio), the main indicators are the customers satisfaction and the brand image that it's related to the reputation of the company.

a) Customer satisfaction

Customer satisfaction is the main reason for the existence of a company, a condition of sustainability and a major challenge for companies.

Satisfaction expresses "the pleasure that results from the fulfillment of what one expects, desire or simply from a desirable thing"

A demanding customer is a source of progress for the company, the measure of its satisfaction and an action to maintain a strong and lasting bond[1].

For better customer satisfaction, the company must perform a set of procedures:

- Establishment of a commercial quality plan, whose customer satisfaction surveys will be used systematically;
- Immediate processing of complaints;
- Strengthening the pace of the relationship with the most important clients, through visits or more telephone calls or from a larger number of interlocutors;
- Development, thanks to the information, of the processing of the information relative to each customer and their exploitation by the company;
- Reminder, by mail or phone, of customers who have not ordered Since X months;
- Retaliation operations at the best customers of the most offensive competitor.

[1] Link: https://www.l-expert-comptable.com visited 20/03/2015 at 15h34

Section 03: The link between quality management practices and commercial performance

Introduction

For many firms, intense global competition has led to an increased quality management focus. Operationally, many firms have abandoned their reliance on detection of defects through inspection in favor of a reliance on defect prevention. This approach focuses on designing quality into products, implementing process control, and continually improving processes[1].

Managers in firms seeking to achieve market growth typically must identify ways to attract new customers and keep existing ones. This goal is often achieved through a focus on improving customer satisfaction levels. Firms are focusing on customer satisfaction by focusing on improved product and service design and features, without significant increases in price. In terms of quality and purchased material inputs, this means that engineering and purchasing managers must collaborate in order to involve critical suppliers in design decisions, so that core technologies can be developed at low cost.
Dominant empirical evidence has supported the positive contribution of numerous quality management practices to organizations' performance:

- **Top management leadership for quality**

It plays a vital role in setting the quality goals and strategies of the organization to achieve the goals[2]. The support from top management would encourage behaviors and performance throughout the organization toward sustainability goals. The positive influence of top management leadership for quality on other quality management practices and performance is well supported by empirical evidence in[3].

- **Training on quality**

Providing Training on quality will enhance skills of employees, especially quality-related skills. Having a good policy on internal human resource is a contribution to commercial sustainability. In addition, by improving skills, employees would improve the

[1] C. Tan , R.B. Handfield & D.R. Krause ,Enhancing the firm's performance through quality and supply base management: An empirical study, International Journal of Production Research,1998.
[2] Flynn, B.B, Schroeder, R.O.; Sakakibara, S. The impact of quality management practices on performance and competitive advantage. Decis. Sci. 1995,pp 659,691
[3] Anderson, J.C.; Rungtusanatham, M.; Schroeder, R.G.; Devaraj, S. A path analytic model of a theory of quality management underlying the Deming management method: Preliminary empirical findings. Decis. Sci. 1995, pp 637,658

accuracy of the production processes and in turns, reduce defects and increase the quality performance in general. This contributes to commercial and economic sustainability.[1] [2]

- **Product/service design**

The importance of Design for high quality and defect-free product was emphasized by both Joseph Juran and Genichi Taguchi[3]. As a result, it would contribute to a reduction in wastes and material consumption, and, in turn, contribute to high sales sustainability. In addition, design for producibility and simplification would better standardize components, make it easier to produce, and lead to higher process efficiency.

- **Quality data and reporting:**

It refers to the availability of information on the quality-related performance which would help managers make appropriate decisions timely based on the facts, and quickly detect and prevent quality problems. This contributes to not only the improvement of economic efficiency but also commercial performance through increasing sales[4].

- **Process control**

Seven tools for statistical quality control were developed and disseminated by Ishikawa. Thorough process control using statistical techniques is postulated to reduce process variance which, in turns, prevents defective components or products[5]. As a result, economic and commercial performance would be improved by reduction of material consumption as well as additional cost[6].

- **Continuous improvement**

With continuous improvement, organizations take never-ending efforts to improve their products and processes which, in turns, are expected to result in better overall commercial performance[7].

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[1]Kaynak, H, The relationship between Total Quality Management practices and their effects on firm performance, J. Oper. Manag. 2003,pp 405,435.
[2] De Cerio, J.M. Quality management practices and operational performance: Empirical evidence for Spanish industry. Int. J. Prod. Res. 2003, pp 2763,2786
[3] Foster, S.T. Managing Quality: Integrating the Supply Chain; Pearson: London, UK, 2013.
[4] Sánchez-Rodríguez, C.; Martínez-Lorente, A.R. Effect of IT and quality management on performance. Ind. Manag. Data Syst. 2011,pp 830,848.
[5] Phan, A.C.; Abdallah, A.B.; Matsui, Y. Quality management practices and competitive performance: Empirical evidence from Japanese manufacturing companies. Int. J. Prod. Econ. 2011, pp 518,529
[6] Fuentes, M.M.F.; Montes, F.J.L.; Fernández, L.M.M. Total quality management, strategic orientation and organizational performance: The case of Spanish companies. Total Qual. Manag. Bus, 2006,pp 303,323
[7]Agus, A.; Hassan, Z, Enhancing production performance and customer performance through Total Qual. Manag. (TQM): Strategies for competitive advantage. Procedia Soc. Behav. Sci. 2011, 24, 1650–1662.

- **Problem solving**

They teams are usually formed with cross-functional members to deal with quality-related problems. Finding and addressing the causes of problems would prevent a repetition of the same defect type, leading to an improvement in both financial and commercial performance.

- **Improve customer's relationship and better satisfaction**

Quality management is a major lever for improving customer relations.

Bringing the company to constantly monitor the changing expectations of target prospects and measure the satisfaction of its customer will lead firms to meet customer expectations; thus a high level of sales. By demanding the certification of the proposed services and making tangible the effort of the latter; it allows better selling.[1]

The ISO 9001 certification, carries an assurance of conformity of the company with the recognized reliability reference system, makes it possible to decrease the frequency and the complexity of the external audits imposed by the customer, it is also a source of economy for the company.

Certified companies have a better commercial performance based on the demonstration made through several studies.

The advantages of this certification are externally oriented in the first place (argument, satisfaction, brand image, competitive differentiation, export position ...) and internal ones (structure, productivity, staff mobilization).) are generally secondary in origin but they are the first areas of return on investment once the process is completed.

[1] Hung, R.Y.Y.; Lien, B.Y.H.; Yang,B. Wu, C.M.; Kuo, Y.M. Impact of TQM and organizational learning on innovation performance in the high-tech industry. Int. Bus. Rev. 2011,pp 213,225.

Conclusion

Performance is no longer limited to a measure from a financial point of view, nowadays companies conceive performance as a research under various criteria to satisfy the interests of all its actors (multidimensional angle), it can be reflected into two terms that are:

The degree of satisfaction (by achieving a goal); that can be translated into effectiveness.

The way these goals are realized and that is translated into efficiency.

Performance is the degree of accomplishment of objectives pursued; it is measured by comparing what has been achieved with what has been planned.

The commercial function is classified among the functions of wealth creation for the company; its performance is based on a set of indicators which are:

a. Quantitative indicators, measurement and performance appraisal tools (turnover, market share, number of clients)
b. Qualitative indicators, indicator obtained through the use of statistical treatments (image of the company, customer satisfaction).

In this theoretical part we have concluded that the quality management system has a positive impact on the performance of the commercial function but it remains to be confirmed in the case study.

Chapter III:

The impact of ISO 9001:2015 certification on the commercial performance

Introduction

After having presented the theoretical aspects of quality management and commercial performance in the previous chapters, we will study in this third chapter the impact of a certified quality management system on the performance of the commercial function of El SEWEDY Cables.

In the first section we will see a general presentation of the host organization ,the following section deals with the research methodology followed in our study, the third and final section is reserved for the analysis and processing of collected data.

Section 01: presentation of the company

1.1. General presentation of Elsewedy Cables

Elsewedy Cables was established in 1984 and is considered one of the oldest and most successful industrial groups in the Middle East and Africa.

Elsewedy Cables is the undisputed leader in the integrated production of cables and electrical products throughout the Middle East, while specializing in the provision of complete telecommunications solutions, turnkey projects and recently in the production of 'wind power. The group consists of 23 production units in 12 different countries. The continued development of Elsewedy Cables allows us to meet and grow the number of customers on a daily basis. The Elsewedy Cables Group exports its wide range of high quality products to meet all regulatory requirements in more than 110 countries around the world.[1]

❖ **Mission**

The ultimate mission is to produce and market high quality energy products that provide our customers with greater security.

❖ **Vision**

To be one of the top five global brands in the field of cables, electrical products manufacturing and related services.

❖ **Values**

– Credibility, mutual respect, reliability and integrity
– Loyalty of the clientele
– Innovation and continuous development
– A friendly working environment
– Human capital is our greatest asset
– Intransigence in terms of quality

[1] Link: http://www.elsewedyelectric.com/FE/Common/Companies.aspx?ID=28&g=3 visited 21/04/2018 at 2h10

1.2.Subsidiary of Algeria

In order to provide a complete energy solution, El Sewedy decided to launch its subsidiary ElSewedy Electric in Algeria in partnership with an Algerian shareholder to transfer its know-how in project implementation to its subsidiary in Algeria

The establishment of Elsewedy Cables in Algeria is a strategic choice that is part of an international growth dynamic; especially that Algeria is a market with undeniable potential.

In this context, Elsewedy Cables has built its first factory in the region of Ain Defla. The plant has been operational since the end of 2008. It covers a 5-hectare area with a production capacity of 15,000 tons of copper and aluminum cables, including low-voltage cables, cables and instrumentation and overhead conductors ; all of the company's products are made according to the series ISO 9001 standers.(see appendix 1)

To date, the commissioning of this plant has created more than 508 jobs for young Algerians. The introduction of our products on the local market has also helped lower the price of electric cable on the Algerian market by 20% according to our statistics.[1]

Until 2017, this subsidiary covers all the electrical works to know:

- Realization of turnkey MT / HT / THT Transmission Lines (Design, Supplies, Engineering, Installation, Testing, Commissioning);
- Realization of underground lines MT / HT / THT. Turnkey (Design, Supplies, Engineering, Installation, Testing, Commissioning);
- Deployment of fiber optic fiber optic cable under voltage;
- Deployment of Optical Fiber Optic Fiber Cable Underground (Pull / Blow);
- Power supply and transformer station MV / HT / THT;
- Lighting for new constructions and public lighting;
- Renovation and maintenance of electrical installations;
- Consulting and supply of Telecom equipment;
- Integration and project management system;
- Backbone fiber optic projects, connectivity solutions;
- Security system;

[1]This section about the presentation of the company is mostly based on internal information, documents provided for interns by the training agent of the training department

- Voice and data system.

Table III-1: Activity evolution of the company since establishment.

Year	Activity
2017	Accessories
2016	15% of the production destined for Export, the equivalent of more than 30 Million Dollars
2015	Very high voltage cables + 220 KV
2014	Refinery of copper and brass
2013	OPGW
2012	Distribution Transformer
2012	High Voltage Cables + 60 KV
2011	Transmission and distribution of energy
2010	MV cables under ground
2009	MT / HT overhead conductors
2008	Low voltage cables
2007	Installation of equipment
2006	Creation of Elsewedy Cables Electric Algeria

Source: corporate brochure of ElSewedy Cables.

Elsewedy Cables Electric Algeria is defined by:

- The largest production capacity in Algeria with 30 thousand tons / year of cables, and 3000 transformers / year.

- The largest exporter of electric cables in Algeria with an export turnover of $ 18 million in 2016.

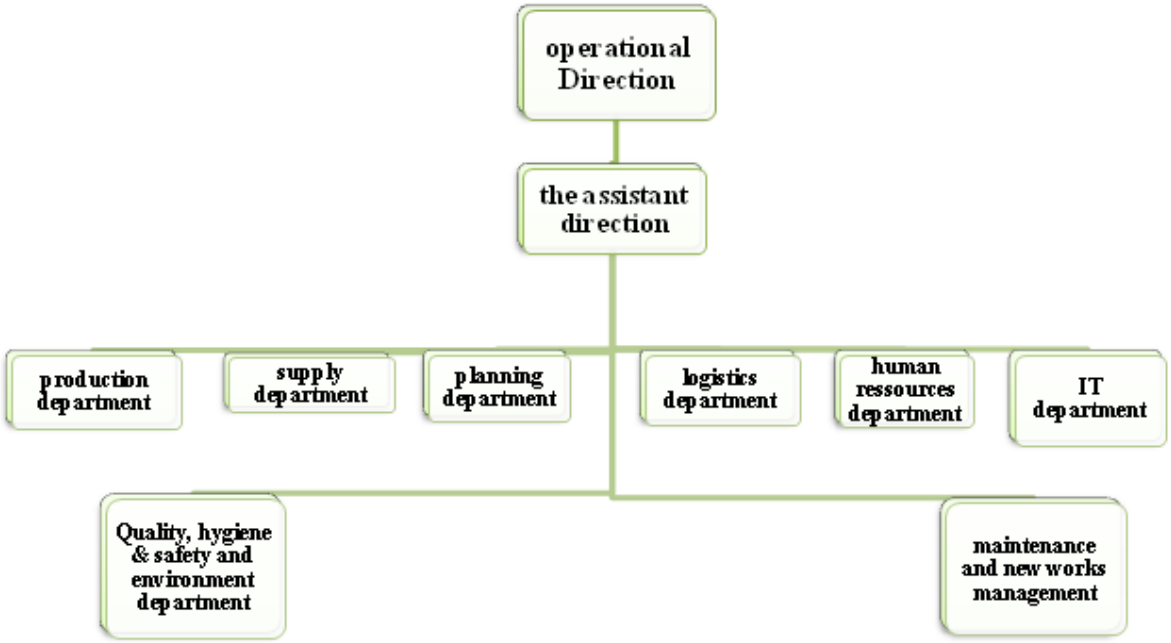
- The introduction of ElSewedy Cables Electric products on the Algerian market has reduced the cable import rate by 35%.

The turnover of the company has experienced several variations from 2009 by an amount of 3.4 billion dinars until 2017 by an amount of 20 billion dinars and it can be mentioned that the latter is generally in increasing evolution.

2. Organization of Elsewedy Cables

Like all companies, Elsewedy Cables is structured according to an organization chart pre-established by its general management to respond to emergencies and targets in advance The flowchart below illustrates the different directions of Elsewedy Cables.

Figure III-1: flowchart of Elsewedy Cables Algeria



Source: the company's internal document, provided by the head of human resources department,13/04/2018

2.1. Presentation of the Operational direction departments

2.1.1. The assistant direction

It is composed of a Deputy Director and a Secretariat. The general direction has for mission to coordinate between different directions, to motivate the stuff, to control, to forecast and to decide.

2.1.2. Supply department

As part of the overall procurement strategy, and allocated budgets (investments and operation); It sets up mechanisms to meet material and service needs as quickly as possible,

with the best quality and at the lowest cost in order to achieve the production and sales objectives.

2.1.3. Production department

The company produces a whole range of cables and wires, with different types, according to specific criteria that customers define.

- **Cables and Accessories Segment**

The cable and accessory segment represents the largest segment of the business. Our expertise in cable manufacturing, advanced machinery and high quality raw materials ensures that our customers are in good hands.

- **Low voltage cables**

PRODUCTION CAPACITY: 20,000 TONS / YEAR

COVERAGE IN ALGERIA: +130,000 TONNES

Low voltage cables are the cables used by the end customer to supply buildings, machinery. We all produce the range of low voltage cables:

- Anti-fire CR1-C1
- Non-fire retardant C1 (without halogen)
- Rubber cables (Isolated)
- Twist
- Armed with wire and armed with ribbon (strap)

- **Medium voltage cables**

PRODUCTION CAPACITY: 15,000 KM / YEAR

COVERAGE IN ALGERIA: +42,000 KM

In November 2008, we expanded our product lines by launching the production of medium voltage cables.

At the end of 2009 the first medium voltage cable was born after approval. During the same year, we began three medium voltage cable export orders to Tunisia, Equatorial Guinea and Bahrain.

High and very high voltage cables

PRODUCTION CAPACITY: 1000 KM / YEAR

COVERAGE IN ALGERIA: +1500 KM

In order to expand our range of products, we acquired the latest equipment for the production of high voltage cables.

The new production line started its activity in 2011, the first high-voltage cable production contract was signed with CAMEG in the following year.

Elsewedy Cables Algeria is thus the only producer of high voltage underground cables in Algeria and the third largest producer in Africa.

- **OPGW**

PRODUCTION CAPACITY: 3000 KM / YEAR

COVERAGE IN ALGERIA: +1000 KM

Elsewedy Cables Algeria relies on a working strategy that aims to meet the needs of its customers in the various energy sectors.

The needs evolve with the technological advance, for that OPGW cables were born like a marriage between the cables of guards and the cables of communication in optical fiber.

Production was launched in 2013, and our first major contract was signed in 2017 with CEEG, a 5 billion dinar contract for the supply of 6300 KM OPGW and accessories.

- **Transformers segment**

Our energy transformers are manufactured in our production unit located in Ain Defla in order to provide our customers with the appropriate adaptations to their requirements and to respond in a very short time to quotation requests and order deliveries.

- **Transformers immersed in oil**

The products are manufactured in accordance with the latest quality certificates. Our transformers immersed in oil are up to 5 MVA of power, and a voltage up to 33 kV down (step down) and elevator (step up).

Our production program covers the following types:

- Hermetically sealed dispensing transformers, are generally used in damp locations

- Distribution transformers with conservative are generally used in places known by difficult and changing climatic conditions.

- **Services**

It is very important for clients to maximize the return on their assets on their processors. We offer them full service coverage to increase reliability, optimize performance and improve lifecycle cost:

- Mounting monitoring
- Test and commissioning
- Maintenance
- Preventive maintenance

- Evaluation
- Spare parts

- **Dry transformers**

Small, safe, flexible and compliant with HSE requirements. The demand for molded resin dry type transformers is increasing day by day. Human safety, flexibility of positioning, reliability, cost awareness, life cycle considerations and many other reasons are the consequences of this increased demand for molded resin transformers.

In order to meet this demand, Elsewedy Cables Transformers Algeria has started manufacturing (assembly-based) molded resin transformers up to 10 MVA, 36 kV.

➢ **Energy Transmission and Distribution Segment**

Elsewedy Cables Electric T & D Algeria was established in 2011, it specializes in the design, engineering, procurement, installation, testing and commissioning of:

- Transmission networks "OHTL, UG cables & SS" from 66 KV to 500 KV.
- Distribution networks "OHTL, UG, SS and public lighting cables" from 0.4 KV to 34.5 KV.
- Communication networks

Production processes

The production processes of the plant according to the nature of the cable ordered and these materials passed through the following area:

- ✓ Wire drawing area
- ✓ Braiding zone
- ✓ Insulation area
- ✓ Assembly area
- ✓ Dubbing area
- ✓ Armament area
- ✓ Area of covers
- ✓ Test cell area of completed cables

2.1.4. Quality, hygiene & safety and environment department

This department is subdivided into three sub-departments:

- Quality Management Department: it is in charge of documentary system, audit and improvement and ISO 9001: 2015 standards application.
- Quality control department: Elsewedy Cables gives great importance to the quality control of its products, for this it has two laboratories for each of the production units and a management dedicated to innovation and research and development.. The quality control laboratories also work in perfect collaboration with the direction of production.
- HSE Department =: it is a department whose main function is to ensure environmental safety and reduce the impact of pollution on the environment.

Quality Procedures

✓ Document control

The Quality Assurance Department is in charge of controlling all the processes at the level of each Department. It is responsible for updating the documents of recordings and the control of the documents.

The Technical Department is responsible for updating the technical documents (standards)

✓ Product Identification and Traceability

The material received is identified during the inspection process upon receipt using the material code, the lot number, the date, the supplier number and its name.

During the manufacturing process, the entry in each process is identified by the work order number and the output is identified by a control card (tracking card) which includes the process name, the next process, the number of the machine, the material entered, the team, the name of the worker, the number of the incoming drum, the number of the outgoing drum, the results of the process control as well as its conformity status.

✓ Tests & Controls

All tests and controls specified in the customer order quality control plan are applied to customer cables to ensure they conform to specifications.

The conformity of the tests and controls is identified on the control card attached to the product throughout the production process.

- ✓ Measuring and control equipment

All measurement and control equipment is calibrated according to the annual calibration plan.

- ✓ Control of non-compliant products

If a material / product is judged to be non-compliant with one of the control points, this one will be submitted to a non-conformance report.

The customer will be trained for any rework in production or request for a concession if necessary, depending on the actions undertaken.

- ✓ Corrective actions

Any nonconformity report established after the customer's order, corrective actions are taken to ensure a smooth progress for the various processes of the company.

- ✓ Quality recordings

Quality records associated with testing and control activities will be submitted to the customer.

- ✓ Internal Audits Quality

All company processes are subject to internal quality audits to ensure compliance with ISO 9001: 2015 requirements.

- ✓ Handling, Storage, Packaging and Delivery

All items ordered by the customer will be packaged and delivered in accordance with the contract and referenced procedures of the company. The final list of shipping slips will be submitted to the customer

2.1.5. The planning department

The Planning Department integrates the customer's order into the monthly production plan and prepares a "work order" for the relevant production machinery, including the description and performance specifications for each phase, during the manufacturing process, the production yield each phase is identified according to the Identification & Traceability Process.

2.1.6. IT department

Its main role is:

- **Governance** refers to the implementation of operational parameters for working units and individuals' use of IT systems, architecture, and networks. The governance of the master data is based on workflow processes that integrate business rules and subject matter domain expertise. This is part of the conventional IT security as well as the data assurance for which the IT department is also responsible.
- **Infrastructure** refers to the hardware components, the network, the circuitry, and all other equipment necessary to make an IT system function according to the established needs and system "size" of the company.
- **Functionality** is perhaps the most apparent task performed by the IT department. It refers to creating and maintaining operational applications; developing, securing, and storing electronic data that belongs to the organization; and assisting in the use of software and data management to all functional areas of the organization.

2.1.7. Logistics department

The logistics management consists of two services, a transport service and an expedition service

- The role of the transport service is:
  - To deliver Elsewedy Cables products, from Ain defla complex to different customers
  - To ensure the distribution and maintenance of the cable reel
- The shipping service is charge of:

- Shipping of cables, and wires, dry and oil transformers;

- Establishment of delivery vouchers;

- Management of instructions files;

- Establishment of consignment vouchers.

2.1.8. Human Resources Department

Considered to be one of the pillars of Elsewedy Cables's structural organization, the management human resources supports:

- Career management of employees
- Recruitment and selection of staff
- Training and staff development
- Paying employees' salaries
- Follow-up of employee social security files

2.1.9. Maintenance and new works management

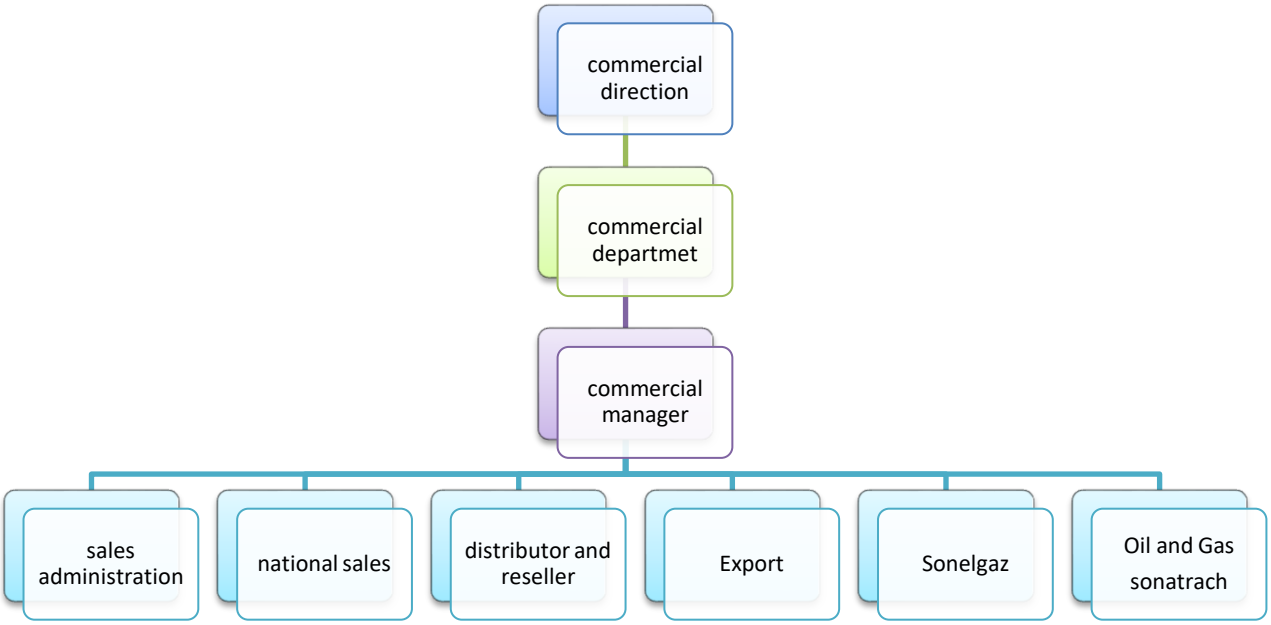
- Establishes and integrates new industrial equipment and processes;
- Plan and maintain for all installations;
- Manages and deploys with the industrial director and the pole directors the projects investments in the building and energy / utility production lines (from the definition of the trial until the start of the line or the workshop);
- Write the specifications internally;
- Negotiate with suppliers and external stakeholder.

Section 02: Study and description of ElSewedy Cables' commercial function

Introduction

The commercial department of Elsewedy Cables is the creative part of wealth for the company; this structure is in charge of marketing and selling the Elsewedy Cables's product.

Figure III-2: flowchart of the Commercial Direction



Source: personal elaboration from the internal information given by commercial agent 13/04/2018

1. The commercial department

The commercial department is one of the most dynamic services because it represents the heart of the development of the company; it ensures the delivery of all services provided by the company to its customers, from the first contact until the delivery of the product.

The commercial management of the company is divided into two parts which constitute six (06) departments:

1.1.Sales administration

Sales administration includes all the administrative support and shipping functions:

- Sales Administration Coordination: assists the Division Manager;

- Cable dispatch department: logistics, planning, chartering and monitoring;
- Management of the order book: recording and monitoring of the books (national depots and export), Food for the establishment of manufacturing schedules, coordination with inventory management and inventories, establishment of transfer programs to the depots;
- Inventory and inventory management: interface and centralized support (new applications, support and coordination with module marketing users);
- Complaint: Receipt of registration and identification of complaints, follow-up and interface with the quality department, complaints processing Marketing interface quality control and production, coordination with the regions.

1.2.National sales

- The coordinator is responsible under the authority of the marketing office for the commercial policy of the main products (special and normal cables), the national market, direct sales and warehouses. It sets the objectives price / volume and control.
- Coordinating Assistant centralizes all direct sales / deposits of the product concerned, market evolution, competition, price, application of directives and reports to the product coordinator.
- Region manager: under the authority of the product coordinator, he assumes responsibility for the application of the price / volume policy at the regional level.
- Seller: locally applies the price / volume policy.

1.3.Export sales:

- the main mission of this service is summarized in the following steps:
- Ensure the smooth running and follow-up of the export of cable drums by sea or land.
- Create the order form and prepare the file for direct debit.
- Support shipping documentation: No demurrage.
- Manage interface banking cash legal insurance accounting
- Logic and partners
- Follow up on the order and take care of the preparation of the administrative documents.
- Monitoring of human and material resources.

1.4.Distribution and reseller: its main mission is limited simply to the distribution of the company's products to the reseller.

1.5. **SONELGAZ:** the company has devoted a special office only to take care of SONELGAZ's orders since it represents the most important client of Elsewedy cables.

1.6. **SONATRACH Oil and Gas**: it is the last established office in the commercial department; its mission is to handle only SONATRACH orders.

2. Staff of the commercial direction by socio-professional category

Table III-2: Staff of the Commercial Division of Elsewedy cables Algeria

CSP	Local labor		Foreign labor	
	Women	Men	women	men
Senior executive	13	22	0	15
Supervisors	9	20	0	22
Execution	39	50	0	0
Total	61	92	0	37

Source: personal elaboration from the company's human resources department manual

The commercial direction is composed of 89 executives, 51 supervisors and 50 senior executive.

3. Customers of the company

Elsewedy types of customers are:

- Representatives
- Industrial (condor, SAMSUNG ...)
- Institutions and administrations
- electrical suppliers
- construction work (contractors)

4. Study and modeling of the commercial process

4.1. Staff involved

- The sales representative responsible for the client's file;
- The commercial service coordinator;
- The factory coordinator contacted;

- The agent responsible for monitoring the purchasing department;
- -The delivery guy;
- Accountant;
- Cashier.

4.2.Documents used

- Commercial proposal: price offer and technique.
- A CR model;
- Customer order form;
- Purchase order from the commercial department;
- Certificate of exemption from VAT;
- Sales receipt;
- Delivery form.

4.3.Description of the process

- The first contact with the customer is through a call for tenders, an audience, a fax, an email or a phone call, or quotation request...
- After that the sales representative completes a CR (contract review) template and transfers this file to the commercial and financial coordinators who will keep the transfer to the exploitation direction of the subsidiary according to the requested cable type:
  - ✓ If the reference and description of the cable are known, simply do a search or a copy which automatically triggers the sending of the technical offer.
  - ✓ If this is a new description of the Cable, the technical service will collect the information necessary to meet the customer's need.

- A coordinator at the factory level contacted will send the technical data sheet together with the commercial offer to the sales coordinator.
- The latter transmits the offer to the commercial that is responsible for contracting the customer and to offer this offer (In the case where the technical characteristics of the desired cable are known by the customer, a commercial offer will suffice)
- If the customer considers that the offer meets his needs, he will send a purchase order, otherwise several cases arise:

- Refusal of the technical offer: the sales representative mentions all the information added or modified in the consultation sheet with the same number of CR, then he transfers this offer to the coordinator of the commercial department who will take care of the follow-up of the modifications of the technical offer.
- Refusal of the commercial offer: a discount is proposed by the commercial what he does an update on the commercial proposal.
- A total refusal means a cancellation of the offer.

– The purchase validation part is confirmed by an order (purchase order) this voucher contains the type of product, quantity, price, delivery date, date of order.

– The method of payment is defined according to the model of the contract signed between the two parties, the conditions of payment and the type of customer and his activity.

In general the commercial offer encompasses the different types of commitment quoting the delivery time, delivery terms, packaging, payment, validity of the offer, tolerance, warranty, documentation.

The purchasing department follows the order and correspondence by email with the supplier (the exploitation direction), transportation of goods, until disembarkation where the client decides.

During the unloading of the goods (the order of the cables) the purchasing department informs the customer of the arrival of his order through the commercial service (either the customer will take his order from the store of the factory or ask for delivery).

The billing department of the finance and accounting department takes care of the regularization of the bills by respecting the clauses mentioned in the contract.

4.4.The terms of the contract

The sale can only be carried out if the company (the seller) and the customer (the buyer) have agreed on the essential points of the sales contract. These points are:

– the goods to be supplied;

– Terms and delivery times;

– Payment terms;

– The benefit or not of a VAT exemption;

- Any discount on the price;
- The payment method;
- The methods of recovery;
- Validity of the offer;
- Packaging;
- Documentation;
- Tolerance;
- Warranty.

It is to specify the commitments of the partners on:

- The goods to be supplied: the item number, the exact denomination or description, the reference, the quantity and the unit price excluding taxes.
- Modality, terms, and delivery times: rates, delivery address, delivery method, geographical coverage, delivery times and delivery date.
- Payment terms: the time of payment, the date on which the payment must be made must appear on the bill:
  - ✓ In advance: by deposit or total
  - ✓ At the moment of delivery: at the Cash
  - ✓ After delivery: in term (sale on credit).
- Payment of VAT: in case of exemption from VAT, legal proof of exemption must be given (certificate of exemption handed over by the tax authorities).A statement that the transaction benefits from a VAT exemption measure must appear on the bill.
- Possible reductions: any price reductions (discounts, rebates) from which the sales transaction benefited.
- The percentage of the discount must appear on the bill.
- The means of payment: cash, bank transfer, check, bank card, paper instrument (bill of exchange, promissory note);
- Recovery methods: these are the penalties for late payment.
- The rate of the penalties payable the day after the date of payment must be mentioned on the bill and on the general conditions of sale.
- Validity of the offer: until which date, the salesman commits himself on the tariffs, availability of the offer.

- Packaging: This is a clause determines the different types of packaging, according to the technical characteristic of the product, or it is recommended by the customer, or export packaging.
- Documentation: the supporting or administrative documents to be provided with the contract such as the required equalization, or certificate of exemption.
- Tolerance: it's a percentage represents the risk, in general is 5%
- Warranty: This is a period of product testing against defects in materials and workmanship under normal conditions of use and service from the date of delivery.

4.5.The types of contracts

We distinguish two types of sales contracts:

The cash sale

This is the normal case in which the delivery of the good by the company and the payment of the price by the customer are executed simultaneously.

Credit sales

This is the case where a payment term is granted to the customer. Delivery occurs before payment and the credit can be paid or free.

4.6.The different payment methods

- A payment of 100% of the goods before delivery.
- A payment of a percentage in advance (a payment advance before the delivery of the goods) and the rest on delivery.
- A payment of a percentage in advance, and the rest to be paid 1 to 2 months after deliver

Section 03: Methodology, process and results of the study

1. Presentation and objective of the study

In order to achieve our research goal and answer our central question: “How does the certification of the quality management system improve the commercial performance of exporting companies” We have extracted the needed information from the field of study, conducted some interviews with a methodological approach that we adapted to the nature of our research and tried to analyze the risks and opportunities of the commercial process; we

have also analyzed the evaluation of customers satisfaction to know how can this latter improve the commercial performance.

2. Tools of research

2.1. Survey overview

We chose to conduct a survey to uncover answers to our main question for two main reasons:

- To get a snapshot of the attitudes and behaviors (thoughts, opinions, and comments) related to our theme of research that represent a valuable feedback.
- To evoke discussions that allowed us eventually to dig deeper into our survey and collect the most accurate data.

The study depends on information extracted from the field survey, in addition to the participative observation during the four months period of internship in ELSEWEDY CABLES; no documents were acquired in relation to the identity of suppliers or the amount of purchases which is due to the strict confidentiality policy followed by the company to protect its development plan. This however shows the strategic importance of the commercial function considered as a key asset by ELSEWEDY CABLES and as a competitive edge that differentiate it from its competitors.

During the execution of the survey and the whole period of internship, we had a positive feedback from many executives and managers, and a willing to help extracting different barriers and challenges that the function faces, and which prevents it from developing.

2.2.Qualitative studies

2.2.1 The interviews

- **Purpose of the run interviews**

In-depth interviews can be defined as a qualitative research technique which involves "conducting intensive individual interviews with a small number of respondents to explore their perspectives on a particular idea, program or situation"[1].

It is "The verbal conversation between two people with the objective of collecting relevant information for the purpose"[2]

[1] Boyce, C & Neale, "Conducting in-depth Interviews: A Guide for Designing and Conducting In-Depth Interviews", Pathfinder International Tool Series, 2006, P3.

[2]Link: https://fr.slideshare.net/VinayKumar49/interview-method-in-research

In our case we chose to conduct semi-structured interviews with different actors in the procurement division within the host company because it was considered the most appropriate tool to:

- Collect detailed information and answers to our research question,
- Control over the flow of primary data collection process,
- Clarify certain ambiguities and contradictions during the research process.

- **Drafting the interviews**

Our interview guides are structured as follows:

- A presentation of the purpose of the interview guide and our research project followed by a form of politeness, in which we ensure that all provided information are used only for scientific purposes,
- The body of the interview guides containing semi-directive questions aimed at a single objective.

- **Running the interviews**

Our questions were addresses to the:

-Quality Management Manager;
- Quality auditor;
- Commercial Manager;
- Commercial agent.

The participants were interviewed face-to-face by individual interviews of 5 questions to the QMS department and 7 questions for the commercial department, spread over a one-week period, from 22nd April to 26th April,2018, for an average of 40 minutes per interview using different interview guides with specific questions for each commercial and QMS managers and commercial agent and the quality auditor.

These interview guides aims to confirm and get deeper explanations, the questions were previously sent by e-mail to the interviewees in order to enable them to prepare the right amount of information, yet for reasons of a crowded schedule they only reviewed the guide moments before the meeting and still have given adequate information in relation to the research.

Some of the interviews were audio-recorded with the consent of the interviewees and the rest by note taking in order to permit later for content analysis.

➢ **Analyzing the interviews**

The interview answers were in form of recorded speech that was transcribed carefully, in addition to the notes that have been written down during internship; that were gathered in order to check and be sure of the provided information.

2.2.2. Main results of the study

❖ **Presentation and analyses of interview guides results**

- First interview guide: " with quality management manager and the quality auditor "

Question 01: How can you explain the need for businesses to certify their quality management system?

The QM manager and the quality auditor claimed that ISO 9001 is the quality management system standards that provide numerous benefits for any company willing to follow this path, and they mentioned couple of them:

- meeting customer requirements
- get more revenue and business from new customers
- open new markets that business were virtually unable to do business with before your certification
- An improved level of quality for the entire organization every process and every product
- increase customer satisfaction with the company's products
- helps to identify and describe the process using business metrics, that are used to understand and communicate the system's performance relative to the quality objectives;
- Implementing an ISO 9001 Quality Management System can empower employees, as a result an improved company culture and a more professional staff;
- The ISO 9001 QMS has a way to ensure the company stays focused, and that's quality auditing, internal audits, registration (and surveillance) audits, and self-process audits.

Question 2: In which way can your department control the overall of department's activities?

Every department is related to the QMS department, because it's the one who set the rules; moreover, our responsibility is to audit periodically our quality processes, which is required by the ISO 9001 certification. Regular process audits and as-needed audits, when

done correctly, provide the objective feedback needed to correct any deviations from the quality path and keep the company focused on its goals.

Question 3: How did you apply the certification standards on your internal organization?

The quality management team has done a specific job, in setting the internal procedures that every department should apply in order to respect the certification clauses, which means the company's procedures are inspired from the ISO 9001:2015 series.

Question 4: In your opinion, does certification in ISO 9001:2015 helps your company to achieve better performance? Can you tell give me more details about the commercial performance?

The QM manager and the quality auditor said that ISO 9001:2015 brings quality management and continual improvement into the heart of an organization. The new standard is an opportunity for the company to align its strategic direction with its quality management system and means that it can be used to help enhance and monitor its performance.

It is important to realize that high performance will only be achieved if all members of the commercial function perform effectively, and the norm assure this through Planning, establishing, implementing and maintaining audit program, including frequency, methods, responsibilities and reporting; so that the commercial process is controlled and evaluated more often to avoid any deficiency.

Question 5: the new version of the norm ISO 9001 introduced a new clause of evaluating the performance through different aspects; in your opinion, how can this evaluation be a major key to measure the commercial performance in particular?

Both of the QM manager and the quality auditor claimed that, according to the new clause, the organization must determine what needs to be monitored and measured; the methods of monitoring, measurement, analysis and evaluation necessary to ensure the validity of the results; when monitoring and measurement are to be performed; and when the results of monitoring and measurement need to be analyzed and evaluated.

The organization must evaluate the performance as well as the effectiveness of the quality management system.

In addition to that, it must retain relevant documented information as evidence of the results.

It helps measuring the commercial performance through the evaluation of customer satisfaction, which is important to keep customers pleased and show them that the company cares about their complaints and giving them products that fulfils their needs.

In the other hand, like it has been mentioned before; the instruction evaluate whether it is necessary to take action to eliminate the causes of non-compliance, so that it does not recur or do not appear elsewhere to impede the commercial process

- Second interview guide: " with the commercial manager and the sales agent "

Question 1: Can you tell me about the link between quality management department and commercial department?

The quality management department is related to every department is this organization, so that is assure the best application of the instructions required by the norm. So the quality management department monitors and analyzes the commercial process to assure the best progression of the latter.

Question 2: According to you, did the certification in ISO 9001:2015 influence the results' evolution in sales volume, share of market, and number of customers?

The commercial manager confirmed that sales has been increased, because the application of the certification's clauses assure good quality products that reflect the brand image, and the company is considered as a leader in the Algerian market because of its high quality products. The commercial agent said that, paying attention to client's satisfaction by evaluating and treating complaints attracts potential customers. As a result, the market share gets wider.

Question 3: What are the indicators used in the commercial activity dashboard?

The commercial manager and the commercial agent affirmed that the commercial dashboard is a tool for improving the commercial performance since it makes it possible to follow the evolution of the commercial activity with regard to the objectives set.
Indeed, without a measurement tool, it is impossible for him as a commercial manager to control and improve the performance of his commercial team.
To establish its commercial dashboard, it is necessary to distinguish 3 levels of metrics:

The results are the elements on which he cannot act, but on which he makes a statement. For example, the following results can be mentioned: Increase in turnover, the percentage of market share margin increase percentage of satisfied customers

Business objectives are objectives on which he can directly influence the use of specific activities.

In the sales objectives, we can include: percentage of portfolio by commercial, of new business.

Contrary to the results that we can only see, the metrics "**activities**" is a metric, on which the commercial manager can directly act. They help achieve sales objectives and then see results.

The construction of the commercial dashboard from the levels of metrics A (activities) - O (objectives) - R (results) makes it possible to define a specific process completely involved in the improvement of commercial performance.

Building good sales dashboard means knowing how to select metrics first and creating a logical chain of events that affect the objectives that will lead to the expected results.

Question 4: What do you think about internal communication and cooperation between departments? How can this lead important for the success of the commercial strategy?

For the commercial manager, communication is one of the organizational functions that helps his department to stay efficient and productive, and he find that one of the more important forms of organizational communication, is inter-departmental communication.

The commercial agent claims that the importance of communication between different departments becomes more evident when that communication breaks down. Implementing ISO 9001:2015 certifications was to strengthen inter-departmental communication and help to underscore its importance and maintain an efficient flow of information. So departments should ensure that the information they are giving to other departments in the organization is reliable to help improve operational efficiency and to retain clients and insure the flow of business reports and this can happen only if we maintain a high level of customer service.

The accurate exchange of information between departments improves the ability to meet sales projections, to get product to distribution points and to have contracts and documents reviewed by the proper people.

Question 5: According to you, in which manner does the certification of quality management system improves the commercial department performance? And how can you measure it?

The commercial department witnessed a great improvement in performance since the implementation of the ISO 9001:2015 certification that can be measured through sales volume, also by the evaluation of our clients' satisfaction and only the certification could guarantee this improvement because it requires continual auditing of the commercial process and assure that is kept up to date.

Question 6: what are the most common problems that the department faces frequently?

The commercial department faces different problems that could slow down the progression of the commercial process. One of the most important is the relationship with new customers, since they are not familiar with our company's sale process; but our commercial agents try to go slow with them in order to keep good relationships.
Since we're living in the middle of the economic crisis, we're having difficulty in getting our money from customers, and most of the time we find ourselves in critical situations.
Product return is also one of our major problems that appear in very active production periods; it can be in our case a one millimeters defective cable which is in the same time a 10 kilometers defective cable; this is when we finish by having defective products, or most of the time, clients mishandle the cable reel, so a small lapse can lead to immense damages.

Question 7: In your opinion, what do your customers value and / or do not value in your products? How do you know?

The commercial manager said that he believes that customers value the company's products for their high quality, their reliability, their technological level, and their pricing which is known in the whole Algerian market.
The commercial agent stated that, the company gives a ten years warranty for its products; which make it difficult for the other suppliers in the cables' market to compete with them; as a result customer volume increases as well as the sales volume.

Generally, the company's customers are satisfied by the products and just a few of them find that the price is a little bit higher, but they finish by purchasing because they're convinced that no company in the Algerian market offers such a high quality cables.

The commercial department has established in collaboration with the quality management department an evaluation sheet that the commercial agent emails to the client ones the sale's process is finished, where the latter fill it out mentioning what he liked and what he didn't in terms of quality, respect of deadlines, friendliness of staff, Price, opening hours, relations and communication, security and environment, availability, staff qualifications, claims handling

Conclusion of interview guides analysis

Through the conduct of our interview, we were able to get more information regarding the link between the quality management system department and the commercial one.
The statement of the head of the QMS department allowed us to confirm what we have stated in the previous chapters about the Quality Management System, being the set of actions implemented by the company in order to have a quality approach or continuous improvement to increase the quality of its production and organization. The company considers the quality management as a priority since it reaches all the levels of the company.
According to ISO 9001:2015 Quality is a measure of customer satisfaction with the products or services offered.

The QMS department can control all the activities of the departments through the verification of progress of the objectives set daily, perform internal audits, develop quarterly reports and evaluate the overall performance.

The department of quality management system applies the seven (7) processes of quality management for its internal organization which are the control of the documents and the registrations, the control of non-compliant, the corrective actions and the preventive actions, the quality Audit, the steering processes, the Global Steering of continuous improvement, The company, its context and its interested parties.

The ISO 9001: 2015 certification helped the company to achieve better performance especially on the commercial level that represents the heart of the company; from the questions we asked, we could deduce the main commercial performance measurement:

- the number of customer appointments;
- the sales volume;
- the customers' satisfaction;
- The market share and profitability.

The commercial department takes into account, the customers satisfaction's assessment which is necessary for the measurement of the commercial performance as required in the ISO 9001: 2015 standard in its ninth chapter.

From the obtained answers, we can conclude the major indicators that allow the commercial department to measure its performance:

- The customer conversion rate;
- The cost per perspective;
- The rate of gain / loss compared to our competitors;
- Customer call rate and quality metrics;
- Sales ratios by customer type;
- Recommendation rate;
- Customer complaint rate;
- Customer satisfaction rate.

Knowing that commercial performance embodies the ability of a company to satisfy its customers by offering a product or service that meets its expectations, this is why we add satisfaction assessment and customer loyalty as a necessary indicator to measure commercial performance

Being ISO 9001 certified is a guarantee of quality and assurance that will be maintained and improved over time. Elsewedy Company offers to its customers a simple and inexpensive way to check the quality of our products or services.

On the international level, the ISO 9001 label is very well known and by being certified, the company benefits from the notoriety of this label; one of the benefits is that Elsewedy Cables Company can easily respond to international calls for tenders just by being ISO 9001:2015 certified and for the huge production's capacity.

The company's awareness of the major role played by the commercial function in its development plan has made the top management ensure its independence concerning the choice of the methods applied during sales' operations, but in the other hand, the function does not have the same degree of independence and autonomy in taking decisions, this may be due in Elsewedy's case to the fact that the function is directly attached to the general direction. This link made decision-making strongly centralized and the degree of delegation of power relatively weak; that impede most of the time the sales process.

2.2.3. Risks and opportunities analysis of the commercial function

- **presentation of the risk assessment analysis**

Risk analysis is a new requirement, and certainly the most emblematic of this new 2015 version. This ISO 9001 standard encourages companies to manage risks that are likely to affect process output and results of the QMS, including those related to the conformity of products and services, compliance with customer and regulatory requirements and the improvement of customer satisfaction.

The ISO 9001V2015 standard does not impose a method for determining risks and opportunities, and it does not replace standards such as ISO 31000 (provides general principles and guidelines on risk management.) Which is the reference standard for constructing a risk identification and control approach.

ISO 9001:2015version has encouraged companies to analyze and monitor their processes or activities, but it has not addressed this notion of identifying risks and opportunities.

Risk and opportunity are characterized by four attributes:

1. The event that gives rise to the risk or opportunity;
2. Its likelihood which is the probability of occurrence of the event;
3. Its consequence which is the effect on the product, the customer satisfaction, the processes or the system;
4. Its gravity or benefit that is the impact on the product, customer satisfaction, process or system.

As any action of a management system, the management of risks and opportunities will be carried out according to a **Plan, Do, Check** and **Act** approach:

a) Determination of the perimeter of risk identification (which processes? which activities?);

b) Research and identification of risks;

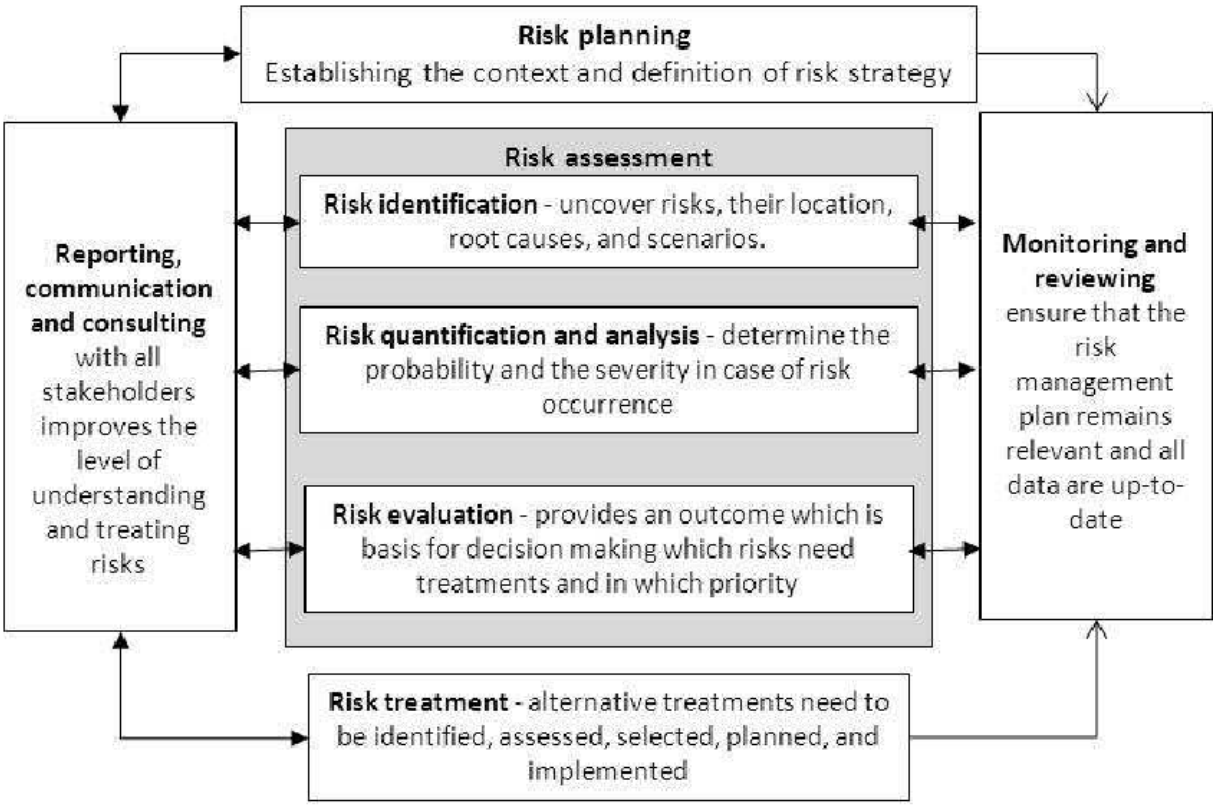
c) An analysis and classification, in term of duration, the occurrence, gravity, in order to have the knowledge of the significant risks for the studied perimeter;

d) Need to decide how each significant risk will be handled, internal treatment (procedure, training, organizational change, etc.), risk transfer or, no taking into account the risk;

e) Review of the actions implemented and their effectiveness, without forgetting to question the possible emergence of new risks.

The following figure (III-3) illustrate the main steps to risk assessment.

Figure III-3: the five steps to risk assessment:



Source:https://www.researchgate.net/profile/Eivind_Helland/publication/256767905/figure/fig1/AS:297966465241089@1448052149532/Enterprise-Risk-Management-Process

We will try in the following part, to propose the appropriate method or tool for each step that we allow us to define the risks and opportunity of the commercial process:

- **Determination of the perimeter of risk identification**

The risks and opportunities of the commercial process are those that can impact its purpose.

The potential risks related to this process are:

1. Accumulation of unpaid bills;
2. Order processing delay;
3. Non-conformity of products;
4. Communication problems with new clients.

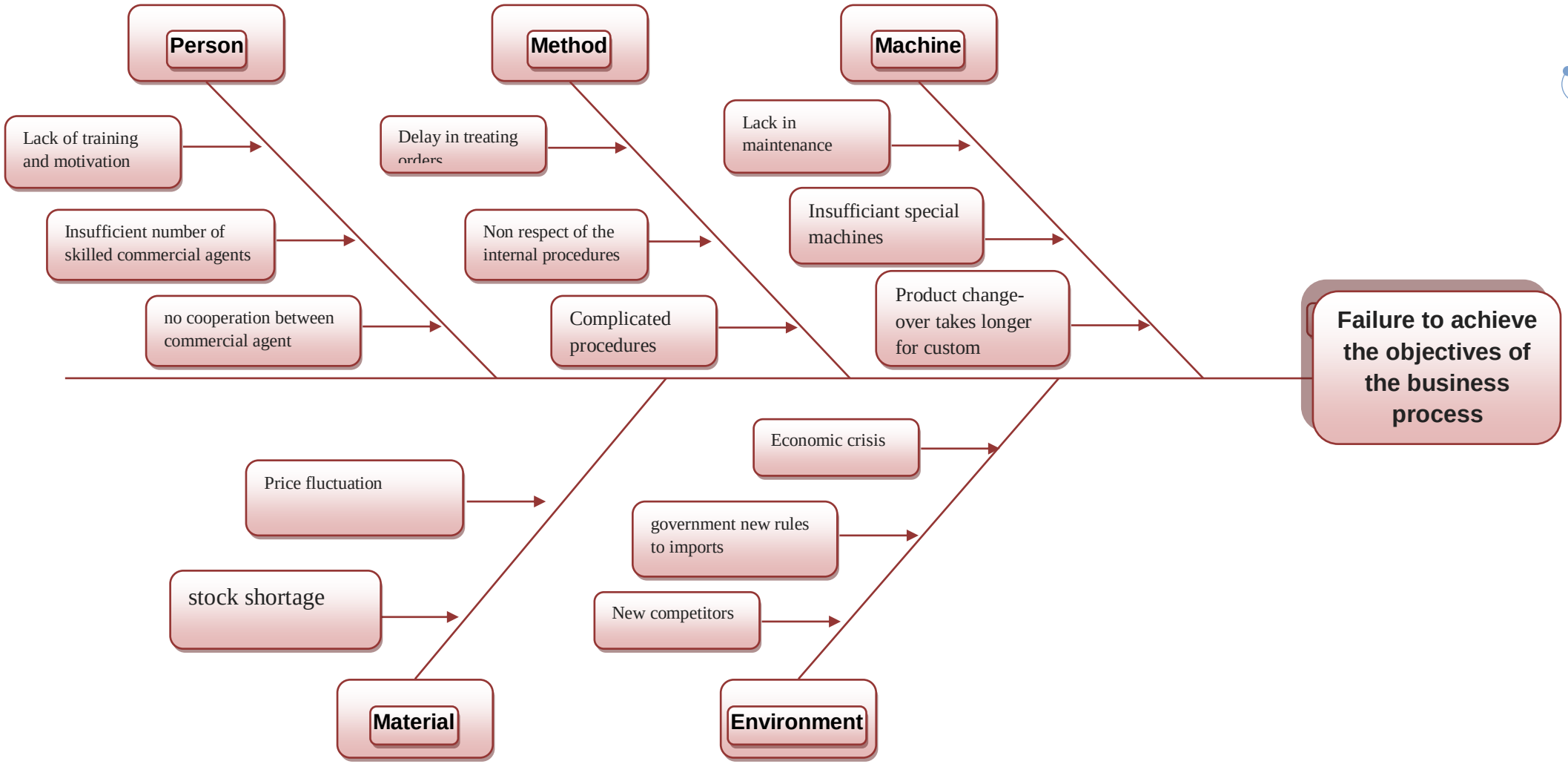
- **Identifying risks through Ishikawa diagram**

To properly manage these risks, it is important to look for the main causes of these risks, so we suggest the 5M method, or the ISHIKAWA diagram. This method makes it possible to classify the causes by five (05) origins:

- Machine (equipment, technology);
- Method (process);
- Material (includes raw material, consumables, and information);
- Man / mind power (physical or knowledge work, includes: kaizens, suggestions);
- Measurement / medium (inspection, environment).

The following diagram presents all the causes that have affected the achievement of the objectives set by the commercial process:

Figure III-4: Ishikawa diagram for the commercial process



Source: personal elaboration from the collected notes during the internship in both commercial and QMS departments

- **Classify and prioritize risks**

It is impossible to treat all risks at once and at the same time, for that we use a key concept that is the risk assessment. Risk can be defined as the combination of the probability (likelihood) of an event occurring and the consequences if that event does occur. This gives us a simple formula to measure the level of risk in any situation.

Risk rating = likelihood x Severity

The risk rating calculation classifies and assigns a risk treatment priority. The ranking of risks is carried out on a matrix called "the risk matrix".

This matrix gives a graphical view of the situation of existing risks in a process, company, project ... etc. It is a two-dimensional matrix, these criteria "probability and severity" are often evaluated each on a scale of 1 to 4, which are multiplied to give a level of risk (number ranging from 1 to 16).

Figure III-5 presents a model of the risk assessment matrix:

Figure III-5: the risk assessment matrix

LIKELIHOOD OF OCCURRENCE					
	Probable	4 Moderate	8 Major	12 severe	16 severe
	Possible	3 Minor	6 Moderate	9 Major	12 severe
	Unlikely	2 Minor	4 Moderate	6 Moderate	8 Major
	Rare	1 Minor	2 Minor	3 Minor	4 Moderate
		Low	Medium	High	Very high
	SEVERITY OF CONSEQUENCES				

Source: personal elaboration,

- **The risk assessment interpretation**

Table III-3: risk assessment interpretation

Nature of risk		Actions to implement
<= 3	Minor risk	Risk considered acceptable - No action required
4<C<6	Moderate risk	Risk considered acceptable, however a risk treatment may be necessary in the long term. - No further action required apart from ensuring that the relevant controls are effective and operational.
8<C<9	Major risk	Unacceptable risk requiring timely treatment. - Define an appropriate risk treatment, validate it and implement it.
12<C<16	Severe risk	Unacceptable risk requiring treatment as soon as possible. - Define an appropriate risk treatment to have it validated and implemented.

Source: personal elaboration fromhttp://slideplayer.com/slide/6587873/ viewed 20/04/2018 at 21h50

- **Treatment and risk monitoring**

After having localized and prioritized the risks, two control strategies:

1) Reduce its probability: prevention
2) Reduce its severity: protection

The ideal is to do both at the same time by optimizing the ratio (cost of loss / cost of prevention)

Table 11I-4: Assessment of the level of risk control and opportunity

Before dealing with a risk, the company must determine its level of control over that risk: to decide whether to process it internally or outsource it to other organizations.

The level of risk control (C) corresponds to the means, skills, methods that the company has to manage these risks or opportunities. The level of control is characterized by a scale of 1 to 3.

C	level of risk control	In human terms	In organizational terms	In the technical terms
1	Neither	Untrained staff and responders.	No documented information available	Non-existent technical means.
2	Insufficient	staff and stakeholders training - Not evaluated.	Incomplete documented information or not effective.	Existing technical means, but need to be strengthened. Technical means not in conformity.
3	Sufficient	staff and stakeholders well trained, and empowered information effectively Verified	Documented, effective and regularly tested information.	Infrastructure or equipment adapted and compliant.

Source : Isabelle Gapillout, La qualité avec ISO 9001 :2015 et plus encore, édition Vyatiosys, 2015,

We present below the identification, the calculation of the risk assessment of the commercial process, and we present an action plan for the processing, the follow-up and the evaluation of level of control of these risks.

Table III-5: calculation of the risk assessment of the commercial process

Risk label	S	O	R
Accumulation of unpaid bills	**4**	**3**	**12**
Order processing delay	**2**	**4**	**8**
Communication problems with new clients	**3**	**2**	**6**
Non-conformity of products	**3**	**1**	**3**

Source: personal elaboration;

We will rank the risks listed in the table in the risk matrix according to their degree of criticality as shown in Figure III-5:

Figure III-6: the ranking of the company's risk according to their criticality.

LIKELIHOOD OF OCCURRENCE					
	Probable	4 Moderate	8 Major Order processing delay	12 Severe	16 severe
	Possible	3 Minor	6 Moderate	9 Major	12 Severe Accumulation of unpaid bills
	Unlikely	2 Minor	4 Moderate	6 Moderate Communication problems with new clients	8 Major
	Rare	1 Minor	2 Minor	3 Minor Non-conformity of products	4 Moderate
		Low	Medium	High	Very high
	SEVERITY OF CONSEQUENCES				

Source: personal elaboration;

Table III-6 Actions to address risks and opportunities of the commercial process.

Risk title	(S) 1-4	(O) 1-4	Risk rating	Level of control commentary	Actions	Deadline	Method of evaluating actions
Accumulation of unpaid bills	**4**	**3**	**12**	3 Personnel 2 Organizational 2Technical	- Set a recovery office - Negotiate the payment period's limits in the contract -	December, 2018	Internal audit, process review, management review, monthly indicator tracking sheet
Order processing delay	**2**	**4**	**8**	3 Personnel 2 Organizational 2Technical	– Planning – Staff awareness – Empower the commercial agents – Program the storage capacity extension – Manage orders on time.	June, 2018	Internal audit, process review, management review, monthly indicator tracking sheet
Communication problems with new clients	**3**	**2**	**6**	3 Personnel 2 Organizational 2Technical	- Train staff on the importance of communication. - Inform new customers of the sale procedures - Privilege face-to-face meetings with clients.	June , 2018	Internal audit, process review, management review, monthly indicator tracking sheet
Non-conformity of products	**3**	**1**	**3**	3 Personnel 2 Organizational 2 Technical	- Raise awareness and train those responsible - Complete product analysis - Develop the laboratories	June , 2018	Internal audit, process review, management review, monthly indicator tracking sheet

Source: personal elaboration,

2.3. Quantitative study: commercial performance analysis through the evaluation of customers' satisfaction.

The Commercial performance depends on the quality, reliability and relevance of its indicators.

Elsewedy commercial and quality management system departments have put in place seven (07) commercial performance indicators to manage, monitor and improve this latter through the assessment of clients' satisfaction:

- Sales ratios by customer type;
- Customer satisfaction rate;
- The cost per prospect;
- The rate of gain / loss compared to competitors;
- Customer call rate and quality metrics;
- Recommendation rate;
- Customer complaint rate.

During the internships, a lot of responsible wanted to keep the confidentiality on certain subject, judged by confidential; so we simply made the evaluation and the analysis of the commercial performance, relying on the measurement and the interpretation of the evaluation of the customer satisfaction.

2.3.1. Analyzing the evaluation of performance through customer satisfaction survey:

Based on what has been discussed in Chapter II, the indicator is information or a measure that can be used to judge progress toward the objective that has already been set.

Elsewedy is no exception to this rule, as long as each indicator represents a quantified translation of an objective set by the commercial and management department.

The customer satisfaction rate is a very important indicator for evaluating the commercial performance, knowing that the customer is the king for the company. So the company's evaluation concerning the customer satisfaction is conducted as following

- Sending of the annual survey form:

The commercial department sends the annual customer satisfaction survey sheets to the customers targeted by Elsewedy Cables Algeria in order to inform them and return them after

completed object mentioning the evaluation criteria of the customer satisfaction index which are:

- Product quality;
- Respect of deadlines;
- Friendliness of staff;
- Price;
- Opening hours;
- Relations and Communication;
- Security and Environment;
- Availability;
- Staff qualifications.

❖ Collection of survey cards:

The commercial department ensures the collection of all survey sheets within the time required by Elsewedy Cables Algeria. The latter contain all the data and information concerning the customer's perception of the level of satisfaction of his requirements by Elsewedy cables Algeria.

❖ Data analysis:

The commercial department analyzes the data on each survey sheet and makes an overall rating based on the following scale:

- A : Very satisfying
- B : Satisfying
- C : Average
- D : Low

❖ Calculation of the customer satisfaction index:

The overall scores obtained make it possible to measure the customer satisfaction index.

The target set for the level of customer satisfaction is ≥ 80%

2.3.2. Data analysis

The table below represents the evaluation of satisfaction given by clients to the following index:

1. Product Compliance with Customer Specification;
2. The homogeneity of quality from one batch to another;
3. Technical support if necessary;
4. Communication with our company;
5. Reply to Customers' observation or complaint;
6. Delivery on time;
7. Delivery of the requested quantity;
8. Wrapping and packaging of products;
9. Documents presented (catalog, technical offer, test certificates, packing list, ...);
10. Quality level of products compared to our competitors.

Table III-7: clients' evaluation of their satisfaction toward the different indexes.

Clients / Mesure	ABB ARAB	Belayim petroleum coompany	Texel (Italy)	Siemens (Germany)	Spie France	SAMSUNG	Brown &Roots-Condor	AVENTIC SARL	ABB ZIMBABWE	TECNICAS REUNIDAS	ARAB CONTRACTOR CHAD
1	95	95	95	77	80	95	95	85	85	85	95
2	95	95	95	95	80	85	95	60	60	85	85
3	85	80	95	95	80	75	95	85	85	85	95
4	85	90	95	95	90	75	95	85	95	95	85
5	85	80	95	95	80	75	95	85	85	70	85
6	95	95	95	70	70	95	95	70	70	45	95
7	95	95	95	70	70	70	85	95	85	75	85
8	85	95	50	95	70	50	95	60	95	60	85
9	95	95	75	95	95	95	95	70	70	70	95
10	85	80	95	77	80	70	70	85	85	85	85
Total %	***90***	***90***	***89***	***86***	***80***	***78,5***	***92***	***78***	***82***	***75,5***	***89***
Objectives	***89,5***	***90***	***90***	***80***	***80***	***80***	***90***	***80***	***80***	***90***	***80***

Source: internal information provided by the quality auditor of the QMS department.

According to the results shown in table III-7 we can notice that most of the clients are satisfied, from their evaluation of multiple indexes only 3 clients were unsatisfied from these indexes:

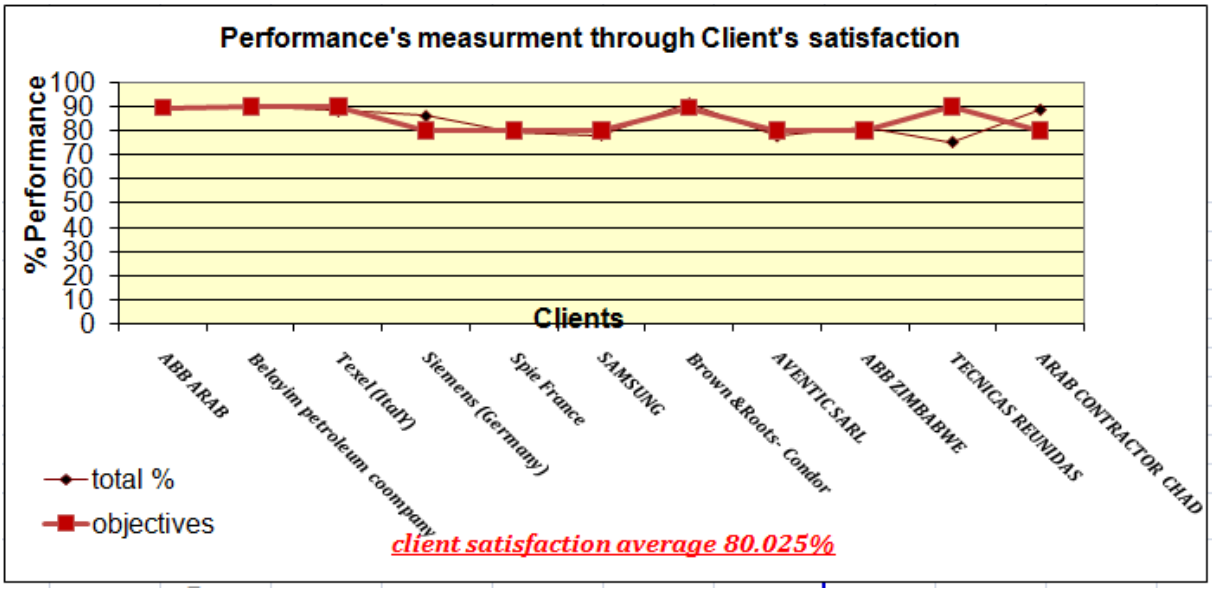
- Delivery on time

- wrapping and packaging of products.

For the first index, the client was dissatisfied from the delay of his delivery, he asked for an approximate period to the one written on the contract.

For the two other customers, their dissatisfaction was about wrapping and packaging of the product received; according to them, the packaging were too vulnerable to keep their products safe from getting damaged during the handling operation; so they recommended a strong packaging.

Graphic III-1: performance measurement through clients' satisfaction evaluation



Source: personal elaboration;

The graphic shows that eight clients are satisfied or approximately satisfied resulting 90% of performance to the commercial function; while three of them were dissatisfied toward some satisfaction indexes; that gives an 80,025% average of satisfied clients which is the level of customer satisfaction targeted by the commercial department.

From the results of this survey and the graph reading, we find that:

1. The most attractive factors by Elsewedy's customers reside in the conformity of the products to the Client's Specification, the response to the Customer's observation and the availability of the products added to the quality of the services offered;

2. Deliveries periods are the less evaluated and customers describe them as non-compliant with the required standards;

3. The product packaging also is less attractive by customers.

A satisfaction survey is a method that serves as a basis for getting customer's feedback. For this purpose, each year the commercial department conduct a satisfaction survey with the purpose to:

- Improve its brand image, as a national leader in the production of high quality cables;
- Retain customers (permanent and effective listening);
- Demonstrate interest for clients;
- Educate staff about customer expectations;
- Complete the customer requirements to be taken into account;
- Define new directions (strategy / policy / objectives);
- Improve customer satisfaction;
- Compare the internal measurement of performance, with the perception of the client to improve the system of indicators and refine the objectives.

2.3.3. synthesis of results obtained from satisfaction surveys

Satisfaction is a fundamental goal on which the survival of a company depends whether it is certified or not. The ISO 9001 standard, aware of this golden rule, has introduced the concept of customer satisfaction since the 2000 version as a quality management principle. In 2015, this principle became customer orientation that is to say the whole company is customer oriented.

Although the standard does not dictate specific methods, it does encourage companies to adopt methods to measure customer satisfaction.

Among the most answered methods we find customer satisfaction surveys, generally established using questionnaires or evaluation sheet. These satisfaction surveys must be carried out in order to progress to better satisfy their customers and not only for the sake of compliance with the standard.

The standard therefore specifies, between the lines, that it is better to analyze relevant information than to carry out sterile surveys that do not add value.

However, a satisfaction survey prepared, conducted and analyzed in a methodical, objective and rigorous manner remains an excellent way to identify avenues of progress to improve the level of customer satisfaction and loyalty.

Elsewedy conducts customer satisfaction surveys, using the evaluation sheets; the purpose of the survey differs from one to another. We noticed that the response rate to the evaluation forms sent by e-mail never exceeded a rate of 60% during the nine (09) years, therefore less than 40% of feedback; even customer answers are not 100% reliable.

We believe this rate is low and insufficient to truly assess and monitor client satisfaction. As a result, the results obtained will be biased and less reliable.

Customer satisfaction is a central indicator of the commercial and marketing process and also a central notion of the ISO 9001 standard, which explains the close relationship existing between commercial performance and the quality approach according to the ISO 9001 standard.

3) Recommendations

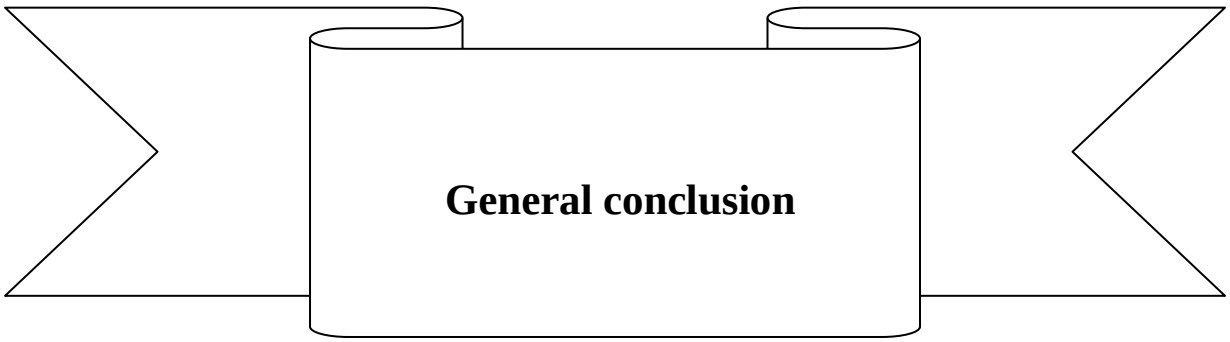
From all that has been mentioned, and in order to find solutions to the problems facing Elsewedy Cables Algeria, while taking into account the various constraints we propose:

- Decentralization of the sales decision which will allow a better integration of the responsible team; and a better control of the commercial process. That will simply eliminate the delay in treating orders by the salesmen, leading to a satisfied client.
- Nowadays, customers received many requests for online satisfaction surveys, for that reason, it is not easy to get high participation rates. In order to increase the response rate, we suggest that the company can rely on:
  - Meetings conducted through video calls especially for foreign customers.
  - Completion of the satisfaction survey with all interested parties: supplier; distributors; shareholder, partner; employees, etc.
  - Visiting the client or invite him to discuss his order to avoid any misunderstanding.
- In order to improve delivery times, the company must establish a provision's study of additional means of delivery.
- Discharging of the salesman from payment recovery and create special office instead, to diminish his workload and avoid accumulation of unpaid bills; that will:

- Ensure the recovery of receivables (debt recovery)
- Provide reminders to late payment customers.
- Enforce payment deadlines.
- Process billing conflicts and prepares files for the litigation-coordination department with the legal department.
- Be persistent with late customers.
- Monitor the aging balance and traceability.
- Achieve the recovery objectives determined.

- To avoid additional costs of non-compliant products, the company should do continuous machine maintenance.
- The company must train the staff in terms of handling to avoid cable damages that will cause a return of goods.
- The company must improve communication internally and externally.
- the benchmarking method must be applied in order to at least measure the performance of the service compared to the competitors
- Implement a SWOT analysis; identify strengths and weaknesses to answer the question "what can be done to increase our performance indicators?"And" what precautions and preventions to take? "
- The development of the management review in stages since it requires the study of several cases of several units.

It’s recommended that the commercial department with the help of the QMS department to elaborate an action plan taking in consideration this recommendations, to be able to follow up the deadlines and the efficiency of the actions suggested , because during the internship we didn’t find any action plan that treat the customers dissatisfactions.


General conclusion

General conclusion

In order to satisfy clients, companies have to respects the requirements of their clients and provide them with better product than the ones offered by competitors; producing better than the competitors means putting a strategy that will serve the company in the long term and allow the latter to improve over time.

The quality management system is an indispensable tool for all companies, thanks to the advantages it offers, not only inside the company (improves the functioning of the company) but even outside because it gives a guarantee for the customers.

Measuring the company's performance is very important to see whether the objectives set are achieved; when it comes to measuring the performance of the commercial function, some indicators are well defined by the company.

Improvement means in the context of ISO 9001:2015; an overall approach requiring review of processes, products and services and quality management system results, with some useful reminders that the mechanisms for such improvements can be achieved by a variety of means; correction, corrective action, continual improvement, and customer satisfaction evaluation.

The objective of our research work was to determine the impact of ISO 9001:2015 certification on the commercial performance of the company.

In order to better study this theme we have devised our work in two parts; the first part was devoted to the presentation of the quality management system and certification then the commercial performance and its evaluation.

In order to provide answers to our questions, we have developed personal interviews to both quality management and commercial managers; we have also tried to apply the 6th clause in ISO 9001:2015 and identify actions to address risks and opportunities.

After that, we tried to study the results of the evaluation of customer satisfaction that the ISO 9001:2015 requires in order to concluded how can this new clause contribute in improving and measuring performance

After the processing of data collected, we drew the following conclusions; an ISO 9001:2015 certification of the quality management system, contributes to the efficiency and effectiveness of the company.

General conclusion

According to the Customer Satisfaction Survey developed by the Elsewedy cables commercial department, the evaluation of customer satisfaction is very satisfactory and that explains that the company refers to the requirements of ISO 9001:2015, the 9th clause.

The certification of the QMS set up by the company has paid off; we can say that majority of the company's clients are satisfied towards what the latter offers, which means sales volume will increase, as a result an increased turnover.

From these analyzes it is clear that the certification of QMS is the ultimate tool to improve the overall performance of the company especially the performance of the commercial function.

So can affirm from the interview data analysis that sales volume and evaluation of clients' satisfaction, both are the main indicators on which the company relies to measure its commercial performance, and that confirm the first hypothesis (H1).

Since the adoption of the ISO 9001:2015 standards , there has been a rise either in sales or at the level of the organization; that means that there is a strong significant and positive relationship between the certification of QMS and the commercial performance of the function therefore the second hypothesis is confirmed (H2).

Finally, we can say that evaluation of customer satisfaction is one of the main clause that ISO 9001 introduced in its latest 2015 version which contributes in enhancing performance, through our research we have found that the company take this approach as the major parameter of the company's performance which allows us to confirm the third hypothesis (H3).

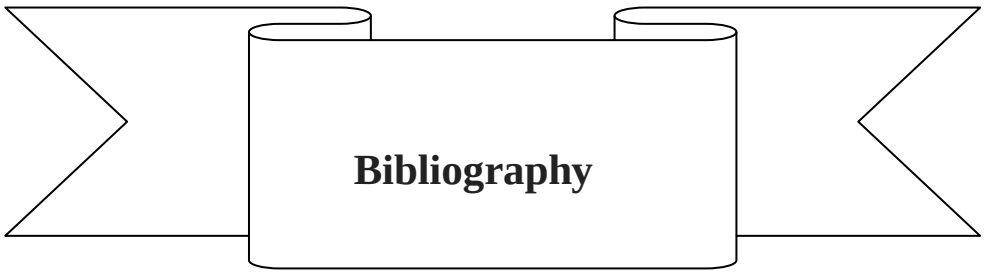
This research and despite the difficulties that we have faced, gave us the chance to study a very important case of business that weighs heavily on the national and international level. Knowing now how essential for businesses to certify their quality management systems in ISO 9001:2015 that allow them not only to enhance their performance but it represents a competitive advantage over non-certified companies especially in the Algerian markets where only few companies are certified in ISO 9001:2015 series of standards or not certified at all.

Being an ISO 9001:2015 certified gives companies especially the Algerian once; the ability to expand across borders, it is a great trump for them to enter international tenders, and export their product.

As all scientific research, our work has empirical limits. The main empirical limit is the lack of numerical demonstrations and reports of the internal audits due to the

confidentiality of any numerical data relating to the commercial function of which the host organization exercises and which prevented us from measuring its performance.

This study also helps to identify directions for future research that can increase our understanding of ISO 9001:2015's impact; the first direction is toward the impact of certification ISO 9001:2015 on the competitiveness of companies; the second direction is about an attempt to adopt a QMS of a national Algerian company to ISO 9001:2015 standards, and finally look whether national differences affect the performance benefits of ISO 9001:2015 certification.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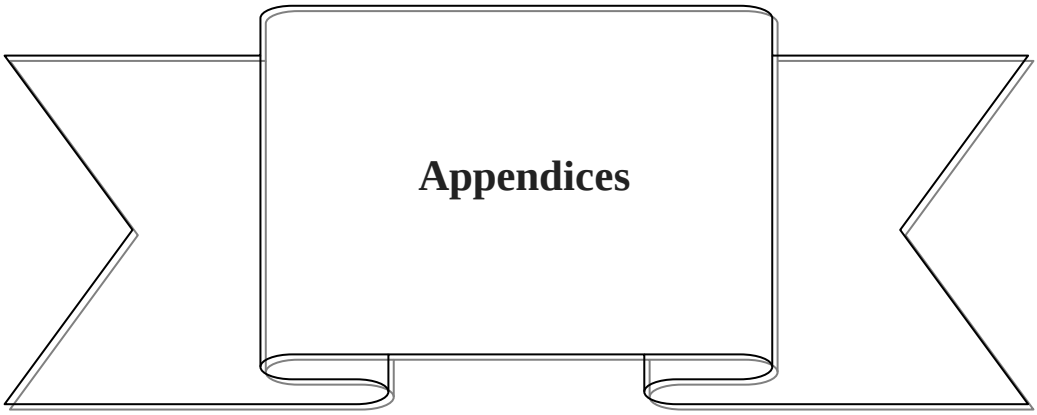
Appendices

Appendix 01:

Elsewedy cables Algeria certification in ISO 9001:2008 and 9001:2015

Certificate EG09/2098

This management system of

El Sewedy Cables Algeria SPA

Head Office:
153 Rue Ali Khodja El Bair Alger
Plant:
Zone Industrial Ain Delfa Algeria

has been assessed and certified as meeting the requirements of

ISO 9001:2008

For the following activities

- **Manufacture and sales of Control & Low Voltage including fire resistance ,medium voltage cables , overhead transmission lines and low voltage electrical meters**
- **Sales of cable accessories and mono phase transformers**

Further clarifications regarding the scope of this certificate and the applicability of ISO 9001:2008 requirements may be obtained by consulting the organization

This certificate is valid from 04 March 2010 until 06 January 2012 and remains valid subject to satisfactory surveillance audits
Re certification audit due before 24 December 2011
Issue 3. Certified since 06 January 2009

Authorised by

SGS United Kingdom Ltd. Systems & Services Certification
Rossmore Business Park Ellesmere Port Cheshire CH65 3EN UK
t +44 (0)151 350 6666 f +44 (0)151 350 6600 www.sgs.com

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Certificate EG09/2098

This management system of

El Sewedy Cables Algeria SPA

Head Office:
153 Rue Ali Khodja El Bair Alger
Plant:
Zone Industrial Ain Delfa Algeria

has been assessed and certified as meeting the requirements of

ISO 9001:2015

For the following activities

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- **Sales of cable accessories and mono phase transformers**

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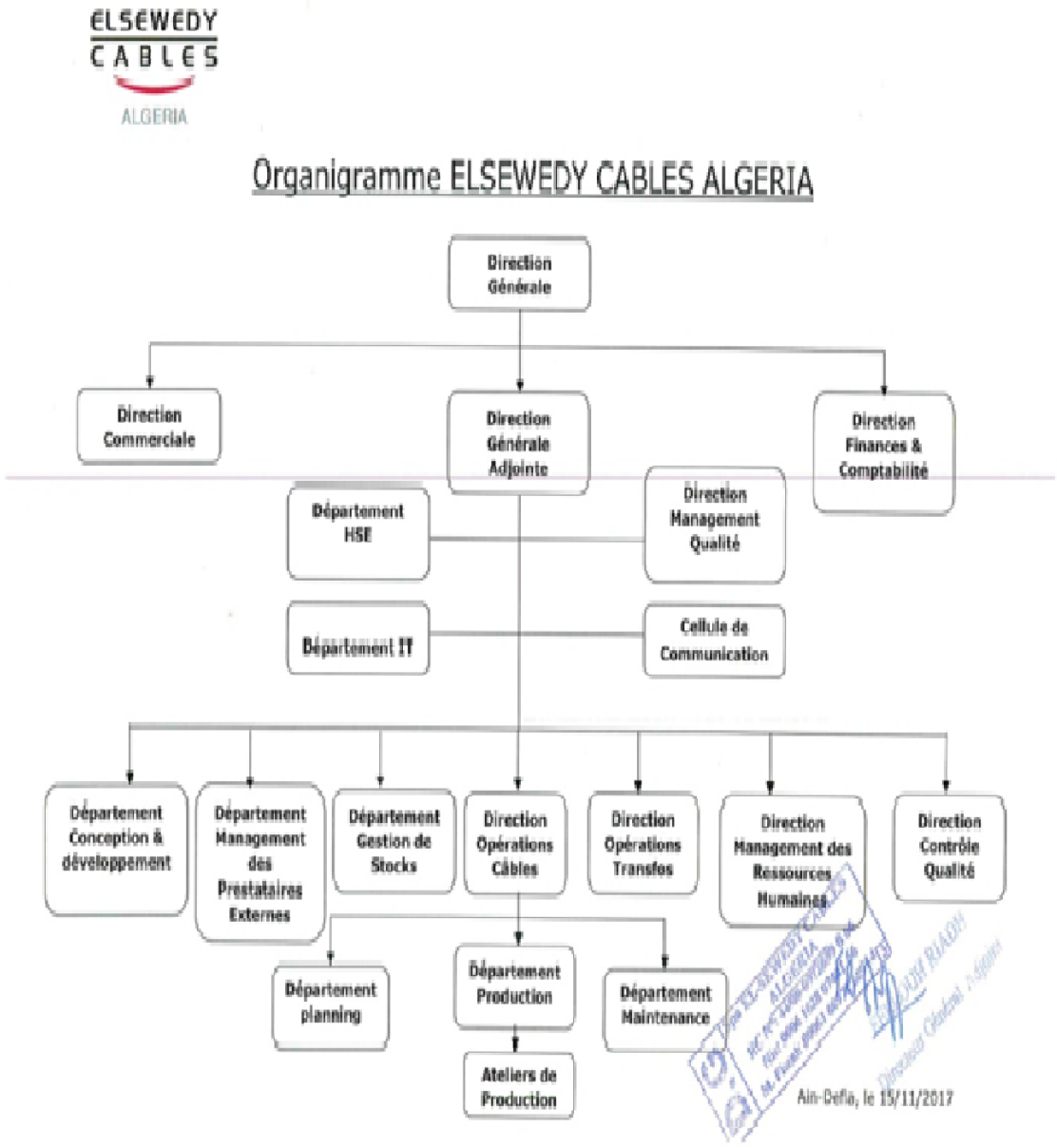
Appendix 02:

Flowchart of Elsewedy cables:



Appendix 03:

Guide d’entretien : pour le département Management de qualité

- **Question 01:** Comment pouvez-vous expliquer le besoin des entreprises de certifier leur système de gestion de la qualité?
- **Question 02:** De quelle manière votre département peut-il contrôler l'ensemble des activités du département?
- **Question 03:** Comment avez-vous appliqué les normes de certification à votre organisation interne?
- **Question 04:** Selon vous, la certification ISO 9001: 2015 aide-t-elle votre entreprise à obtenir de meilleures performances? Pouvez-vous me donner plus de détails sur la performance commerciale?
- **Question 05:** la nouvelle version de la norme ISO 9001 introduit une nouvelle clause d'évaluation de la performance à travers différents aspects; À votre avis, comment cette évaluation peut-elle être une clé majeure pour mesurer la performance commerciale en particulier?

Pour le département commercial

- **Question 01**: Pouvez-vous me parler du lien entre le département de gestion de la qualité et le département commercial?
- **Question 02**: Selon vous, la certification ISO 9001: 2015 a-t-elle influencé l'évolution des résultats, des parts de marché, du nombre de clients?
- **Question 03**: Quels sont les indicateurs utilisés dans le tableau de bord de l'activité commerciale?
- **Question 04**: Que pensez-vous de la communication interne et de la coopération entre les départements? Comment cela peut-il être important pour le succès de la stratégie commerciale?
- **Question 05:** Selon vous, de quelle manière la certification du système de management de la qualité améliore-t-elle la performance du département commercial? Et comment pouvez-vous le mesurer?
- **Question 06**: quels sont les problèmes les plus courants auxquels le département est confronté fréquemment?
- **Question 07**: Selon vous, qu'est-ce que vos clients apprécient et / ou n'apprécient pas dans vos produits? Comment le sais-tu?

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