

**Ecole des Hautes Etudes Commerciales
d'Alger**

EHEC

**Thesis Submitted in Partial Fulfillment of the Requirements for
Master's Degree in Commercial Sciences**

THEME:

**The impact of the information and
communication technology on the
internal communication**

Case study : SADEG - SONELGAZ

Submitted by :

Chahinez BOUARARA

Supervised by :

Mme Meriem CHERFOUH

8th graduation

JULY 2021

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I can never be thankful enough to my mother, who taught me that a woman must be strong and smart to survive in this world! I would love to thank my supervisor, Mme Meriem CHERFOUH, for being such a supportive person to me, to thank Mme Nassima BOUABIDA, without her our two last master years wouldn't be easy.

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Dedications:

To anyone who had any kind of impact in my life,

I dedicate this work.

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List of abbreviations:

Abbreviation	Signification
ICOMM	Internal Communication
NLP	Neurological Linguistic Programation
HR	Human Resources
ICT	Information and communication technology
TCP	Transmission control protocol
IP	Internet protocol
IT	Information technology
HRD	Human resources Director
SADEG	Algerian society of GAZ and ELECTRICITY distribution
GD	General Directorate

Summary:

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General Conclusion

ABSTRACT

Recently, ICT has become one of the fundamentals of communication in all vital areas. It also broke into the inner perimeter of the institutions and became one of the most widely used internal tools of communication.

We asked the next question to know if this use has a positive impact or no:

"Has communication and information technology contributed to improving the internal communication of enterprises?"

To answer the forms at hand, we have conducted an application study in the General Directorate of Gas and Electricity Distribution of the city of Ghardaia, of the SONELGAZ Company, on the theme, "The impact of ICT on internal communication." This study will allow us to investigate the impact this technology has had on the internal communication of the institution, whether positive or not, and its contribution to the development of this important aspect of the institution.

Key words: Internal communication, the information and communication technology, Information, electronic messaging.

RESUME

Récemment, les TIC sont devenus l'un des fondements de la communication dans tous les domaines vitaux. Ils ont également pénétré dans le périmètre intérieur des institutions et est devenu l'un des outils internes de communication les plus largement utilisés.

Nous avons posé la question suivante pour savoir si cette utilisation a un effet positif ou non:

"Les technologies de l'information et de la communication ont-elles contribué à améliorer la communication interne des entreprises?"

Pour répondre aux formulaires en main, nous avons réalisé une étude d'application à la Direction générale de la distribution de gaz et d'électricité de la ville de Ghardaïa, de la société Sonelgaz, sur le thème "L'impact des TIC sur la communication interne." Cette étude nous permettra d'étudier l'impact de cette technologie sur la communication interne de l'institution, qu'elle soit positive ou non, et sa contribution au développement de cet important aspect de l'institution.

Mots clés: La communication interne, La technologie de l'information et de la communication, L'information, La messagerie électronique.

ملخص

مؤخراً، أصبحت تكنولوجيا الاتصال والمعلومات واحدة من أساسيات التواصل في جميع المجالات الحيوية. كما أنها أيضاً اقتحمت المحيط الداخلي للمؤسسات وأصبحت من وسائل الاتصال الداخلي الأكثر استعمالاً بها.

قمنا بطرح السؤال الموالي، لمعرفة إن كان هذا الاستعمال ذو أثر إيجابي أم لا:

"هل ساهمت تكنولوجيا الاتصال والمعلومات في تحسين الاتصال الداخلي للمؤسسات؟"

للإجابة على الإشكال المطروح، قمنا بإجراء دراسة تطبيقية في المديرية العامة لتوزيع الغاز والكهرباء بولاية غرداية، والتابعة لمؤسسة سونلغاز، حول موضوع، "أثر تكنولوجيا الاتصال والمعلومات على الاتصال الداخلي". حيث ستسمح لنا هاته الدراسة بتحري الأثر الذي تركته هاته التكنولوجيا على الاتصال الداخلي للمؤسسة إن كان إيجابياً أم لا، وإن ساهم في تطوير هذا الجانب المهم من المؤسسة.

الكلمات المفتاحية: الاتصال الداخلي، تكنولوجيا المعلومات والاتصال، المعلومة، الرسائل الإلكترونية

General Introduction

General introduction

In our time, information is very important as part of the sources of decision-making at the organizational level. Therefore, having it sufficiently puts the institution in the safety zone in terms of strategic vigilance. Currently, having information is not just enough, but, more importantly, how to ensure its effective and smooth transition between the components of the Organization. This is what we call the internal communication process. Good information transfer is supportive for the success of the internal communication process.

So the relationship between internal communication and the flow of information is to know how to manage your information and distribute it at the right time and to the right audience. It is very important that a manager knows well the information needs of his various employees, the satisfaction of these needs, promotes a flexible and efficient internal communication.

Internal communication is an operation of information production at the internal and external level, by this definition the external image of the company is justified by its positioning inside, this concept gives two types of contexts to the internal communication, the first one is marketing if considered as an exchange promotion, where the product is the information itself, and on the other hand, management, for its strategic dimension.

Until the 1980s, internal communication was codified by the hierarchy, where managers owned and distributed information to subordinates, this type of communication is part of the Taylorian management strategies, or everything is centralized, therefore communication was often formal and written.

So, given the way in which information was being conducted within the institution, the emergence of information and communication technology has changed the stereotype of internal communication, highlighting new forms of information exchange that are more effective, structured and time-saving. It has also strengthened the internal capacities of organizations, on the one hand, in terms of team spirit, strengthening signs of teamwork and building a culture.

Information and communication technology relies on the process of collecting, storing and transmitting information in such a way as to ensure that quality information is transmitted

to serve the communication process within the enterprise. All of this is part of improving the quality and effectiveness of relationships between an organization's internal partners.

Despite all that's been said, there's still a risk about the problem of controlling communication and the clarity of the message. Controlling the various tools of these new technologies is also one of the most important difficulties faced by organizations when including any of these technologies in their internal communications system, an aspect that cannot be overlooked.

Given all that has been said, comes the subject of our study, which is

« The impact of the information and communication technologies on the internal communication ».

The purpose of our study is to see the impact that ICT and its various tools have on the internal communication in a positive way that ensures that tasks are facilitated and accelerated.

The choice of this subject was for the following reasons:

- Regarding to the importance of the theme and its originality, as it was rarely touched upon.
- Regarding to the importance of the internal communication in companies.
- The prominent role that the ICTs play nowadays, and especially in the Algerian companies.

And with a view to completing this study, we have signed up for the SONELGAZ, more precisely the general directorate of SADEG Ghardaia, to conduct our practical training there.

SONELGAZ is known for its open policy of renewal and development of its internal potential to ensure greater efficiency and productivity from its human resources. So, in turn, it has moved to embrace the use of information and communication technologies.

And this study was conducted with a help of both a theoretical and a practical study, in order to answer the following problem:

« Has the information and communication technologies, contributed in the improvement of the internal communication in companies? »

And in order to answer this problem and make it easier and closer, we asked the following secondary questions:

- Is a good internal communication important for the HR performance?
- How can we describe the information flow in SONELGAZ?
- What is the role that the ICTs play in the internal communication process improvement?

In order to answer all the questions mentioned, we suggest the following hypotheses:

- **Hypothesis N1:** An efficient internal communication is important for the HR performance.
- **Hypothesis N2:** The information flow in SONELGAZ is effective.
- **Hypothesis N3:** The ICTs play a positive role in the internal communication process improvement.

To confirm or disprove the mentioned hypotheses, we used two approaches:

We opted for a methodological approach, which consists of bibliographic research, on all that was written on internal communication or the ICTs.

And an empirical approach that consists of two tools, the first is qualitative, in the form of a questionnaire distributed to a sample of SONELGAZ employees. The second is qualitative, in the form of a direct interview.

Our work consists of three chapters:

The first chapter, entitled « The fundamental framework of the internal communication. », defines the global communication, the internal communication, its tools, objectives and strategy.

The second chapter entitled « The information and communication technologies » focuses on the general definition and aspect of the ICTs, also their use in companies and their relationship with the internal communication, especially the electronic messaging tools.

The third chapter, entitled « The impact of technology through ICT tools on the internal communication of SADEG - SONELGAZ. » is dedicated to the presentation of the host company, then the definition of its internal communication and various ICT tools, then

we move on to the explanation of the research methodology and then to the analysis of the data collected and the suggestion of a summary and some recommendations.

***Chapter 1: The fundamental
framework of the internal
communication***

Chapter 1: The fundamental framework of the internal communication

1 Introduction:

The global communication in an entity is one of the most important aspects to ensure the survival of the organism, there are two different types, external communication to the external audience and internal communication to the internal audience.

Internal communication plays a prejudicial role in the implementation of the company's strategy; it shall ensure cooperation between the different parts of the organization and the provision of a clear message within it to facilitate the achievement of its objectives. For this reason, internal communication requires a very deep diagnostic and a good construction of strategy that manages the allocation of human resources, the budget and a good precision of the objectives also the communication plan, all while combining this plan and strategy with the global communication strategy and the global strategy of the company as well.

In this chapter, we will look at the theoretical study of internal communication, passing by the global communication and, finally, the institutional internal communication strategies.

2 Section one: A general view on the internal communication

Internal communication and as an essential element in the management of organizations, has been a good subject for many writers, from the birth of the communication concept to the blurring of an internal concept of this communication

2.1 The global communication:

2.1.1 The history of the global communication:

The researches about communication were held for many aspects, such as sociology, psychology or sometimes even the anthropology in order to build some theories and justify some others. But in the last period or decades, the science of communication was established separately to study the concept and build some related theories by specialists in the field¹.

Under the development of the science and in the circumstances bellow; a new perspective was born²:

- The development of ENIAC, the new computers in the 1945
- The second world war events
- The development of the famous revolutionary energy theory by Einstein

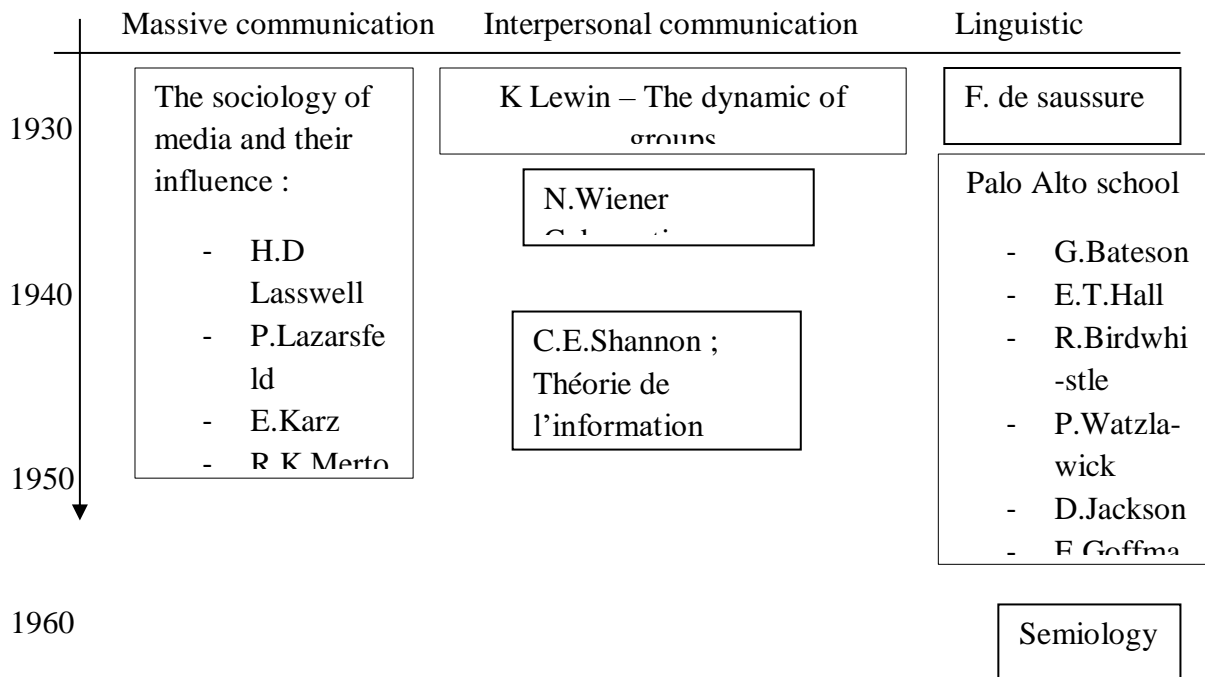
So here is a figure that shows, the main theories, chronologically and conceptually organized³:

¹ Judith Lazar « la science de la communication », Edition Dahleb, 2nd edition, 1993, may, page 3-4.

²<https://fr.slideshare.net/clementdussarps/thories-des-sciences-de-linformation-et-de-la-communication-partie-1>, (viewed the 26/04/21 at 17 :33)

³ Christine Parrot « Les théories de la communication, Les grandes références »

Figure 1: the main global communication theories



Source: 1 ; Inspired From: <https://fr.slideshare.net/clementdussarps/thories-des-sciences-de-linformation-et-de-la-communication-partie-1>

In what comes next, we will try to brief some remarkable theories by some authors, according to what was indicated in the figure.

- **Lawsell's paradigm (1948)⁴ :**

This model combines both, the massive and interpersonal communication in a way that we get some different aspects such as: manipulation, influence...

The model consists on the « WH questions » and goes this way:

Who says what to whom in Which Channel with What effect?

- Who : The transmitter
- What : The message
- Whom : The receiver or the audience
- Which channel : The channel or support
- What effect : The message effect

According to Harold Lawsell, there are three levels of conductance that rule the path of any message, all depending on the interference applied on it:

⁴<https://fr.slideshare.net/clementdussarps/thories-des-sciences-de-linformation-et-de-la-communication-partie-1> , (viewed the 26/04/21 at 18 :49)

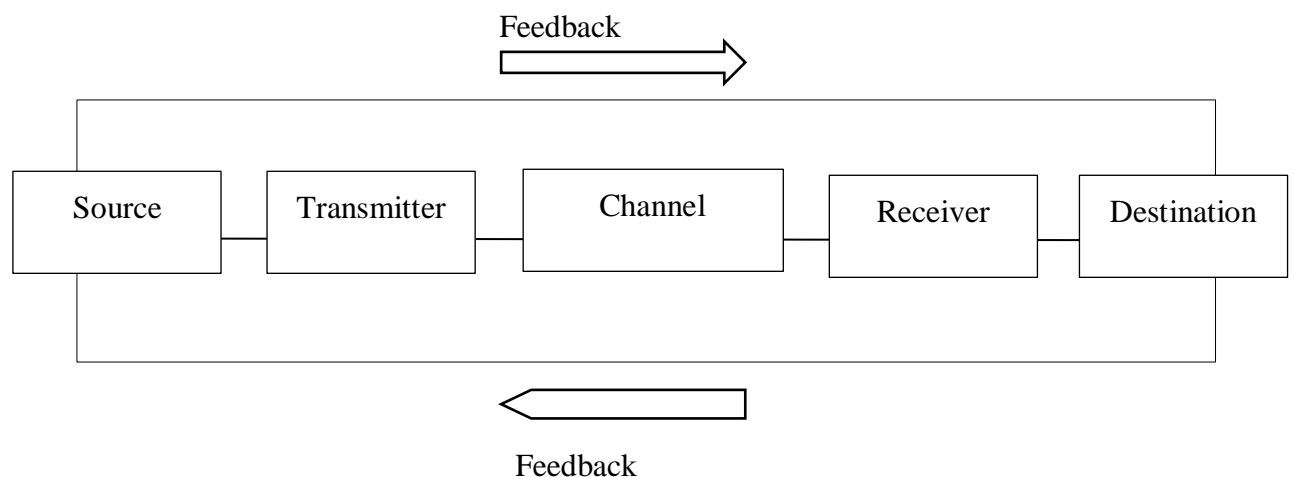
- Level one: Total conductance; the message passes with no interruption.
- Level two: Modified conductance; the message passes but not so clear.
- Level three: No conductance; the message doesn't pass at all.

2.1.1.1 The cybernetic theory of Wiener (1948)⁵ :

Based on his observations of the barrel movement in the second world war, he could've deduced the concept of « the feedback », after the end of his researches he had a full science there ready to be applied on both animals and machines, under the name of cybernetic, that he extracted from the Greek world « κυβερνήτης » that means « to pilote »⁶.

So in his dynamic system, the process goes in a form of a loop, a feedback loop, as this figure shows⁷ :

Figure 2: The cybernetic theory mode



Source: 2 ; Inspired From: <https://fr.slideshare.net/clementdussarps/thories-des-sciences-de-linformation-et-de-la-communication-partie-1>, (viewed the 28/04/21 at 13:03)

2.1.1.2 The paradigm of Shannon (1948)⁸ :

Shannon is the student of Wiener, so he shared the same idea of the general concept, but made it more practical by giving it a mathematical aspect. According to him, the communication is totally related to the information and that's way he focused on the study of the process of the transmission of the information between the transmitter of the message and

⁵ Bruno joly « la communication », Edition de Boeck Université, 1st edition :2009, Bruxelles, page 12 et 13.

⁶ Judith Lazar « La science de la communication », Edition Dahleb, 2nd edition, 1993, may, page35

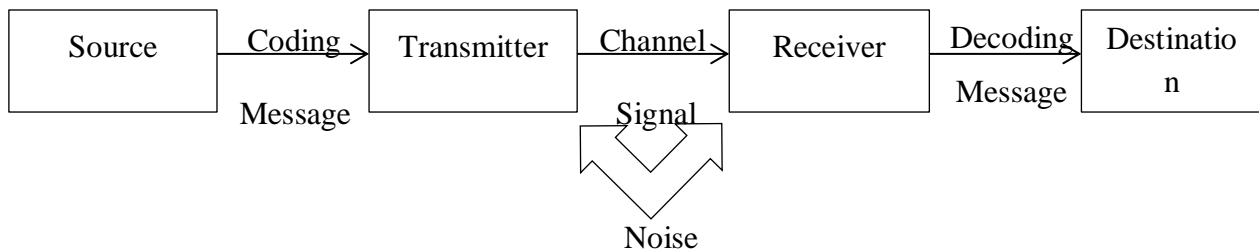
⁷<https://fr.slideshare.net/clementdussarps/thories-des-sciences-de-linformation-et-de-la-communication-partie-1> , (viewed the 26/04/21 at 19 :25)

⁸ Bruno joly « La communication », Edition of Boeck University, 1st edition :2009, Bruxelles, page 12

the receiver all by highlighting the idea of the coding of the message; therefore; the information here is a sort of statistical data.

Here is the ultimate model of Shannon that is considered as a standard conceptual model of the communication nowadays.

Figure 3: The paradigm of Shannon



Source: 3 ; Inspired from: Bruno Joly'' la communication'' Boeck university edition, 1st edition: 2009, Bruxelles p 12.

2.1.1.3 The school of Palo Alto (1956):

Also known as « the invisible college », this school drops defiantly the theory of Shannon, due its limits, for them, that theory is mainly for the technical domain and machines, and it can't work in the social studies.

This school adopted the « system theory »⁹.

A system is a combination of functions, goals, objectives, intentions, its elements, the way they are organized, the interactions between them, its links with its environment if there are and it can also have sub-systems¹⁰.

So this approach concludes that the communication is a whole system, where we find sub-systems, such as the talking, the reacting, the gestures...

This means that the coding of the message is not the core of the communication, but the verbal and none verbal conducts and behaviors are.¹¹

⁹ Annie Bartoli « Communication et organisation pour une politique générale cohérente », editions of organisation, 1986, 2nd edition 1988, paris cédex 05, page 65-66.

¹⁰<https://fr.slideshare.net/clementdussarps/thories-des-sciences-de-linformation-et-de-la-communication-partie-1>, (viewed the 28/04/21 at 13 :23)

¹¹ Annie Bartoli « Communication et organisation pour une politique générale cohérente », editions of organisation, 1986, 2nd edition 1988, paris cédex 05, page 65-66.

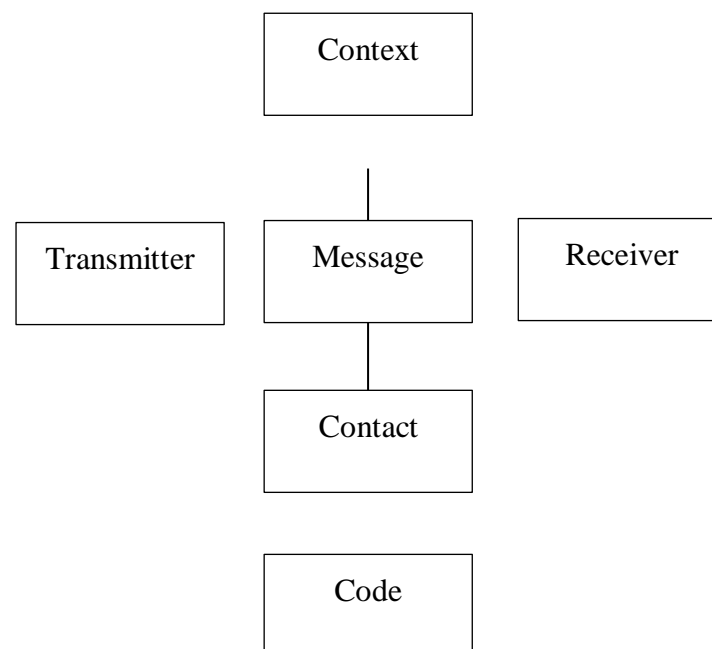
2.1.1.4 The linguistic analysis of communication (1960):

As Edward Sapir explained saying: “it is quite illusory to imagine that the adaptation of individuals to reality can be made without the basic use of language, and that language is only an ancillary tool for solving specific problems of communication or reflection”

So as we can see, this theory focuses on the message delivered and more specifically in the verbal communication, and so the choice of the language and the way it is received and decoded¹².

Here is the Jacobson figure that explains this process:

Figure 4: The Jacobson model of the linguistic analysis



Source: 4 : Inspired from: <https://fr.slideshare.net/clementdussarps/thories-des-sciences-de-linformation-et-de-la-communication-partie-1>, (viewed the 28/04/21 at 14:13)

2.1.1.5 The transactional paradigm¹³:

This paradigm consists on the study of the conduct of people and between people by a psychological approach; it explains the personality of the person based on their behaviors and interactions. It is based on three types of analysis:

- Analysis of the states of the self.

¹²<https://fr.slideshare.net/clementdussarps/thories-des-sciences-de-linformation-et-de-la-communication-partie-1>, (viewed the 28/04/21 at 13 :56)

¹³ Bruno Joly « la communication », Edition of Boeck University, 1st edition :2009, Bruxelles, page20.

- Transaction analysis.
- Analysis of signs of recognition and stimulation.

2.1.1.6 The neurological programming NLP (1970)¹⁴:

Founded by John Grinder and Richard Bandler in the Santa-cruz University, the NLP can be defined as the adaptation to the other side's characteristics, changes and values during a communication process.

NLP is the abbreviation of:

- Neurological: refers to the use of the neurological system for the data treatment in the process.
- Linguistic: refers to the language
- Programming: It is a sort of comparison between computers and the human brain, as they share some specific functions.

The NLP studies actually flourished in the 80's.

2.1.2 The definition and the types of the global communication:

2.1.2.1 The definition of the communication:

The communication has many definitions, both the lexical and practical side; where the definitions vary depending on the authors.

a- The lexical definitions:

The word communicate comes from the Latin word "Communicar" that means "share" or "exchange"

- According to the Oxford dictionary: "a noun; the activity or process of expressing ideas and feelings or of giving people information"¹⁵
- According to the Merriam Webster dictionary: "A process by which information is exchanged between individuals through a common system of symbols, signs, or behavior"¹⁶

b- The practical definitions:

There are many definitions, according to many authors:

¹⁴ Annie Bartoli « Communication et organisation pour une politique générale cohérente », éditions of organisation, 1986, 2nd edition 1988., paris cédex 05, page 68.

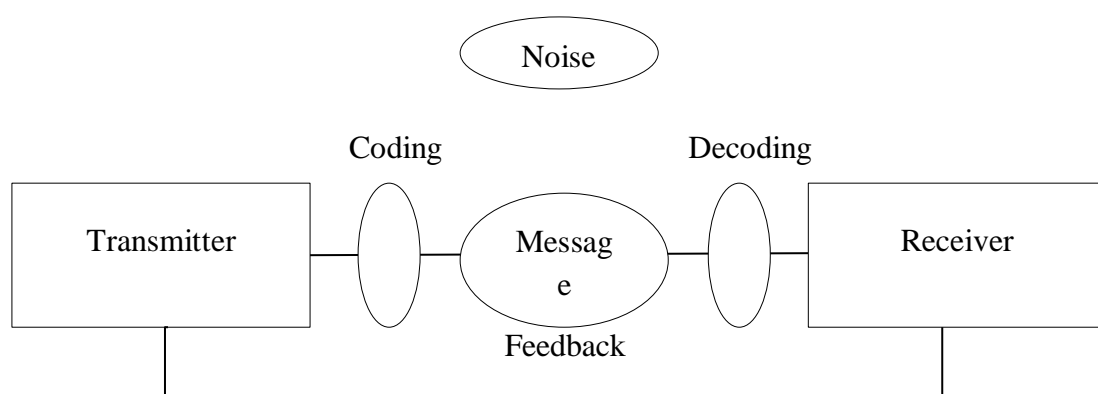
¹⁵ Oxford learner's pocket dictionary, third edition, page 81.

¹⁶<https://www.merriam-webster.com/dictionary/communication> (viewed the 28/04/21 at 15 :11)

- Claude Jean Bertrand thinks that the communication is establishing the relationship between, people, objects...
- Vandaman and Alterna say that the communication in organization is the flow of materials information and all sorts of exchange between its parts and components.¹⁷
- Chaffe and Berger in 1986 said that: “the science of communication seeks to understand the production, processing and effort of symbols and sign systems by analyzable theories containing legitimate generalizations to explain phenomena associated with production, treatment and effects”¹⁸
- Lendrevie and Lindon.D defined the communication as all the messages, information and signs that the organization decides to deliver to its audience willingly.¹⁹
- Jean Mukandi says that communication is the mechanisms of the transfer of the information within an organization.²⁰
- Nicole d’Almeida and Thierry Libaert defined this concept as the production of the information within and organization.²¹

From all the definitions above we can deduct that the communication is the process of finding a relationship between two sides, a transmitter receiver, who share a common objective, where we try to transfer a message through signs, symbols or a specific languages.

Figure 5: The internal communication process



¹⁷VARDAMAN et CAROLL. C. HALTERNAN : *La communication au service du contrôle de gestion*. Ed. Chiron, Paris IVème, 1974

¹⁸ Judith lazar, *la science de la communication*, édition Dahleb, paris 1993, p04.

¹⁹ Glaude Demeure, *Aide-mémoire, Marketing*, Dunod 6° ed Paris 2008.

²⁰ EKAM BO DUASENGE J.C. *Information et Communication*, cours inédit G2 Kin, IFASIC, 2002, P 21

²¹ Nicole d’Almeida, Thierry Libaert, *la communication interne de l’entreprise*, Dunod Paris, 2002 , p7.

Source: 5, Established by: Us same.

2.1.2.2 The types of the communication:

There are two basic ways to classify the communication:

A- **Depending on the channel:** The verbal and non-verbal communication²² :

a- The verbal communication:

It's any sort of communication that happens through a verbal, vocal or a written way to deliver a message.

There to sub-types of this type of communication, which are :

- The Oral communication: It's any sort of communication that is shared by mouth through a speech.
- The written communication: It's a communication through written words ; language or symbols.

b- The non-verbal communication :

It's any sort of communication that happens without any words; it can be a gesture, facial expression or a sign...

B- **Depending on the audience**²³:

- a- **The interpersonal communication:** It's a direct communication, between a transmitter and a receiver, the feedback here is mandatory to keep the conversation going.
- b- **The massive communication:** It's the transmission of information or a message to an unlimited number of people, generally publically.
- c- **The group communication:** It's the transmission of a message to a specific identified group of receivers.

2.1.3 The global communication in companies²⁴ :

2.1.3.1 The definition:

Philippe Schwebig defines it as: "the company talking about itself, which means, the company being the transmitter, the receiver and the subject of its own discourse"

²²<https://www.communicationtheory.org/types-of-communication/> (viewed the 30/04/21 at 14 :03)

²³<https://management.savoir.fr/communication/>(viewed the 30/04/21 at 14 :55)

²⁴DURAND Anthony, DARTIGUES Stéphane et ROCHE Gaëtan
Université de Perpignan Via Dominitia Institut Jacques Maillot - Licence 2005

It's a combination of the external and internal communication, a homogenous approach that insures the transmission of the information through all the channels and toward all the audiences.

So there are two basic types of the global communication in companies, the internal communication and the external communication

2.1.3.2 The types of communication in a company:

There two initial types of the global communication in a company that consist on many others. The principal aim of each one of them is to to collaborate in the implementation of the company's strategy by attending its objectives mainly and increase the entity profit specifically²⁵.

a- **The external communication:** that concerns the employees, and we can find in it:

- The communication of a product: it's a marketing communication that promotes for the company's product.
- The commercial communication: It's a sort of communication that aims for the sales augmentation.
- The branding communication: its objective is to expand the brand's name.
- The institutional communication: or the corporate communication, it works on improving the notoriety of the brand.
- The crisis communication: it's the prevention communication, to activate the informative vigilance in order to prepare the company for fast and efficient reactions against the sudden problems.

b- **The internal communication:** that concerns the external environment of the company, and we can find in it:

- The institutional communication: It concerns the notes delivered to the employees, concerning the company values of coherence and such instructions that help the internal image of the company grow.
- The crisis communication: This type insures the circulation of information in order to avoid the internal conflicts.
- The social communication: It's part of the company's strategy that creates a sort of synergy within its components.

²⁵ Bruno Joly, la communication, édition BoekUnivercité, Bruxelles, 2009

2.1.3.3 The objectives of the global communication²⁶:

Generally the objectives of the global communication are identified by its general direction, because they give the real value and mission of the communication in the entity in the present and the future.

We can resume them in two types; the general one that consists on the legitimacy of choice, the value proposition, the image imposition, and the specific goals that consist on the promotion, the internal purposes and institutional reasons.

2.2 The history and definition of the internal communication²⁷:

2.2.1 The history:

The development of all the managerial concepts was right after the industrial revolution, where the companies knew the effect of their management strategies' on their performance and competitive competencies, the internal communication concept as well, knew its first apparition in that era.

By the year of 1980 the “internal journals” has been established in some companies and a century later, the function of an “internal communication responsible” has appeared. By time, the concept has developed and we got some new implementations until that the French companies took it to another high level by integrating the intranet.

2.2.2 The definition of the internal communication:

As any other business concept, the ICOMM has many definitions, depending on the author, here are some definitions:

2.2.2.1 The lexical definition:

To give it a lexical explanation we have to separate it into two words, ineternal and communication.

- According to the Oxford dictionary:
 - Internal²⁸: an adjective
- Of or in the inside

²⁶ Annie Bartoli, communication et organisation, édition organisation, France, 1998, p62.

²⁷ <https://www.memoireonline.com/06/07/497/la-communication-d-entreprise.html> (viewed the 01/05/21 at 06:12)

²⁸ Oxford learner's pocket dictionary, third edition, page 227.

- Not foreign, domestic
 - Communication²⁹: a noun; the activity or process of expressing ideas and feelings or of giving people information
 - From both definitions we get that: the internal communication is the activity or the process of expressing ideas or feelings and giving ideas to people who are both in the inside and not foreigners.

2.2.2.2 **The practical definition:**

There many different definitions, but we can settle on these:

- Depending on BOURON .M. Thierry; the internal communication is the communication actions destined to the entity or organization employees³⁰.
- The ICOMM can also be defined as one the components of the global system of the entities and the corporate variations that insures the information flow and exchange³¹.
- BRENNEMAN R and SEPARI. S say that the ICOMM is ; the management of the information flow in the company that helps us in any decision making, and that the main challenge for any entity is to channel this these information and direct them to the right users³².

So from all the previous definitions we can deduct that the internal communication is, the communication actions in an entity or organization where the audience is its own employees, in order to inform them and integrate them.

2.2.3 **The forms and directions of the internal communication:**

The internal communication in a company occurs in two forms; a formal and an informal one:

²⁹ Oxford learner's pocket dictionary, third edition, page 81.

³⁰(BOURON .M. Thierry), *Structures de communication et d'organisation pour la coopération dans un univers multi-agent*, to obtain the PHD from the university of paris 6, 1992, p : 30

³¹<http://www.bordeauxconseil.com>, la communication interne des entreprise (viewed the 01/05/21 at 06 :45)

³² (BRENNEMAN R, SEPARI. S), *économie d'entreprise*, DUNOD, paris, 2001, p : 197

2.2.3.1 The ICOMM forms:

- **The formal communication³³:**

It's the communication that happens through pre-defined channels in the organization, it's generally addressed from the leadership positions to the sub-positions and departments. It is generated by an official flow of procedures and it is a necessity to accomplish the organization strategic goals.

- **The informal communication³⁴:**

On the contrary of the formal communication, this form doesn't have a pre-defined channel, nor a procedure, it occurs spontaneously between the employees in order to strengthen the relationship between them.

From what has been said can distinguish the following differences between the two forms:

Table 1: The internal communication forms

The formal communication	The informal communication
A pre-defined official channel	Unofficial channel
Planned and systematic	Unplanned and spontaneous
Directed toward the organization goals	Directed toward the collaborators goals
Impersonal objectives	Personal and social objectives
A slow flow of the message transmission	A fast flow of the message transmission

Source: 6 : By us same.

2.2.3.2 The directions of the internal communication:

As any other process in the organization, the ICOMM has many directions, in which the information flow circulates; we can count then 5 essential directions, which are:

- **The downward communication³⁵:**

As being part of the formal communication, it is the a top-communication that consists on the message sent from the managers to their subordinates such as; Job instructions, office orders, performance judgments...

³³<https://status.net/articles/formal-communication-informal-communication/>(viewed the 03/05/21 at 12 :24)

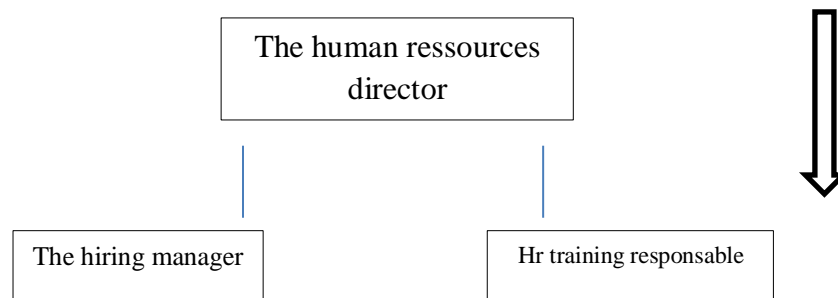
³⁴<https://status.net/articles/formal-communication-informal-communication/>(viewed the 03/05/21 at 12 :36)

³⁵Assessing organizational communication: strategic communication audits By Cal W. Downs, Allyson D. Adrian, Guilford Press, 2004)

If we take the example of the human resources management department:

The black arrow refers to the communication direction.

Figure 6: The downward communication



Source: 7 ; Established by: Us same.

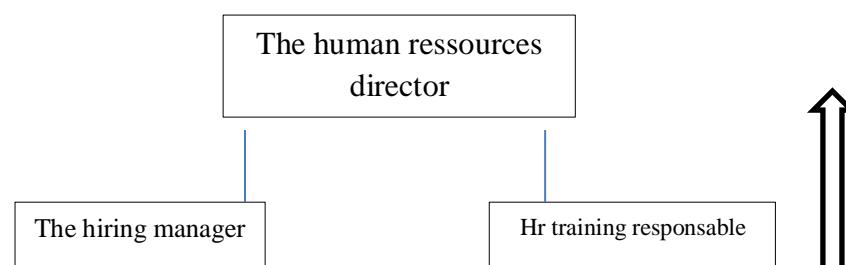
- **Upward communication³⁶:**

It can be both formal and informal; the upward communication goes from the employees to their managers, where they listen to their subordinates as a sort of a flexible ability to be a good leader by being a good listener.

By taking the same previous example:

The black arrow refers to the communication direction.

Figure 7: The upward communication



Source: 8 ; Established by: Us same.

³⁶Assessing organizational communication: strategic communication audits By Cal W. Downs, Allyson D. Adrian, Guilford Press, 2004)

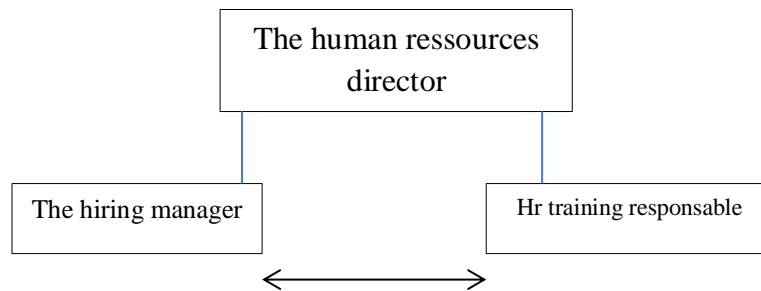
- **The horizontal communication³⁷:**

It's the type of communication that happens between collaborators at the same level, in order to accomplish their tasks.

The same old example shows that:

The black arrow refers to the communication direction.

Figure 8: The horizontal communication



Source: 9 ; Established by: Us same.

- **The diagonal communication³⁸:**

It doesn't have any précised level, it happens in specific cases, generally urgent ones or cases of crisis. For example, the hiring manager contacting a member of the HR training service directly for a specific issue that concerns the employee's direct functions.

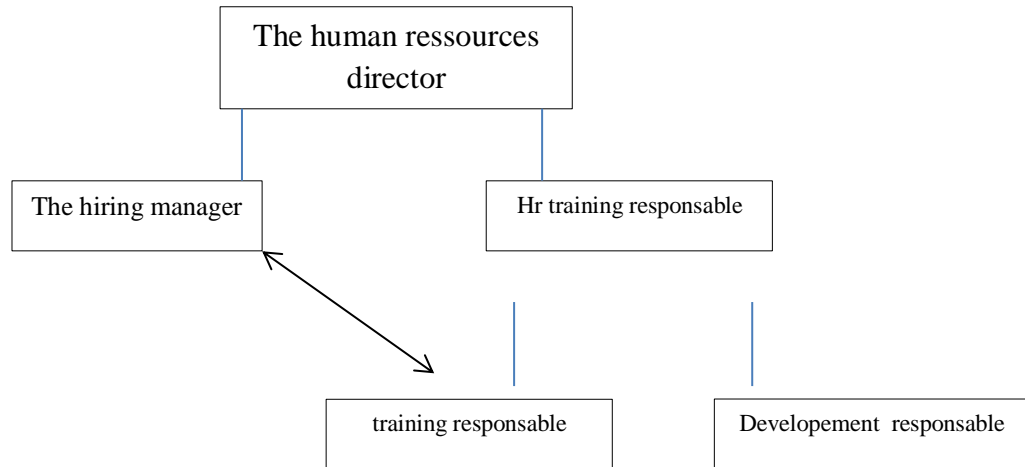
Here is the human resources department example:

The black arrow refers to the communication direction.

Figure 9: The diagonal communication

³⁷Corporate assessment: auditing a company's personality By Adrian Furnham, Barrie Gunter, Routledge, 1993, Page 165

³⁸Management, 10 /e (New Edition) By Robbins, Dorling Kindersley (India) Pvt. Ltd., 2010, Page 328)



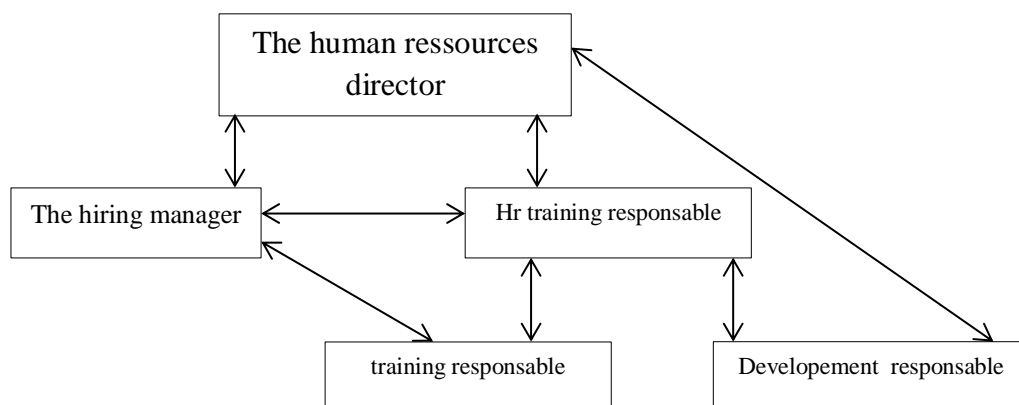
Source: 10 ;Established by: Us same.

- **The grapevine communication**³⁹:

This type of communication has no specified source or destination it goes, for example what we call “testing the waters” by spreading rumors to collect the reaction of the receivers and base the next decision that concerns the topic of the rumor on those pre-reactions.

According to the previous figures, we can extract the figure bellow that sums up all the ICOMM directions:

Figure 10: The grapevine communication



Source: 11 ; Established by: US same

³⁹<https://www.iedunote.com/grapevine>(viewed the 03/05/21 at 14 :35)

2.2.4. The objectives and times of the internal communication:

2-2-4-1- The objectives of the ICOMM:

Beside the information flow arrangement inside the organization, the ICOMM works on the personal and professional development of the collaborators by listening to their needs and responding to their questions and it is what we can call the information offer and demand, also creating an internal specific languages that helps the internal collaborators adapt in their professional journey in the company.

All of this enters in the accomplishment of the global communication objective that was settled in its strategy.

We can resume the ICOMM objectives in the 4 next points:

➤ **Form⁴⁰:**

One of the major goals of the human resources development is to form them through a new aspect that can be practical or technical:

- Practical trainings: About all the non-technical aspects, such as
- Technical trainings: About the new machines or any production process such as; time management or quality management...

This is a sort of internal communication through passing a new informative message, but only and only if the former is an internal agent, so that we can consider the internal flow within the organization.

➤ **Inform and get informed⁴¹:**

The information circulation, is one of the most important details in any organization, it can go through many directions as we have already seen in the communication directions, where the information went in four different directions. So informing mainly is important at the managerial level, where the managers have to keep their employees updated about the current situation of their organization and also all the details needed to accomplish their tasks.

⁴⁰J.J.DEUTSH, communication interne et management, les édition Foucher, paris, 1990, p : 64

⁴¹ Philippe Malaval, Jean-Marc Décaudin avec la collaboration de Christophe Bénaroya, Pentacom Communication : théorie et pratique, ISBN/ 2-7440-7120-X 2005 Pearson Education France.

The informing process is part of the ICOMM as we can see and it can be for these reasons and more:

- Informing the subordinates about the managerial decisions.
- Spreading the implication and validation spirit within the employees by making them feel concerned.

The information must be accessible, permanent and updated.

➤ **Motivate⁴²:**

The role of the ICOMM in the motivation of the employees consists on giving a value to their efforts and achievements, whether by the formal or the informal channels; it can go from a compliment given by a manager verbally in a conversation, to an announcement of the best employee of the month!

➤ **Federate:**

It's the resemblance of the employees and one umbrella, keeping them updated and integrating them, will help gathering the efforts of each member of the organization under one objective. This objective can be practiced through; results sharing, the announcement of the periodic performance indicators, the social conflicts...and more other figures.

2-2-4-2- The internal communication times:

There three global types any organization, the day-to-day or the daily time, the event-driven and the time of crisis. Each one of the previous times has a specific sort of ICOMM.

The chart below classifies each sort by the adequate timing:

Table 2: The internal communication times

The day-to-day	The event-driven	The crisis
Meetings	Company day	Production recall
Departures / arrivals	Change of management	Strike
Results reporting	Merger	Stock market crisis
Absence management	Launch of a new product	
Arrival of couriers		
Trainings		

⁴²J.J.DEUTSH, communication interne et management, les édition Foucher, paris, 1990, p : 64

Source: 12 ; Inspired from: bouckaert.ucl, cours de communication interne <https://overdoc.files.wordpress.com>, p : 14

3 Section two: The internal communication strategy :

Internal communication, like every other aspect of management, consists of a strategy that is established at the beginning of the term and is built on the basis of several constraints. The control of these constraints evaluates the performance of the communication plan established.

3.1 The definition of the internal communication strategy and its elaboration steps:

3.1.1 The definition:

A.D Chandler defines the strategy as: “The strategy is to identify the long-term fundamental goals and objectives of an organization and then to choose the modes of action and allocation of resources that will achieve those goals and objectives”

From that definition we can conduct that the internal communication strategy is the coordination of the different communication types and framework all the actions related to it, to satisfy the global objectives. So it is an instrument of coherence, continuity and control.⁴³

3.1.2 The steps of the elaboration of the ICOMM strategy:

As any other process, there are some specific steps to be followed in order to build an efficient strategy for the internal communication. The common steps are:

- **Defining who will be in charge with the ICOMM⁴⁴:**

It's true that there is one official responsible about the internal communication, but it's not a one man's mission, it can implicate many collaborators; such as:

- The communication responsible
- The managers and heads of departments
- The employees

- **Fixing the objectives⁴⁵:**

⁴³<https://prospere.fr/strategie-de-communication-interne/>(viewed the 05/05/21 at 12 :30)

⁴⁴<https://steeple.com/blog/communication-interne/creer-strategie-communication-interne>(viewed the 05/05/21 at 14 :30)

We can't go through anything in management without having a clear objective out of it, it's based on the objective that the action plan is made. The objectives must be clear and related to the global of objectives of both the global communication and the organization. We have seen before the basic objectives of any internal communication, but we can add to that some many others, such as:

- Increasing the performance
- Facilitating the management
- More acknowledgement about the missions and the job descriptions
- The amelioration of the internal culture of the organization.
- **The identification of the ICOMM message⁴⁶:**

After setting the objectives of the ICOMM, it's time to edit the message that the organization need to pass to the appropriate concerned audience. The content depends totally on the audience, we can distinguish many types, such as:

- A poster about the celebration of the international labor day
- An announcement of a meeting schedule
- The announcement of the monthly performance results
- **Establishing an editorial calendar for the ICOMM⁴⁷:**

Making a calendar enters in the organization of the message sharing process, the entity can't share tons of messages per day because it will annoy and disturb its employees, but also can't share once per three months, because it will make them feel lost and left behind.

Therefore, making a précised well planned schedule is important and mandatory to go forward in the strategy building.

- **Precising and allocating a budget for the operation⁴⁸:**

The ICOMM is not a free concept, every movement has a specific cost that needs to be calculated and directed, it's part of the allocation of the entity resources while making the

⁴⁵<https://steeply.com/blog/communication-interne/creer-strategie-communication-interne>(viewed the 05/05/21 at 14 :40)

⁴⁶<https://steeply.com/blog/communication-interne/creer-strategie-communication-interne>(viewed the 05/05/21 at 14 :50)

⁴⁷<https://steeply.com/blog/communication-interne/creer-strategie-communication-interne>(viewed the 05/05/21 at 14 :55)

⁴⁸(Ben Amara RANIA), Elaboration d'un plan de communication et la création d'une charte graphique au sien de l'UVI, Thesis to obtain the professional master in e-marketing, university of TUNIS, 2011 , p :10

global financial strategy, every smart organization tries to lower the costs, but in the same time give the ICOMM the needed resources and value.

- **Choosing the right tool and the right channel⁴⁹:**

Choosing the right ICOMM tool for any message depends on the audience concerned by that message, it's totally not useful to send a message by a tool or a channel in which the receiver is disconnected. I already mentioned the ICOMM tools before; this step is about choosing the right tool.

- **Integrating the employees in the strategy creation process⁵⁰:**

Since the audience of the ICOMM is the employees, taking them on consideration is the initial key to make the ICOMM efficient.

Integrating the employees in the strategy building can be with many forms, such as surveys, interviews to get their feedbacks or "ideas boxes" to get their minds about better ICOMM tips.

3-2- The internal communication tools:

In order to maintain the internal communication strategy and to insure the message transmission within the employees, the ICOMM needs tools, for this; we have four essential tools of the internal communication:

- The descending tools
- The ascending tools
- The managerial tools
- The intranet and audiovisual tools

3-2-1- The descending tools:

In the downward communication, the managers and the top-management level of the organizational structure need to transfer some messages to the employees.

⁴⁹<https://steep.com/blog/communication-interne/creer-strategie-communication-interne>(viewed the 05/05/21 at 15 :00)

⁵⁰<https://steep.com/blog/communication-interne/creer-strategie-communication-interne>(viewed the 05/05/21 at 15 :10)

- **The company's newspaper:**

Or the company's journal, a very essential tool that strengthens the relationship between the administration and the employees. The perfect control over the content gives the company's newspaper a big value, but also prevents it from being interactive. Despite the fact that most of the companies have this tool, the apparition of the modern ICOMM tools decreased its value, also the budget control applied over the ICOMM plans, made it less favoured⁵¹.

- **The press's review:**

It's the diffusion of the external articles written by the press, in the internal press. This tool keeps the employees updated about what is shared in the extern about their company⁵².

- **The presentation booklet:**

It can be a document representing the company's results or a year-end balance sheet, this booklet is intended specifically for shareholders for informational purposes. This document can also be shared internally for all employees. The presentation brochure is an evolution of the company's journal⁵³.

- **The welcoming booklet:**

The welcoming booklet is a document of contact with the new recruits in the company, it consists on the image of the company and its operational side, in general this document allows the new employees to have a global view on the company, while identifying their rights and obligations, so it helps in both the welcoming and the integration process of the human resources⁵⁴.

- **The electronic journal:**

As the fastest tool, it is either a bright information panel or a video display. It delivers information that is typed by the manager on his computer and displayed in the form of a single sentence on the panel⁵⁵.

- **The information agency:**

Founded in 1980 in multinational companies, it has the same principle as the electronic newspaper. Its aim is to improve and coordinate the dissemination of information

⁵¹ Nicole d'Almeidi, TherryLibert, la communication interne des entreprises, édition DUNOD, Paris 2014, p30.

⁵²Ibid, p41.

⁵³Ibid, p43.

⁵⁴Ibid, PP 43-44.

⁵⁵Ibid, p45.

on a network basis. In parallel with this objective, it can be used as an intermediary for the dissemination of press reviews, business cases, business planning, information packages⁵⁶.

- **The pole of resources in internal communication:**

It is found in large companies, it ensures the disposition of communication officers of tools that enable them to accomplish their missions⁵⁷.

- **The telephone journal:**

It is a complementary element of the written journal, it is sufficient that employees dial a telephone number to receive short announcements that are already detailed in the company journal⁵⁸.

3-2-2- The ascending tools:

There is one ascendant tool:

- **The ideas box:**

It is one of the oldest and most effective techniques that allow employees to express their opinions about the company's realities and its internal situation. Collaborators can give suggestions and proposals as well as ask questions anonymously. It is an indirect creation of a constructive dialogue between the top management and its subordinates, where the information travels from bottom to top⁵⁹.

3-2-3- The managerial tools:

There are many managerial tools:

- **The memo:**

It is an indispensable administrative tool, written on paper or electronic, which aims to set the rules of internal operation, to draw up directives, to inform on legal, technical or commercial guidelines and changes⁶⁰.

- **The documentation:**

It contains all the necessary information about the company and its activities. It is communicated through a dedicated personalized space, a simple circulation of information or sometimes even sent directly to employees⁶¹

⁵⁶Ibid, p46.

⁵⁷Ibid, P. 47.

⁵⁸Ibid, P. 48 .

⁵⁹Ibid, P. 49 .

⁶⁰Ibid, PP. 51-52.

- **The display panel:**

It is a tool for preventing, sensitizing and informing the employees of the company, like every other display, it must be readable, informative and regularly renewed to assume its effectiveness⁶².

- **The personal interview:**

As part of career management, it's a face-to-face communication that's focused on the licensed employee in relation to their position and their position. The interview ends with a report signed by both parties⁶³.

- **Meetings management:**

The meetings are a good place for work and gatherings between the members of the organization where information of all types circulate despite the fact that recently the face-to-face meetings are starting to lose their effect because of the technological development where employees and especially managers prefer to do it online.

- **The supervision:**

It is based on the speech of the supervisor and his communication spirit in the training of employees and the answer to their questions as well as transferring them the messages of the top management , usually it does not need a tool, unless the coach did not do well that task.

There are two types of supervision:

- The informal interview: it's a periodic meeting that can be collective or a face-to-face one, to plan for the next period.
- The basic acts of the professional life: the success of the supervision is based on the usual professional acts⁶⁴.

- **The presence in the field:**

The oldest tool, which is based on face-to-face communication. Lately it knows changes and renews that makes it one of the most important and effective tools⁶⁵.

⁶¹Ibid, P. 52.

⁶²Ibid, p53.

⁶³Ibid, p54.

⁶⁴Ibid, pp. 56-58.

⁶⁵ Ibid, p. 60.

- **The local communication:**

It consists on the communication at the professional field, and it contains three essential elements:

- The listening: it guarantees the direct measurement of the internal social climate without it being filtered by the HR department.
- The Dissemination of messages: facilitate the receipt of the guidelines by sending them directly to the employees concerned.
- The symbols: The presence of managers within the company promotes respect and awareness of employees and a good social climate, which accepts an absence of a strong presence but which appreciates the good one which fights against rumors⁶⁶.

- **The wandering management⁶⁷:**

In order to foster a relationship of trust and appreciation between employees and their manager, its presence must be effective, in two ways:

- Planned and unplanned yours in the company.
- Direct forums: It can be a casual meeting in the company, as it can be a dinner gathering.

- **The Inter-service meetings⁶⁸:**

This is a less well-known type of encounter despite its effectiveness. There are two types:

- The inter-service meeting: It's a meeting between a précised number of the company departments.
- The internal open doors: having the same concept of the casual open doors, but this time, it is intended just for the employees of the company.

- **The internal events⁶⁹:**

- The agreements: A grouping of employees in order to trace the important points of a future event. The convention in this case is the establishment of a check-list of the different tasks of this event and the persons responsible for each task.

⁶⁶ Ibid, p61.

⁶⁷ Ibid, PP. 61-63.

⁶⁸ Ibid, PP. 63-64.

⁶⁹Ibid, PP. 64-66.

- The special event operations: It can be outings as well as seminars with the aim of improving the know-how of the employees of a department and auguring the mutual knowledge and motivation of the staff.

- **The intranet and audiovisual tools:**

With the development of technology and the evolution of ICOMM and the needs of employees, companies find themselves in the case of obligation to be flexible and adapt new communication techniques and use ICTs. Among these tools we find:

- The electronic communication
- Social media
- The audiovisual tools.

(This point will be detailed in the second chapter).

3-3- The implementation of the communication strategy⁷⁰:

3-3-1. The implementation process of the ICOMM strategy:

By the implementation of the ICOMM strategy, we mean the communication plan construction. After passing by the previous steps; identifying the audience, the tools, the budget, now it's time to organize everything in a precised plan to follow.

Therefore, the communication plan sets out, in a given role, the subjects on which the company wishes to communicate during the period under consideration. Each of these topics will be the subject of a detailed campaign plan, specifying the planned actions as well as the messages for each target⁷¹.

There are many types of charts and figures that illustrate the ICOMM plan, we can show of them:

- **The GANTT chart:**

Figure 11: The GANTT chart

⁷⁰L'IMPORTANCE STRATEGIQUE DE LA COMMUNICATION INTERNE DANS LES ORGANISATIONS KEBAILI Hayet, Assistant Master « A » at the university of Boumerdes, universityofeconomical science, commerciale and management science,

⁷¹(Beau Dominique, DAUDEL Sylvain), *stratégie d'entreprise et communication*, DUNOD, paris, 1992, p : 91

Month	Jan	Feb	March	April	May	June	July
Action								
Axis1								
Action1								
Action2								
Axis2								
Action3								

Source: 13 ; Inspired from : **Philippe DETRIE, Catherine BROYEZ, la communication au service de management, édition LIAISONS, 2001,p : 126**

➤ **The action-guide:**

Table 3: The action-guide

Strategic axis	
Action	
Target	
Support	
Actors	
Communication	
Follow-up	
Indicator	
Budget	

Source: 14 ;Inspired from:**Philippe DETRIE, Catherine BROYEZ, la communication au service de management, édition LIAISONS, 2001,p : 126**

3-3-2. The auditing of the ICOMM strategy⁷²:

⁷²(BALMA Andria), stratégie et plan de communication, 2011, p : 03

Before starting the elaboration of any ICOMM strategy and after the strategy setting comes the auditing that insures a prior study to have a general idea at the first situation, and insures the achievement of the designed goals and objectives in the second situation.

The auditing of the ICOMM consists on these steps:

➤ **The analyzing:**

It's about observing, analyzing and evaluating the situation of the organization, all the entity realities and data will go through this step with a fine-tooth comb.

➤ **The diagnosis:**

There are two types of diagnosis:

- a- **The internal diagnosis:** It's about analyzing the internal state of the ICOMM, and figuring out its weaknesses and strengths.
- b- **The external diagnosis:** It's about the analyzing of the external state of the organization, (market, concurrent,...) in order to build a valid strategy that will help the company have a good place in the market, or also to update the old one depending on the change happening in the external environment.

3-4- The ICOMM as a loyalty improvement tool:

The utopian way. The construction of a us by the projection of a common future. In this configuration, the company is in a changing environment; the old medium-term project is obsolete, a new project is emerging, but it is breaking with the internal culture and it faces deep-rooted resistance. This is typically the case with the collective project of a "generalized customer orientation" in a previously oriented business, technology or production company. It is therefore necessary to prepare the collaborators for this change of frame of thought. The IC is maneuvering. Its objectives are pedagogical, rational, argued: to make aware of the context, to draw the future, to make admit the need to evolve, to create a state of mind, then the corresponding mental dispositions and, finally, the behaviors required. As a rational problem, the IC develops a framework of thought in which humanist references are explicitly present,

based on the means of conviction and not seduction: «My ambition for the internal magazine is not Gala, but Le Nouvel Economiste» (Danone)⁷³

⁷³ <https://www.cairn.info/revue-l-expansion-management-review-2010-4-page-114.htm> (viewed 29/06/2021 at 18:15)

4- Conclusion:

Through this chapter, we have concluded that internal communication is a central and essential process in the institutions, and its development depends on the quality of the relations between the various staff and the parties involved in the communication process.

Despite all the obstacles that may have occurred during the transmission of information, the use of more effective means, such as communication and information technology, contributes significantly to the creation of a new way out of most of the gaps in its operation. For example, electronic messages played a crucial role in changing the typical concept of sending and receiving a message.

***Chapter 2 : The information and
communication technologies***

Chapter 2: The information and communication technologies

5- Introduction:

Since its inception many years ago, the tools of communication and information technology have been involved in many areas of work and life, with different orientations and branches.

The characteristics of these tools have made them easily integrated into various aspects of the work. The number of workers who do not have one of these tools is declining significantly, prompting us to talk about the new skills they have to acquire in order to be able to use new technologies at work.

The integration and flexibility characteristics of ICT have made it a competitive advantage to acquire and absorb them that can improve corporate performance at the internal level and improve their return.

In this chapter, we will address the fundamentals of ICT and its different means and techniques. In the second part, we will look at ways of including them in the internal communication of institutions, as well as at electronic messages and their relationship to internal communication.

6- Section one: A general view on the ICTs

Since the 1990s, the concept of ICT has appeared with a certain innovation in the field of computing and audiovisual, as well as telecommunications, what was a bulge in the world of information technology.

6-2- The general framework of the information :

6-2-1. The definition of the information:

6-2-1.1. The lexical definitions :

The word information comes from the Latin word *informatio* that means « an idea » and the word *informare* that means « give a form to a mind ».

- According to the Oxford dictionary: a noun, facts or details about a subject or something.⁷⁴
- According to the Merriam's Webster dictionary⁷⁵ :
 - « knowledge obtained from investigation, study, or instruction »
 - « The attribute inherent in and communicated by one of two or more alternative sequences or arrangements of something (such as nucleotides in DNA or binary digits in a computer program) that produce specific effects ».
 - « a signal or character (as in a communication system or computer) representing data ».
 - « Something (such as a message, experimental data, or a picture) which justifies change in a construct (such as a plan or theory) that represents physical or mental experience or another construct ».

6-2-1.2. The practical definition of information :

- Atneave defines it as: « information is that which removes or reduces uncertainty ».
- Mohammed Louadi said that : « Information is what forms or transforms or even distorts a representation, knowledge for the purpose of acting, a representation of objects and facts . It represents them or corrects them or confirms the idea that things are being done to one another. »

⁷⁴ Oxford learner's pocket dictionary, third edition, p 222.

⁷⁵<https://www.merriam-webster.com/dictionary/information> (viewed the 24/05/21 at 20 :22).

- E. Lentzen and J.P Stroobamb think that: « In-forming is to form, in a sense, it is a dynamic between knowledge, culture, and memory that we must privilege a dynamic or any response, in essence provisional is first of all the fruit of a questioning⁷⁶ ».

Several analyses define information as data literally but mathematically speaking, information is an object of treatment that depends on the certainty of emission and accessibility.⁷⁷

6-2-1.3. Information according to probability:

It's so important to give the information a mathematical definition in order to shape its logical form and align it with some specific laws that can make it accountable and more under control.

➤ **The data :**

It can be the synonym of information but both concepts can represent a different idea, as the data can be the form of information or the code that represents it.⁷⁸

➤ **The information theory :**

When we talk about information theory, we generally mean the theory of Claude E.Shannon who is the founder of information theory and who gave it the quantum concept, it's the information entropy.⁷⁹

Although he was an engineer and a mathematician, his work on information and informatics led to what is known to us today as digital communication.

6-2-2. The information in companies:

6-2-2.1. The information types⁸⁰ :

There are three basic types according to three management levels :

⁷⁶E. LENTZEN, J.P STROOBAMB, "L'information en question", Ed couleur livres, 2005, P07.

⁷⁷Anne Mayère, «Pour une Économie de L'Information» (1990), p17

⁷⁸<https://www.courstechinfo.be/Techno/Informatique.html> (viewed the 29/05/21 at 13 :35).

⁷⁹<https://www.scientificamerican.com/article/claude-e-shannon-founder/>(viewed the 01/06/21 at 14 :39).

⁸⁰https://www.dlswweb.rmit.edu.au/Toolbox/leadership/toolbox/mis/mis_c01.html (viewed the 09/06/21 at 16 :40).

a- **The strategic information:** This is the type of information they need senior managers to make longer-term decisions that are more general and larger.

Such us: Opening a new branch.

b- **The Tactical information:** Intended for middle management to take less global and more specific decisions.

Such us: Changing the working hours to improve performance.

c- **The Operational information:** For team leaders and teams to make operational decisions.

Such us: The number of people in shifts.

Before the 1980, the managers were the only information holders in companies, and the circulation of information in the organization was their mission.

6-2-3. The information sources⁸¹ :

There are two sources of information in a an entity, formal and informal :

a- The formal sources :

Can be both internal or external:

- Internal sources :
 - Computer systems (human resource, accounting, clients, inventory, purchasing)
 - Staff records
 - Accounting records
 - Annual reports
 - Long range planning records
 - Company reports
 - Business documents (letters, minutes of meetings)
- External sources :
 - Professional journals
 - Books
 - Surveys
 - Industry or government reports

⁸¹https://www.dlsweb.rmit.edu.au/Toolbox/leadership/toolbox/mis/mis_c01.html (viewed the 09/06/21 at 16:59).

b- The informal sources :

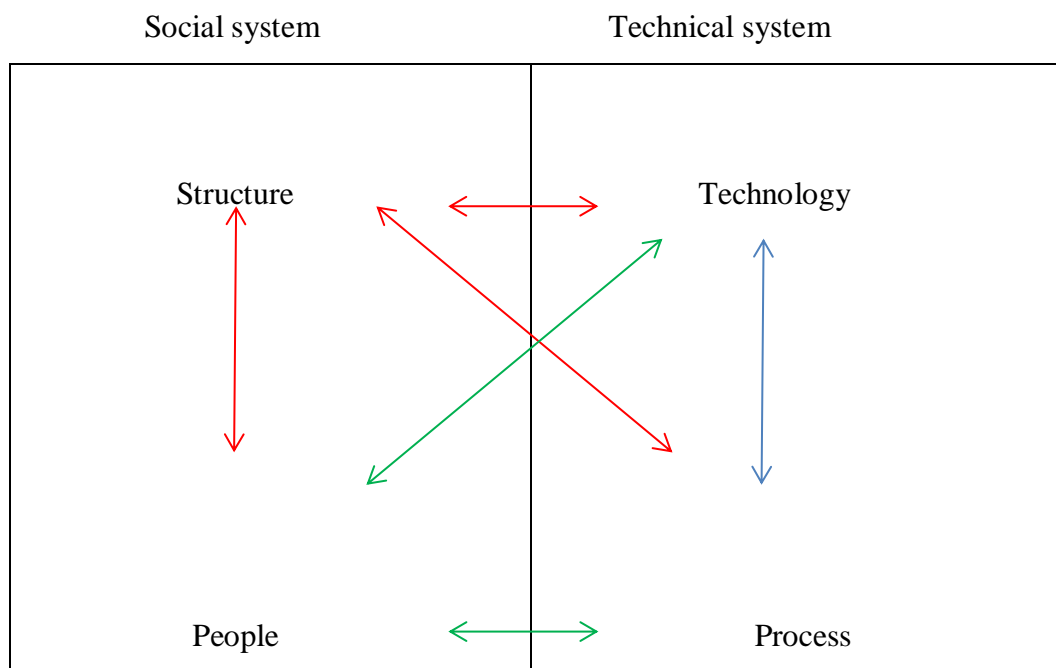
It can be a simple conversation or in the intern or the extern of the company.

6-2-4. The information systems:

To define the information system at the beginning, it is the process of collecting, storing and processing the information to distribute it in order to achieve objectives by the accurate decisions making. This process is ensured by a system which consists of two subsystems, the first one is social and the second is technical⁸².

Each information system has four components that characterize its socio-technical nature.

Figure 12: The information system components



Source; Inspired from : Gabriele Piccoli, Information Systems for Managers : Text and Cases, Wiley, 2012, 66 p

6-3- The basic concept of technology:

⁸²Gabriele Piccoli, Information Systems for Managers : Text and Cases, Wiley, 2012, 65p

6-3-1. The definition:

Technology, like any other technical term, has two definitions a lexical and a practical one.

- **The lexical definitions of technology:**

The word technology comes from the Greek word; coming from the word « techne » that means art, skill or craft and the word « logos » that means word. So the combination gives us science of craft or the word of how the things are done.

- According to the Oxford dictionary: « a noun, study and use of science in practical tasks in industry and business, etc....⁸³
- According to Merriam Webster dictionary⁸⁴ :
 - « the practical application of knowledge especially in a particular area »
 - « A capability given by the practical application of knowledge »
 - « A manner of accomplishing a task especially using technical processes, methods, or knowledge »
 - « The specialized aspects of a particular field of endeavor »

- **The practical definition of technology:**

- Ursula Franklin says that technology is: « practice, the way we do things around here »⁸⁵.
- Bernard Stiegler defines it as: « the pursuit of life by means other than life," and as "organized inorganic matter».⁸⁶

So from all of this we can conclude that technology is the process of using science and knowledge to meet a human need and satisfy it.

- **The artifact:**

It should be noted that this concept fits into the definition of a technology to study the side effects of a technological process, knowing that the artifact is phenomenal undesirable create the out of an experience without having to say it. This term has given us the definition of artistic intelligence which is a type of technology that is based on the natural processing of

⁸³ Oxford learner's pocket dictionary, third edition, page 443.

⁸⁴ <https://www.merriam-webster.com/dictionary/technology> (viewed the 24/05/21 at 14 :24)

⁸⁵ Franklin, Ursula (1999). The Real World of Technology (revised ed.). Scarborough: House of Anansi.

⁸⁶ Stiegler, Bernard (1998). Technics and Time, 1: The Fault of Epimetheus. Stanford University Press. pp. 17, 82

different languages by machines, which has also given us new technologies in the AI world like machine learning.

This concept helps us understand that not every process is one hundred percent controlled anymore, and that's why there are some theories that expect that the robots will rule the world after some few decades.⁸⁷

6-3-2. The technology types⁸⁸:

There are 6 general types of technology, designated in relation to well-defined sectors, these types are:

- Construction
- Communication and information
- Transportation
- Energy / Power
- Manufacturing
- Bio-related

6-4- The ICTs:

6-4-1. The definition of the ICT:

There is no consensus on the definition of ICTs given their complexity, but we can also give it two sorts of definitions a lexical and a practical one.

➤ **The lexical definition:**

- According to the Oxford dictionary: « noun. the study of the use of computers, the internet, video, and other technology as a subject at school (the abbreviation for 'information and communications technology')⁸⁹ »
- According to the Cambridge dictionary: «Information and communication technology: the use of computers and other electronic equipment and systems to collect, store, use, and send data electronically⁹⁰ ».

⁸⁷<https://www.techno-science.net/definition/1646.html> (viewed the 24/05/21 at 19 :53).

⁸⁸<https://schoolwires.henry.k12.ga.us/cms/lib08/GA01000549/Centricity/Domain/1161/categories.pdf> (viewed the 24/05/21 at 19 :35).

⁸⁹<https://www.oxfordlearnersdictionaries.com/definition/english/ict?q=ICT> (viewed the 24/05/21 at 19 :50).

⁹⁰<https://dictionary.cambridge.org/fr/dictionnaire/anglais/ict?q=ICT> (viewed the 09/06/21 at 20 :00).

➤ **The practical definition :**

The introduction of the term ICT was after the 1970s because at the beginning there was only IT, which gave different definitions to this term depending on its components.

- Dieuzeide considers that information and communication technologies are all the instruments carrying immaterial messages⁹¹. He has mottled ICTs in three categories: audiovisual, computer and telecommunications, and he said that: “globally, it will be said: the audiovisual presents, the computer organizes, the telecommunications brings it together”⁹².
- Anderson in the other hand defines it as all technologies that enable the communication or exchange of information with others⁹³
- Herbert Simon the holder of the Nobel prize of the year 1998, says that the ICTs mission is to make : “any information accessible to humans, in verbal or symbolic form, will also exist in computer-readable form; books and memories will be stored in electronic memories”⁹⁴
- In the other hand the UNESCO defines the ICT affirms that: “information and communication technologies are the set of technological tools and resources for transmitting, recording, creating, sharing or exchanging information, including computers, the Internet (websites, blogs and e-mail), over-the-air broadcasting technologies and devices (radio, television and Internet broadcasting) and offline (podcast, audio and video players and recording media) and telephony (fixed or mobile, satellite, videoconferencing, etc.)”⁹⁵

On the basis of the definitions already cited, it can be concluded that information technology and communication is the instruments and tools and technologies that insure the transmission of the immaterial information within a communication process.

In another hand, historically talking, if we take in consideration the period before the appearance of the term ICT, any new method in the communication process is considered as a new technology to transfer any information, such as the writing discovery or the new gestures establishment and even the rituals and the cultural events.

⁹¹ Henri Dieuzeide, « les nouvelles technologies. outils d'enseignement », paris, nathan, 1994, p11.

⁹²Ibid , p36.

⁹³ Anderson, J. ICT Transforming Education: A Regional guide, (2010).

⁹⁴ PATEYRON, (E-A) et SALMON (R) : les nouvelles technologies de l’information et l’entreprise, Ed Economica, Paris, 1996, p.68.

⁹⁵ The UNESCO report about science, 2010, p.130

6-4-2. The ICTs history:

Samuel Morse, was the first one who sent a message through a telegraph line that linked Washington with Baltimore in the US, it was the entrance of humanity in the era of telecommunication. However, the first convention in this area was signed in Paris in 1865.

New inventions such as the telephone in 1876 and the twenty wireless telegraph years later in 1896 the sector expanded internationally. In addition, in 1906 there was the signing in Berlin of the first international radio-telegraphy convention aimed at putting in order the allocation of single frequency bands for each member of the union with the obligation to adhere to them and to comply with them the world.

The decline in the prices of digital equipment, and the emergence of broadband, has put companies within the electronics world, the layout of a microcomputer and an internal network has become indispensable. The invention of computers has drawn a chronological path for the development of ICTs, which can be summarized in the following dates:

- **The 1950s:** computerization was triggered by the diffusion of military computers, then we moved towards decentralization with the invention of mini-computers and even micro-computers.

- **The 1960s:** The orientation of ICT towards the automation of administrative systems.

- **The 1970s:** The orientation of ICT towards the automation of production systems.

- **The 1980s:** ICT orientation towards office automation.

- **1990s:** The arrival of the Internet, and the linking of the various microcomputers, as well as the birth of electronic messaging.

- **From the 2000s:** The explosion of the internet and its accessibility, thanks to emails and mobile phones.

6-4-3. The characteristics of the ICT:

ICT is characterized by its usefulness in several different ways, depending on speed or accessibility or even low cost.

- **Rapidity:**

The IT tools minimize human interaction, allowing more complicated operations to be carried out in shorter briefs.

➤ **Instantaneity:**

The internet allowed transmitting messages minimizing space and time while keeping immateriality with a larger storage capacity, from this we can get out some new terms definitions, such as cyberspace.

➤ **The storing:**

In storage media users have access to a large unlimited space that contains a well-preserved knowledge, practically; it can be said that this space is unlimited.

➤ **Connectivity:**

The techniques are practically compatible and complementary, which increases the choice of action of the users.

➤ **Decentralization:**

The work through the ICT can be done at any time and any moment and in any place, what makes this technology also more autonomous.

➤ **Mobility:**

This means that the service offered by ICTs is movable; this can be seen in three approaches:

- The transmission of information from a state to another, for example from a written state to a sound.
- The transmission of information without any intermediation of any third part.
- The transmission of information to many people at the same time in the same place or separately at the same timing easily.

➤ **Globalization:**

ICT has contributed to globalization by making the world more and more small and united. Thanks to their mobility, ICTs have reduced the problem of time and space in international trade, breaking down the barriers between different parts of the world. With this

huge contribution in economic development and even educational and many other sectors, these technologies are considered as a tool for sustainable development; where they contribute to the optimization of almost all SDGs.

On the other hand, the cost of these technologies raises a new problem in terms of the notion of globalization, the problem of acquisition, countries and more financially developed organizations can have access to more tools and a more advanced generation sometimes, which means faster and less limited access to information that the other part of the world does not really have access to

7- Section two: The ICT in companies

The ICTs collaborate in the creation of information and its dissemination, within the companies; the ICTs used are rapidly developing and are suited to the internal requirements of the organization.

This section will build on the key points of ICT integration into internal communication and the relationship between electronic messaging and internal communication process.

7-1- The ITC tools:

7-1-1. The computer:

The invention of computers makes the boulders element in the evolution of ICT by the automation of calculations by replacing the biases of the punched card.

The beginning of the information age was marked by the undisputed reign of large computers, but they were scarcely numerous: in 1961 there were 6,000 such computers in the world. The terminals are usually located in a separate site from the rest of the company⁹⁶.

Computers have known 4 generations over time; the last was born thanks to the invention of microprocessors that have miniaturized its components. At first computers in companies were limited for executives and managers, today most employees have a computer in the office. Computers have contributed to the storage and processing of information, but since the creation of networks, they have become communicative where they allow a wide dissemination of information through remote computers, therefore this tool has become less expensive and more profitable, saying indispensable in companies.

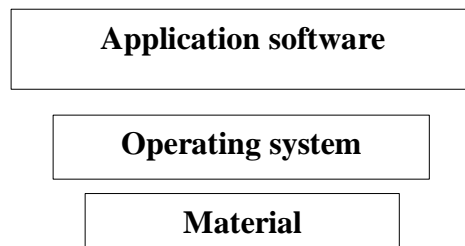
⁹⁶<http://www.est-usmba.ac.ma/Alaoui/cours%20internet/CNTICSUP.pdf>, (viewed the 10/06/21 at 14 :32).

7-1-2. The Software:

You can't use a computer without a program, it needs an explanation of its missions and the information needed to accomplish it, both with a language it understands. The instructions given to a computer are called the program and all the programs are called software.

There are two types of software in a computer, Basic software and application software:

Figure 13: The software types



Inspired from: <https://www.emi.ac.ma/ntounsi/COURS/LogBase/logicielsDeBase-1.html>

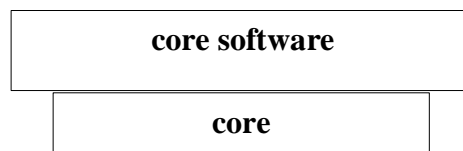
❖ Basic software or operating systems:

It is the set of linked programs that allow the execution of a task by the computer; we can say that it is the link between the user and the material.

Example: Windows, Linux...

We have in the operating system; the core and the core software.

Figure 14Figure N° 15: The basic software components



Inspired from: <https://www.emi.ac.ma/ntounsi/COURS/LogBase/logicielsDeBase-1.html>

❖ Application software:

They are installable software linked to a specific user need; they are usually software that you do not buy with a computer. We find general software such as Microsoft office and specific software such as business management one.

7-1-3. The telecommunications networks (including the mobile phone):

The tools of the telecommunication networks were able to cover the world and were used to transmit information by wire, fiber optics, radio waves. Based on their coverage capacity, it can be distinguished that:

- The Local Area Network (LAN): which is an intra-companies network, their coverage doesn't pass hundreds of meters.
- The Metropolitan Area Network (MAN): An interconnection between many different buildings but in the same city by far.
- Wide Area Network (WAN): for a broader exchange of information, on a country-wide basis. They can be terrestrial by cable and fiber or by satellite.

The telephone is part of this category because it focuses on the transmission of information by voice but nowadays and after the appearance of networks and the Internet specifically it focuses on data.

There are three types of telephone:

- Landline phone
- Mobile phone
- The fax

7-1-4. The smart chips:

For security purposes, smart chips have become a tool used by companies and even individuals. A simple chip that stores the data in an electronic mode and then retains traceability by a biometric reading, as an example; bank cards or identity cards.

The design of the cards containing the chips must be compatible with that of their readers. Several types of chips exist, from the simplest that serve for storage to those of authentication. This technology is certainly the best security choice for any information transaction.

In the same context, smart chips have experienced a new convergence in companies, lately everyone is talking about FRID chip implants, especially in USA, France and Swedish, where the employee voluntarily carries chips in his hands for an identification objective, and here comes a cyborg man era. This trend gives an idea of the future of ICT within companies.

7-2- The ICT types:

7-2-1. Communication technologies:

Communication technologies are all the techniques that enable the transmission of information by sending and receiving information, whether audio, written or visual.

7-2-2. The Networks:

The birth of networks was in relation to the need for the transmission of information between equipment and machines.

A network is all computers and devices connected to each other. (Note: two connected computers are already a network)⁹⁷.

a- Internet network :

Since 1990, the Internet and the network of networks have flourished, it guarantees the connection between computer systems on a worldwide scale, it has become the connection between countries.

The Internet is based on advanced information, computer and telecommunications technologies. The information is distributed on thousands of computers, connected to each other thanks to a single protocol (TCP/IP) that makes it possible to switch from one to the other in a transparent way, thus allowing an ease of access to all the information stored. Developed by DARPA (Defense Advanced Research Projects Agency), the internet can therefore be defined as a set of networks connected to this kernel by at least one type of service, for example, email». ⁹⁸

⁹⁷http://www.pedagogie.ac-aix-marseille.fr/upload/docs/application/pdf/2012-07/formation_reseau.pdf(viewed the 10/06/21 at 17 :17).

⁹⁸SAADOUN. M, « Technologies de l'information et de la communication et management», Hermès, Mars, 2000,P 25.

Through data storage and sharing between users linked by a modem connected to telephone lines, the Internet is a server which offers a high speed transaction and especially after the ADSL (Asymmetric Digital Subscriber Line) apparition.

There are different internet applications, like:

- The World Wide Web (WWW): Or “The Web” it allowed the easy consultation of the sites by the audience, it makes available to visitors a wide range of information of all types, which is why companies try to optimize their content as much as possible at the level of this platform.
- Electronic Messaging: It is used to send and receive all kinds of documents: professional mail, graphic service note, advertising mail. It also allows you to subscribe to electronic journals. It is true that messaging seriously simplifies exchanges without requiring a reform of existing structures. The ease of messages to multiple internal or external recipients should not cause them to be forgotten basic safety rules, each time a message is sent, it is important to check whether all recipients are entitled to receive the information or attachments transmitted.⁹⁹

On the other hand, electronic mail is a tool that allows the exchange of all types of documents and it’s so important to make the difference between the two concepts.

- Newsgroup: It is a space for exchanging themes and ideas in asynchronous mode. It is supposed to be a place of question and answer in relation to a given subject.

b- Intranet network :

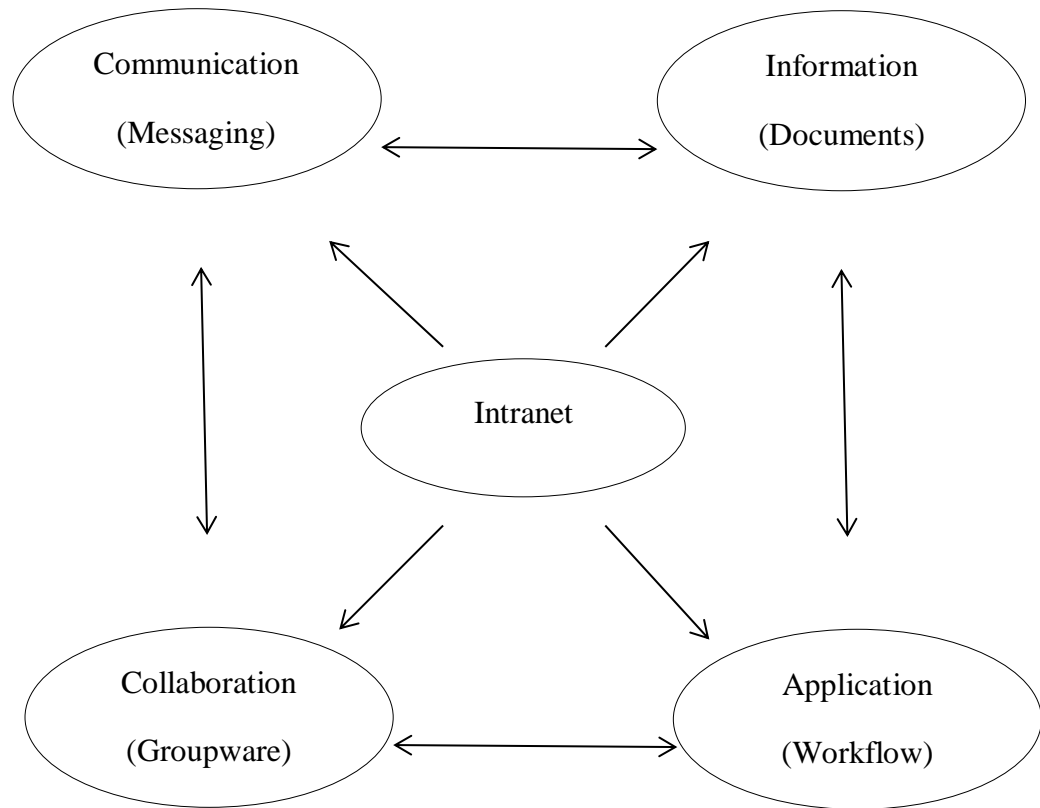
It is a new communication axis that plays a role in the information system of a company. It consists of a standard browser that gives users access to a web page, that stocks information, also they can consult forums and share electronic messages.

This type of network is very secure because it is internal, it contributes to the sharing of information, thus to the communication and distribution of messages, but except users who have access can consult it.

Here is a figure that shows how it actually works:

Figure 15: The intranet functioning system

⁹⁹http://www.pedagogie.ac-aix-marseille.fr/upload/docs/application/pdf/2012-07/formation_reseau.pdf(viewed the 10/06/21 at 18 :01).



Inspired from: <https://www.petite-entreprise.net/definition-d-un-intranet.html>,

c- Extranet network:

The extranet is to apply Internet technology to the company with its main customers and suppliers. A simple Internet connection is enough to connect to the servers of the partner companies. Once the server identifies, it will have access to all the resources made available by the partner, such as e-mail services, information pages at Web format, downloadable documents or forums.¹⁰⁰

The extranet network requires very good security to guarantee the confidentiality of the company's information. The Internet, the intranet and the extranet are strictly linked, the last two must be well placed to bring business success in the internet

7-2-3. Data management tools:

The Database Management System (DBMS) provides data management in an organization.

¹⁰⁰<http://www.est-usmba.ac.ma/Alaoui/cours%20internet/CNTICSUP.pdf>, (viewed the 10/06/21 at 19 :06).

7-2-3.1. Data base:

It is the grouping of data in a large system to facilitate their processing after.

a- Datawarehouse:

It is a decision support system, it is not a simple collection of information, it is based on the collection of production data and the organizations to make decisions.

The datawarehouse goes through three essential phases:

- Data extraction: Using Extraction Transfer Loading (ETL); data is collected and cleaned to avoid redundancy
- Storing: The preservation of data in a structured and relational way that helps decision-making.
- Reporting: Data is made available to users in a secure manner in order to use them in the decision making process.

7-2-3.2. Datamining:

It is the concept of drawing information from a thousand that can help to make an important and profitable decision.

Govare says that datamining is: “process that makes it possible to discover in large consolidated databases of previously unknown information, but which may be useful, and use this information to support tactical and strategic”¹⁰¹

7-2-3.3. Customer relationship management (CRM):

We can define it as: «A system grouping together a set of software and databases to track the history of the behavior of a customer, and to propose, among other things, commercial individualized actions »¹⁰²

It's the creation of a clear relationship tracking process between the company and its client, where the client database is the principal source of any action.

7-2-3.4. Electronic data interchange (EDI) :

An EDI is: « an information system associated with several companies becoming partners, leading to global information systems ».¹⁰³

¹⁰¹GOVARE. V, « L'évolution du travail avec les nouvelles technologies de l'information et de la communication (NTIC) », Paris, 2002, P12.

¹⁰²QUELENNEC. C, « ERP, levier de transformation de l'entreprise », édition Lavoisier, 2007, Paris, P 13.

So, it's an exchange of documents and information between partners through computers, instead of the habitual manual exchange.

- A traditional data interchange:

Figure 16 : A traditional data interchange



Source: <https://www.manutan.com/blog/fr/lexique/quest-ce-que-ledi-definition-fonctionnement-principaux-benefices>(viewed the 10/06/21 at 19 :59).

- An electronic data interchange:

Figure 17: An electronic data interchange



Source: <https://www.manutan.com/blog/fr/lexique/quest-ce-que-ledi-definition-fonctionnement-principaux-benefices>(viewed the 10/06/21 at 20 :01).

7-2-4. Information technology tools:

¹⁰³EXBRAYAT G, FISTEBERG N et FOUESNANT R., "Le Système d'Information des RH: un atout dans l'optimisation de la GRH au service de l'entreprise", MBA - MRH, Université Dauphine, Paris, 2010, P 10.

7-2-4.1. The groupware:

It's a group work integrating software that helps accomplishing the mission.

So it's the use of techniques and technologies in group work, using one of the electronic communication tools for the transfer of information.

We have two big groupware families:

- Intended for messaging: like Exchange, Mdaemon and desknow.
- Intended for projects: like Chronopolys or SharePoint.

7-2-4.2. The workflow:

It is in relation to workflows, it aims to replace manual documents with electronic ones for the purpose of automating business processes.

QueleNNec defines it as: « A workflow is an IT tool dedicated to the management of procedures. This tool defines, manages and executes running programs whose order is predefined in a computer representation of the logic of the procedures. The workflow therefore ensures the automation of Circulation of documents within the organization based primarily on ICT¹⁰⁴ »

There are two types of a workflow:

- The Procedural Workflow: it is for the type of repetitive work, or procedures are well defined in advance.
- The ad hoc workflow: it is for the case where the employees intervene according to the given situation.

7-2-4.3. Enterprise Resource Planning (ERP)

It is a software package that allows managing the process of a company by integrating all its functions; purchases, sales, inventory, finance, logistics and manufacturing. They aim to share the same information and unify the mode of operation by achieving a strong automatic synergy.

¹⁰⁴QUELENNEC. C, « *ERP, levier de transformation de l'entreprise* », édition Lavoisier, 2007, Paris, P 18.

7-2-4.4. Enterprise Application Integration (EAI) :

It is a platform that serves to bring together all applications at the enterprise level around a common application integration engine in order to create a relationship between them.

The EAI insures a sort of an ecosystem area in the entity and it helps lowering its maintenance costs.

7-3- The impact of ICTs with a modern vision¹⁰⁵:

Since the 1980s the use of ICT has increased significantly at the enterprise level, which has led to an obligation to carry out an impact analysis of these tools on the different surroundings of the enterprises, and these are some approaches.

7-3-1- The approach to economic theory:

This approach consists of the relationship between the investments made on Tics and the improvement achieved in productivity, this relationship is supposed to be positive. The result can be interpreted differently, the first is the increase in marginal product and the second is the creation of value in a form of surplus consumption among the company's customers. This approach has been criticized for minimizing human influence on the use of ICTs.

7-3-2- The Competitive Analysis Approach:

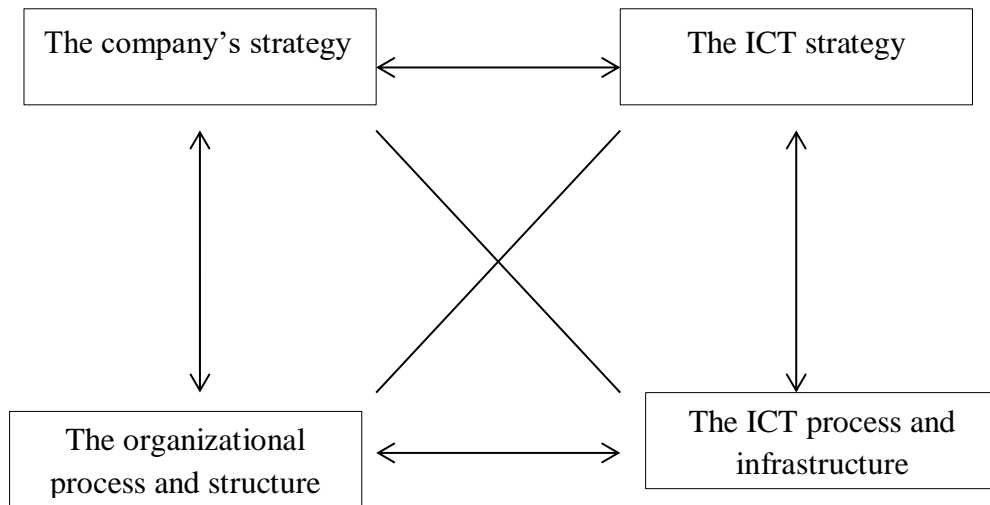
According to the authors concerned by this approach, such as Porter and Millar, ICTs can be a strong source of competitive values among companies, and at a competitive level, the company is updated in relation to its market, its customers and competitors and it has a better image of its goods and services, which gives it the chance to improve and position itself in a better way.

7-3-3- The Strategic Alignment Approach:

This approach explains the positive impact of ICTs on the company through the alignment and coherence between ICTs and the company's internal and external factors

¹⁰⁵Naceur MEBARKI, tic et performance d'entreprise étude d'impact - cas de quelques entreprises algeriennes, Les cahiers du CREAD n°104-2013, p120-126.

Figure 18: The alignment and coherence between ICTs and the company's internal and external factors

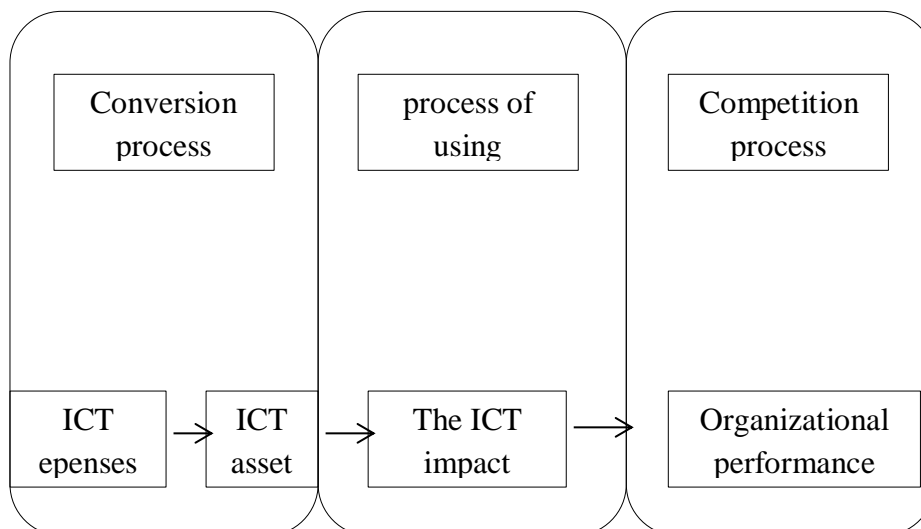


Inspired from: Naceur MEBARKI, *tic et performance d'entreprise étude d'impact - cas de quelques entreprises algeriennes*, Les cahiers du CREAD n°104-2013, p123.

7-3-4- Process-oriented analysis:

This approach aims to measure the impact of ICTs in relation to their contribution to the value chain, because it indicates not only the result obtained in relation to the resources provided but also all the uses of these tools.

Figure 19: The process oriented analysis model



Inspired from: Naceur MEBARKI, *tic et performance d'entreprise étude d'impact - cas de quelques entreprises algériennes*, Les cahiers du CREAD n°104-2013, p125.

7-3-5- Resource-Based Analysis:

ICT capital, technological property, skills, ICT techniques and managerial ICT skills... are all ICT resources that can contribute to its positive impact. This approach creates a kind of link between the economic and the managerial side. So enterprise resources can be grouped into three in terms of ICT; visions of ICT, design of the ICT architecture and ICT service delivery.

7-4- The ICT and the internal communication:

7-4-1- Knowledge Management :

Knowledge management is the conscious process of defining, structuring, retaining and sharing the knowledge and experience of employees within an organization.

The main goal of knowledge management is to improve an organization's efficiency and save knowledge within the company. Often it is referring to training and learning in an organization or of its customers. It consists of a cycle of creating, sharing, structuring and auditing knowledge, in order to maximize the effectiveness of an organization's collective knowledge.¹⁰⁶

ICT on the other hand are tools of knowledge management, which can be done in a daily process of internal communication, by identifying, entering, indexing and distributing all kinds of relevant information.

7-4-2- The benefits of ICT in ICOMM:

The arrival in the 1980s of Information and Communication Technologies developed the circulation of information in the company. When it was necessary to print an information note for employees and carry it in the various departments, it is now enough to send an e-mail to all employees concerned to transmit the information to them. The traditional tools for circulating information (notes, letters to employees, company newspapers, and welcome

¹⁰⁶ <https://www.valamis.com/hub/knowledge-management> (viewed 29/06/2021 at 18:00)

booklet) have not disappeared from the company, but with these transmissions in real time, information circulates much faster in organizations.¹⁰⁷

Here are some points to be noted:

- Creating a collective memory
- Facilitate cooperation between team members or between teams
- Ensuring broad information sharing and visibility of shared information

7-4-3- The electronic messaging as an ICOMM tool:

a- The electronic messaging:

Includes, but is not limited to, electronic mail (e-mail) systems which store and transmit typed communications, voicemail systems which store and transmit voice communications, facsimile and imaging equipment which stores and transmits images, transmission of messages over the Internet, and other systems where images, audio, or text are stored in electronic format.

b- The electronic messaging types¹⁰⁸ :

One to One communication

- Instant message (on a computer network)
- Personal message (on a computer network)
- Text message (on a cellular phone network)
- SMTP (on a computer network)
- Email (on a computer Network)
- Voicemail (using the PSTN)
- Fax (using the PSTN)
- Pager (using the PSTN)

One to Many communications

¹⁰⁷ <https://www.reverso.net/translationresults.aspx?lang=FR&direction=francais-anglais> (viewed 29/06/2021 at 18:27)

¹⁰⁸ https://en.wikipedia.org/wiki/Electronic_messaging (viewed the 30/06/2021 at 16:31)

- Bulletin board system (on a computer network)
- Internet forum (on a computer network)
- Internet Newsgroups on the Usenet (on a computer network)

c- The electronic messaging through E-mail and the internal communication:

Whilst overall e-mail was found to be less influential than face-to-face communication, e-mail was found to positively and specifically influence: the communication climate, where it provides a mechanism for staff to feed their views up the organization; shared objectives and goal alignment, where it helps staff to understand the overarching goals of the organization (the “bigger picture”); and perceived external prestige – the construed external image of the organization – by helping the organization to share positive publicity, and its successes, amongst staff.¹⁰⁹

So e-mail is specifically for giving the big image to the internal audience; meanwhile it can go for details but with a limited reach, regarding to some indicators, such as the clicks in and the checkups.

¹⁰⁹ <https://www.emerald.com/insight/content/doi/10.1108/13563280610643570/full/html> (viewed the 30/06/2021 at 16:37)

8- Conclusion :

At the end of this chapter, we can say that ICT has an important direct impact on the various activities of the intern and the extern of the institutions and on the internal communication process. The adoption of these technologies by enterprises is therefore imperative to keep pace with the demands of the new age and to gain a competitive place in their field. This technology is also an important element of the enterprise's potential improvement and development.

Electronic messaging is also one of the most important tools of information and communication technology (ICT), which has a significant impact in controlling the quality of information transmission within enterprises, and which must be adopted, developed and integrated into the Enterprise Information System.

***Chapter 3: the impact of the ICTs
through the electronic messaging
tools on the internal
communication of SADEG -
SONELGAZ***

Chapter 3: the impact of the ICTs through the electronic messaging tools on the internal communication of SADEG - SONELGAZ

9- Introduction:

After addressing the two previous chapters of the theoretical aspect of both internal communication and ICT, we will try to make a projection of the information that we have provided on the data that we have collected from SADEG - SONELGAZ, in an effort to see if information and communication technology has a positive impact on their internal communication.

In this chapter, we're going to introduce the hosting company and introduce its internal communication and the various tools of information and communication technology that exist in it. And then we're going to introduce our research methodology, and finally we're going to analyze the results that we got to study the validity of our hypotheses.

10- Section one: The presentation of the hosting company

10-1- The presentation of SONELGAZ -The entity mother- :

In this section, we will present the hosting company, its history, its missions, its organizations and its structure, as well as the hosting department.

10-1-1.A brief history¹¹⁰:

SONELGAZ was established in 1969. According to Order No.: 69/59 of 28 July 1969, published in Official Gazette No. 63 dated 1 October 1969. This involved the dissolution of the EGA, which operated in Algeria under French law during the colonial period, and was established in 1947, and the establishment of the new company, the National Electric and Gas Company.

- In 1969, SONELGAZ had: 6000 workers, 70000 customers across the country.
- Beginning in 1978, SONELGAZ focused its efforts on a program to deliver electricity to various communities across the country, with a view to developing the conditions of life of Algerian citizens.
- In 1983, SONELGAZ underwent its first restructuring, which saw the birth of the five completion companies:
 - Electrified Company: Its primary function is to deliver electricity to different regions of the country.
 - Electrification Company: Its function is to accomplish basal structures and electrical equipment.
 - Qangaz Company: Its primary function is to accomplish gaseous networks.
 - Energa Corporation: Her job is civil engineering.
 - Installation Company: Its primary function is the industrial structure of electrical and gas installations.

Plus:

 - AMC: Its function is to make various meters and measuring and monitoring machines.
- In 1991, SONELGAZ became a public enterprise of an industrial and commercial nature (EPIC) in accordance with Executive Decree No. 95/280 of 17 September 1995.

¹¹⁰ The communication service of the SDEG.

- In 2002, SONELGAZ was transformed into a equity institution by Presidential Decree No. 195/2002 of 1 June 2002, this formula allowed SONELGAZ to expand its activities to other fields of energy, and also allowed the foundation to operate outside the national territory, and to participate in the capital of other national or foreign companies, which allowed the company to rise to an industrial complex in 2004.
- Between 2004 and 2006, the SONELGAZ complex expanded considerably, becoming a holding facility involving several subsidiary institutions, including those responsible for basal functions:
 - Electricity producer SPE
 - GRTE Electricity Transmission Network Management Company
 - GRTG Gas Network Management Company

In 2006, the electricity and gas distribution function was structured, with the creation of four regional distribution institutions: Algeria, East, West and Centre.

- Between 2007 and 2008, the process of restructuring was brought to an end, with efforts focused on improving the quality of service for the customer, by infusing considerable financial means directed at strengthening the infrastructure of the means of producing and distributing electricity and gas.
- In 2013, the SONELGAZ complex broke into the field of renewable energies. A company was set up in charge of isolated networks in southern Algeria. Its main task is to develop and produce electricity through the exploitation of renewable energies.
- In April 2017, the SONELGAZ complex was restructured to 32 companies after 39 companies. One of the companies that emerged from the new restructuring was the Algerian Electricity and Gas Distribution Company, which was formed after the four distribution companies were combined into one company.

10-1-2. The missions of SONELGAZ:

SONELGAZ has always played a major role in the economic and social development of the country. Its contribution to the achievement of national energy policy is commensurate with the important programs carried out in the field of rural electrification and public gas

distribution; this has enabled the electricity coverage rate to be raised to 99, 4% and the gas penetration rate at 62%¹¹¹.

Its core business subsidiaries are responsible for the production, transmission and distribution of electricity, as well as the transmission and distribution of gas via pipelines. Its work subsidiaries are in charge of the realization of the electricity and gas infrastructure of the country. Its service subsidiaries operate mainly in the fields of energy equipment manufacturing and maintenance, distribution of electrical and gas equipment, transport and handling¹¹².

As the operational activities are vested in its companies, the SONELGAZ holding company is responsible for steering the Group. As such, it develops and implements the Group's overall development strategy, as well as its financial and human resources policy. It is also working to mobilize significant funding to develop and strengthen electricity and gas infrastructure. The booming African market offers it the opportunity to export the know-how of its subsidiaries, notably in Mali, Libya, Mauritania and Sudan...¹¹³

10-1-3. The identity of SONELGAZ:

Here is the logo of SONELGAZ:

Figure 20: The SONELGAZ logo



¹¹¹<https://www.sonelgaz.dz/fr/category/qui-sommes-nous> , (viewed the 18/05/21 at 17 :33)

¹¹²<https://www.sonelgaz.dz/fr/category/qui-sommes-nous> , (viewed the 18/05/21 at 17 :43)

¹¹³<https://www.sonelgaz.dz/fr/category/qui-sommes-nous> , (viewed the 18/05/21 at 17 :50)

Source: The company files.

The current slogan of SONELGAZ is: “together for more energy”¹¹⁴

10-2- The presentation of the SADEG :

10-2-1. Introduction to SADEG :

10-2-1.1. A general view :

In 16 May 2007, SADEG was established pursuant to resolution 478, taken by the General Management and which contains the establishment of the General Distribution Directorates affiliated to the special distribution channels. Where it belongs to the central distribution company Blida, the latter includes (Blida, Tizi Ouzou, Bouira, Médea, Ghardaïa, Laghouat, Ouargla, Djelfa, Tamanrasset, El Oued, Biskra, Illizi). Its turnover is estimated at 15 billion dinar. Its objective is to provide GAS and electricity to the whole wilaya.

10-2-1.2. The channels of SADEG :

It is a network that links the distribution management of the wilaya of Ghardaïa with its commercial agencies: Ghardaïa, Ménea, Guerrara, Berriane, Bounoura. Metlili and Zelfana.

The distribution management network is an internal network which allows to transmit all the digital information of the user, basically it is a set of computers which belong to the same organ, linked together by a network of several meters to transmit the data, in this network SONELGAZ uses several types of transmission techniques: VPN and GSHDSL.

- Between the management and the commercial agencies: Metlili, Berriane, Guerrara, Zelfana, we use the VPN.
- Between the management and the two sales agencies Ghardaïa and Bounoura, the GSHDSL is used.

10-2-1.3. SADEG in numbers:

- The number of employees is:
 - 2014: 99 executives, 229 screening officers, 109 enforcement officers.
 - 2013: 93 executives, 215 screening officers, 98 enforcement officers.

¹¹⁴<https://www.sonelgaz.dz/fr/category/qui-sommes-nous> , (viewed the 18/05/21 at 18 :00)

- 2012: 92 executives, 204 screening officers, 102 enforcement officers.
- The number of subscribers: 162432.
 - Electricity: 105291
 - GAS: 57141

10-2-1.4. The organizational structure of the SADEG:

The direction of the distribution of the electricity and the GAS is an enterprise which exercises several Functions and tasks, which also turn to several classes and levels.

The appendix N01 shows the organizational structure of SONELGAZ.

- The interpretation of the organizational chart:

The components of the organizational chart can be presented as follows:

- The GAS and Electricity Distribution director:

He or she is primarily responsible for all the operations involved in the management and organization of the entity, also ensures control, supervision and coordination between all the management structures, it has other powers connected to the financialized operations, such as the signature on accounting papers, manual evaluation of the final budget, and other main tasks.

- The general secretariat:

Concerned with the follow-up of the mail received and moved from and to the centers, they occupy the functions of communications, on using the communication devices; telephones and fax... etc.

- Communications officer :

They ensure the availability of information concerning employees within the company. Their missions are: the facilitation of communication between the company and its clients or partners, the facilitation of internal communication, the representation of the company in the informative and advertising outgoings.

- The Legal Annex:

It follows the company's legal listing.

- The Industrial Security Engineer:

Among their principal tasks, the insurance and distribution of the electrical energy and network maintenance.

Other tasks: the maintenance of companies by an organized program, the analysis of accidents that arrive in the network, the management of subscribers in the region, the management of tools, the representation of the company in the State.

- Legal Department:

Their duties are to resolve disputes between the company and subscribers, supervise the construction of contracts between them, and represent the company in pleadings.

- The Information Systems Manager :

are responsible for Information Analysis and Invoice Printing, Software and Corporate Information Systems management.

- Commercial relations department:

plays an important role in the company. The Head of Department has 3 subordinates who are: a statistician, a customer complaints manager, a head of operations of electricity purchase and sale statistics and GAS.

To help them services have been established:

- Sales development: specialized in connecting new customers with GAS and electricity.
 - Major calculations: Concerned by the invoices of entities and administrations.
 - The collection: the collection of receivables.
 - Commercial agencies: There are 8 agencies involved with normal customers. One of their larger missions is to apply the company's commercial policy by putting customers under services through commercial operations and sales development, suggesting ways of financing and the control on the field.
- Department of studies and execution of the works concerned by the GAS and electricity:

It is divided to the 4 departments: the studies and execution of the works of electricity, the study and execution of the works of the GAS, the general program of the electricity and the general program of the GAS.

Their tasks are: To study the demands of new customers, the follow-up of the works and its completion.

- Department of Finance and Accounting:

it is based on these 4 administrations:

- Accounting administration: this sub-department classifies the resources and expenses of the company in relation to its resources, it is considered as a door of reception of all invoices, either of investments or of services, to classify transactions in relation to the office concerned by the studies or accounting officers.
- Finance administration: this sub-department supervises the justification of the company's financial operations, it attaches it to the other financialized entities: the bank, the post office, and the latter pays the next bills after the assets are deposited with the Investment sub-department, and it is the sub-department that centralizes all the accounting and finance sub-department.
- Budgeting service: This service studies the costs and the final result suggested from the general accounting with a presentation, and also controls the company's earnings among the audit and finance office, and this sub-department also contains an audit office.
- Inspection and Audit Service: Its role is the control and audit of the finance and accounting.

- Human Resources Department:

It contains both the human resources management and the human resources development and training.

Its missions are: the management of employees, the follow-up of the training of employees, the internships, the educational days, the follow-up of accidents at work, the follow-up of administrative documents.

- GAZ Investment Department:

There are 3 divisions:

- Repair Service: This service works on an annual program divided by week, it searches for GAS leaks in all regions covered by the GAS and Electricity Distribution Directorate in Ghardaïa and follow the networks.
- The Control and Investment Department: This department monitors and follows all matters relating to the networks, it also specifies the programme and tasks of the person concerned, and the establishment of specific project programmes, as well as the establishment of emergency programmes.
- Technical services: in the case of damage, a GAS leak at a customer for example, the customer calls this service, the service does not intervene, it sends a letter to the investment service with the address of the customer, the reason for the problem, and the last intervenes.
 - Electricity Investment Department: consisting of three agencies: Grid Investment Control Agency, Repair Agency and Technical Agency Management Agency.
 - General Equipment Department: provides all equipment used in centres and related agencies.
 - Internal Safety Officer: Their role is to minimize accidents in the company.

10-3- The Presentation of the hosting department « The human resources management department » :

10-3-1. Introduction to the department :

SONELGAZ has a great interest in human resources, especially in training, or this entity works on an administrative organization based on training and continuous training, so that it can follow development in its external environment.

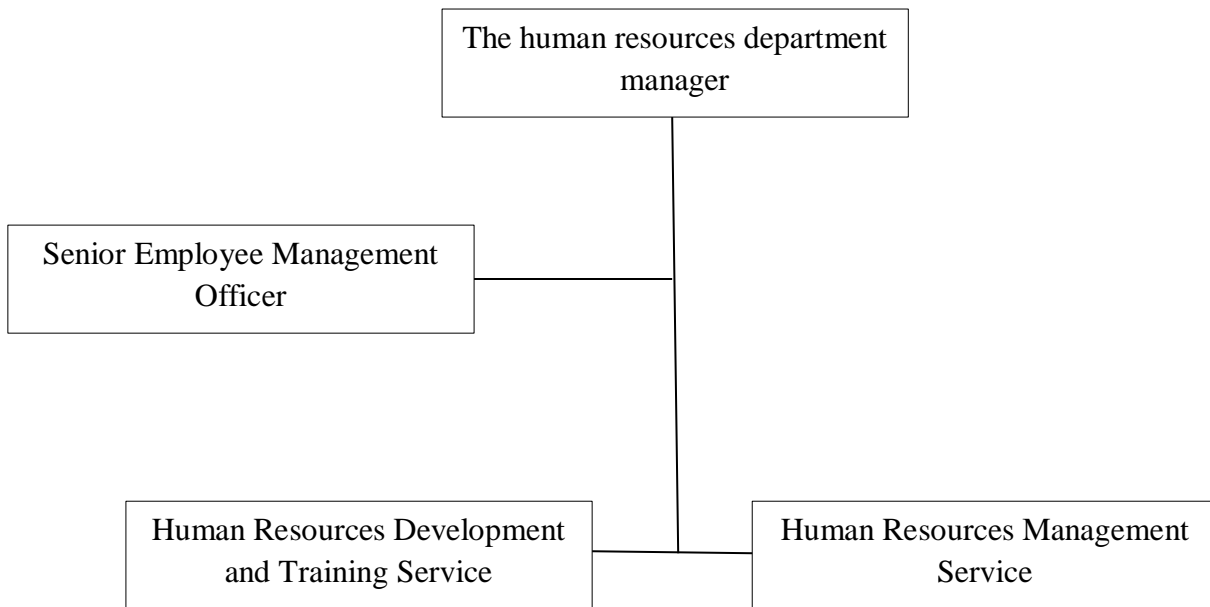
SONELGAZ aims through this training strategy to guarantee the growth of human skills and the guarantee of good supervision. This interest in human resources is always linked to the recruitment process by the provision of all equipment to guarantee the imposed criteria. For this reason the SONELGAZ is equipped with specialists as well as workshops, workshops and special rooms equipped to train and train its human resources.

From the above it is concluded that the human resources planning operation is one of the most important operations carried out by the company or it pays attention to its human resources by claiming their future needs and the degree of availability and essential skills to achieve goals. All to ensure coordination between the work of the responsible senior

administration on overall strategic planning and the human plan with its bodies such as training and recruitment and promotion and development of the professional processes that all work together to achieve a balance in the professional life of human resources so that it can grow general relationships with its managers in the company

10-3-2. The organizational structure of The department :

Figure 21: The organizational chart of the human resources department.



Source: The human resources department

11- Section Three: The methodology and the results of the research

In this section we will begin with the introduction of the methodology of our research, then we will address the results of our qualitative study, going through the analysis of the results of the quantitative study and ending with a synthesis and some recommendations.

11-1- The steps and the methodology of the research:

11-1-1. The methodology of the research:

11-1-1.1. The purpose of the research:

This research is established for the purpose of carrying out my study on the impact of technology on internal communication at the level of SONELGAZ, but also for other particular reasons, which are:

- Study the reality of ICT use at the level of Algerian state enterprises.
- Study the deep relationship between ICT and internal communication
- Measuring the efficiency gap between the different ICT tools
- Verify the veracity of my hypotheses.

11-1-1.2. The methodology of the establishment of the research:

To check the hypotheses resulting from the problem; "What is the impact of the technology through the ICTs on the internal communication of SONELGAZ?" I opted for two different types of studies; the qualitative study by an interview with two representatives at the SONELGAZ level and a quantitative study by questionnaire, carefully established for a specific sample of employees.

This is a brief definition of the two types of study:

- **Qualitative research:** is the process of collecting, analyzing, and interpreting non-numerical data, such as language.
Qualitative research can be used to understand how an individual subjectively perceives and gives meaning to their social reality.¹¹⁵
- **Quantitative research:** Quantitative research involves the process of objectively collecting and analyzing numerical data to describe, predict, or control variables of interest.

The goals of quantitative research are to test causal relationships between variables, make predictions, and generalize results to wider populations.¹¹⁶

11-1-1.3. The interview :

11-1-1.4. The objective of the research :

In order to collect valid data on the reality of internal communication and ICT at SONELGAZ level, I carried out a qualitative study in the form of an open-ended type of the semi-directional interview. The interview had other sub-board objectives, which are:

- Have an idea about the people responsible for the topic studied and link the profiles and their influence on the results.

¹¹⁵<https://www.simplypsychology.org/qualitative-quantitative.html> , (viewed the 18/05/21 at 19 :15)

¹¹⁶<https://www.simplypsychology.org/qualitative-quantitative.html> , (viewed the 18/05/21 at 19 :33)

- Conceptualize the theme by clarifying the main points on the field.
- Have a data base that assists in the selection of quantitative study questions.

11-1-1.5. The methodology of the interview :

Here is a brief definition of a semi-directive interview:

Semi-directional maintenance, also known as qualitative or in-depth maintenance, is a qualitative method of study. Its purpose is to collect information that provides explanations or evidence to a research work.¹¹⁷

To obtain these data, the semi-directive interview consists of a series of open questions. They are prepared upstream by the researcher and the data collected will have to be interpreted, so that you can write a reasoned conclusion.¹¹⁸

The interview took place separately with the HRD and the person responsible for communication, with an interview guide that consists of 4 themes chosen in relation to the objective of research.

11-1-2. The questionnaire:

It's one of the data collection tools, « A questionnaire is a research instrument that consists of a set of questions or other types of prompts that aims to collect information from a respondent. A research questionnaire is typically a mix of close-ended questions and open-ended questions. Open-ended, long-form questions offer the respondent the ability to elaborate on their thoughts. »¹¹⁹

➤ Target population :

In order to have more credible data and an intervening volume of response, we have chosen, the target of executives and engineers, because it is the target that uses the tool "Tensik" which is an electronic messaging tool, dedicated to this target which is at the level of all departments. So it's a very representative.

➤ Size of the sample :

A random sample of 30 employees, from a total of 70 executives and engineers at the SADEG level were selected.

¹¹⁷<https://www.scribbr.fr/methodologie/entretien-semi-directif/>, (viewed the 18/05/21 at 19 :40)

¹¹⁸<https://www.scribbr.fr/methodologie/entretien-semi-directif/>, (viewed the 18/05/21 at 19 :56)

¹¹⁹<https://www.questionpro.com/blog/what-is-a-questionnaire/> (viewed 28/06/2021 at 19 :48)

➤ **Duration and type of investigation:**

The data collection took a day and a half. The questionnaire was distributed in form of an electronic survey, every employee had his full time to answer, meanwhile; it was a one to one investigation, were the surveys were distributed individually and they have been filled in our presence, this method was adopted for the following reasons:

- It's the first time that the employees receive an electronic survey, so they might need help.
- To avoid fake data, an explanation of some questions was provided.
- To notice the interactions and collect the feedbacks, which can help in the recommendations section.

➤ **Investigation conception:**

The questionnaire was compiled by the "Google forms" tool for the following reasons:

- Google forms is an electronic creation tool.
- It makes the sharing of the survey easier.
- It stores the data and avoids its damage.
- It provides statistics and different interpretations.

The questionnaire has been structured as follows:

- Introduction: It is a presentation of us and our subject of study, It is in order to bring the interviewee to know the context of the survey and to give him confidence to better collaborate
- Description sheet: A part that made it possible to collect more precise and personal information on the interviewees to be able to classify them
- The core of the questionnaire: Contains all the questions intended for our interests, classified logically and under specific theme.

The core of our survey, contains 30 questions about the following themes:

- The internal communication in the company
- The information and communication technology in the company
- The electronic messaging.

The following types of questions have been used:

- Closed questions (Yes or no questions): The interview can chose only one answer.
- Multiple choice questions: The interview can chose many answers.
- Questions according to the Likert scale:

➤ **Method of treatment of results:**

The tool, Google forms and Excel, was used to process data, create tables and graphs, and calculate percentages and frequencies. For data crossing, the SPSS tool was used

For data analysis, we've made two sortings:

- Flat-sorting: which gives the breakdown of the answers question by question, is the first statistical processing carried out: it gives an initial idea of the results and naturally forms the basis of the survey reports.¹²⁰
- Cross-sorting: is to link the answers to different questions to find out which criteria play on each other. Sometimes complex to interpret, they are essential to refine the analysis of the results.¹²¹

11-2- The results of the qualitative study: (The interview that was previously done in SDC SONELGAZ):

11-2-1. The positioning of the internal communication in SDC – SONELGAZ :

The function of the global communication is a synergy work between the communication responsible, the HR division and the social partners, as Mr Abbas Yahia the communication officer said ; he can consider the ICOMM as one of his tasks but not his first mission, because the ICOMM depends on many points that are actually part of the HR division data, also the presence of the social partners as a sort of transparency and integration. In the near future the communication will know an upgrade from a simple position to a division, and by that time we can consider it as an independent mission.

The synergy between the different parts is insured by the official meetings, and in the communication plan establishment ones to be more specific.

11-2-2. The internal communication in SDC – SONELGAZ :

¹²⁰<https://blog.questio.fr/tri-a-plat-base-de-tout-rapport-d-enquete> (viewed 28/06/2021 at 20 :25)

¹²¹<https://blog.questio.fr/tri-croise-comment-affiner-analyse-resultats> (viewed 28/06/2021 at 20 :26)

11-2-2.1. The different forms and types of the internal communication in SDC – SONELGAZ :

a. The different forms :

❖ Formal communication:

This type of instruction consists of transmitting decisions and instructions to ensure access to all concerned and also to ensure the proper management and control of the flow of messages. This type is indispensable and it takes several forms and directions:

- **Top-down communication:**

This is the type of communication that goes from top to bottom, so hierarchically speaking, it starts from the manager to the head of department within the company and moving to their subordinates.

The message content of this type of communication is generally instructive and contains work instructions to improve performance or to ensure proper application of standards to properly establish the task. It can also be a training announcement or a call to a meeting. This message can be written or face to face.

- **Bottom-up communication:**

This is typically the opposite of top-down communication, it goes from the bottom up.

Usually it is the reports drawn up by the heads of departments in relation to the situation of their subordinates as well as the status and progress of the work, this type of communication provides a general overview of the situation to the managers concerned and helps in the analysis and strategic decision-making.

On the other hand, this type of communication can be claims or employee concerns. This type usually requires writing the transferred message to ensure traceability.

- **Horizontal communication:**

It is a communication between equivalent parties, between subordinates, between department heads or between managers, taking a look at the organization chart, one can have a general idea on the concept.

This type is often envisaged in meetings between employees or between heads of departments in the company with the aim of an exchange of ideas and perspective, each relying on his field and his data. It is also found in the meeting between regional directors at the national level. Sometimes the message is written, in the form of mail, these mails must be sent in an official manner and keep it out of reception. Nowadays, mail has become electronic, either by e-mail or in another form, in the case of SONELGAZ we will discuss the new tools.

❖ **Informal communication:**

It is a communication out of formalization, is the common type in many cases, usually thanks to good personal relationships between work teams, it is good relationship have several reasons, such as the neighbourhood or old friendships or even friendships developed within the company.

One of the relevant factors is the nature of the region or almost everyone knows each other, so it facilitates communication among others in the unofficial setting.

This type of communication gives employees a sense of comfort and influences their daily performance, as can be seen in small conversations at the beginning of the day or during breaks.

A company that ensures good unofficial communication, succeeds in its internal social climate and this is the case of SONELGAZ.

According to the points mentioned and the analysis carried out, internal communication plays a fundamental role in the management of the company either at the official or unofficial level. But from what I've noticed, top-down communication dominates in SONELGAZ.

b. The tools:

After defining the types of internal communication, we can now distinguish the different tools used to maintain a good communication plan that leads to a work organization and good results.

The tools of internal communication at SONELGAZ level are:

- The oral tools:

Compounds by:

- ✓ Interviews: This is one of the tools used to communicate with employees within the company, personal interviews are divided into two:
 - Recruitment interviews: This is the responsibility of the Human Resources Management Department, where candidates are welcome to complete the recruitment process. This can be done by the heads of departments involved in recruitment in a few cases.
 - Disciplinary Interviews - usually between an employee and his line manager. Employees may be summoned by their department heads to be questioned about bad action or behaviour, such as absence, delay or lack of commitment.

The department heads can also meet these types of meetings during their missions, on behalf of the company director, if they do not carry out their missions properly. This kind of meeting does not always end in a good way, sometimes the interviewees are blamed and punished if they do not find a good justification for their behaviour.

- ✓ The meeting:

It is the most common and ordinary tool; they aim at the exchange of ideas for a successful outcome of the strategies that result from decision-making. At the SONELGAZ level, meetings are usually held between the Director's subordinates and the Chiefs served.

- The written tools:

Internal communication tools written within SONELGAZ include:

- ✓ Announcements:

It is an essential and common tool in the organization, announcements are instant documents shared at the same time in order to circulate information in a way that is open to the internal public. The content of an ad differs from one occasion to another but the location is unified and known.

- ✓ Reports:

Speaking of progress or general status, in a general or specific setting, reports are usually written by assistants or department heads.

✓ Instructions:

Generally contains decisions, new or ordinary for employees, such as; leave or extraordinary leave, salary increases or a new schedule.

11-2-3. The ICOMM plan and implementation:

As Mr. Abbas mentioned, there is no specific plan, in fact the audience is always chosen depending on the subject communicated and the budget is not précised, since his service belongs to the one of the director. In SADEG they classify each division by “VM**” the communication officer belongs to the director stuff so his budget in the entity accounting is extracted from the “VM0”. The good thing is that he showed a big satisfaction about the resources he has in hand and said that the work conditions couldn’t be any better.

As the HRM mentioned, the auditing system of the ICOMM is random, they can conclude it from the social climate of the company, as the number of conflicts or some specific reports about urgent situations.

11-2-4. The ICT realities and applications in SADEG– SONELGAZ (GD) :

- **The ICT implementation:**

Prior to 2007, communication was a centralized mission, in the case of SADEG Ghardaia, it is after 2009 that it "passed a recruitment of a person responsible for global communication. After this decentralization, the Directorate-General saw a need for a more technical approach to facilitate the transmission of information between the different parts of the global organization, with the increase in the number of HR and the development of missions.

This implementation was by necessity therefore, then and with the necessity of a follow-up, SONELGAZ signed an agreement with the company ELIT for any kind of IT need, this agreement was signed, the year 2007, and since this year, all the ICT tools used by SONELGAZ are developed by this company.

ELIT, send some surveys through « Tensik » to know about the opinion of the employees.

- **The ICT tools related to the internal communication used by SADEG (GD) :**

a- Computers :

Each office has at least one computer with a printer. Computers are controlled, actions on computers are limited. Employees can't install any kind of software, the IT service do, and the softwares must be original and with a license, any attempt to install a random software will be detected.

b- Phones :

SADEG works with a standard three-digit system for communication between posts and department, each employee has a telephone and a list of the different numbers of the different departments in front of him.

- **The ICT types in SADEG (GD):**

a- Internet :

SONELGAZ has its own internet network, it is not linked to Algeria telecom, the internet is transferred by fibre and the network is limited. only the department heads has an internet network.

b- Intranet :

The SADEG intranet functions with FTP which consists on IP addresses but lately they have generalized the electronic management of documents.

In the intranet, mostly, documents are shared and especially high volumed ones, or those that must be kept and available.

c- Web solutions :

A software on the basis of an internal network shared by the intranet, they are not installed and it does not need internet for it to work within the company.

There are many web solutions, we can cite :

- **CRMs, Customer Management System :** Destinated for most of the company services that are included in operations.

The front office :

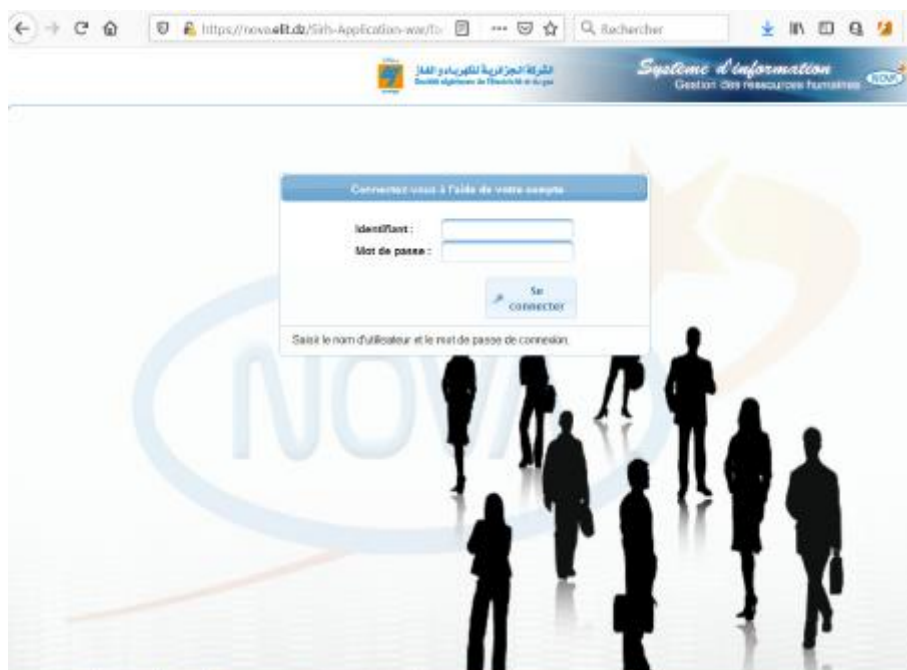
Figure 22: The CRMs



Source : the company documents.

- Nova : A web solution destined for the human ressources management
The front office :

Figure 23: The NOVA



Source : The company documents.

- Other web solutions, such as :
 - Ikraa : E-learning platform
 - Help desk : for IT solutions
 - Hissab : for the finance and accounting department

d- The Facebook group :

A Facebook group has been scripted for information sharing with employees but is less active

e- Electronic messaging :

The official tool of electronic messaging since 2007 is Tensik, it is a communication tool between executives and engineers.

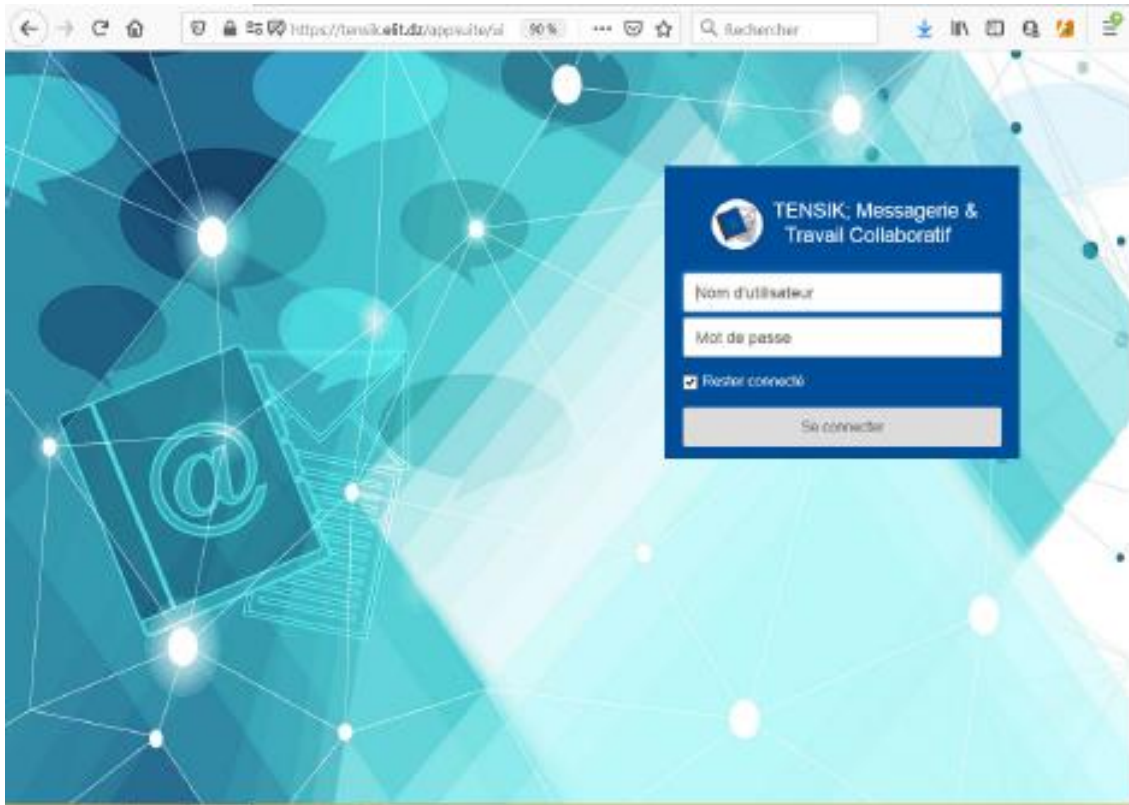
It is an open exchange tool emerging in the intranet, the electronic addresses are of a pro type and in the form: firstname.secondname@SADEG.Ghardaia-DZ.

Its characters :

- It can work with the internal network only
- It can work using the ordinary internet
- Its storing capacities are so low, that's why they use the software Thunderbird to store and archive the old conversations, in order to not to lose them.
- The messages sent by Tensik, have the same credibility as the documents sent by fax.

The front office:

Figure 24: Tensik



Source : The company documents.

- **The ICT tools related functions accomplishment :**

These missions are shared between the own IT engineers of SADEG and ELIT, the following table shows the sharing of missions :

Table 4: The ICT tools related functions accomplishment

The missions	SADEG IT engineers	ELIT
maintenance of infrastructures ; such as computers, phones...	×	
IT support	×	
Web and software developpemet		×
Data security	×	×

Source : The company documents.

11-3- The results of the qualitative study (The survey) :

11-3-1.The flat tabulation analysis :

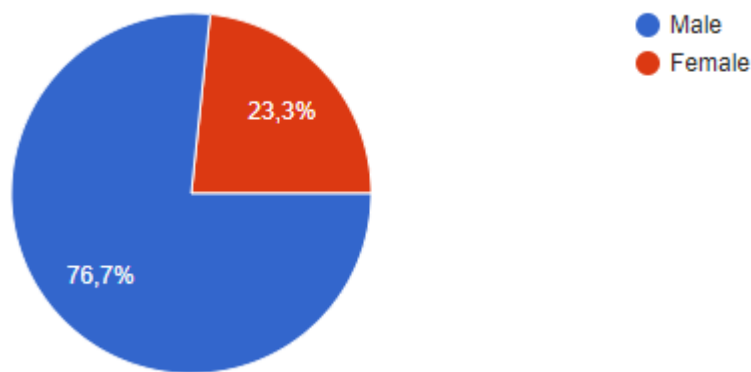
Question 01 : The gender :

Table 5: Sample distribution by gender

Gender	The frequency	The pourcentage
Male	23	76,7%
Female	7	23,3%
Totality	30	100%

Source: Developed by us, based on the survey answers

Figure 25Figure N°27 : Sample distribution by gender



Source : Results extracted from Google forms

The comment:

The sample chosen consists of 23 males and 7 females. This is more or less balanced, compared to the following criteria :

- The studied target of the executives, contains 70 employee. 9 of them are woman and the 61 are men.

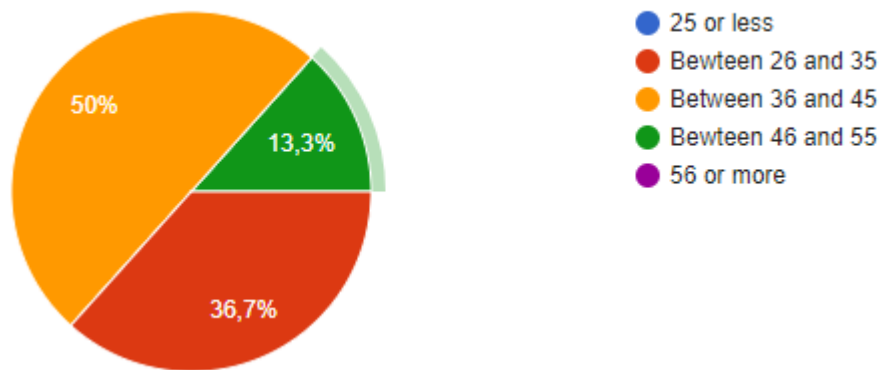
Question 2 : The age :

Table 6; Sample distribution by age

Age	Frequency	Pourcentage
25 or less	0	0%
Between 26 and 35	11	36,7%
Between 36 and 45	15	50%
Between 46 and 55	4	13,3%
56 or more	0	0%
Totality	30	100%

Source: Developed by us, based on the survey answers

Figure 26: Sample distribution by age



Source: Results extracted from Google forms

The comment:

We maintain that the majority of the target is between 36 and 45 years, This is explained by the following reasons :

- This is the age level sufficient to achieve enough seniority to be an executive.
- It is It is aligned with new policies and strategies to make the company younger in terms of human resources.

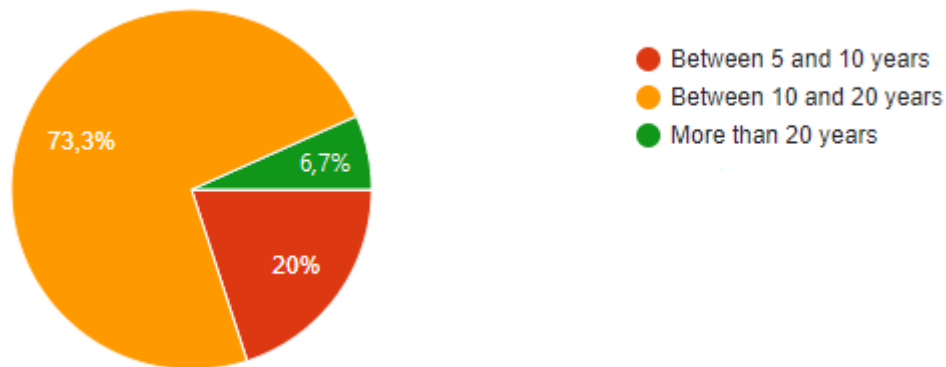
Question 3: The seniority :

Table 7: Sample distribution by seniority

The seniority	The frequency	The pourcentage
Between 5 and 10 years	6	20%
Between 10 and 20 years	22	73,3%
More than 20 years	2	6,7%
Totality	30	100%

Source: Developed by us, based on the survey answers

Figure 27: Sample distribution by seniority



Source : Results extracted from Google forms

The comment:

The results show that 73,3% of the sample have between 10 and 20 years of seniority years in the institution, 20% of the rest have between and 10 years and the other 6,7% others have more than 20 years of experience. These results excluded the employees with less than 5 years of experience, because:

- This category does not have enough experience to be executives.
- The employees in this category didn't attend the phase of « before the ICT tools implementation » that is part of our study.

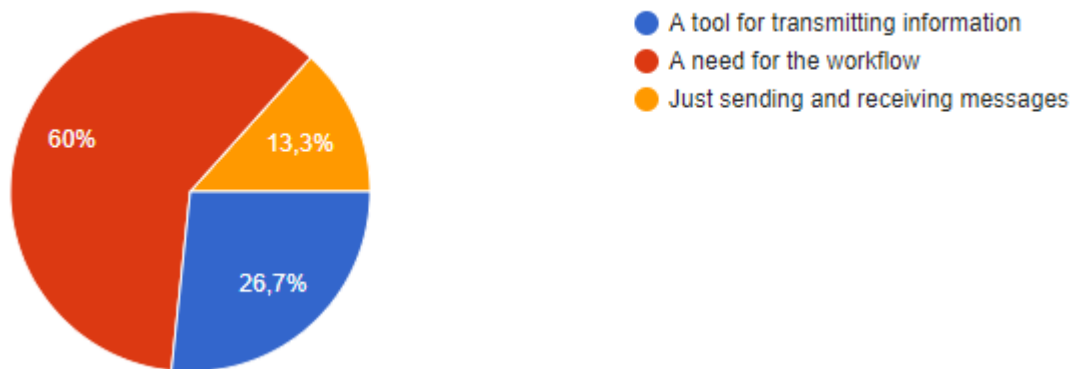
Question 4: How can you define the internal communication?

Table 8: The definition of the internal communication according to interviewees

	The frequency	The percentage
A tool for transmitting information	18	26,7%
A need for the workflow	8	60%
Just sending and receiving messages	4	13,3%
Totality	30	100%

Source: Developed by us, based on the survey answers

Figure 28; the definition of the internal communication according to interviewees



Source: Results extracted from Google forms

The comment:

60% of the target considers the ICOMM as a need for the workflow, the 26,7% others think that it's a tool for transmitting information, and the rest which is 13,3% of the audience see it as ; just sending and receiving messages.

This question was asked, to conclude the idea that the employees have about the internal communication, in order to extract its importance for them, and as the results show, most of them see it as a need for the workflow, which means, no ICOMM, no workflow.

Question 5: The information flow in the company is good :

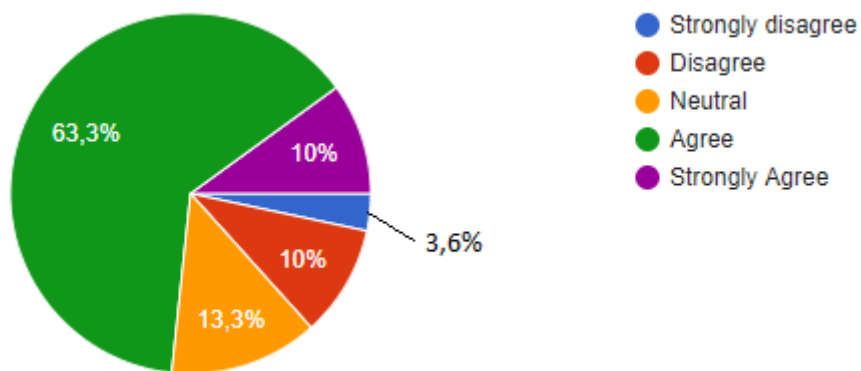
Table 9 : The efficiency of the information flow in the company

	The frequency	The percentage
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Strongly disagree	1	3,6%
Disagree	3	10%
Neutral	4	13,3%
Agree	19	63,6%
Strongly agree	3	10%
The totality	30	100%

Source : Developed by us, based on the survey answers

Figure 29 : The efficiency of information flow in the company



Source : Results extracted from Google forms

The comment:

The majority of the sample think that the information flow in the company is good, we find that 63% of them agree about the statement, 10% strongly agree, 13,3% preferred to be neutral, 10% disagree about the idea and the 3,6% that is left strongly disagree about it.

Question 6: You are well acknowledged about the company's news or goals:

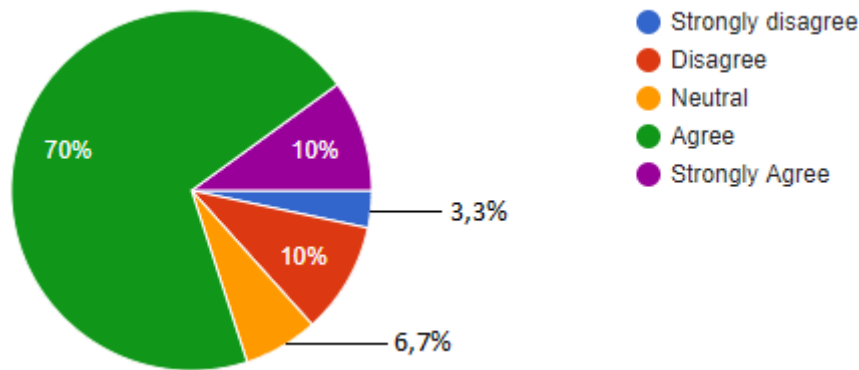
Table 10 : The acknowledgment about the company's news or goals:

	The frequency	The percentage
Strongly disagree	1	3,3%
Disagree	3	10%
Neutral	2	6,7%
Agree	21	70%
Strongly agree	3	10%

The totality	30	100%
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Source: Developed by us, based on the survey answers

Figure 30; The acknowledgement about the company's news or goal



Source: Results extracted from Google forms

The comment:

The majority of the sample thinks that they are well acknowledged about the company's news or goals, we find that 70% of them agree about the statement, 10% strongly agree, 6,,7% preferred to be neutral, 10% disagree about the idea and the 3,3% that is left strongly disagree about it.

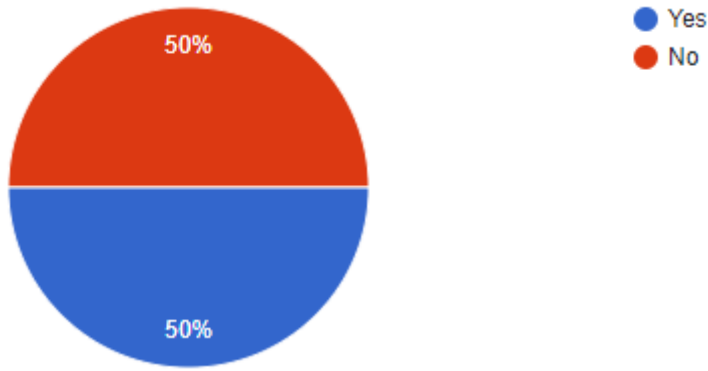
Question7: Are you concerned by the future of the organization?

Table 11;The proportion of interest in the future of the organization

	The frequency	The percentage
Yes	15	50%
No	15	50%
The totality	30	100%

Source: Developed by us, based on the survey answers

Table 12: The Proportion of interest in the future of the organization



Source: Results extracted from Google forms

The comment:

The results show that 50% of the sample care about the organization’s future and the other 50% don’t really care about it.

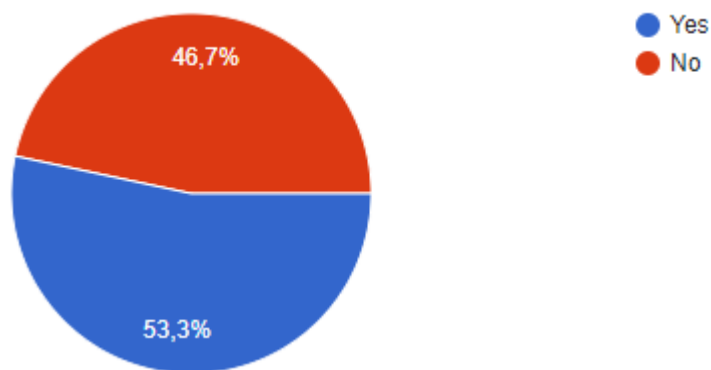
Question 8: Do you think your comments are considered and appreciated?

Table N°11 : The Proportion of the feedback consideration

	The frequency	The percentage
Yes	16	53,3%
No	14	46,7%
The totality	30	100%

Source: Developed by us, based on the survey answers

Figure 31: The Proportion of the feedback consideration



Source: Results extracted from Google forms

The comment:

This question was asked to know about the feedback loop activation in the company, and the results show that 53,3% of the sample think that their feedback s are well considered, meanwhile the 46,7% think that their feedbacks are not really considered or appreciated.

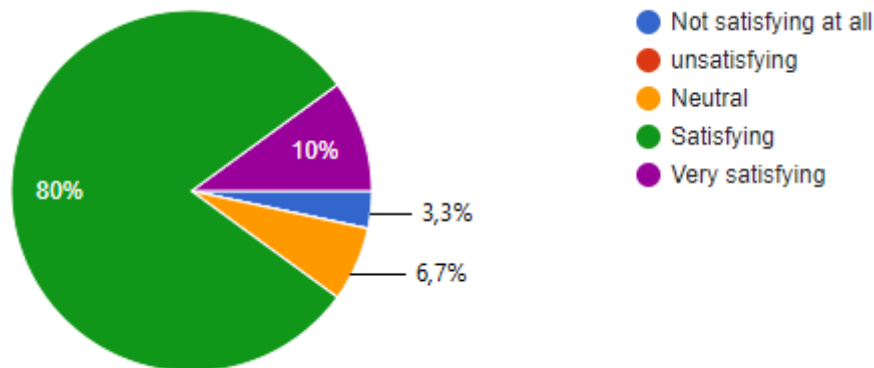
Question 9: How do you rate the communication between you and your colleagues?

Table 13; Proportion of the horizontal communication

	The frequency	The percentage
Not satisfying at all	1	3,3%
Unsatisfying	0	0%
Neutral	2	6,7%
Satisfying	24	80%
Very satisfying	3	10%
The totality	30	100%

Source: Developed by us, based on the survey answers

Figure 32; The Proportion of the horizontal communication



Source: Results extracted from Google forms

The comment:

The figure we have here, shows that most of the interviewees, with a percentage of 80% are satisfied with the communication between them and their colleagues and 10% were even very satisfied, meanwhile 6,7% preferred to be neutral and the 3,3% others were not satisfied at all, which is actually the case of one person among the 30 others.

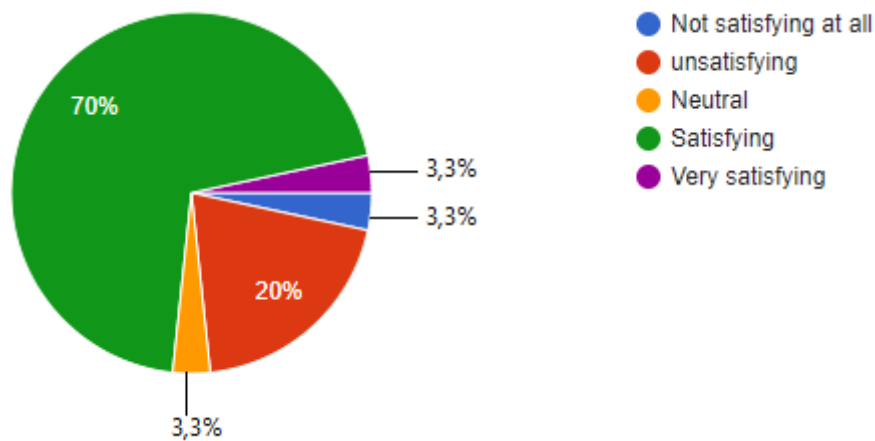
Question 10: How do you rate the communication between you and your superiors?

Table 14: The Proportion of the upward and the downward communication

	The frequency	The percentage
Not satisfying at all	1	3,3%
Unsatisfying	6	20%
Neutral	1	3,3%
Satisfying	21	70%
Very satisfying	1	3,3%
The totality	30	100%

Source: Developed by us, based on the survey answers

Figure 33: The Proportion of the upward and the downward communication



Source: Results extracted from Google forms

The comment:

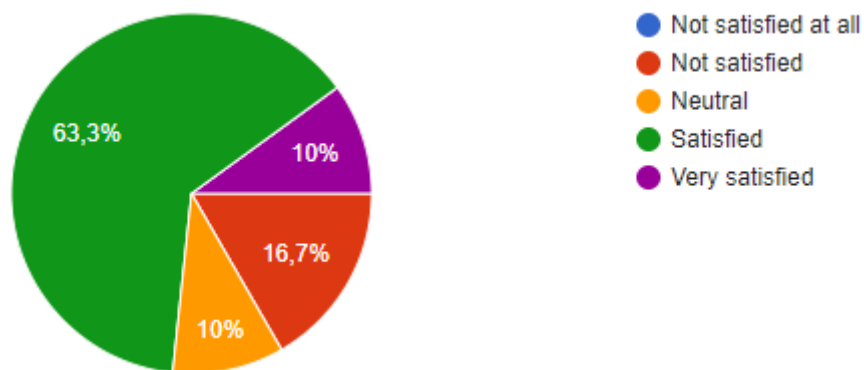
The figure we have here, shows that most of the interviewees, with a percentage of 70% are satisfied with the communication between them and their superiors and 3,3% were even very satisfied, meanwhile 3,3% preferred to be neutral and there was 20% unsatisfied employee ,also 3,3% others who were not satisfied at all, which is actually the case of one person among the 30 others.

Question 11: Are you satisfied by the current internal communication tools used by your company?

Table 15: The internal communication tools efficiency

	The frequency	The percentage
Not satisfied at all	0	0%
Not satisfied	5	16,7%
Neutral	3	10%
Satisfied	19	63,3%
Very satisfied	3	10%
The totality	30	100%

Source: Developed by us, based on the survey answers

Figure 34: The internal communication tools efficiency

Source: Results extracted from Google forms

The comment:

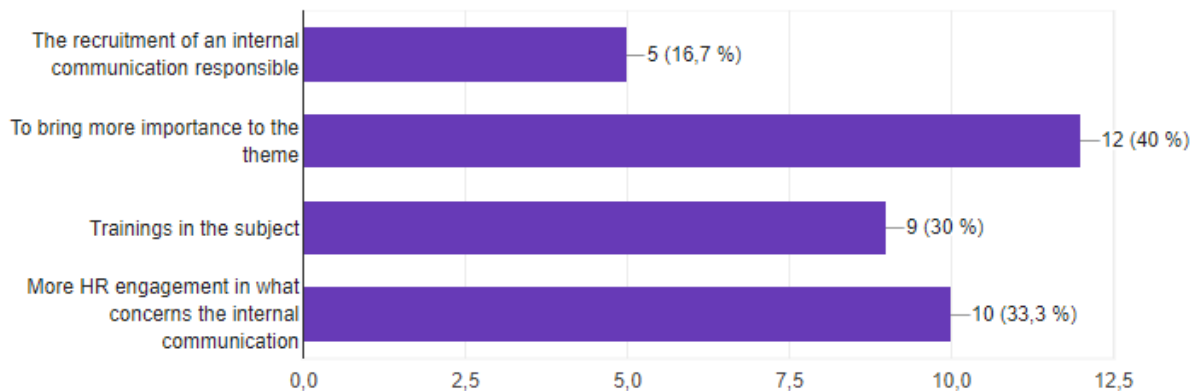
The majority of the sample thinks that they are satisfied about the company's ICOMM tools, we find that 63,3% says that they are satisfied, 10% very satisfied, 10% preferred to be neutral, 16,7% are not satisfied with the tools the company is using and none is not satisfied at all.

Question 12: What are the improvements that you want to see in the internal communication in your company?

Table 16; The ICOMM needed improvements

	The frequency	The percentage
The recruitment of an internal communication responsible	5	16,7%
To bring more importance to the theme	12	40%
Trainings in the subject	9	30%
More HR engagement in what concerns the internal communication	10	33,3%
The totality	-	-

Source: Develop by us, based on the survey answers

Figure 35; The ICOMM needed improvements

Source: Results extracted from Google forms

The comment:

Most of the interviewees see that the solution to their ICOMM problems is to bring more important to theme, we find that 40% voted on this option , 33,3% see that the HR must give more value to the subject actually, which was the second solution. The third solution in which we had 30% vote, is to provide trainings in the subject, to make them more aware about it, the last solution with 16,7% from the votes, was the recruitment of an ICOMM responsible, depending on what they said during the O2O's, they already have the global communication

responsible and the social partners so they don't really see the need of a responsible on the ICOMM.

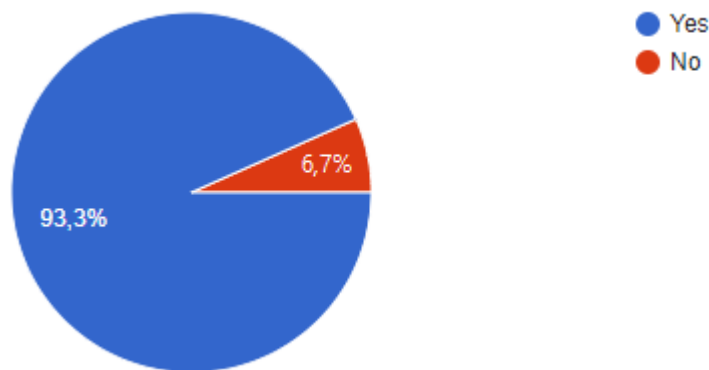
Question 13: Do you believe that a good internal communication process is one of your high performance keys?

Table 17: The positive impact of the ICOMM on the performance.

	The frequency	The percentage
Yes	28	93,3%
No	2	6,7%
The totality	30	100%

Source: Develop by us, based on the survey answers

Figure 36: The positive impact of the ICOMM on the performance



Source: Results extracted from Google forms

The comment:

The majority see that a good ICOMM is one of their high performance keys ; 93,3% of them voted yes on this statement and the 6,7% voted no, because they don't see a relationship between the ICOMM and their performance.

Question 14: Are you aware of the definition of the ICTs?

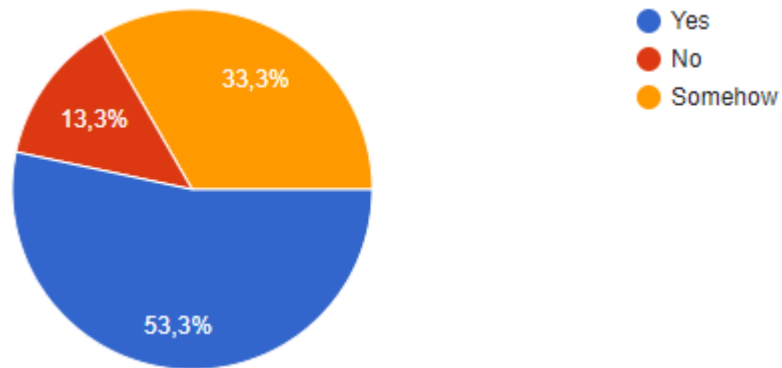
Table 18; the awareness of the meaning of the ICTs

	The frequency	The percentage
--	---------------	----------------

Yes	16	53,3%
No	4	13,3%
Somehow	10	33,3%
The totality	30	100%

Source: Developed by us, based on the survey answers

Figure 37; The awareness of the meaning of the ICTs



Source: Results extracted from Google forms

The comment:

53,5% answered yes, 33,3% were not really sure, so they answered somehow and 13,3% answered no, so the majority know or at least have an idea about what are the ICTs

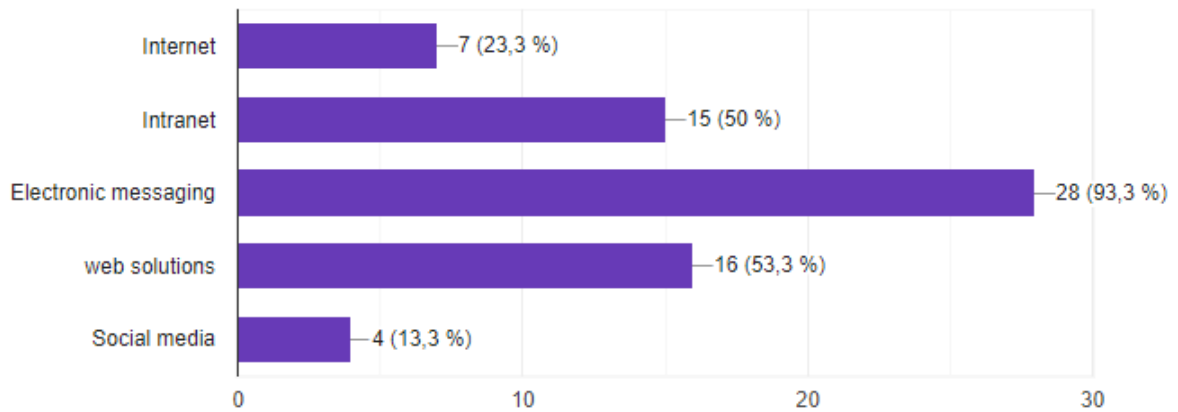
Question 15: What ICT tool do you use during your work?

Table 19; The ICT tools use in the company

	Frequency	Percentage
Internet	7	23,3%
Intranet	15	50%
Electronic messaging	28	93,3%
Web solutions	16	53,3%
Social media	4	13,3%
Totality	-	-

Source: Develop by us, based on the survey answers

Figure 38; The ICT tools use in the company



Source: Results extracted from Google forms

The comment:

Most of the target and with a percentage of 93.3% uses electronic messaging, and that makes sense, because the target being studied is a target that certainly uses the Tensik software that is part of the electronic messaging. On the other hand, web solutions are in the second place with a percentage of 53.3%, the intranet is ranked third with a percentage of 50%, the grape, is that the intranet is within everyone's reach but not everyone knows how to use it. The Internet with a percentage of 23.3% is less used because the internal network of the company is limited, the social networks in the ranking with a percentage of 13.3% is less used because employees do not see its usefulness with the presence of all these tools.

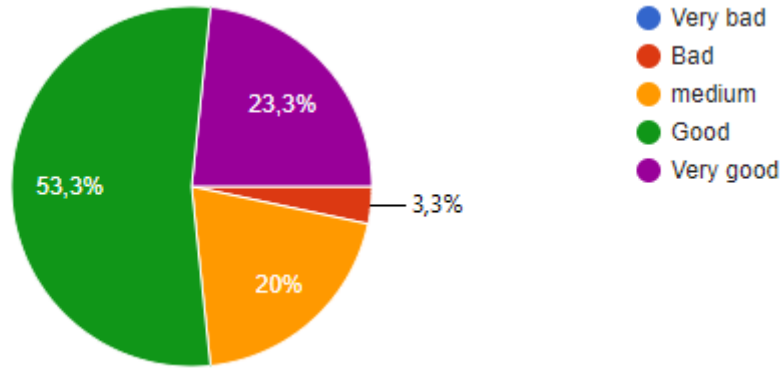
Question 16: How do you rate your ICTs proficiency level ?

Table 20; the ICTs proficiency level

	Frequency	Percentage
Very bad	0	0%
Bad	1	3,3%
Medium	6	20%
Good	16	53,3%
Very good	7	23,3%
Totality	30	100%

Source: Develop by us, based on the survey answers

Figure 39; The ICTs proficiency level



Source: Results extracted from Google forms

The comment:

The proficiency level of most of the interviewees is good with a percentage of 53,3% or even very good with a percentage of 23,3%, 20% others are medium and only 3,3% which is the equivalent of 1 person, is bad at using the ICT tools.

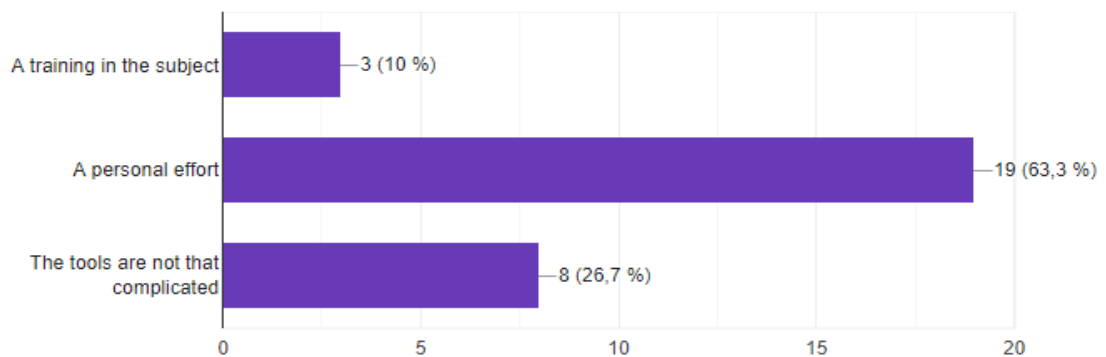
Question 17: The level mentioned above, is acquired as a result of :

Table 21: The ICTs proficiency level reasons

	The frequency	The percentage
A training in the subject	3	10%
A personal effort	19	63,3%
The tools are not that complicated	8	26,7%
The totality	-	-

Source: Develop by us, based on the survey answers

Figure 40: The ICTs proficiency level reasons



Source: Results extracted from Google forms

The comment:

63,3% think that their proficiency acquisition was due to a personal effort, 26,7% think that the tools are not even that complicated and the 10% others see that it's due to a trainin in the subject.

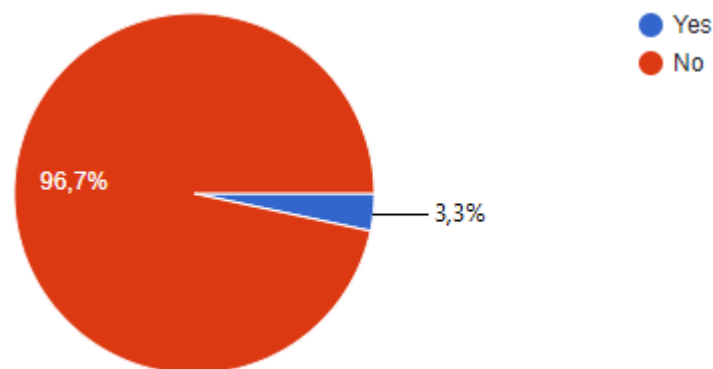
Question 18: Do you get confused sometimes between the different ICT tools you use?

Table 22: The confusion during the use of different tools

	The frequency	The percentage
Yes	1	3,3%
No	29	96,7%
The totality	30	100%

Source: Develop by us, based on the survey answers

Figure 41: The confusion during the use of different tools



Source: Results extracted from Google forms

The comment:

96,7% don't get confused between the different ICT tools they use, meanwhile the 3,3% do. These results are due to the difference between the tools and also because that they got used by time to each tool and its specify.

Question 19: Do you think that the ICT tools are keeping you updated about the entity news?

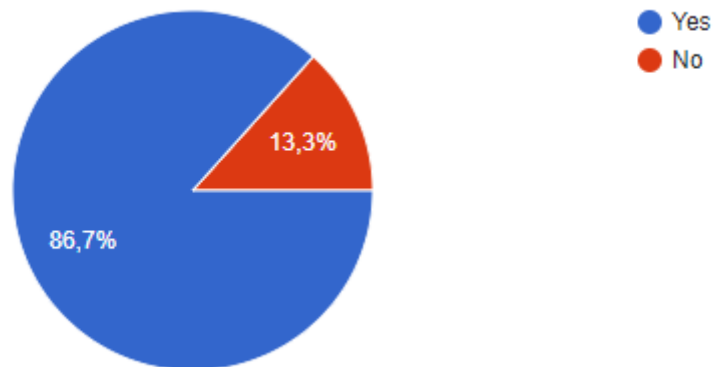
Table 23: The contribution of the ICT tools in the information flow

	The frequency	The percentage
Yes	26	86,7%

No	4	13,3%
The totality	30	100%

Source: Develop by us, based on the survey answers

Figure 42: The contribution of the ICT tools in the information flow



Source: Results extracted from Google forms

The comment:

86,7% see that the ICT tools help improving the information flow in the company, 13,3% others think the opposite, which leads us to confirm that the ICT tools depending on their opinions helps improving the information flow in the company.

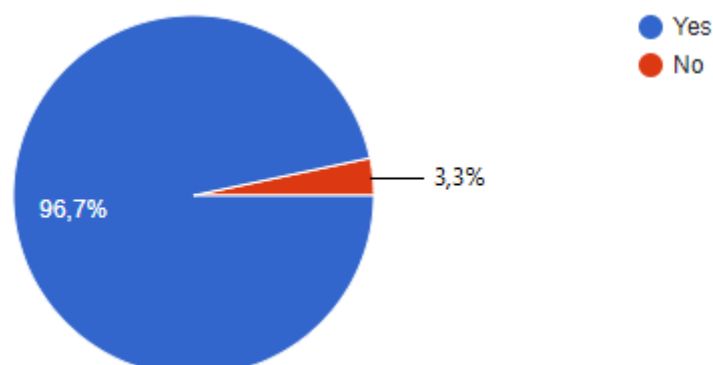
Question 20: Do you know the concept of the electronic messaging?

Table 24: The awareness of the meaning of the electronic messaging

	The frequency	The percentage
Yes	29	96,7%
No	1	3,3%
The totality	30	100%

Source: Develop by us, based on the survey answers

Figure 43; The awareness of the meaning of the electronic messaging



Source: Results extracted from Google forms

The comment:

The majority knows the definition of the electronic messaging which is the ICT tools we will study as a practical case, 96,7% think that they know the definition and 3,3% others which is actually one person, thinks that he doesn't know the definition of the electronic messaging. These results are good for our study case, in order to get clear certain answers about the rest of the questions.

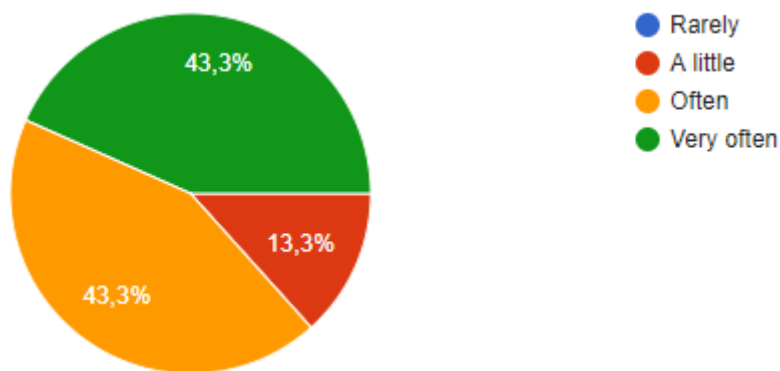
Question 21: How often do you use Tensik per day?

Table 25: The Proportion of Tensik's use per day

	The frequency	The percentage
Rarely	0	0%
A Little	4	13,3%
Often	13	43,3%
Very often	13	43,3%
The totality	-	-

Source: Develop by us, based on the survey answer

Figure 44: The Proportion of Tensik's use per day



Source : Results extracted from Google forms

The comment:

43,3% think that they use Tensik often and 43,3% others think that they use it very often, 13,3% use it just a little and no one uses it rarely.

This shows the importance of this ICT tool.

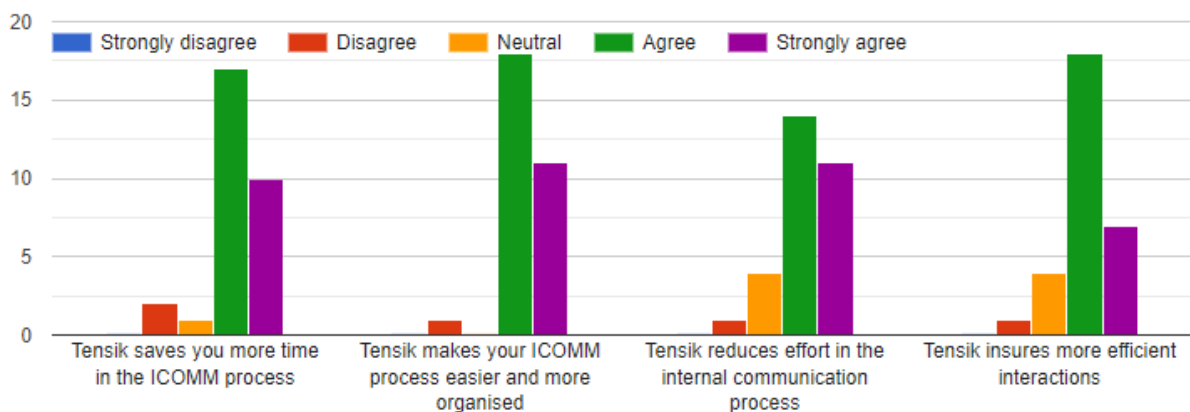
Question 22: What kind of influence Tensik has on the internal communication?

Table 26: The Influence of Tensik on the ICOMM

		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Tensik saves you more time in the ICOMM process	Frequency	0	2	1	17	10
	Percentage	0%	6,67%	3,33%	56,67%	33,33%
Tensik makes your ICOMM process easier and more organized	Frequency	0	0	1	18	11
	Percentage	0%	0%	3,33%	60%	36,67%
Tensik reduces effort in the internal communication process	Frequency	0	1	4	14	11
	Percentage	0%	3,33%	13,3%	46,66%	36,67%
Tensik insures more efficient interactions	Frequency	0	1	4	18	7
	Percentage	0%	3,33%	13,3%	60%	23,33%

Source: Develop by us, based on the survey answers

Figure 45: The Influence of Tensik on the ICOMM



Source: Results extracted from Google forms

The comment:

- Tensik saves more times in the ICOMM process, we can notice this from the answers of the employees who agreed with a percentage of 56,67% and those who strongly agreed with 33,3%, meanwhile 6,67% disagreed and 3,33 % preferred to be neutral.
- Tensik makes the ICOMM process easier and more organized we can see this in the answers of the employees who agreed with a percentage of 60% and those who strongly agreed with 36,7%, meanwhile none disagreed or strongly disagreed and 3,33 % preferred to be neutral.
- Tensik reduces the efforts in the internal communication process, this was proved by the answers of the employees who agreed with a percentage of 46,66% and those who strongly agreed with 36,67%, meanwhile only one employee disagreed and 13,33 % preferred to be neutral.
- Tensik insures more efficient interactions, this statement was strongly approved by the answer of the employees who agreed with a percentage of 60% and those who strongly agreed with 23,33%, meanwhile only one employee disagreed and 13,33 % preferred to be neutral.

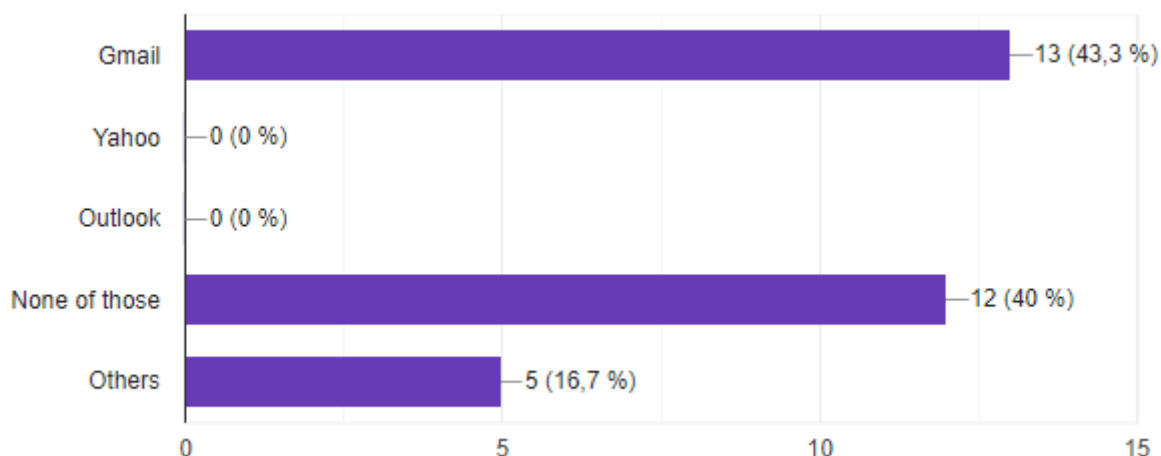
Question 23: What other electronic messaging tool do you use during your work?

Table 27: The ordinary electronic messaging tools use proportion

	The frequency	The percentage
Gmail	13	43,3%
Yahoo	0	0%
Outlook	0	0%
None of those	12	40%
Others	5	16,7%
The totality	-	-

Source: Develop by us, based on the survey answers

Figure 46: The ordinary electronic messaging tools use proportion



Source: Results extracted from Google forms

The comment:

According to the results, Gmail is the first used electronic messaging, other than Tensik. 43,3% voted for Gmail, none uses Yahoo or Outlook, 40% don't use any other electronic messaging tool than Tensik and 16,7% use other tools.

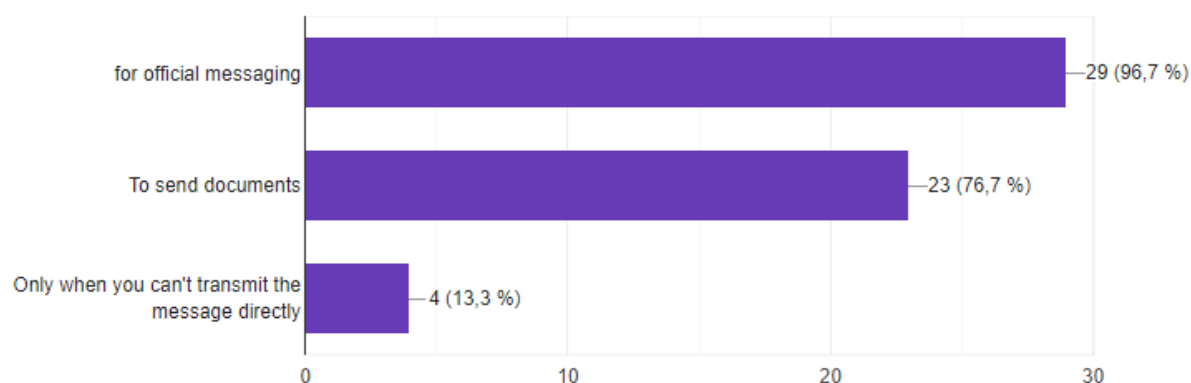
Question 24: Why do you use Tensik exactly?

Table 28: The reasons behind using Tensik

	The frequency	The percentage
For official messaging	29	96,7%
To send documents	23	76,7%
Only when you can't transmit the message physically	4	13,3%
The totality	-	-

Source: Developed by us, based on the survey answers

Figure 47: The reasons behind using Tensik



Source: Results extracted from Google forms

The comment:

96,7% of the population studied use Tensik for official communication purposes, 76,7% use it to send documents and 13,3% use it only when they can't do the process otherwise.

These results show the effect of considering Tensik as an official tool that provides traceability, and that's why most of them use it for this purpose, it's like the easiest way to send official messages while being sure that they must be taken in consideration.

In another hand, this point has a negative impact also, many think that the fast process that Tensik is providing the sender with, makes the receiver in more pressures, like receiving a mission order to be delivered in short delays, the message is sent now, and you have to start working now to make it, meanwhile you are probably still crowded with other missions to do.

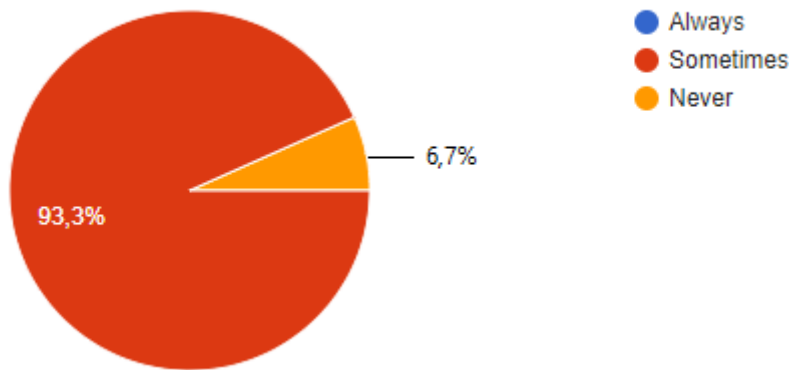
Question 25: How Often per week do you face a technical problem in Tensik?

Table 29: Technical problems in Tensik

	The frequency	The percentage
Always	0	0%
Sometimes	28	93,3%
Never	2	6,7%
The totality	30	100%

Source: Developed by us, based on the survey answers

Table 30: Technical problems in Tensik



Source: Results extracted from Google forms

The comment:

None has a technical problem in Tensik always, meanwhile 93,3% do sometimes have them and 6,7% never have those technical problems.

This can be justified with the fact that Tensik is used a lot, so technical problems must be avoided.

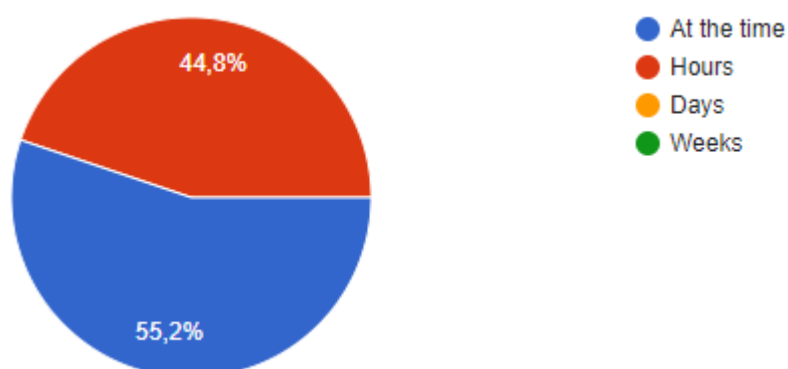
Question 26: How much time it takes for the problem to be solved generally?

Table 31: The Proportion of the technical problems solving

	The frequency	The percentage
At the time	16	55,2%
Hours	13	44,8% %
Days	0	0%
Weeks	0	0%
The totality	30	100%

Source: Developed by us, based on the survey answers

Figure 48: The Proportion of the technical problems solving



Source: Results extracted from Google forms

The comment:

55,2% said that these technical problems are always solved at the time, and 44,8% others said that it takes hours, but none said it took days or weeks.

These results and according to the value of this tool are o valid, Tensik must be fixed as soon as the issue is declared to ELIT, because any wasted time is actually a wasted task.

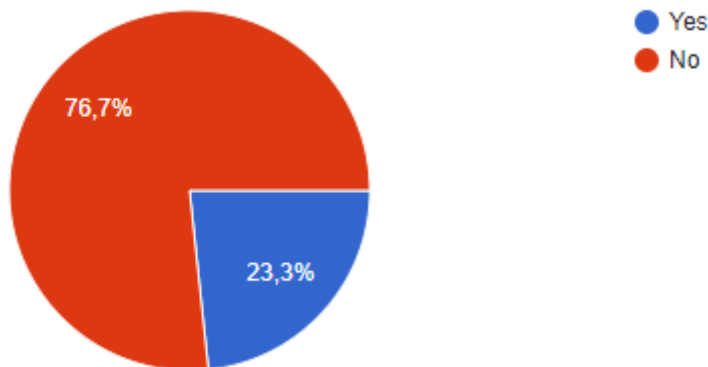
Question 27: Have you ever received a survey about Tensik from ELIT?

Table 32: The Proportion of receiving a feedback survey about Tensik

	The frequency	The percentage
Yes	7	23,3%
No	23	76,7%
The totality	30	100%

Source: Developed by us, based on the survey answers

Table 33: The Proportion of receiving a feedback survey about Tensik



Source: Results extracted from Google forms

The comment:

76,7% never received an evaluation survey from ELIT about Tensik, meanwhile 23,3% did.

These results make us consider recommending an investigation about the way these surveys are being sent, if the majority didn't receive them.

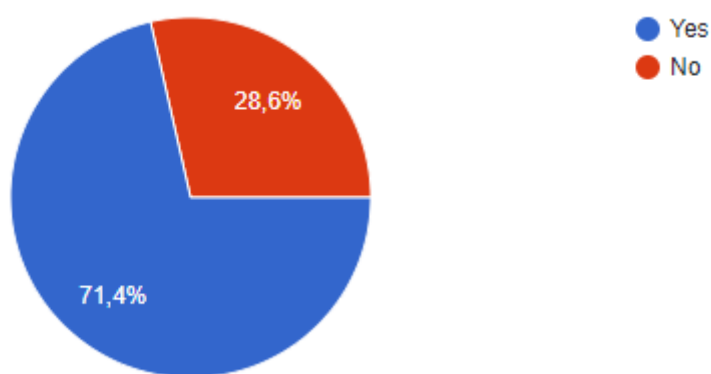
Question 28: If your answer in the previous question was yes, did you fill it?

Table 34: The Proportion of the answers on the feedback surveys about Tensik

	The frequency	The percentage
Yes	5	71,4%
No	2	28,6%
The totality	7	100%

Source: Developed by us, based on the survey answers

Figure 49: The Proportion of the answers on the feedback surveys about Tensik



Source: Results extracted from Google forms

The comment:

In the previous question, only 7 people answered yes, which means they received a survey, 71,4% from them did fill it and 28,6% didn't.

The results of the next question will give us a view about the reasons.

Question 29: If your answer in the previous question was no, can you tell us why?

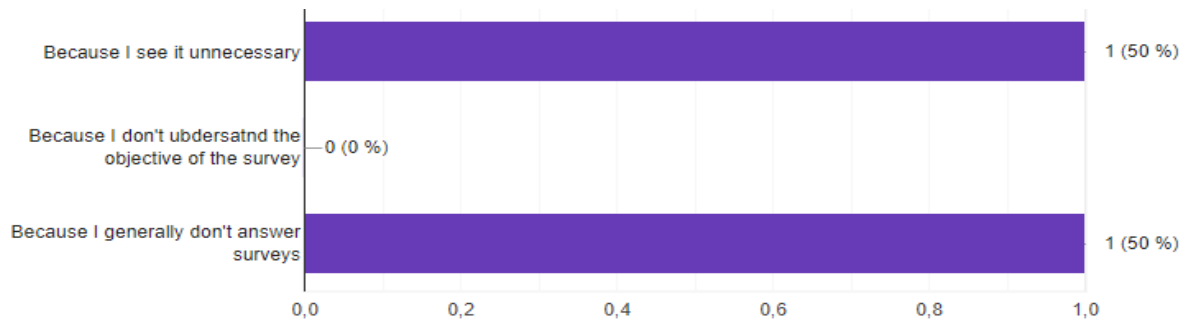
Table 35: The Proportion of the reasons of not answering ELIT surveys

	The frequency	The percentage
Because I see it unnecessary	1	50%
Because I don't understand the objective of the survey	0	0%

Because I generally don't answer surveys	1	50%
The totality	-	-

Source: Developed by us, based on the survey answers

Figure 50: The Proportion of the reasons of not answering ELIT surveys



Source: Results extracted from Google forms

The comment:

50% see that the survey is unnecessary and 50% don't generally answer surveys, these were the reasons that the two people who received a survey and didn't reply mentioned.

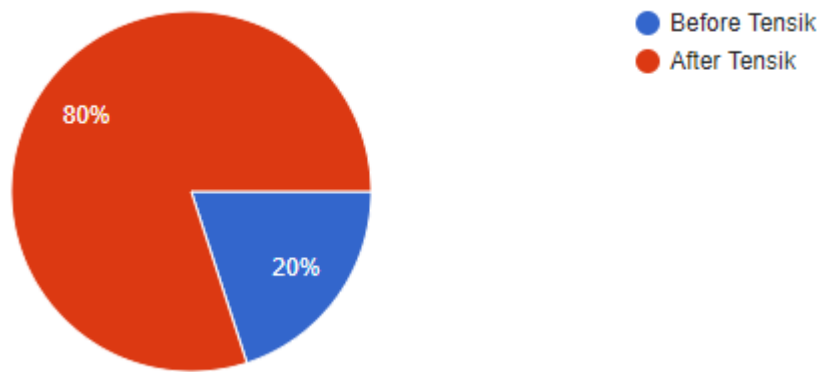
Question 30: Was your work experience in general better:

Table 36 : The evaluation of the work experience

	The frequency	The percentage
Before Tensik	6	20%
After Tensik	24	80%
The totality	30	100%

Source: Developed by us, based on the survey answers

Figure 51: The evaluation of the work experience



Source: Results extracted from Google forms

The comment:

Obviously, the majority affirmed that their experience after the electronic messaging tool became better, 80% voted on this option, and 20% thought that their experience before Tensik was better.

The ones, who said that their experience before Tensik was better, generally gave these reasons:

- Tensik caused them more pressures because of the short delays.
- They must be all the time connected, to check if there is any new task that they missed.
- Some employees still resist Tensik and refuse receiving official documents through it.

11-3-2-The cross-sorting analyses:

After the flat sorting analysis that we did each question separately, we decided to do a cross-sorting analysis for some question that can answer our hypotheses.

H1: An efficient internal communication is important for the HR performance.

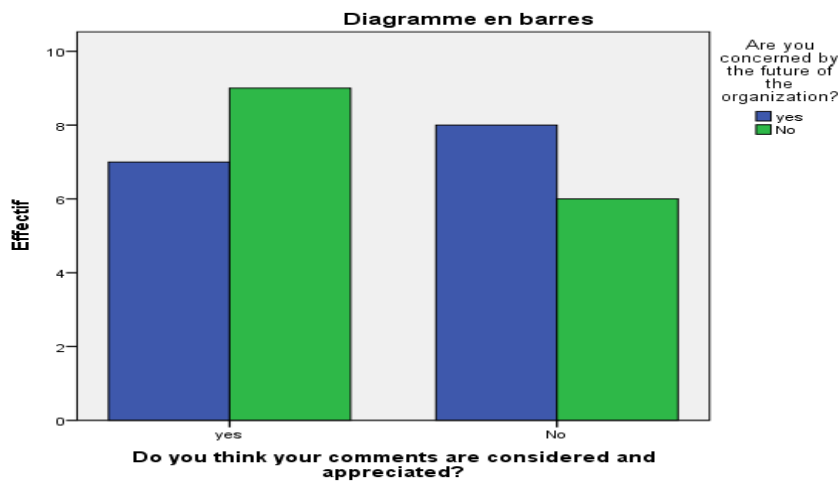
Table 37: The employees concern by the future of the company by the consideration and appreciation of their feedbacks.

Effectif

	Are you concerned by the future of the organization?		Total
	yes	No	
Do you think your comments are considered and appreciated? yes	9	7	16
No	6	8	14
Total	15	15	30

Source: Developed by us, by the SPSS software

Figure N°57: The employees concern by the future of the company by the consideration and appreciation of their feedbacks.



Source: Developed by us, by the SPSS software

Comment:

From the results above, we can see that 9 people, who think that their comments are considered and appreciated, do care about the entity future. This point proves the importance of the feedback consideration in the internal communication, and how much it drives the employees to be more committed and automatically give their best.

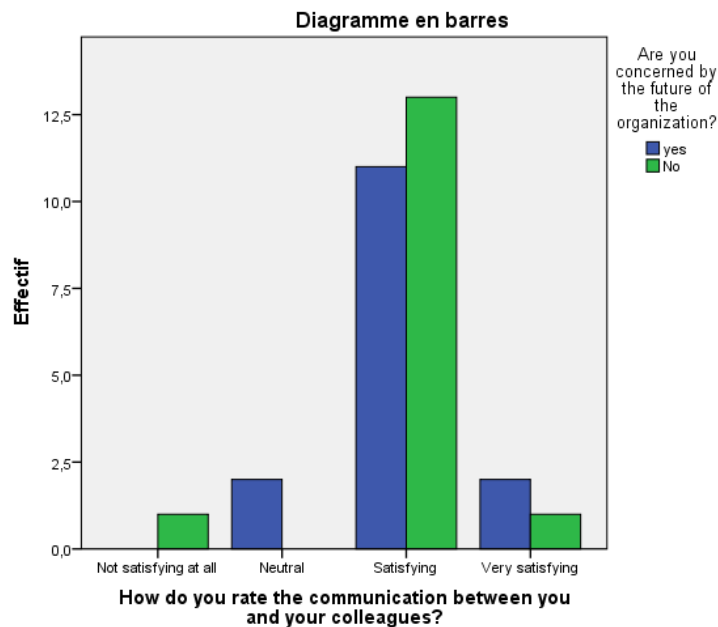
Table N°35: The employees concern by the future of the company by the horizontal communication

Effectif

		Are you concerned by the future of the organization?		Total
		Yes	No	
How do you rate the communication between you and your colleagues?	Not satisfying at all	0	1	1
	Neutral	0	2	2
	Satisfying	13	12	24
	Very satisfying	2	1	3
Total		15	15	30

Source: Developed by us, by the SPSS software

Table 38: The employees concern by the future of the company by the horizontal communication



Source: Developed by us, by the SPSS software

Comment:

13 employees who are satisfied by the communication between them and their colleagues, feel committed toward their mission, this will improve their performance rate.

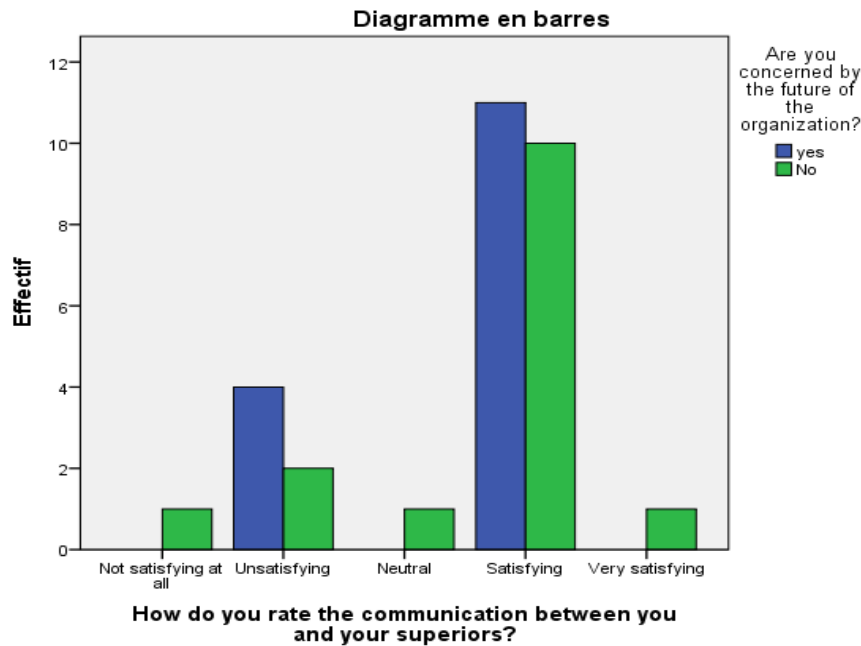
Table 39: Table 39: The employees concern by the future of the company by the upward and downward communication

Effectif

	Are you concerned by the future of the organization?		Total
	Yes	No	
Not satisfying at all	0	1	1
Unsatisfying	4	2	6
Neutral	0	1	1
Satisfying	11	10	21
Very satisfying	1	0	1
Total	15	15	30

Source: Developed by us, by the SPSS software

Figure 52: The employees concern by the future of the company by the upward and downward communication.



Source: Developed by us, by the SPSS software

Comment:

11 people who are satisfied about their relationships with their superiors, have enough commitment toward their mission, and this will improve their performance.

From the 3 previous cross sortings, we can see that a good ICOMM process can increase the commitment within employees, which affects positively their performance. And from the

results of the question 13, where 93,3% said that the good internal communication is the key to a high performance. We can confirm our first hypothesis.

H2: The information flow in SONELGAZ is effective.

Figure 53: The information flow in SONELGAZ and the employees level of acknowledgedme.

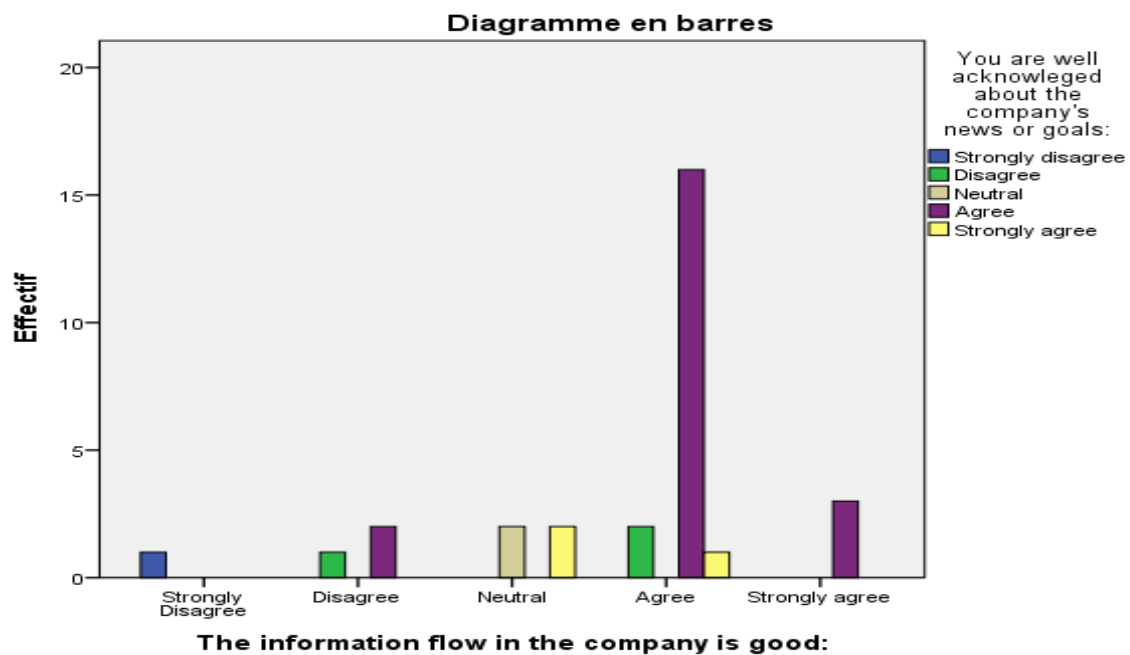
Tableau croisé The information flow in the company is good: ^ You are well acknowledged about the company's news or goals:

Effectif

		You are well acknowledged about the company's news or goals:					Total
		Strongly disagree	Disagree	Neutral	Agree	Strongly agree	
The information flow in the company is good:	Strongly Disagree	1	0	0	0	0	1
	Disagree	0	1	0	2	0	3
	Neutral	0	0	2	0	2	4
	Agree	0	2	0	16	1	19
	Strongly agree	0	0	0	3	0	3
Total		1	3	2	21	3	30

Source: Developed by us, by the SPSS software

Figure 54: The information flow in SONELGAZ and the employees level of acknowledgedme



Source: Developed by us, by the SPSS software

Comment:

16 employees who agreed that they are well acknowledged about the news pf the company and its goals, agreed also that the communication flow is good.

From this result, we can have a direct conclusion that the information flow in the company is good. And so we confirm our second hypothesis.

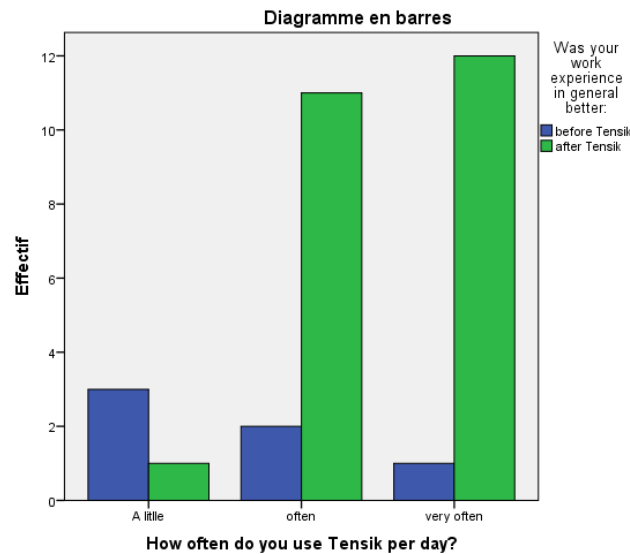
H3: The ICTs play a positive role in the internal communication process improvement

Table 40: The use rate of Tensik and the work experience evaluation

Effectif		Was your work experience in general better:		Total
		before Tensik	after Tensik	
How often do you use Tensik per day?	A little	3	1	4
	often	2	11	13
	very often	1	12	13
Total		6	24	30

Source: Developed by us, by the SPSS software

Figure 55: The use rate of Tensik and the work experience evaluation



Source: Developed by us, by the SPSS software

Comment:

12 employees, who use Tensik very often, think that their experience became better after the integration of this tool.

As Tensik is an electronic messaging tool, which makes it part of the ICTs, and according to this and to the results of question 21 where we confirmed that :

- Tensik saves you more time in the ICOMM process
- Tensik makes your ICOMM process easier and more organised
- Tensik reduces effort in the internal communication process
- Tensik insures more efficient interactions

We can say that the ICTs have a positive impact on the internal communication and on the work experience in general, then our third hypothesis is confirmed.

11-4- Synthesis and recommendations:

11-4-1. The synthesis:

After the presentation of the results of the research, here is a summary of the results obtained:

- The employees consider the internal communication as need for the workflow.
- Generally, the information flow in SADEG is good, and the employees are well acknowledged about the different news and goals of the company.
- There is a good feedback consideration in the ICOMM process.
- There are many committed employees who care about the future of the company.
- All the directions of the internal communication are good and the employees are mostly satisfied about that.
- SADEG has a variety of ICOMM tools that satisfy, the different needs of the employees.
- A good internal communication is one of the high performance keys.
- There is a good awareness about the ICTs concept within the employees in SADEG.
- Electronic messaging is the most used ICT tools, by all of the departments in SADEG
- The ICTs proficiency level in the company studied is quite good.
- The proficiency level mentioned above is generally acquired as a result of a personal effort.
- The ICT tools are insuring that the employees are up to date when it comes to the company news, and there is no big confusion within the employees when it comes to the use of the different tools.
- Tensik and the electronic messaging is so used, in a way that employees barely use other electronic messaging tools beside the ones provided by the company.

- The electronic messaging tool is used a lot, because it is an official internal communication tool, so it provides a traceability and confidentiality.
- The electronic messaging tools barely know a technical problem, and if any problem accrues, it is generally solved at the time, regarding to the importance of the ICT tools.
- Electronic messaging, so ICTs , save more time in the ICOMM process, make it easier and more organized, reduce efforts in the internal communication process, and insures more efficient interactions
- The auditing system by the IT partner ELIT is not enough, most of the tools users, don't receive any surveys or other auditing tools to give their opinions or to talk about their users experience.
- The work experience in SADEG is a way better after the implementation of the electronic messaging tool.

11-4-2. The recommendations and suggestions :

- Specify the tasks of each party responsible for internal communication or recruit a person responsible for its missions.
- Make a clear boundary between the social partners role in the employee's journey and the ordinary internal communication actions.
- To work more on the knowledge management and the gaps between the different generations, in terms of the ICTs
- Schedule more trainings, either on internal communication or on ICT.
- Study the method of information exchange by Tensik and try to make it less pressuring.
- Adopt more anonymous ways of mind expression in order to get more valuable and honest opinions, better be electronic tools.
- Implement team buildings in the HR strategies.
- Activating an audit system for both the ICOMM and the ICTs.

12- Conclusion:

Through this chapter, we tried to drop all the theoretical studies we had previously examined on the internal position of SONELGAZ. We have analyzed and commented on the data we have gathered from the organization, to have a view on the studies already mentioned.

The analysis we did, helped us to see if the role of ICT in the internal communication process at Sonelgaz was positive or not.

General conclusion:

Information and communication technology (ICT) has significantly changed the internal communication process, as the latter has been accompanied by and linked to the development of technology. In this study, we tried to highlight the impact of ICT on internal communication, and we investigated this impact, whether positive or not.

On the theoretical side of this study, we were able to find that internal communication is the crucible of the institution and its system, since it is a concept that evolves according to time and the nature of the relations between the various partners in the organization, all in the direction of achieving the goals of the institution and applying its pre-ordered strategies, and we also pointed out the correct ways to be followed to develop an internal communication strategy, in line with the strategy for each division and the overall strategy of the enterprise.

With regard to information and communication technology, it has a significant direct impact on the various functions of the Organization and on its internal and external outreach function, and we have addressed its usefulness to the benefits of human resources and the productivity of the Organization. Therefore, enterprises must adopt them as quickly as possible and cost less and make them an element of their competitive advantage. At the same time we were able to conclude that ICT is closely linked to the internal communication process, especially the e-mail medium.

As a result of our study, we note that the majority are satisfied with the internal means of communication used by the Foundation for communication, but they see that the advent of ICT has changed and improved the situation, and they prefer to use it more often than traditional methods, since most of them are able to use these technologies, generally thanks to a personal effort to learn them, but that has not prevented training on their use techniques being organized by one party. The internal centre of the institution is also highly aware of the importance of internal communication and believes that the institution should pay greater attention to it, particularly with regard to the "Tensik" tool of electronic messages.

The problem at hand was:« **Has the information and communication technologies, contributed in the improvement of the internal communication in companies? »**

From the theoretical study and analysis of the results of the questionnaire, we were able to find that good internal communication had a direct impact on the high performance of

staff, since good information mobility and the way in which it was done played an important role in improving staff performance, which confirmed the validity of our first hypothesis: « An efficient internal communication is important for the HR performance. »

The results of the questionnaire showed a high satisfaction with the internal means of communication used, and the internal flow of information at the company level is good, allowing employees to remain informed about its objectives and various stories, which we were able to verify our second hypothesis : « The information flow in SONELGAZ is effective. »

We have come to the conclusion that information and communication technology (ICT) and the electronic messaging process in particular have contributed significantly to reducing the time in the internal communication process, making the internal communication function easier and more structured and making the information exchange process more effective. The results of the study also confirmed that the majority felt that their practical experience was better after the use of the electronic messaging tool. All this led us to validate our third hypothesis:«The ICTs play a positive role in the internal communication process improvement. »

At the end of this study, we cannot but say that ICT has a positive impact on the internal communication of enterprises, and we hope that the solutions we have proposed will be taken into account by the Sonelgaz stakeholders. On the other hand, we should mention some of the obstacles encountered in conducting this study:

- The method we did the study on, which is generally used only by tires and engineers, which can have a small impact on the results of the study.
- Lack of awareness of the importance and feasibility of a study on a similar topic
- Absence of direct responsibility for the subject of the study
- Lack of time and information

This study is an integral part of the research that can be done on the subject, since both internal communication and ICT are broad and unlimited areas in which studies continue to exist. We therefore hope that there will be further academic studies in the field, given their rarity.

Bibliography

BOOKS

E. LENTZEN, J.P STROOBAMB, "L'information en question", Ed couleur livres, 2005, P07.

Anne Mayère, «Pour une Économie de L'Information» (1990)

Annie Bartoli « Communication et organisation pour une politique générale cohérente », les éditions d'organisation, 1986, 2nd edition 1988, paris cédex 05

Assessing organizational communication: strategic communication audits By Cal W. Downs, Allyson D. Adrian, Guilford Press, 2004

BRENNEMAN R, SEPARI.S, économie d'entreprise, DUNOD, paris, 2001

Bruno joly « la communication », Edition de Boeck Université, 1er édition :2009, Bruxelles.

Corporate assessment: auditing a company's personality By Adrian Furnham, Barrie Gunter, Routledge, 1993,

Franklin, Ursula (1999). The Real World of Technology (revised ed.). Scarborough: House of Anansi.

Gabriele Piccoli, Information Systems for Managers : Text and Cases, Wiley, 2012

Glaude Demeure, Aide-mémoire, Marketing, Dunod 6^o ed Paris 2008.

Henri Dieuzeide, « les nouvelles technologies. outils d'enseignement », paris, nathan, 1994

J.J.DEUTSH, communication interne et management, les édition Foucher, paris, 1990

Judith Lazar « La science de la communication », Edition Dahleb, 2emeédition, 1993, mai

Management, 10 /e (New Edition) By Robbins, Dorling Kindersley (India) Pvt. Ltd., 2010,

Nicole d'Almeida, Thierry Libaert, la communication interne de l'entreprise, Dunod Paris, 2002

PATEYRON, (E-A) et SALMON (R) : les nouvelles technologies de l'information et l'entreprise, Ed Economica, Paris, 1996

Philippe Malaval, Jean-Marc Décaudin with the collaboration of Christophe Bénaroya, Pentacom Communication : théorie et pratique, ISBN/ 2-7440-7120-X 2005 Pearson Education France.

QUELENNEC. C, « ERP, levier de transformation de l'entreprise », édition Lavoisier, 2007, Paris

SAADOUN. M, « Technologies de l'information et de la communication et management», Hermès, Mars, 2000

VARDAMAN et CAROLL. C. HALTERNAN : *La communication au service du contrôle de gestion*. Ed. Chiron, Paris IVème, 1974

Academic works

BOURON .M. Thierry, *Structures de communication et d'organisation pour la coopération dans un univers multi-agent*, to obtain the PHD from the university of paris 6, 1992

Ben Amara RANIA), Elaboration d'un plan de communication et la création d'une charte graphique au sien de l'UVI, Thesis to obtain the professional master in e-marketing, university of TUNIS, 2011 , p :10

DURAND Anthony, DARTIGUES Stéphane and ROCHE Gaëtan
Université de Perpignan Via Dominitia Institut Jacques Maillot - Licence 2005

EKAM BO DUASENGE J.C. Information et Communication, cours inédit G2 Kin, IFASIC, 2002

¹L'IMPORTANCE STRATEGIQUE DE LA COMMUNICATION INTERNE DANS LES ORGANISATIONS KEBAILI Hayet, Assistant Master « A» at the university of Boumerdes, universityofeconomical science, commerciale and management science,

Naceur MEBARKI, tic et performance d'entreprise étude d'impact - cas de quelques entreprises algériennes, Les cahiers du CREAD n°104-2013,

Nicole d'Almeidi, TherryLibert, la communication interne des entreprises, édition DUNOD, Paris 2014, p64-66.

Stiegler, Bernard (1998). *Technics and Time, 1: The Fault of Epimetheus*. Stanford University Press.

Glossary

Oxford learner's pocket dictionary, third edition

Oxford learner's pocket dictionary, third edition

Oxford learner's pocket dictionary, third edition

Oxford learner's pocket dictionary, third edition

Guid and reports

Anderson, J. ICT Transforming Education: A Regional guide, (2010).

The UNESCO report about science, 2010

Internal communication and technology - The secret of success, Dr Nalina Ganapathi

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firstname.secondname@SADEG.Ghardaia-DZ.

<http://www.bordeauxconseil.com>

http://www.pedagogie.ac-aix-marseille.fr/upload/docs/application/pdf/2012-07/formation_reseau.pdf

http://www.pedagogie.ac-aix-marseille.fr/upload/docs/application/pdf/2012-07/formation_reseau.pdf

<https://blog.questio.fr/tri-a-plat-base-de-tout-rapport-d-enquete>

<https://blog.questio.fr/tri-croise-comment-affiner-analyse-resultats>

<https://dictionary.cambridge.org/fr/dictionnaire/anglais/ict?q=ICT/>

<https://fr.slideshare.net/clementdussarps/thories-des-sciences-de-linformation-et-de-la-communication-partie-1>

<https://fr.slideshare.net/clementdussarps/thories-des-sciences-de-linformation-et-de-la-communication-partie-1>

<https://management.savoir.fr/communication/>

<https://schoolwires.henry.k12.ga.us/cms/lib08/GA01000549/Centricity/Domain/1161/categories.pdf>

<https://status.net/articles/formal-communication-informal-communication/>

<https://steeple.com/blog/communication-interne/creer-strategie-communication-interne>

<https://www.communicationtheory.org/types-of-communication/>

<https://www.courstechinfo.be/Techno/Informatique.html>

https://www.dlsweb.rmit.edu.au/Toolbox/leadership/toolbox/mis/mis_c01.html

<https://www.emi.ac.ma/ntounsi/COURS/LogBase/logicielsDeBase-1.html>

<https://www.iedunote.com/grapevine>

<https://www.memoireonline.com/06/07/497/1a-communication-d-entreprise.html>

<https://www.merriam-webster.com/dictionary/information>

<https://www.merriam-webster.com/dictionary/technology>

<https://www.oxfordlearnersdictionaries.com/definition/english/ict?q=ICT>

<https://www.petite-entreprise.net/definition-d-un-intranet.html>

<https://www.scientificamerican.com/article/claude-e-shannon-founder/>

<https://www.simplypsychology.org/qualitative-quantitative.html> ,

<https://www.sonelgaz.dz/fr/category/qui-sommes-nous>

<https://www.techno-science.net/definition/1646.html>

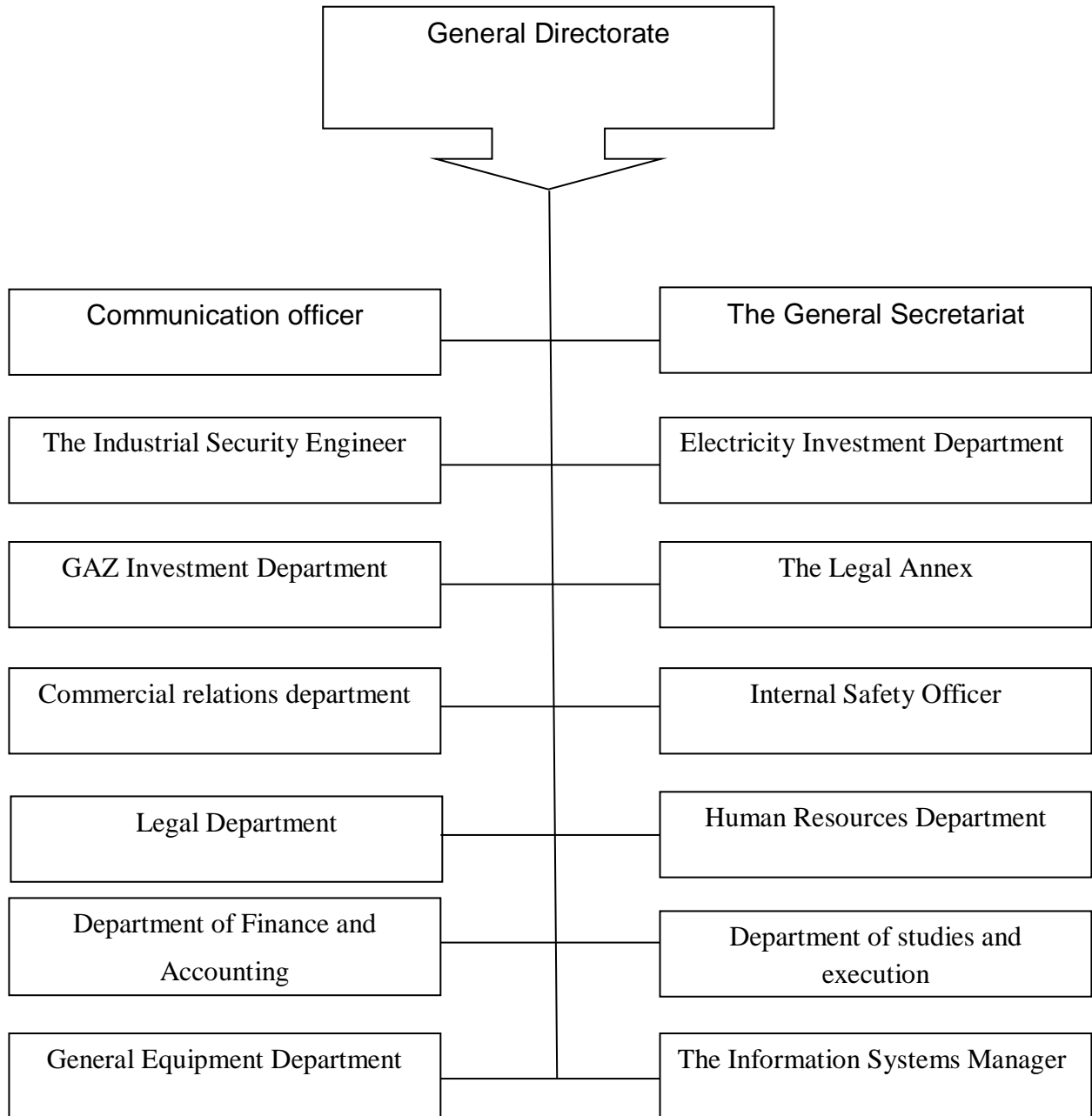
<https://www.cairn.info/revue-l-expansion-management-review-2010-4-page-114.htm>

<https://www.valamis.com/hub/knowledge-management>

The communication service of the SADEG.

Appendixes

Appendix N°01 : the organizational chart of SADEG



Appendix N°02 : The interview guideline

The interview guideline :

With the aim of completing my master degree thesis in the human resources management field, under the subject of « The impact of technology on the internal communication in entities », I have to ask you some few questions in the form of an interview, in order to collect the informations I need to accomplish my research within your company. The questions are well studied, I request you to be as detailed as possible in your answers, and in return I promise you that your answers will be studied and treated transparently and confidentially and only for an academic purpose.

Thematic 1 : A presentation part

- 1- How long have you been in this position ?
- 2- How do you describe your experience so far ?
- 3- Are you getting the support you were expecting to get through your mission ?
- 4- Do you think that the results of my research will help you get updated or in any other way? if yes, how ?

Thematic 2 : The positioning of the internal communication in SDC - SONELGAZ

- 1- Who is the first responsible on the internal communication in the SDC ?
- 2- How do you insure the synergy between the different responsables parts on the internal communication ?

Thematic 3 : The internal communication in SDC – SONELGAZ

- 1- What are the different forms and types of the internal communication in SDC – SONELGAZ ?
- 2- What are the different tools used for each type ?
- 3- What are the obstacles that you face in the process of the internal communication ?
- 4- Did you ever have some problems or conflicts that you can consider « huge » because of a communication problem ?
- 5- Do you have any ICOMM auditing or evaluation system ?

Thematic 4 : The ITC realities and application in SDC – SONELGAZ

- 1- In which way, do you think that the ITC is implemented in SDC – SONELGAZ ?
- 2- Was this implementation by necessity or obligation ?
- 3- Can you give me the implementation process details ?
- 4- Which ITC tool do you use currently ?
- 5- How do you rate the role of these ITC tools ?
- 6- Do you have an ITC evaluation or auditing system ? if yes, can you give me more details about it ?
- 7- In case any new needs or ideas were established, how does the process go to implement them ?
- 8- Are you considering any other improvements ? if yes, which are they?

Appendix N°03 : the questionnaire (English version)

The investigation Survey

As part of the preparation of our graduation thesis, for obtaining a master's degree in Commercial Science, option: Human Resources Management at the school of the high commercial studies

(HEC) ex INC, and whose theme is: "The impact of technology on the internal communication", case: SONELGAZ - SADEG, the General Directorate of Ghardaia.

We invite you to answer this survey with full honesty and transparency, and in return We guarantee you the total anonymity of your identity. This survey will be studied and analyzed confidentially and for an academic purpose purely.

***Obligatoire**

Description sheet

1. Sex *

Une seule réponse possible.

- Male
 Female

2. Age *

Une seule réponse possible.

- 25 or less
 Between 26 and 35
 Between 36 and 45
 Between 46 and 55
 56 or more

3. Seniority *

Une seule réponse possible.

- Between 5 and 10 years
 Between 10 and 20 years
 More than 20 years

The internal communication in the company

4. How can you define the internal communication? *

Une seule réponse possible.

- A tool for transmitting information
- A need for the workflow
- Just sending and receiving messages

5. the information flow in the company is good: *

Une seule réponse possible.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

6. You are well acknowledged about the company's news or goals *

Une seule réponse possible.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

7. Are you concerned by the future of the organization? *

Une seule réponse possible.

- Yes
- No

8. Do you think your comments are considered and appreciated? *

Une seule réponse possible.

Yes

No

9. How do you rate the communication between you and your colleagues? *

Une seule réponse possible.

Not satisfying at all

unsatisfying

Neutral

Satisfying

Very satisfying

10. How do you rate the communication between you and your superiors? *

Une seule réponse possible.

Not satisfying at all

unsatisfying

Neutral

Satisfying

Very satisfying

11. Are you satisfied by the current internal communication tools used by your company? *

Une seule réponse possible.

- Not satisfied at all
- Not satisfied
- Neutral
- Satisfied
- Very satisfied

12. What are the improvements that you want to see in the internal communication in your company? *

Plusieurs réponses possibles.

- The recruitment of an internal communication responsible
- To bring more importance to the theme
- Trainings in the subject
- More HR engagement in what concerns the internal communication

13. Do you believe that a good internal communication process is one of your high performance keys? *

Une seule réponse possible.

- Yes
- No

The information and communication technology in the company

14. Are you aware of the definition of the ICTs? *

Une seule réponse possible.

- Yes
- No
- Somehow

15. What ICT tool do you use during your work? *

Plusieurs réponses possibles.

- Internet
- Intranet
- Electronic messaging
- web solutions
- Social media

16. How do you rate your ICTs proficiency level ? *

Une seule réponse possible.

- Very bad
- Bad
- medium
- Good
- Very good

17. The level mentioned above, is acquired as a result of: *

Plusieurs réponses possibles.

- A training in the subject
- A personal effort
- The tools are not that complicated

18. Do you get confused sometimes between the different ICT tools you use? *

Une seule réponse possible.

Yes

No

19. Do you think that the ICT tools are keeping you updated about the entity news? *

Une seule réponse possible.

Yes

No

The electronic messaging

20. Do you know the concept of the electronic messaging? *

Une seule réponse possible.

Yes

No

21. How often do you use Tensik per day? *

Une seule réponse possible.

Rarely

A little

Often

Very often

22. What kind of influence Tensik has on the internal communication? *

Une seule réponse possible par ligne.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Tensik saves you more time in the ICOMM process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tensik makes your ICOMM process easier and more organised	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tensik reduces effort in the internal communication process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tensik insures more efficient interactions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

23. What other electronic messaging tool do you use during your work? *

Plusieurs réponses possibles.

- Gmail
- Yahoo
- Outlook
- None of those
- Others

24. Why do you use Tensik exactly? *

Plusieurs réponses possibles.

- for official messaging
- To send documents
- Only when you can't transmit the message directly

25. How Often per week do you face a technical problem in Tensik? *

Une seule réponse possible.

- Always
- Sometimes
- Never

26. How much time it takes for the problem to be solved generally?

Une seule réponse possible.

- At the time
- Hours
- Days
- Weeks

27. Have you ever received a survey about Tensik from ELIT? *

Une seule réponse possible.

- Yes
- No

28. If your answer in the previous question was yes, did you fill it?

Une seule réponse possible.

- Yes
- No

29. If your answer in the previous question was no, can you tell us why?

Plusieurs réponses possibles.

- Because I see it unnecessary
- Because I don't understand the objective of the survey
- Because I generally don't answer surveys

30. Was your work experience in general better *

Une seule réponse possible.

- Before Tensik
- After Tensik

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Appendix N°04 : the questionnaire (Arabic version)

الإستقصاء

وكجزء من إعداد أطروحة التخرج ، للحصول على درجة الماجستير في العلوم التجارية ، تخصص : إدارة الموارد البشرية في مدرسة الدراسات العليا التجارية ، وموضوعه: "تأثير التكنولوجيا على الاتصالات الداخلية" ، حالة: SONELGAZ- SADEG. ندعوكم للإجابة على هذا الاستطلاع بأمانة وشفافية كاملتين ، وبالمقابل ، نحن نحسن لكم بقاء هويتكم مجهولة بالكامل. وستدرس هذه الدراسات الإستقصائية وتحلل بسرية ولأغراض أكاديمية بحثية.

***Obligatoire**

ورقة الوصف

1. الجنس *

Une seule réponse possible.

- ذكر
 أنثى

2. السن *

Une seule réponse possible.

- أقل من 25 سنة
 بين 26 و 35 سنة
 بين 36 و 45 سنة
 بين 46 و 55 سنة
 أكثر من 56 سنة

3. الأقدمية *

Une seule réponse possible.

- بين 5 و 10 سنوات
 بين 10 سنوات و 20 سنة
 أكثر من 20 سنة

الاتصال الداخلي في الشركة

4. * كيف يمكنك تعريف الإتصال الداخلي ؟

Une seule réponse possible.

- أداة نقل المعلومات
- واحدة من حاجات سير العمل
- مجرد إرسال واستقبال للرسائل

5. * تتفق المعلومات في الشركة جيد

Une seule réponse possible.

- لا أوافق بشدة
- لا أوافق
- محايد
- أوافق
- أوافق بشدة

6. * أنت محيط بأخبار الشركة وأهدافها

Une seule réponse possible.

- لا أوافق بشدة
- لا أوافق
- محايد
- أوافق
- أوافق بشدة

7. * هل أنت مهتم بمستقبل المؤسسة عموماً؟

Une seule réponse possible.

- نعم
- لا
-

8. * هل تعتقد أن تعليقاتك تؤخذ بعين الاعتبار وتقدر؟

Une seule réponse possible.

- نعم
 لا

9. * كيف تقم التواصل بينك و بين زملائك ؟

Une seule réponse possible.

- غير مرض تماما
 غير مرض
 محايد
 مرض
 جد مرض

10. * كيف تقم التواصل بينك وبين رؤسائك ؟

Une seule réponse possible.

- غير مرض تماما
 غير مرض
 محايد
 مرض
 جد مرض

11. * هل أنت راض عن أدوات الاتصال الداخلية التي تستخدمها شركتك ؟

Une seule réponse possible.

- غير راض تماما
 غير راض
 محايد
 راض
 جد راض

12. * ما هي التحسينات التي تريد رؤيتها في الاتصالات الداخلية في شركتك ؟

Plusieurs réponses possibles.

- توظيف مسؤول عن الاتصال الداخلي
- إضفاء المزيد من الأهمية على الموضوع
- التدريب في هذا الموضوع
- زيادة مشاركة الموارد البشرية في ما يتعلق بالاتصال الداخلي

13. * هل تعتقد أن عملية اتصال داخلية جيدة هو واحد من مفاتيح الأداء العالي ؟

Une seule réponse possible.

- نعم
- لا

تكنولوجيا المعلومات والاتصالات في الشركة

14. * هل أنت على علم بتعريف تكنولوجيا الإعلام والاتصال ؟

Une seule réponse possible.

- نعم
- لا
- ربما

15. * ما هي أداة تكنولوجيا المعلومات والاتصالات التي تستخدمها أثناء عملك ؟

Plusieurs réponses possibles.

- Internet
- Intranet
- الرسائل الإلكترونية
- حلول على الشبكة (NOVA, CRMS...)
- وسائل التواصل الاجتماعي

16. * كيف تقيم مستوى كفاءتك في استعمال تلك الأدوات؟

Une seule réponse possible.

- سيء جدًا
- سيء
- متوسط
- جيد
- جيد جدًا

17. * اكتسبت المستوى المذكور أعلاه نتيجة لـ

Une seule réponse possible.

- تدريب في المجال
- مجهود خاص
- الأدوات المستعملة غير معقدة أصلاً

18. * هل يقع لك خلط في بعض الأحيان بين أدوات تكنولوجيا المعلومات والاتصالات المختلفة التي تستخدمها؟

Une seule réponse possible.

- نعم
- لا

19. * هل تعتقد أن أدوات تكنولوجيا المعلومات والاتصالات تفيك على علم بأخبار المؤسسة؟

Une seule réponse possible.

- نعم
- لا

الرسائل الإلكترونية

20. * هل تعرف مفهوم الرسائل الإلكترونية ؟

Une seule réponse possible.

- نعم
 لا

21. * كم مرة تستخدم تنسيق في اليوم ؟

Une seule réponse possible.

- نادرا
 قليلا
 كثيرا
 كثيرا جدا

22. * ما نوع تأثير تنسيق على الاتصالات الداخلية ؟

Une seule réponse possible par ligne.

	لا أوافق بشدة	لا أوافق	محايد	أوافق	لا أوافق بشدة
تنسيق يوفر لكم المزيد من الوقت في عملية الاتصال الداخلي	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
تنسيق يجعل عملية الاتصال الداخلي أسهل وأكثر تنظيما	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
تنسيق يقلل من الجهد المبذول في عملية الاتصال الداخلي	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
تنسيق يضمن تفاعلات أكثر كفاءة	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

23. * (ما هي أداة الرسائل الإلكترونية الأخرى التي تستخدمها أثناء عملك ؟ (ليس بالضرورة في مكتبك

Une seule réponse possible.

- Gmail
- Yahoo
- Outlook
- لا شيء
- برنامج آخر

24. * لماذا تستخدم تنسيق الضغط ؟

Plusieurs réponses possibles.

- للمراسلة الرسمية
- لإرسال الملفات
- فقط عندما لا تستطيع نقل الرسالة مباشرة

25. * كم مرة في الأسبوع تواجه مشكلة تقنية تنسيق ؟

Une seule réponse possible.

- دائما
- أحيانا
- أبدا

26. * كم من الوقت يلزم لحل المشكلة بشكل عام ؟

Une seule réponse possible.

- في الوقت ذاته
- بعد ساعات
- بعد أيام
- بعد أسابيع

27. * هل استلمت من قبل استطلاع رأي عن تنسيق من

Une seule réponse possible.

- نعم
 لا

28. إذا كانت إجابتك في السؤال السابق نعم ، هل مالت؟

Une seule réponse possible.

- نعم
 لا

29. إذا كان جوابك في السؤال السابق لا ، هل يمكنك أن تخبرنا لماذا ؟

Plusieurs réponses possibles.

- لأنني أراه غير ضروري
 لأنني لا أحرف الهدف منه
 لأنني عموما لا أحب على الاستطلاعات

30. * هل تجربة عملك أفضل عموما

Une seule réponse possible.

- قبل تنسيق
 بعد تنسيق

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