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MASTER IN ORGANIZATIONAL MANAGEMENT

**Development of feedback loop process according to the ICAP model
for change management of IT project**

CASE: Distribution Directorate of Belouizdad SADEG

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ABSTRACT

In recent years, change management has grown, it has become an essential component that manifests itself at all levels of an organization and this is due to rapidly changing and competitive environment. The present research focuses on the implementation of feedback loop process on change management, and the contribution of this tool at measuring the effectiveness of change, making each change project a learning experience for the organization while relying on references dealing with change management and measuring its effectiveness.

To achieve our objective within the SONELGAZ distribution branch, we opted for a qualitative research methodology through questionnaire and semi-structured interviews with managers and employees of the distribution directorate. The results show that the feedback loop process of piloting change developed proving to be an important management tool that allows the assessment of the progress and achievement of change project, as well as the reason behind this result that enable the organization to make the appropriate decision for piloting change and treatment of dysfunctions.

Key words: feedback loop process of piloting change, change management, measuring effectiveness, ICAP model, IT system implementation.

RÉSUMÉ

Au cours de ces dernières années, la conduite du changement a pris de l'ampleur, elle est devenue une composante essentielle qui se manifeste à tous les niveaux d'une organisation et ce, en raison de l'évolution rapide et de l'environnement concurrentiel. La présente recherche s'intéresse à la mise en place d'une de processus de boucle feedback sur la conduite du changement, et à la contribution de cet outil à la mesure de l'efficacité du changement, faisant de chaque projet de changement comme une expérience d'apprentissage pour l'organisation tout en s'appuyant sur des références traitant de la conduite du changement et la mesure de son efficacité.

Pour atteindre notre objectif au sein de la branche distribution de SONELGAZ, nous avons opté pour une méthodologie de recherche qualitative à travers des questionnaire et entretiens semi-directifs avec des managers et employés de la direction de distribution. Les résultats montrent que le processus de feedback de pilotage du changement développé s'avère un outil de management important qui permet l'évaluation de l'avancement et les réalisations du projet de changement, ainsi que les raisons derrière ce résultat qui permet à l'organisation de prendre les décisions appropriée pour le traitement des dysfonctionnements.

Mots clés: la processus de la boucle feedback de pilotage du changement, conduite du changement, la mesure d'efficacité, le model ICAP, l'implémentation d'une system d'information

الملخص

في السنوات الأخيرة ، إدارة التغيير شهدت نمواً كبيراً ، وأصبحت مكوناً أساسياً يتجلى في جميع مستويات المنظمة وهذا بسبب التغيير السريع والبيئة التنافسية. يركز البحث الحالي على تنفيذ عملية حلقة التغذية الراجعة على إدارة التغيير ، ومساهمة هذه الأداة في قياس فعالية التغيير ، مما يجعل كل مشروع تغيير تجربة تعليمية للمؤسسة مع الاعتماد على المراجع التي تتعامل مع إدارة التغيير وقياس مدى فعاليتها.

لتحقيق هدفنا داخل فرع التوزيع في SONELGAZ اخترنا منهجية البحث النوعي من خلال الاستبيان والمقابلات شبه المنظمة مع المديرين والموظفين في مديرية التوزيع. تظهر النتائج أن عملية حلقة التغذية الراجعة لي إدارة التغيير التي تم تطويرها أنها أداة إدارية مهمة تسمح بتقييم التقدم وإنجاز مشروع التغيير ، وكذلك السبب وراء هذه النتيجة التي تمكن المنظمة من اتخاذ القرار المناسب لعلاج الاختلالات.

الكلمات المفتاحية: عملية حلقة التغذية الراجعة لي إدارة التغيير ، إدارة التغيير ، قياس الفعالية ، نموذج ICAP ، تنفيذ نظام تكنولوجيا المعلومات

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List of Abbreviations and Acronyms

B

- BI: Business intelligence
- BV: Base voltage

C

- CRM: Customer relationship management
- CRMS: Customer relationship management system

D

- DD: Distribution directorate
- DDB: Distribution directorate of Belouizdad

E

- ETL: Extract, Transform, Load
- ERP: Enterprise resource planning

H

- HR: Human resource
- HSE: Health safety environment

- HV: High voltage

I

- ICAP: Information, Comprehension, Adherence, Participation
- IS: Information System
- IT: Informational technology

L

- LMX: Leader-member exchange

M

- MB: Memory billing
- MCQ: Multiple choice questionnaire
- MV: Medium voltage

O

- OLAP: Online analytical processing

S

- SADEG: Society Algerian of distribution of electricity and gas

INTRODUCTION

Change is a general transition or transformation of something or phase to another state condition, any form of mutation to anything material or immaterial is considered change (Zekai , 2016). A never ending process of readjustment and re-adaptation, as man responds behaviorally to ever changing circumstances. The change is continuing as the time keep changing, as new technologies emerge and the need of human evolvement (Lesley & J, 2013).

The workplace of this era is characterized by frequent and rapid pace of organizational change along with organizational growth, innovation, globalization, complex regulations, competition, and ever-changing consumer tastes and needs. (Pasmore, Shani, & Woodman, 2011). Although long-term economic and organizational growth is inevitable, organizational changes usually face resistance (Claudia , Dieter, Marit, Peter, & Eva, 2009).

The implementation or introduction of change is most likely met with resistance (Scheck & Kinicki, 2000), and resistance to change is any negative reaction that cause harmful outcome and impede its success (Weeks, Roberts, Chonko, & Jones, 2004). This resistance to change is the unwillingness to adapt to altered circumstances, and this opposition to altered circumstances is to hinder the modification of the status quo. The resistance to change can be direct or indirect (Berkeley, 2021).

Change management is about designing and implementing an optimal path from the starting point witch is the current state to the goal witch is the desired state (Thomas, 2021). Change management is the application of structured processes and a set of tools for leading people aspect of the change to achieve predefined expected results. Although the existing literature and researcher on change management, organizational change predominantly does not unfold in the anticipated ways (Burke, 2009), which make it difficult to predict, explain and control the process of change, thus necessitate unique planning and preparation for each change scenario.

In the managerial world, this study aims to communicate the reaction of employees toward the implementation of change, and the difficulties they encountered during change, and recognizing their characteristics and their reactions, to better understand the catalyst and under witch environment resistance overcome and sabotage the change process. This will enable the organization to determent the tools and strategies to implement as a counter measure for resistance to change.

Research Problem

In this context, it fits our research problem which is interested in the development of feedback loop process, to measure the effectiveness of change, to perfect the planning and implanting the change.

In this point of view and to achieve our objectives, we were inspired by scientific work of (Autissier & Moutot, 2016), in practical the ICAP model. Our work is thus based on the following problem:

How to set up a feedback loop process for change management project and derive benefits from it to achieve the goals of change project?

This study is based on an application case of implementing change of an IT project in Distribution Directorate of Belouizdad SADEG branch of SONELGAZ, specializing in the distribution of electrical and gas energy, maintaining and developing electrical and gas distribution grid, integrating and provide service to client. While adopting a qualitative methodological approach.

Research objectives

The principal objective of our research is to establish feedback process to close the loop of change management process, and the contribution of this feedback loop in the change management and knowledge creation.

From this main objective result the following specific objectives:

- Collect and analyze the feedback data based on ICAP model, that enable us to measure the effectiveness of change process.
- Diagnose the data collected and identify dysfunctions, and point out the causes of the result obtained.
- Proposer corrective measures and tools to enhance the effectiveness of change and the performance of change management process.

Research plan

Our work start with this introduction which defines the scope of our research.

The first chapter covers the theoretical framework, together with the literature review as well as the conceptual framework. It aims to discuss several scientific works dealing with change management and ICAP model in addition to CRM model, as well as the presentation of key concepts and definitions of these topics.

The second chapter will explain the practical context and the methodological framework. The host organization will be introduced first and secondly the change project in question. Then, the methodological approach and the data collection instruments adopted.

Qualitative analyses based on ICAP model will be implemented in the last chapter to analyze the data collected, which will be followed by a general conclusion.

**CHAPTER 1: LITERATURE REVIEW
AND CONCEPTUAL FRAME**

Section 1: literature Review

1. Change management

1.1 Employee perceptions of justice

Authors; Joanna Georgalis, Ramanie Samaratunge, Nell Kimberley

Title; Change process characteristics and resistance to organizational change: The role of employee perceptions of justice

Date of publication; 9 February 2014

The current research sought to investigate resistance to change from a behavioral perspective and defined it as any conduct that serves to maintain the status quo in the face of pressure to alter the status quo (Zaltman & Duncan, 1997). Behavioral response to change fall in three categories affective, cognitive and intentional behavioral, these behaviors define the complexities of individual responses to change. Employees resistance to change is a reaction to change process and a reaction to change outcomes. Leader-Member exchange (LMX) theory focus on employee's engagement and timely and accurate provision of information to develop different types of exchange relationships between leaders and their members to alleviate employees' resistance to change. Another reasons that cause resistance to change to surface is diminishing of trust (perception of justice). After empirical study the authors conclude that the relationships between the organizations context and resistance to change is mediated by perceived organizational justice. The results show that the characteristics of the change process of LMX are significantly negatively correlated with the resistance to change. Information fairness is significantly negatively correlated with resistance to change. This finding empirically confirms the importance of the leadership-member relationship and the importance of managing employee's views of justice through the dissemination of high-quality information.

1.2 The importance of organizational support

Authors; Kristin L. Cullen, Bryan D Edwards, Wm. Camron Casper, Kevin R. Gue

Title; Employees' Adaptability and Perceptions of Change-Related Uncertainty: Implications for Perceived Organizational Support, Job Satisfaction, and Performance

Date of publication; 8 June 2013

The purpose of this literature is to study the influence of employee's adaptability and change related uncertainty on their interpretation of organization actions toward managing change, one of the determining factors of employee's satisfaction and performance is their tendencies and appraisals of the work environment. In this case, employee's perceptions and attitudes depend on their understanding of the changing situation and the impact that changes will have on them, ambiguity and lack of information leads to uncertainty which has deleterious effect on the work experience and performance and cause stress. Having a positive impression of the support employees receive from their organization will lead to positive results and positive work attitudes. Therefore, it all depends on the employee's perception of the support provided by the organization.

The question raise what is this support and how can we express it to get positive perception?

2 Communication

2.1 Communication as success factors

Author; Thomas Lauer

Title; change management fundamentals and success factors

Date of publication; 23 October 2020

Change itself is moving in to the unknown, as R. Nicholas Carleton (R, 2016) has well defined in his book Fear of the unknown the dangers of anxiety and stress, which translate in organizations to resistance to change. Communication creates transparency and thus orientation, the researcher has shined the light on the importance of communication in managing change and overcoming resistance, the author defined multiple concept like formal or informal, symmetrical or asymmetric communication, digital and analog communication, and rules to insure the right implementation of communication by creating informational transparency and the Promotion of social inclusion. Applying this tools incorrectly (not timely and group oriented) will escalate resistance and lead to project failure.

2.2 Change initiatives

Authors; Claudia Peus, Dieter Frey, Marit Gerhardt, Peter Fischer, Eva Trut-Mattausch

Title; Leading and managing organizational change initiatives

Date of publication; 25 November 2008

In this article the authors have focused on finding and highlighting why and under what conditions changes lead to resistance and its likely consequences, by using psychological theories and empirical evidence. Furthermore, the article discusses success factors for organizational change, that are separated in two categories, individual difference variables like need for achievement, personal resilience, change related self-efficacy, and objective characteristics of the change like changes magnitude, frequency. The authors in their article conclude that adequate communication strategies are the most beneficial tool to minimize resistance to change and maximize commitment to change. By targeting these success factors using monologic and dialogic communication that is characterized by perceived timelines, accuracy, and usefulness.

3 Training

3.1 Knowledge creation

Authors; Janice E. Carrillo, Cheryl Gaimon

Title; Improving Manufacturing Performance Through Process Change and Knowledge Creation

Date of publication; 2 February 2000

Process change is a practical means by which a firm can enhance its manufacturing capabilities (effective capacity), but changes can be the source of serious short term disruption. For instance, reduced productivity, excessive equipment downtime. For example, Hayes and Clark (Hayes & K, 1985) state that the short term loss in productivity from implementation of new manufacturing equipment is often more costly than the actual equipment purchase. Furthermore, these authors stated that the loss in productivity may persist for up to two years.

The authors in this article introduce a model to guide a profit maximizing firm in its quest to enhance performance through process change. Despite the short term loss due to disruption process change is associated with long term gain in effective capacity. Thus managers tend to make common mistake by selecting and planning process change from the narrow viewpoint of the long term benefits sought.

This model focus on three factors during the planning of process

- The rate and timing for investment in process change:

If a rapid timing strategy is employed for process change, the firm may experience a substantial reduction in effective capacity in the short term, in addition the cost incurred at each instant of time may be relatively high. Alternatively, if the new manufacturing system is implemented slowly over time, the degree of interruption and the cost incurred at any point in time may be reduced, but the total time for the new system to be fully operational may be extended.

- The rate and timing for investment and preparation for investment in preparation and training:

Knowledge can be acquired explicitly, through advanced preparation and employees training in two ways, and implicitly acquired through practical experience, Knowledge is generated from investment in preparation and training (learning-before-doing) and as a by-product of process change (learning-by-doing).

- Relationship between process change and knowledge accumulated:

By modeling the learning dynamics related to the process change time, the company can well evaluate the value of the knowledge generated from preparation and training. Compared with the knowledge acquired as a by-product of the process change, the level of accumulated knowledge may be achieved through preparation and Training and experience gained in the actual implementation of process changes, these tools can be modified over time to better allocate resources during the implementation of process changes ,and investments in preparation and training options cover a wide spectrum including major equipment replacement, upgrade of software, or modification of manufacturing procedure.

3.2 Human capital investment

Authors; Ravi Bapna, Nishtha Langer, Amit Mehra, Ram Gopal, Alok Gupta

Title; Human Capital Investments and Employee Performance: An Analysis of IT Services

Date of publication; 9 November 2012

Human capital investments directed toward employees training are effective in improving employee performance. The research question in this article is, whether these continuing training investments yield any measurable performance benefits to the employees?

investment in human capital through employees training improves the quality of human capital and thus has major productivity implications and it is effective in improving employee's

performance. Training is one of the important components of HR planning activities in maximizing the returns from the employee's asset.

One of the authors hypothesis is, employer provided training is positively related to improvement in overall employees' performance.

Empirical data obtained in this study stated that focusing training effort in either domain or technical skills would yield optimal training efficacy, it can be a tool to not only to enhance productivity, but also to attract better talent. Although domain and technical training have significant positive main effects, implication of this research is that firms should effectively manage the training programs to reap optimal returns from these investments.

While the primary interest of this article is in measuring the aggregate effect of training on employees' performance, the authors establishes a link between training and change by quoting from (Joseph, Ang, Chiang, & Slaughter, 2010) and (Pazy, 1996) «Domain, and process changes leading to rapid skills obsolescence, unless these skills are updated often. At the individual level, human capital can also depreciate due to interference».

Section 2: conceptual frame

This section is divided in to four parts: we will present a few definition of change management, next will present a model of organizational change management. After this we will define key factors of change management, and we will approach the reaction to change. Followed by a model to measure the performance of change management. Finally, will finish with presenting CRM and informational systems.

1 Notions and generalities about change management

Change is ongoing and never-ending process of organizational life. As Heraclitus stated «The only constant is change» , this is unquestionably and increasingly true for the organizational world, thus also the individual companies that play a central role in it (Thomas, 2021).

1.1 Definition

Over the last four decades, organizational change has been given great attention, it has been studied in various disciplines such as sociology, psychology and managerial studies. As result the literature is filled with definitions of change management.

Organizational change involves moving from the know to the unknown, from relative certainty to relative uncertainty, from familiar to unfamiliar (Cohen, S, H, & R, 1995). Change is an event were difference in form, quality or state is empirically observed over time in an organization entity (Van, A, Poole, & M, 1995).

Complexity theorists stated that organizational change is characterized by a process that unfolds over time, revealing more or less unstable periods, in which systemic restlessness is an instinctive response to survival in a constantly changing environment (Mary & James, 2003). This definition demonstrate that change is unknown in term of its details and its consequences toward the organization, the only sure thing is that it consumes all the resource and energy of the organization.

Change management signifies the action to plan, to initiate, to realize, to stabilize, this are fundamental of the change processes. Change management consider and pursue a mid-term to long-term basis at effective change of behavior modality and abilities in order to optimize processes and communication structures (Kostka & Monch, 2002).

Change management is strategic, systematic and planned change, accomplished by the guidance of individual behavior, corporate culture and organizational structure, carried-out by the significant employees' participation (Von, 2006).

1.2 Change management model

Change model is fundamental for successful change implementation. Change management model is the roadmap that usher and guides change planning and implementation activities. Change model is the guiding framework change agent depend on to manage the organizational change process (Vivette, 2005).

It has been recognized that significant divide exist between the academic and practitioner change managers, (Buchanan, 1993) has defined it as boundary existing between theoreticians and practitioners, and more recently similar division was identified by (Saka, 2003), Evan more (Appelbaum, Habashy, Malo , & Shafiq, 2012) advocated for producing research in form usable by change agent and change managers. This resulted in little research on how to actually apply change management techniques or critically question their effectiveness (Raineri, 2011). Although there is considerable amount of literature that provides advice for change agent (Julien & Rachel , 2014).

In 1996 John Kotter designed eight stage model to creating a major change, it has been recognized as the most well-known approaches to organizational change (Mento, Jones , & Diendorfer, 2002), as the most enthralling mechanism for success in change management (Phelan, 2005), and established as wisdom for leading change (Nitta, Wrobel, Howard, & Jimmerson-Eddings, 2009).

Managers planning to implement organizational changes puts high demands on Kotter's work, to quotes (Appelbaum, Habashy, Malo , & Shafiq, 2012) «The Process became an instantaneous success at the time it was advocated and it remains a key reference in the field of change management», this quotes shows the importance and the wide spread use of Kotter's work in the practical field of management. Given the popularity of his work it may be reasonable to assume that there is no boundary between his research and practice.

1.2.1 The eight stage process of creating a major change

The eight stage process is a set of procedures fallowed to reach the goals of organizational change, Kotter's approach has focused on organization culture (Casey, Payne, & Eime, 2012)

and viewing change as top-led (Appelbaum, Habashy, Malo , & Shafiq, 2012), and has a strong emphasis on leadership (Pillay, Hackney, & Braganza, 2012).

Although it wide spread and popularity, controversy exists, as it has been described as centrally planned change (Pillay, Hackney, & Braganza, 2012) and it's emphasizing on emergent, rather than planned approach to change management (By, 2005). It has been criticized, that it describes what has to be done but provide sufficient little detail in how it should be accomplished (Pfeifer, Schnitt, & Voigt, 2005), and it not adequately detailed to guide change management in all framework and situation (Appelbaum, Habashy, Malo , & Shafiq, 2012). However, these criticisms can be tone down by the quote of (Sikorko, 2008) «...no single model can provide a one-size-fits-all solution to organizational change».

- **Stage 1: Establishing a Sense of Urgency**

The first stage in Kotter's eight stage process is to establish a sense of urgency, a consciousness of the need for the organization to change. Kotter state that failure to create a sense of urgency is major error in organization change (Kotter, 2008), and has dedicated a book exclusively focusing on this stage "A sense of Urgency".

Establishing a sense of urgency is important to ensuring cooperation and high complacency, transformation often hits a wall if people aren't interested in working on the change problem, thus making it harder to build a group with sufficient power and credibility to pilot the change effort (Kotter, 1995).

Substantial effort may be necessary to motivate employees to invest their time and energies' to overcome the disruption and inconveniences of change (Ansari & Bell, 2009).

- **Stage 2: Creating the guiding coalition**

The second stage in Kotter's process call for creating coalition or group of employees that have sufficient power and influence to lead the change (Kotter, Leading change, 1995). It has been recognized that it is frequently strenuous to identify isolated factors that are responsible for successful execution of change in organization (Van Der Meer , 1999). Nevertheless, it has been recognized that sponsor program as one of the success factors and its vital role in change management (Helm & Remington, 2005). The participation of these group of authoritative and senior personnel respond to the obligation for a strong commanding coalition for the change management (Kotter, 1995)

- **Stage 3: Develop a vision and strategy**

Vision is a conceivable image of the planned future, it can promote and arouse employees interest and urge them to build that future, the vision motivates employees to dedicate their energy and time in the direction of change (Kouzes & Posner, 2016). In a collaborative leadership culture, employees at all levels have a common understanding of the vision that defines and guides change initiatives. Nevertheless, often disagreement, confusion and controversy can emerge wail the implementation of change, the organization should develop backup strategies to aide in settling these problems. In the case were the vision is far-fetched and unfeasible, employees will loss motivation in the change. Effective strategy has important role in the implementation of change, feasible strategy need to be embedded comprehensibly in the organizational culture (Chun-Mei & Li, 2017).

- **Stage 4: Communicating the change vision**

Although Kotter's emphasis on communicating the vision for change, managers underrate the amount of communication necessary to build a uniformed understanding of the change, an endeavor often get impeded by inconsistent messages, that hinder the implementation on change (Kotter, *Leading change*, 1995). Communicating the change has been identified as one of the two most important stage in Kotter's process (Ansari & Bell, 2009). In major change it is difficult to communicate to much, nevertheless, it is possible (Hamlin, 2001), excessive and unnecessary communication poses a risks like the possibility of employees losing interest in the change or losing track of the messages (Loonam & McDonagh, 2007).

- **Stage 5: Empowering broad-based change**

The fifth stage in Kotter's process call for removing obstacles to change, like changing structures or program and policy that undermined the vision, and motivate the innovative idea (Kotter, *Leading change*, 1995). Effective change is one of grate tools to empower employees. It has been founded in collective leadership culture that when employees sense empowerment their self-efficacy develops and trust is established (Su, 2013). The structures and systems of organization, with the supervisors and employees skill has been identified as obstacles and barriers that organization should overcome (Salmela, Eriksson , & Fagerstrom, 2012), this study establishes a link between training and employees empowering toward change. Before the implementation of change now skills, attitudes and behavior need to be developed, the change

agent should evaluate the capability of employees to conduct change, without this criteria, employees would feel disempowered (Chun-Mei & Li, 2017).

- **Stage 6: Generating short-term wins**

Recognizing and celebrating short-term wins is important tool to demonstrate the feasibility of the change and to build momentum and gain support of employees. Identifying these short-term wins need to be visible, and clearly related to the ongoing change (Kotter, *Leading change*, 1995). Not all researchers consider short-term wins significant in all change management process, but it's plays an important part in knowledge management process, the change agent role involves in advertising the short-term wins rather than creating them (Ansari & Bell, 2009). Another strategy used to boost consciousness about the progress of change is through storytelling, to quote (Kotter, 2008) «Neurologists say that our brains are programmed much more for stories than for PowerPoint slides and abstract ideas», and has also referred to it in other book «...the incredible power of good stories to influence behaviors over time...». (Kotter, 2005) and (Roberto & Levesque, 2005) also recognized the importance of using metaphors and compelling stories to elicit views and perception on the need for change or to describe specific initiatives

- **Stage 7 & 8: Consolidating Gains and Producing More Change, and Anchoring New Approaches in the Culture**

The implementation of change may be a long process. In reality, without sufficient leadership some change cannot run smoothly. In collective leadership, all levels of employees understand their joint mission and good communication plan, and achieving the goals is inevitable, these are the factors that make organization adaptable to change (Chun-Mei & Li, 2017).

Kotter's theory mentions the implementation of long-term changes and the need to integrate these practices into organizational culture. Additional employees are promoted and developed to help further and improve on change, top management will maintain the urgency level of the change, and sharing the vision in the organization (Chun-Mei & Li, 2017).

This stage of Kotter process was reported as often the longest stage to complete (Julien & Rachel , 2014). It has been recognized that the large scale change especially in large organization can take a long time to complete, to quote Kotter «Whenever you let up before the job is done, critical momentum can be lost and regression may follow. Until changed practices attain a new equilibrium and have been driven into the culture, they can be very fragile» (Kotter, 1995). This

message was sought to maintain organizational interest in the change, and that all the change progress and successful achievement can collapse to nothing if the organization fail to anchor the change in the culture of the organization. Adding difficulty to the matter (Appelbaum, Habashy, Malo , & Shafiq, 2012), noted that stages 7 and 8 of Kotter model are complicated to evaluate, and it would be likely many years before definitive report that evaluate the effectiveness of embedding the knowledge management program in the culture of the organization can be made.

1.3 Factors affecting the implementation of change

1.3.1 Communication

Communication is a success factor in organizational change (Kotter, 2008), Kotter emphasis on creating realistic and clear visions for the change, by dedicating special team responsible in communicating the visions, ideas, achievement and most importantly failures within the organization. Resistance to change is inevitable especially if employees don't comprehend the need for change (Muller, 2006). Organizational change, such as the implementation of new IT system, often has negative impact on employees, in such change employees perceive that they don't have any control or influence on the matter. Consequently, they presume that the change is not their own making, therefore should be feared (Muller, 2006).

Change management rely heavily on organizational communication. When employees understand the cause behind change they are inclined to cooperate. Nevertheless, communication is not one-time task, once employees understand the project and the change, persistent communication is needed to strengthen the mindset of change (Gotsill & Meryl, 2007).

Effective communication has an important role in decreasing resistance to change, it also promotes teamwork. However, it should be targeted communication in place of broad-brush, and need to be in timeliness manner (Milis & Mercken, 2002). Communication can take the form of support, (Milis & Mercken, 2002) argue that it is very important and change agent must be committed, focused and motivated to support employees, and their complaint's must not be ignored.

Managers often assume that their job is finished once they have communicated clearly with their employees, meanwhile researcher show that many cases were employees don't understand or hear their managers in the first attempt. In fact, researcher advocate that messages need to be

repeated six to seven times, before they are grounded in the minds of the recipient (employees). Considering the readiness of employees to receive the message, depends on multiple factors. Effective communication take in consideration three components, first is the audience and what is communicated (said), finely when it is said. Communication should be designed to share the right message at the right time for the right audience (Austin & Currie, 2003).

(Austin & Currie, 2003) research in human transition identified three phases, and each phase present different challenges. “letting-go” is the first phase, users have to let go of the old system and procedure. Communication plays an important role in keeping employees uncertainties as low as possible, Austin and Currie point out that often managers try to convince their employees that the feeling towered the letting-go process are wrong, witch result in the employees feeling that their managers do not understand them, making them turn to resist the change.

The second phase called “the in-between”, which is characterized as the longest and the most difficult between the three, in this phase employees experience dingers feeling like fear from the future, uncertainty and confusion. Austin and Currie argue that this phase is best managed if it is clearly recognized that this is indeed a difficult period for the employees.

The thread phase is “starting new”, this phase starts when employees start to grasp the positive side of the new procedures or system, and observe the benefit compeered to the old system. Although the finish line is close, Austin and Currie persist that it is important that managers are consistent in their behavior and rewarding system to maintain trust. They also noted that there is a type of employees always eager to adapt and embrace new thing, these early adopters and managers able to encourage the rest of teams moving forward much faster. Austin and Currie state that by acknowledging this phases change will be implemented in the organization with minimal disruption to the actual business (Austin & Currie, 2003).

Communication is crucial success factor, as stated by many authors including (Loonam & McDonagh, 2007). Thus the implantation plans and the progress have to be regularly communicated to stakeholders witch are also affected by the change (Mabert, Soni, & Venkataramanan, 2003). Communication needed and should float freely among employees witch is refer to as justice in communication, because when employees sense injustices they will feel excluded from the change and they will resist it (Teo & Ang, 2001).

(Lannig, 2001) Emphasize on the fact that communication should be effective, he further argues that mobilizing different technique and media of communication makes it more effective.

Communication should be made to carry the strategic and organizational aspect of the implemented change (Davenport, 1998). Nevertheless, technical said need to be communicated, so the employees who need to understand the technical aspect can do so (Wongnum, 2004).

To overcome resistance, organization should not withhold any type of information from their employees. It need to inform them about the change beforehand and when it is going to take place, how the change will be implemented, what is expected from them, how the change will influence their jobs, and how the organization is willing to support and motivate them to commit to the change (Kotter, 1995).

Effective communication enables employees to form realistic image for the project, and reduce uncertainties. As an add benefit, effective communication encourages teamwork. However, it is important for the communication to be focused rather than broad, and its diffusion should be timed correctly. The change agent have an indispensable role in change management, they must be focused and dedicated to motivate and support the end-users during and after the implementation of the project (Milis & Mercken, 2002).

1.3.2 Training

Training plays an important role in the overall change process. The role of training is to help employees to understand what is the project and its outcome in practice, and how it is going to affect their work. To distinguish the difference between communication and training we have to note that communication answer the question why, training answer the question how, it is further noted that training is the foundation for building knowledge and required skills for the change project. One of the project teams roles is determining training requirement based on skills and knowledge required to implement the change, these requirement are the starting point for the training group to develop training program (Gotsill & Meryl, 2007).

Research has stated that training is an integral part of any system implementation. Arguing that without sufficient and effective training, the new system benefits will not be reached, making the investment waste of money and time. In case of system-implementation project, four factors need to be taken in consideration. Firstly, training should be included in the planning phase of the project with detailed descriptions. The second factor, all employees who would be impacted by the change or by the system implemented, must be trained before the implementation, to minimize disruption to the momentum of the organization. Third factor, employees training and support should be given sufficient resources and finance. Last factor, proper support mechanism

should be provided after system implementation (Williams & Williams, 2007). Other research noted that training consume a remarkable amount of resources, and is therefore often not arranged properly (Kotter, 1995).

Training in organization should flow in tow direction bottom-up and top-down. As (Gargeya & Brady, 2005) argue that employees training must be handled on two levels. First, organizing training on the newly implemented system to harness it full benefits. Secondly, all levels of management should understand and know the entanglement of the new system. After top management buy-in, managers are charged with shearing the information with their colleague. If management don't buy into the change, enthusiasm in the change will diminish and active resistance will raise (Davenport, 1998). Often training for system implementation receive the least amount of attention, for example ignoring training or not paying attention to it, which is primarily caused because it does not have quantifiable benefit. Resulting in increased expenses in the long run, or the expense and investment to be wasted, due to not fully utilized implemented system (Gargeya & Brady, 2005).

Training is used to facilitate and support the implementation of new system, as well as any behavioral change. It exists different focuses of training, for example; one that focuses on specific outcome in terms of behaviors or skills. another might focus on opening employees mind to new techniques of doing work. However, it is important to choose the right strategy for the specific change, and take in consideration the knowledge level of employees who are the beneficiary of the new system (Balogun & Hailey, 1999). Research has shown that it is good to train small groups of employees at the time, and training managers separately and before the rest of employees. Managers could play importing role in the development of the training program, ensuring that it contains a holistic view on the project, not just technical how-to (Stewart, 2001).

(Stewart, 2001) emphasis that it is preferable to divide the contents of training program in to small sessions, rather than cramming them in the first session, so that employees can practice the basics, before diving into advanced sessions in later stages.

The objective for training during system implementation is to get employees to understand and accept change, and then show them how to use the new system (Lannig, 2001). Employees resistance to accepting the change can be solved by proper training (Siddiqui, Burns, &

Backhouse, 2004). Research done by (Sharma & Yetton, 2007) investigating the effect of training on system implementation success, shown that training effect on employees acceptance and implementation success is related to two factors, the degree of mutual dependency between tasks executed in the system and the complexity of the system. In other words the success of training is dependent on the characteristics of the system.

In order to achieve effective implementation in IT systems, or any other system, on-going support is required from the organization. On-going or continuous support is maintenance, equipment upgrades and most importantly training. Employees training and their involvement, have positive impact on their feeling towards the implemented system (Kemp & Low, 2008).

(Garvin, 1993) stated that change should evolve in constant rhythm within the organization, and for the organization to progress, it has to consider the change process as a learning process and to study it. (Dobiey & Wanger, 2001) research reveals, to promote and facilitate change in a constantly changing environment, it is indispensable to adapt learning organization culture.

Studies have shown that problems or failures in employees training, will have serious repercussions on the system implementation, in form of implementation challenges or even project failures (Loonam & McDonagh, 2007).

Developing an appropriate plan for training has proven to be a challenge in system-project implementation (Al-Mashari, Al-Mudimigh, & Zairi, 2003). Additionally, it is indispensable to update constantly the training strategy, so that it can reflect the changes in and around the project (Mabert, Soni, & Venkataramanan, 2003).

Although the abundant literature, training and employees support is not given enough human resources during system implementation project. This is an indicator that awareness of potential future problems in the usage of the system, is not getting dedicated (Williams & Williams, 2007). (Loonam & McDonagh, 2007) noted that by dedicating 10 to 15% of project budget for training, the chances for successful implementation of IT project would raise up to 80%. Further research supports this concept, and recognizes that training consumes a noteworthy amount of resources for proper planning and execution (Lannig, 2001).

1.4 Employees resistance to organizational change

Even though organizations are obliged to change to persist in a rapidly changing environment (Gordon, Stewart, Sweo, & Luker, 2000), two-thirds of organizations didn't enhance their

performance after implementing organization changes (Meaney & Pung, 2008). The critical factors of success for change are external organizational pressures (Rafferty, Jimmieson, & Armenakis, 2013) and the reaction of employees to these pressures, that can be their attitudes toward change (Miller, Johnson, & Grau, 1994) together with resistance (Waddell & Sohal, 1998). This acknowledge that the organization is vulnerable to external influence during the change.

In order to understand the reaction of employees toward change, we should understand the types of change. (Ackerman, 1986) identify three types of change. The first one is developmental change, in this type of change the organization improves what already exists by the means of improving conditions, methods or skills. The second type of change is transitional change, this type of change is characterized by the replacement of the current ways of doing things with something new, predefined and controlled over period of time. The third type of change is transformational change, in this case the new organization that emerged from the wreckage of the old organization's chaotic death, remains unknown until it took shape.

Organization can't implement change if its employees won't embrace it and will not change themselves (Jick, 1993). If the individual is not motivated and not ready to change, change in the organization will not take place (Schein, 1986). Even though if the change is necessary or not, previous research proven that it will be met with resistance (Goodstein & Burke, 1991). Hence, to implement change successfully, managers should choose a strategy that eliminate or minimize resistance, by identifying resistances as an obstacle to overcome (Armenakis & Bedeian, 1999).

(Peccei, Giangreco, & Szbastiano, 2011) Define resistance to change, as a form of organizational dispute that employees join-in when they perceive change as personally unpleasant or inconvenient. To quote (Chawla & Kelloway, 2004) definition of resistance to change « an adherence to any attitudes or behaviors that thwart organizational change goals ». Resistance can be defined as failure to comply with clear requirement for change (Herscovitch & Meyer, 2002). Another study argue that employees don't resist change itself, rather the perceived effects connected to the change (Dent & Goldberg, 1999).

Resistance to change are more probable with certain employees, these are employees who rely heavily on their personal experience in decisions making, and who presume that previous state will continue to prevail, who think that there is only one best way of doing things, and who have

little propensity for taking risks (Pitts, 1976). These employees have the most to lose from change, therefore are most likely to resist it. The loss can be a loss of material or a matter of decision-making authority. Resistance arises from basic assumption, personal values, sources of security, and friendship relationships (Miner, 1978).

1.4.1 Types of resistance

1.4.1.1 Resistance to change in need of explanation and non-explanation

Often there is no serious reasons for resistance to change, reasons like, change that threaten to fire employees, lower their salaries, or remove them from position of power, or something in this kind. This resistance itself wouldn't require explanation rather negotiation and it would have been easier to predict. In change management, the less obvious resistance to change is predominant, because it is difficult to predict and manage. This resistance for change is in need for explanation, this resistance doesn't have clear compromise for employees as result from change, rather its founded on psychological factors, some aspect can be (Thomas, 2021):

- **A general rejection of the initially foreign:**

Psychological research has proven that as a human being we have mechanisms that favor the development of prejudices, like the capacity to classify the environment according to differences, therefore between employees associated with different group (Wagner, Van, & Zick, 2000). Consequently, if change take place in form of new groups or persons, irrational rejection is likely to occur. This effect is strengthening by group polarization phenomenon (Werth, 2004). Furthermore, groups that perceive themselves to be foreign have tendency to take extreme positions, further increasing conflicts. This type of resistance is often seen in projects of reorganization like forming new teams from previous different units. Another case, is in the use of external change agent or consultants for the implementation of change processes.

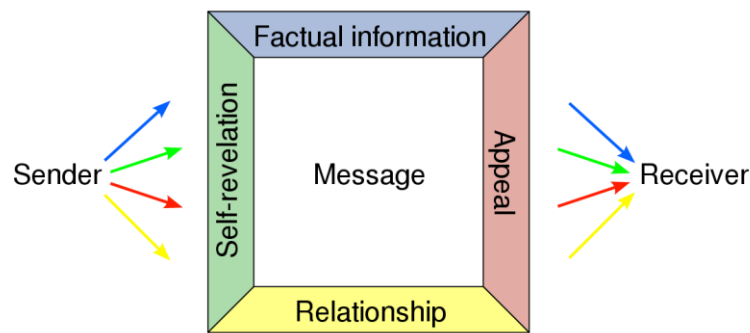
- **Reactance:**

This psychological reaction first documented by (Brehm, 1966), define a general tendency of people to resist any action that restrict their freedom. Resistance is used to restore or find substituted for freedom, as add difficulty the forbidden alternative generally becomes even more attractive. Considering that change alter existing rules and behavior, and new rules take place of previously valid ones, reactance can occur in two forms; because the new rules are perceived as restriction of previous freedom, and the old ways appear more attractive after they are forbidden.

- **Communicative misunderstanding:**

This is an important cause of resistance that need explanation. There are two fundamental characteristics of interpersonal communication, one the first hand, communication is inherently prone to disruption, the possibility of translational errors is high between what the sender wants to sand as massage and what the recipient ultimately understands, these translational errors are the cause of ambiguities regarding the content of the massage. On the second hand, relationship level has decisive role on the disturbing influences of this miscommunication, for better understanding, communication can be compared to an iceberg, genuine content aspect of communication is tip, and the relationship with all its emotions is the invisible part below the surface (Thomas, 2021). According to the four-side model of communication developed by (Schulz von, 2008), a message has four distinguished components at the same time; first component is the factual information, that is objectively perceptible or audible. The second component is self-revelation, it is the personal thought and understanding of the sender about the respective matter. The third components make an appeal to the recipient (employees) to say or do something. The final component reveals the relationship between sender and receiver.

Figure 1 : Four-Sides Model of Communication



Source : (Schulz von, 2008)

1.4.2 Forms of resistance to change

Not only can the resistance be distinguished according to the need for explanation, but also in the forms in which they reveal themselves to observer. By using active vs passive, verbal vs non-verbal dimensions, we can distinguish four types of resistance (Doppler & Lauterburg, 2002):

- **Evasion:**

It is form of verbal resistance, the dispute is indirectly related to the change. Typical occurrence of this type is trivializing or ridiculing things. Nevertheless, it can occur in the form of mock battles, in which unimportant matters are debated.

- **Opposition:**

Is more or less direct verbal resistance. This resistance can start from counter-arguments which are still sort of factual argument, to accusation or worst, threats.

- **Discomposure:**

Its active form of resistance, but mostly non-verbal resistance. Furthermore, rumors and general discomposure fall in this category. The challenge of this form is that change agent perceive that something is wrong with the environment, but they are not verbally informed by those affected.

- **Listlessness:**

It is the least visible form of resistance, because it is non-verbal expression with passivity attitude. Although the passivity communication is a must (Watzlawick, 2000). This type of resistance can be seen on employees as general inattentiveness, inner emigration, fatigue, or actual absence from work. Nevertheless, burn-outs and increased internal dismissal among employees is the most dangers effect of this type of resistance (Thomas, 2021).

1.4.3 Political and factual resistance

Resistance to change can be distinguished relatively to the motivation behind the resistance, either objective or power interests, and the source of this resistance is either group of specialist or power opponents (Helmke, Brinker, & Uebel, 2013). Power opponents are typically employees of middle to top management and specialist opponents are typically lower management employees (Thomas, 2021).

To better distinguish the difference between these groups, we are going to look at the difference between their fears or motivations for the resistance:

1.4.3.1 Power opponents:

- The loss of influence and reputation is there biggest fear, for example, if the span of their activities and responsibilities is downgraded or narrowed as consequence of change project. A fear of losing status and influence is the important cause for lack of willingness to change (Capgemini, 2012).

- Losing resources, resembling in human or material resources, which always include a status and power aspect (Thomas, 2021).

- Most importantly, opponents of power may be inclined to present hypothetical factual arguments, which in fact cover up hidden attempts to defend personal interests (Thomas, 2021). Symptoms of this motivated resistance may be signs of expertise or experience supposedly essential, or it may be the seemingly inevitable loss of quality when budgets are cut.

1.4.3.2 Specialist opponents

- New requirements due to changes may lead to excessive expansion of requirements. According to (Capgemini, 2012) latest change management research, this fear of being overwhelmed is reason for lack of willingness to change

- Criticism of the way things have been done so far, whether direct or indirect, by changing the previous practice.

- A possible loss of employment

The fears and worries described may be reasonable or unfounded, and therefore may need to be explained or not explained. In practice, it is also possible that the two categories are mixed up.

1.5 Conclusion

In this part we have defined the organizational change and its characteristic from the point of view of different authors in different fields, then we have chosen the eight stage process of creating a major change developed by Kotter as a model representing change management based on its wide use and the research developed on it, in addition to emphasizing on communication and training as main factors affecting the change. As any action has a reaction (Sir Isaac Newton), we have defined employee's reaction to change, mainly their resistance to it, in different forms and types.

2 The ICAP model

The performance of change implementation action, of training and communication are measured with the help of key indicators that determine the level of awareness, comprehension, Adherence and participation of the users (employees) in the change project (Autissier & Moutot, 2016).

After insuring achievement of change management action, in terms of contents, planning and budgeting, the second step is evaluating if the change in question is in progress. The evaluation

of change progress can be achieved with the use of four indicator measured form the population effected by the change implementation:

- The information rate of the project
- The comprehension rate of the project
- The Adherence rate of the project
- The participation rate of the project

These four indicator are part of ICAP model, and they are obtained by conducting interviews with the aid of questionnaire for the population, or for representative sample concerned by the change project. It is recommended to run questionnaire grouping a set of question, allowing researcher to calculate the rate of four indicators, this process should be administrated periodically, preferably each three month or according to project planning. For clarity, the indicators can be presented in form of barometer. The average or weighted average of the four indicators can be grouped to form global indicator of change (Autissier & Moutot, 2016).

2.1 The information rate

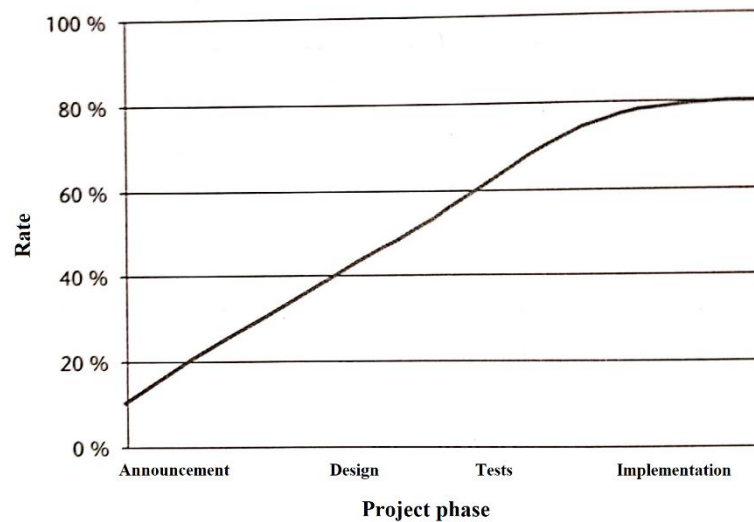
The information rate measures the number of employees that have awareness about the project, its content, technical aspect and its progress, as well as the employees who are responsible about the change and how to participate. Awareness about the project is considered as the first element for which employee's engagement in the implementation of change. Too many organizational projects suffer from unknowledgeable employees whom are the main interest of change and especially the main actors in its implementation. This indicator measures the effectiveness of communication in the change process. Basically its respond to the question "what is the level of information of employees about the change or project?" (Autissier & Moutot, 2016).

The information rate evolves as the project unfolds. In the beginning of the project the information rate is low, but it evolves linearly all along the progress of the project, with compulsory points of passage which allow the communication action to be validated, and in general the change management (Autissier & Moutot, 2016):

- The information rate must be 25% from the start of the project to initiate visibility of it by influential actors

- The information rate must be 50% at the end of conceptual phase of IT project. For organizational and cultural project information rate should be 50% in the announcement phase.
- The information rate must be 80% at the end of project or the organization risks the implementation of project with unknowledgeable employees.

Figure 2 : Evolution curve of the information rate



Source : (Autissier & Moutot, 2016)

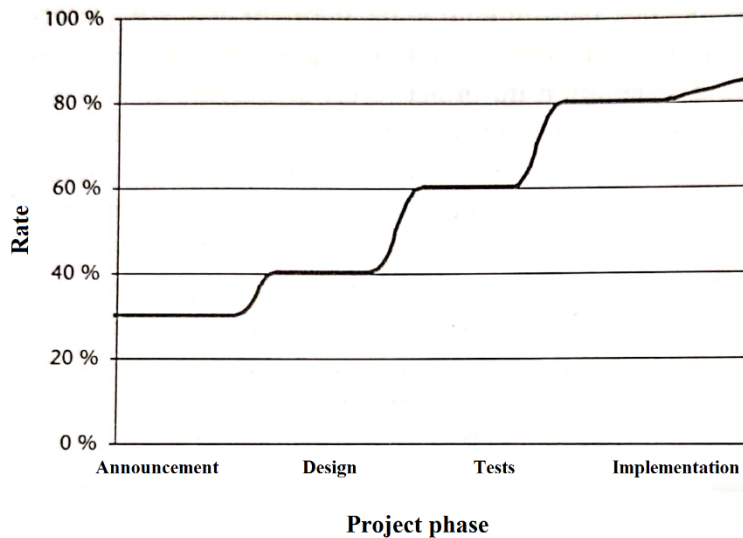
2.2 The comprehension rate

The comprehension rate measures the technical knowledge of employees concerning the project. It is about understanding what employees grasp from a technical point of view of a change project. And its evaluate if the employees understand the risks, approach and content of the project. The comprehension rate is concerned with the mastery of the project content with regard to the daily activity of employees. It aims to determine the understanding that employees have on the objectives and organization of the project. It basically asks the question “what do you understand about the project?”. The comprehension rate is an indication of the evaluation of active actors who make the effort to understand the ins and outs of the project that is proposed to them. The notion of comprehension is different than the notion of information, because to comprehend something you must get informed first (Autissier & Moutot, 2016).

The comprehension rate differs from information rate, because it doesn't evolve in linear rate, its evolves by threshold, according to step curve. the employees are engaged in experimentation processes with impact studies, communication and training effort.

The comprehension rate progress in step function in relation to project advancement. Before the test and implantation phase, 60% of employees concerned by the change project must have partial or excessive comprehension about the change project in question. This rate opens the argument of “if we can implement change without comprehension?”. The study shown that it is important to have 60% rate of comprehension for implementing the change, even though 34% of employees are ignorant about the project, which at least more then have of the employees should comprehend the project for successful implementation. The calculation of this rate make it possible to assess whether the change management actions make it possible to move towards this pivot rate when the project switches from design to implementation (Autissier & Moutot, 2016).

Figure 3 : Evolution curve of the comprehension rate



Source : (Autissier & Moutot, 2016)

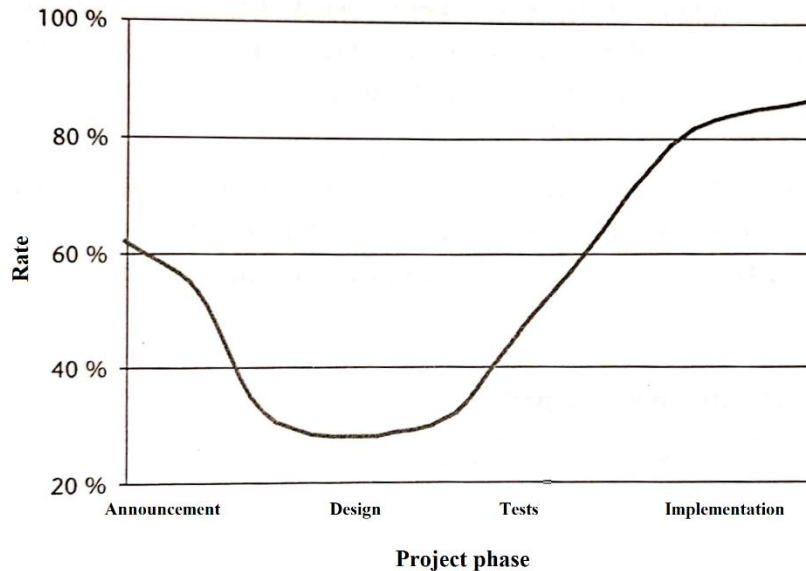
2.3 The Adherence rate

The third indicator of change is the adherence rate. This indicator is not necessarily dependent on the comprehension rate. It is possible to notes adherence based on beliefs, ideologies or employees who does not take into account the technical aspect of the project. The adherence rate measures the level of acceptance of the project. It is a form of survey of opinion that are

interested in the project and proportion of people who judge it positively. Different from the previous two rate, the adherence indicates the level of acceptance, vice versa the level of resistance against the project. Because no big change can be implemented without adherence or beliefs, it is indispensable to have significant proportion of employees adhered to the project, or it risk the rejection of this project. In democratic logic, the validity of change relies in his acceptance by the general public. When employees adhere to the project, they help on the implementation of the project by innovating ways of doing that wasn't in the original plans. In the first stages of change, when perimeters, functionality and the objectives of change are blurry, employees are subject to accepting the change more than adhering to it (Autissier & Moutot, 2016).

The adherence rate evolves in function of project progress, this evolution is in the form of U curve. This dip is due to phenomena called "the valley of despair", which is characteristic for loss in productivity after the launch of project. The start of project always creates novelty excitement and future promise. The speech at the start of the project uses a high level of ambition, the idea of the change gives an aspiration of novelty and transformation suitable for adherence. For successful change implementation the rate of adherence must be above 50%, the 1% or 0.1% is important to ensure the condition of majority is fulfilled. One of the condition of change management is to guarantee that absolute or relative majority of employees favor the change (Autissier & Moutot, 2016).

Figure 4 : Evolution curve of the adherence rate



Source : (Autissier & Moutot, 2016)

The realization phase of the project is the most challenging, because it requires employees to invest their effort in the change on top of their daily work. This tension will lead employees to defined their personal interest which increase resistance and lower adherence. Furthermore, increasing the need for change management effort to limit this effect, and to increase the level of adherence by communicating result. After the first victory is achieved. It is important to communicate it to prove it is possible, and the obstacles that they have faced are normal and parts of the process, this has a huge effect in boosting moral and therefore adherence to the project (Autissier & Moutot, 2016).

2.4 The participation rate

The participation rate is an indicator that reveals the employees that are taking productive action toward the change, by measuring the percentage of employees who are participating in the implementation of change regularly and in timely manner. The fear of not knowing how to participate in the change and devoting additional time over the daily activity, is an importing obstacles facing employees.

Participation to the change can take multiple forms:

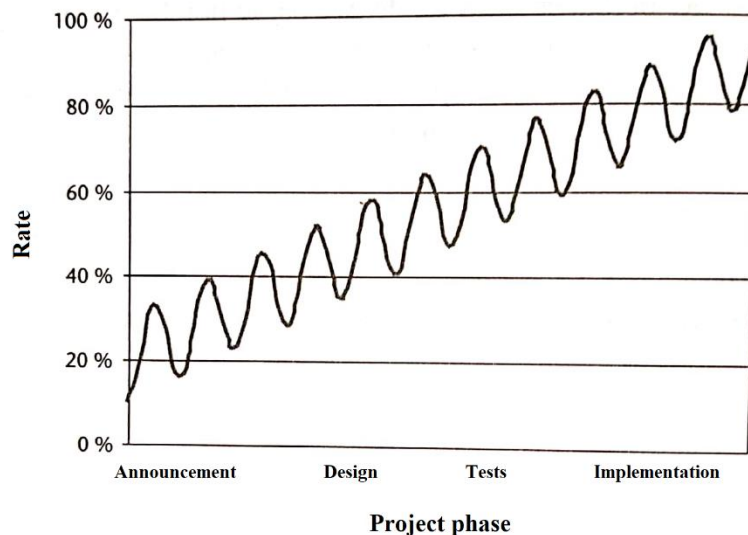
- Participation in works and informational meeting
- Offering diagnostic, analyzes, ideas and procedures

- The implantation of the new procedures “the change” in the daily activity
- feedback from experiences of implementing the new procedures so that they can be communicated to others who will have to do so.

Change projects often get bogged down and derailed from their plan because employees don't flow the pass of course of the implementation and don't stick to speeches. These harmful acts are not necessarily intentional, it's often due to not knowing how to do (Autissier & Moutot, 2016).

The participation rate evolves in function of the progress of change, this evaluation is linearly oscillating. Researcher study of change project has showed that the participation rate is high when implementing part of the change, after this it tend to fall back, which indicate that it is in constant need of rejuvenation from the change agent. This oscillation between high and low rate is due to employee's participation in the change in parallel of their daily activate, this dynamic causes delays in the project deadline. To minimize this effect, it is important to ensure a regular progression while avoiding too large oscillation differences, and the participation rate must be between 70% and 80% in the implementation phase, to insure that the project is operational when get deployed (Autissier & Moutot, 2016).

Figure 5 : Evolution curve of the participation rate



Source : (Autissier & Moutot, 2016)

2.5 Conclusion

These four indicators can be synthesized in a global indicator of change which will be their arithmetic or weighted average. This change rate is a relative value that indicate the level of transformation and the investment of employees in the change.

3 Customer Relationship Management CRM

Customer relationship management involves various strategies and techniques aimed at maintaining healthy relationships with existing and potential customers of the organization. To ensure higher customer retention rate, organizations must maintain customer satisfaction with their products and services. Customer relationship management refers to studying the needs and expectations of customers and providing them with the right solutions (Kavitha, 2020).

3.1 Definition of CRM

A customer relationship management system is a process of compiling information that can increase the understanding of how to manage the relationship between an organization and its customers. Simply put, a CRM system consists of two dimensions, analysis and action (Kavitha, 2020).

In order to build a relationship with the customer and to achieve customer loyalty, companies now are more and more oriented towards customer relationship management. CRM is a process that is to win, maintain, expand and retain customers. Its strategy is to place the customer at the center of concerns of the company by establishing communication, a relationship of trust and mutual respect with customers (Meier, Zumstein, Graf, Stern, & Payot, 2008).

3.2 Scope of CRM

The globalization in the e-commerce field, challenged all companies to make customer communication truly interactive. The CRM strategy has shifted from the concept of mass communication to a more personalized one-to-one communication. Real-time automated marketing communications related to effective and personalized sales and services, ensuring relevant and timely communication between the company and consumers (Kavitha, 2020).

Customer expectations and the complexity of customer relationships in the CRM field continue to increase. This is not only caused by new technologies, but also because of greater mobility of economic field and faster new product development. Companies must change from the old

paradigm of mass production to the new paradigm of mass customization to meet the exact needs of customers (Kavitha, 2020).

In customer relationship management, Brown divides the CRM strategy into three phases that we think are important to mention. Indeed, they alone summarize the challenges and foundations of Customer Relationship Management (Brown & Guyon, 2001).

- The permanent conquest of new customers.
- The loyalty of customers
- Strategic management of customer service, the company must identify its most promising customers and so, while maintaining good quality service to all of its customers, and to offer them even higher quality services.

3.3 Advantages of CRM

CRM is the process of acquiring, retaining and growing profitable customers. It requires a clear focus on the service attributes that represent value to the customer and creates loyalty. Customer relationship management has several advantages (Kavitha, 2020);

- Reduces advertising costs
- It makes it easier to reach specific customers by focusing on their needs
- It makes it easy to track the performance of a given campaign
- Allows organization to compete for customer based service, not prices
- Prevents overspending on low-conception clients or under spending on high conception ones
- Speed up the time to develop and market a product
- Improves the use of the customer channel, thus making the most of each contact with a customer

3.4 Types of CRM programmers

CRM is classified in to four types (Kavitha, 2020);

3.4.1 Wingback or save

This is the process of persuading customers to stay in the organization when discounted services or persuading them to rejoin after leaving. Winning back is time sensitive. Research shows that if organization make contact within the first week after defecting, its four times more likely to win them back than in the fourth week.

Selectivity is another aspect of a successful win-back campaign. Leading organization frequently filters their prospects for contacting costumers, its leads to exclude customers who have changed frequently, have bad credit scores, or whose utilization is low.

3.4.2 Prospecting

Prospecting is an effort to win new first-time customers. In addition to the offer itself, the three most critical elements of prospecting activities are segmentation, selectivity and source. An effective demand-based segmentation model must be developed to enable the organization to effectively target offers. Without this focused approach, organizations cannot achieve an adequate acceptance on the offers or spend too much on promotions, advertising, and preferential pricing.

Selectivity is important to prospecting. Demand-based segmentation defines the customer's needs for the organization, and profit-based segmentation defines the value of customers and helps the organization decide how much it is willing to spend to acquire the customer. Pre-scoring a consumer's credit rating is one of the techniques that organizations can use to determine the latter.

3.4.3 Loyalty

Loyalty is the most difficult to measure accurately. The organization tries to prevent customers from leaving by using three basic elements: value-based and demand-based segmentation and predictive churn models. Value-based segmentation allows the organization to determine how much it is willing to invest in customers. Once it is determined that the customer belongs to the value-based segmentation, the organization can use demand-based segmentation to provide a customized loyalty program "affinity plan". As organizations pay more attention to the needs of individual customers, they find that they can achieve the same loyalty with less investment.

3.4.4 Cross-sell and up-sell

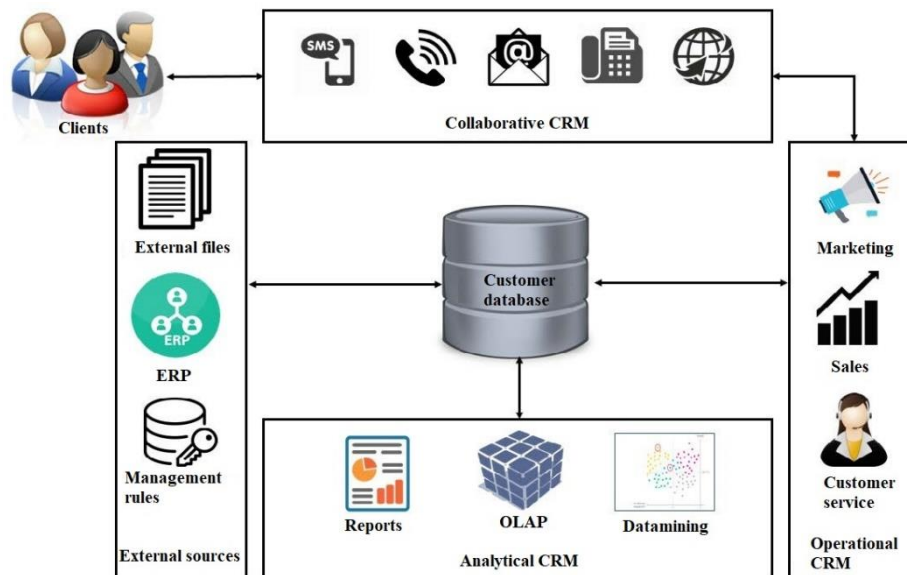
Cross-selling and up-selling is also referred to as increasing the share of wallet or the amount spent by the customer. The goal of cross-selling is to determine the complementary products that the customer wants. Upselling is similar to this, but instead of providing supplementary products, the organization pouch customers to consume a product with technical features that are better than consumers are interested in.

Cross-selling and up-selling activities are important because the target customer already has a relationship with the organization. On the financial side, when customers accept cross-sell or up-sell offers, the organization begins to make more profits.

3.5 The dimension of CRM

Several studies divide CRM into three parts according to the areas of its activity: operational CRM, collaborative CRM and analytical CRM. The collaboration of these three parties aims to develop and improve customer relationship. The diagram below shows these three elements of CRM and their interdependence (Meier, Zumstein, Graf, Stern, & Payot, 2008).

Figure 6 : Customer Relationship Management System



Source : (Meier, Zumstein, Graf, Stern, & Payot, 2008)

In order to better understand CRM as a whole and to properly represent the role and participation of each of its dimensions, it is necessary to define what is meant by operational CRM, collaborative CRM and analytical CRM.

3.5.1 Operational CRM

Customer relationship management is run in the company through three functions (Yao & Zhang, 2005).

Marketing: is responsible for the design, execution and monitoring of marketing campaigns. It relies on customer knowledge analyzes and predictive models developed by data mining (analytical CRM) to determine the optimal composition of its campaign targets. It creates

dashboards (analytical CRM) to monitor the results of the campaigns and to assess the return on investment.

Seals: the sales network is responsible for selling the company's products. It defines the prospects to meet, assesses their needs, establishes commercial proposals, makes sales. By using the available data, and possibly searches form additional data sources to build lists of potential prospects. Then executes the sales process and manages the results through dashboards.

Customer Service: is responsible for all customer support tasks: information, troubleshooting, response to complaints, etc. Customer service often includes a call center that the customer can call to obtain the desired information or service, or even a website which the customer can use as a self-service.

3.5.2 Collaborative CRM

Collaborative CRM refers to the means of communication through which the company comes into direct contact with the customer. We think in particular of the call center, the Internet or even email correspondence. One of the objectives of collaborative CRM is to give a positive and uniform image of the company to the client and to establish a relationship of trust with him by offering personalized and quality service. It is also, in this same idea, the opportunity to collect very valuable information on the customer, which will be stored and will allow better targeting of his needs and expectations. Finally, one of the main challenges of collaborative CRM is to ensure that each employee has access to the most complete and up-to-date information possible on his interlocutor, so that they feel personally followed and considered (Yao & Zhang, 2005).

3.5.3 Analytical CRM

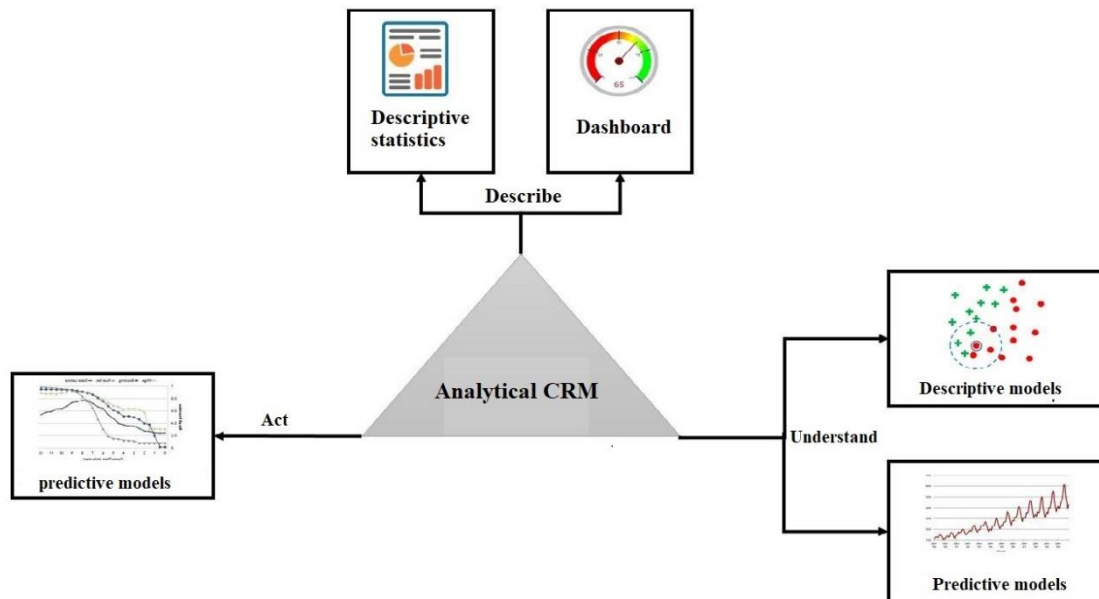
Analytical CRM uses the data stored in the customer database. It has three main functions implemented by Business Intelligence (Reporting and OLAP) or Data Mining techniques (Soulié, 2008).

Describe: The historical data in the customer database are used to produce data representations for business users that are as easy to understand as possible (Dashboards and reporting).

Understand: The goal of data mining is to understand the data, that is, to assess its importance. This according to exploratory models, OLAP dashboards and certain data mining techniques, allowing the understanding of data and predictive models (classification or regression for example).

Act: the action to be taken must be based on the results of the previous function. Analytical CRM therefore makes it possible to use the data stored in the customer database, either to explain this data by understanding what happened or to predict what will happen. So-called data mining techniques are therefore used to produce exploratory models and predictive models. They are the basis for optimizing CRM actions.

Figure 7 : Analytical CRM



Source : (Soulié, 2008)

3.6 Customer database

The customer database contains all the data available on customers. It often has the structure of a data warehouse, whose data model is optimized to produce reports. The customer database is populated by multiple sources which are classified into three categories as follows (Soulié, 2008).

3.6.1 Company back-office data

Comes from databases fed by the various production applications (invoicing, contracts, disputes and litigation, ...). These databases are often non-historical but transactional databases. The company can also buy or obtain this data according to its needs, external files for example the results of one-off surveys, behavioral files These data are therefore heterogeneous, even contradictory, and numerous processing operations are necessary to integrate these data into the database. (Soulié, 2008)

3.6.2 Contact data

Operational CRM activities generate a large amount of data about the customer (what they like, what they want, how they react ...). These data are often contained in a data store, which thus streamlines the format and allows controls, sometimes quite sophisticated to be carried out on the quality of the data provided (Soulié, 2008).

3.6.3 Calculated data

Data mining analyzes exploit data from the database and produce data (segments, scores, etc.) which can be re-integrated into the database. These enrichments can then be used to improve subsequent analyzes (analytical CRM) or to optimize the actions of operational CRM (Soulié, 2008).

3.7 Conclusion

Through this part, we have presented the evolution and the importance of CRM for the company in the competitive context as well as its different dimensions and scopes. We have emphasized the notion of analytical CRM which constitutes the strategic aspect of CRM. Indeed, this dimension is in a way a business intelligence solution applied to the model of customer relationship management. This is why we will discuss in the next part the important tool that enable organization to reap the benefits of CRM model especially the analytical aspect of it.

4 The decision-making information systems

With the appearance and development of economic and technological phenomena, companies operate in an environment that is difficult to understand. As a result, strategic, tactical or operational decision-making has become increasingly complex because of increase in the number of parameters to be taken into account. In addition, company managers must intervene very quickly so that competitors do not have time to get ahead.

New information technologies make it possible to design particularly efficient and innovative information systems dedicated to supporting decision-making. These types of systems are known as business intelligence systems. In this part, we will clarify what a decision information system is by defining it and comparing it with a transactional system. Then we will mention the advantages of this type of systems.

4.1 Definition of business intelligence

BI is a technology-driven process for analyzing data and presenting relevant information to business leaders to help them gain in-depth knowledge of the business and support their business strategies (UPMC, 2021).

Microsoft defines it as: « Business intelligence simplifies the discovery and analysis of information, enabling decision-makers at all levels of an organization to more easily access, understand, analyze, collaborate and act on information, anytime and anywhere. This definition of BI demonstrates that traditional analyst-driven BI applications have evolved to include multiple initiatives to measure, manage and improve the performance of individuals, processes, teams and business units » (Microsoft, 2021).

4.2 Comparison between decisional IS and transactional IS

Transactional systems are the operational systems of the company that capture the transactions of the company (Kimball & Ross, 2011). These systems are concerned with managing the repetitive and day-to-day tasks of a business. Whereas business intelligence systems are concerned with the management of historical data. This management makes it possible to synthesize this data in order to facilitate access to decision-making data.

Table 1 : Transactional IS Vs Decisional IS

Characteristic	Transactional IS	Decision-making IS
Goal	Day-to-day management, production	Analysis, decision support
Data model	Entity relationship	Star, snowflake
Normalization	Frequent	Very rare
Data	Current, raw	Histories, sometimes aggregated
Updates	Immediate, real time	Often delayed
Consolidation Level	Low	High
Perception	Two-dimensional	Multidimensional
Transaction	Readings, updates, deletion	Readings, cross analyzes, refresh
Size	In gigabytes	In terabytes

Source : (Kimball & Ross, 2011)

4.3 Warehouses and data stores

Data from the extraction, transformation or load process must be stored in a structured way to facilitate access to relevant information for decision makers. Traditional databases do not

support this volume of data or the processing that will be performed by the analysis tools of the decision-making system. On the other hand, data warehouses are built to meet these needs.

4.3.1 Definition of data warehouse

Ralph Kimball defines the data warehouse as follows: «The data warehouse is a searchable presentation resource for a company's data and it should not be organized around an entity relationship model, which would make it lose its clarity and its performance. It is the company's searchable data source. It is the union of the Data Stores that make it up » (Kimball & Ross, *The data warehouse toolkit :the complete guide to dimensional modeling*, 2011).

As Bill Inmon, defines it as «a collection of subject-oriented, integrated, non-volatile, and historiated data, organized to support a decision support process» (Inmon, 2005).

4.3.2 The process of data warehousing

A data warehouse is made up of four layers with different functionalities ensuring the warehousing process (Kimball, 2005).

The different of the four layers are:

- **Source system:** obviously we first need one or more sources to feed the data warehouse. These sources are the operational recording systems whose function is to capture the transactions related to the activity. Their main priority is uptime.
- **Data Preparation Area:** This is the set of processes, known as ETL (Extract, Transform, Load), that prepares source data for integration into the data warehouse. This zone must not be accessible to queries or reports.
- **Data presentation area:** this area represents the warehouse data storage location. The data is organized to respond directly to the requests of users, reporters or corporate applications.
- **Restitution tools:** these are the set of tools that allow end users to use data from the data warehouse for analysis. There are several tools for accessing warehouse data such as OLAP, datamining, reporting and dashboards.

4.4 The advantages of decision-making systems

The potential benefits of business intelligence systems include (Margaret, 2014):

- The acceleration and improvement of decision-making at different levels (strategic, tactical and operational).
- Optimization of internal business processes.

- Improving operational efficiency.
- Driving new income.
- Obtaining competitive advantages over business rivals.
- Identifying market trends.
- Identifying the business place issues that need to be addressed.

4.5 Conclusion

In this part, we have seen the notion of decision-making systems and their interest by comparing them to operational systems. We also introduced warehouses and data stores. Then, we approached the process of data warehousing which is one of components of the solution that client relationship module relies on, in a way the effectiveness of CRM model is in direct link with employee's knowledge and mastering the use of IT tools.

**CHAPTER 2: PRACTICAL CONTEXT
AND METHODOLOGICAL
FRAMEWORK**

After the presentation of the literature review and conceptual framework in the first chapter, we will present in this second chapter the host organization SADEG, where we perform our practical internship for the development of feedback process, after this we will present the change project in question, while relying on internal company documents and field study. We will then present the methodological approach adopted for carrying out our research.

Section 1: Presentation of the host organization SADEG and the change project

Before the development of the feedback process, it is necessary to highlight the history and organizational structure of the organization SONELGAZ and the service it offers. And will focus our study in the affiliated organization SADEG.

1 Presenting the National Electricity and Gas Company and its affiliated organization

1.1 History of the organization SONELGAZ

The organization was created after the world war two in the era of France colonial, the France economy at the time was suffering the consequence of the world war two, as result the France government decided to exploit the electrical and gas resources, by order number 628-46 in 08 April 1946 in France, EGA organization was created in Alger in 05 June 1947

1.1.1 Creation of National Organization for Electricity and Gas

According to the order number 6959 dated 26 July 1969 issued in the official paper in 01 August 1969, EGA was changed to the national organization for electricity and gas SONELGAZ, the change was general by transferring all powers of the country energy policy, which resulted in monopoly on production, transport and distribution, and so exporting energy in general, further more constructing and managing transportation infrastructures and distribution field.

1.1.2 Restructuring the National Organization for Electricity and Gas 1983

the construction of the electrical grid has started in the mid-seventies, it has been recognized that this grid is going to be triple the size that was anticipated containing (HV, MV, BV). To insure the creation of national energy dominion, SONELGAZ was required to develop a considerable amount of resources for projects studies and implementation.

In the other hand the organization had a key role in developing strategies for local industry that specialized in main electrical equipment for the grid (transformers, cables, poles). Furthermore, to insure that the project finishes in time, the organization created implementation structures, merged in the organization, this structures has witnessed rapid evolution, becoming independent organization. This lead to the birth of five organizations:

- KAHRIF: Electrical construction.
- KAHRAKIB: Assembling electrical equipment.
- KANAGAZ: Construction of gas line and the distribution of it.
- INERGZ: Construction and civil engineering.
- ETTERKIB: Industrial assembling.

Furthermore, SONELGAZ gone in major restructuring, ended by immerging the prewise five company back to SONELGAZ.

1.1.3 SONELGAZ Public organization as industrial and commercial character 1991:

The legal nature of the organization has been changed from national electrical and gas organization to public organization with industrial and commercial character, by the special low number 475-91 issued in the official paper in September 1991.

1.1.4 SONELGAZ 1995

Decree number 280-95 issued in the official paper in 17 September 1995, confirm that SONELGAZ is public organization with industrial and commercial character, furthermore it has been placed under the tutelage of the ministry of energy (Brahmi, Rabie, & Obaid , 2010).

With this the organization gained legal personality and financial independency. Witch dictate that the organization is subjected to public laws and policy with it relation with the government, as for it transaction with other client it is considered as trader and subject for commercial low.

1.1.5 SONELGAZ publicly traded company 2002

Under the presidential decree number 02-195 issued in the official paper in 05 February 2002, that include the principle law of the organization, SONELGAZ changed from public organization with industrial and commercial character to publicly traded company, in which the government is the shear holder. In 2006 five companies war created and add to the group.

Furthermore, four braches war created to the distribution of electricity and gas, and the Algerian electricity production company SPE, the Algerian company for management of electricity

transportation network GRTE, the Algerian company for management of gas transportation network GRTG, and four electricity production companies were constructed with the collaboration of SONATRACH in the same year, in January 2007 training and selection center was created, it has developed to become institution of training in electricity and gas IFEG, in 2009 the reconstruction of the organization was finished by the creation electrical and gas engineering company CEEG, after this major change project SONELGAZ turned into industrial group with 39 companies.

1.2 The missions and goals of SONELGAZ

1.2.1 The missions of SONELGAZ

The presidential decree number 195-02 issued in the official paper in January 2002 regulates the principle law of the organization in these responsibilities:

- Production, transportation and distribution of the electrical energy.
- Public distribution of gas.
- Development and implementation of commercial policy according to working conditions.
- Preparing schematics for structural development of electrical energy, in the field of activity planning according to annual program.
- Contributing in the creation of standards concerning electrical resource, electrical and gas equipment, machinery and measuring equipment.
- Studying, evaluating, and developing all types of energy rescuers.
- Developing all types of structures that have direct or indirect relation with electrical or gas industries.

In simpler manner the principle mission of SONELGAZ is guaranteeing public service according to the law.

1.2.2 The goals of SONELGAZ

SONELGAZ aims to achieve many goals, in which some of them (Brahmi, Rabie, & Obaid , 2010):

- Meet the demands of clients in best condition.
- Providing consulting and subsidies in the limit of the budget and laws in effect.
- Developing and financing all transaction in the field of energies service.

- Developing by all means possible all the activates that have direct or indirect relation with electrical and gas industries and its social goals.
- Developing all activates applicable and acquisition of companies in the field in Alger or abroad.
- In long terms goals SONELGAZ aims to become one of the top 5 energy provider (electrical and gas) companies in the Mediterranean Sea.

1.3 Organizational chart of SONELGAZ

1.3.1 Definition of organizational chart

The organization chart is characterized by its pyramid structure that define the relation in the four direction up, down and both side. It can be based on the chain of command or it can be based on functional basis, determining field of right for each position. Organizational chart of organization means a fixed system of harmonious relations (Abdul Raziq, 2002).

as we mentioned before that the organization of SONELGAZ in the goals of facilitating it mission, organizational chart was developed containing group of branches divided in three categories.

1.3.2 Activity branches

It has eight branches (Brahmi, Rabie, & Obaid , 2010):

- SONELGAZ for production of electricity SPE.
- Management of the electrical transportation grid GRTE.
- Management of the gas transportation grid GRTG.
- System parameter OP.
- SONELGAZ Alger distributor SDA.
- SONELGAZ center distributor SDC.
- SONELGAZ east distributor SDE.
- SONELGAZ west distributor SDO.

1.3.3 Construction branches

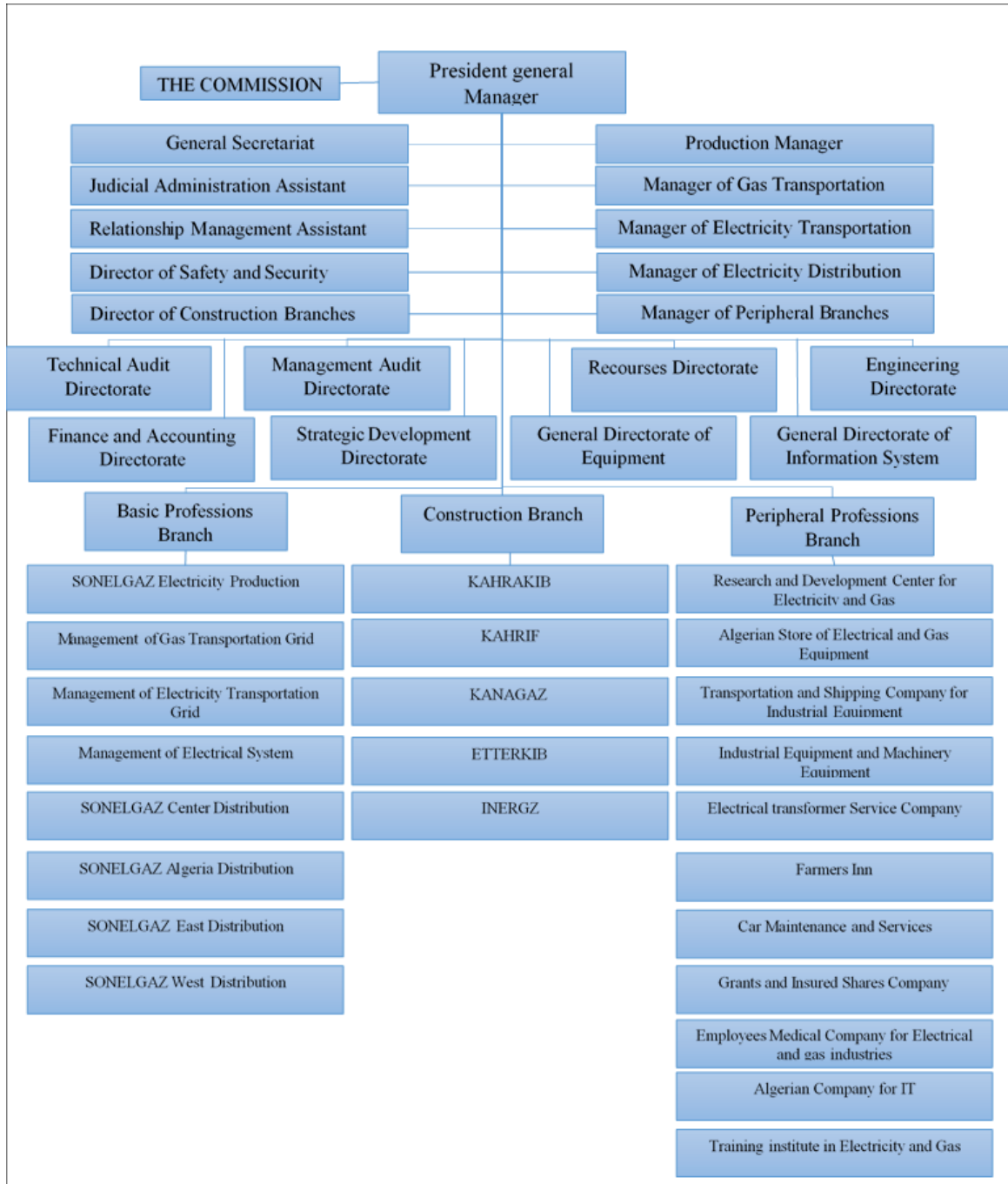
- Civil engineering work INERGA.
- Establishment of facilities and installation of electrical equipment.

1.3.4 Ancillary branches

- Electrical and gas research and development center CREDEG.

- El Djazair Information Technology ELIT.
- Industrial equipment maintenance MEI.

Figure 8 : Organizational chart of SONELGAZ industrial group 2009



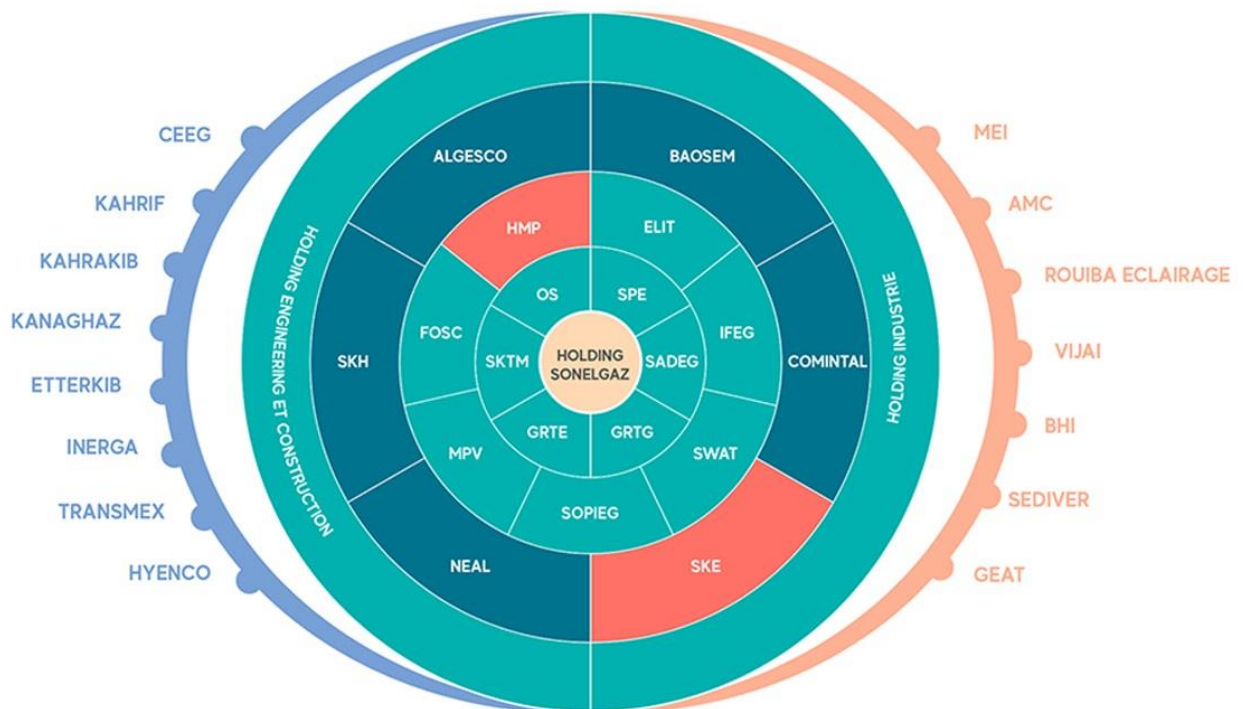
Source : (Brahmi, Rabie, & Obaid , 2010)

At the end of reorganization project in 2009, SONELGAZ became industrial group with 39 affiliated companies, as shown above in the figure 8.

1.3.5 SONELGAZ 2021

SONELGAZ had witness another reorganization project, now it is made up of 21 companies including 02 Holding, including 14 companies directly managed by the Holding, 02 companies controlled at 50% and 51% and 05 companies in participations with third parties, as shown in the figure 9.

Figure 9 : Organizational chart of SONELGAZ industrial group 2021



Source : (Sonelgaz, 2021)

1.4 Presentation of Alger Electricity and Gas Distribution Company SADEG

1.4.1 Algeria Electricity and Gas Distribution Company SDA

SONELGAZ Algeria distribution is one of four branches of distribution of SONELGAZ, it has been created according to the decree number 01-02 issued in 05 February 2002, in 2006 it was created as micro enterprise for SONELGAZ and subjected to the same law and policy as the last one (Brahmi, Rabie, & Obaid , 2010).

1.4.2 Alger Electricity and Gas Distribution Company SADEG

Alger Electricity and Gas Distribution Company was created in 22 may 2017 by the merger of the four distribution branches SDC, SDE, SDO and SDA, as publicly traded company. The company manage 53 distribution direction and 387 commercial agencies across the country.

1.4.3 The mission of Alger Electricity and Gas Distribution Company

The main mission of SADEG is to distribute the electricity and gas, and satisfying the need of their client respecting the standers of quality and security, and more (Brahmi, Rabie, & Obaid , 2010):

- Baying electrical energy and resealing it to its client.
- Participating in the creation of the commercial policy of the group (service provided for the client, developing seals and commercial terms).
- Implementing the commercial policy of the group, by creating customer's management policy, commercial policy and monitoring its implementation.
- Satisfying in the best condition possible the client and providing counseling.
- Assuring local grid management and development.
- Implementation of investment programs.
- Developing organizational studies for distribution, in coordination with the group.
- Assuring the management and development of human resources.
- Assuring the security of people and equipment that have link with the distribution activity.

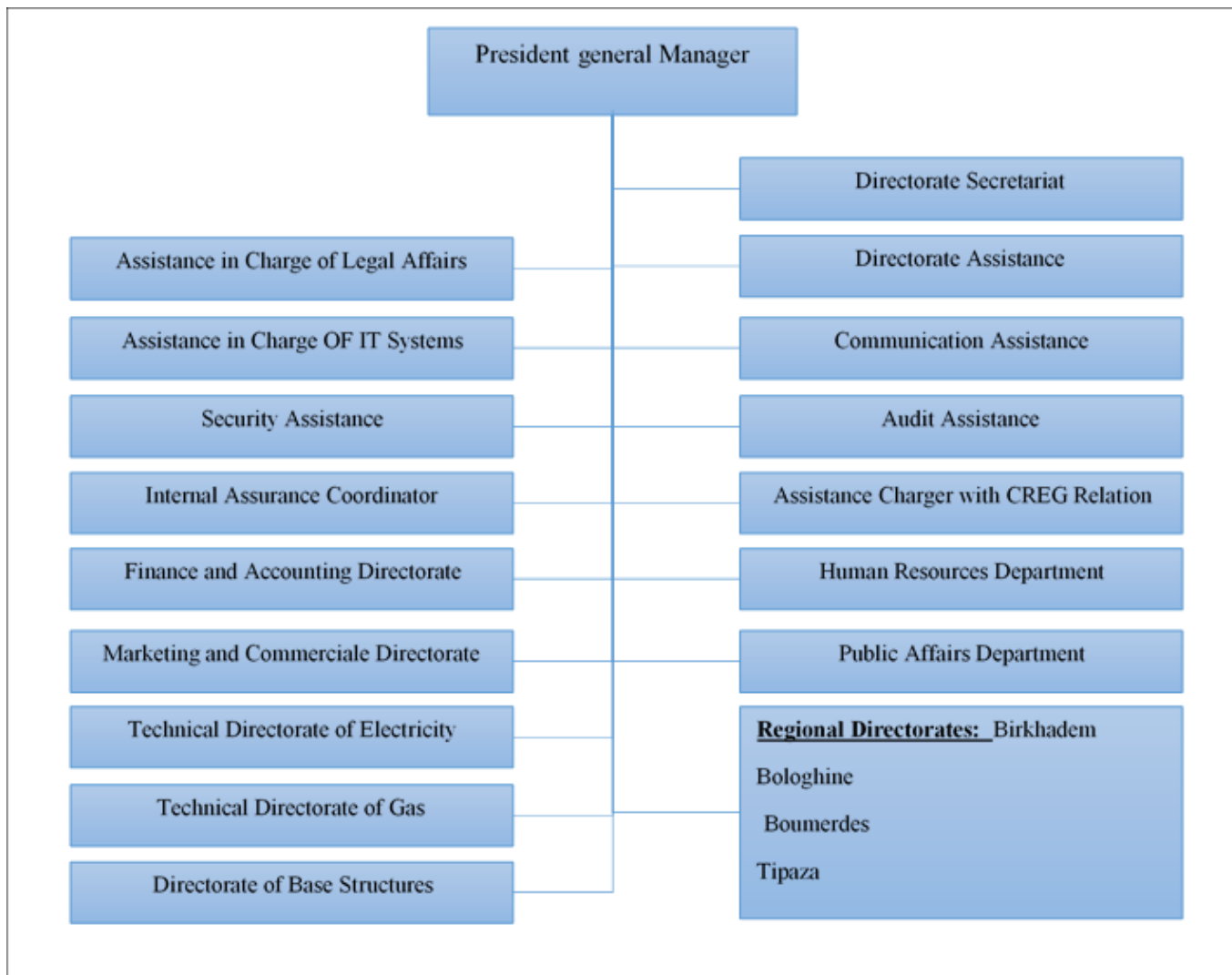
1.4.4 Organizational chart of Alger Electricity and Gas Distribution Company SADEG

The parent organization SONELGAZ has organized Alger Electricity and Gas Distribution Company with what it need to be able to achieve its general strategy, resulting from this the creation of five districts:

- Finance and accounting directorate.
- Commercial and marketing directorate.
- Technical directorate of electricity.
- Technical directorate of gas.
- Directorate of base structures.

Aside to these districts we also find regional directorates as shown in the figure 10:

Figure 10 : Organizational chart of Alger Electricity and Gas Distribution Company SADEG



Source : (SADEG, 2021)

1.5 Presenting electricity and gas distribution directorate of Belouizdad

1.5.1 Introducing electricity and gas distribution directorate of Belouizdad

The regional directorate of Belouizdad was created in 1 January 1996 as distribution center, after the creation of SDA, in 2005 it got changed to one of the regional distribution directorate of SDA, in the year 2020 the directorate has going in to internal reorganization and process change (SADEG, 2021).

1.5.2 The mission of the directorate

The main mission of the organization is to grantee the best service and security possible in distribution of electricity and gas, and in the same time (Brahmi, Rabie, & Obaid , 2010):

- Assuring management of client demand and need in the field of electricity and gas.
- Managing electricity and gas facilities.
- Developing energy seals.
- Elaborating the directorate budget and it affiliated organization.
- Managing resources, employees, equipment and transportation infrastructure for Centre Alger.
- Representing the organization SADEG in Centre Alger.
- Participating in development of gas distribution infrastructure.
- Assuring the safety of people and equipment that have link with it distribution activity.
- Assuring the management and development of human resources and physical resources necessary to work in Centre Alger.

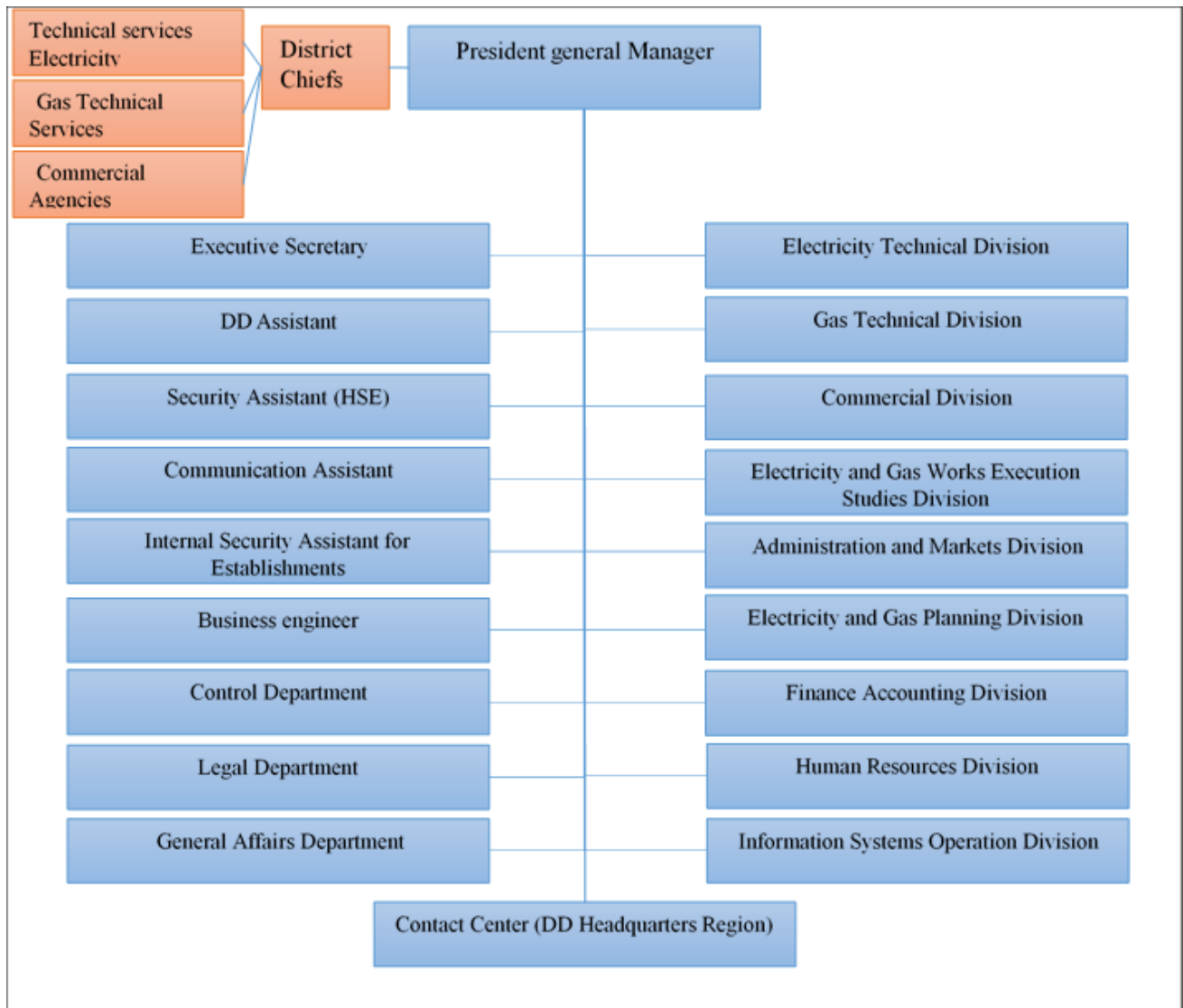
1.5.3 Organizational chart of electricity and gas distribution directorate of Belouizdad

In the frame of SONELGAZ and SADEG the directorate of Belouizdad was organized, to achieve it strategic goals and to facilitate it work, as shown in figure 11.

1.6 Conclusion

In this parte we presented the host organization, in order to understand the organization culture and experience, we presented the organization from the day of creation, and we have emphasized on it development and in particular on the major changes that it has experienced, from this we can conclude that the change is grounded on the culture of the organization. And in the other hand to better understand the complexity of the organization and its decision-making and management style.

Figure 11 : Organizational chart of electricity and gas distribution directorate of Belouizdad



Source : (SADEG, 2021)

2 The informational system CRMS

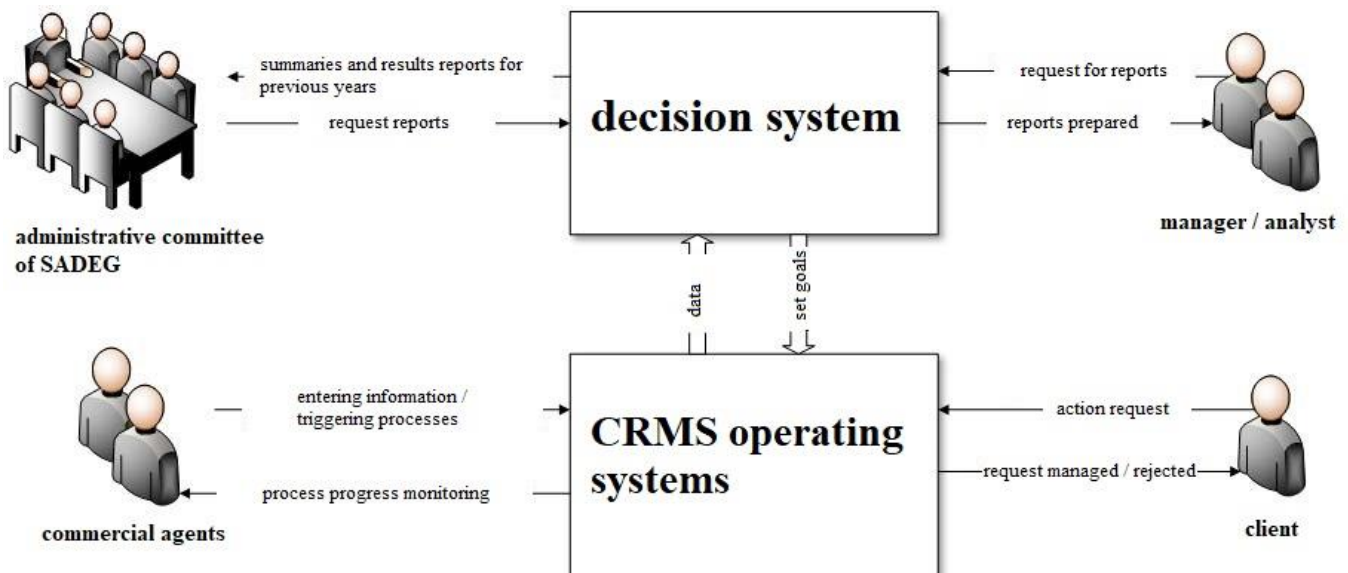
2.1 Presenting CRMS project

With a view to harmonizing customer management within SONELGAZ organization, the group has decided to set up a new customer management system for its distribution company SADEG. The project, which was launched in 2015, is part of the group's overall strategy, which aims to reorganize its subsidiaries and modernize their IS to reinforce their relationship with the customers. Like any other IT project for SONELGAZ group, this project development was assigned to ELIT division. The new system, called CRMS, aims initially to redevelop all the functionalities of the old system SGC, which have become obsolete in the face of changing needs and related business processes. The CRMS will also offer new functionalities which will serve both to facilitate the tasks of SONELGAZ employees and to improve the relationship of the organization with customers. The group aims through this project to centralize data from the energy distribution business for security purposes, internal management control and monitoring of distribution activity.

2.2 The overall architecture of the CRMS

The CRMS system only ensures the business aspect of customer management. The steering aspect is provided by the decision-making component that we are going to demonstrate. The following diagram shows the players in the system as well as the main information flows.

Figure 12 : The overall architecture of the CRMS



Source : (SADEG, 2021)

2.3 The functional architecture of the CRMS

The CRMS system is composed of several modules that provide different features:

Figure 13 : Functionality of CRMS

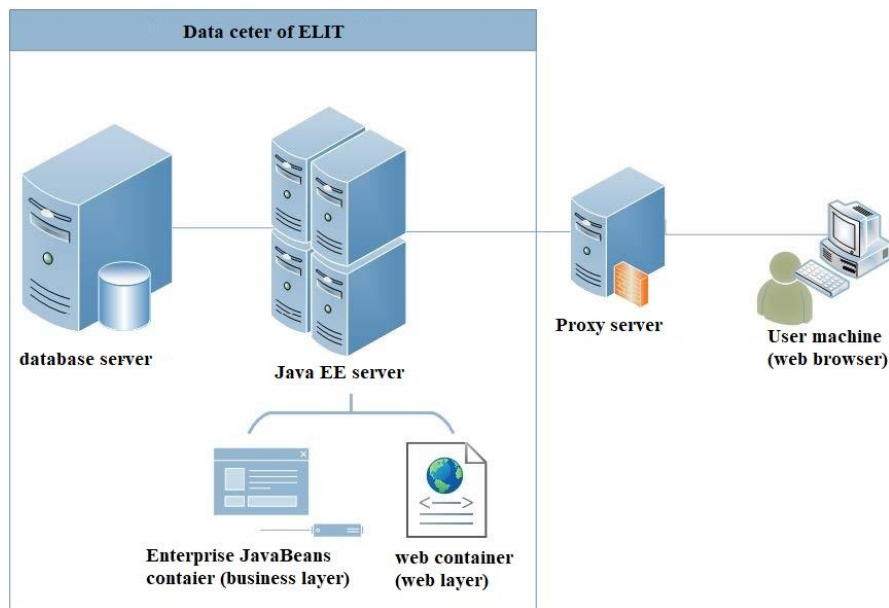


Source : (SADEG, 2021)

2.4 The technical architecture of CRMS

The ELIT division follows an open source policy for the development of IT systems. For the CRMS project, the division team opted for the following architecture:

Figure 14 : Technical architecture of CRMS



Source : (SADEG, 2021)

- The Java EE platform for the development of CRMS.
- The PostgreSQL DBMS for the CRMS Database.
- The application server is deployed under the Linux CentOS distribution.

2.5 CRMS database

The consolidation of customer’s data of SADEG being one of the priority objectives for CRMS project, it has limited the choice of the team to a single inevitable solution which is the construction of a centralized database for CRMS, regrouping all the data. coming from the various commercial agencies of the national territory. This database is hosted at ELIT data center (SADEG, 2021).

2.6 Study of SADEG CRMS according to the three dimensions of a complete CRM

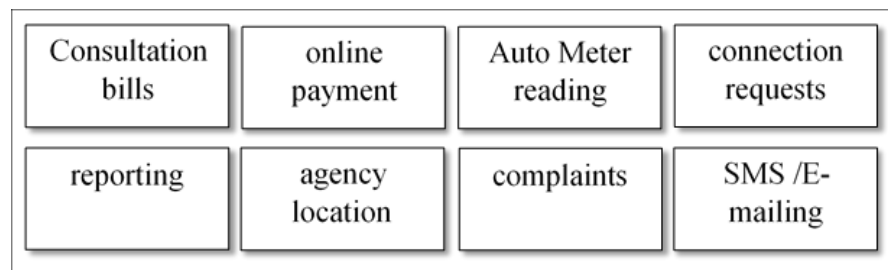
A good study of SADEG CRMS is not limited to understanding its business processes. Rather, it requires a comparison of it to an evolved and complete CRM in order to determine the system’s deficiencies toward the decision-making system. The CRM being, by definition, made up of three complementary dimensions, we proceeded to a projection of the different modules of SADEG CRMS on these dimensions.

2.6.1 The collaborative dimension

Communication is an essential parameter for building a mutually beneficial relationship that can increase business profits and increase customer satisfaction. The CRMS system does indeed have a set of functionalities that promote the aspect of communication with the customer and which are part of the collaborative dimension. This is the customer area represented by the figure 15 below.

The different modules of this space present very interesting communication channels to best reach the customers of SADEG.

Figure 15 : Collaborative dimension of CRMS

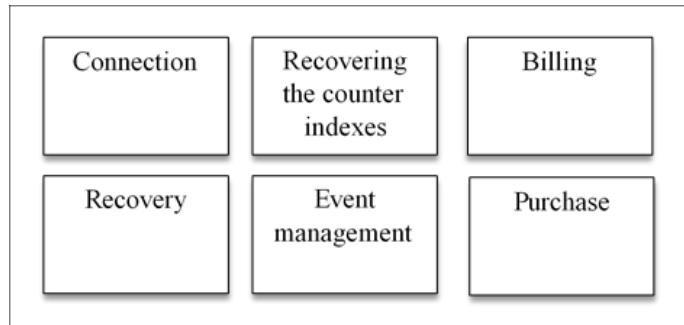


Source : (SADEG, 2021)

2.6.2 The operational dimension

The operational dimension of the CRMS is the set of modules automating the business processes that manage customer relationship from the request for electricity and gas energy supply to the total termination of the contract between the customer and the organization SADEG. This dimension is made up of six modules as shown in the figure below.

Figure 16 : Operational dimension of CRMS



Source : (SADEG, 2021)

2.6.3 The Analytical dimension

The analytical dimension of a CRMS aims to exploit and enrich the data collected by the operational and collaborative dimensions in order to provide reliable information that helps to facilitate decision-making. The only module that includes this analytical aspect is the reporting module. In fact, there are reporting and decision-making procedures that take place based on data without being integrated into the CRMS.

2.7 Conclusion

In this part we have explored the change project CRMS from its structural to technical dimension, and compared it to the three dimension of CRM model, this is important to understand and analyze the change project,

Section 2: Presenting methodological framework

In this section we will present research methodology adopted to carry out this research, and the data collection tools and methods used.

1 Research Methodology

The methodology represents a set of methods used to answer the research question, to achieve the previously set objectives and to test the validity of its hypotheses (Boungou & J, 2017).

Research in the academic language register, implies looking for knowledge that the researcher uses to establish a command and understanding on a subject and area of interest (Kothari, 1985).

In the context of our study, the qualitative approach is the most appropriate and the best suited to respond to our problem. It also allowed us to better present the different notions related to our subject in the theoretical part.

According to (Paillé & Mucchielli, 2016) a qualitative survey is: « The survey which involves personal contact with the subjects of the research (...) It is said to be qualitative mainly in two senses: first, in the sense that the instruments and methods used are designed, on the one hand, to collect qualitative data (testimonies, field notes, etc.), on the other hand, to analyze these data qualitatively ».

1.1 Data collection instrument

The qualitative approach is based on several analysis and data collection tools and techniques (Ketele & Roegiers, 2015). To be able to carry out this work we have opted for the following four instruments:

- Observation
- Document consultation
- Multiple Choice Questionnaire MCQ
- Interviews

1.1.1 Observation

In order to interpret and better perceive the situation of the host organization and its environment, we opted for qualitative research instrument, namely observation.

Observation is a process whose purpose is to collect relevant information. This information gathering process is goal oriented and requires a certain degree of attention (Ketele & Roegiers, 2015).

In our case, the observation was present throughout the period of the internship. It enabled us to understand the progress of activities within the electricity and gas distribution directorate of Belouizdad and to confirm the information gathered and notes were taken in order to be able to understand the style of personnel management and decision making.

1.1.2 Document consultation

Several documents were consulted to better reflect the main ideas and orientations of our research subject.

We started by consulting several scientific articles in several libraries and digital platforms such as: SNDL, Jstor, Google Scholar and springer, for the writing of the literature review.

In addition, we have used a number of books in the library of our school to enrich our conceptual framework, as well as internal documents of the distribution directorate of Belouizdad where we conducted our internship. The analysis of these data allowed us to fully understand the operation and organization of the distribution directorate.

All the documents that we used to carry out this research are mentioned in the bibliography.

1.1.3 Multiple Choice Questionnaire MCQ

The multiple choice questionnaire was based on the ICAP model developed by (Autissier & Moutot, 2016), by measuring the four indicators of the model we can measure the effectiveness of the change and determine the service with lowest global indicator of change.

In appendices (1) you will find the multiple choice questionnaire model that was distributed on sample of 16 employees across 4 services from 115 employees, that represent 14% of distribution directorate of Belouizdad employees.

1.1.4 Interviews

1.1.4.1 Definition of interviews

The interview is a tool we used for data collection during our internship. It consists of asking questions to one or more people in order to collect precise information (Cruz & V, 2016).

Mainly, there are three types of interview according to the interviewer's directivity, the three types are as follows (Dina, 2019):

- Unstructured interview.
- Semi-structured interview.
- Structured interview.

1.1.4.2 Interview guide

The interview explains the reasoning or the “why”, it is useful to explain complex situations or to show how certain situations are experienced and interpreted. here are the different phases of the interview development:

- **Theme: Presentation**

Tell me about your job within SADEG and the missions you are entrusted with in the organization? “The purpose of the question is to lead the person to have confidence in me by giving importance on his life and his experiences.”

How long have you been doing your job? “To find out if the person has been in the distribution directorate for a long time and therefore has experienced changes or not.”

- **Theme: Information management systems before “CRMS”**

What tools were deployed (Used) before CRMS? “To understand the previous situation.”

What do you think of these tools? “The purpose of the question is to understand the felling of employees toward these tools and if they have a sense of urgency for change”

- **Theme: Communication**

How the new procedures were communicated? “The purpose of the question is to know the means of communication, whether it is face to face, individually or collectively in meetings, by mail or by intermediary, etc. to see later if there is any in-person support”

Can you explain to me the steps taken for the communicating the new procedures? “The purpose of the question is to understand if there is support for the change provided with the modification of procedures or if they were imposed without follow-up”

If it is up to you to communicate the change in procedures in the work environment, how would you make employees better understand and accept that change? “The aim of the question is to put the person in a situation, to open up perspectives and possibilities of the means for accompaniment the change”

Is there someone who accompanies you after the implementation of the new procedure? “The purpose of the question is to check if there is support and follow-up after the implementation of change to detect and debug problems or not”

- **Theme: Training**

Can you explain to me the training program you participated in or planned for you in the near future concerning CRMS system? “The purpose of the question is to understand the training program concerning the change”

Have you benefited from CRMS training? “The purpose of the question is to check if the training was planned and implemented correctly”

What were your difficulties related to the implementation of CRMS system? “The aim of the question is to underline the type of difficulties encountered and check if there was technical support to fix them or not.”

How do you explain the difficulties you are experiencing? “This is follow-up question to the previous one to try and evaluate the knowledge level of employee toward the implemented change and their perspective of the problem.”

How do you know if the new procedures are working? “The aim of the question is to verify the way of measuring the effect of the change or the degree of effectiveness of the new procedures.”

How would you assess whether you were successful? “The purpose of the question is to check if the human factor is taken into account by the method of evaluating the success of the implementation of the change or not”

Do you have any other comments or suggestions for improvement? “The purpose of the question is to harvest the suggestion of employee, that are generated from his experience”

Finally, I will end the interview by thanking the person for the time granted and I will leave them my contact details in case he or she wants to communicate other ideas.

1.1.4.3 Content analysis

(Bardin , 2003) definition of content analysis «a set of communication analysis techniques aiming, through systematic and objective procedures for describing the content of messages, to obtain indicators (quantitative or not) allowing the inference of relative knowledge. the production / reception conditions (inferred variables) of these messages». Many researchers have in fact contested the obligatory quantitative dimension of content analysis, as well as the

fact of focusing only on a description and on the manifest content exclusively (Marie, Gavard, David, Christophe, & Alain, 2008).

1.2 Conclusion

We presented the methodology adopted for carrying out our work, namely the qualitative approach and its data collection and analyses instruments which in our case are; documentary research, observation and interviews, in addition to MCQ, we have defined each instrument and the reason we have choose it, and we closed this part with the presentation of the interview guide.

CHAPTER 3: RESULTS AND DISCUSSIONS

In this last chapter, we will present the results of the observation, the multiple choice questionnaire in addition to the interviews, carried out to measure the effectiveness of change process related to the implementation of CRMS system in SADEG distribution directorate of Belouizdad while referring to the ICAP model of (Autissier & Moutot, 2016) and the qualitative analyses method of (Kleiber, 1994).

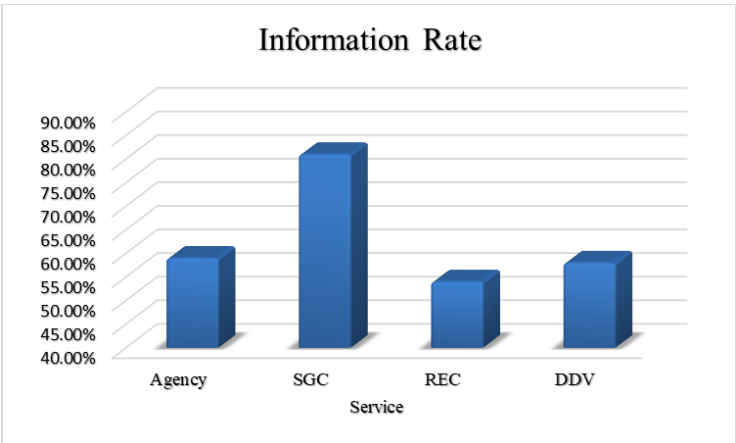
1 Multiple Choice Questionnaire Analyses

Here is a summary of the results obtained from the questionnaire for a sample of 16 employees out of 116 of the distribution directorate of Belouizdad, followed by a statistical analysis of the results.

In 16 employees, 10 of them indicated that they have participated in classroom training (that is 63%) and 6 of them (that is 37%) indicated that they have participated in mentor-coaching (one-to-one), this indicates that the organization implemented multiple forms of training, therefore multiple possibilities for introducing the change.

- We have asked a group of questions designed to measure the information rate of employees concerning the change, we have obtained the following results:

Figure 17 : Information Rate

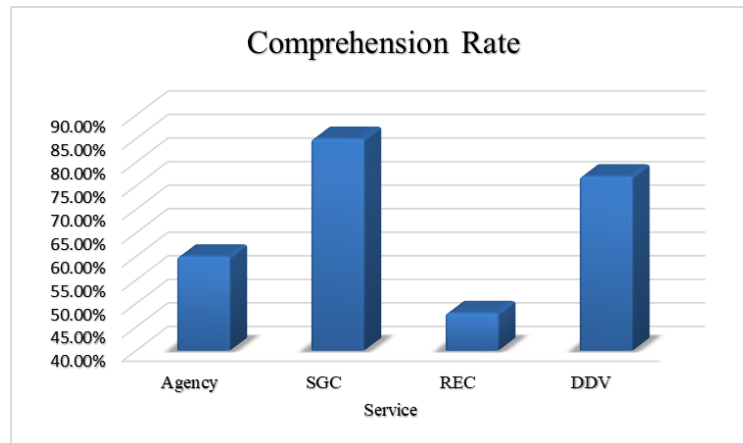


The Agency scored 59%, REC service scored 54%, SGC service has scored 81%, and DDV service has scored 58%. Considering the optimal information rate to be 80% (Autissier & Moutot, 2016), this result indicates a low level of employee’s awareness about project content, technical aspect and progress, in Agency, REC and DDV services, with small variation between

them indicating the same effectiveness of communication, in the other hand SGC service has high and the recommended level of employee's awareness, with a big difference in the effectiveness of communication regarding previous services.

- We have asked a group of question designed to measure the comprehension rate of employees concerning the change, we have obtained the following results:

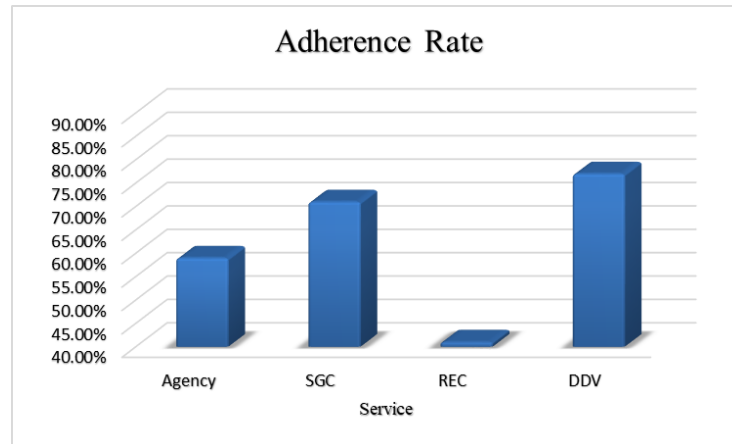
Figure 18 : Comprehension Rate



The Agency scored 60%, REC service scored 48%, SGC service has scored 85%, and DDV service has scored 77%. Considering the optimal comprehension rate to be 85% (Autissier & Moutot, 2016) , this result indicates a low level of employee's technical knowledge and understanding of risk, objectives and content of the project in Agency and REC services, a moderate level of technical knowledge and understanding in DDV service and optimal level of it in SGC service, with big variation between Agency and REC services compared to DDV and SGC services in comprehension rate, indicating a variation in training and communication effort in relation to employee's needs.

- We have asked a group of question designed to measure the adherence rate of employees concerning the change, we have obtained the following results:

Figure 19 : Adherence Rate



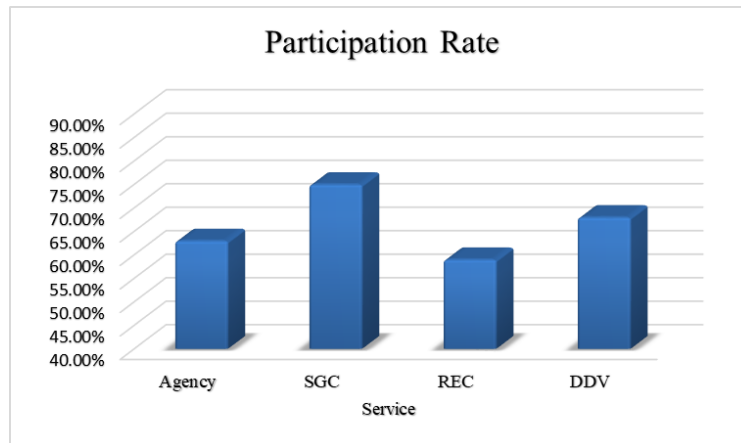
The Agency scored 59%, REC service scored 41%, SGC service has scored 71%, and DDV service has scored 77%. Considering the optimal adherence rate to be 85% (Autissier & Moutot, 2016), this result indicate a dangerously low level of employee’s acceptance and interest in the change and who judge it positively in REC service, and the Agency service with low level of acceptance, SGC and DDV services with a moderate level of acceptance with small variation between theme, it is difficult to interpret the reason behind this result without qualitative study, because this rate does not depend solely on communication program but rather on the beliefs, ideologies and the level of acceptance of employees to a given change.

- We have asked a group of question designed to measure the participation rate of employees concerning the change, we have obtained the following results:

The Agency scored 63%, REC service scored 59%, SGC service has scored 75%, and DDV service has scored 68%. Considering the optimal participation rate to be between 70% and 80% (Autissier & Moutot, 2016), this result indicate a low level of employee’s participation and productive action toward the implementation of change in REC service, in the other hand Agency and DDV services had a moderate level of participation with small variation between theme, and SGC with optimal level of participation. Due to the oscillating evolution of this rate,

it is difficult understand the reason behind this result without conducting periodic measurement flowed with qualitative study.

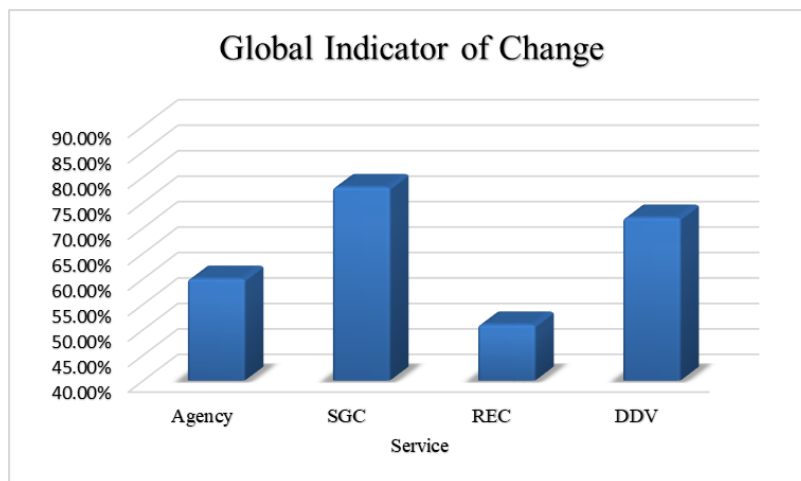
Figure 20 : Participation Rate



- The Global Indicator of Change

This indicator is the mean of four rate of the ICAP model, its allows us to measure the effectiveness of change and determine the service with lowest transformation and investment of employees in the change.

Figure 21 : Global indicator of change



The Agency scored 60%, SGC service scored 78%, REC service has scored 51%, and DDV service has scored 72%. Considering calculated optimal rate to be 88%, all the services in our

research study haven't reached optimal rate with the closest being SGC service, and the lowest service is REC, a big variation between the four service is noticed.

2 Interview analyses

The interviews were conducted on an individual basis, and they lasted between 20 minutes and 30 minutes without specifying the time for our interviewees to enable them to express themselves freely.

All the interviews were recorded by telephone. The transcription of the audio files was done word by word to ensure the credibility of our data and without any modification.

2.1 The study sample

For the purposes of our research and in order to conduct our interviews, the choice of our interview sample is based on the result of the ICAP model analyses, in which we choose the department with the lowest global change indicator, which happen to be collection department REC and in addition to control variable, with in SADEG company. Our study sample was limited to three employees because of the covid pandemic, in the time of our interviews, the organization was hit with the fourth wave of covid virus, and organization want to a semi-lockdown.

The following table summarizes the characteristics of our sample:

Table 2 : The characteristics of the interviewees

Participant	Service	Position Held	Seniority (years)	Date of the interview
Participant A	SGC	Head of Service	12	15/09/2021
Participant B	REC	Commercial agent	12	15/09/2021
Participant C	REC	MB Customer Management	15	15/09/2021

2.2 Data analysis and discussion

In order to analyze the results obtained through the survey carried out using the interview guide, we chose the content analysis which makes it possible to synthesize each question (Bardin , 2003).

Theme 1: Information management systems before “CRMS”

- Which tools were deployed (Used) before CRMS?

According to the interviewees the old system before CRMS was called SGC, this system was used in addition to third party systems to manage transaction of the organization. This system had many disadvantages that have been identified by the interviewees, Participant A stated that the system was outdated and need a large number of employees because of its demand of manual work to accomplish takes, with lengthy procedures and multiple interfaces in addition to a lack of security, Participant B stated that it was easier to make mistake due to the multiple interfaces and the system has no checking function to identify incomplete or out of the ordinary data, and the Participant C has emphasized on this point. But never the less this system had some advantages as Participant A has stated that the system was standardized across all the SADEG branches and the Participant B has stated that it was easier to use and practical and provided more access to information for the users and Participant C stated that the SGC system was user friendly and versatile.

- What do you think of these tools?

This flow up question was designed to determine if the employees had a sense of urgency to change the old system. Participant A has shown his sense of urgency by his multiple statement, the change was necessary to standardize procedures across all SADEG branches and to insure more visibilities and control for managers, and to provide client with excellent service and eliminating human error by limiting their roll in data processing, and most importantly to minimize time needed to accomplish tasks and make them easier. Participant B and C they were neutral toward the change, but nevertheless they have shown acceptance to the change by stating the it is ok to change.

Theme 2: Communication

- How the new procedures were communicated?

Participant A revealed that the means used to communicate the change were limited to the internal messaging system “TENSIK” to managers, and these managers were responsible to diffuse and share the message with their staff by either publishing the message or communicating face to face, which has been confirmed by Participant B and C. Participant B

has stated that the communication is mono-directional, in which all of their attempts to communicate with top management have meet with no respond or failure which have caused Participant C to perceive injustice in communication stating that their messages about the new system are ignored and not acknowledged, its goon as fare as evaluating communication procedures from scale 0 to 10 as definite 0.

- Can you explain to me the steps taken for the communication of the new procedures?

Participant A stated that the organization communicated at the beginning to implicate all employee's segmentation to develop the system, and that they received multiple messages containing all information about the new system, nevertheless no information about the development or progress of the project was communicated. Participant B and C shard the same statement in which they received three messages that consisted in the announcement of the development of new system, the date of training session and the date of implementation, they further revealed that when changes on the system accrue they don't get informed about them or the date of implementing them, Participant C expressed that she can't remember any communication effort which implies that the communication program wasn't effective and didn't had impact on the employee.

- If it is up to you to communicate a change in procedures in the work environment, how would you make employees better understand and accept this change?

Participant A expressed that the official communication channels are clear and direct, and he further stated that nots, massaging system and meeting are the best way to communicate the change. Participant B stated that communication should focus on convincing employees to embrace the change by communicating the need of change, its benefits and results, and most importantly focusing on employee's feedback like observation and complaint. In the other hand Participant C stated that communication should be based on relationship communication "face to face, meetings" focusing on implicating employees on development and implementation of the change by sharing all information concerning the system "what to expect from the change" and the progress of the change, most importantly to ask the employees what do they need to be improved "changed" and how to improve it.

- Is there someone who accompanies you after the implementation of the new procedure?

Participant A stated that follow up support was provided, by the technical watch team, that receives all complaint, user difficulties or system bugs thro dedicated communication channel integrated in the system “MONTISE” and if the dysfunction is urgent or crippling to the function of the organization a meeting will be organized to solve the problem. Participant B revealed that the watch team was slow to react at best, and its effort were negligible, stating that single complaint took up to 6 months to get resolved and many more still pending and some haven’t got processed yet. Furthermore, when changes are implemented to the system no information is communicating the release of these changes and detail of them, which forced employees to discover these changes by themselves. Participant B and C had expressed their effort trying to report these problems and trying to get the attention of the organization to fix these problems that impeded their work and made it difficult, they stated that it took them a year and half to get the attention of the organization and to participate in meeting, to better convey the feeling and perception of these employees, when I asked participant B ,you got invited to this meeting to resolve these problems? and I quote « we didn’t get invited, we intruded on theme, and after the meeting they assured us that these problems will get solved in one week, until these days we are still waiting (3 month after) » this shows that the employees feel left-out and perceive injustice.

Theme 3: Training

- Can you explain to me the training program you participated in or planed in the near future concerning CRMS system?

Participant A is teacher in the training program, he revealed that the first step in the training program was to train the teacher form each distribution directorate across the country, after this step four training session were programed for the users of the system with one session lasting a week, Participant B and C stated that they participated in first and second training session in 2017. Participant A revealed that the system was implement in January 2020 in which the training program was infected by covid pandemic, when participant B and C were asked how much training session is programmed for them they didn’t know. The employees were split on tow group to insure the day-to-day function of organization, the second group started to use the system with no formal training because of the pandemic, so they relayed on their supervisors and on their coworker to teaches them how to use the system.

- Have you benefited from these training?

When participant A was asked with this question, he expressed that it is difficult to evaluate the efficiency of the training program because no official survey has been made, but at the end of each training session an evaluating test is conducted, according to these tests employees were satisfied and benefited from the training. When participant B was asked this question she stated that she didn't benefit from the training because of the long time between the training and the first time using the system (3 years) and the content of the training was vastly deferent from what the system is, because when the training was organized the system was still on development, Participant C has revealed that she didn't benefit from training and confirmed what has been stated by participant B, and further stating that this caused them to learn how to use the system with experience and by taking the initiative to try and explore the system.

- What were your difficulties related to the implementation of CRMS?
- How do you explain the difficulties you are experiencing?

Participant A has revealed that miner difficulties were encountered because the structure of the system, in which the system is limited in his use and doesn't allows employees to adapt with particular case in the real situation, but after many complaints the organization opened some privileges for managers to allows them to adapt with these situations, another type of problems were encountered because some aspect of the system are not fully developed yet. Participant B has reported that she experienced many problems, some of them are technical and a some of them are structural, in which the new system has complicated to procedure of work and limit employee access to view or modified data, this made it difficult to detected mistake or to verify the work, this is especially crucial because the organization implement changes on the system without informing employees, making the mater more complicated, multiple bugs exist in the system, participant B and C stated that when they make mistake it is near possible to fix them, and the client always get caught up in these problems due to lengthy bureaucratic procedures that demeaned communication between three organization ELIT, SADEG and DDB. Participant C has confirmed the that the system is under developed and made the work difficult in some areas by limiting their access, and the lake of some function that used to exist which made them develop new manual work that is prone to mistake due to its complexity, furthermore, the system data base is limited to 2018 which limit their service to the client, adding to this lake of support to help understand and fix these problems increased their level of stress.

- How do you know if the new procedures are working?

Participant A stated that by measuring the complaint frequency of client and by measuring client satisfaction and monitoring the evolution of the profit (income), in addition to monitoring system transaction and by measuring time needed to accomplish tasks we can determine the effectiveness of the new procedures. Participant B has stated that in order to measure the effectiveness of the new procedures organization must measure the productivity of employees, and Participant C further instated a survey should be organized targeting employee's satisfaction and feedback about the change and organizing periodic meetings to discuss with them about these new procedures.

- How would you assess whether you were successful?

Participant A has stated that because the system is implemented this implies that he has seceded in the change and further expressing that there is no other way to work out said the system impaling that the change was imposed, and by measuring his error rate, we can determine if he was successful in the change this indicating that in his evaluating method he didn't considered the human factor. In the other hand participant B responded by one sentence « when I'm convinced by it » she further express that employee's perception of change is more important than just measuring its productivity because when the employee is convinced with the change he goes the extra length to insure the continues development of the system, paying attention for the human factor. Participant C had emphasized on performance indicator and knowledge level as measuring tool of success, paying a slight attention for the human factor.

- Do you have any other comments or suggestions for improvement?

Participant A suggested that the continues development of system is a kay factor to facilitating change, and the change should be coherent to the economic need of the organization, and must be well planned. Participant B stated that the change project shouldn't be radicle and it should be based on past experience, more importantly is to improve communication program by using more relationship based communication to understand employee's need and suggestion, and implicating them in the development and implanting the change, and she emphasized that the organization should change it communication culture and techniques. Participant C suggested that rather than developing project in close door with supervisor and managers, they should consult with all employees for their suggestion and experience, and they should communicate

with them before the starter, through and after the implantation of the project, and providing support and looking for problems to fix theme, participant C has emphasized on the importance to improving the communication system but rather redesigning it a major transformation is needed, on the other said participant C called for supervisors to organize more training session for their staff emphasizing on the difficulties that cloud have been overcome if employees were more knowledgeable about the new system.

3 DISCUSSIONS

From previous resulted obtained we can say with no doubt the change management wasn't sufficient, this is true because according to the ICAP model no service in our research has reached the recommended rate of the global indicator of change, furthermore we have notice a big variation between the service, what is alarming in this variation is that these services are form the same division, this indicate that the change wasn't perceived in the same way in the same population. Our interview allowed us to better understand the reason why, we will try and analyze the result according to what we have seen in the theatrical chapter.

In this change the organization field to create an urgency for the change even though (Kotter, 2008) has based his model on this concept, the employees accepted the change but they have no sense of urgency that drive them to seek the benefits of the change, adding to this there vision for this change and its benefits are vague, the organization goal of this change is to implement a CRM model, which means in general, is for the employees to provide a better service for client, from our study no employee known this, there understanding is that the implementation of a new system is the change project. Author alarming failure committed by the organization, is providing different employees segmentation with different level of attention and support, creating a gap between simple employees and manager, which caused employees to perceive injustice, this had a negative outcome on their motivation and adherence to the change project (Kristin, Bryan, Wlm, & Kevin, 2013). Manager whom got better support then employees, reported better than employees in the ICAP scale.

This perceived segregation is due to poorly planned and implemented communication plan, the communication was limited in content and means of communicating. The communication was limited to managers only using single mean of communicating, that wasn't based on relationship or human interaction, it was all done through electronic messaging system, only in special and

extreme problems a meeting was organized, mainly on employee's request, this shows that the organization didn't take initiative to accompany employees, this is justified by organization neglect and the poorly operated watch group of the change. The employees were kept in the dark, because the progress and achievement of the change weren't communicated. This had a noticeable impact on employee's motivation, adherence and participation on the change.

The training programmed was poorly planned and implemented, the employees received half of their training 3 years before the implementation of the change, this caused the employees to loss knowledge acquired from the training sessions and most importantly they lost faith in the project because it got delayed year after a year, and it was a sign to employees that the organization is struggling with this project and "it going to be a fail" attitude was spreading in the hallways of the organization due to rumors and the void caused by lack of communication. Adding to this training program was halted by covid pandemic, and the employees who hadn't participated in the training they relayed on their teamwork and supervisors to teach them how to use the new system.

On the technical side, employees had no knowledge about the details of the system, its technical and structural dimension. The system was full of bugs and problems, these problems kept on making employee's work harder, because they weren't fixed in time, after a year some problems haven't got fixed yet, in addition to three-year implementation delay, the employees perceive the change as failure. If we go deep into this change, the main goal of the change is to implement CRM model, which makes CRMS system a tool, in author word a by-product of the main change, this has been said, if we analyze the system from technical view, the CRMS system is transactional IS not decisional IS, Appendices 2 & 3 shows the reporting process, and in order to implement CRM model you need decisional IS for its analytic dimension (Meier, Zumstein, Graf, Stern, & Payot, 2008), this mane that the employees have to make analytical reports manually, which is difficult, causing the employees to work harder than ever causing stress level to raise among employees. From figure 14 we can notice that the technical support is centralized in ELIT, this made it difficult to communicate problems and information about the project, adding to this administrator privileges is confined to ELIT members, and any communication between employees and developers has to be routed through SADEG first, which made it difficult and lengthy bureaucratic process, that caused employees to abandon any effort to communicate, therefor making it difficult to detect problems and to fix them. (Autissier &

Moutot, 2016) stated that technical problems should be fixed in the first six months, in this case almost two years has passed, and the system is wreaking with bugs, that cause employees to redo their work from the day of implementation when the fix is deployed, this increase the level frustration among employees knowing that the work that they are doing is going to be redone in the future.

These encountered problems in the implementation of change, are based on two principal axes communication and training, and the problems are amplified by management style of the organization, in general manner, decision making in DDB is accomplished in directive style, this means, top management make decision with little to no consideration of employee's opinions, this style of management is used on the majority of decisions made.

Adding all what we have mentioned above, created a resistance to change, in our first month of internship we couldn't observe this resistance to change, until we accompanied employees while using the system, we detected a feeling of inner emigration were employees abandoned their initiative to implement and improve the change project, fatigue and burn-outs, which are caused by the difficult use of system and prolonged stress, these are symptoms of passive form of resistance called listlessness, this form of resistance is hard to predict and identify because it is silent and passive, but its implication has a negative outcome on change project implementation on the long term, adding to this employees will have negative perception on future changes, raising the chance of resistance to them (Thomas, 2021), in simpler words employees started to drift away from the change.

4 Operational recommendation

After having analyzed the study results, and the field of investigation, and according to the feedbacks from employees on the suggestions for improvement, we now present to you the operational recommendations in two categories; communication and training

4.1 Communication

When we think of support for change, we think before any action, communication. Communication is in fact an essential cog in the accompaniment of change. It can follow several vectors, take different forms, have different objectives; internal communication aimed at employees, can take an upward direction, then we are speaking of listening, or downward direction, such as the transmission of information on the state of progress of a project. It can be

directed outwards, aimed at the public in the form of advertising in the media, but at the same time serve internal communication. A communication plan, which will formalize the objectives, targets, planning, messages to be disseminated or information to be collected is an essential tool for managing change.

- Communicate before, during and after the change while comparing the system and the environment before and after the change.
- Establish transparency and clarity on the decision taken to avoid rumors.
- Perform a 360-degree evaluation (effective for operational levels), the employee is evaluated by his superior, his colleagues and himself.
- Carry out an evaluation by the management by objective (effective for strategic levels), the employee and his superior set the objectives and the evaluation criteria.
- Better communicate the impact of change on social media (Facebook, twitter, etc.).
- Explain reasons for the change and alternative suggestions.
- Establish communication from both sides and involve employees in the ideas of innovation and change.
- Ensure a minimum of freedom to employees in decision-making and give them importance whatever their role in the organization.
- Delegate and rotate delegation to avoid misunderstandings, jealousy and rumors between colleagues
- Celebrate short term wins and acknowledge obstacles and losses.

4.2 Training

According to the results of the survey, the organization offered two means of training; classroom training and mentor-coaching. However, in order to improve the quality of training, it would be necessary to:

- Communicate clearly to employees on the reasons for not benefiting from training.
- Distribute access to training equitably among the various categories of employees.
- Disseminate the training offer more widely, in another form than a classroom training, by computer for example, online training, on the company's network accessible to all.

- Avoid the supremacy of department heads in decision-making (planning, agreement or refusal of training). The employee can raise the need for training, and department heads get informed of the employee's registration for training.
- Imagine a computer system (online academy) where the employee positions himself on a training session, which makes it possible to empower the employee by making him an actor in his professional development.
- Provide employee with more access to requests for support of training in the context of his career.
- Follow-up after training, with a questionnaire and field test submitted to the employee and his hierarchical superior to know the benefit at the professional level, which would also allow an adjustment of the content of the training (are they relevant?).
- Ensure that encouraging scenarios are carried out during the training to make the employees the most contumacious to the theoretical envy (concrete and re-examining situations applicable to the reality of the company).
- Clarify the return and added value of training for employees as well as the usefulness of training for the organization and for employees.

CONCLUSION

In order to support the actors of the organization in their contact with the change, it would be necessary to implement a set of actions on the ground with the actors concerned, to help them to appropriate the new provisions of the organization, their new role, their new practices, it is a matter of working with them.

Different tools are used to ensure this support, such as communication, which enables the right message to be sent, at the right time and with the right means. the training which allows to provide future users with the knowledge and skills necessary to carry out the new tasks induced by the change.

The current work is based on one the key indispensable concept that enable change management to evolve in professional usage or in theoretical concept, the feedback loop of change management.

We conducted this study with the objective of developing and implementing a feedback process of the change implanted in distribution directorate of Belouizdad of SADEG a branch of SONELGAZ, and to be interested in the contribution of this tool in measuring the effectiveness of change management of the organization.

In order to carry out our work well, we have opted for a qualitative methodological approach by using scientific articles, books and the ICAP model, observation and interviews. Through an interview guide that we prepared, we were able to interview managers and employees of the distribution directorate of Belouizdad and collect the information necessary to be able to develop a feedback process and measure the effectiveness of change management.

In this, we have arrived at the following main results:

- Change management plan development must be based on well-defined model that necessitate the implication of managers and employees and organization experience.
- Communication and training they are the success factor in implanting change, they ether suppress resistance to change or elevate it.
- ICAP model is a reliable tool to measure the effectiveness of change process, therefor establishing a feedback loop.
- The feedback loop of change management is one of important instruments that allow the organization to follow the progresses of change in real time with factual indicator and to understand the “why” behind it. By enabling the organization access to these data, it

allows it to make real time changes to change plan, and better reallocation of resources. Therefor maximizing the return of investment.

- The feedback process allows the organization to learn from past experience and to master the art of change management, because every change is different.

Change management aims at insuring that the implement project is accepted, implemented and fully functional. In fastest time with minimal resources. Its insures the alignment of organization objectives with employee's objectives. And the feedback process provides the information needed to optimize change management process, therefor optimizing resources.

The vision of change management becomes wider and wider. It contributes to the creation as well as the preservation of value in the change project, by convincing employees to adopt the change, each one of them becomes a developer playing the role of professional expert, taking the project implemented into continuous development, developing aspect that haven't been conceived in the original development of the project.

The feedback loop of change management includes several managerial contributions. Once designed and obtained it is akin to a very practical tool measuring the effectiveness of change. Thanks to this instrument, organizations will have a global vision of the dysfunctions hindering their activities and the achievement of their objectives. Thus they will be able to put in place a better strategy to deal with it.

However, our work unfortunately has some limitations:

- We haven't covered so many scientific articles on change management and indicators of change.
- Limitations related to our study sample. The sample size of the interviews was limited to only three interviewees, which is insufficient for such an approach.
- Some of the sources with which we referred to in the conceptual framework are of an ancient date.
- Our study was implemented in the last stages of change (anchoring stage), this limits our access to data, because this feedback process must take periodic measurements to follow the development of change in real time.

In conclusion of this study, we highlight the importance of change management in all project of change and the usefulness of the feedback loop, so we recommend in the additional work.

- Determining the coefficient of the ICAP model indicators according to the nature of change.
- Develop a change model for ALGERIAN organization.

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APPENDICES

Appendices 1: MCQ

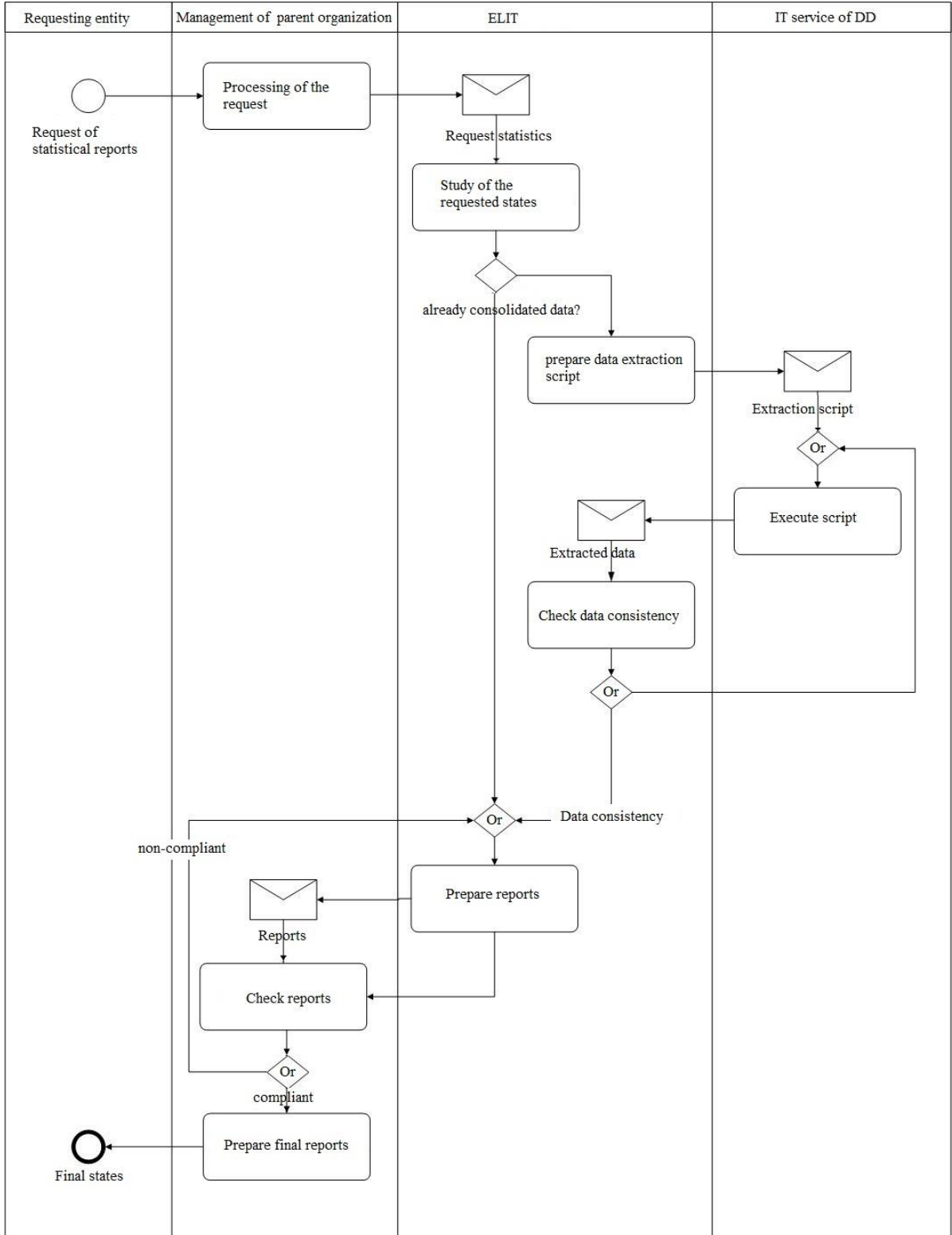
Figure 22 : MCQ to measure the effectiveness of change

Check the correct answer with (X) :				
	DDV	REC	SGC	Agency
Which department do you work in?				
	Classroom training (at a training center)		Mentor-coaching (One-to-One)	
What type of training did you take within the framework of CRMS project?				
	Yes regularly	Yes irregularly	Yes only once	No never
Have you heard of the project?				
Did your hierarchical supervisor present the project to you?				
Have you received any information about the project?				
Have you looked for information about the project?				
Have you been told how the project will unfold?				
	Yes exhaustively	Partially yes	No but I would like	Not at all
Do you understand the objectives and the modalities of the project?				
Did you ask people or experts for a better understanding of the project?				
Do you have a clear idea of what will change for you?				

Have you looked for documented, by yourself on the project and its themes?				
	Yes completely	Overall yes	Yes a bit	Not at all
Do you think this project is useful for your company?				
Do you think that this project is useful for your activity?				
Do you think that the project is well received by employees?				
Do you think that all the conditions are in place for the success of the project?				
	Yes and it is a priority	Yes in part	No but I would like	No and I'm not interested
Did you attend any project meetings?				
Have you produced diagnostics, analyzes and proposals for the project?				
Have you considered integrating the elements of the project into your activity?				
Have you tested certain elements of the project in your activity?				

Appendices 2: Reporting process through ELIT

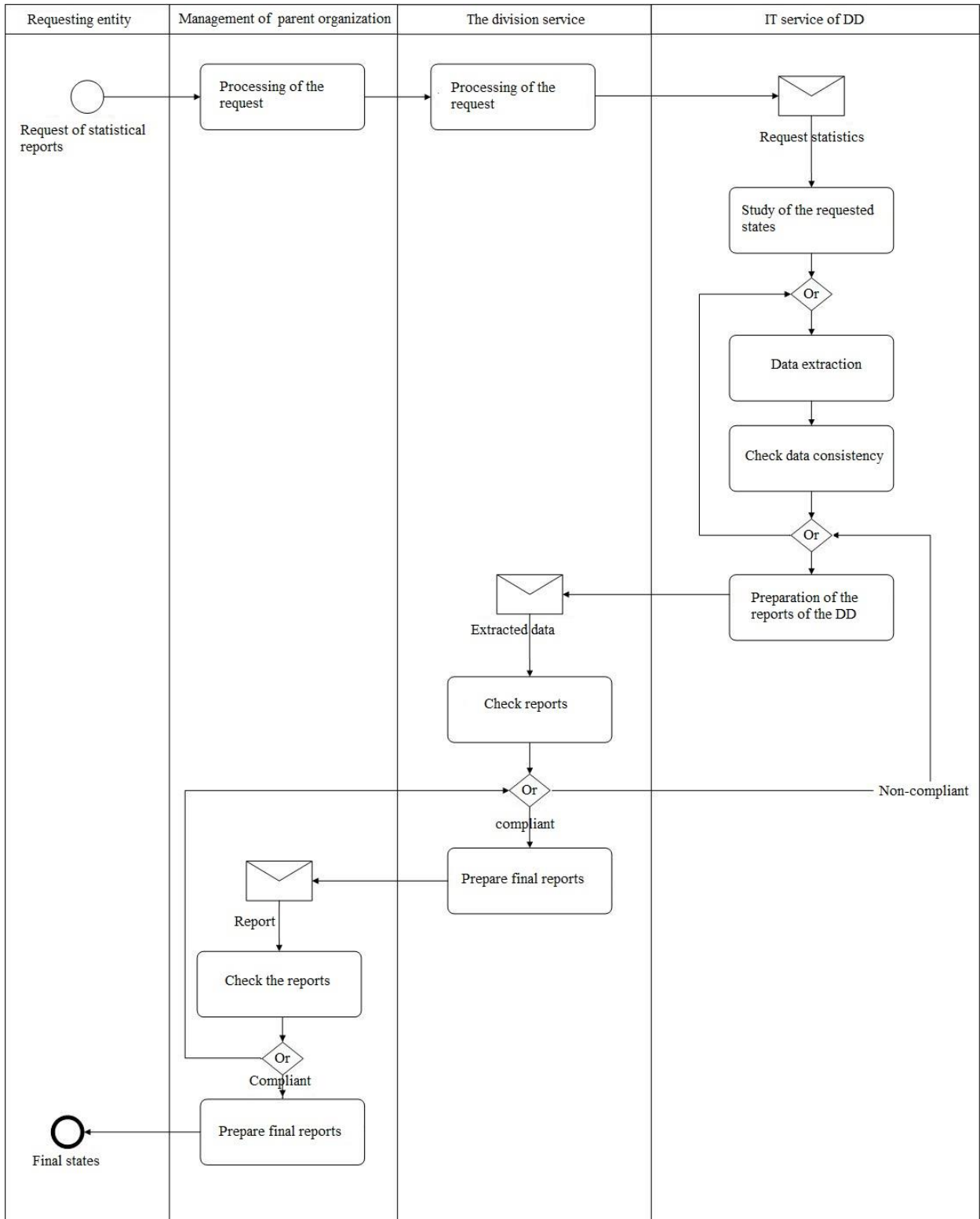
Figure 23 : Reporting process through ELIT



Source : (SADEG, 2021)

Appendices 3: Reporting process through distribution directorate

Figure 24 : Reporting process through distribution directorate



Source : (SADEG, 2021)